# SUPPLEMENT 2010

Catalog

CLIPLINE
PLUSCON
COMBICON
TRABTECH
INTERFACE
AUTOMATION

PHOENIX CONTACT
INSPIRING INNOVATIONS

# The Phoenix Contact catalog system

**CLIPLINE**

From the modular terminal block to the mounting 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.

**PLUSCON**

The PLUSCON catalog documents industrial connectors for data, signal and power cables, as well as for fiber optics. The complete offer for the sensor/actuator cabling makes this catalog a standard for field wiring.

**COMBICON**

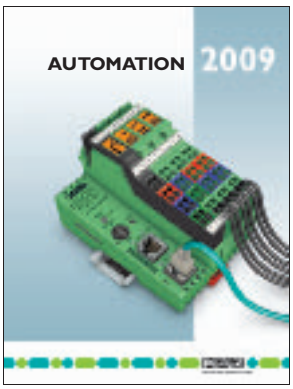
The COMBICON catalog provides a complete range of device connection technology with protection classes up to IP67. Electronic housings, plug-in card blocks and DIN socket strips make this catalog a standard for every developer.

**TRABTECH**

The products and solutions regarding the topic of "power and signal quality" from the TRABTECH catalog make a considerable contribution to trouble-free work processes in all areas. This provides you with more availability.

**INTERFACE**

The INTERFACE catalog comprises all components used in and around an industrial controller, which are required for the signal adaptation of digital, analog, serial and power signals, such as signal converters, switching devices and power supply units.




**AUTOMATION**

From the simplest IT-powered control system through to the world's fastest I/O module, the AUTOMATION catalog provides state-of-the-art automation components and systems from Phoenix Contact.

**2** | **Industrial connection technology, marking systems and mounting material** CLIPLINE

**104** | **Connection technology for field devices and field cabling** PLUSCON

**170** | **Device connection technology and electronic housing** COMBICON

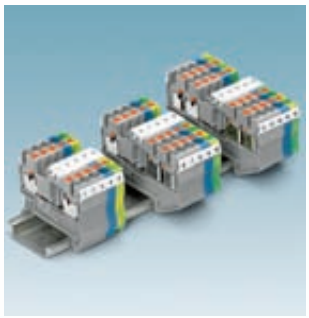
**192** | **Power & signal quality** TRABTECH

**212** | **Signal converters, switching devices, power supplies** INTERFACE

**290** | **Components and systems** AUTOMATION

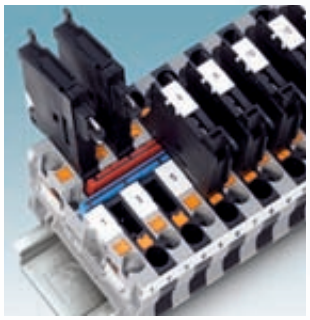
**344** | **Index**

## CLIPLINE complete



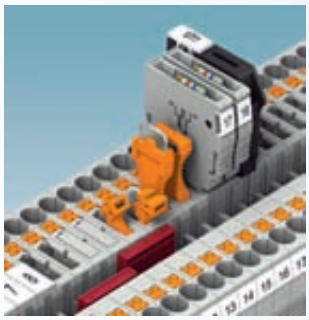
Push-in feed-through, multi-conductor, and double-level terminal blocks

**PIT 4... / PITTB 4...** page 8



Push-in lever-type, self-leveling fuse terminal blocks

**PIT 4-HESI... / PIT 4-FSI/F...** page 14



Push-in knife, disconnect terminal blocks

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**PITME 4** page 18

Push-in terminal blocks, angled type

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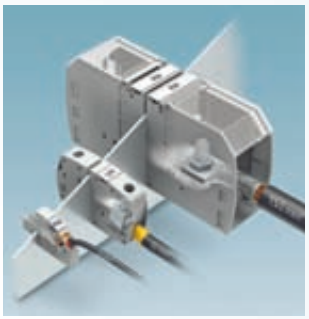
Screw connection lever-type fuse terminal blocks and inserts for solar technology

**UK 10,3-HESI 1000 V** page 32

Bolt connection terminals for DIN rails and direct mounting

**RBO... / RSC...** page 38



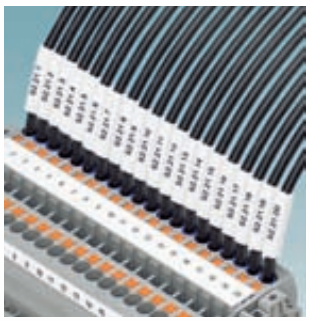
High-current feed-through terminal blocks with screw and bolt connection

**UW... / RW...** page 44

## MARKING system

Ferrules with option for BLUEMARK labeling

**AI-WM ...** page 68



Conductor marker for threading and subsequent labeling of conductors

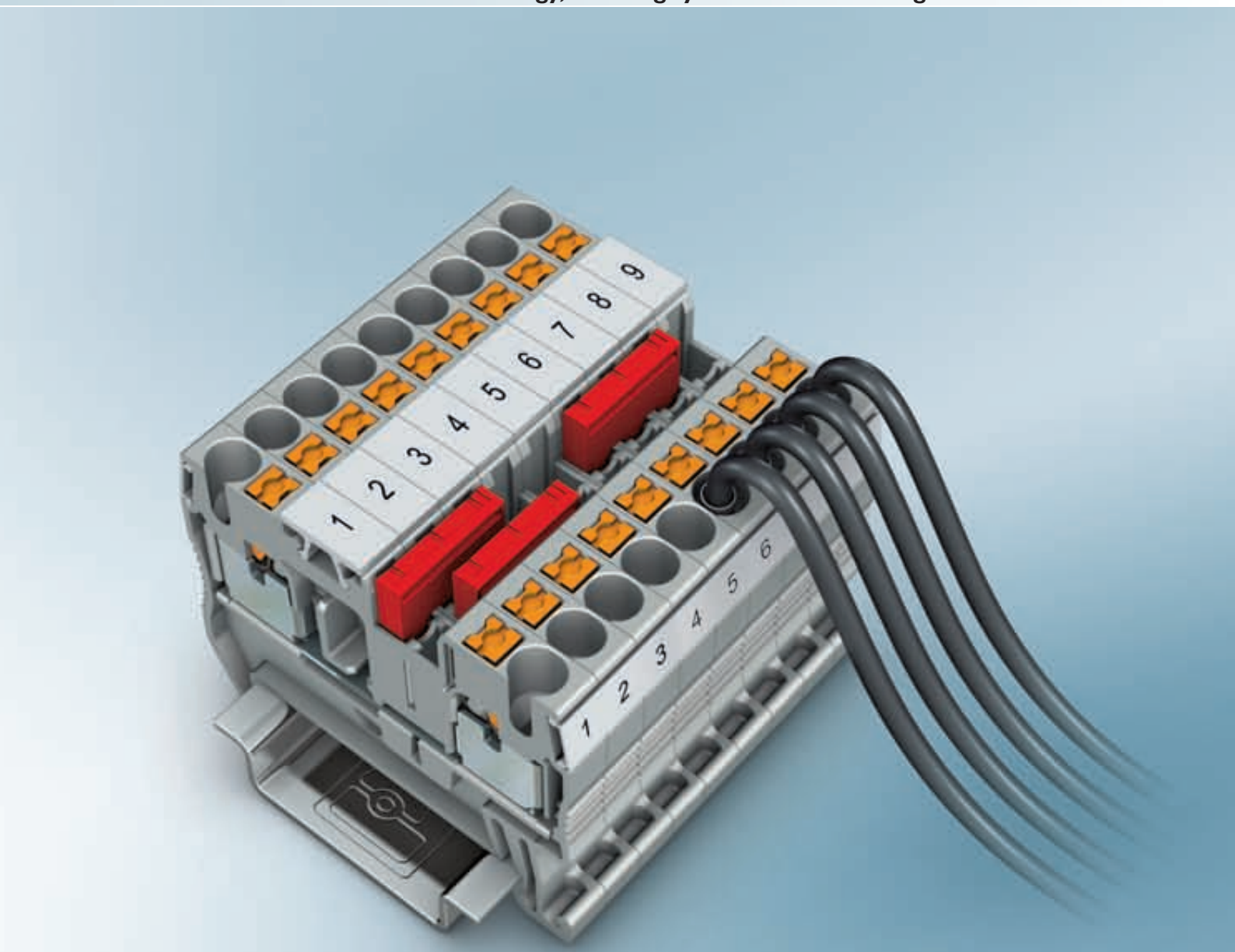
**UC-WMCO ...** page 72

Device labeling with bore holes for securing with screws or rivets

**UC-EMSP ...** page 80

Marker carrier for buttons and switches

**CARRIER-EMLP, CARRIER-EMP...** page 82




## TOOL fox

Tool sets for convenient use on site

**TOOL-...** page 84

Pliers for all electronics applications

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Stripping and crimping tools for solar connectors

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Cable duct cutters

**CUTFOX-CD** page 100

Halogen-free cable ducts

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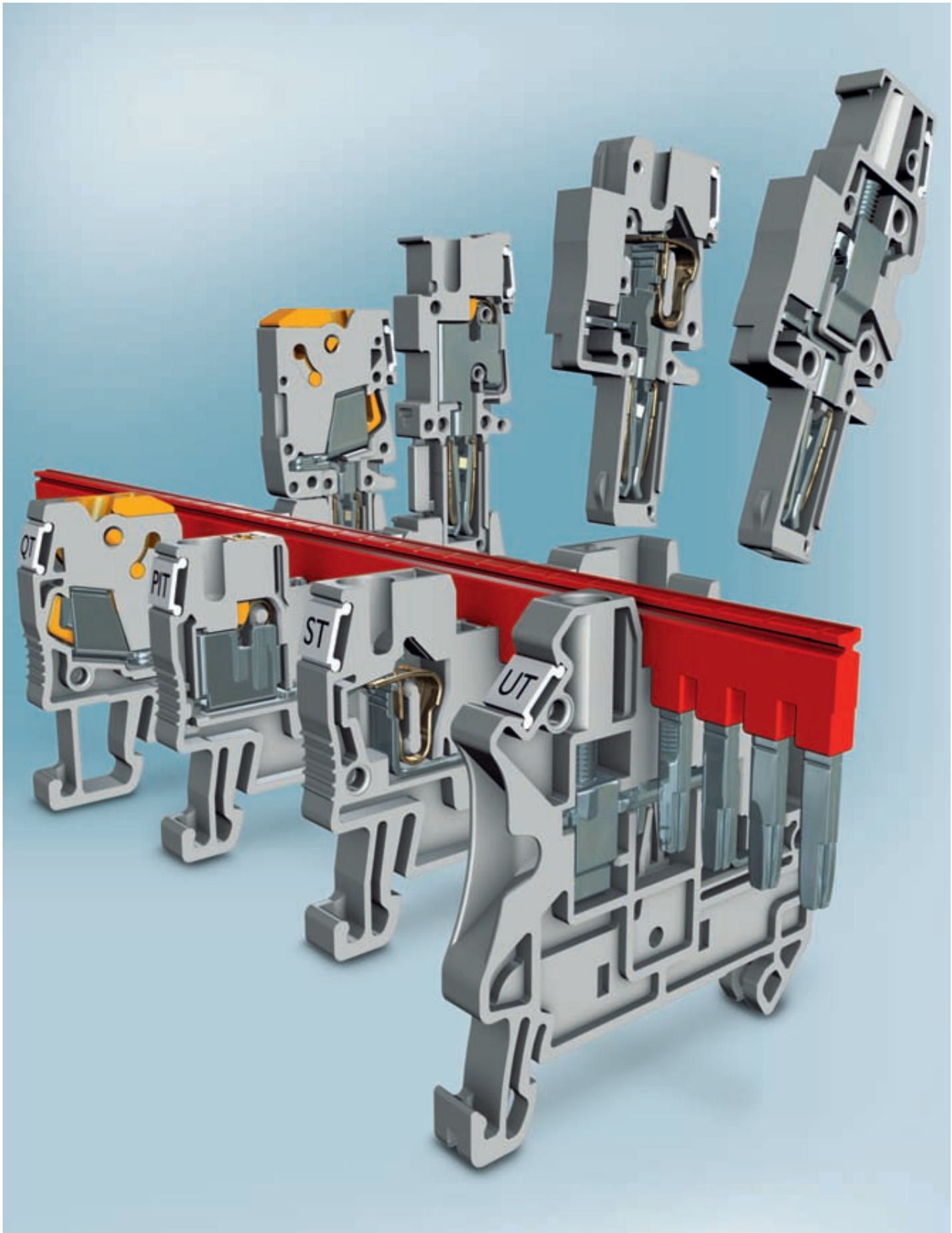
## CLIPLINE complete



## General

With the unique modular terminal block system from Phoenix Contact, the user has a free choice of connection method. Irrespective of whether you opt for the screw, spring-cage, push-in, fast or bolt connection, all these connection methods can be freely combined with each other with the same accessories due to the double bridge shaft.

Bridging, labeling, and test accessories are standardized and reduce storage costs.

The CLIPLINE complete system includes the following connection methods:

**UT**

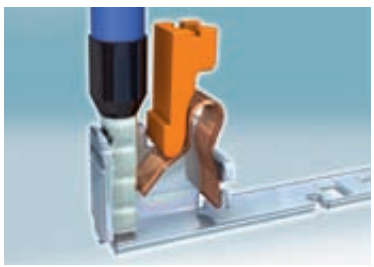
## UT Universal Terminals
### Screw connection method

Universal in every application. The screw connection method is characterized by the multiple conductor connection and extremely high contact force. The screw connection method is familiar and accepted worldwide and can be used everywhere.

**ST**

## ST Spring Terminals
### Spring-cage connection method

The proven connection method for applications that are sensitive to vibration. The spring always exerts the same constant force on the conductor, regardless of the influence of the operator. Wiring is easy using the space-saving front connection.



**PIT**

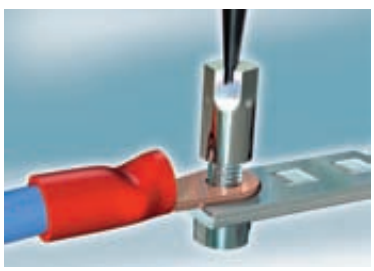
## PIT Push-In Terminals
### Push-in connection method

Solid conductors are simply pushed into the terminal block. This is the characteristic feature of the push-in method. The screwdriver is only used to release the conductor. The push-in connection is particularly advantageous in very restricted and narrow wiring spaces.

**QT**

## QT QUICKON Terminals
### Quick connection method

Connect the conductor without stripping. The fast connection method represents a drastic (up to 60%) reduction in wiring time.
The conductor is connected easily, reliably, and quickly with just one turn of a standard screwdriver.



**RT**

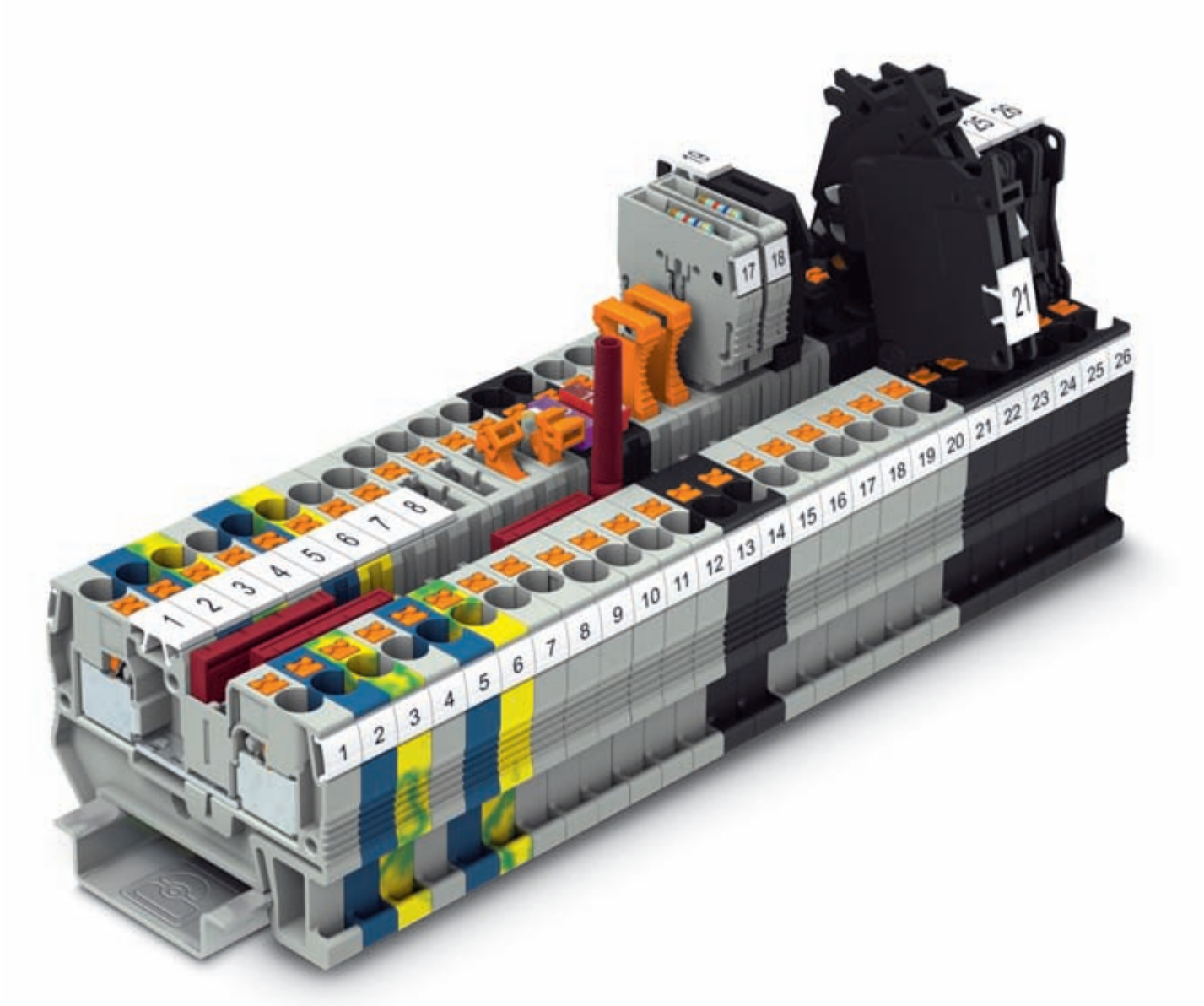
## RT Ring Lug Terminals
### Bolt connection method

Rugged connection for conductors with ring cable lugs. RT combines the bolt connection with the advantages of the CLIPLINE complete system, such as simple potential distribution through plug-in bridges, large marking surfaces, and uniform test accessories.

**COMBI**

## COMBI
### Pluggable connection method

Power and signal wiring can be easily plugged in using the COMBI system. The standardized plug-in zone allows all terminal blocks and connectors to be freely combined, whatever the connection method.

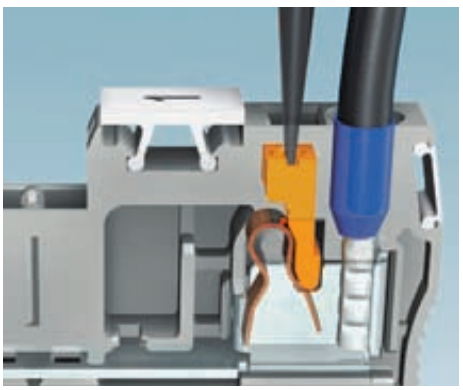


**PIT push-in connection method**

The PIT series is synonymous with simple, direct conductor connection and draws extensively on the benefits of the CLIPLINE complete system.

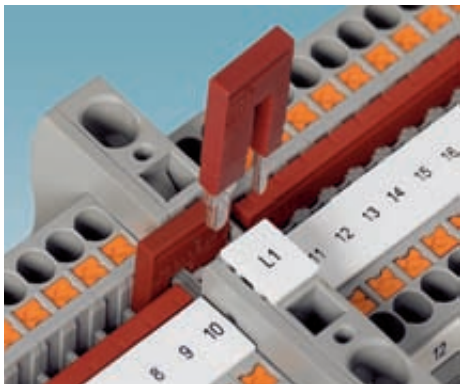
**Insertion is child's play**

The up to 50% reduction in insertion force offered by the PIT push-in connection method supports simple and direct insertion of solid and stranded conductors featuring ferrules with a cross-section of 0.34 $mm^2$ or higher.

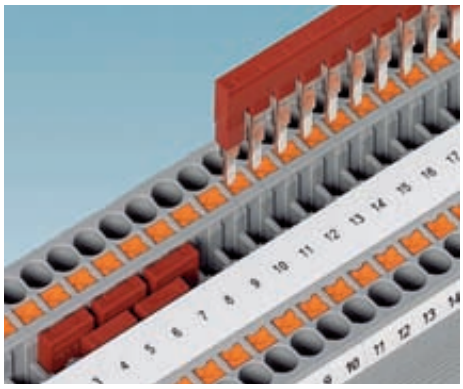


**Latch function**

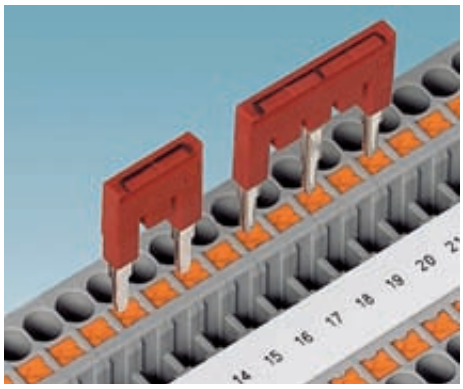
The integrated latch allows you to release connections with any type of tool – easily and without direct contact with live parts.



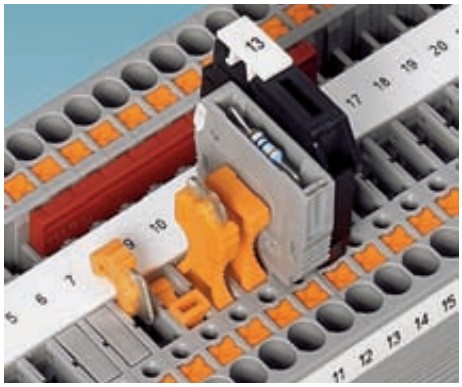
The reducing bridge permits simple connection of terminal blocks with different nominal cross-sections, for example an ST 10 spring-cage terminal block with a PIT 2,5. Input blocks can be arranged quickly with the reducing bridge.



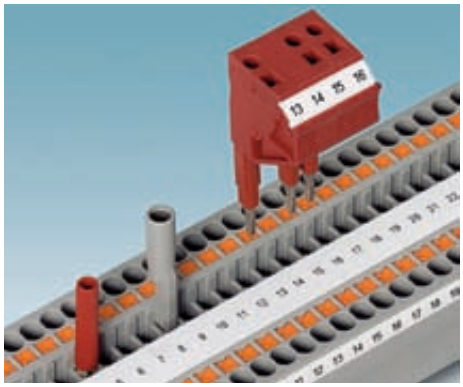
With the double bridge shaft, any number of terminal blocks can be connected with each another using two-pos. bridges. The 2 to 50-pos. bridges permit bridging of up to 50 terminal blocks in one step.



Non-adjacent terminal blocks can be bridged by breaking off individual contact tabs from the standard bridge. In this way, two potentials can be led in parallel through a terminal strip. The contact points can also be marked.



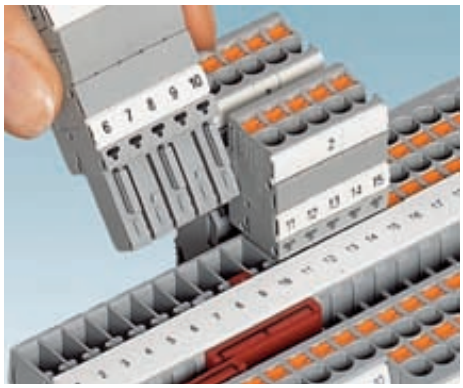
The P-FIX insulated feed-through connectors, P-DI isolating connectors, P-CO component connectors, and P-FU cartridge fuse connectors can be used in the universal plug-in zone of the disconnect terminal block.



A 2.3-mm-Ø test plug is available for measuring cables. All the measurement and testing work can be completed faster using test adapters for 4-mm-Ø test plugs and the modular test plugs.

The clear and large-scale marking in the center of the terminal block is vital for reliable and time-saving installation.

In addition to this, each terminal point can be labeled separately.

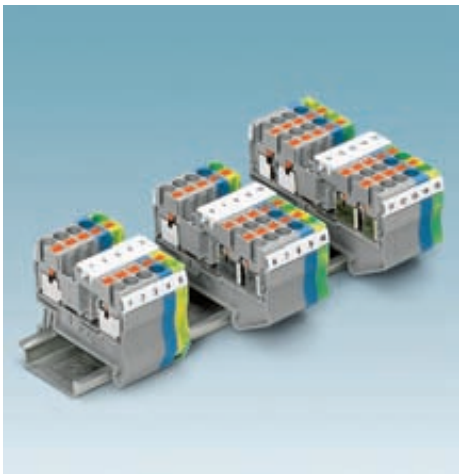


PIT-COMBI terminal blocks can be used to configure signal wiring using the pluggable push-in connection. The system is touch-proof and comprises self-assembly connectors with a wide range of accessories.

Self-leveling fuse terminal blocks with a 4 $mm^2$ conductor connection and the same shape as the feed-through terminal blocks are available. All terminal blocks can be bridged seamlessly with the double bridge shaft.

The compact lever-type fuse terminal blocks are the same shape as the feed-through terminal blocks and support seamless labeling and bridging. It is easy to achieve a time-saving potential distribution via bridging between non-adjacent terminal blocks.

## PIT 4 ... feed-though and multi-conductor terminal blocks



- Tool-free wiring of conductors with ferrules or solid conductors
- Stranded conductors with ferrules can be inserted directly with PIT 2,5 (from 0.34 mm²) and PIT 4 (from 0.5 mm²)
- The actuation lever opens the terminal point, so there is no direct contact with live parts
- Compact design and front connection enable wiring in a small amount of space
- Double bridge shaft enables individual potential distribution and supply
- Testing and labeling using CLIPLINE complete standard accessories

**Notes:**

[1]) The max. load current must not be exceeded by the total current of all connected conductors.

**4/6 mm² feed-through terminal block, 2 connections, can be double bridged**

### Technical data

| | | | | |
|---|---|---|---|---|
| Dimensions | | Width | Length | Height NS 35/7.5 |
| | [mm] | **6.2** | **56** | **36.5** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] / AWG |
| | | **40** | **800** | **0.2 - 6** / **24 - 10** |
| **Rated data** | | IEC 60947-7-1 | | |
| | | IEC | UL/CUL | CSA / IEC/EN 60079-7 |
| Rated voltage | [V] | 800 | - | - / - |
| Nominal current / cross-section | [A] / [mm²] | 32 / 4 | - | - / - |
| Rated cross-section | [mm²] | 4 | - | - / - |
| Cross-section range | AWG | 24 - 10 | - | - / - |
| **Connection capacity** | | solid | stranded | Ferrule<br>Without / with plastic sleeve |
| One conductor | [mm²] | 0.2 - 6 | 0.2 - 4 | 0.2 - 4 / 0.2 - 4 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | / 0.5 - 1 |
| Connection cross-sections directly pluggable | [mm²] | 0.5 - 6 | - | 0.5 - 4 / 0.5 - 4 |
| **General data** | | | | |
| Stripping length | [mm] | 10 | | |
| Insulating material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |

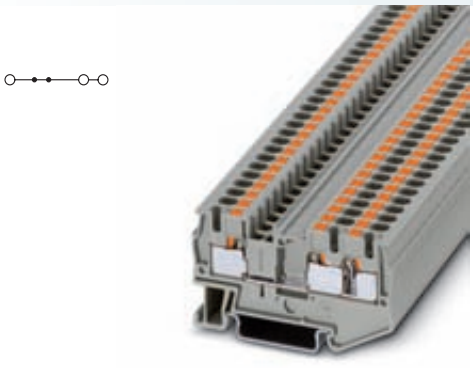
### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Terminal block**, for mounting on NS 35... | | gray | **PIT 4** | | **3211757** | 50 |
| | | blue | **PIT 4 BU** | | **3211760** | 50 |

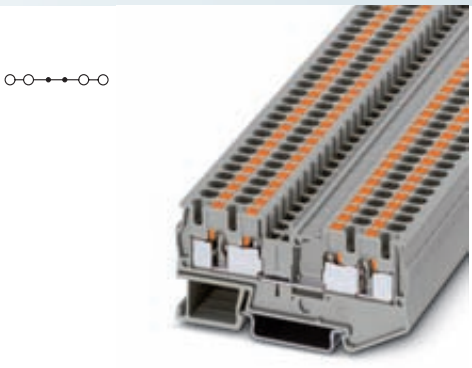
### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-ST 4** | | **3030420** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | | |
| 0.25 - 0.5 mm² | | gray | **ISH 4/0,5** | | **3002885** | 50 |
| 0.75 - 1 mm² | | black | **ISH 4/1,0** | | **3002898** | 50 |
| **Plug-in bridge**, for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 32 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 32 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 32 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 32 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 32 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 32 A | **3030365** | 10 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-ST 4** | | **3030721** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | | **3030925** | 10 |
| **Test plug,** consisting of: **metal part** for 2.3 mm Ø socket hole and | | | **MPS-MT** | | **0201744** | 10 |
| **insulating sleeve** for MPS metal part | | red | **MPS-IH RD** | | **0201676** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | | **3030996** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

| | |
|---|---|
| **UniCard sheet** for labeling the center groove | **UC-TM 6 (see CLIPLINE catalog)** |
| **UniCard sheet,** flat, for labeling the center and lateral grooves | **UC-TMF 6 (see CLIPLINE catalog)** |
| **Zack markers** for labeling the center groove | **ZB 6 (see CLIPLINE catalog)** |
| **Zack marker strip,** flat, for labeling the center and lateral grooves | **ZBF 6 (see CLIPLINE catalog)** |



**4/6 mm² feed-through terminal block, 3 connections, can be double bridged**



**4/6 mm² feed-through terminal block, 4 connections, can be double bridged**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **66.5** | **36.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **40[1])** | **800** | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 32[1]) / 4 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **PIT 4-TWIN** | | **3211771** | 50 |
| **PIT 4-TWIN BU** | | **3211775** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-PIT 4-TWIN** | | **3208977** | 50 |
| **ISH 4/0,5** | | **3002885** | 50 |
| **ISH 4/1,0** | | **3002898** | 50 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 3-6** | 32 A | **3030242** | 50 |
| **FBS 4-6** | 32 A | **3030255** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **ATP-ST-TWIN** | | **3030789** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-6** | | **3030996** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **77** | **36.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **40[1])** | **800** | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 32[1]) / 4 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **PIT 4-QUATTRO** | | **3211797** | 50 |
| **PIT 4-QUATTRO BU** | | **3211802** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-PIT 4-QUATTRO** | | **3208979** | 50 |
| **ISH 4/0,5** | | **3002885** | 50 |
| **ISH 4/1,0** | | **3002898** | 50 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 3-6** | 32 A | **3030242** | 50 |
| **FBS 4-6** | 32 A | **3030255** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **ATP-ST QUATTRO** | | **3030815** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-6** | | **3030996** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

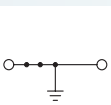
**UC-TM 6 (see CLIPLINE catalog)**

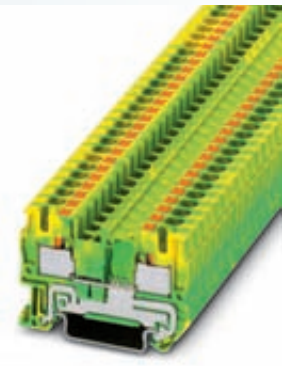
**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## PIT 4 ...-PE ground terminal blocks

**Notes:**
For current carrying capacity of DIN rails, see CLIPLINE catalog.





**4/6 mm² ground terminal block, 2 connections, can be double bridged**

- Same shape and pitch as the feed-through terminal blocks
- Contact is made free from mechanical and electrical errors by simply snapping onto the DIN rail
- All the requirements of standard IEC 60947-7-2 are met

### Technical data

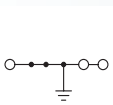
| | | | | |
|---|---|---|---|---|
| Dimensions | | | | |
| | Width | Length | Height NS 35/7.5 | |
| | [mm] | | | |
| | **6.2** | **56** | **36.5** | |
| **Max. electrical data** | | | max. Ø [mm²] | AWG |
| | | | **0.2 - 6** | **24 - 10** |
| | IEC 60947-7-2 | | | |
| **Rated data** | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage [V] | - | - | - | - |
| Nominal current / cross-section [A] / [mm²] | - / - | - | - | - |
| Rated cross-section [mm²] | 4 | - | - | - |
| Cross-section range AWG | 24 - 10 | - | - | - |
| **Connection capacity** | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor [mm²] | 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| Two stranded conductors with a TWIN ferrule [mm²] | | | | 0.5 - 1 |
| Connection cross-sections directly pluggable [mm²] | 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| **General data** | | | | |
| Stripping length [mm] | 10 | | | |
| Insulating material | PA | | | |
| Inflammability class acc. to UL 94 | V0 | | | |

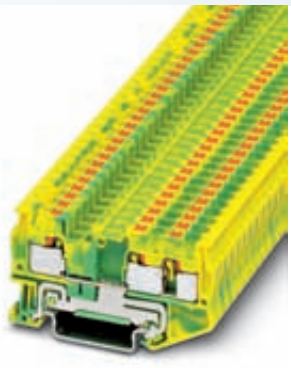
### Ordering data

| Description | No. of pos. | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Ground terminal block**, for mounting on NS 35... | | green/yellow | **PIT 4-PE** | **3211766** | 50 |

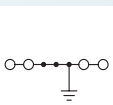
### Accessories

| | | | | | |
|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-ST 4** | **3030420** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | |
| 0.25 - 0.5 mm² | | gray | **ISH 4/0,5** | **3002885** | 50 |
| 0.75 - 1 mm² | | black | **ISH 4/1,0** | **3002898** | 50 |
| **Plug-in bridge**, for cross connections in the bridge shaft | | | | | |
| | 2 | red | **FBS 2-6** | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | **3030365** | 10 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-ST 4** | **3030721** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | **3030925** | 10 |
| **Test plug,** consisting of: **metal part** for 2.3 mm Ø socket hole and | | | **MPS-MT** | **0201744** | 10 |
| **insulating sleeve** for MPS metal part | | red | **MPS-IH RD** | **0201676** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | **3030996** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | **1204517** | 10 |
| **UniCard sheet** for labeling the center groove | | | **UC-TM 6 (see CLIPLINE catalog)** | | |
| **UniCard sheet,** flat, for labeling the center and lateral grooves | | | **UC-TMF 6 (see CLIPLINE catalog)** | | |
| **Zack markers** for labeling the center groove | | | **ZB 6 (see CLIPLINE catalog)** | | |
| **Zack marker strip,** flat, for labeling the center and lateral grooves | | | **ZBF 6 (see CLIPLINE catalog)** | | |





**4/6 mm² ground terminal block, 3 connections, can be double bridged**



**4/6 mm² ground terminal block, 4 connections, can be double bridged**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **66.5** | **36.5** | |
| | | max. Ø [mm²] | AWG |
| | | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PIT 4-TWIN-PE** | **3211780** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-PIT 4-TWIN** | **3208977** | 50 |
| **ISH 4/0,5** | **3002885** | 50 |
| **ISH 4/1,0** | **3002898** | 50 |
| **FBS 2-6** | **3030336** | 50 |
| **FBS 3-6** | **3030242** | 50 |
| **FBS 4-6** | **3030255** | 50 |
| **FBS 5-6** | **3030349** | 50 |
| **FBS 10-6** | **3030271** | 10 |
| **FBS 20-6** | **3030365** | 10 |
| **ATP-ST-TWIN** | **3030789** | 50 |
| **PAI-4** | **3030925** | 10 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-6** | **3030996** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **77** | **36.5** | |
| | | max. Ø [mm²] | AWG |
| | | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PIT 4-QUATTRO-PE** | **3211809** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-PIT 4-QUATTRO** | **3208979** | 50 |
| **ISH 4/0,5** | **3002885** | 50 |
| **ISH 4/1,0** | **3002898** | 50 |
| **FBS 2-6** | **3030336** | 50 |
| **FBS 3-6** | **3030242** | 50 |
| **FBS 4-6** | **3030255** | 50 |
| **FBS 5-6** | **3030349** | 50 |
| **FBS 10-6** | **3030271** | 10 |
| **FBS 20-6** | **3030365** | 10 |
| **ATP-ST QUATTRO** | **3030815** | 50 |
| **PAI-4** | **3030925** | 10 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-6** | **3030996** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

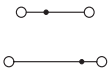
## PITTB 4... multi-level terminal blocks

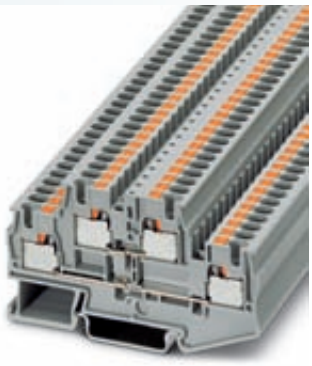
- Amount of space required is reduced by 50% compared to single-level terminal blocks
- Can be bridged on both levels for all potential distribution tasks
- The PITTB 4-PE ground terminal block meets all the requirements of standard IEC 60947-7-2
- Contact is made free from mechanical and electrical errors by simply snapping onto the DIN rail
- Large-surface labeling using STP 5-2 double marker carriers
- Potential bridging of levels using the **FBS-PV** vertical potential bridge, see figure below

**Notes:**

For current carrying capacity of DIN rails, see CLIPLINE catalog.

[1]) The max. load current must not be exceeded by the total current of all connected conductors.





**4/6 mm² double-level terminal block, 2 connections per level, both levels can be bridged**

### Technical data

| | | | | |
|---|---|---|---|---|
| Dimensions | | | | |
| | [mm] | Width | Length | Height NS 35/7.5 |
| | | **6.2** | **83.5** | **47.5** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] / AWG |
| | | **32** | **500** | **0.2 - 6** / **24 - 10** |
| **Rated data** | | IEC 60947-7-1 | | |
| | | IEC | UL/CUL | CSA / IEC/EN 60079-7 |
| Rated voltage | [V] | 500 | - | - / - |
| Nominal current / cross-section | [A] / [mm²] | 30 / 4 | - | - / - |
| Rated cross-section | [mm²] | 4 | - | - / - |
| Cross-section range | AWG | 24 - 10 | - | - / - |
| **Connection capacity** | | solid | stranded | Ferrule: Without / with plastic sleeve |
| One conductor | [mm²] | 0.2 - 6 | 0.2 - 4 | 0.2 - 4 / 0.2 - 4 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | / 0.5 - 1 |
| Connection cross-sections directly pluggable | [mm²] | 0.5 - 6 | - | 0.5 - 4 / 0.5 - 4 |
| **General data** | | | | |
| Stripping length | [mm] | 10 | | |
| Insulating material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Terminal block**, for mounting on NS 35... | | gray | **PITTB 4** | | **3211786** | 50 |
| | | blue | **PITTB 4 BU** | | **3211793** | 50 |
| **Terminal block**, with equipotential bonder, for mounting on NS 35... | | gray | | | | |
| **Ground terminal block**, for mounting on NS 35... | | green/yellow | | | | |

### Accessories

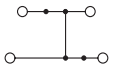
| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-STTB 4** | | **3030462** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | | |
| 0.25 - 0.5 mm² | | gray | **ISH 4/0,5** | | **3002885** | 50 |
| 0.75 - 1 mm² | | black | **ISH 4/1,0** | | **3002898** | 50 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 26 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 26 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 26 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 26 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 26 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 26 A | **3030365** | 10 |
| **Vertical potential bridge**, to connect the upper and lower level | | | | | | |
| | | black | **FBS-PV** | | **3032185** | 50 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-STTB 4** | | **3030747** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | | **3030925** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | | **3030996** | 10 |
| **Double marker carrier**, can be snapped into STTB 2,5 and PITTB 2,5 double-level terminal blocks, can be labeled with UC-TM 5, ZB 5 or UC-TMF 5, ZBF 5 | | gray | **STP 5-2** | | **0800967** | 100 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UniCard sheet,** flat, for labeling the lateral groove

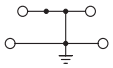
**Zack marker strip,** flat, for labeling the lateral groove

**UC-TMF 6 (see CLIPLINE catalog)**

**ZBF 6 (see CLIPLINE catalog)**



**4/6 mm² double-level potential distributor terminal block, 4 connections to one potential, levels can be bridged**



**4/6 mm² double-level ground terminal block, 4 grounded connections, top level can be double bridged**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **83.5** | **47.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **32[1])** | **500** | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | - |
| 30[1]) / 4 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PITTB 4-PV** | | **3211825** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-STTB 4** | | **3030462** | 50 |
| **ISH 4/0,5** | | **3002885** | 50 |
| **ISH 4/1,0** | | **3002898** | 50 |
| **FBS 2-6** | 26 A | **3030336** | 50 |
| **FBS 3-6** | 26 A | **3030242** | 50 |
| **FBS 4-6** | 26 A | **3030255** | 50 |
| **FBS 5-6** | 26 A | **3030349** | 50 |
| **FBS 10-6** | 26 A | **3030271** | 10 |
| **FBS 20-6** | 26 A | **3030365** | 10 |
| **ATP-STTB 4** | | **3030747** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **PS-6** | | **3030996** | 10 |
| **STP 5-2** | | **0800967** | 100 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TMF 6 (see CLIPLINE catalog)**

**ZBF 6 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **83.5** | **47.5** | |
| | | max. Ø [mm²] | AWG |
| | | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PITTB 4-PE** | **3211854** | 50 |

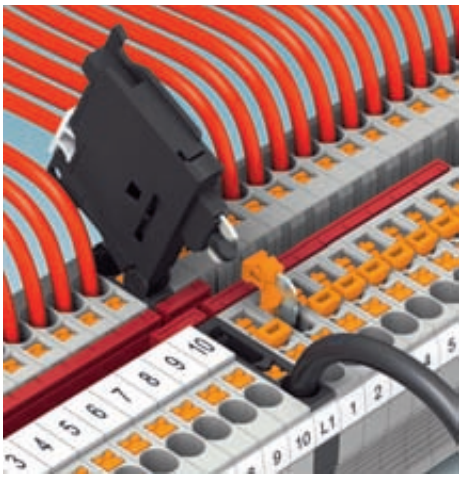
## Accessories

| | | |
|---|---|---|
| **D-STTB 4** | **3030462** | 50 |
| **ISH 4/0,5** | **3002885** | 50 |
| **ISH 4/1,0** | **3002898** | 50 |
| **FBS 2-6** | **3030336** | 50 |
| **FBS 3-6** | **3030242** | 50 |
| **FBS 4-6** | **3030255** | 50 |
| **FBS 5-6** | **3030349** | 50 |
| **FBS 10-6** | **3030271** | 10 |
| **FBS 20-6** | **3030365** | 10 |
| **ATP-STTB 4** | **3030747** | 50 |
| **PAI-4** | **3030925** | 10 |
| **PS-6** | **3030996** | 10 |
| **STP 5-2** | **0800967** | 100 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

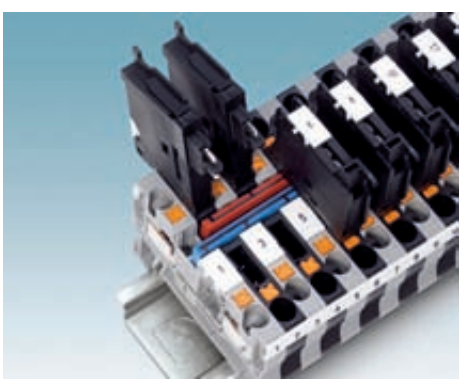
**UC-TMF 6 (see CLIPLINE catalog)**

**ZBF 6 (see CLIPLINE catalog)**

## PIT 4-HESI... lever-type fuse terminal blocks



- Compact design and same shape as PIT 4 feed-through terminal blocks and ...-MT and ...-TG function terminal blocks
- Seamless and can be double bridged for all tasks in time-saving potential supply and distribution
- Acts as the fuse carrier for 5 x 20 mm fuse inserts
- For standardized 5 x 20 mm fuse format
- Versions with light indicator for indicating that a fuse has blown

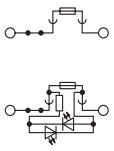


**Notes:**

[1]) If the fuse is faulty, the downstream circuit is not off load.

[2]) The current is determined by the fuse used, the voltage by the selected light indicator.

[3]) The current is determined by the fuse used, the voltage by the selected light indicator. Observe the maximum power dissipation, see www.phoenixcontact.net/catalog.



**4/6 mm² lever-type fuse terminal block, for 5 x 20 mm cartridge fuse inserts, with or without fault indicator, 2 connections, can be double bridged**

### Technical data

| | | | | |
|---|---|---|---|---|
| Dimensions | | | | |
| | [mm] | Width | Length | Height NS 35/7.5 |
| | | **6.2** | **56** | **62.5** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] / AWG |
| | | **6.3[3])** | **500[2])** | **0.2 - 6 / 24 - 10** |
| **Rated data** | | IEC 60947-7-3 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 500[2]) | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 6.3[2]) / 1 | - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 24 - 10 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1 |
| Connection cross-sections directly pluggable | [mm²] | 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| **General data** | | | | | |
| Fuse type / dimensions | – / [mm] | G / 5 x 20 | | | |
| Stripping length | [mm] | 10 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Ordering data

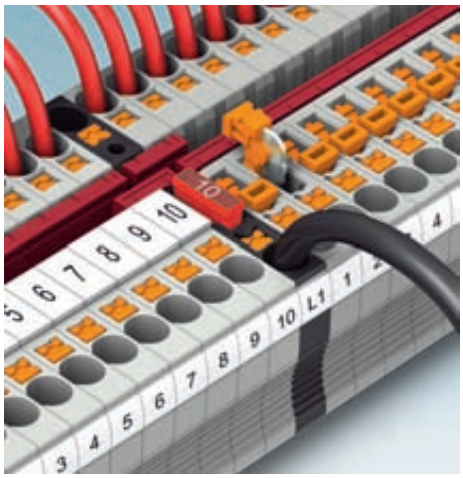
| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Fuse terminal block,** for mounting on NS 35..., for cartridge fuse inserts 5 x 20 mm[1]) | | black | **PIT 4-HESI (5X20)** | | **3211861** | 50 |
| With light indicator for 12-30 V AC/DC, 1-3 mA | | black | **PIT 4-HESILED 24 (5X20)** | | **3211903** | 50 |
| With light indicator for 30-60 V AC/DC, 0.95-2.5 mA | | black | **PIT 4-HESILED 60 (5X20)** | | **3207908** | 50 |
| With light indicator for 110-250 V AC/DC, 0.1-0.5 mA | | black | **PIT 4-HESILA 250 (5X20)** | | **3211907** | 50 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-ST 4** | | **3030420** | 50 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 32 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 32 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 32 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 32 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 32 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 32 A | **3030365** | 10 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-ST 4** | | **3030721** | 50 |
| **Connection pin**, for coupling several fuse terminal blocks, made of plastic, 1 m long | | white | **VS** | | **3004207** | 1 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

| | |
|---|---|
| **UniCard sheet,** for lever labeling | **UC-TM 5 (see CLIPLINE catalog)** |
| **UniCard sheet,** flat, for labeling the lateral groove | **UC-TMF 6 (see CLIPLINE catalog)** |
| **Zack marker strip,** for lever labeling | **ZB 5 (see CLIPLINE catalog)** |
| **Zack marker strip,** flat, for labeling the lateral groove | **ZBF 6 (see CLIPLINE catalog)** |

## PIT 4-FSI/F fuse terminal blocks for automotive flat-type fuses

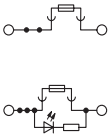


- Compact design and same shape as PIT 4 feed-through terminal blocks and ...-MT and ...-TG function terminal blocks
- Seamless and can be double bridged for all tasks in time-saving potential supply and distribution
- Acts as the fuse carrier for flat-type fuse inserts
- For standardized type F fuse format
- Versions with light indicator for indicating that a fuse has blown

**Notes:**

[1]) 10 A with single arrangement, 7.5 A with interconnected arrangement. Derating curve available on request.

[2]) The current is determined by the fuse used, the voltage by the selected light indicator.



**4/6 mm² flat-type fuse terminal block, for fuse type F, with or without fault indicator, 2 connections, can be double bridged**

### Technical data

| Dimensions | | | | | |
|---|---|---|---|---|---|
| | [mm] | Width | Length | Height NS 35/7.5 | |
| | | **6.2** | **56** | **36.5** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **10[1])** | **400[2])** | **0.2 - 6** | **24 - 10** |
| **Rated data** | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 7,5[2]) / 4 | - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 24 - 10 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1 |
| Connection cross-sections directly pluggable | [mm²] | 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| **General data** | | | | | |
| Fuse type / dimensions | – / [mm] | F | | | |
| Stripping length | [mm] | 10 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Fuse terminal block**, for mounting on NS 35... | | black | **PIT 4-FSI/F** | | **3208943** | 50 |
| With light indicator for 12 V DC, 1.7 mA | | black | **PIT 4-FSI/F-LED 12** | | **3208951** | 50 |
| With light indicator for 24 V DC, 1.9 mA | | black | **PIT 4-FSI/F-LED 24** | | **3208964** | 50 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-ST 4** | | **3030420** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | | |
| 0.25 - 0.5 mm² | | gray | **ISH 4/0,5** | | **3002885** | 50 |
| 0.75 - 1 mm² | | black | **ISH 4/1,0** | | **3002898** | 50 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 41 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 41 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 41 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 41 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 41 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 41 A | **3030365** | 10 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-ST 4** | | **3030721** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | | **3030925** | 10 |
| **Test plug,** consisting of: **metal part** for 2.3 mm Ø socket hole and | | | **MPS-MT** | | **0201744** | 10 |
| **insulating sleeve** for MPS metal part | | red | **MPS-IH RD** | | **0201676** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | | **3030996** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

| | |
|---|---|
| **UniCard sheet** for labeling the center groove | **UC-TM 6 (see CLIPLINE catalog)** |
| **UniCard sheet,** flat, for labeling the center and lateral grooves | **UC-TMF 6 (see CLIPLINE catalog)** |
| **Zack markers** for labeling the center groove | **ZB 6 (see CLIPLINE catalog)** |
| **Zack marker strip,** flat, for labeling the center and lateral grooves | **ZBF 6 (see CLIPLINE catalog)** |

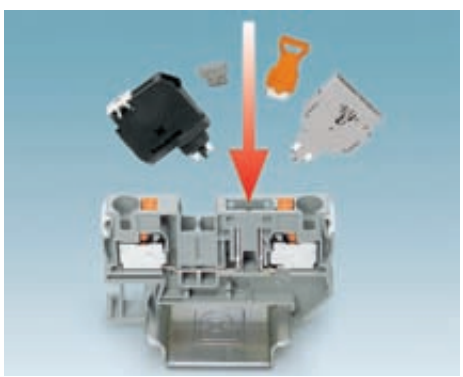
# PIT 4-MT knife disc. terminal blocks
# PIT 4-TG disc. terminal blocks

## PIT 4-MT

- Knife disconnect terminal block with a current carrying capacity of 20 A
- Compact design and same shape as PIT 4 feed-through and fuse terminal blocks
- Seamless and can be double bridged for all tasks in time-saving potential supply and distribution
- Testing option on both sides of the disconnect point, left in the bridge shaft, right in the 1 mm Ø test hole near the actuation lever

## PIT 4-TG

- Disconnect terminal block with universal disconnect zone for accommodating isolating connectors, feed-through connectors, component connectors, and fuse connectors
- Compact design and same shape as PIT 4 feed-through and fuse terminal blocks
- Seamless and can be double bridged for all tasks in time-saving potential supply and distribution
- Testing option on both sides of the disconnect point, left in the bridge shaft, right in the 1 mm Ø test hole near the actuation lever



**Notes:**

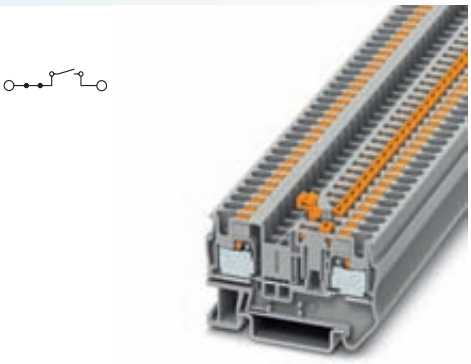
For more plug-in bridges, visit www.phoenixcontact.net/catalog.

[1]) Observe max. load current.

[2]) Observe max. load current, depending on the power dissipation of the components. Max. 0.5 W with single arrangement.

[3]) Current and voltage are determined by the plug used.

[4]) For maximum power dissipation, see CLIPLINE catalog.



**4/6 mm² knife disconnect terminal block, 2 connections, can be double bridged**

## Technical data

| Dimensions | | | | |
|---|---|---|---|---|
| | [mm] | Width | Length | Height NS 35/7.5 |
| | | **6.2** | **56** | **36.5** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] / AWG |
| | | **20** | **400** | **0.2 - 6 / 24 - 10** |
| **Rated data** | | IEC 60947-7-1 | | |
| | | IEC | UL/CUL | CSA / IEC/EN 60079-7 |
| Rated voltage | [V] | 400 | - | - / - |
| Nominal current / cross-section | [A] / [mm²] | 20 / 2.5 | - | - / - |
| Rated cross-section | [mm²] | 4 | - | - / - |
| Cross-section range | AWG | 24 - 10 | - | - / - |
| **Connection capacity** | | solid | stranded | Ferrule: Without / with plastic sleeve |
| One conductor | [mm²] | 0.2 - 6 | 0.2 - 4 | 0.2 - 4 / 0.2 - 4 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | / 0.5 - 1 |
| Connection cross-sections directly pluggable | [mm²] | 0.5 - 6 | - | 0.5 - 4 / 0.5 - 4 |
| **General data** | | | | |
| Stripping length | [mm] | 10 | | |
| Insulating material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |

## Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Knife disconnect terminal block**, for mounting on NS 35... | | gray | **PIT 4-MT** | | **3211933** | 50 |
| **Disconnect terminal block,** for mounting on NS 35... | | gray | | | | |

## Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-ST 4** | | **3030420** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | | |
| 0.25 - 0.5 mm² | | gray | **ISH 4/0,5** | | **3002885** | 50 |
| 0.75 - 1 mm² | | black | **ISH 4/1,0** | | **3002898** | 50 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 32 A | **3030336** | 50 |
| | 5 | red | **FBS 5-6** | 32 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 32 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 32 A | **3030365** | 10 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-ST 4** | | **3030721** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | | **3030925** | 10 |
| **Test plug,** consisting of: **metal part** for 2.3 mm Ø socket hole and | | | **MPS-MT** | | **0201744** | 10 |
| **insulating sleeve** for MPS metal part | | red | **MPS-IH RD** | | **0201676** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | | **3030996** | 10 |
| **Isolating connector**[1]) | | orange | | | | |
| **Feed-through connector**[1]) | | gray | | | | |
| **Component connector,** labeled with ZBF 5 or UC-TMF 5[2]) | | gray | | | | |
| **Fuse connector,** width 6.2 mm[4]) | | black | | | | |
| With light indicator for 12-30 V | | black | | | | |
| With light indicator for 30-60 V | | black | | | | |
| With light indicator for 110-250 V | | black | | | | |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

| | |
|---|---|
| **UniCard sheet** for labeling the center groove | **UC-TM 6 (see CLIPLINE catalog)** |
| **UniCard sheet,** flat, for labeling the center and lateral grooves | **UC-TMF 6 (see CLIPLINE catalog)** |

**4/6 mm² disconnect terminal block, for function connectors, 2 connections, can be double bridged**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **56** | **36.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **20[3])** | **400[3])** | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400[3]) | - | - | - |
| 20[3]) / 2.5 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PIT 4-TG** | | **3211922** | 50 |

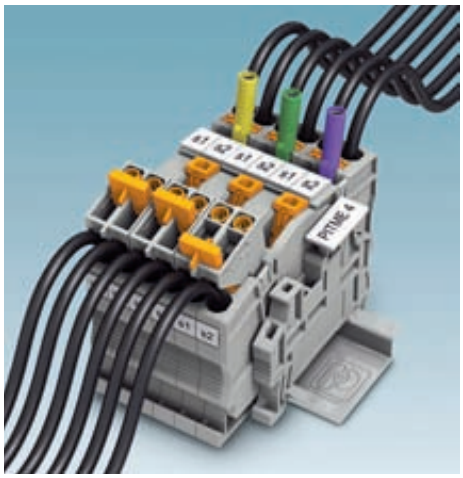
## Accessories

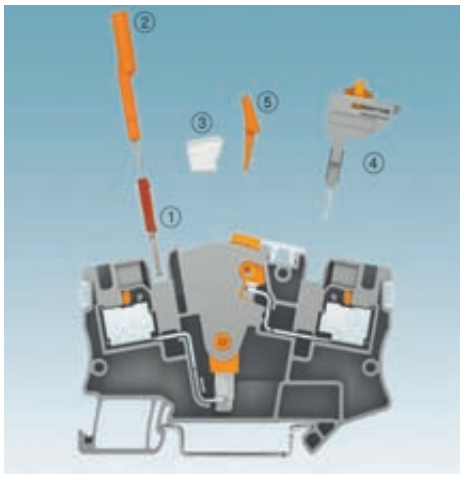
| | | | |
|---|---|---|---|
| **D-ST 4** | | **3030420** | 50 |
| **ISH 4/0,5** | | **3002885** | 50 |
| **ISH 4/1,0** | | **3002898** | 50 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **ATP-ST 4** | | **3030721** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-6** | | **3030996** | 10 |
| **P-DI** | | **3036783** | 50 |
| **P-FIX** | | **3038956** | 50 |
| **P-CO** | | **3036796** | 10 |
| **P-FU 5X20** | | **3036806** | 10 |
| **P-FU 5X20 LED 24** | | **3036819** | 10 |
| **P-FU 5X20 LED 60** | | **3036822** | 10 |
| **P-FU 5X20 LA 250** | | **3036835** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

# PITME 4, PITMED 4 test disconnect terminal blocks






The new PITME 4 test disconnect terminal blocks with push-in connection method offer the following features:

- Compact design
- Easy operation
- Clear
- Flexible and comprehensive accessories
- Feed-through terminal block of the same shape available

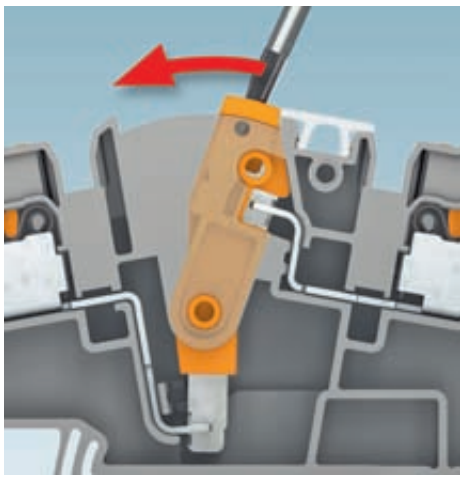
- Current transformer measuring circuit can be created using just two PITME 4
- Less space required compared to creating circuits with slide-type terminal blocks

① FBS... plug-in bridge for cross connection
② 4 mm Ø PAI-4-FIX... test plug adapter
③ S-ME 4 switching lock
④ SB-ME... switching jumper
⑤ C-ME 4/2 connection bridge

**Notes:**

For more plug-in bridges, visit www.phoenixcontact.net/catalog.

| Dimensions | |
|---|---|
| | [mm] |
| **Max. electrical data** | |
| **Rated data** | |
| Rated voltage | [V] |
| Nominal current / cross-section | [A] / [mm²] |
| Rated cross-section | [mm²] |
| Cross-section range | AWG |
| **Connection capacity** | |
| One conductor | [mm²] |
| Two stranded conductors with a TWIN ferrule | [mm²] |
| Connection cross-sections directly pluggable | [mm²] |
| **General data** | |
| Stripping length | [mm] |
| Tightening torque | [Nm] |
| Insulating material | |
| Inflammability class acc. to UL 94 | |



- Reliable contacting and latching of the longitudinal isolating switch in the relevant switching state
- Clear selection thanks to printed switching symbols
- Unintentional switching prevented by means of optional switching lock
- Simultaneous actuation of two switches using connection bridge

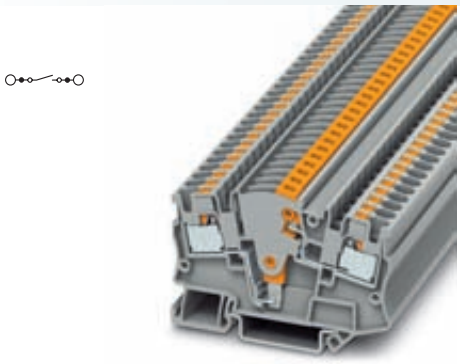
- SB-ME ... switching jumpers can be positioned and latched on both sides of the disconnect point in the bridge shaft
- Reliably snapped into the end positions
- Contact made via screw terminal points

| Description | No. of pos. | Color |
|---|---|---|
| **Test disconnect terminal block**, for mounting on NS 35 | | gray |
| **Feed-through terminal block,** for mounting on NS 35... | | gray |
| **Switching jumper,** pluggable, 2-pos. | | gray/orange |
| 3-pos. | | gray/orange |
| 4-pos. | | gray/orange |
| **Cover**, width 2.2 mm | | gray |
| **Plug-in bridge,** for cross connections in the bridge shaft | | |
| | 2 | red |
| | 5 | red |
| | 10 | red |
| | 20 | red |
| **Switching lock,** pluggable | | white |
| **Connection bridge,** for connecting two test disconnect terminal blocks | | orange |
| 3-pos. | | orange |
| **Test adapter,** for 4-mm-Ø safety test plug, snapped into bridge shaft | | orange |
| | | blue |
| | | red |
| | | yellow |
| | | green |
| | | violet |
| | | black |
| | | brown |
| | | gray |
| **Screwdriver** | | |

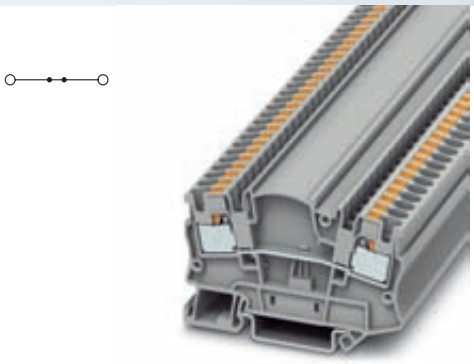
**UniCard sheet** for labeling the center groove

**UniCard sheet,** flat, for labeling the center and lateral grooves

**Zack markers** for labeling the center groove
**Zack marker strip,** flat, for labeling the center and lateral grooves



**4/6 mm² test disconnect terminal block, 2 connections, can be bridged on both sides of the disconnect point**



**4/6 mm² feed-through terminal block of the same shape, 2 connections, can be double bridged**

**2, 3, and 4-pos. insulated switching jumper**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **70.5** | **49.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **500** | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | - |
| 24 / 4 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PITME 4** | | **3212139** | 10 |

## Accessories

| | | | |
|---|---|---|---|
| **D-PITME 4** | | **3212167** | 10 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **S-ME 4** | | **3035758** | 10 |
| **C-ME 4/2** | | **3035759** | 10 |
| **C-ME 4/3** | | **3035760** | 10 |
| **PAI-4-FIX-5/6 OG** | | **3035974** | 10 |
| **PAI-4-FIX-5/6 BU** | | **3035975** | 10 |
| **PAI-4-FIX-5/6 RD** | | **3035976** | 10 |
| **PAI-4-FIX-5/6 YE** | | **3035977** | 10 |
| **PAI-4-FIX-5/6 GN** | | **3035978** | 10 |
| **PAI-4-FIX-5/6 VT** | | **3035979** | 10 |
| **PAI-4-FIX-5/6 BK** | | **3035980** | 10 |
| **PAI-4-FIX-5/6 BN** | | **3035981** | 10 |
| **PAI-4-FIX-5/6 GY** | | **3035982** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **70.5** | **49.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **28** | **800** | **0.2 - 6** | **24 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 28 / 4 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| | | | |
| 10 | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PITMED 4** | | **3212141** | 10 |

## Accessories

| | | | |
|---|---|---|---|
| **D-PITME 4** | | **3212167** | 10 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **PAI-4-FIX-5/6 OG** | | **3035974** | 10 |
| **PAI-4-FIX-5/6 BU** | | **3035975** | 10 |
| **PAI-4-FIX-5/6 RD** | | **3035976** | 10 |
| **PAI-4-FIX-5/6 YE** | | **3035977** | 10 |
| **PAI-4-FIX-5/6 GN** | | **3035978** | 10 |
| **PAI-4-FIX-5/6 VT** | | **3035979** | 10 |
| **PAI-4-FIX-5/6 BK** | | **3035980** | 10 |
| **PAI-4-FIX-5/6 BN** | | **3035981** | 10 |
| **PAI-4-FIX-5/6 GY** | | **3035982** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **16.4** | **24.7** | **-** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **28** | **250** | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 250 | - | - | - |
| - / - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| | | | |
| - | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **SB-ME 2-6** | **3035755** | 10 |
| **SB-ME 3-6** | **3035756** | 10 |
| **SB-ME 4-6** | **3035757** | 10 |

## Accessories

| | | | |
|---|---|---|---|
| **SZF 1-0,6X3,5** | **1204517** | 10 |

## PIT 4 ...-DIO... component terminal blocks

– Can be used for a wide range of switching tasks
– Versions with diode conducting direction from left to right or vice versa
– Multi-conductor connection terminal blocks available

**Notes:**

[1]) The max. current is determined by the diode. Integrated: Diode 1N 5408, reverse voltage: 1000 V, maximum continuous current 1.5 A.

**4/6 mm² terminal block with 1N 5408 diode, conducting direction from right to left, 2 connections, can be double bridged**

### Technical data

| Dimensions | | Width | Length | Height NS 35/7.5 | |
|---|---|---|---|---|---|
| | [mm] | **6.2** | **56** | **36.5** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **1.5[1])** | **800** | **0.2 - 6** | **24 - 10** |
| **Rated data** | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 800 | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 1.5[1]) / 1 | - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 24 - 10 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1 |
| Connection cross-sections directly pluggable | [mm²] | 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

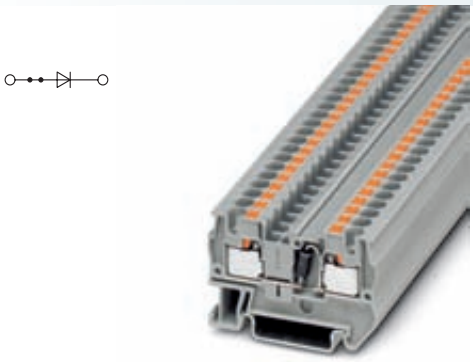
### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Terminal block,** with integrated diode, conducting from right to left | | gray | **PIT 4-DIO 1N 5408/R-L** | | **3212125** | 50 |
| **Terminal block,** with integrated diode, conducting from left to right | | gray | | | | |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-ST 4** | | **3030420** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | | |
| 0.25 - 0.5 mm² | | gray | **ISH 4/0,5** | | **3002885** | 50 |
| 0.75 - 1 mm² | | black | **ISH 4/1,0** | | **3002898** | 50 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 32 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 32 A | **3030242** | 50 |
| | 4 | red | **FBS 4-5** | 32 A | **3030187** | 50 |
| | 5 | red | **FBS 5-6** | 32 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 32 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 32 A | **3030365** | 10 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-ST 4** | | **3030721** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | | **3030925** | 10 |
| **Test plug,** consisting of: **metal part** for 2.3 mm Ø socket hole and | | | **MPS-MT** | | **0201744** | 10 |
| **insulating sleeve,** for MPS metal part | | red | **MPS-IH RD** | | **0201676** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | | **3030996** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

| | |
|---|---|
| **UniCard sheet** for labeling the center groove | **UC-TM 6 (see CLIPLINE catalog)** |
| **UniCard sheet,** flat, for labeling the center and lateral grooves | **UC-TMF 6 (see CLIPLINE catalog)** |
| **Zack markers** for labeling the center groove | **ZB 6 (see CLIPLINE catalog)** |
| **Zack marker strip,** flat, for labeling the center and lateral grooves | **ZBF 6 (see CLIPLINE catalog)** |



**4/6 mm² terminal block with 1N 5408 diode, conducting direction from left to right, 2 connections, can be double bridged**

**4/6 mm² terminal block with 1N 5408 diode, conducting direction from right to left, 4 connections, can be double bridged**

**4/6 mm² terminal block with 1N 5408 diode, conducting direction from left to right, 4 connections, can be double bridged**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **56** | **36.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **1.5[1])** | **800** | **0.2 - 6** | **24 - 10** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 1.5[1]) / 1 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PIT 4-DIO 1N 5408/L-R** | | **3212112** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-ST 4** | | **3030420** | 50 |
| **ISH 4/0,5** | | **3002885** | 50 |
| **ISH 4/1,0** | | **3002898** | 50 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 3-6** | 32 A | **3030242** | 50 |
| **FBS 4-6** | 32 A | **3030255** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **ATP-ST 4** | | **3030721** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-6** | | **3030996** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **77** | **36.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **1.5[1])** | **800** | **0.2 - 6** | **24 - 10** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 1.5[1]) / 1 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PIT 4-QUATTRO-DIO 1N 5408/R-L** | | **3211921** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-PIT 4-QUATTRO** | | **3208979** | 50 |
| **ISH 4/0,5** | | **3002885** | 50 |
| **ISH 4/1,0** | | **3002898** | 50 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 3-6** | 32 A | **3030242** | 50 |
| **FBS 4-6** | 32 A | **3030255** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **ATP-ST QUATTRO** | | **3030815** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-6** | | **3030996** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **77** | **36.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **1.5[1])** | **800** | **0.2 - 6** | **24 - 10** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 1.5[1]) / 1 | - | - | - |
| 4 | - | - | - |
| 24 - 10 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.2 - 6 | 0.2 - 4 | 0.2 - 4 | 0.2 - 4 |
| | | | 0.5 - 1 |
| 0.5 - 6 | - | 0.5 - 4 | 0.5 - 4 |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PIT 4-QUATTRO-DIO 1N 5408/L-R** | | **3211919** | 50 |

## Accessories

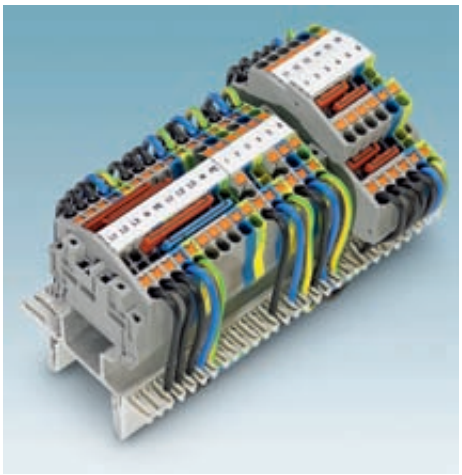
| | | | |
|---|---|---|---|
| **D-PIT 4-QUATTRO** | | **3208979** | 50 |
| **ISH 4/0,5** | | **3002885** | 50 |
| **ISH 4/1,0** | | **3002898** | 50 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 3-6** | 32 A | **3030242** | 50 |
| **FBS 4-6** | 32 A | **3030255** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **ATP-ST QUATTRO** | | **3030815** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-6** | | **3030996** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## PITS 2,5 ... and PITTBS 2,5 feed-though and multi-conductor terminal blocks



### PITS 2,5...

– Angled conductor entry
– Large space saving when used in concealed wiring systems
– The PITS 2,5, which is equipped with four bridge shafts, offers a wide range of potential bridging options
– 2, 3, and 4-wire terminal blocks with the same shape
– Ground terminal blocks of the same shape are available

### PITTBS 2,5...

– Angled conductor entry
– Amount of space required is reduced by 50% compared to single-level terminal blocks
– Two bridge shafts on both levels for all potential distribution tasks
– Two large-surface labeling options
– Potential bridging of levels using the **FBS-PV** vertical potential bridge, see figure below

**Notes:**

For more plug-in bridges, visit www.phoenixcontact.net/catalog.

[1]) The max. load current must not be exceeded by the total current of all connected conductors.

**2.5/4 mm² feed-through terminal block, 2 connections, can be bridged four fold**

### Technical data

| Dimensions | | | | | |
|---|---|---|---|---|---|
| | [mm] | Width | Length | Height NS 35/7.5 | |
| | | 5.2 | 49 | 43 | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | 30 | 800 | 0.14 - 4 | 26 - 12 |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 800 | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 24 / 2.5 | - | - | - |
| Rated cross-section | [mm²] | 2.5 | - | - | - |
| Cross-section range | AWG | 26 - 12 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 |
| Connection cross-sections directly pluggable | [mm²] | 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Terminal block**, for mounting on NS 35... | | gray | **PITS 2,5** | | **3211799** | 50 |
| | | blue | **PITS 2,5 BU** | | **3211812** | 50 |
| **Terminal block**, with equipotential bonder, for mounting on NS 35...[1]) | | gray | | | | |

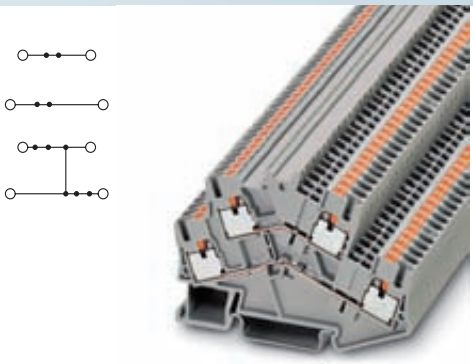
### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-STS 2,5** | | **3031762** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | | |
| 0.08 - 0.2 mm² | | white | **ISH 2,5/0,2** | | **3002843** | 50 |
| 0.25 - 0.5 mm² | | gray | **ISH 2,5/0,5** | | **3002856** | 50 |
| 0.75 - 1 mm² | | black | **ISH 2,5/1,0** | | **3002869** | 50 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-5** | 24 A | **3030161** | 50 |
| | 5 | red | **FBS 5-5** | 24 A | **3030190** | 50 |
| | 10 | red | **FBS 10-5** | 24 A | **3030213** | 10 |
| | 20 | red | **FBS 20-5** | 24 A | **3030226** | 10 |
| **Vertical potential bridge**, to connect the upper and lower level | | black | | | | |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-QTC** | | **3206209** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | | **3030925** | 10 |
| **Test plug,** consisting of: **metal part** for 2.3 mm Ø socket hole and | | | **MPS-MT** | | **0201744** | 10 |
| **insulating sleeve,** for MPS metal part | | red | **MPS-IH RD** | | **0201676** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-5** | | **3030983** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

| | |
|---|---|
| **UniCard sheet** for labeling the center groove | **UC-TM 5 (see CLIPLINE catalog)** |
| **UniCard sheet,** flat, for labeling the center groove | **UC-TMF 5 (see CLIPLINE catalog)** |
| **Zack markers** for labeling the center groove | **ZB 5 (see CLIPLINE catalog)** |
| **Zack marker strip,** flat, for labeling the center groove | **ZBF 5 (see CLIPLINE catalog)** |

**2.5/4 mm² feed-through terminal block, 3 connections, can be double bridged**

**2.5/4 mm² feed-through terminal block, 4 connections**



**2.5/4 mm² double-level terminal block, 2 connections per level, both levels can be double bridged**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **5.2** | **49** | **43** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **28[1])** | **800** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 24[1]) / 2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| | | | 0.5 |
| 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PITS 2,5-TWIN** | | **3211896** | 50 |
| **PITS 2,5-TWIN BU** | | **3211906** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-STS 2,5** | | **3031762** | 50 |
| **ISH 2,5/0,2** | | **3002843** | 50 |
| **ISH 2,5/0,5** | | **3002856** | 50 |
| **ISH 2,5/1,0** | | **3002869** | 50 |
| **FBS 2-5** | 24 A | **3030161** | 50 |
| **FBS 5-5** | 24 A | **3030190** | 50 |
| **FBS 10-5** | 24 A | **3030213** | 10 |
| **FBS 20-5** | 24 A | **3030226** | 10 |
| **ATP-QTC** | | **3206209** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-5** | | **3030983** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 5 (see CLIPLINE catalog)**

**UC-TMF 5 (see CLIPLINE catalog)**

**ZB 5 (see CLIPLINE catalog)**
**ZBF 5 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **5.2** | **49** | **43** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **28[1])** | **800** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 24[1]) / 2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| | | | 0.5 |
| 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PITS 2,5-QUATTRO** | **3211993** | 50 |
| **PITS 2,5-QUATTRO BU** | **3212002** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-STS 2,5** | | **3031762** | 50 |
| **ISH 2,5/0,2** | | **3002843** | 50 |
| **ISH 2,5/0,5** | | **3002856** | 50 |
| **ISH 2,5/1,0** | | **3002869** | 50 |
| **ATP-QTC** | | **3206209** | 50 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 5 (see CLIPLINE catalog)**

**UC-TMF 5 (see CLIPLINE catalog)**

**ZB 5 (see CLIPLINE catalog)**
**ZBF 5 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **5.2** | **78** | **55** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **500** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | - |
| 22 / 2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| | | | 0.5 |
| 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PITTBS 2,5** | | **3209604** | 50 |
| **PITTBS 2,5 BU** | | **3209617** | 50 |
| **PITTBS 2,5-PV** | | **3210211** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-STTBS 2,5** | | **3038503** | 50 |
| **ISH 2,5/0,2** | | **3002843** | 50 |
| **ISH 2,5/0,5** | | **3002856** | 50 |
| **ISH 2,5/1,0** | | **3002869** | 50 |
| **FBS 2-5** | 20 A | **3030161** | 50 |
| **FBS 5-5** | 20 A | **3030190** | 50 |
| **FBS 10-5** | 20 A | **3030213** | 10 |
| **FBS 20-5** | 20 A | **3030226** | 10 |
| **FBS-PV** | | **3032185** | 50 |
| **ATP-STTB 4** | | **3030747** | 50 |
| **PAI-4** | | **3030925** | 10 |
| **MPS-MT** | | **0201744** | 10 |
| **MPS-IH RD** | | **0201676** | 10 |
| **PS-5** | | **3030983** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 5 (see CLIPLINE catalog)**

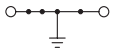
**UC-TMF 5 (see CLIPLINE catalog)**

**ZB 5 (see CLIPLINE catalog)**
**ZBF 5 (see CLIPLINE catalog)**

## PITS 2,5 ...-PE, PITTBS 2,5-PE ground terminal blocks

– Same shape and pitch as the feed-through terminal blocks
– Contact is made free from mechanical and electrical errors by simply snapping onto the DIN rail
– All the requirements of standard IEC 60947-7-2 are met

**Notes:**
For current carrying capacity of DIN rails, see CLIPLINE catalog.



**2.5/4 mm² ground terminal block, 2 connections, can be triple bridged**

### Technical data

| | | | | |
|---|---|---|---|---|
| Dimensions | | Width | Length | Height NS 35/7.5 |
| | [mm] | 5.2 | 49 | 43 |
| **Max. electrical data** | | | | max. Ø [mm²] / AWG |
| | | | | 0.14 - 4 / 26 - 12 |
| **Rated data** | | IEC 60947-7-2 | | |
| | | IEC | UL/CUL | CSA / IEC/EN 60079-7 |
| Rated voltage | [V] | - | - | - / - |
| Nominal current / cross-section | [A] / [mm²] | - / - | - | - / - |
| Rated cross-section | [mm²] | 2.5 | - | - / - |
| Cross-section range | AWG | 26 - 12 | - | - / - |
| **Connection capacity** | | solid | stranded | Ferrule<br>Without / with plastic sleeve |
| One conductor | [mm²] | 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 / 0.14 - 2.5 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | / 0.5 |
| Connection cross-sections directly pluggable | [mm²] | 0.34 - 4 | - | 0.34 - 2.5 / 0.34 - 2.5 |
| **General data** | | | | |
| Stripping length | [mm] | 10 | | |
| Insulating material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |

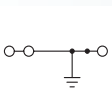
### Ordering data

| Description | No. of pos. | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Ground terminal block**, for mounting on NS 35... | | green/yellow | **PITS 2,5-PE** | **3211867** | 50 |

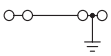
### Accessories

| | | | | | |
|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-STS 2,5** | **3031762** | 50 |
| **Insulation stop sleeve,** cross-section range: | | | | | |
| 0.08 - 0.2 mm² | | white | **ISH 2,5/0,2** | **3002843** | 50 |
| 0.25 - 0.5 mm² | | gray | **ISH 2,5/0,5** | **3002856** | 50 |
| 0.75 - 1 mm² | | black | **ISH 2,5/1,0** | **3002869** | 50 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | |
| | 2 | red | **FBS 2-5** | **3030161** | 50 |
| | 3 | red | **FBS 3-5** | **3030174** | 50 |
| | 4 | red | **FBS 4-5** | **3030187** | 50 |
| | 5 | red | **FBS 5-5** | **3030190** | 50 |
| | 10 | red | **FBS 10-5** | **3030213** | 10 |
| | 20 | red | **FBS 20-5** | **3030226** | 10 |
| **Partition plate,** for visual and electrical separation of terminal groups, 2 mm thick | | gray | **ATP-QTC** | **3206209** | 50 |
| **Test adapter,** for 4 mm Ø test plug PS and 4 mm safety test plug, makes contact in the bridge shaft | | gray | **PAI-4** | **3030925** | 10 |
| **Test plug,** consisting of: **metal part** for 2.3 mm Ø socket hole and | | | **MPS-MT** | **0201744** | 10 |
| **insulating sleeve,** for MPS metal part | | red | **MPS-IH RD** | **0201676** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-5** | **3030983** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | **1204517** | 10 |

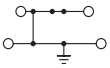
| | |
|---|---|
| **UniCard sheet** for labeling the center groove | **UC-TM 5 (see CLIPLINE catalog)** |
| **UniCard sheet,** flat, for labeling the center groove | **UC-TMF 5 (see CLIPLINE catalog)** |
| **Zack markers** for labeling the center groove | **ZB 5 (see CLIPLINE catalog)** |
| **Zack marker strip,** flat, for labeling the center groove | **ZBF 5 (see CLIPLINE catalog)** |



**2.5/4 mm² ground terminal block, 3 connections, can be bridged**



**2.5/4 mm² ground terminal block, 4 connections**



**2.5/4 mm² double-level ground terminal block, 4 connections, top level can be double bridged**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **5.2** | **49** | **43** | |
| | | max. Ø [mm²] | AWG |
| | | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| | | | 0.5 |
| 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PITS 2,5-TWIN-PE** | **3211935** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-STS 2,5** | **3031762** | 50 |
| **ISH 2,5/0,2** | **3002843** | 50 |
| **ISH 2,5/0,5** | **3002856** | 50 |
| **ISH 2,5/1,0** | **3002869** | 50 |
| **FBS 2-5** | **3030161** | 50 |
| **FBS 3-5** | **3030174** | 50 |
| **FBS 4-5** | **3030187** | 50 |
| **FBS 5-5** | **3030190** | 50 |
| **FBS 10-5** | **3030213** | 10 |
| **FBS 20-5** | **3030226** | 10 |
| **ATP-QTC** | **3206209** | 50 |
| **PAI-4** | **3030925** | 10 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-5** | **3030983** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TM 5 (see CLIPLINE catalog)**

**UC-TMF 5 (see CLIPLINE catalog)**

**ZB 5 (see CLIPLINE catalog)**
**ZBF 5 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **5.2** | **49** | **43** | |
| | | max. Ø [mm²] | AWG |
| | | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| | | | 0.5 |
| 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PITS 2,5-QUATTRO-PE** | **3212011** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-STS 2,5** | **3031762** | 50 |
| **ISH 2,5/0,2** | **3002843** | 50 |
| **ISH 2,5/0,5** | **3002856** | 50 |
| **ISH 2,5/1,0** | **3002869** | 50 |
| **ATP-QTC** | **3206209** | 50 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TM 5 (see CLIPLINE catalog)**

**UC-TMF 5 (see CLIPLINE catalog)**

**ZB 5 (see CLIPLINE catalog)**
**ZBF 5 (see CLIPLINE catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **5.2** | **78** | **55** | |
| | | max. Ø [mm²] | AWG |
| | | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | 24-12 | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| | | | 0.5 |
| 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| | | | |
| 10 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PITTBS 2,5-PE** | **3209620** | 50 |

## Accessories

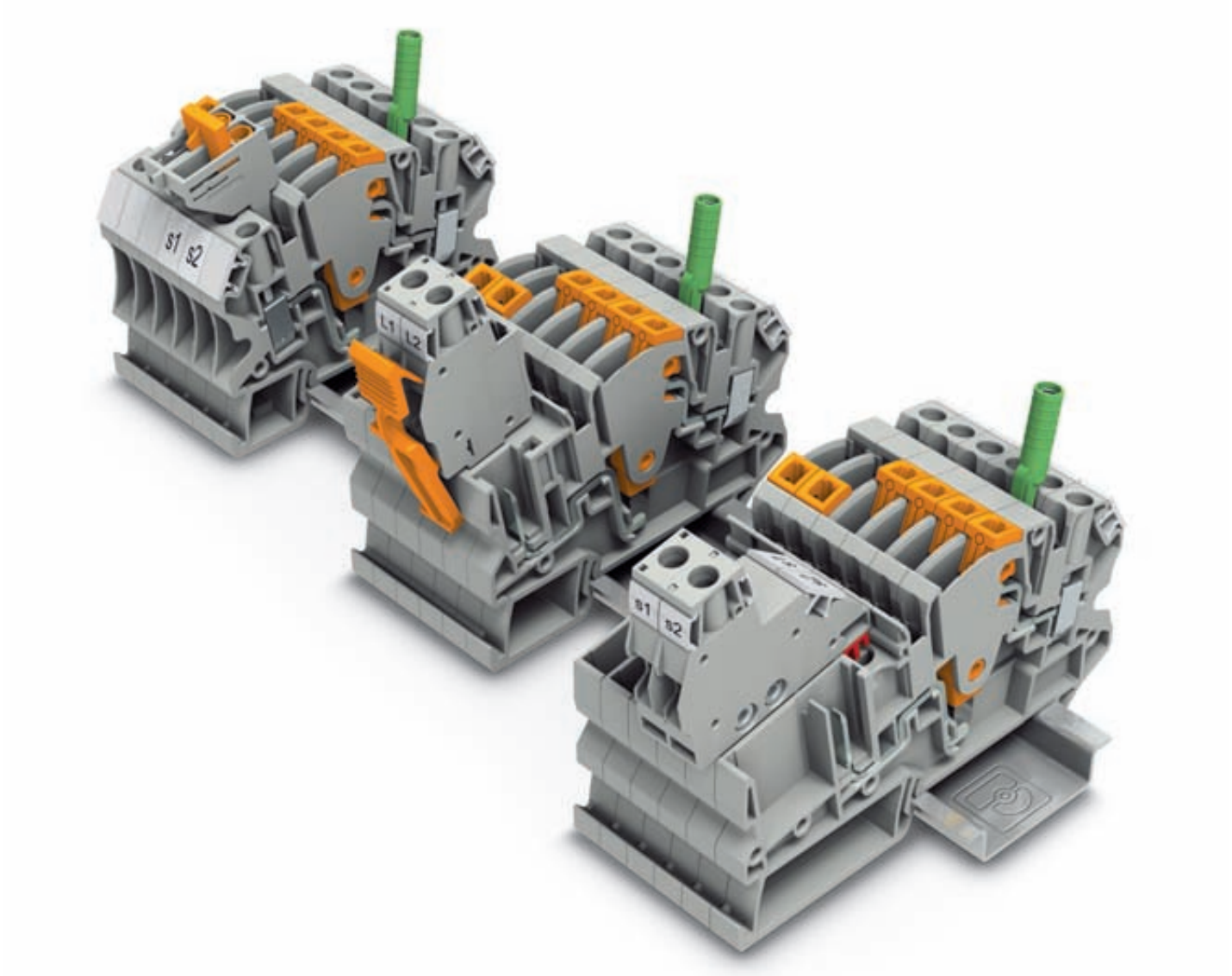
| | | |
|---|---|---|
| **D-STTBS 2,5** | **3038503** | 50 |
| **ISH 2,5/0,2** | **3002843** | 50 |
| **ISH 2,5/0,5** | **3002856** | 50 |
| **ISH 2,5/1,0** | **3002869** | 50 |
| **FBS 2-5** | **3030161** | 50 |
| **FBS 3-5** | **3030174** | 50 |
| **FBS 4-5** | **3030187** | 50 |
| **FBS 5-5** | **3030190** | 50 |
| **FBS 10-5** | **3030213** | 10 |
| **FBS 20-5** | **3030226** | 10 |
| **ATP-STTB 4** | **3030747** | 50 |
| **PAI-4** | **3030925** | 10 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-5** | **3030983** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

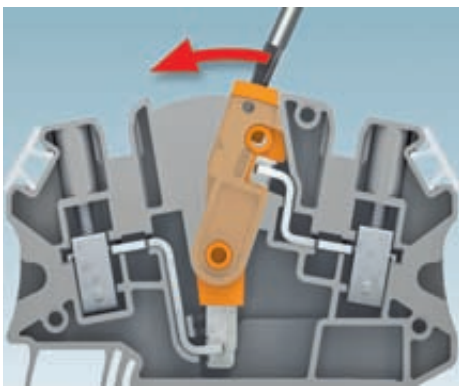
**UC-TM 5 (see CLIPLINE catalog)**

**UC-TMF 5 (see CLIPLINE catalog)**

**ZB 5 (see CLIPLINE catalog)**
**ZBF 5 (see CLIPLINE catalog)**

## UTME 4... test disconnect terminal blocks



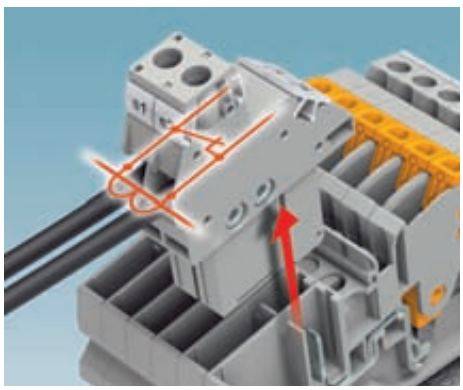



**Clear switching states**

The compact yet clearly arranged design enables clear identification of all switching states. The longitudinal isolating switch makes contact and snaps safely in place in the respective switching state.

**Safe short circuiting**

The current transformer short circuit, in particular, can be implemented safely and conveniently with the pluggable switching jumpers. The switching jumpers can be placed on both sides of the disconnect point in the bridge shaft and snapped securely in place.



**Pluggable automatic short circuiting**

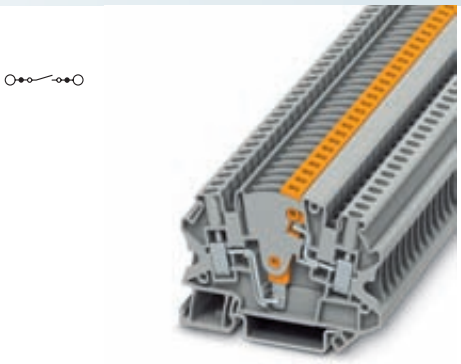
The new short-circuiting connector is particularly safe and user-friendly. When the connector is pulled out, an integrated metal switching device ensures a leading short circuit. Connected measuring transducers are automatically protected against damage.

## UTME 4 test disconnect terminal blocks, UTMED 4 feed-through terminal block of the same shape

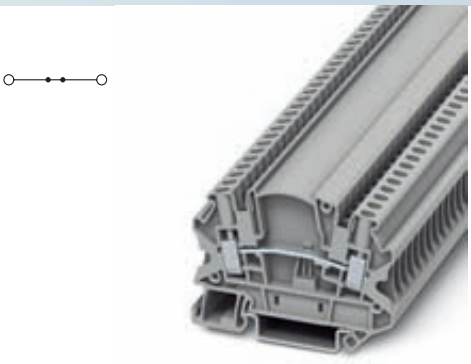
- Compact design
- Screwless longitudinal isolating switch safely latches in the relevant switch position
- Feed-through terminal block of the same shape enables seamless bridging and labeling

**Notes:**

For more plug-in bridges, visit www.phoenixcontact.net/catalog.



**4/6 mm² test disconnect terminal block, 2 connections, can be bridged on both sides of the disconnect point**



**4/6 mm² feed-through terminal block of the same shape, 2 connections, can be double bridged**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| Dimensions | | Width | Length | Height NS 35/7.5 | |
| | [mm] | **6.2** | **66** | **49.5** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **28** | **500** | **0.14 - 6** | **26 - 10** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 500 | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 28 / 4 | - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 26 - 10 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 0.14 - 6 | 0.14 - 6 | 0.14 - 4 | 0.14 - 4 |
| Two conductors (of the same type) | [mm²] | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 9 | | | |
| Screw thread | | M3 | | | |
| Tightening torque | [Nm] | 0.6 - 0.8 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Test disconnect terminal block**, for mounting on NS 35 | | gray | **UTME 4** | | **3047452** | 10 |
| **Feed-through terminal block,** for mounting on NS 35... | | gray | | | | |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-UTME 4** | | **3047491** | 10 |
| **Switching jumper,** pluggable | | | | | | |
| | 2 | gray/orange | **SB-ME 2-6** | 30 A | **3035755** | 10 |
| | 3 | gray/orange | **SB-ME 3-6** | 30 A | **3035756** | 10 |
| | 4 | gray/orange | **SB-ME 4-6** | 30 A | **3035757** | 10 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 32 A | **3030336** | 50 |
| | 5 | red | **FBS 5-6** | 32 A | **3030349** | 50 |
| | 20 | red | **FBS 20-6** | 32 A | **3030365** | 10 |
| **Switching lock,** pluggable | | white | **S-ME 4** | | **3035758** | 10 |
| **Connection bridge,** for connecting two test disconnect terminal blocks | | orange | **C-ME 4/2** | | **3035759** | 10 |
| 3-pos. | | orange | **C-ME 4/3** | | **3035760** | 10 |
| **Test adapter,** for 4-mm-Ø-safety test plug, snapped into bridge shaft | | orange | **PAI-4-FIX-5/6 OG** | | **3035974** | 10 |
| | | yellow | **PAI-4-FIX-5/6 YE** | | **3035977** | 10 |
| | | green | **PAI-4-FIX-5/6 GN** | | **3035978** | 10 |
| | | violet | **PAI-4-FIX-5/6 VT** | | **3035979** | 10 |
| | | black | **PAI-4-FIX-5/6 BK** | | **3035980** | 10 |
| | | blue | **PAI-4-FIX-5/6 BU** | | **3035975** | 10 |
| | | red | **PAI-4-FIX-5/6 RD** | | **3035976** | 10 |
| | | gray | **PAI-4-FIX-5/6 GY** | | **3035982** | 10 |
| | | brown | **PAI-4-FIX-5/6 BN** | | **3035981** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | | **3030996** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |
| **UniCard sheet** for labeling the lateral groove | | | **UC-TM 6 (see CLIPLINE catalog)** | | | |
| **Zack marker strip,** for labeling the lateral groove | | | **ZB 6 (see CLIPLINE catalog)** | | | |

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| | | Width | Length | Height NS 35/7.5 | |
| | | **6.2** | **66** | **49.5** | |
| | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **28** | **800** | **0.14 - 6** | **26 - 10** |
| | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| | | 800 | - | - | - |
| | | 28 / 4 | - | - | - |
| | | 4 | - | - | - |
| | | 26 - 10 | - | - | - |
| | | solid | stranded | Ferrule Without / with plastic sleeve | |
| | | 0.14 - 6 | 0.14 - 6 | 0.14 - 4 | 0.14 - 4 |
| | | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - |
| | | | | | 0.5 - 2.5 |
| | | 9 | | | |
| | | M3 | | | |
| | | 0.6 - 0.8 | | | |
| | | PA | | | |
| | | V0 | | | |

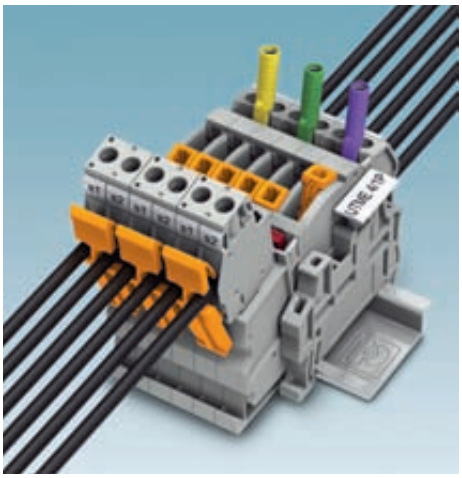
### Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| | | | |
| **UTMED 4** | | **3047465** | 10 |

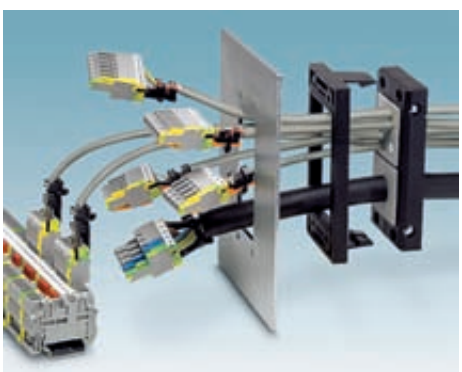
### Accessories

| | | | | |
|---|---|---|---|---|
| **D-UTME 4** | | **3047491** | 10 |
| **SB-ME 2-6** | 30 A | **3035755** | 10 |
| **SB-ME 3-6** | 30 A | **3035756** | 10 |
| **SB-ME 4-6** | 30 A | **3035757** | 10 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **PAI-4-FIX-5/6 OG** | | **3035974** | 10 |
| **PAI-4-FIX-5/6 YE** | | **3035977** | 10 |
| **PAI-4-FIX-5/6 GN** | | **3035978** | 10 |
| **PAI-4-FIX-5/6 VT** | | **3035979** | 10 |
| **PAI-4-FIX-5/6 BK** | | **3035980** | 10 |
| **PAI-4-FIX-5/6 BU** | | **3035975** | 10 |
| **PAI-4-FIX-5/6 RD** | | **3035976** | 10 |
| **PAI-4-FIX-5/6 GY** | | **3035982** | 10 |
| **PAI-4-FIX-5/6 BN** | | **3035981** | 10 |
| **PS-6** | | **3030996** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |
| **UC-TM 6 (see CLIPLINE catalog)** | | | |
| **ZB 6 (see CLIPLINE catalog)** | | | |

## UTME 4/1P plug-in test disconnect terminal blocks with UT-COMBI screw connection



- The COMBI system offers maximum protection for users, as both the basic terminal blocks and the connectors are touch-proof. In addition to safety aspects, this provides even greater flexibility for configuration: the supply can be led via the terminal blocks or the connectors.
- Easy and individual keying increases wiring safety and provides protection against incorrect connection. To do this, the pin must be removed from the connector, rotated, and inserted in the basic terminal block.
- Snap-on strain relief is available if required to relieve the cables at the connectors. Latches are also available, which can be used to secure the connectors to the basic terminal blocks.
- The KEL cable entry system enables the space-saving installation of pre-assembled cables with IP54 protection in the control cabinet, see CLIPLINE catalog and figure below

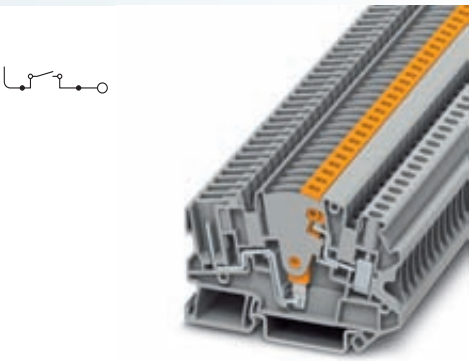


**Notes:**

For corresponding AP-ME and AH-ME terminal strip covers, visit www.phoenixcontact.net/catalog

For more plug-in bridges, visit www.phoenixcontact.net/catalog.

1) Derating curve available on request.



**4/6 mm² test disconnect terminal block, one permanent and one plug-in connection, can be bridged on both sides of the disconnect point**

### Technical data

| | | | | |
|---|---|---|---|---|
| Dimensions | | | | |
| | [mm] | Width | Length | Height NS 35/7.5 |
| | | **6.2** | **71.1** | **49.5** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] / AWG |
| | | **28** | **500** | **0.14 - 6** / **26 - 10** |
| **Rated data** | | IEC 60947-7-1 | | |
| | | IEC | UL/CUL | CSA / IEC/EN 60079-7 |
| Rated voltage | [V] | 500 | - | - / - |
| Nominal current / cross-section | [A] / [mm²] | 28¹) / 4 | - | - / - |
| Rated cross-section | [mm²] | 4 | - | - / - |
| Cross-section range | AWG | 26 - 10 | - | - / - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve |
| One conductor | [mm²] | 0.14 - 6 | 0.14 - 6 | 0.14 - 4 / 0.14 - 4 |
| Two conductors (of the same type) | [mm²] | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 / - |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | / 0.5 - 2.5 |
| **General data** | | | | |
| Stripping length | [mm] | 9 | | |
| Screw thread | | M3 | | |
| Tightening torque | [Nm] | 0.6 - 0.8 | | |
| Insulating material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Terminal block**, for mounting on NS 35... | | gray | **UTME 4/1P** | | **3057416** | 25 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-UTME 4/1P** | | **3057429** | 25 |
| **Switching jumper**, pluggable | | | | | | |
| | 2 | gray/orange | **SB-ME 2-6** | 30 A | **3035755** | 10 |
| | 3 | gray/orange | **SB-ME 3-6** | 30 A | **3035756** | 10 |
| | 4 | gray/orange | **SB-ME 4-6** | 30 A | **3035757** | 10 |
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 32 A | **3030336** | 50 |
| | 5 | red | **FBS 5-6** | 32 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 32 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 32 A | **3030365** | 10 |
| **Switching lock,** pluggable | | white | **S-ME 4** | | **3035758** | 10 |
| **Connection bridge,** for connecting two test disconnect terminal blocks | | orange | **C-ME 4/2** | | **3035759** | 10 |
| 3-pos. | | orange | **C-ME 4/3** | | **3035760** | 10 |
| **Test adapter,** for 4-mm-Ø-safety test plug, snapped into bridge shaft | | orange | **PAI-4-FIX-5/6 OG** | | **3035974** | 10 |
| | | yellow | **PAI-4-FIX-5/6 YE** | | **3035977** | 10 |
| | | green | **PAI-4-FIX-5/6 GN** | | **3035978** | 10 |
| | | violet | **PAI-4-FIX-5/6 VT** | | **3035979** | 10 |
| | | black | **PAI-4-FIX-5/6 BK** | | **3035980** | 10 |
| | | blue | **PAI-4-FIX-5/6 BU** | | **3035975** | 10 |
| | | red | **PAI-4-FIX-5/6 RD** | | **3035976** | 10 |
| | | gray | **PAI-4-FIX-5/6 GY** | | **3035982** | 10 |
| | | brown | **PAI-4-FIX-5/6 BN** | | **3035981** | 10 |
| **Modular test plug,** for the individual assembly of test plug strips | | red | **PS-6** | | **3030996** | 10 |
| **Keying star**, with 4 keying branches, can be inserted in all basic terminal blocks | | red | **PC** | | **3040588** | 50 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UniCard sheet** for labeling the lateral groove

**Zack marker strip,** for labeling the lateral groove

**UC-TM 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**

## COMBI connectors with a screw connection

– Connector with two conductor connection directions
– UPBV... can be bridged
– Strain relief and connector latching can be snapped on as an option

**Notes:**

For connectors for self-assembly, visit: www.phoenixcontact.net/catalog

For more plug-in bridges, visit www.phoenixcontact.net/catalog.

[1]) Derating curve available on request.

**4/6 mm² connector, conductor connection at a right angle to the plug-in direction, can be bridged**

**4/6 mm² connector, conductor connection in plug-in direction**

### Technical data

| Dimensions | | Width | Length | Height | Height when plugged in |
|---|---|---|---|---|---|
| | [mm] | **6.2 x No. of pos.** | **21** | **47** | **31** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **32[1])** | **800** | **0.14 - 6** | **26 - 10** |
| **Rated data** | | IEC 61984 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 800 | 600 | - | - |
| Nominal current / cross-section | [A] / [mm²] | 32[1]) / 4 | 30 / - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 26 - 10 | 26-10 | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 0.14 - 6 | 0.14 - 6 | 0.14 - 4 | 0.14 - 4 |
| Two conductors (of the same type) | [mm²] | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1 |
| **General data** | | | | | |
| Stripping length | [mm] | 9 | | | |
| Screw thread | | M3 | | | |
| Tightening torque | [Nm] | 0.6 - 0.8 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Technical data

| Dimensions | | Width | Length | Height | Height when plugged in |
|---|---|---|---|---|---|
| | [mm] | **6.2 x No. of pos.** | **21** | **41** | **24** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **32[1])** | **800** | **0.2 - 6** | **24 - 10** |
| **Rated data** | | IEC 61984 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 800 | 600 | - | - |
| Nominal current / cross-section | [A] / [mm²] | 32[1]) / 4 | 30 / - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 24 - 10 | 26-10 | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 0.2 - 6 | 0.2 - 6 | 0.14 - 4 | 0.14 - 4 |
| Two conductors (of the same type) | [mm²] | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 9 | | | |
| Screw thread | | M3 | | | |
| Tightening torque | [Nm] | 0.6 - 0.8 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **UT-COMBI connector** | | | | | | |
| | 1 | gray | **UPBV 4 / 1** | | **3045800** | 50 |
| | 2 | gray | **UPBV 4 / 2** | | **3045813** | 50 |
| | 3 | gray | **UPBV 4 / 3** | | **3045826** | 50 |
| | 4 | gray | **UPBV 4 / 4** | | **3045839** | 50 |
| | 5 | gray | **UPBV 4 / 5** | | **3045842** | 50 |
| | 6 | gray | **UPBV 4 / 6** | | **3045855** | 25 |
| | 7 | gray | **UPBV 4 / 7** | | **3045868** | 25 |
| | 8 | gray | **UPBV 4 / 8** | | **3045871** | 25 |
| | 9 | gray | **UPBV 4 / 9** | | **3045884** | 25 |
| | 10 | gray | **UPBV 4/10** | | **3045897** | 25 |
| | 11 | gray | **UPBV 4/11** | | **3045907** | 10 |
| | 12 | gray | **UPBV 4/12** | | **3045910** | 10 |
| | 13 | gray | **UPBV 4/13** | | **3045923** | 10 |
| | 14 | gray | **UPBV 4/14** | | **3045936** | 10 |
| | 15 | gray | **UPBV 4/15** | | **3045949** | 10 |
| | 1 | blue | **UPBV 4 / 1 BU** | | **3045266** | 50 |
| | 1 | green/yellow | **UPBV 4 / 1 GNYE** | | **3045279** | 50 |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **UP 4 / 1** | **3060115** | 50 |
| **UP 4 / 2** | **3060128** | 50 |
| **UP 4 / 3** | **3060131** | 50 |
| **UP 4 / 4** | **3060144** | 50 |
| **UP 4 / 5** | **3060157** | 50 |
| **UP 4 / 6** | **3060160** | 25 |
| **UP 4 / 7** | **3060173** | 25 |
| **UP 4 / 8** | **3060186** | 25 |
| **UP 4 / 9** | **3060199** | 25 |
| **UP 4/10** | **3060209** | 25 |
| **UP 4/11** | **3060212** | 10 |
| **UP 4/12** | **3060225** | 10 |
| **UP 4/13** | **3060238** | 10 |
| **UP 4/14** | **3060241** | 10 |
| **UP 4/15** | **3060254** | 10 |
| **UP 4 / 1 BU** | **3045282** | 50 |
| **UP 4 / 1 GNYE** | **3045295** | 50 |

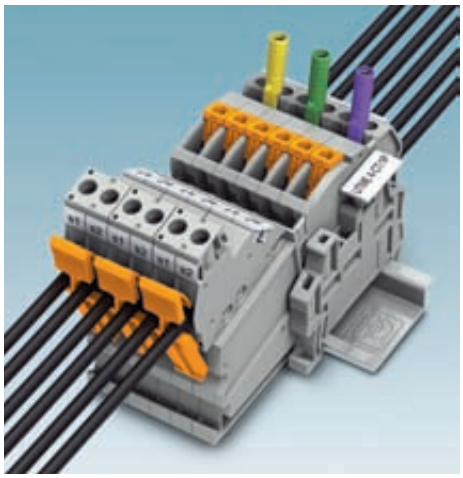
### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Plug-in bridge,** for cross connections in the bridge shaft | | | | | | |
| | 2 | red | **FBS 2-6** | 27 A | **3030336** | 50 |
| | 5 | red | **FBS 5-6** | 27 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 27 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 27 A | **3030365** | 10 |
| **Strain relief,** for UPBV connectors, 2-pos. | | black | **UPZ / 2** | | **3045554** | 50 |
| **Latching,** for connectors, 1-pos. | | orange | | | | |
| 2-pos. | | orange | **UPR / 2** | | **3045567** | 50 |
| **Latching and strain relief**, for UPBV... connectors, 2-pos. | | orange | **UPRZ** | | **3045570** | 50 |
| **UniCard sheet,** flat, for labeling the lateral groove | | | **UC-TMF 6 (see CLIPLINE catalog)** | | | |
| **Zack marker strip,** flat, for labeling the lateral groove | | | **ZBF 6 (see CLIPLINE catalog)** | | | |

### Accessories

| | | |
|---|---|---|
| **PZ/2** | **3040627** | 50 |
| **PR** | **3040559** | 50 |
| **PR/2** | **3040630** | 50 |
| **PRZ** | **3040614** | 50 |
| **UC-TMF 6 (see CLIPLINE catalog)** | | |
| **ZBF 6 (see CLIPLINE catalog)** | | |

## UTME 4-CT/1P plug-in test disconnect terminal blocks

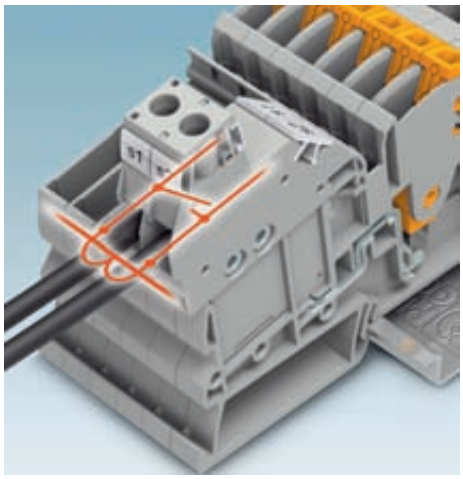


### Compact and safe insertion of current transformer circuits

– The terminal block with the new patented short-circuit connector is particularly user-friendly and safe. When the connector is removed, there is an automatic, leading short circuit.
– Connected measuring transducers are automatically protected against damage

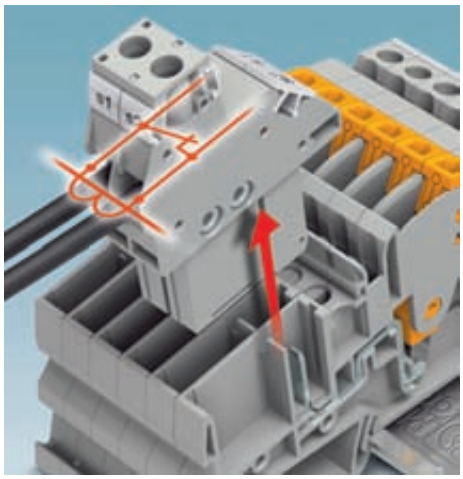
### Easy and safe keying

– Both connector versions can be reliably protected against polarity reversal using a snap-in keying profile
– The short-circuit connectors are available in a 2 and 3-pos. version
– Strain relief and connector latching can be snapped on as an option



### Function:

– Connector inserted - no short circuit



### Function:

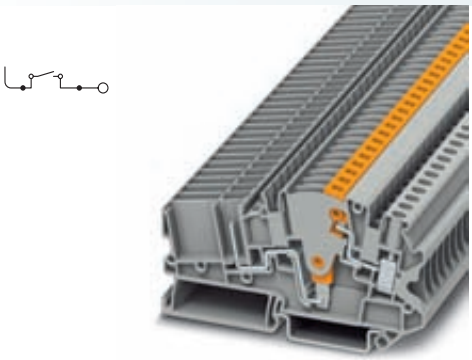
– Connector removed - automatic, leading short circuit

| Notes: |
|---|
| For more test plugs, visit www.phoenixcontact.net/catalog |
| For corresponding AP-ME and AH-ME terminal strip covers, visit www.phoenixcontact.net/catalog |
| [1]) Derating curve available on request. |

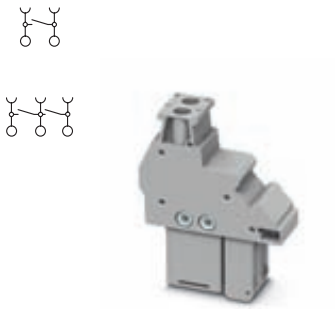
| | |
|---|---|
| Dimensions | |
| | [mm] |
| **Max. electrical data** | |
| **Rated data** | |
| Rated voltage | [V] |
| Nominal current / cross-section | [A] / [mm²] |
| Rated cross-section | [mm²] |
| Cross-section range | AWG |
| **Connection capacity** | |
| One conductor | [mm²] |
| Two conductors (of the same type) | [mm²] |
| Two stranded conductors with a TWIN ferrule | [mm²] |
| **General data** | |
| Stripping length | [mm] |
| Screw thread | |
| Tightening torque | [Nm] |
| Insulating material | |
| Inflammability class acc. to UL 94 | |

| Description | No. of pos. | Color |
|---|---|---|
| **Terminal block**, for mounting on NS 35... | | gray |
| **COMBI connector**, with integrated short-circuit function, 2-pos. | | gray |
| 3-pos. | | gray |
| **Cover**, width 2.2 mm | | gray |
| **Plug-in bridge** for cross connections in the bridge shaft | | |
| | 2 | red |
| | 3 | red |
| | 4 | red |
| | 5 | red |
| | 10 | red |
| | 20 | red |
| **Switching lock,** pluggable | | white |
| **Connection bridge,** for connecting two test disconnect terminal blocks | | orange |
| 3-pos. | | orange |
| **Test adapter,** for 4-mm-Ø-safety test plug, snapped into bridge shaft | | orange |
| **Modular test plug,** for the individual assembly of test plug strips | | red |
| **Strain relief,** for UPBV connectors, 2-pos. | | black |
| **Keying profile,** for a 2-pos. connector | | red |
| for a 3-pos. connector | | red |
| **Screwdriver** | | |

| |
|---|
| **UniCard sheet** for labeling the lateral groove |
| **UniCard sheet,** flat, for labeling the lateral groove |
| **Zack marker strip,** for labeling the lateral groove |
| **Zack marker strip,** flat, for labeling the lateral groove |



**4/6 mm² test disconnect terminal block, one permanent and one plug-in connection, can be bridged on both sides of the disconnect point**



**4/6 mm² connector with leading automatic short-circuit function**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **6.2** | **86.5** | **49.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **28** | **500** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | - |
| 28[1]) / 4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 6 | 0.14 - 6 | 0.14 - 4 | 0.14 - 4 |
| 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **12.4** | **38.5** | **-** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **20** | **320** | **0.14 - 6** | **26 - 10** |
| IEC 61984 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 320 | - | - | - |
| 20 / 4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| solid | stranded | Ferrule | |
| | | Without / with plastic sleeve | |
| 0.14 - 6 | 0.14 - 6 | 0.14 - 4 | 0.14 - 4 |
| 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - |
| | | | 0.5 - 1 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **UTME 4-CT/1P** | | **3057432** | 25 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **UPCT 4/2** | **3057461** | 10 |
| **UPCT 4/3** | **3057458** | 10 |

## Accessories

| | | | |
|---|---|---|---|
| **D-UTME 4-CT/1P** | | **3057445** | 25 |
| **FBS 2-6** | 32 A | **3030336** | 50 |
| **FBS 3-6** | 32 A | **3030242** | 50 |
| **FBS 4-6** | 32 A | **3030255** | 50 |
| **FBS 5-6** | 32 A | **3030349** | 50 |
| **FBS 10-6** | 32 A | **3030271** | 10 |
| **FBS 20-6** | 32 A | **3030365** | 10 |
| **S-ME 4** | | **3035758** | 10 |
| **C-ME 4/2** | | **3035759** | 10 |
| **C-ME 4/3** | | **3035760** | 10 |
| **PAI-4-FIX-5/6 OG** | | **3035974** | 10 |
| **PS-6** | | **3030996** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**

## Accessories

| | | |
|---|---|---|
| **UPZ / 2** | **3045554** | 50 |
| **PC-CT/2** | **3032855** | 10 |
| **PC-CT/3** | **3032868** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TM 6 (see CLIPLINE catalog)**

**UC-TMF 6 (see CLIPLINE catalog)**

**ZB 6 (see CLIPLINE catalog)**
**ZBF 6 (see CLIPLINE catalog)**

## UK 10,3-HESI 1000V lever-type fuse terminal blocks for solar technology

### Terminal blocks

– Terminal blocks for protecting PV lines
– Particularly suitable for protecting monocrystalline and polycrystalline modules
– Suitable for standard 10.3 x 38 mm fuse inserts with gPV characteristic
– Dielectric strength up to 1000 V DC
– Light indicator indicates that a fuse has blown
– Simple grouping of currents from individual lines by using insertion bridges that can be custom configured
– Generous labeling options for the unique identification of lines

### Fuses

– Special fuses with an ultra-rapid PV characteristic (gPV)
– Use in PV lines with a nominal voltage of up to 1000 V DC
– Safe shutdown even in the event of short-circuit currents that are just above the nominal current

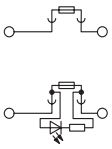
Fuse holders and fuses are usually used in generator connection boxes, see figure below. ST 6 terminal blocks from the CLIPLINE complete product range, for example, can be used as standard feed-through terminal blocks here.

**Notes:**

For tools for stripping and crimping solar cables and connectors, see page 92

[1]) If the fuse is faulty, the downstream circuit is not off load.

[2]) The current and voltage are determined by the fuse.



**16/25 mm² lever-type fuse terminal block, 1000 V, for 10.3 x 38 mm midget fuse inserts, with or without fault indicator, 2 connections**

## Technical data

| | | | | | |
|---|---|---|---|---|---|
| Dimensions | | Width | Length | Height NS 35/7.5 | |
| | [mm] | **18** | **81** | **65.5** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **32[2])** | **1000[2])** | **1.5 - 25** | **16 - 4** |
| **Rated data** | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 1000[2]) | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 32[2]) / 16 | - | - | - |
| Rated cross-section | [mm²] | 16 | - | - | - |
| Cross-section range | AWG | 16 - 4 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor | [mm²] | 1.5 - 25 | 1.5 - 16 | 1.5 - 16 | 1.5 - 16 |
| Two conductors (of the same type) | [mm²] | 1.5 - 4 | 1.5 - 4 | 1.5 - 4 | - |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 1.5 - 10 |
| Max. cross-section with insertion bridge | [mm²] | 10 | 10 | | |
| **General data** | | | | | |
| Fuse type / dimensions | – / [mm] | Midget / 10.3 x 38 | | | |
| Stripping length | [mm] | 12 | | | |
| Screw thread | | M5 | | | |
| Tightening torque | [Nm] | 2.5 - 3 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

## Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Fuse terminal block**, for mounting on NS 35..., for midget fuse inserts 10.3 x 38 mm[1]) | | black | **UK 10,3-HESI 1000V** | | **3211236** | 10 |
| With light indicator for 220 - 1000 V AC/DC | | black | **UK 10,3 HESILED 1000V** | | **3211249** | 10 |
| **Midget** fuse, 10.3 x 38 mm, nominal current: 2 A | | | | | | |
| Nominal current: 4 A | | | | | | |
| Nominal current: 6 A | | | | | | |
| Nominal current: 8 A | | | | | | |
| Nominal current: 10 A | | | | | | |
| Nominal current: 12 A | | | | | | |
| Nominal current: 16 A | | | | | | |
| Nominal current: 20 A | | | | | | |

## Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Insertion bridge,** can be separated, insulated spine | | | | | | |
| 1-phase | 56 | gray | **EB 56-18** | 76 A | **3009299** | 5 |
| 3-phase | 56 | gray | **EB 56-18/L1-L2-L3** | 76 A | **3009367** | 5 |
| **Connection pin,** for connecting several fuse terminal blocks, 2-pos. | | black | **VS-UK 10,3-HESI N 2POL** | | **3048532** | 10 |
| 3-pos. | | black | **VS-UK 10,3-HESI N 3POL** | | **3048409** | 10 |
| **Screwdriver** | | | **SZS 0,6X3,5** | | **1205053** | 10 |
| **Zack marker strip,** flat, for labeling the center groove | | | **ZBF 10 (see CLIPLINE catalog)** | | | |

**10.3 x 38 mm midget fuse inserts, 2 A - 20 A**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| - | - | - | |
| | | max. Ø [mm²] | AWG |
| | | - | - |

| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
|---|---|---|---|
| - | - | - | - |
| - / - | - | - | - |
| - | - | - | - |
| - | - | - | - |

| solid | stranded | Ferrule Without / with plastic sleeve | |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |

-
-
-
-
-
-

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **FUSE 10,3X38 2A PV** | **3061295** | 10 |
| **FUSE 10,3X38 4A PV** | **3061305** | 10 |
| **FUSE 10,3X38 6A PV** | **3061318** | 10 |
| **FUSE 10,3X38 8A PV** | **3061321** | 10 |
| **FUSE 10,3X38 10A PV** | **3061334** | 10 |
| **FUSE 10,3X38 12A PV** | **3061347** | 10 |
| **FUSE 10,3X38 16A PV** | **3061350** | 10 |
| **FUSE 10,3X38 20A PV** | **3061363** | 10 |

## Accessories

## MS(D)B 2,5 mini spring-cage terminal blocks and ground terminal blocks for mounting on NS 15 DIN rails

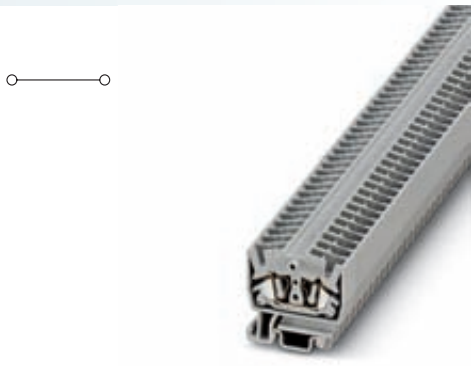
- The mini spring-cage terminal block for NS 15 DIN rails is available as a 2 and 4-wire terminal block
- Maximum wiring space, 4 mm² solid or 2.5 mm² stranded conductors can also be contacted with ferrules
- Ideal for wiring in a small amount of space
- Ground terminal block of the same shape makes contact when simply snapped on and meets the high requirements of IEC 60947-7-2
- MSBV 2,5... mini spring-cage terminal blocks with vertical conductor exit, see CLIPLINE catalog from page 174
- Mini spring-cage terminal blocks are also available for direct mounting with screw flange or engagement pin versions, see CLIPLINE catalog page 162 and onwards, see figure below

**Notes:**

For current carrying capacity of DIN rails, see CLIPLINE catalog.

[1]) The max. load current must not be exceeded by the total current of all connected conductors.

[2]) For installation notes on using accessories for Ex e applications, see CLIPLINE catalog.



**2.5/4 mm² feed-through terminal block, 2 connections, mounting on NS 15 DIN rails**

Ex: PTB

PTB 08ATEX1075U / IECEx PTB 08.0048U

### Technical data

| | | | |
|---|---|---|---|
| **Dimensions** | | | |
| Width | Length | Height NS 15 | |
| **5.2** | **32** | **30** | |
| **Max. electrical data** | | | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **800** | **0.08 - 4** | **28 - 12** |
| **Rated data** | IEC 60947-7-1 | | Ex |
| | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage [V] | 800 | 600 | - | 690 |
| Nominal current / cross-section [A] / [mm²] | 24 / 2.5 | 20 / - | - | 22 / 2.5 // 28 / 4 |
| Rated cross-section [mm²] | 2.5 | - | - | 2.5 |
| Cross-section range AWG | 28 - 12 | 28-12 | - | 28 - 12 |
| **Connection capacity** | solid | stranded | Ferrule Without / with plastic sleeve | |
| One conductor [mm²] | 0.08 - 4 | 0.08 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| Two stranded conductors with a TWIN ferrule [mm²] | | | | 0.5 |
| **General data** | | | | |
| Stripping length [mm] | 8 | | | |
| Insulating material | PA | | | |
| Inflammability class acc. to UL 94 | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|
| **Mini terminal block,** for mounting on NS 15 | | gray | **MSB 2,5** | **3244012** | 50 |
| | | blue | **MSB 2,5 BU** | **3244025** | 50 |
| | | orange | **MSB 2,5 OG** | **3244038** | 50 |
| | | yellow | **MSB 2,5 YE** | **3073092** | 50 |
| **Double mini terminal block,** with four terminal points having the same potential, for mounting on NS 15 | | gray | | | |
| | | blue | | | |
| | | orange | | | |
| | | yellow | | | |
| **Mini ground terminal block**, for mounting on NS 15 | | green/yellow | | | |

### Accessories[2])

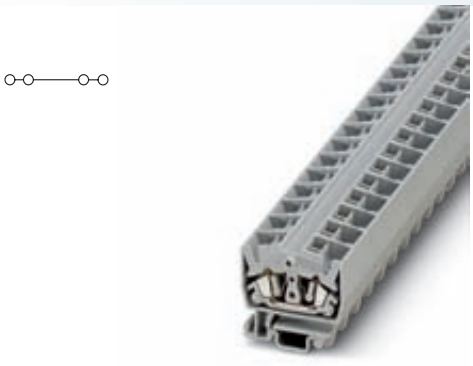
| | | | | | |
|---|---|---|---|---|---|
| **Cover**, width 4 mm | | gray | **D-MZB 1,5** | **3024177** | 50 |
| | | blue | **D-MZB 1,5 BU** | **3024423** | 50 |
| **Insertion bridge,** fully insulated | 2 | gray | | | |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | **1204517** | 10 |

**UniCard sheet,** flat, for labeling the center groove

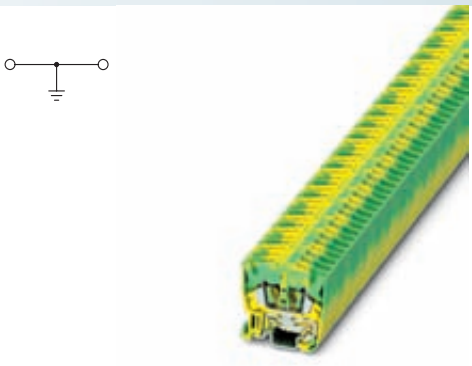
**Zack marker strip,** flat, for labeling the center groove

**UC-TMF 5 (see CLIPLINE catalog)**

**ZBF 5 (see CLIPLINE catalog)**



**2.5/4 mm² double feed-through terminal block, 4 connections, mounting on NS 15 DIN rails**



**2.5/4 mm² ground terminal block, 2 connections, mounting on NS 15 DIN rails**

Ex:

PTB 08ATEX1075U / IECEx PTB 08.0048U

## Technical data

| Width | Length | Height NS 15 | |
|---|---|---|---|
| **10.4** | **32** | **30** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30[1])** | **800** | **0.08 - 4** | **28 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | 600 | - | 690 |
| 24[1]) / 2.5 | 20 / - | - | 22 / 2.5 // 28 / 4 |
| 2.5 | - | - | 2.5 |
| 28 - 12 | 28-12 | - | 28 - 12 |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.08 - 4 | 0.08 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5<br>0.5 |
| | | | |
| 8 | | | |
| PA | | | |
| V0 | | | |

## Technical data

| Width | Length | Height NS 15 | |
|---|---|---|---|
| **5.2** | **32** | **30** | |
| | | max. Ø [mm²] | AWG |
| | | **0.08 - 4** | **28 - 12** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 2.5 | - | - | - |
| 28 - 12 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.08 - 4 | 0.08 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5<br>0.5 |
| | | | |
| 8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **MSDB 2,5** | | **3244216** | 50 |
| **MSDB 2,5 BU** | | **3244229** | 50 |
| **MSDB 2,5 OG** | | **3073102** | 50 |
| **MSDB 2,5 YE** | | **3073115** | 50 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **MSB 2,5-PE** | **3244151** | 50 |

## Accessories[2])

| | | | |
|---|---|---|---|
| **D-MZB 1,5** | | **3024177** | 50 |
| **D-MZB 1,5 BU** | | **3024423** | 50 |
| **ESB 2-MZDB** | 24 A | **3029703** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TMF 5 (see CLIPLINE catalog)**

**ZBF 5 (see CLIPLINE catalog)**

## Accessories[2])

| | | |
|---|---|---|
| **D-MZB 1,5** | **3024177** | 50 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TMF 5 (see CLIPLINE catalog)**

**ZBF 5 (see CLIPLINE catalog)**

## MS(D)B 2,5 mini spring-cage terminal blocks and ground terminal blocks for mounting on NS 35 DIN rails

- The mini spring-cage terminal block for NS 35 DIN rails is available as a 2 and 4-wire terminal block
- Maximum wiring space, 4 mm² solid or 2.5 mm² stranded conductors can also be contacted with ferrules
- Ideal for wiring in a small amount of space
- Ground terminal block of the same shape makes contact when simply snapped on and meets the high requirements of IEC 60947-7-2
- Mini spring-cage terminal blocks are also available for direct mounting with screw flange or engagement pin versions, see CLIPLINE catalog page 162 and onwards
- MSBV 2,5... mini spring-cage terminal blocks with vertical conductor exit, see CLIPLINE catalog from page 174

**Notes:**

For current carrying capacity of DIN rails, see CLIPLINE catalog.

[1]) The max. load current must not be exceeded by the total current of all connected conductors.

[2]) For installation notes on using accessories for Ex e applications, see CLIPLINE catalog.

**2.5/4 mm² feed-through terminal block, 2 connections, mounting on NS 35 DIN rails**

Ex: PTB

PTB 08ATEX1075U / IECEx PTB 08.0048U

### Technical data

| Dimensions | | | | |
|---|---|---|---|---|
| | Width | Length | Height NS 35/7.5 | |
| | [mm] | **5.2** | **42.7** | **32** |
| **Max. electrical data** | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | **30** | **800** | **0.08 - 4** | **28 - 12** |
| **Rated data** | IEC 60947-7-1 | | | Ex |
| | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 800 | 600 | - | 690 |
| Nominal current / cross-section | [A] / [mm²] | 24 / 2.5 | 20 / - | - | 22 / 2.5 // 28 / 4 |
| Rated cross-section | [mm²] | 2.5 | - | - | 2.5 |
| Cross-section range | AWG | 28 - 12 | 28-12 | - | 28 - 12 |
| **Connection capacity** | | solid | stranded | Ferrule | Without / with plastic sleeve |
| One conductor | [mm²] | 0.08 - 4 | 0.08 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 8 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

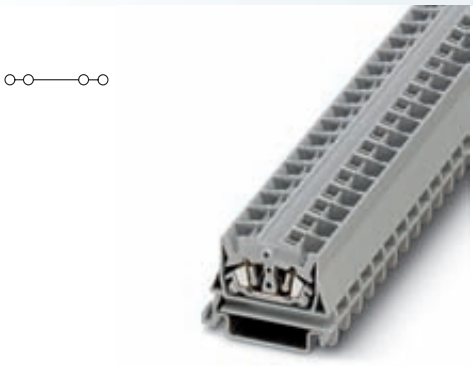
### Ordering data

| Description | No. of pos. | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|
| **Mini terminal block,** for mounting on NS 35 | | gray | **MSB 2,5-NS 35** | **3244119** | 50 |
| | | blue | **MSB 2,5-NS 35 BU** | **3244122** | 50 |
| | | orange | **MSB 2,5-NS 35 OG** | **3244135** | 50 |
| | | yellow | **MSB 2,5-NS 35 YE** | **3073128** | 50 |
| **Double mini terminal block,** with four terminal points having the same potential, for mounting on NS 35 | | gray | | | |
| | | blue | | | |
| | | orange | | | |
| | | yellow | | | |
| **Mini ground terminal block**, for mounting on NS 35... | | green/yellow | | | |

### Accessories[2])

| | | | | | |
|---|---|---|---|---|---|
| **Cover**, width 4 mm | | gray | **D-MZB 1,5** | **3024177** | 50 |
| | | blue | **D-MZB 1,5 BU** | **3024423** | 50 |
| **Insertion bridge,** fully insulated | 2 | gray | | | |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | **1204517** | 10 |

| | |
|---|---|
| **UniCard sheet,** flat, for labeling the center groove | **UC-TMF 5 (see CLIPLINE catalog)** |
| **Zack marker strip,** flat, for labeling the center groove | **ZBF 5 (see CLIPLINE catalog)** |



**2.5/4 mm² double feed-through terminal block, 4 connections, mounting on NS 35 DIN rails**

**2.5/4 mm² ground terminal block, 2 connections, mounting on NS 35 DIN rails**

Ex:

PTB 08ATEX1075U / IECEx PTB 08.0048U

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **10.4** | **42.7** | **32** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30[1])** | **800** | **0.08 - 4** | **28 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | 600 | - | 690 |
| 24[1]) / 2.5 | 20 / - | - | 22 / 2.5 // 28 / 4 |
| 2.5 | - | - | 2.5 |
| 28 - 12 | 28-12 | - | 28 - 12 |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.08 - 4 | 0.08 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5<br>0.5 |
| | | | |
| 8 | | | |
| PA | | | |
| V0 | | | |

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **5.2** | **42.7** | **32** | |
| | | max. Ø [mm²] | AWG |
| | | **0.08 - 4** | **28 - 12** |
| IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - / - | - | - | - |
| 2.5 | - | - | - |
| 28 - 12 | - | - | - |
| solid | stranded | Ferrule Without / with plastic sleeve | |
| 0.08 - 4 | 0.08 - 2.5 | 0.14 - 2.5 | 0.14 - 2.5<br>0.5 |
| | | | |
| 8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **MSDB 2,5-NS 35** | | **3244300** | 50 |
| **MSDB 2,5-NS 35 BU** | | **3244313** | 50 |
| **MSDB 2,5-NS 35 OG** | | **3244326** | 50 |
| **MSDB 2,5-NS 35 YE** | | **3073131** | 50 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **MSB 2,5-NS 35-PE** | **3244148** | 50 |

## Accessories[2])

| | | | |
|---|---|---|---|
| **D-MZB 1,5** | | **3024177** | 50 |
| **D-MZB 1,5 BU** | | **3024423** | 50 |
| **ESB 2-MZDB** | 24 A | **3029703** | 10 |
| **SZF 1-0,6X3,5** | | **1204517** | 10 |

**UC-TMF 5 (see CLIPLINE catalog)**

**ZBF 5 (see CLIPLINE catalog)**

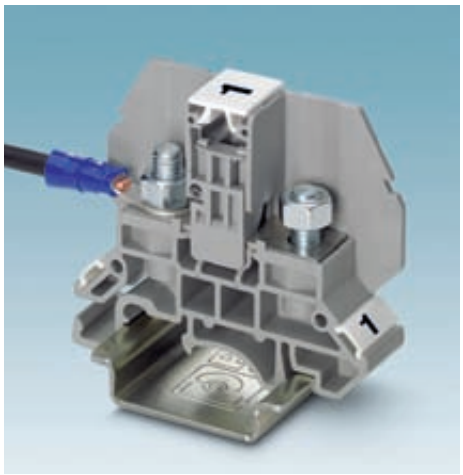
## Accessories[2])

| | | |
|---|---|---|
| **D-MZB 1,5** | **3024177** | 50 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

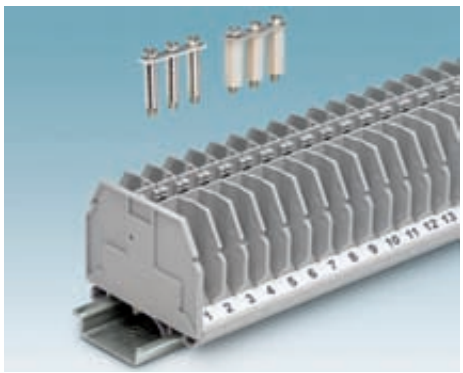
**UC-TMF 5 (see CLIPLINE catalog)**

**ZBF 5 (see CLIPLINE catalog)**

## RBO 5... bolt connection terminals, for M5 ring and fork-type cable lugs



- Compact connection of ring and fork-type cable lugs
- Bridge shaft for potential distribution using standard screw bridges
- The isolator bridge bar supports switchable cross connections; the bridge screw therefore has the function of a live contact
- Mounting on standard DIN rails or directly in control boxes
- Easy grouping of flange terminal blocks
- Pre-assembled flange terminal blocks are available
- Cover profile that can be snapped directly onto the terminal blocks provides touch-proof protection
- Large-surface, seamless external and center labeling
- Threaded bolts and current bars are latched in the insulating housing and cannot be removed

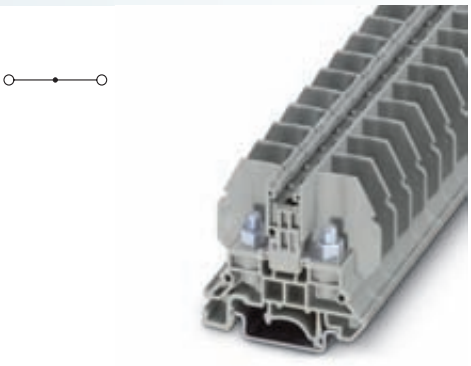


**Notes:**

For marking material, see page 40

[1]) 57 A for continuous bridging, 41 A for bridging between non-adjacent terminal blocks

[2]) Rated voltage for 630 V open disconnect point



**10 mm² feed-through terminal block, 2 M5 connections, can be bridged, mounting on NS 35 DIN rails**

### Technical data

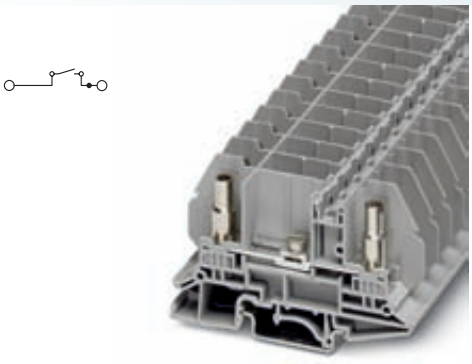
| Dimensions | | | | |
|---|---|---|---|---|
| | Width | Length | Height NS 35/7.5 | |
| [mm] | **13** | **53.3** | **47** | |
| **Dimensions** | Width | Length | Height | |
| [mm] | **13** | **53.3** | **-** | |
| **Max. electrical data** | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | **57** | **800** | **0.1 - 10** | **26 - 8** |
| **Rated data** | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage [V] | 800 | - | - | - |
| Nominal current / cross-section [A] / [mm²] | 57 / 10 | - | - | - |
| Rated cross-section [mm²] | 10 | - | - | - |
| Cross-section range AWG | 26 - 8 | - | - | - |
| **Connection capacity, DIN 46234** | | | | |
| Cable lugs, DIN 46234 [mm²] | 0.1 - 10 | | | |
| Connection bolt / hole diameter / width [mm] | 5 / 5.3 / 10 | | | |
| **Connection capacity, DIN 46237** | | | | |
| Cable lugs DIN 46237 [mm²] | 0.5 - 6 | | | |
| Connection bolt / hole diameter / width [mm] | 5 / 5.3 / 10 | | | |
| Color code red | 1.00 mm² | | | |
| blue | 2.50 mm² | | | |
| yellow | 6.00 mm² | | | |
| **General data** | | | | |
| Disconnect slide: Thread/tightening torque - / [Nm] | - / - | | | |
| Bolt thread | M5 | | | |
| Tightening torque [Nm] | 2 - 2.2 | | | |
| Insulating material | PA | | | |
| Inflammability class acc. to UL 94 | V0 | | | |

### Ordering data

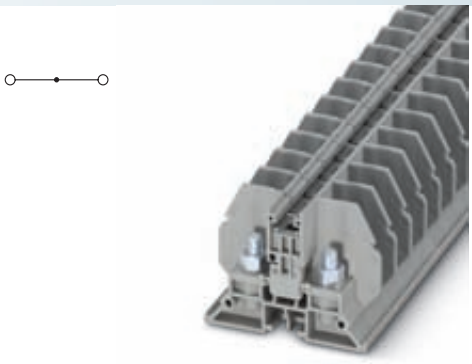
| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Bolt connection terminal,** for mounting on NS 32... or NS 35... | | gray | **RBO 5** | | **3058059** | 50 |
| **Test disconnect terminal block**, for mounting on NS 32... or NS 35... | | gray | | | | |
| **Flange terminal block,** for direct mounting, including D-RSC 5-F cover flange | | gray | | | | |
| **Flange terminal block,** for direct mounting, including D-RSC 5-F cover flange, 4-pos. | | gray | | | | |
| Block, 6-pos. | | gray | | | | |
| Block, 8-pos. | | gray | | | | |
| Block, 12-pos. | | gray | | | | |
| **Test disconnect terminal block**, with flange, for direct mounting | | gray | | | | |

### Accessories

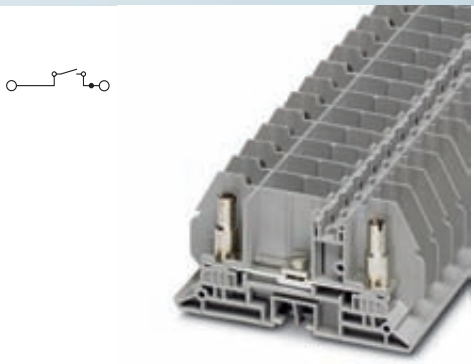
| | | | | | |
|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-RSC 5** | | **3058020** | 50 |
| **Cover flange** | | gray | | | | |
| **Fixed jumper,** for cross connections in the terminal center, can be separated, with 10 screws | | silver | **FB 10-13** | 57 A[1]) | **3059126** | 50 |
| **Isolator bridge bar,** can be separated, with 10 screws | | silver | **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **Separating disk,** for electrical separation of neighboring bridges, can be fitted later, no loss of pitch | | gray | **TS-KK 3** | | **2770215** | 50 |
| **Cover profile,** supply length 1 m | | transparent | **AP RSC** | | **3058017** | 50 |
| **Socket wrench** | | | **SHN 8** | | **1209868** | 10 |
| **Screwdriver** | | | | | | |



**10 mm² test disconnect terminal block, 2 M5 connections, can be bridged, 4 mm test connections, mounting on NS 35 DIN rails**



**10 mm² feed-through terminal block, 2 M5 connections, can be bridged, for direct mounting**



**10 mm² test disconnect terminal block, 2 M5 connections, can be bridged, 4 mm test connections, for direct mounting**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **13** | **79.9** | **49.8** | |
| Width | Length | Height | |
| **13** | **79.9** | **-** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **50** | **800²)** | **0.1 - 10** | **26 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800²) | - | - | - |
| 50 / 10 | - | - | - |
| 10 | - | - | - |
| 26 - 8 | - | - | - |
| | | | |
| 0.1 - 10 | | | |
| 5 / 5.3 / 10 | | | |
| | | | |
| 0.5 - 6 | | | |
| 5 / 5.3 / 10 | | | |
| 1.00 mm² | | | |
| 2.50 mm² | | | |
| 6.00 mm² | | | |
| | | | |
| M4 / 1.2 - 1.4 | | | |
| | | | |
| M5 | | | |
| 2 - 2.2 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **RBO 5-T** | | **3058114** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-RSC 5-T** | | **3058046** | 50 |
| **FB 10-13** | 57 A¹) | **3059126** | 50 |
| **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **TS-KK 3** | | **2770215** | 50 |
| **AP RSC-T** | | **3059139** | 50 |
| **SZG 0,9X6,5** | | **1205134** | 10 |

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **13** | **53.3** | **-** | |
| Width | Length | Height | |
| **13** | **53.3** | **37** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **57** | **800** | **0.1 - 10** | **26 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 57 / 10 | - | - | - |
| 10 | - | - | - |
| 26 - 8 | - | - | - |
| | | | |
| 0.1 - 10 | | | |
| 5 / 5.3 / 10 | | | |
| | | | |
| 0.5 - 6 | | | |
| 5 / 5.3 / 10 | | | |
| 1.00 mm² | | | |
| 2.50 mm² | | | |
| 6.00 mm² | | | |
| | | | |
| - / - | | | |
| | | | |
| M5 | | | |
| 2 - 2.2 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **RBO 5-F** | | **3058062** | 50 |
| **RBO 5-F/4** | | **3058237** | 1 |
| **RBO 5-F/6** | | **3058240** | 1 |
| **RBO 5-F/8** | | **3058253** | 1 |
| **RBO 5-F/12** | | **3059252** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **D-RSC 5-F** | | **3059647** | 50 |
| **FB 10-13** | 57 A¹) | **3059126** | 50 |
| **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **TS-KK 3** | | **2770215** | 50 |
| **AP RSC** | | **3058017** | 50 |
| **SHN 8** | | **1209868** | 10 |

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **13** | **79.9** | **-** | |
| Width | Length | Height | |
| **13** | **79.9** | **39.7** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **50** | **800²)** | **0.1 - 10** | **26 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800²) | - | - | - |
| 50 / 10 | - | - | - |
| 10 | - | - | - |
| 26 - 8 | - | - | - |
| | | | |
| 0.1 - 10 | | | |
| 5 / 5.3 / 10 | | | |
| | | | |
| 0.5 - 6 | | | |
| 5 / 5.3 / 10 | | | |
| 1.00 mm² | | | |
| 2.50 mm² | | | |
| 6.00 mm² | | | |
| | | | |
| M4 / 1.2 - 1.4 | | | |
| | | | |
| M5 | | | |
| 2 - 2.2 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **RBO 5-T-F** | | **3058169** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-RSC 5-T-F** | | **3059346** | 50 |
| **FB 10-13** | 57 A¹) | **3059126** | 50 |
| **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **TS-KK 3** | | **2770215** | 50 |
| **AP RSC-T** | | **3059139** | 50 |
| **SZG 0,9X6,5** | | **1205134** | 10 |

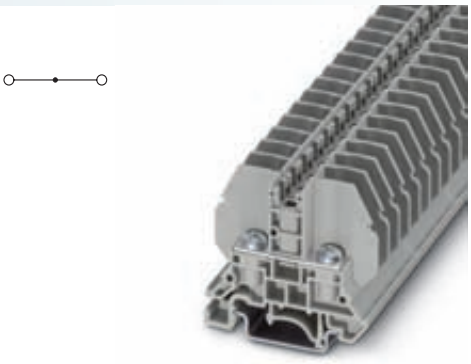
## RSC ... screw terminal blocks, for M4 and M5 ring and fork-type cable lugs

- Compact screw connection of ring and fork-type cable lugs
- Bridge shaft for potential distribution using standard screw bridges
- The isolator bridge bar supports switchable cross connections; the bridge screw therefore has the function of a live contact
- Mounting on standard DIN rails or directly in control boxes
- Cover profile that can be snapped directly onto the terminal blocks provides touch-proof protection
- Large-surface, seamless external and center labeling
- Screw nuts and current bars are latched in the insulating housing and cannot be removed

**Notes:**

[1]) 57 A for continuous bridging, 41 A for bridging between non-adjacent terminal blocks

[2]) Rated voltage for 630 V open disconnect point



**6 mm² feed-through terminal block, 2 M4 connections, can be bridged, mounting on NS 35 DIN rails**

### Technical data

| Dimensions | | Width | Length | Height NS 35/7.5 | |
|---|---|---|---|---|---|
| | [mm] | **9** | **53.3** | **47.1** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **32** | **800** | **0.1 - 6** | **26 - 10** |
| **Rated data** | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 800 | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 32 / 4 | - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 26 - 10 | - | - | - |
| **Connection capacity, DIN 46234** | | | | | |
| Cable lugs, DIN 46234 | [mm²] | 0.1 - 6 | | | |
| Connection bolt / hole diameter / width | [mm] | 4 / 4.3 / 8 | | | |
| **Connection capacity, DIN 46237** | | | | | |
| Cable lugs DIN 46237 | [mm²] | 0.5 - 2.5 | | | |
| Connection bolt / hole diameter / width | [mm] | 4 / 4.3 / 8 | | | |
| Color code | red | 1.00 mm² | | | |
| | blue | 2.50 mm² | | | |
| | yellow | | | | |
| **General data** | | | | | |
| Disconnect slide: Thread/tightening torque | - / [Nm] | - / - | | | |
| Bolt thread | | M4 | | | |
| Tightening torque | [Nm] | 1.2 - 1.4 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Bolt connection terminal,** for mounting on NS 32... or NS 35... | | gray | **RSC 4** | | **3058127** | 50 |
| **Test disconnect terminal block**, for mounting on NS 32... or NS 35... | | gray | | | | |

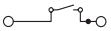
### Accessories

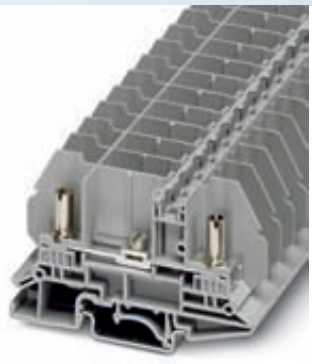
| | | | | | |
|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-RSC 5** | | **3058020** | 50 |
| **Fixed jumper,** for cross connections in the terminal center, can be separated, with 10 screws | | silver | **FB 10-9** | 32 A | **3059113** | 50 |
| **Isolator bridge bar,** can be separated, with 10 screws | | silver | **FB 10-9 ISO** | 24 A | **3059650** | 50 |
| **Separating disk,** for electrical separation of neighboring bridges, can be fitted later, no loss of pitch | | gray | **TS-KK 3** | | **2770215** | 50 |
| **Cover profile,** supply length 1 m | | transparent | **AP RSC** | | **3058017** | 50 |
| **Screwdriver** | | | **SZS 1,0X6,5** | | **1205079** | 10 |
| | | | **SZK PH2** | | **1205163** | 10 |

**Zack markers** for labeling the center groove
**Zack marker strip,** flat, for labeling the lateral groove

**ZB 9 (see online catalog)**
**ZBF 9 (see online catalog)**

**10 mm² feed-through terminal block, 2 M5 connections, can be bridged, mounting on NS 35 DIN rails**





**10 mm² test disconnect terminal block, 2 M5 connections, can be bridged, 4 mm test connections, mounting on NS 35 DIN rails**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **13** | **53.3** | **47.1** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **57** | **800** | **0.1 - 10** | **26 - 8** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 57 / 10 | - | - | - |
| 10 | - | - | - |
| 26 - 8 | - | - | - |
| 0.1 - 10 | | | |
| 5 / 5.3 / 10 | | | |
| 0.5 - 6 | | | |
| 5 / 5.3 / 10 | | | |
| 1.00 mm² | | | |
| 2.50 mm² | | | |
| 6.00 mm² | | | |
| - / - | | | |
| M5 | | | |
| 2 - 2.2 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **RSC 5** | | **3058143** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **D-RSC 5** | | **3058020** | 50 |
| **FB 10-13** | 57 A[1]) | **3059126** | 50 |
| **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **TS-KK 3** | | **2770215** | 50 |
| **AP RSC** | | **3058017** | 50 |
| **SZS 1,0X6,5** | | **1205079** | 10 |
| **SZK PH2** | | **1205163** | 10 |

**ZB 13 (see online catalog)**
**ZBF 13 (see online catalog)**

## Technical data

| Width | Length | Height NS 35/7.5 | |
|---|---|---|---|
| **13** | **79.9** | **49.8** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **50** | **800[2])** | **0.1 - 10** | **26 - 8** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800[2]) | - | - | - |
| 50 / 10 | - | - | - |
| 10 | - | - | - |
| 26 - 8 | - | - | - |
| 0.1 - 10 | | | |
| 5 / 5.3 / 10 | | | |
| 0.5 - 6 | | | |
| 5 / 5.3 / 10 | | | |
| 1.00 mm² | | | |
| 2.50 mm² | | | |
| 6.00 mm² | | | |
| M4 / 1.2 - 1.4 | | | |
| M5 | | | |
| 2 - 2.2 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

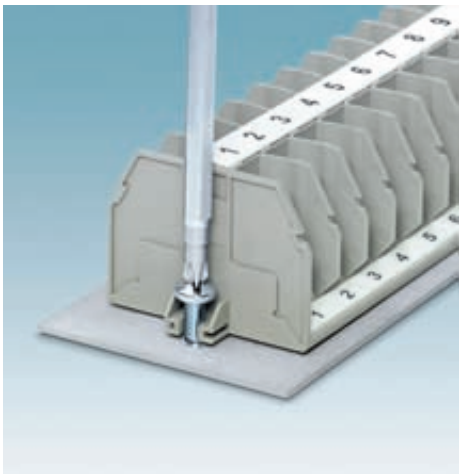
| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **RSC 5-T** | | **3058172** | 50 |

## Accessories

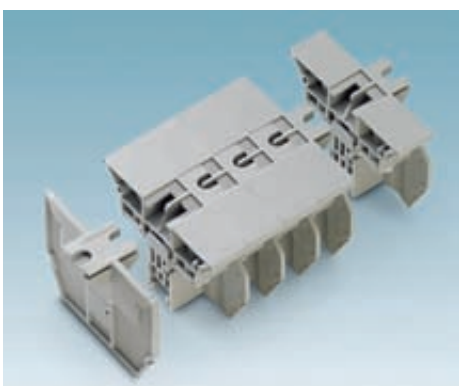
| | | | |
|---|---|---|---|
| **D-RSC 5-T** | | **3058046** | 50 |
| **FB 10-13** | 57 A[1]) | **3059126** | 50 |
| **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **TS-KK 3** | | **2770215** | 50 |
| **AP RSC-T** | | **3059139** | 50 |
| **SZG 0,9X6,5** | | **1205134** | 10 |

**ZB 13 (see online catalog)**
**ZBF 13 (see online catalog)**

## RSC ...-F screw terminal blocks for direct mounting, for M4 and M5 ring and fork-type cable lugs



- Flange terminal blocks for direct mounting in control boxes
- Compact screw connection of ring and fork-type cable lugs
- Bridge shaft for potential distribution using standard screw bridges
- The isolator bridge bar supports switchable cross connections; the bridge screw therefore has the function of a live contact
- Pre-assembled flange terminal blocks are available
- Cover profile that can be snapped directly onto the terminal blocks provides touch-proof protection
- Large-surface, seamless external and center labeling
- Screw nuts and current bars are latched in the insulating housing and cannot be removed
- Easy grouping of flange terminal blocks, see figure below



**Notes:**

[1]) 57 A for continuous bridging, 41 A for bridging between non-adjacent terminal blocks

[2]) Rated voltage for 630 V open disconnect point

**6 mm² feed-through terminal block, 2 M4 connections, can be bridged, for direct mounting**

### Technical data

| Dimensions | | | | | |
|---|---|---|---|---|---|
| | [mm] | Width | Length | Height | |
| | | 9 | 53.3 | 37 | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | 32 | 800[2]) | 0.1 - 6 | 26 - 10 |

| Rated data | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
|---|---|---|---|---|---|
| Rated voltage | [V] | 800[2]) | - | - | - |
| Nominal current / cross-section | [A] / [mm²] | 32 / 4 | - | - | - |
| Rated cross-section | [mm²] | 4 | - | - | - |
| Cross-section range | AWG | 26 - 10 | - | - | - |
| **Connection capacity, DIN 46234** | | | | | |
| Cable lugs, DIN 46234 | [mm²] | 0.1 - 6 | | | |
| Connection bolt / hole diameter / width | [mm] | 4 / 4.3 / 8 | | | |
| **Connection capacity, DIN 46237** | | | | | |
| Cable lugs DIN 46237 | [mm²] | 0.5 - 2.5 | | | |
| Connection bolt / hole diameter / width | [mm] | 4 / 4.3 / 8 | | | |
| Color code | red | 1.00 mm² | | | |
| | blue | 2.50 mm² | | | |
| | yellow | | | | |
| **General data** | | | | | |
| Disconnect slide: Thread/tightening torque | - / [Nm] | - / - | | | |
| Bolt thread | | M4 | | | |
| Tightening torque | [Nm] | 1.2 - 1.4 | | | |
| Insulating material | | PA | | | |
| Inflammability class acc. to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Bolt connection/flange terminal block,** for direct mounting | | gray | **RSC 4-F** | | **3058130** | 50 |
| Block, 4-pos. | | gray | **RSC 4-F/4** | | **3059171** | 1 |
| Block, 6-pos. | | gray | **RSC 4-F/6** | | **3059184** | 1 |
| Block, 8-pos. | | gray | **RSC 4-F/8** | | **3059197** | 1 |
| Block, 12-pos. | | gray | **RSC 4-F/12** | | **3059207** | 1 |
| **Test disconnect terminal block**, with flange, for direct mounting | | gray | | | | |

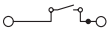
### Accessories

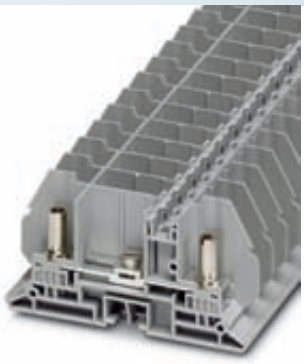
| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover flange** | | gray | **D-RSC 5-F** | | **3059647** | 50 |
| **Fixed jumper,** for cross connections in the terminal center, can be separated, with 10 screws | | silver | **FB 10-9** | 32 A | **3059113** | 50 |
| **Isolator bridge bar,** can be separated, with 10 screws | | silver | **FB 10-9 ISO** | 24 A | **3059650** | 50 |
| **Separating disk,** for electrical separation of neighboring bridges, can be fitted later, no loss of pitch | | gray | **TS-KK 3** | | **2770215** | 50 |
| **Cover profile,** supply length 1 m | | transparent | **AP RSC** | | **3058017** | 50 |
| **Screwdriver** | | | **SZS 1,0X6,5** | | **1205079** | 10 |
| | | | **SZK PH2** | | **1205163** | 10 |

**Zack markers** for labeling the center groove
**Zack marker strip,** flat, for labeling the lateral groove

**ZB 9 (see online catalog)**
**ZBF 9 (see online catalog)**

**10 mm² feed-through terminal block, 2 M5 connections, can be bridged, for direct mounting**





**10 mm² test disconnect terminal block, 2 M5 connections, can be bridged, 4 mm test connections, for direct mounting**

## Technical data

| Width | Length | Height | |
|---|---|---|---|
| **13** | **53.3** | **37** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **57** | **800** | **0.1 - 10** | **26 - 8** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800 | - | - | - |
| 57 / 10 | - | - | - |
| 10 | - | - | - |
| 26 - 8 | - | - | - |
| 0.1 - 10 | | | |
| 5 / 5.3 / 10 | | | |
| 0.5 - 6 | | | |
| 5 / 5.3 / 10 | | | |
| 1.00 mm² | | | |
| 2.50 mm² | | | |
| 6.00 mm² | | | |
| - / - | | | |
| M5 | | | |
| 2 - 2.2 | | | |
| PA | | | |
| V0 | | | |

## Technical data

| Width | Length | Height | |
|---|---|---|---|
| **13** | **79.9** | **39.7** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **50** | **800²)** | **0.1 - 10** | **26 - 8** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 800²) | - | - | - |
| 50 / 10 | - | - | - |
| 10 | - | - | - |
| 26 - 8 | - | - | - |
| 0.1 - 10 | | | |
| 5 / 5.3 / 10 | | | |
| 0.5 - 6 | | | |
| 5 / 5.3 / 10 | | | |
| 1.00 mm² | | | |
| 2.50 mm² | | | |
| 6.00 mm² | | | |
| M4 / 1.2 - 1.4 | | | |
| M5 | | | |
| 2 - 2.2 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **RSC 5-F** | | **3058156** | 50 |
| **RSC 5-F/4** | | **3059210** | 1 |
| **RSC 5-F/6** | | **3059223** | 1 |
| **RSC 5-F/8** | | **3059236** | 1 |
| **RSC 5-F/12** | | **3059249** | 1 |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **RSC 5-T-F** | | **3058334** | 50 |

## Accessories

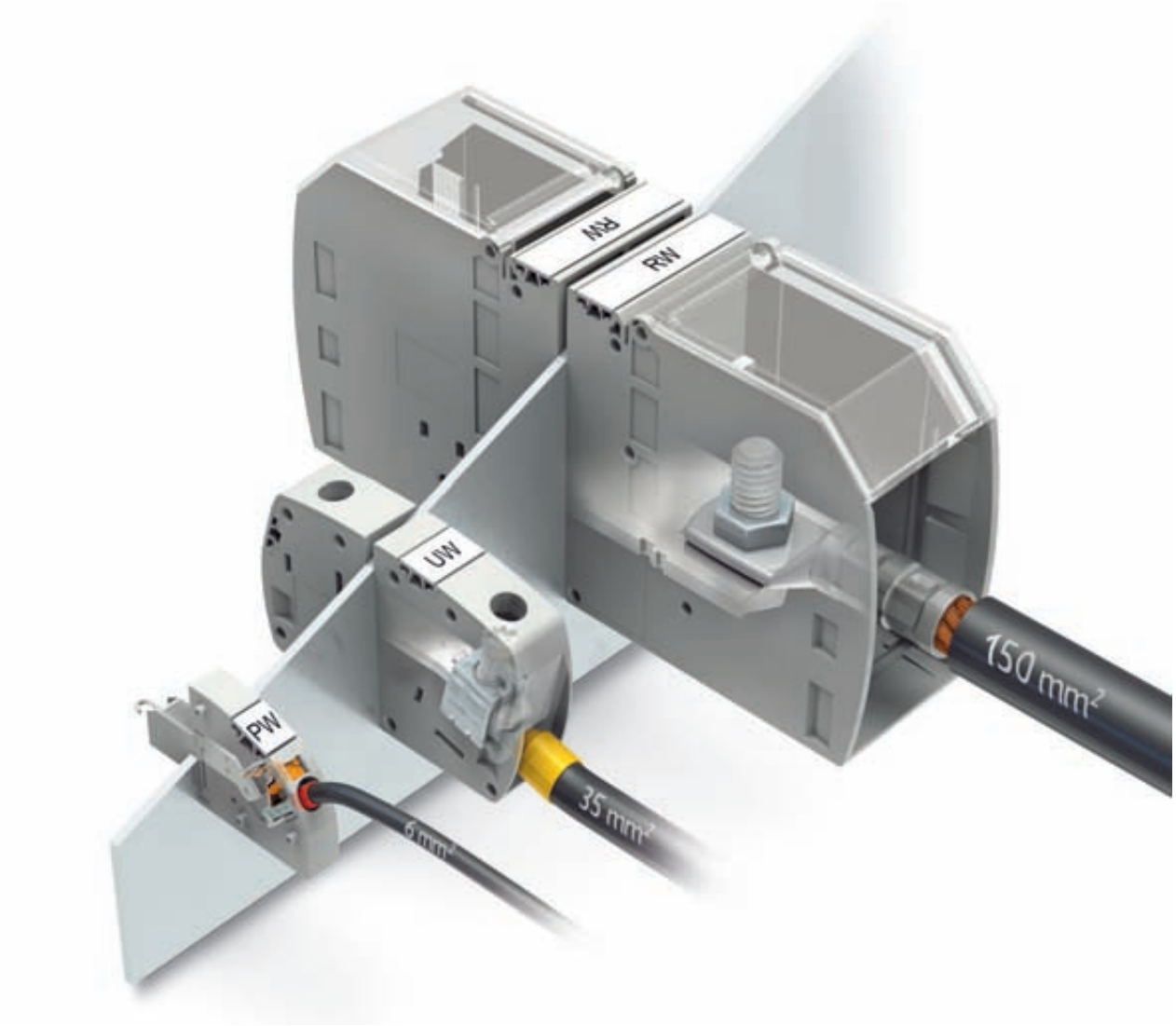
| | | | |
|---|---|---|---|
| **D-RSC 5-F** | | **3059647** | 50 |
| **FB 10-13** | 57 A¹) | **3059126** | 50 |
| **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **TS-KK 3** | | **2770215** | 50 |
| **AP RSC** | | **3058017** | 50 |
| **SZS 1,0X6,5** | | **1205079** | 10 |
| **SZK PH2** | | **1205163** | 10 |

**ZB 13 (see online catalog)**
**ZBF 13 (see online catalog)**

## Accessories

| | | | |
|---|---|---|---|
| **D-RSC 5-T-F** | | **3059346** | 50 |
| **FB 10-13** | 57 A¹) | **3059126** | 50 |
| **FB 10-13 ISO** | 24 A | **3059663** | 50 |
| **TS-KK 3** | | **2770215** | 50 |
| **AP RSC-T** | | **3059139** | 50 |
| **SZG 0,9X6,5** | | **1205134** | 10 |

**ZB 13 (see online catalog)**
**ZBF 13 (see online catalog)**

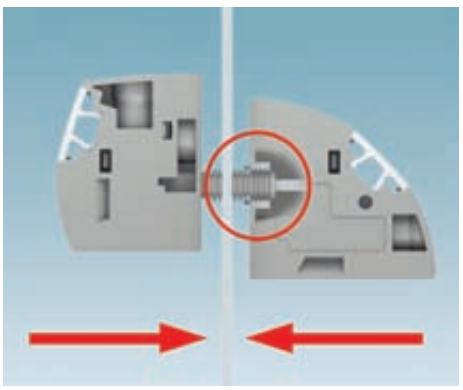


**Elegant wall insertion**

With their compact design, the new generation of high-current feed-through terminal blocks lets you choose the ideal connection method.

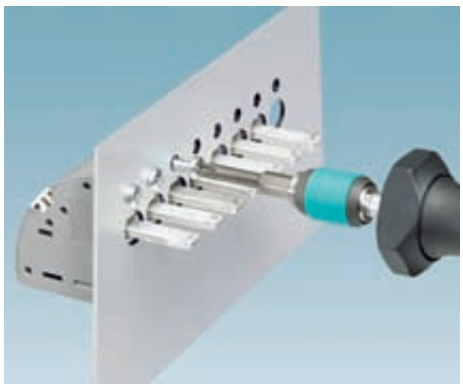
**Can be used in any application up to UL 600 V**

The product range was specifically developed for devices and applications at the upper end of the power range. Their performance features ensure they can be used anywhere in the world.



**Simple mounting**

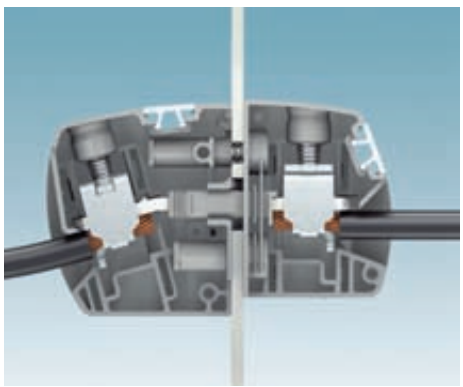
Terminal blocks consist of an internal and an external element. These elements pass through the housing panel and snap together without the need for tools or other complex procedures. The precise engagement mechanism makes for a tight fit, however thick the panel may be.



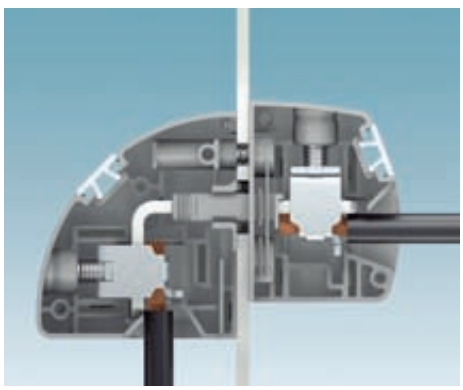
Alternative fixing options for higher levels of mechanical strain are provided by screws, ...

... rivets,

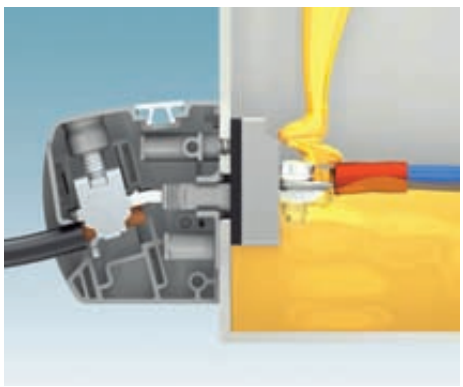
... and flanges.



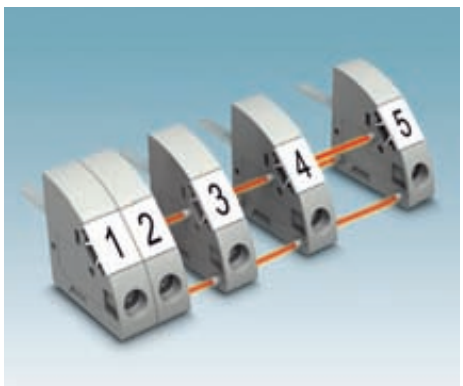
To ensure conductors are routed in an effective and space-saving manner whatever the mounting position, high-current feed-through terminal blocks for horizontal and ...



... vertical conductor routing are available.



The molded versions are specifically designed for the requirements associated with molded devices. They ensure maximum tightness of seal, even with low-viscosity sealing compounds.




The various engagement pin versions can be used to create pre-assembled blocks and speed up assembly work.

The universal marking groove, an integral part of the housing design, enables clear marking of the device connection.

The CLIPLINE selector guides you quickly and easily to the required terminal block for your application. Our 2D and 3D CAD data supports your integrated design process.

## UW... 4 high-current feed-through terminal blocks with screw connection

- Universal screw connection with screw locking
- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Touch-proof insulating housing in a new design
- Spacer plates increase air and creepage distances

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

[1]) The voltage specifications apply for mounting on a conductive housing panel and when using spacer plates.

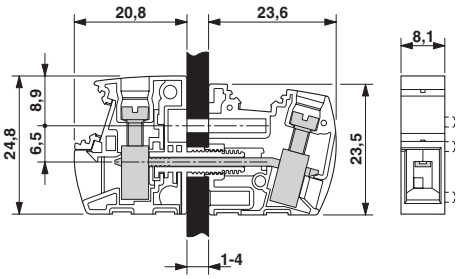
**4/6 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

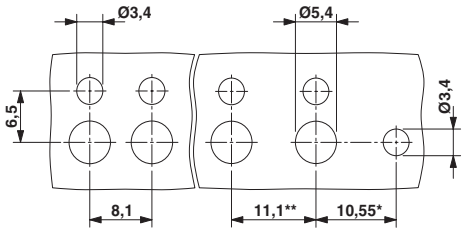
| For all types | Type |
|---|---|
| | Screwdriver<br>**SZS 0,6 x 3,5**<br>**Order No.**<br>**1205053** |
| | Insertion bridge<br>**EBS 10-8**<br>**Order No.**<br>**3118135** |
| **For UW 4 .../S** | |
| | Spacer plate, 3 mm thick<br>**DP-UW 4**<br>**Order No.**<br>**3074499** |
| | Flange plate<br>**UW 4-F**<br>**Order No.**<br>**3074512** |
| **For UWV 4 .../S** | |
| | Spacer plate, 3 mm thick<br>**DP-UWV 4**<br>**Order No.**<br>**3074509** |
| | Flange plate<br>**UWV 4-F**<br>**Order No.**<br>**3074596** |

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 41 / 6 // 32 / 4 | | |
| Rated voltage | [V] | 500[1]) | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 6 / 0.2 - 4 / 24 - 10 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 4 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.25 - 4 | | |
| Multi-conductor connection capacity (two conductors with the same cross-section) | | | | |
| Solid / stranded | [mm²] | 0.2 - 1.5 / 0.2 - 1.5 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 1.5 | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 0.5 - 2.5 | | |
| Cross-section with insertion bridge (solid/stranded) | [mm²] | 1.5 - 4 / 1.5 - 2.5 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 500[1]) | 630[1]) | 1000[1]) |
| Rated surge voltage | [kV] | 6[1]) | 6[1]) | 6[1]) |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 300[1]) | 300[1]) | 600[1]) |
| Nominal current | [A] | 30 | 30 | 5 |
| Connection capacity AWG | AWG | 24 - 10 | 24 - 10 | 24 - 10 |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 9 | | |
| Terminal sleeve: Thread/tightening torque | - / [Nm] | M3 / 0.6 - 0.8 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 4 | | |

### Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **UW 4** | **3073306** | 50 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **UW 4/S** | **3073319** | 50 |

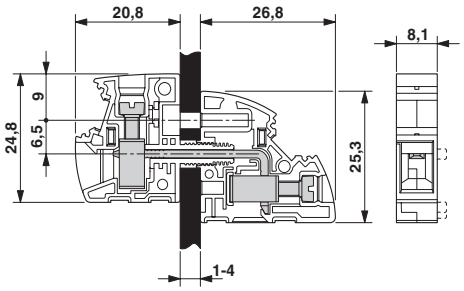
**ZB 8.../ZBF 8... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**4/6 mm² feed-through terminal block, vertical conductor connection**

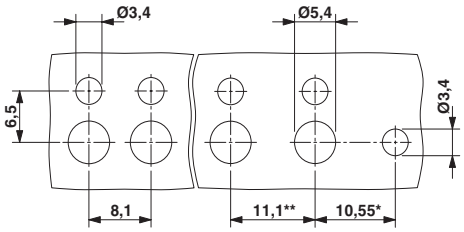
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **UWV 4** | **3073380** | 50 |
| **Feed-through terminal block, with engagement pin** | | |
| **UWV 4/S** | **3073393** | 50 |

**ZB 8.../ZBF 8... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

## UW... 10... high-current feed-through terminal blocks with screw connection

- Universal screw connection with screw locking
- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Touch-proof insulating housing in a new design
- Spacer plates increase air and creepage distances

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

[1]) The voltage specifications apply for mounting on a conductive housing panel and when using spacer plates.

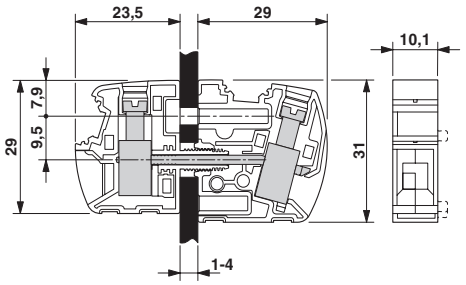
**10/16 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

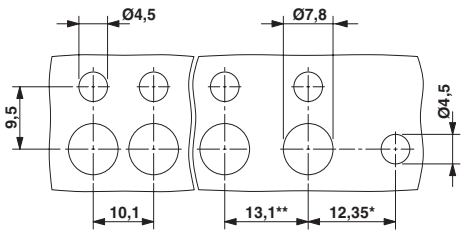
| For all types | Type | |
|---|---|---|
| | Screwdriver<br>**SZS 1,0 x 4,0**<br>**Order No.**<br>**1205066** | |
| | Insertion bridge<br>**EBS 10-10**<br>**Order No.**<br>**0203137** | |
| **For UW 10 .../S** | | |
| | Spacer plate, 3 mm thick<br>**DP-UW 10**<br>**Order No.**<br>**3074389** | |
| | Flange plate<br>**UW 10-F**<br>**Order No.**<br>**3074525** | |
| **For UWV 10 .../S** | | |
| | Spacer plate, 3 mm thick<br>**DP-UWV 10**<br>**Order No.**<br>**3074415** | |
| | Flange plate<br>**UWV 10-F**<br>**Order No.**<br>**3074606** | |

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 76 / 16 // 57 / 10 | | |
| Rated voltage | [V] | 500[1]) | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.5 - 16 / 0.5 - 10 / 20 - 6 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.5 - 10 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.5 - 10 | | |
| Multi-conductor connection capacity (two conductors with the same cross-section) | | | | |
| Solid / stranded | [mm²] | 0.5 - 4 / 0.5 - 4 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.5 - 2.5 | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 0.5 - 6 | | |
| Cross-section with insertion bridge (solid/stranded) | [mm²] | 2.5 - 10 / 2.5 - 10 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 500[1]) | 630[1]) | 1000[1]) |
| Rated surge voltage | [kV] | 6[1]) | 6[1]) | 6[1]) |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 300[1]) | 300[1]) | 600[1]) |
| Nominal current | [A] | 65 | 65 | 5 |
| Connection capacity AWG | AWG | 20 - 6 | 20 - 6 | 20 - 6 |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 11 | | |
| Terminal sleeve: Thread/tightening torque | - / [Nm] | M4 / 1.5 - 1.8 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 4 | | |

### Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **UW 10** | **3073322** | 50 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **UW 10/S** | **3073335** | 50 |

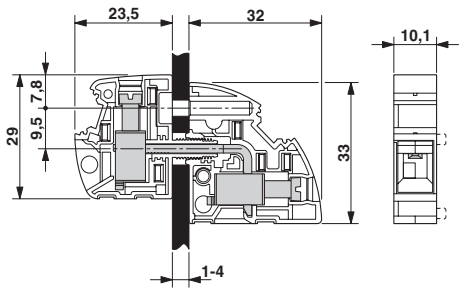
**ZB 10.../ZBF 10... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**10/16 mm² feed-through terminal block, vertical conductor connection**

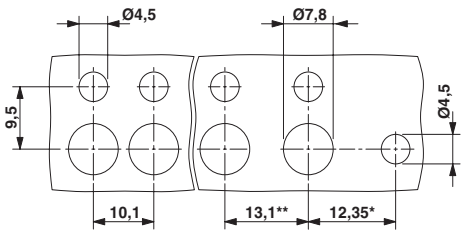
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **UWV 10** | **3073403** | 50 |
| **Feed-through terminal block, with engagement pin** | | |
| **UWV 10/S** | **3073416** | 50 |

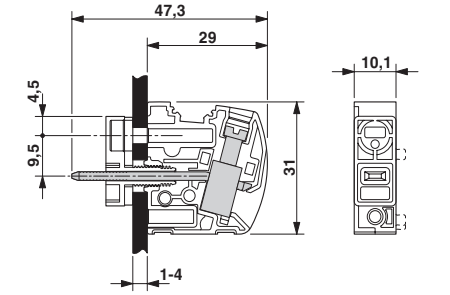
**ZB 10.../ZBF 10... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**10/16 mm² molded feed-through terminal block, solder connection, sealing plate with sponge rubber seal, horizontal conductor connection**

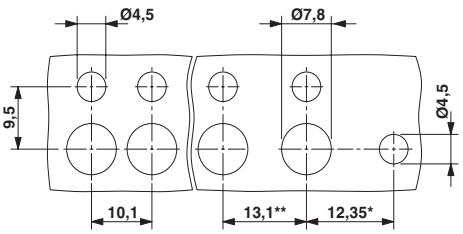
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **UW 10-POT** | **3073461** | 50 |
| **Feed-through terminal block, with engagement pin** | | |
| **UW 10-POT/S** | **3073474** | 50 |

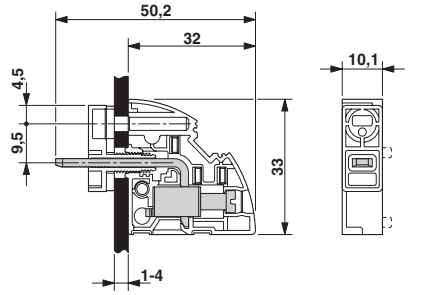
**ZB 10.../ZBF 10... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**10/16 mm² molded feed-through terminal block, solder connection, sealing plate with sponge rubber seal, vertical conductor connection**

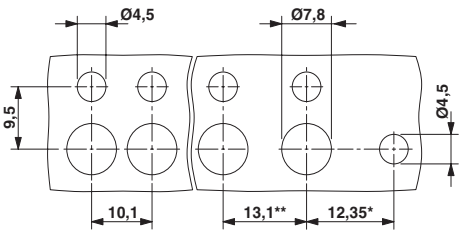
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate



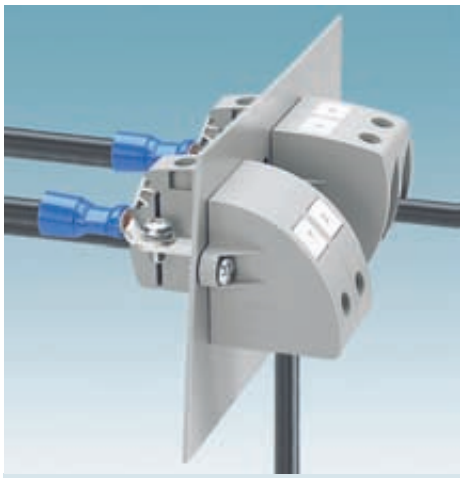

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **UWV 10-POT** | **3073526** | 50 |
| **Feed-through terminal block, with engagement pin** | | |
| **UWV 10-POT/S** | **3073539** | 50 |

**ZB 10.../ZBF 10... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

## UW... 16... high-current feed-through terminal blocks with screw connection



- Universal screw connection with screw locking
- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Touch-proof insulating housing in a new design
- Spacer plates increase air and creepage distances

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

[1]) The voltage specifications apply for mounting on a conductive housing panel and when using spacer plates.

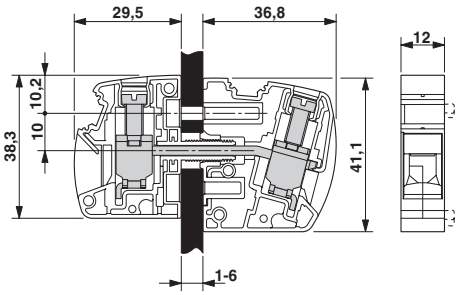
**16/25 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

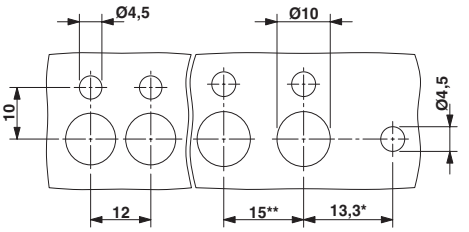
| For all types | Type |
|---|---|
| | Screwdriver<br>**SZS 1,0 x 4,0**<br>**Order No.**<br>**1205066** |
| **For UW 16 .../S** | |
| | Spacer plate, 3 mm thick<br>**DP-UW 16**<br>**Order No.**<br>**3074392** |
| | Flange plate<br>**UW 16-F**<br>**Order No.**<br>**3074538** |
| **For UWV 16 .../S** | |
| | Spacer plate, 3 mm thick<br>**DP-UWV 16**<br>**Order No.**<br>**3074428** |
| | Flange plate<br>**UWV 16-F**<br>**Order No.**<br>**3074619** |

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 101 / 25 // 76 / 16 | | |
| Rated voltage | [V] | 800[1]) | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 6 - 25 / 6 - 16 / 10 - 4 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 6 - 16 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 6 - 16 | | |
| Multi-conductor connection capacity (two conductors with the same cross-section) | | | | |
| Solid / stranded | [mm²] | 2.5 - 10 / 2.5 - 6 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 4 - 6 | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 4 - 6 | | |
| Cross-section with insertion bridge (solid/stranded) | [mm²] | - / - | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 800[1]) | 1000[1]) | 1000[1]) |
| Rated surge voltage | [kV] | 8[1]) | 8[1]) | 8[1]) |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600[1]) | 600[1]) | - |
| Nominal current | [A] | 85 | 85 | - |
| Connection capacity AWG | AWG | 10 - 4 | 10 - 4 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 16 | | |
| Terminal sleeve: Thread/tightening torque | - / [Nm] | M5 / 2.5 - 3 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

### Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **UW 16** | **3073348** | 50 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **UW 16/S** | **3073351** | 50 |

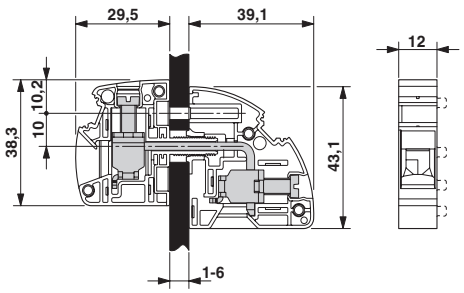
**ZB 12.../ZBF 12... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**16/25 mm² feed-through terminal block, vertical conductor connection**

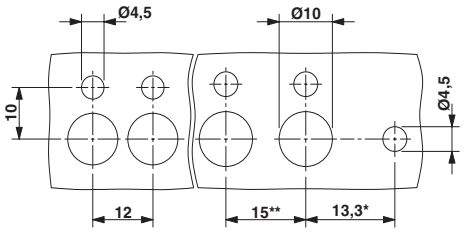
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| UWV 16 | 3073419 | 50 |
| **Feed-through terminal block, with engagement pin** | | |
| UWV 16/S | 3073432 | 50 |

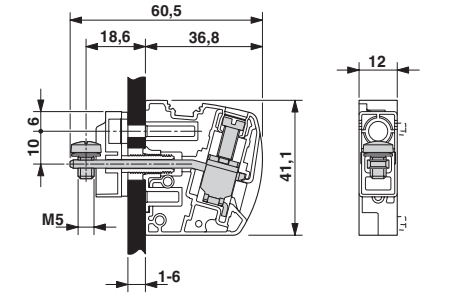
ZB 12.../ZBF 12... marking material (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

**16/25 mm² molded feed-through terminal block, M5 screw connection, sealing plate with sponge rubber seal, horizontal conductor connection**

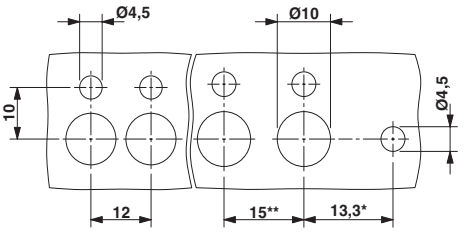
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| UW 16-POT | 3073487 | 50 |
| **Feed-through terminal block, with engagement pin** | | |
| UW 16-POT/S | 3073490 | 50 |

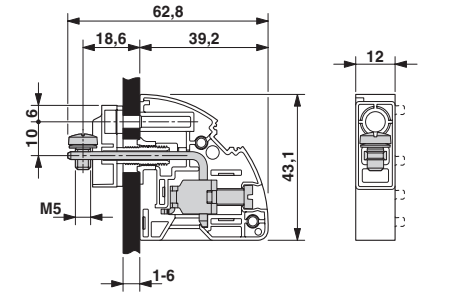
ZB 12.../ZBF 12... marking material (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

**16/25 mm² molded feed-through terminal block, M5 screw connection, sealing plate with sponge rubber seal, vertical conductor connection**

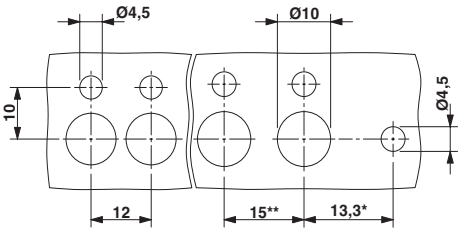
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| UWV 16-POT | 3073542 | 50 |
| **Feed-through terminal block, with engagement pin** | | |
| UWV 16-POT/S | 3073555 | 50 |

ZB 12.../ZBF 12... marking material (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

## UW... 25... high-current feed-through terminal blocks with screw connection

- Universal screw connection with screw locking
- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Touch-proof insulating housing in a new design
- Spacer plates increase air and creepage distances

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

[1]) The voltage specifications apply for mounting on a conductive housing panel and when using spacer plates.

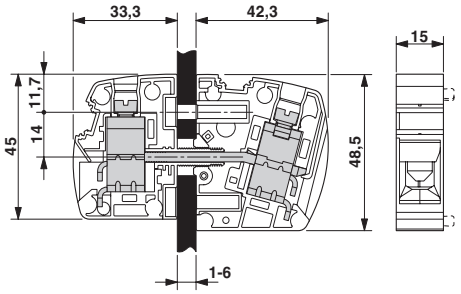
**25/35 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

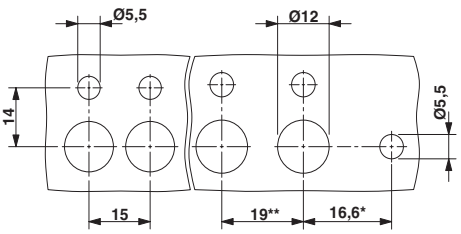
| For all types | Type |
|---|---|
| | Screwdriver<br>**SZS 1,0 x 6,5**<br>**Order No.**<br>**1205079** |
| **For UW 25 .../S** | |
| | Spacer plate, 4 mm thick<br>**DP-UW 25**<br>**Order No.**<br>**3074402** |
| | Flange plate<br>**UW 25-F**<br>**Order No.**<br>**3074541** |
| **For UWV 25 .../S** | |
| | Spacer plate, 4 mm thick<br>**DP-UWV 25**<br>**Order No.**<br>**3074431** |
| | Flange plate<br>**UWV 25-F**<br>**Order No.**<br>**3074622** |

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 125 / 35 // 101 / 25 | | |
| Rated voltage | [V] | 800[1]) | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 6 - 35 / 10 - 25 / 10 - 2 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 4 - 25 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 4 - 25 | | |
| Multi-conductor connection capacity (two conductors with the same cross-section) | | | | |
| Solid / stranded | [mm²] | 2.5 - 10 / 4 - 10 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 2.5 - 10 | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 2.5 - 10 | | |
| Cross-section with insertion bridge (solid/stranded) | [mm²] | - / - | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 800[1]) | 1000[1]) | 1000[1]) |
| Rated surge voltage | [kV] | 8[1]) | 8[1]) | 8[1]) |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600[1]) | 600[1]) | - |
| Nominal current | [A] | 115 | 115 | - |
| Connection capacity AWG | AWG | 10 - 2 | 10 - 2 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 19 | | |
| Terminal sleeve: Thread/tightening torque | - / [Nm] | M5 / 4 - 4.5 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

### Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **UW 25** | **3073364** | 25 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **UW 25/S** | **3073377** | 25 |

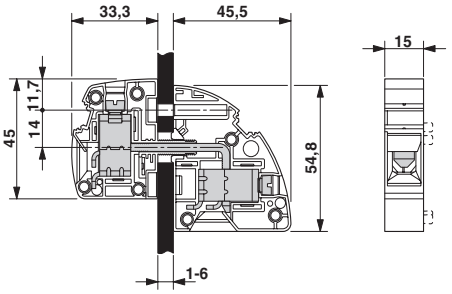
**ZB 15.../ZBF 15... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**25/35 mm² feed-through terminal block, vertical conductor connection**

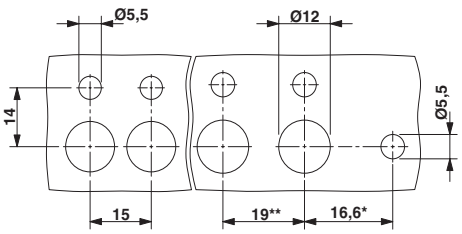
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **UWV 25** | **3073445** | 25 |
| **Feed-through terminal block, with engagement pin** | | |
| **UWV 25/S** | **3073458** | 25 |

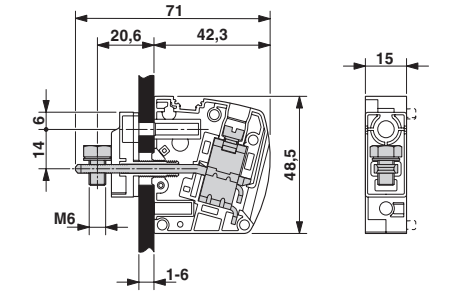
**ZB 15.../ZBF 15... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**25/35 mm² molded feed-through terminal block, M6 screw connection, sealing plate with sponge rubber seal, horizontal conductor connection**

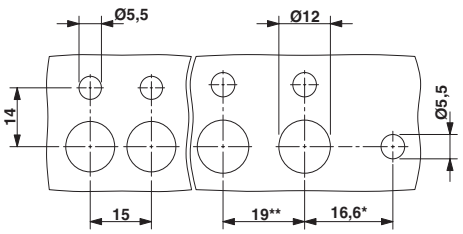
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **UW 25-POT** | **3073500** | 25 |
| **Feed-through terminal block, with engagement pin** | | |
| **UW 25-POT/S** | **3073513** | 25 |

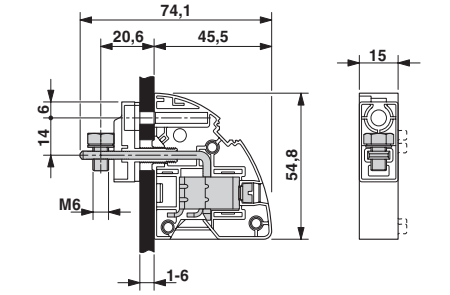
**ZB 15.../ZBF 15... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**25/35 mm² molded feed-through terminal block, M6 screw connection, sealing plate with sponge rubber seal, vertical conductor connection**

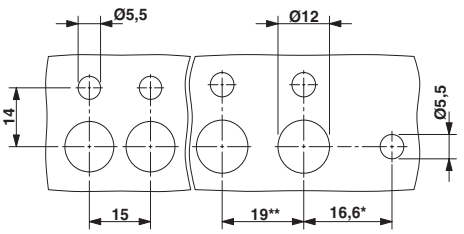
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **UW...-F** flange plate
** Dimensions when using the **DP-UW...** spacer plate



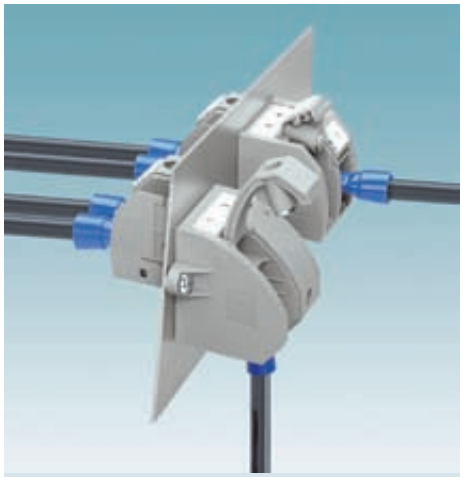

### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **UWV 25-POT** | **3073568** | 25 |
| **Feed-through terminal block, with engagement pin** | | |
| **UWV 25-POT/S** | **3073571** | 25 |

**ZB 15.../ZBF 15... marking material (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

# RW... 5... high-current feed-through terminal blocks with bolt connection

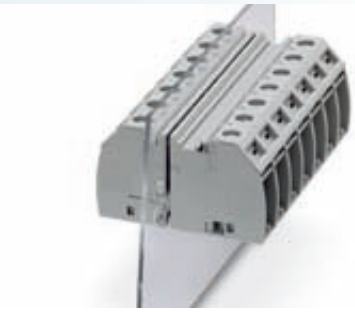


- Quick and easy conductor connection thanks to hinged cover flaps with captive clamping nut
- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Touch-proof insulating housing in a new design
- Spring-loaded spacers protect the bolt connection against loosening

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.



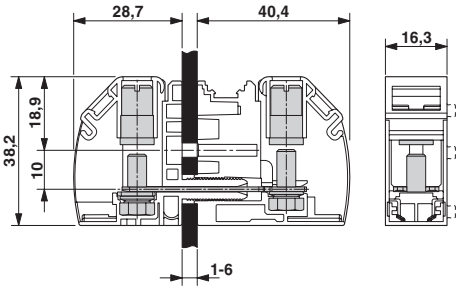
**16 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

## Accessories

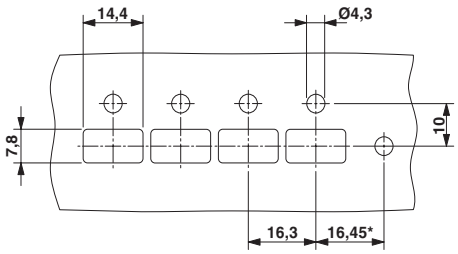
| For all types | Type |
|---|---|
| | Screwdriver<br>**SZS 0,6 x 3,5**<br>**Order No.**<br>**1205053** |
| **For RW 5 .../S** | |
| | Flange plate<br>**RW 5-F**<br>**Order No.**<br>**3075155** |
| **For RWV 5 .../S** | |
| | Flange plate<br>**RWV 5-F**<br>**Order No.**<br>**3075317** |

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate




## Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 76 / 16 // 76 / 16 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity, DIN 46234 | | | | |
| Cable lugs, DIN 46234 | [mm²] | 0.5 - 16 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 11 | | |
| Connection capacity DIN 46235 | | | | |
| Cable lugs DIN 46235 | [mm²] | 6 - 10 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 9 | | |
| Connection capacity, DIN 46237 | | | | |
| Cable lugs DIN 46237 | [mm²] | 1 - 6 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 10 | | |
| Color code | red | 1.00 mm² | | |
| | blue | 2.50 mm² | | |
| | yellow | 6.00 mm² | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600 | 600 | - |
| Nominal current | [A] | 65 | 65 | - |
| Connection capacity AWG | AWG | 26 - 10 | 26 - 10 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Bolt thread/tightening torque | - / [Nm] | M5 / 2.5 - 3 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

## Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **RW 5** | **3073584** | 10 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **RW 5/S** | **3073597** | 10 |

**ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)**

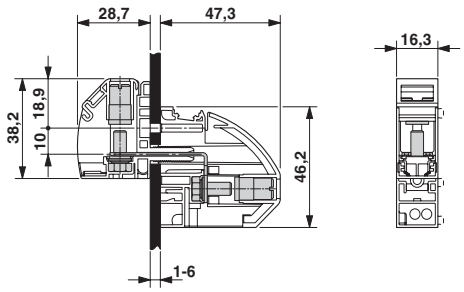
**ZB 12.../ZBF 12... marking material for labeling the lateral groove (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**16 mm² feed-through terminal block, vertical conductor connection**

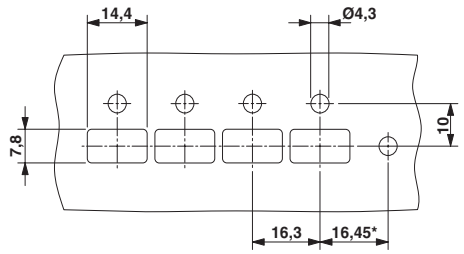
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWV 5 | 3073746 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWV 5/S | 3073759 | 10 |

ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)

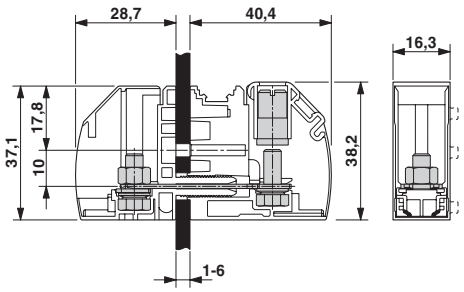
ZB 12.../ZBF 12... marking material for labeling the lateral groove (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

**16 mm² molded feed-through terminal block, M5 bolt connection, sealing plate with sponge rubber seal, horizontal conductor connection**

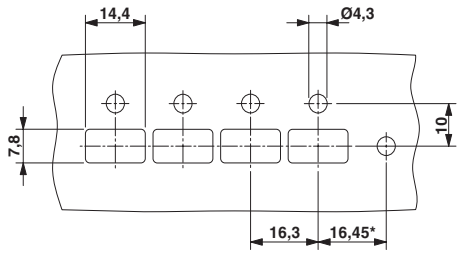
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RW 5-POT | 3073665 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RW 5-POT/S | 3073678 | 10 |

ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)

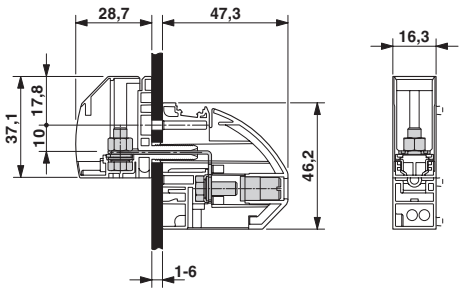
ZB 12.../ZBF 12... marking material for labeling the lateral groove (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

**16 mm² molded feed-through terminal block, M5 bolt connection, sealing plate with sponge rubber seal, vertical conductor connection**

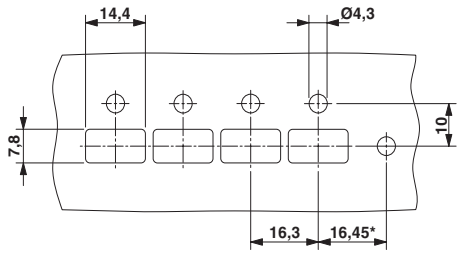
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate



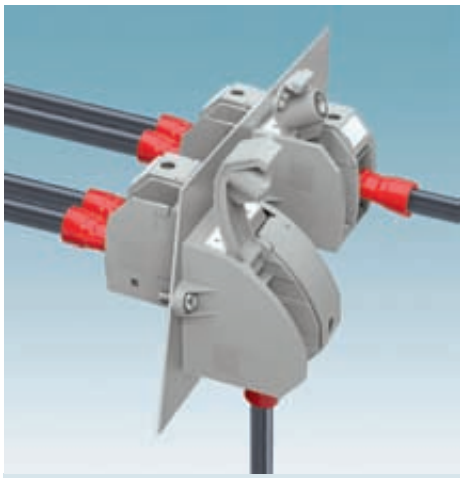

### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWV 5-POT | 3073788 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWV 5-POT/S | 3073791 | 10 |

ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

# RW... 8... high-current feed-through terminal blocks with bolt connection



- Quick and easy conductor connection thanks to hinged cover flaps with captive clamping nut
- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Touch-proof insulating housing in a new design
- Spring-loaded spacers protect the bolt connection against loosening

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

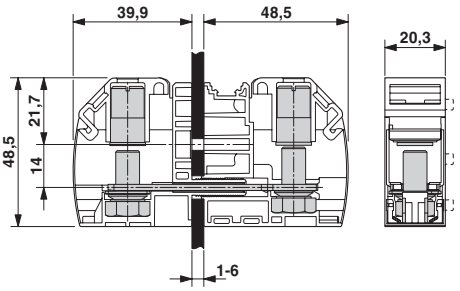
**35 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

## Accessories

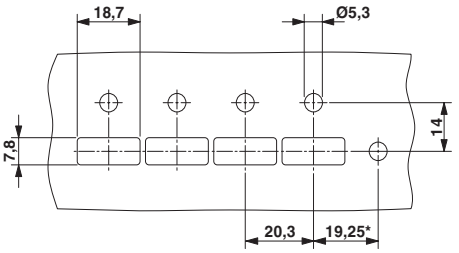
| For all types | Type |
|---|---|
| | Screwdriver<br>**SZS 1,0 x 4,0**<br>**Order No.**<br>**1205066** |
| **For RW 8 .../S** | |
| | Flange plate<br>**RW 8-F**<br>**Order No.**<br>**3075171** |
| **For RWV 8 .../S** | |
| | Flange plate<br>**RWV 8-F**<br>**Order No.**<br>**3075333** |

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate




## Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 125 / 35 // 125 / 35 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity, DIN 46234 | | | | |
| Cable lugs, DIN 46234 | [mm²] | 2.5 - 35 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 16 | | |
| Connection capacity DIN 46235 | | | | |
| Cable lugs DIN 46235 | [mm²] | 16 - 25 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 14 | | |
| Connection capacity, DIN 46237 | | | | |
| Cable lugs DIN 46237 | [mm²] | 2.5 - 6 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 14 | | |
| Color code | red | - | | |
| | blue | 2.50 mm² | | |
| | yellow | 6.00 mm² | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600 | 600 | - |
| Nominal current | [A] | 115 | 115 | - |
| Connection capacity AWG | AWG | 14 - 2 | 14 - 2 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Bolt thread/tightening torque | - / [Nm] | M8 / 4.5 - 5 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

## Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **RW 8** | **3073607** | 10 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **RW 8/S** | **3073610** | 10 |

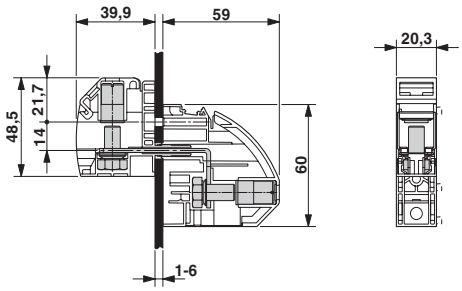
**ZB 20,3 marking material for labeling the center groove (see online catalog)**
**ZB 16.../ZBF 16... marking material for labeling the lateral groove (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**35 mm² feed-through terminal block, vertical conductor connection**

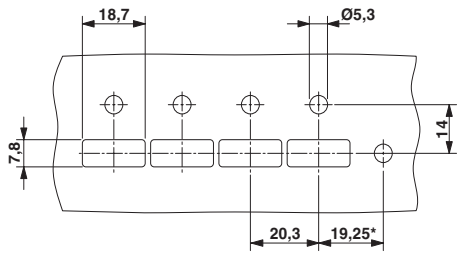
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWV 8 | 3073762 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWV 8/S | 3073775 | 10 |

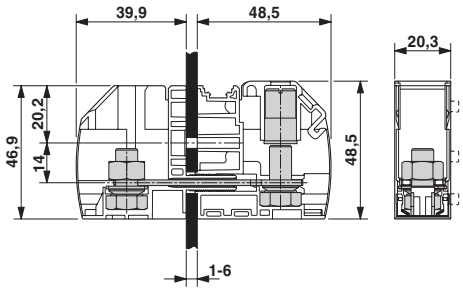
**ZB 20,3 marking material for labeling the center groove (see online catalog)**
**ZB 16.../ZBF 16... marking material for labeling the lateral groove (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**35 mm² molded feed-through terminal block, M8 bolt connection, sealing plate with sponge rubber seal, horizontal conductor connection**

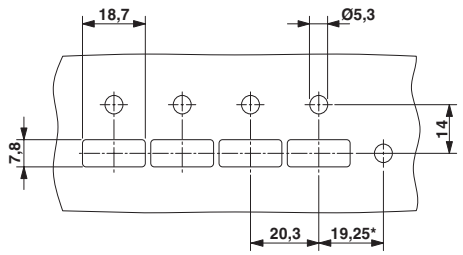
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RW 8-POT | 3073681 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RW 8-POT/S | 3073694 | 10 |

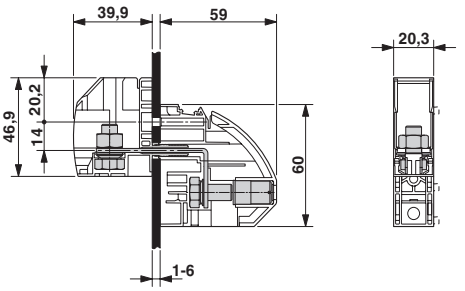
**ZB 20,3 marking material for labeling the center groove (see online catalog)**
**ZB 16.../ZBF 16... marking material for labeling the lateral groove (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**35 mm² molded feed-through terminal block, M8 bolt connection, sealing plate with sponge rubber seal, vertical conductor connection**

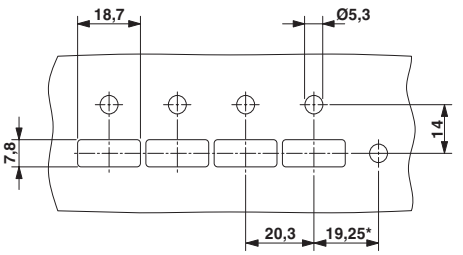
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate



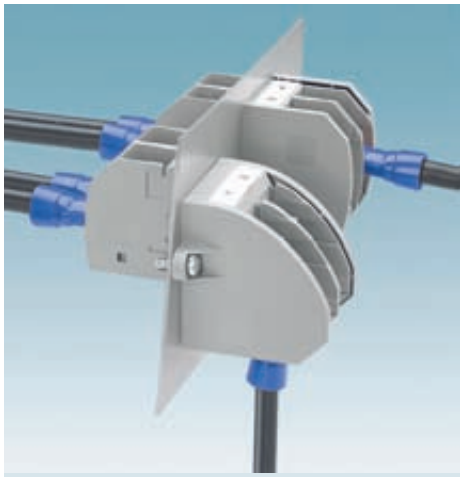

### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWV 8-POT | 3073801 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWV 8-POT/S | 3073814 | 10 |

**ZB 20,3 marking material for labeling the center groove (see online catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

## RWO... 5... high-current feed-through terminal blocks with bolt connection in open housing



- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Spring-loaded spacers protect the bolt connection against loosening

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

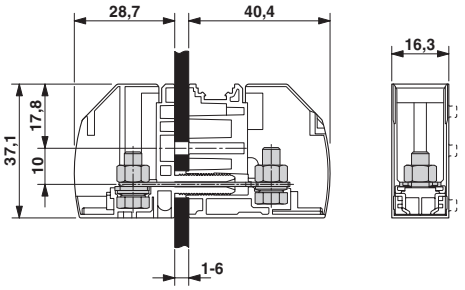
16 mm² feed-through terminal block, horizontal conductor connection

Applied for:
UL

### Accessories

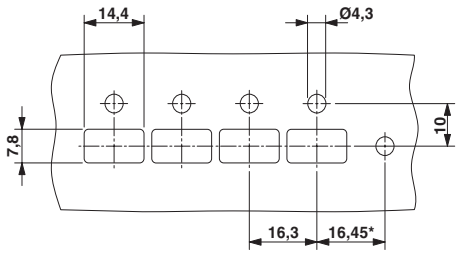
| For all types | Type |
|---|---|
| | Socket wrench<br>**SHN 8**<br>**Order No.**<br>**1209868** |
| **For RWO 5 .../S** | |
| | Flange plate<br>**RW 5-F**<br>**Order No.**<br>**3075155** |
| **For RWOV 5 .../S** | |
| | Flange plate<br>**RWV 5-F**<br>**Order No.**<br>**3075317** |

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 76 / 16 // 76 / 16 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity, DIN 46234 | | | | |
| Cable lugs, DIN 46234 | [mm²] | 0.5 - 16 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 11 | | |
| Connection capacity DIN 46235 | | | | |
| Cable lugs DIN 46235 | [mm²] | 6 - 10 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 9 | | |
| Connection capacity, DIN 46237 | | | | |
| Cable lugs DIN 46237 | [mm²] | 1 - 6 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 10 | | |
| Color code | red | 1.00 mm² | | |
| | blue | 2.50 mm² | | |
| | yellow | 6.00 mm² | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600 | 600 | - |
| Nominal current | [A] | 65 | 65 | - |
| Connection capacity AWG | AWG | 26 - 10 | 26 - 10 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Bolt thread/tightening torque | - / [Nm] | M5 / 2.5 - 3 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

### Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **RWO 5** | **3056116** | 10 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **RWO 5/S** | **3056129** | 10 |

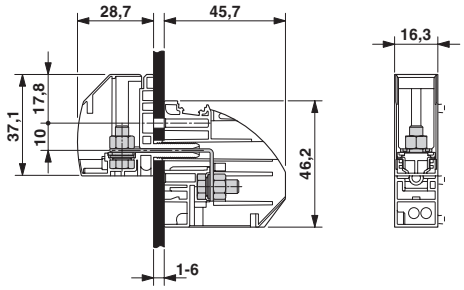
**ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)**

**TMT (EX9,5)R marking material (see online catalog)**

**16 mm² feed-through terminal block, vertical conductor connection**

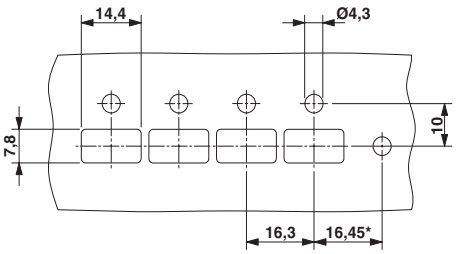
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWOV 5 | 3056271 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWOV 5/S | 3056284 | 10 |

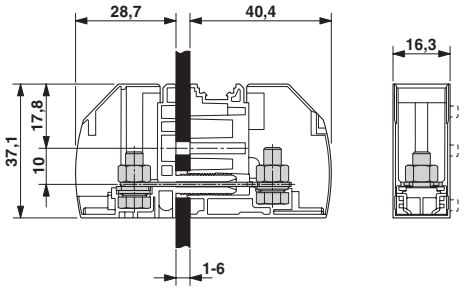
ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

**16 mm² molded feed-through terminal block, M5 bolt connection, sealing plate with sponge rubber seal, horizontal conductor connection**

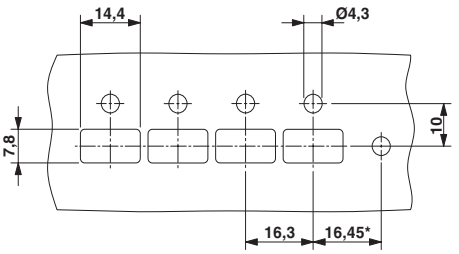
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWO 5-POT | 3056190 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWO 5-POT/S | 3056200 | 10 |

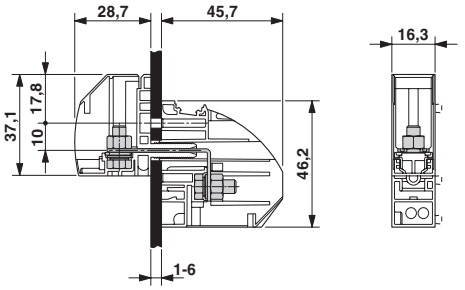
ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

**16 mm² molded feed-through terminal block, M5 bolt connection, sealing plate with sponge rubber seal, vertical conductor connection**

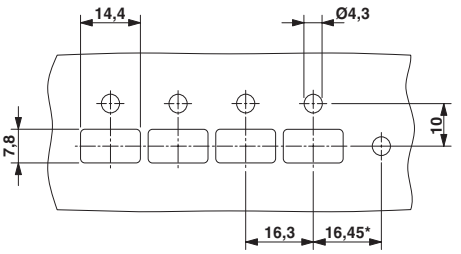
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate



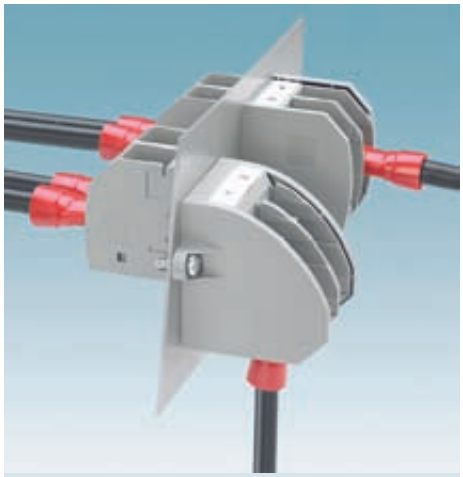

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWO 5-POT | 3056310 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWO 5-POT/S | 3056323 | 10 |

ZB 16.../ZBF 16... marking material for labeling the center groove (see CLIPLINE catalog)

TMT (EX9,5)R marking material (see online catalog)

## RWO... 8... high-current feed-through terminal blocks with bolt connection in open housing



- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Spring-loaded spacers protect the bolt connection against loosening

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

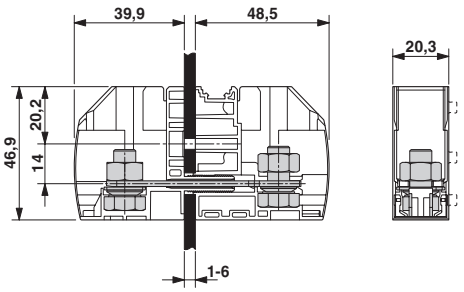
**35 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

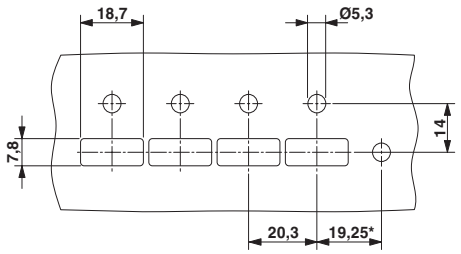
| For all types | Type |
|---|---|
| | Socket wrench<br>**SHN 13**<br>**Order No.**<br>**1209923** |
| **For RWO 8 .../S** | |
| | Flange plate<br>**RW 8-F**<br>**Order No.**<br>**3075171** |
| **For RWOV 8 .../S** | |
| | Flange plate<br>**RWV 8-F**<br>**Order No.**<br>**3075333** |

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate



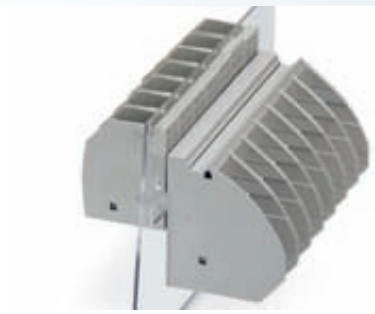

### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 125 / 35 // 125 / 35 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity, DIN 46234 | | | | |
| Cable lugs, DIN 46234 | [mm²] | 2.5 - 35 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 16 | | |
| Connection capacity DIN 46235 | | | | |
| Cable lugs DIN 46235 | [mm²] | 16 - 25 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 14 | | |
| Connection capacity, DIN 46237 | | | | |
| Cable lugs DIN 46237 | [mm²] | 2.5 - 6 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 14 | | |
| Color code | red | - | | |
| | blue | 2.50 mm² | | |
| | yellow | 6.00 mm² | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600 | 600 | - |
| Nominal current | [A] | 115 | 115 | - |
| Connection capacity AWG | AWG | 14 - 2 | 14 - 2 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Bolt thread/tightening torque | - / [Nm] | M8 / 4.5 - 5 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

### Ordering data

| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **RWO 8** | **3056132** | 10 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **RWO 8/S** | **3056145** | 10 |

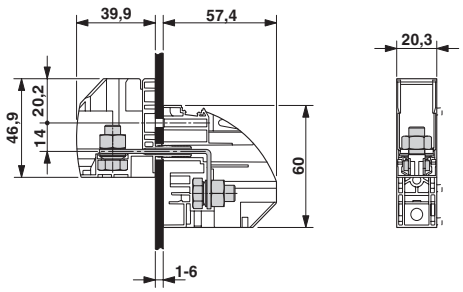
**ZB 20,3 marking material for labeling the center groove (see online catalog)**
**TMT (EX9,5)R marking material (see online catalog)**



**35 mm² feed-through terminal block, vertical conductor connection**

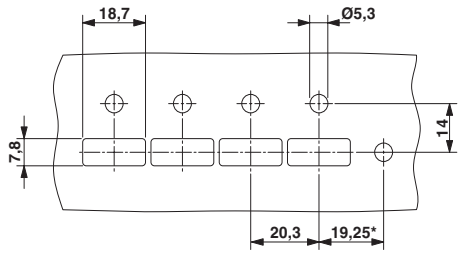
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate




## Ordering data

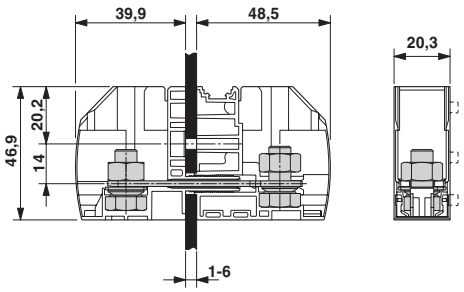
| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWOV 8 | 3056297 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWOV 8/S | 3056307 | 10 |

ZB 20,3 marking material for labeling the center groove (see online catalog)
TMT (EX9,5)R marking material (see online catalog)

**35 mm² molded feed-through terminal block, M8 bolt connection, sealing plate with sponge rubber seal, horizontal conductor connection**

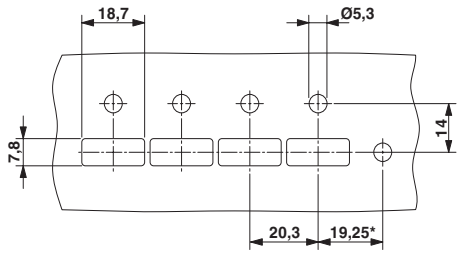
Applied for:
UL

## Dimensional drawing




## Drilling diagram

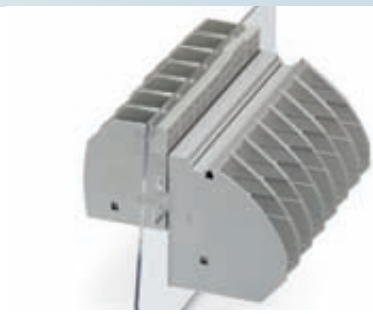
* Only when using the **RW...-F** flange plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWO 8-POT | 3056213 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWO 8-POT/S | 3056226 | 10 |

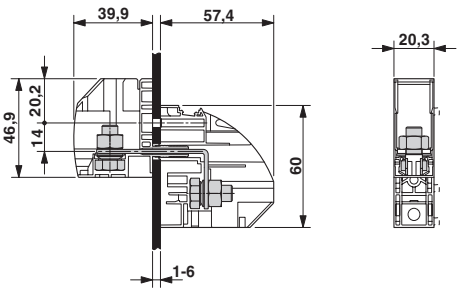
ZB 20,3 marking material for labeling the center groove (see online catalog)
TMT (EX9,5)R marking material (see online catalog)



**35 mm² molded feed-through terminal block, M8 bolt connection, sealing plate with sponge rubber seal, vertical conductor connection**

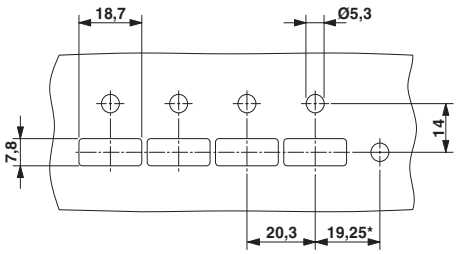
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate

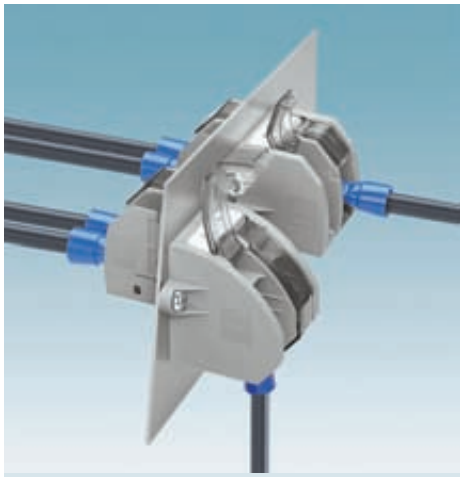



## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWOV 8-POT | 3056336 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWOV 8-POT/S | 3056349 | 10 |

ZB 20,3 marking material for labeling the center groove (see online catalog)
TMT (EX9,5)R marking material (see online catalog)

## RWO... 5...-TC high-current feed-through terminal blocks with bolt connection and cover



- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Touch-proof insulating housing with transparent cover
- Spring-loaded spacers protect the bolt connection against loosening

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

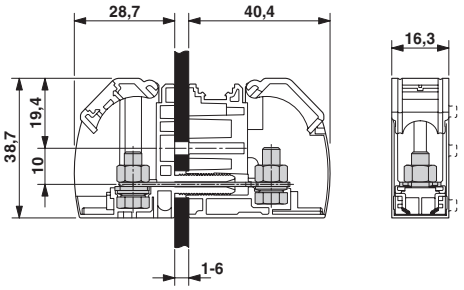
**16 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

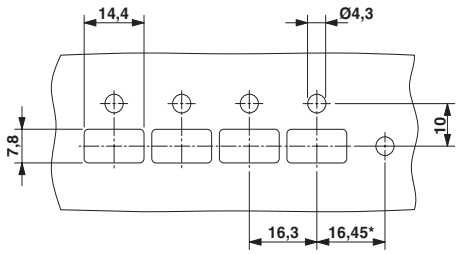
| For all types | Type |
|---|---|
| | Socket wrench<br>**SHN 8**<br>**Order No.**<br>**1209868** |
| **For RWO 5 .../S** | |
| | Flange plate<br>**RW 5-F**<br>**Order No.**<br>**3075155** |
| **For RWOV 5 .../S** | |
| | Flange plate<br>**RWV 5-F**<br>**Order No.**<br>**3075317** |

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 76 / 16 // 76 / 16 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity, DIN 46234 | | | | |
| Cable lugs, DIN 46234 | [mm²] | 0.5 - 16 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 11 | | |
| Connection capacity DIN 46235 | | | | |
| Cable lugs DIN 46235 | [mm²] | 6 - 10 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 9 | | |
| Connection capacity, DIN 46237 | | | | |
| Cable lugs DIN 46237 | [mm²] | 1 - 6 | | |
| Connection bolt / hole diameter / width | [mm] | 5 / 5.3 / 10 | | |
| Color code | red | 1.00 mm² | | |
| | blue | 2.50 mm² | | |
| | yellow | 6.00 mm² | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600 | 600 | - |
| Nominal current | [A] | 65 | 65 | - |
| Connection capacity AWG | AWG | 26 - 10 | 26 - 10 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Bolt thread/tightening torque | - / [Nm] | M5 / 2.5 - 3 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

### Ordering data

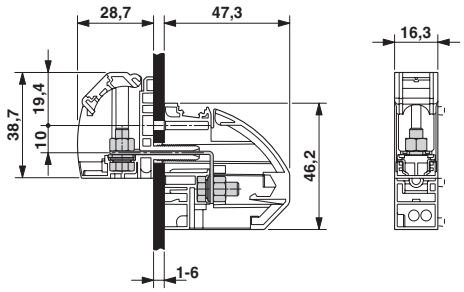
| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **RWO 5-TC** | **3074910** | 10 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **RWO 5-TC/S** | **3074923** | 10 |

**ZB 16 marking material for labeling the center groove (see CLIPLINE catalog)**
**TMT (EX9,5)R marking material (see online catalog)**

**16 mm² feed-through terminal block, vertical conductor connection**

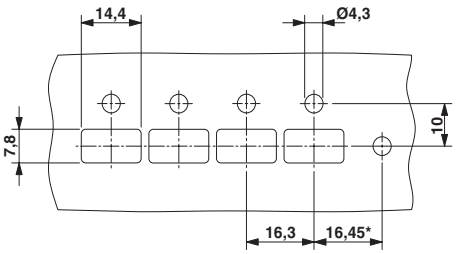
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Ordering data

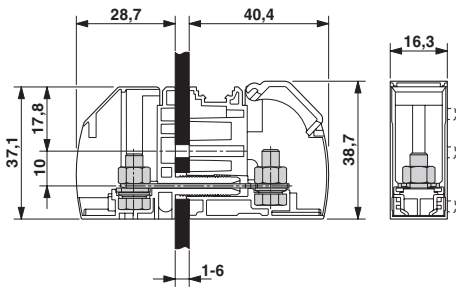
| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWOV 5-TC | 3075074 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWOV 5-TC/S | 3075087 | 10 |

ZB 16 marking material for labeling the center groove (see CLIPLINE catalog)
TMT (EX9,5)R marking material (see online catalog)

**16 mm² molded feed-through terminal block, M5 bolt connection, sealing plate with sponge rubber seal, horizontal conductor connection**

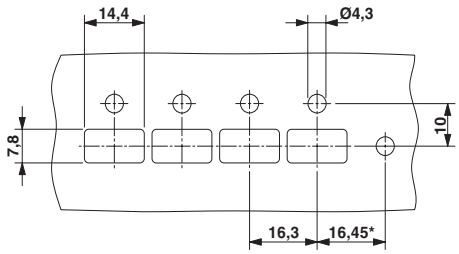
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Ordering data

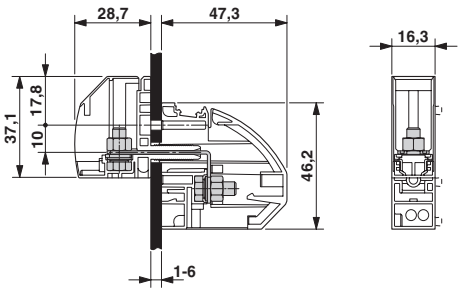
| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWO 5-POT-TC | 3074994 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWO 5-POT-TC/S | 3075003 | 10 |

ZB 16 marking material for labeling the center groove (see CLIPLINE catalog)
TMT (EX9,5)R marking material (see online catalog)

**16 mm² molded feed-through terminal block, M5 bolt connection, sealing plate with sponge rubber seal, vertical conductor connection**

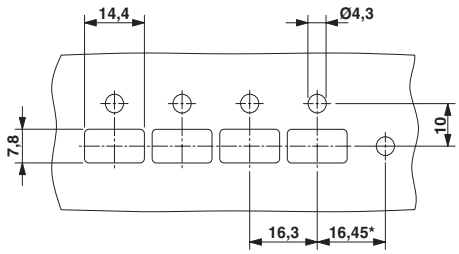
Applied for:
UL

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate

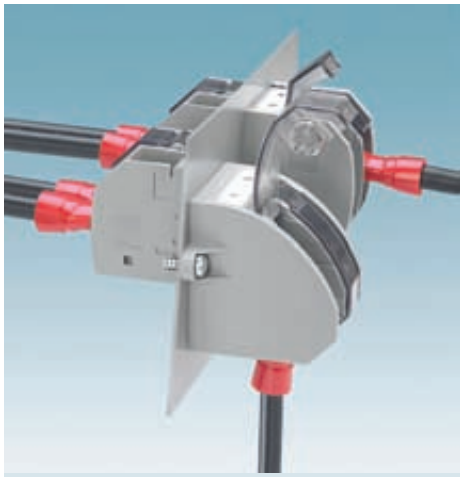



### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWOV 5-POT-TC | 3075113 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWOV 5-POT-TC/S | 3075126 | 10 |

ZB 16 marking material for labeling the center groove (see CLIPLINE catalog)
TMT (EX9,5)R marking material (see online catalog)

## RWO... 8...-TC high-current feed-through terminal blocks with bolt connection and cover



- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Molded versions ensure maximum tightness of seal
- Touch-proof insulating housing with transparent cover
- Spring-loaded spacers protect the bolt connection against loosening

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

For corresponding rivet for fixing the feed-through terminal blocks, see page 94.

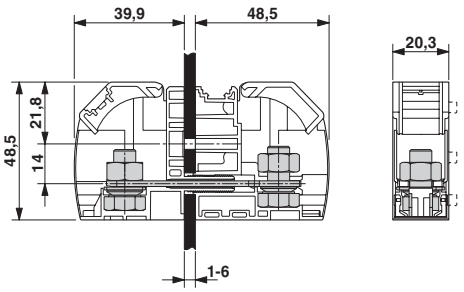
**35 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

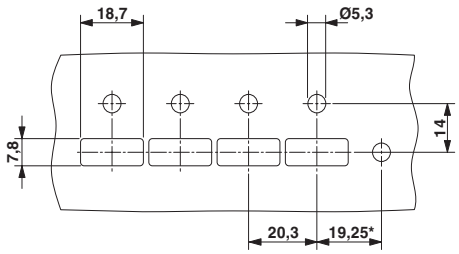
| For all types | Type |
|---|---|
| | Socket wrench<br>**SHN 13**<br>**Order No.**<br>**1209923** |
| **For RWO 8 .../S** | |
| | Flange plate<br>**RW 8-F**<br>**Order No.**<br>**3075171** |
| **For RWOV 8 .../S** | |
| | Flange plate<br>**RWV 8-F**<br>**Order No.**<br>**3075333** |

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 125 / 35 // 125 / 35 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity, DIN 46234 | | | | |
| Cable lugs, DIN 46234 | [mm²] | 2.5 - 35 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 16 | | |
| Connection capacity DIN 46235 | | | | |
| Cable lugs DIN 46235 | [mm²] | 16 - 25 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 14 | | |
| Connection capacity, DIN 46237 | | | | |
| Cable lugs DIN 46237 | [mm²] | 2.5 - 6 | | |
| Connection bolt / hole diameter / width | [mm] | 8 / 8.4 / 14 | | |
| Color code | red | - | | |
| | blue | 2.50 mm² | | |
| | yellow | 6.00 mm² | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600 | 600 | - |
| Nominal current | [A] | 115 | 115 | - |
| Connection capacity AWG | AWG | 14 - 2 | 14 - 2 | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Bolt thread/tightening torque | - / [Nm] | M8 / 4.5 - 5 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

### Ordering data

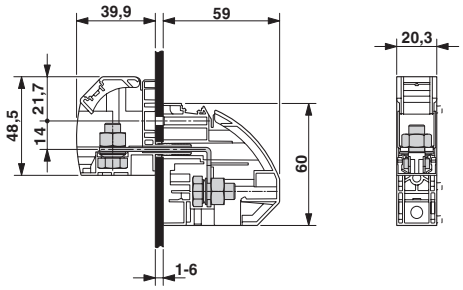
| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **RWO 8-TC** | **3074936** | 10 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **RWO 8-TC/S** | **3074949** | 10 |

**ZB 20,3 marking material for labeling the center groove (see online catalog)**
**TMT (EX9,5)R marking material (see online catalog)**

**35 mm² feed-through terminal block, vertical conductor connection**

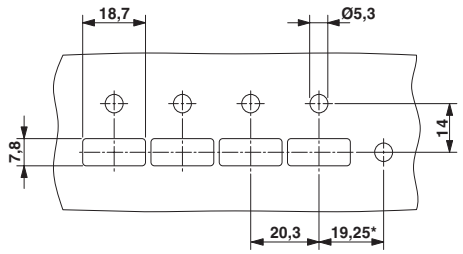
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate




## Ordering data

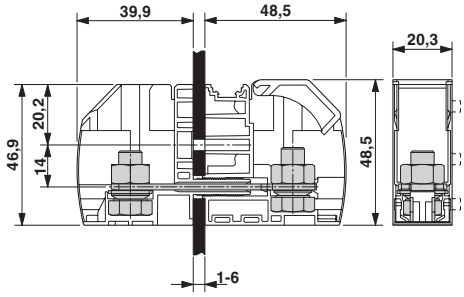
| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWOV 8-TC | 3075090 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWOV 8-TC/S | 3075100 | 10 |

ZB 20,3 marking material for labeling the center groove (see online catalog)
TMT (EX9,5)R marking material (see online catalog)

**35 mm² molded feed-through terminal block, M8 bolt connection, sealing plate with sponge rubber seal, horizontal conductor connection**

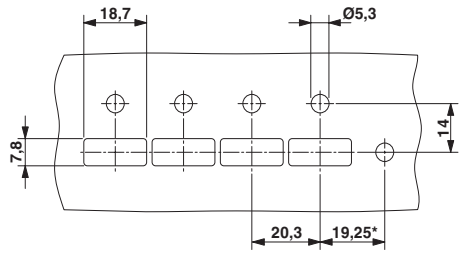
Applied for:
UL

## Dimensional drawing




## Drilling diagram

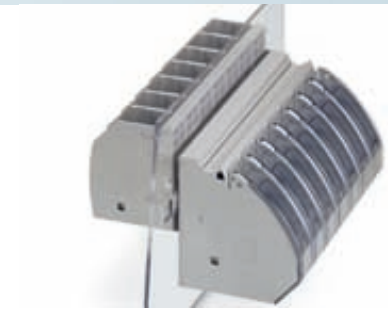
* Only when using the **RW...-F** flange plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWO 8-POT-TC | 3075016 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWO 8-POT-TC/S | 3075029 | 10 |

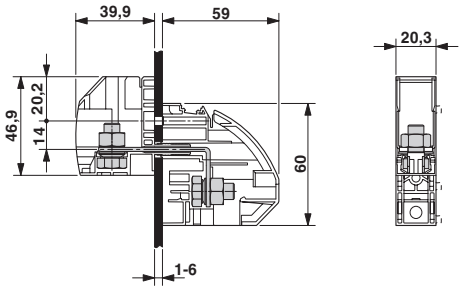
ZB 20,3 marking material for labeling the center groove (see online catalog)
TMT (EX9,5)R marking material (see online catalog)



**35 mm² molded feed-through terminal block, M8 bolt connection, sealing plate with sponge rubber seal, vertical conductor connection**

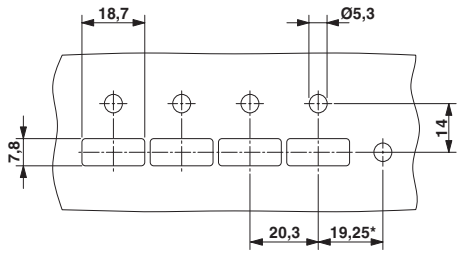
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate

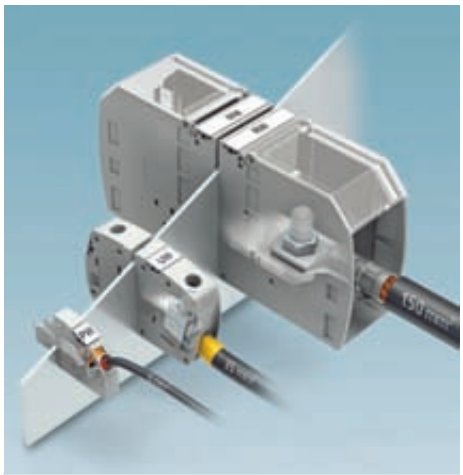



## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| RWOV 8-POT-TC | 3075139 | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| RWOV 8-POT-TC/S | 3075142 | 10 |

ZB 20,3 marking material for labeling the center groove (see online catalog)
TMT (EX9,5)R marking material (see online catalog)

## RWO 10... high-current feed-through terminal blocks with bolt connection



- Both terminal halves can be easily assembled by simply snapping them together
- Automatic panel thickness compensation thanks to the integrated snap principle in the insulating housing
- Easy grouping with engagement pin versions
- Touch-proof insulating housing with transparent cover
- Spring-loaded spacers protect the bolt connection against loosening

**Notes:**

Inside = left side of portrait photos
Outside = right side of portrait photos

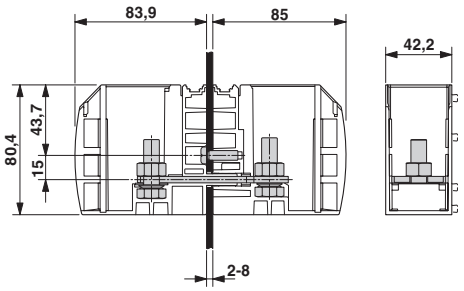
**150 mm² feed-through terminal block, horizontal conductor connection**

Applied for:
UL

### Accessories

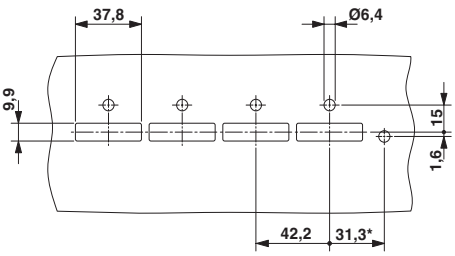
| For all types | Type |
|---|---|
| | Flange plate<br>**RW 10-F**<br>**Order No.**<br>**3075197** |

### Dimensional drawing




### Drilling diagram

* Only when using the **RW...-F** flange plate




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Current/conductor cross-section | [A] / [mm²] | 309 / 150 // 309 / 150 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity, DIN 46234 | | | | |
| Cable lugs, DIN 46234 | [mm²] | 6 - 150 | | |
| Connection bolt / hole diameter / width | [mm] | 10 / 10.5 / 30 | | |
| Connection capacity DIN 46235 | | | | |
| Cable lugs DIN 46235 | [mm²] | 10 - 95 | | |
| Connection bolt / hole diameter / width | [mm] | 10 / 10.5 / 28 | | |
| Connection capacity, DIN 46237 | | | | |
| Cable lugs DIN 46237 | [mm²] | - 6 | | |
| Connection bolt / hole diameter / width | [mm] | 10 / 10.5 / 18 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | 600 | 600 | - |
| Nominal current | [A] | 285 | 285 | - |
| Connection capacity AWG | AWG | 10 - 300 kcmil | 10 - 300 kcmil | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Bolt thread/tightening torque | - / [Nm] | M10 / 10 - 20 | | |
| Insulation material | | PA | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Panel thickness | [mm] | 2 - 8 | | |

### Ordering data

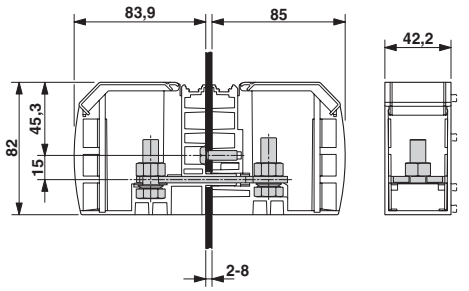
| Description | Type | Order No. | Pcs./Pkt. |
|---|---|---|---|
| | **Feed-through terminal block** | | |
| | **RWO 10** | **3056158** | 10 |
| | **Feed-through terminal block, with engagement pin** | | |
| | **RWO 10/S** | **3056161** | 10 |

**ZB 21,1 marking material for labeling the center groove (see online catalog)**
**TMT (EX9,5)R marking material (see online catalog)**

**150 mm² feed-through terminal block, horizontal conductor connection, with transparent cover**

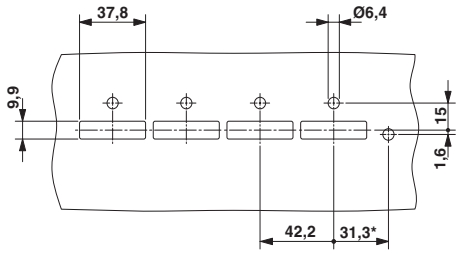
Applied for:
UL

## Dimensional drawing




## Drilling diagram

* Only when using the **RW...-F** flange plate




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Feed-through terminal block** | | |
| **RWO 10-TC** | **3074952** | 10 |
| **Feed-through terminal block, with engagement pin** | | |
| **RWO 10-TC/S** | **3074965** | 10 |

**ZB 21,1 marking material for labeling the center groove (see online catalog)**
**TMT (EX9,5)R marking material (see online catalog)**

Software
Printer
BLUEMARK LED
Material

# MARKING system - The easy way of printing

Software

**Software**

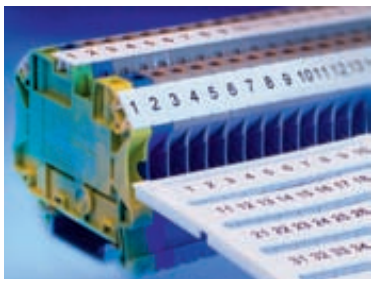
CLIP PROJECT is the central software for creating and printing onto terminal strips. Information about terminal points, cables, conductors, and markings is stored in the Electro CAD system. This is used when designing terminal strips and for printing onto them accordingly.

CLIP PROJECT supports data exchange with different Electro CAD systems and offers reliable control of all output devices from Phoenix Contact.

Hardware

**Hardware**

CLIP PROJECT configuration software sends the labels to the printer with just a click of the mouse. Irrespective of whether you choose the new environmentally-friendly high-speed BLUEMARK printer, one of the thermal transfer printers or the plotter, a wide range of marking material is available for each printing system.



Terminal marking

**TM Terminal Marking**

The terminal markers are available in strips or sheets, with or without labeling. Depending on the version, unlabeled terminal markers can be labeled using different printing systems from Phoenix Contact.

Markers on UniCard sheets can be labeled quickly and reliably using the new BLUEMARK printer. Material off the roll has been specially developed for labeling with thermal transfer printers, e.g., from the THERMOMARK series from Phoenix Contact. Zack marker strips are mainly labeled using the plotter or manually.

Conductor and cable marking

**WM Wire Marking**
**Conductor and cable marking**

Clear marking of all conductors and cables considerably improves transparency in control cabinets and switchgear. This makes assembly and maintenance work easier and helps in rectifying malfunctions. Standard-compliant and permanent conductor marking is not a luxury, but rather a quality standard for modern and high-quality capital goods as required by the customer.

Conductor and cable marking systems from Phoenix Contact offer all users excellent marking solutions, whether conductor marking is to be slid on, clipped or glued into place, or attached with cable binders.

Device marking

**EM Equipment Marking**
**Device marking**

Explicit marking of electrical and electronic control cabinet components is essential for safe and efficient work. In addition to having comprehensive technical documentation available, ensuring all items are marked increases the availability of the switchgear and simplifies maintenance. Last but not least, equipment identification improves the quality of the control cabinets and systems.

## AI-WM ... ferrules, with insulating collar that can be labeled, according to DIN 46228-4

- Ferrules can be labeled with BLUEMARK
- Crimping and marking in one step
- Highly resistant and optimum printing quality thanks to modern UV printing technology
- Ferrules made from electrolytic copper
- Electrogalvanized
- Corresponding crimping pliers from the TOOL fox range can be found in the online catalog, visit: www.phoenixcontact.net/catalog

Can be printed with:

BLUEMARK

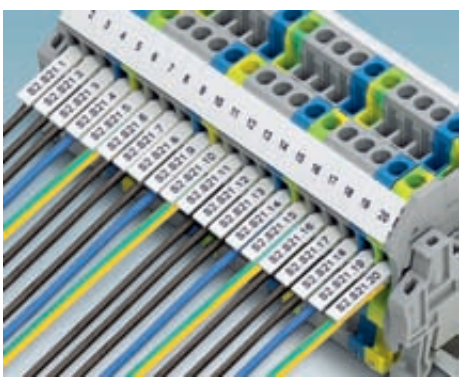
**Ferrules for 0.5 to 1.5 mm² conductors, 15 x 4 mm lettering field size**

### Technical data

| General data | |
|---|---|
| Material / coating | E-CU / tin-plated (galvanic) |
| Temperature range [°C] | -40 ... 120 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Ferrules,** with plastic sleeve that can be labeled, color range according to **DIN 46228-4: 1990-09** | | | | |
| 0.5 mm² cross-section | white | **AI-WM 0,5-8 WH** | **3240542** | 780 |
| 0.75 mm² cross-section | gray | **AI-WM 0,75-8 GY** | **3240543** | 780 |
| 1.0 mm² cross-section | red | **AI-WM 1-8 RD** | **3240544** | 780 |
| 1.5 mm² cross-section | white | **AI-WM 1,5-8 WH** | **3240545** | 780 |



## BLUEMARK LED UV printer

- Quick labeling of labels for terminal, conductor, and device marking
- Environmentally friendly high-speed printer with modern UV technology
- Time-saving and easy operation thanks to automatic media feed

Printer with UV technology

**Ordering data**

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **BLUEMARK LED,** printer with solvent-free UV technology, including Euro mains cable, US mains cable, USB cable, printer driver, multilingual manual, CLIP PROJECT advanced planning and marking software | gray | **BLUEMARK LED** | **5147888** | 1 |

**Accessories**

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Ink cartridge,** for replacement, 30 ml printing fluid, black | **BLUEMARK FLUID-CARTRIDGE** | **5147421** | 1 |

## BLUEMARK MAG AI-WM magazine for ferrules with insulating collar that can be labeled

- Designed to accommodate AI-WM... ferrules for labeling and printing with BLUEMARK

Magazine for labeling AI-WM... ferrules with BLUEMARK

**Ordering data**

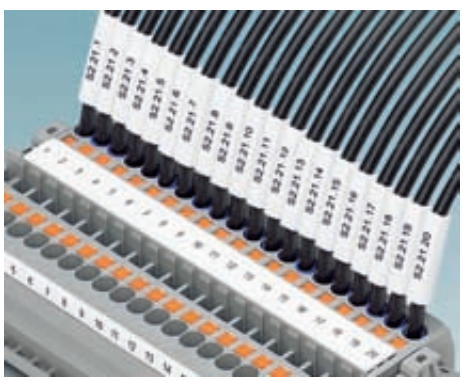
| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Plastic magazine for BLUEMARK printer,** for accommodating ferrules with insulating collar that can be labeled | **BLUEMARK MAG AI-WM** | **5146567** | 1 |

## UC-WMCO ... conductor marking, 0.25 - 0.75 mm² and 1.3 - 2.1 mm diameter

- Conductor markers in UniCard sheet form that can be labeled using BLUEMARK
- Highly resistant and optimum printing quality thanks to modern UV printing technology
- Slide-on conductor markers for subsequent conductor labeling, which are easily slid on using the UC-WMCO ... TOOL, also suitable for very small conductors
- Large-surface labeling in a space-saving design
- Secure tight fit even in the event of vibrations
- Available in seven colors

**Notes:**

Order markers labeled according to customer specifications using item UC-WMCO ... CUS. For ordering examples, see CLIPLINE catalog page 601.



Can be printed with:

BLUEMARK

CMS-P1-PLOTTER

**Markers for 0.25 to 0.34 mm² conductors, 12 x 3 mm lettering field size**

### Technical data

| General data | | |
|---|---|---|
| Number of individual labels | | 40 |
| Number of individual labels per strip | | 10 |
| Material | | PA |
| Inflammability class acc. to UL 94 | | V2 |
| Temperature range | [°C] | -40 ... 120 |
| Components | | free from silicone and halogen |
| Conductor diameter range | [mm] | 1.3 ... 1.6 |
| Conductor cross-section range | [mm²] | 0.25 ... 0.5 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **UniCard sheet,** for subsequent labeling of conductors, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | |
| Lettering field size: 12 x 3 mm | white | **UC-WMCO 1,6 (12X3)** | **0827092** | 10 |
| | red | **UC-WMCO 1,6 (12X3) RD** | **0827516** | 10 |
| | orange | **UC-WMCO 1,6 (12X3) OG** | **0827517** | 10 |
| | yellow | **UC-WMCO 1,6 (12X3) YE** | **0827513** | 10 |
| | violet | **UC-WMCO 1,6 (12X3) VT** | **0827518** | 10 |
| | blue | **UC-WMCO 1,6 (12X3) BU** | **0827514** | 10 |
| | green | **UC-WMCO 1,6 (12X3) GN** | **0827515** | 10 |
| Lettering field size: 21 x 3 mm | white | | | |
| | red | | | |
| | orange | | | |
| | yellow | | | |
| | violet | | | |
| | blue | | | |
| | green | | | |
| **UniCard sheet,** for subsequent labeling of conductors, **labeled according to customer requirements** | | | | |
| Lettering field size: 12 x 3 mm | white | **UC-WMCO 1,6 (12X3) CUS** | **0829032** | 1 |
| | red | **UC-WMCO 1,6 (12X3) RD CUS** | **0829036** | 1 |
| | orange | **UC-WMCO 1,6 (12X3) OG CUS** | **0829037** | 1 |
| | yellow | **UC-WMCO 1,6 (12X3) YE CUS** | **0829033** | 1 |
| | violet | **UC-WMCO 1,6 (12X3) VT CUS** | **0829038** | 1 |
| | blue | **UC-WMCO 1,6 (12X3) BU CUS** | **0829034** | 1 |
| | green | **UC-WMCO 1,6 (12X3) GN CUS** | **0829035** | 1 |
| Lettering field size: 21 x 3 mm | white | | | |
| | red | | | |
| | orange | | | |
| | yellow | | | |
| | violet | | | |
| | blue | | | |
| | green | | | |

### Accessories

| | | |
|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-WMCO ... | | |
| **P1 UC-MAG 7** | **5146568** | 1 |
| **Assembly tool,** for easily sliding on UC-WMCO 1,6 and UC-WMCO 2,1 conductor markers | | |
| **UC-WMCO 2,1 TOOL** | **0827803** | 10 |
| **Assembly tool set,** for easily sliding on UC-WMCO 1,6 ... and UC-WMCO 4,9 ... conductor markers | | |
| **UC-WMCO TOOL SET** | **0827807** | 1 |

**Markers for 0.25 to 0.34 mm² conductors, 21 x 3 mm lettering field size**

**Markers for 0.5 to 0.75 mm² conductors, 12 x 3 mm lettering field size**

**Markers for 0.5 to 0.75 mm² conductors, 21 x 3 mm lettering field size**

## Technical data

| | |
|---|---|
| 40 | |
| 10 | |
| PA | |
| V2 | |
| -40 ... 120 | |
| free from silicone and halogen | |
| 1.3 ... 1.6 | |
| 0.25 ... 0.5 | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UC-WMCO 1,6 (21X3) | 0827106 | 10 |
| UC-WMCO 1,6 (21X3) RD | 0827528 | 10 |
| UC-WMCO 1,6 (21X3) OG | 0827529 | 10 |
| UC-WMCO 1,6 (21X3) YE | 0827525 | 10 |
| UC-WMCO 1,6 (21X3) VT | 0827530 | 10 |
| UC-WMCO 1,6 (21X3) BU | 0827526 | 10 |
| UC-WMCO 1,6 (21X3) GN | 0827527 | 10 |
| UC-WMCO 1,6 (21X3) CUS | 0829039 | 1 |
| UC-WMCO 1,6 (21X3) RD CUS | 0829043 | 1 |
| UC-WMCO 1,6 (21X3) OG CUS | 0829044 | 1 |
| UC-WMCO 1,6 (21X3) YE CUS | 0829040 | 1 |
| UC-WMCO 1,6 (21X3) VT CUS | 0829045 | 1 |
| UC-WMCO 1,6 (21X3) BU CUS | 0829041 | 1 |
| UC-WMCO 1,6 (21X3) GN CUS | 0829042 | 1 |

## Accessories

| | | |
|---|---|---|
| P1 UC-MAG 7 | 5146568 | 1 |
| UC-WMCO 2,1 TOOL | 0827803 | 10 |
| UC-WMCO TOOL SET | 0827807 | 1 |

## Technical data

| | |
|---|---|
| 40 | |
| 10 | |
| PA | |
| V2 | |
| -40 ... 120 | |
| free from silicone and halogen | |
| 1.6 ... 2.1 | |
| 0.5 ... 0.75 | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UC-WMCO 2,1 (12X3) | 0827120 | 10 |
| UC-WMCO 2,1 (12X3) RD | 0827540 | 10 |
| UC-WMCO 2,1 (12X3) OG | 0827541 | 10 |
| UC-WMCO 2,1 (12X3) YE | 0827537 | 10 |
| UC-WMCO 2,1 (12X3) VT | 0827542 | 10 |
| UC-WMCO 2,1 (12X3) BU | 0827538 | 10 |
| UC-WMCO 2,1 (12X3) GN | 0827539 | 10 |
| UC-WMCO 2,1 (12X3) CUS | 0829046 | 1 |
| UC-WMCO 2,1 (12X3) RD CUS | 0829050 | 1 |
| UC-WMCO 2,1 (12X3) OG CUS | 0829051 | 1 |
| UC-WMCO 2,1 (12X3) YE CUS | 0829047 | 1 |
| UC-WMCO 2,1 (12X3) VT CUS | 0829052 | 1 |
| UC-WMCO 2,1 (12X3) BU CUS | 0829048 | 1 |
| UC-WMCO 2,1 (12X3) GN CUS | 0829049 | 1 |

## Accessories

| | | |
|---|---|---|
| P1 UC-MAG 7 | 5146568 | 1 |
| UC-WMCO 2,1 TOOL | 0827803 | 10 |
| UC-WMCO TOOL SET | 0827807 | 1 |

## Technical data

| | |
|---|---|
| 40 | |
| 10 | |
| PA | |
| V2 | |
| -40 ... 120 | |
| free from silicone and halogen | |
| 1.6 ... 2.1 | |
| 0.5 ... 0.75 | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UC-WMCO 2,1 (21X3) | 0827134 | 10 |
| UC-WMCO 2,1 (21X3) RD | 0827552 | 10 |
| UC-WMCO 2,1 (21X3) OG | 0827553 | 10 |
| UC-WMCO 2,1 (21X3) YE | 0827549 | 10 |
| UC-WMCO 2,1 (21X3) VT | 0827554 | 10 |
| UC-WMCO 2,1 (21X3) BU | 0807550 | 10 |
| UC-WMCO 2,1 (21X3) GN | 0827551 | 10 |
| UC-WMCO 2,1 (21X3) CUS | 0829053 | 1 |
| UC-WMCO 2,1 (21X3) RD CUS | 0829057 | 1 |
| UC-WMCO 2,1 (21X3) OG CUS | 0829058 | 1 |
| UC-WMCO 2,1 (21X3) YE CUS | 0829054 | 1 |
| UC-WMCO 2,1 (21X3) VT CUS | 0829059 | 1 |
| UC-WMCO 2,1 (21X3) BU CUS | 0829055 | 1 |
| UC-WMCO 2,1 (21X3) GN CUS | 0829056 | 1 |

## Accessories

| | | |
|---|---|---|
| P1 UC-MAG 7 | 5146568 | 1 |
| UC-WMCO 2,1 TOOL | 0827803 | 10 |
| UC-WMCO TOOL SET | 0827807 | 1 |

## UC-WMCO ... conductor marking, 0.75 - 1.5 mm² and 2.1 - 2.9 mm diameter

Markers for 0.75 to 1.5 mm² conductors, 12 x 3.5 mm lettering field size

Markers for 0.75 to 1.5 mm² conductors, 21 x 3.5 mm lettering field size

### Technical data

| | | | |
|---|---|---|---|
| **General data** | | | |
| Number of individual labels | | 40 | 40 |
| Number of individual labels per strip | | 10 | 10 |
| Material | | PA | PA |
| Inflammability class acc. to UL 94 | | V2 | V2 |
| Temperature range | [°C] | -40 ... 120 | -40 ... 120 |
| Components | | free from silicone and halogen | free from silicone and halogen |
| Conductor diameter range | [mm] | 2.1 ... 2.9 | 2.1 ... 2.9 |
| Conductor cross-section range | [mm²] | 0.75 ... 1.5 | 0.75 ... 1.5 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|
| **UniCard sheet,** for subsequent labeling of conductors, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | | | | |
| Lettering field size: 12 x 3.5 mm | white | **UC-WMCO 2,9 (12X3,5)** | **0827148** | 10 | | | |
| | red | **UC-WMCO 2,9 (12X3,5) RD** | **0827564** | 10 | | | |
| | orange | **UC-WMCO 2,9 (12X3,5) OG** | **0827565** | 10 | | | |
| | yellow | **UC-WMCO 2,9 (12X3,5) YE** | **0827561** | 10 | | | |
| | violet | **UC-WMCO 2,9 (12X3,5) VT** | **0827566** | 10 | | | |
| | blue | **UC-WMCO 2,9 (12X3,5) BU** | **0827562** | 10 | | | |
| | green | **UC-WMCO 2,9 (12X3,5) GN** | **0827563** | 10 | | | |
| Lettering field size: 21 x 3.5 mm | white | | | | **UC-WMCO 2,9 (21X3,5)** | **0827162** | 10 |
| | red | | | | **UC-WMCO 2,9 (21X3,5) RD** | **0827576** | 10 |
| | orange | | | | **UC-WMCO 2,9 (21X3,5) OG** | **0827577** | 10 |
| | yellow | | | | **UC-WMCO 2,9 (21X3,5) YE** | **0827573** | 10 |
| | violet | | | | **UC-WMCO 2,9 (21X3,5) VT** | **0827578** | 10 |
| | blue | | | | **UC-WMCO 2,9 (21X3,5) BU** | **0827574** | 10 |
| | green | | | | **UC-WMCO 2,9 (21X3,5) GN** | **0827575** | 10 |
| **UniCard sheet,** for subsequent labeling of conductors, **labeled according to customer requirements** | | | | | | | |
| Lettering field size: 12 x 3.5 mm | white | **UC-WMCO 2,9 (12X3,5) CUS** | **0829060** | 1 | | | |
| | red | **UC-WMCO 2,9 (12X3,5) RD CUS** | **0829064** | 1 | | | |
| | orange | **UC-WMCO 2,9 (12X3,5) OG CUS** | **0829065** | 1 | | | |
| | yellow | **UC-WMCO 2,9 (12X3,5) YE CUS** | **0829061** | 1 | | | |
| | violet | **UC-WMCO 2,9 (12X3,5) VT CUS** | **0829066** | 1 | | | |
| | blue | **UC-WMCO 2,9 (12X3,5) BU CUS** | **0829062** | 1 | | | |
| | green | **UC-WMCO 2,9 (12X3,5) GN CUS** | **0829063** | 1 | | | |
| Lettering field size: 21 x 3.5 mm | white | | | | **UC-WMCO 2,9 (21X3,5) CUS** | **0829067** | 1 |
| | red | | | | **UC-WMCO 2,9 (21X3,5) RD CUS** | **0829071** | 1 |
| | orange | | | | **UC-WMCO 2,9 (21X3,5) OG CUS** | **0829072** | 1 |
| | yellow | | | | **UC-WMCO 2,9 (21X3,5) YE CUS** | **0829068** | 1 |
| | violet | | | | **UC-WMCO 2,9 (21X3,5) VT CUS** | **0829073** | 1 |
| | blue | | | | **UC-WMCO 2,9 (21X3,5) BU CUS** | **0829069** | 1 |
| | green | | | | **UC-WMCO 2,9 (21X3,5) GN CUS** | **0829070** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-WMCO ... | | | |
| | **P1 UC-MAG 7** | **5146568** | 1 |
| **Assembly tool,** for easily sliding on UC-WMCO 2,9 ... and UC-WMCO 3,6 ... conductor markers | | | |
| | **UC-WMCO 3,6 TOOL** | **0827804** | 10 |
| **Assembly tool set,** for easily sliding on UC-WMCO 1,6 ... and UC-WMCO 4,9 ... conductor markers | | | |
| | **UC-WMCO TOOL SET** | **0827807** | 1 |

### Accessories

| | | |
|---|---|---|
| **P1 UC-MAG 7** | **5146568** | 1 |
| **UC-WMCO 3,6 TOOL** | **0827804** | 10 |
| **UC-WMCO TOOL SET** | **0827807** | 1 |

## UC-WMCO ... conductor marking, 1.5 - 2.5 mm² and 2.9 - 3.6 mm diameter

Markers for 1.5 to 2.5 mm² conductors, 12 x 4.5 mm lettering field size

Markers for 1.5 to 2.5 mm² conductors, 21 x 4.5 mm lettering field size

### Technical data

| | | | |
|---|---|---|---|
| **General data** | | | |
| Number of individual labels | | 32 | 32 |
| Number of individual labels per strip | | 8 | 8 |
| Material | | PA | PA |
| Inflammability class acc. to UL 94 | | V2 | V2 |
| Temperature range | [°C] | -40 ... 120 | -40 ... 120 |
| Components | | free from silicone and halogen | free from silicone and halogen |
| Conductor diameter range | [mm] | 2.9 ... 3.6 | 2.9 ... 3.6 |
| Conductor cross-section range | [mm²] | 1.5 ... 2.5 | 1.5 ... 2.5 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|
| **UniCard sheet,** for subsequent labeling of conductors, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | | | | |
| Lettering field size: 12 x 4.5 mm | white | **UC-WMCO 3,6 (12X4,5)** | **0827176** | 10 | | | |
| | red | **UC-WMCO 3,6 (12X4,5) RD** | **0827588** | 10 | | | |
| | orange | **UC-WMCO 3,6 (12X4,5) OG** | **0827589** | 10 | | | |
| | yellow | **UC-WMCO 3,6 (12X4,5) YE** | **0827585** | 10 | | | |
| | violet | **UC-WMCO 3,6 (12X4,5) VT** | **0827590** | 10 | | | |
| | blue | **UC-WMCO 3,6 (12X4,5) BU** | **0827586** | 10 | | | |
| | green | **UC-WMCO 3,6 (12X4,5) GN** | **0827587** | 10 | | | |
| Lettering field size: 21 x 4.5 mm | white | | | | **UC-WMCO 3,6 (21X4,5)** | **0827190** | 10 |
| | red | | | | **UC-WMCO 3,6 (21X4,5) RD** | **0827600** | 10 |
| | orange | | | | **UC-WMCO 3,6 (21X4,5) OG** | **0827601** | 10 |
| | yellow | | | | **UC-WMCO 3,6 (21X4,5) YE** | **0827597** | 10 |
| | violet | | | | **UC-WMCO 3,6 (21X4,5) VT** | **0827602** | 10 |
| | blue | | | | **UC-WMCO 3,6 (21X4,5) BU** | **0827598** | 10 |
| | green | | | | **UC-WMCO 3,6 (21X4,5) GN** | **0827599** | 10 |
| **UniCard sheet,** for subsequent labeling of conductors, **labeled according to customer requirements** | | | | | | | |
| Lettering field size: 12 x 4.5 mm | white | **UC-WMCO 3,6 (12X4,5) CUS** | **0829074** | 1 | | | |
| | red | **UC-WMCO 3,6 (12X4,5) RD CUS** | **0829078** | 1 | | | |
| | orange | **UC-WMCO 3,6 (12X4,5) OG CUS** | **0829079** | 1 | | | |
| | yellow | **UC-WMCO 3,6 (12X4,5) YE CUS** | **0829075** | 1 | | | |
| | violet | **UC-WMCO 3,6 (12X4,5) VT CUS** | **0829080** | 1 | | | |
| | blue | **UC-WMCO 3,6 (12X4,5) BU CUS** | **0829076** | 1 | | | |
| | green | **UC-WMCO 3,6 (12X4,5) GN CUS** | **0829077** | 1 | | | |
| Lettering field size: 21 x 4.5 mm | white | | | | **UC-WMCO 3,6 (21X4,5) CUS** | **0829081** | 1 |
| | red | | | | **UC-WMCO 3,6 (21X4,5) RD CUS** | **0829085** | 1 |
| | orange | | | | **UC-WMCO 3,6 (21X4,5) OG CUS** | **0829086** | 1 |
| | yellow | | | | **UC-WMCO 3,6 (21X4,5) YE CUS** | **0829082** | 1 |
| | violet | | | | **UC-WMCO 3,6 (21X4,5) VT CUS** | **0829087** | 1 |
| | blue | | | | **UC-WMCO 3,6 (21X4,5) BU CUS** | **0829083** | 1 |
| | green | | | | **UC-WMCO 3,6 (21X4,5) GN CUS** | **0829084** | 1 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-WMCO ... | **P1 UC-MAG 7** | **5146568** | 1 | **P1 UC-MAG 7** | **5146568** | 1 |
| **Assembly tool,** for easily sliding on UC-WMCO 2,9 ... and UC-WMCO 3,6 ... conductor markers | **UC-WMCO 3,6 TOOL** | **0827804** | 10 | **UC-WMCO 3,6 TOOL** | **0827804** | 10 |
| **Assembly tool set,** for easily sliding on UC-WMCO 1,6 ... and UC-WMCO 4,9 ... conductor markers | **UC-WMCO TOOL SET** | **0827807** | 1 | **UC-WMCO TOOL SET** | **0827807** | 1 |

## The MARKING system

# UC-WMCO ... conductor marking, 2.5 - 4 mm² and 3.6 - 4.9 mm diameter

Markers for 2.5 to 4 mm² conductors, 12 x 5 mm lettering field size

Markers for 2.5 to 4 mm² conductors, 21 x 5 mm lettering field size

### Technical data

| | | | |
|---|---|---|---|
| **General data** | | | |
| Number of individual labels | | 24 | 24 |
| Number of individual labels per strip | | 6 | 6 |
| Material | | PA | PA |
| Inflammability class acc. to UL 94 | | V2 | V2 |
| Temperature range | [°C] | -40 ... 120 | -40 ... 120 |
| Components | | free from silicone and halogen | free from silicone and halogen |
| Conductor diameter range | [mm] | 3.6 ... 4.9 | 3.6 ... 4.9 |
| Conductor cross-section range | [mm²] | 2.5 ... 4 | 2.5 ... 4 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|
| **UniCard sheet,** for subsequent labeling of conductors, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | | | | |
| Lettering field size: 12 x 5 mm | white | **UC-WMCO 4,9 (12X5)** | **0827733** | 5 | | | |
| | red | **UC-WMCO 4,9 (12X5) RD** | **0827737** | 5 | | | |
| | orange | **UC-WMCO 4,9 (12X5) OG** | **0827738** | 5 | | | |
| | yellow | **UC-WMCO 4,9 (12X5) YE** | **0827734** | 5 | | | |
| | violet | **UC-WMCO 4,9 (12X5) VT** | **0827739** | 5 | | | |
| | blue | **UC-WMCO 4,9 (12X5) BU** | **0827735** | 5 | | | |
| | green | **UC-WMCO 4,9 (12X5) GN** | **0827736** | 5 | | | |
| Lettering field size: 21 x 5 mm | white | | | | **UC-WMCO 4,9 (21X5)** | **0827747** | 5 |
| | red | | | | **UC-WMCO 4,9 (21X5) RD** | **0827751** | 5 |
| | orange | | | | **UC-WMCO 4,9 (21X5) OG** | **0827752** | 5 |
| | yellow | | | | **UC-WMCO 4,9 (21X5) YE** | **0827748** | 5 |
| | violet | | | | **UC-WMCO 4,9 (21X5) VT** | **0827753** | 5 |
| | blue | | | | **UC-WMCO 4,9 (21X5) BU** | **0827749** | 5 |
| | green | | | | **UC-WMCO 4,9 (21X5) GN** | **0827750** | 5 |
| **UniCard sheet,** for subsequent labeling of conductors, **labeled according to customer requirements** | | | | | | | |
| Lettering field size: 12 x 5 mm | white | **UC-WMCO 4,9 (12X5) CUS** | **0829088** | 1 | | | |
| | red | **UC-WMCO 4,9 (12X5) RD CUS** | **0829092** | 1 | | | |
| | orange | **UC-WMCO 4,9 (12X5) OG CUS** | **0829093** | 1 | | | |
| | yellow | **UC-WMCO 4,9 (12X5) YE CUS** | **0829089** | 1 | | | |
| | violet | **UC-WMCO 4,9 (12X5) VT CUS** | **0829094** | 1 | | | |
| | blue | **UC-WMCO 4,9 (12X5) BU CUS** | **0829090** | 1 | | | |
| | green | **UC-WMCO 4,9 (12X5) GN CUS** | **0829091** | 1 | | | |
| Lettering field size: 21 x 5 mm | white | | | | **UC-WMCO 4,9 (21X5) CUS** | **0829095** | 1 |
| | red | | | | **UC-WMCO 4,9 (21X5) RD CUS** | **0829099** | 1 |
| | orange | | | | **UC-WMCO 4,9 (21X5) OG CUS** | **0829100** | 1 |
| | yellow | | | | **UC-WMCO 4,9 (21X5) YE CUS** | **0829096** | 1 |
| | violet | | | | **UC-WMCO 4,9 (21X5) VT CUS** | **0829101** | 1 |
| | blue | | | | **UC-WMCO 4,9 (21X5) BU CUS** | **0829097** | 1 |
| | green | | | | **UC-WMCO 4,9 (21X5) GN CUS** | **0829098** | 1 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-WMCO ... | **P1 UC-MAG 7** | **5146568** | 1 | **P1 UC-MAG 7** | **5146568** | 1 |
| **Assembly tool,** for easily sliding on UC-WMCO 4,9 ... conductor markers | **UC-WMCO 5,8 TOOL** | **0827805** | 10 | **UC-WMCO 5,8 TOOL** | **0827805** | 10 |
| **Assembly tool set,** for easily sliding on UC-WMCO 1,6 ... and UC-WMCO 4,9 ... conductor markers | **UC-WMCO TOOL SET** | **0827807** | 1 | **UC-WMCO TOOL SET** | **0827807** | 1 |

## UC-WMTB ... conductor marking, for assembly with cable binders

- Conductor markers in UniCard sheet form that can be labeled using BLUEMARK
- Highly resistant and optimum printing quality thanks to modern UV printing technology
- Conductor markers for attachment using standard cable binders
- For large-surface labeling of conductors and cables > 7 mm in diameter
- Available in nine colors

**Notes:**

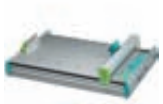
Order markers labeled according to customer specifications using item UC-WMTB ... CUS. For ordering examples, see CLIPLINE catalog page 601.

For corresponding cable binders, see CLIPLINE catalog page 717.

For more cable markers for fixing with cable binders, visit: www.phoenixcontact.net/catalog

Can be printed with:

BLUEMARK



CMS-P1-PLOTTER

**Markers for > 16 mm² conductors, 44 x 15 mm lettering field size**

### Technical data

| General data | | |
|---|---|---|
| Number of individual labels | | 4 |
| Number of individual labels per strip | | 1 |
| Material | | PA |
| Inflammability class acc. to UL 94 | | V2 |
| Temperature range | [°C] | -40 ... 120 |
| Components | | free from silicone and halogen |
| Conductor diameter range | [mm] | > 7 |
| Conductor cross-section range | [mm²] | > 16 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **UniCard sheet,** for mounting with two cable binders, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | |
| Lettering field size: 44 x 15 mm | white | **UC-WMTB (44X15)** | **0828376** | 10 |
| | red | **UC-WMTB (44X15) RD** | **0828377** | 10 |
| | orange | **UC-WMTB (44X15) OG** | **0828378** | 10 |
| | yellow | **UC-WMTB (44X15) YE** | **0828379** | 10 |
| | violet | **UC-WMTB (44X15) VT** | **0828380** | 10 |
| | blue | **UC-WMTB (44X15) BU** | **0828381** | 10 |
| | green | **UC-WMTB (44X15) GN** | **0828382** | 10 |
| | silver | **UC-WMTB (44X15) SR** | **0828383** | 10 |
| | brown | **UC-WMTB (44X15) BN** | **0828384** | 10 |
| **UniCard sheet,** for mounting with one cable binder, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | |
| Lettering field size: 52 x 30 mm | | **UC-WMTB (52X30)** | **5775288** | 10 |
| Lettering field size: 52 x 50 mm | | **UC-WMTB (52X50)** | **5775289** | 10 |
| **UniCard sheet,** for mounting with two cable binders, **labeled according to customer specifications** | | | | |
| Lettering field size: 44 x 15 mm | white | **UC-WMTB (44X15) CUS** | **0829379** | 1 |
| | red | **UC-WMTB (44X15) RD CUS** | **0829406** | 1 |
| | orange | **UC-WMTB (44X15) OG CUS** | **0829405** | 1 |
| | yellow | **UC-WMTB (44X15) YE CUS** | **0829409** | 1 |
| | violet | **UC-WMTB (44X15) VT CUS** | **0829408** | 1 |
| | blue | **UC-WMTB (44X15) BU CUS** | **0829403** | 1 |
| | green | **UC-WMTB (44X15) GN CUS** | **0829404** | 1 |
| | silver | **UC-WMTB (44X15) SR CUS** | **0829407** | 1 |
| | brown | **UC-WMTB (44X15) BN CUS** | **0829402** | 1 |
| **UniCard sheet,** for mounting with one cable binder, **labeled according to customer specifications** | | | | |
| Lettering field size: 52 x 30 mm | | **UC-WMTB (52X30) CUS** | **0829432** | 1 |
| Lettering field size: 52 x 50 mm | | **UC-WMTB (52X50) CUS** | **0829433** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-EM..., UC-EMP..., UC-EMLP..., UC-EMSP..., and UC-WMTB... | **P1 UC-MAG 6** | **5146121** | 1 |

## UC-EM... device marking for Phoenix Contact and devices from other manufacturers

– For device markers in UniCard sheet form that can be labeled using BLUEMARK, which can be snapped into Phoenix Contact devices and devices from other manufacturers, see table on the right of page
– Highly resistant and optimum printing quality thanks to modern UV printing technology
– Available in white and yellow

**Notes:**

Order markers labeled according to customer specifications using item UC-EM ... CUS. For ordering examples, see CLIPLINE catalog page 601.

Can be printed with:

**BLUEMARK**

**CMS-P1-PLOTTER**

**Snap-in device marker, 17.5 x 9 mm lettering field size**

### Technical data

| General data | | |
|---|---|---|
| Number of individual labels | | 20 |
| Number of individual labels per strip | | 5 |
| Material | | PA |
| Inflammability class acc. to UL 94 | | V2 |
| Temperature range | [°C] | -40 ... 120 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | free from silicone and halogen |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **UniCard sheet,** 1.2 mm thick, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | |
| 20-section, lettering field size: 17.5 x 9 mm | white | **UC-EM (17,5X9)** | **0827490** | 10 |
| | yellow | **UC-EM (17,5X9) YE** | **0827494** | 10 |
| **UniCard sheet,** 1.2 mm thick, **labeled according to customer requirements** | | | | |
| 20-section, lettering field size: 17.5 x 9 mm | white | **UC-EM (17,5X9) CUS** | **0828238** | 1 |
| | yellow | **UC-EM (17,5X9) YE CUS** | **0828239** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-EM..., UC-EMP..., UC-EMLP..., UC-EMSP..., and UC-WMTB... | **P1 UC-MAG 6** | **5146121** | 1 |

## Device marking for Phoenix Contact devices

UC-EM (17.5X9)...

**INTERFACE**

Power supply sockets SD-D/..., SD-F/..., SD-US/...

INTERFACE Relay PLC power terminal Order No. 2966508

UC-EM (17,5X9)...

**PLUSCON**

SACB-SPEEDCON distributor boxes with M12 slots and metal thread

SACB-SPEEDCON distributor boxes with M12 slots and plug-in screw connection

Distributor boxes with QUICKON slots

## Device marking for MURR ELEKTRONIK devices

UC-EM (17.5X9)...

**MURR ELEKTRONIK**

Plastic M12 distributor systems

## UC-EMSP ... device marking with holes for screw or rivet fixing

- Device markers in UniCard sheet form that can be labeled using BLUEMARK
- Highly resistant and optimum printing quality thanks to modern UV printing technology
- Secure tight fit due to mechanical fixing using screws or rivets
- Available in three colors

**Notes:**

Order markers labeled according to customer specifications using item UC-EMSP ... CUS. For ordering examples, see CLIPLINE catalog page 601.

For corresponding rivet for fixing the UC-EMSP ..., see page 94.

For drilling diagrams, visit www.phoenixcontact.net/catalog

For snap-in plastic labels and marker carriers, see CLIPLINE catalog page 576 and onwards.

Can be printed with:

**BLUEMARK**

**CMS-P1-PLOTTER**

**Marker for fixing with screws or rivets**

### Technical data

| General data | |
|---|---|
| Material | PA |
| Inflammability class acc. to UL 94 | V2 |
| Temperature range [°C] | -40 ... 120 |
| Wipe resistance | DIN EN 61010-1 (VDE 0411-1) |
| Components | free from silicone and halogen |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **UniCard sheet,** plastic labels with mounting holes 3.2 mm in diameter, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | |
| 4-section, lettering field size: 50 x 15 mm | white | **UC-EMSP (50X15)** | **0828706** | 10 |
| | yellow | **UC-EMSP (50X15) YE** | **0828707** | 10 |
| | silver | **UC-EMSP (50X15) SR** | **0828708** | 10 |
| 3-section, lettering field size: 50 x 30 mm | white | **UC-EMSP (50X30)** | **0828709** | 10 |
| | yellow | **UC-EMSP (50X30) YE** | **0828710** | 10 |
| | silver | **UC-EMSP (50X30) SR** | **0828711** | 10 |
| **UniCard sheet,** plastic labels with mounting holes 3.2 mm in diameter, **labeled according to customer specifications** | | | | |
| 4-section, lettering field size: 50 x 15 mm | white | **UC-EMSP (50X15) CUS** | **0829103** | 1 |
| | yellow | **UC-EMSP (50X15) YE CUS** | **0829104** | 1 |
| | silver | **UC-EMSP (50X15) SR CUS** | **0829105** | 1 |
| 3-section, lettering field size: 50 x 30 mm | white | **UC-EMSP (50X30) CUS** | **0829106** | 1 |
| | yellow | **UC-EMSP (50X30) YE CUS** | **0829107** | 1 |
| | silver | **UC-EMSP (50X30) SR CUS** | **0829108** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-EM..., UC-EMP..., UC-EMLP..., UC-EMSP..., and UC-WMTB... | **P1 UC-MAG 6** | **5146121** | 1 |

## Device marking with UC-EMLP... self-adhesive markers

– Device markers in UniCard sheet form that can be labeled using BLUEMARK
– Highly resistant and optimum printing quality thanks to modern UV printing technology
– High adhesive strength and wide temperature range enable use in the control cabinet and the field

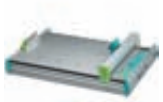
**Notes:**

Order markers labeled according to customer specifications using item UC-EMLP ... CUS. For ordering examples, see CLIPLINE catalog page 601.

For more self-adhesive markers in other lettering field sizes, visit www.phoenixcontact.net/catalog

Can be printed with:

**BLUEMARK**



**CMS-P1-PLOTTER**

**Self-adhesive markers**

### Technical data

| General data | |
|---|---|
| Material | PA |
| Inflammability class acc. to UL 94 | V2 |
| Temperature range [°C] | -40 ... 120 |
| Wipe resistance | DIN EN 61010-1 (VDE 0411-1) |
| Components | free from silicone and halogen |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **UniCard sheet,** with self-adhesive plastic labels, can be labeled with BLUEMARK and CMS-P1-PLOTTER | | | | |
| 10-section, lettering field size: 17 x 15 mm | white | **UC-EMLP (17X15)** | **0827885** | 10 |
| | yellow | **UC-EMLP (17X15) YE** | **0827886** | 10 |
| | silver | **UC-EMLP (17X15) SR** | **0827887** | 10 |
| 4-section, lettering field size: 49 x 15 mm | white | **UC-EMLP (49X15)** | **0827903** | 10 |
| | yellow | **UC-EMLP (49X15) YE** | **0827904** | 10 |
| | silver | **UC-EMLP (49X15) SR** | **0827905** | 10 |
| **UniCard sheet,** with self-adhesive plastic labels, **labeled according to customer requirements** | | | | |
| 10-section, lettering field size: 17 x 15 mm | white | **UC-EMLP (17X15) CUS** | **0827941** | 1 |
| | silver | **UC-EMLP (17X15) SR CUS** | **0827942** | 1 |
| | yellow | **UC-EMLP (17X15) YE CUS** | **0827943** | 1 |
| 4-section, lettering field size: 49 x 15 mm | white | **UC-EMLP (49X15) CUS** | **0827947** | 1 |
| | silver | **UC-EMLP (49X15) SR CUS** | **0827948** | 1 |
| | yellow | **UC-EMLP (49X15) YE CUS** | **0827949** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plastic magazine,** for CMS-P1-PLOTTER, for accommodating: UC-EM..., UC-EMP..., UC-EMLP..., UC-EMSP..., and UC-WMTB... | **P1 UC-MAG 6** | **5146121** | 1 |

## CARRIER-EMLP... and -EMP... marker carriers

- Can be used for all buttons and switches with 22 mm diameter
- The large labeling areas on the CARRIER-EMLP enable individual labeling with EML... thermal transfer labels or GPE... engraving markers
- Snap-in UC-EMP... plastic markers are available for the CARRIER-EMP...

**Marker carrier for buttons and switches with 22 mm diameter**

### Technical data

| General data | | |
|---|---|---|
| Material | | PA |
| Inflammability class acc. to UL 94 | | V2 |
| Temperature range | [°C] | -40 ... 105 |
| Components | | free from silicone and halogen |
| Button diameter | [mm] | 22 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Marker carrier,** for buttons and switches with 22 mm diameter, can be labeled with EML ... self-adhesive labels | | | | |
| Marker size: 27 x 8 mm | black | **CARRIER-EMLP 22 (27X8)** | **0828984** | 50 |
| Marker size: 27 x 12.5 mm | black | **CARRIER-EMLP 22 (27X12,5)** | **0828985** | 50 |
| Marker size: 27 x 15 mm | black | **CARRIER-EMLP 22 (27X15)** | **0828986** | 50 |
| Marker size: 27 x 18 mm | black | **CARRIER-EMLP 22 (27X18)** | **0828987** | 50 |
| Marker size: 27 x 27 mm | black | **CARRIER-EMLP 22 (27X27)** | **0828988** | 50 |
| **Marker carrier**, for UC-EMP... snap-in labels | | | | |
| Marker size: 27 x 8 mm | black | **CARRIER-EMP 22 (27X8)** | **0827445** | 50 |
| Marker size: 27 x 12.5 mm | black | **CARRIER-EMP 22 (27X12,5)** | **0827446** | 50 |
| Marker size: 27 x 15 mm | black | **CARRIER-EMP 22 (27X15)** | **0827447** | 50 |
| Marker size: 27 x 18 mm | black | **CARRIER-EMP 22 (27X18)** | **0827448** | 50 |
| Marker size: 27 x 27 mm | black | **CARRIER-EMP 22 (27X27)** | **0827449** | 50 |

## GBS ... group labeling of terminal blocks

- Space-saving group labeling directly on the terminal block
- Fits all terminal blocks with a high center Zack marker strip groove
- Large-surface labeling with labels or manually using B-STIFT or X-PEN
- Additional Zack marker strip groove in the marker foot

Group marking label

### Technical data

| General data | | |
|---|---|---|
| Material | | PA |
| Inflammability class acc. to UL 94 | | V2 |
| Temperature range | [°C] | -40 ... 120 |
| Components | | free from silicone and halogen |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Group marking label,** can be snapped into terminal center, can be labeled with an EML (24X4)R label or manually using B-STIFT or X-PEN, in the foot part with ZB 5, UC-TM 5 | gray | **GBS 5-25X5** | **0829126** | 100 |
| **Group marking label,** can be snapped into terminal center, can be labeled with an EML (25,4X12,7)R label or manually using B-STIFT or X-PEN, in the foot part with ZB 5, UC-TM 5 | gray | **GBS 5-25X12** | **0810588** | 100 |

## Marker adapter for increasing existing CARRIER-TM... labeling areas

### CARRIER-TMD 300

- Can be snapped into all terminal blocks in the CLIPLINE complete system that have a high center Zack marker strip groove
- For accommodating two ZB ... or UC-TM ... terminal markers, thus doubling the labeling area

### CARRIER-TM 300

- Can be snapped into all terminal blocks in the CLIPLINE complete system that have a lateral flat Zack marker strip groove
- For accommodating ZB ... and UC-TM ... terminal markers, thus doubling the labeling area

**Notes:**

Marker adapters can be cut to length burr-free using cable duct cutters, see page 100.

Marker adapter, 300 mm long

### Technical data

| General data | | |
|---|---|---|
| Material | | PA |
| Inflammability class acc. to UL 94 | | V2 |
| Temperature range | [°C] | -40 ... 100 |
| Components | | free from silicone and halogen |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Marker adapter,** 300 mm long, can be snapped into the lateral groove on modular terminal blocks, designed to accommodate ZB ... or UC-TM ... | gray | **CARRIER-TM 300** | **0828282** | 25 |
| **Marker adapter, double row,** 300 mm long, can be snapped into the center groove on modular terminal blocks, designed to accommodate two ZB ... or UC-TM ... | gray | **CARRIER-TMD 300** | **0828693** | 25 |

# TOOL fox – The right tool, whatever the application

## General

Phoenix Contact offers a full range of professional processing and measuring tools for all electrical engineering applications. The tools used for cutting, stripping, crimping, screwing, and testing are both easy to handle and of the highest quality. Automatic cutting and stripping devices, and crimping machines can be used to automate work steps. Repeatable, good quality results can only be achieved with professional tools. Our tools are all about quality, precision, durability, and effectiveness.

**Cutting and universal tools**

## CUTFOX/UNIFOX

### Cutting and universal tools

With CUTFOX, Phoenix Contact has the perfect cable cutter for every application. There are different designs for processing cables with a diameter up to 100 mm. All parts of the cable cutters that are under particular strain are tempered or specially hardened. The comprehensive range of UNIFOX combination tools ensures all applications are covered. The safety tools, which feature 2-component slip-proof handles, are VDE-tested and marked accordingly.

**Stripping tools**

## WIREFOX

### Stripping tools

The WIREFOX product range provides the perfect tool for every stripping task. WIREFOX precision stripping tools from Phoenix Contact make a real impression thanks to their excellent ergonomics and the special geometry of the hardened blades. They combine a superb tool life with unfailingly excellent results and are ideally suited to crimping work.

**Crimping tools**

## CRIMPFOX

### Crimping tools

The extensive CRIMPFOX range offers the professional user a new generation of crimping pliers. A new power transmission method reduces the amount of manual force required by 25% at maximum crimping pressure. The handles' excellent geometry also makes for light work. The integrated pressure lock ensures long-term stability as well as high-quality, gas-tight crimping.

**Measuring and testing devices**

## TESTFOX

### Measuring and testing devices

TESTFOX multimeters, current pliers, and voltage testers are high-quality measuring tools, which have been tested and approved in accordance with national and international standards. They support all the standard measuring methods and are the perfect solution for any application (industrial, electrical installation, services).

**Cutting and stripping devices, plus crimping machines**

## Automatic devices

### Cutting and stripping devices, plus crimping machines

Phoenix Contact has a comprehensive range of innovative automatic tools offering fast and flexible processing of conductors and cables thanks to the automation of work steps. A combination of functionality, quality, and short modification times guarantees high levels of flexibility while ensuring excellent results every time.

## Tool sets for convenient use on site

– Universal tool sets, with cutting, stripping, crimping, and testing tools from the TOOL fox tool range
– Rugged and heavy-duty tool bags

Tool set in a case

Tool set in a carry case wrap

| Description | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Tool case,** equipped with one of each of the following tools:<br>- CRIMPFOX 6S-F - WIREFOX 10<br>- WIREFOX-D 40 - CUTFOX 18<br>- SZF 1-0,6 x 3,5 - 3 m tape measure<br>- 50 pcs. JBC 2,5/5 junction box connectors<br>- TOOL-KIT STANDARD EMPTY | **TOOL-KIT STANDARD** | **1212422** | 1 | | | |
| **Tool case,** empty | **TOOL-KIT STANDARD EMPTY** | **1212423** | 1 | | | |
| **Tool carry case wrap,** equipped with one of each of the following tools:<br>- CUTFOX-S VDE - CUTFOX 16 VDE<br>- UNIFOX-C VDE - UNIFOX-P VDE<br>- SZS 0,4X2,5 - SZS 0,5X3,0<br>- SZS 1,0X4,0 - SZS 1,0X6,5<br>- SZK PH0 - SZK PH1<br>- SZK PH2 - PROFIPOL<br>- TOOL-WRAP EMPTY | | | | **TOOL-WRAP** | **1212505** | 1 |
| **Tool carry case wrap,** empty | | | | **TOOL-WRAP EMPTY** | **1212501** | 1 |
| **Tool belt pouch,** equipped with one of each of the following tools:<br>- CUTFOX-S VDE - CUTFOX 18<br>- WIREFOX-D 13 - UNIFOX-CE VDE<br>- USS 4 - SZS 0,5 x 3,0<br>- SZS 1,0 x 4,0 - SZS 1,0 x 5,5<br>- SZK PH1 - SZK PH2<br>- Cutter blade - 3 m tape measure<br>- PROFIPOL - TOOL-BELTPOUCH EMPTY | | | | | | |
| **Tool belt pouch,** empty | | | | | | |
| **Tool bag,** equipped with one of each of the following tools:<br>- CUTFOX S VDE - CUTFOX 18<br>- WIREFOX 10 VDE - WIREFOX-D 13<br>- WIREFOX-D 28 - CRIMPFOX-M<br>- CRIMPFOX-M 10/DIE - UNIFOX-CE VDE<br>- UNIFOX-P VDE - UNIFOX WP<br>- SZS 0,4X2,5 - SZS 0,5X3,0<br>- SZS 1,0X4,0 - SZS 1,0X6,5<br>- SZK PH0 - SZK PH1<br>- SZK PH2 - PROFIPOL<br>- USS 4 - Cutter blade<br>- 3 m tape measure - TOOL CARRIER EMPTY | | | | | | |
| **Tool bag,** empty | | | | | | |
| **Tool bag,** with laptop and document compartments, equipped with one of each of the following tools:<br>- CUTFOX 25 VDE - CUTFOX-S VDE<br>- WIREFOX 10 - WIREFOX-D 40<br>- CRIMPFOX-M SET - UNIFOX-C VDE<br>- UNIFOX-P VDE - UNIFOX WP<br>- SZS 0,4X2,5 - SZS 0,5X3,0<br>- SZS 1,0X4,0 - SZS 1,0X6,5<br>- SZK PH0 - SZK PH1<br>- SZK PH2 - DUSPOL EXPERT<br>- USS 4 - AI SORTI BOX RD<br>- Cutter blade - 3 m tape measure<br>- TOOL-BAG EMPTY | | | | | | |
| **Tool bag,** with document and laptop compartments, empty | | | | | | |

Tool set in a belt pouch

Tool set in a bag

Tool set in a bag with laptop and document compartments

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| TOOL-BELTPOUCH | 1212506 | 1 |
| TOOL-BELTPOUCH EMPTY | 1212502 | 1 |

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| TOOL-CARRIER | 1212503 | 1 |
| TOOL-CARRIER EMPTY | 1212499 | 1 |

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| TOOL-BAG | 1212504 | 1 |
| TOOL-BAG EMPTY | 1212500 | 1 |

## MICROFOX pliers, for all applications in electronics

Miniature precision pliers feature the following:
- Ergonomically designed 2-component grip for fatigue-proof and non-slip use
- Manufactured from high-grade special tool steel
- Opening spring for uniform, smooth opening
- Through-connected joint for permanent stability and optimum distribution of force
- Mirror-polished and oiled metal surfaces, which provide maximum rust protection

### Cutting pliers
- Additional inductive hardened cutting for long-term, stable cutting performance
- Precision-ground for exact cutting applications with minimum effort
- Various head shapes, even for areas that are difficult to access

### Gripping and bending pliers
- Smooth grip to prevent damage to components when gripping and bending

Diagonal cutter

**Technical data**

| | |
|---|---|
| Cutting capacity | 0.3 - 1.6 mm, soft wire (AL/CU) up to 220 N/mm² tensile strength |
| | 1.2 mm, medium hard wire up to 750 N/mm² tensile strength |
| | 0.5 mm, hard wire up to 1800 N/mm² tensile strength |

**Ordering data**

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Electronic diagonal cutter,** round head, with chamfer, with opening spring | **MICROFOX-SB** | **1212489** | 1 |
| **Electronic diagonal cutter,** tapered head, without chamfer, with opening spring | **MICROFOX-SP** | **1212488** | 1 |
| **Electronic front cutter,** without chamfer, with opening spring | | | |
| **Electronic front cutter,** 20° angle, without chamfer, with opening spring | | | |
| **Electronic needle-nose pliers,** smooth grip, with opening spring | | | |
| **Electronic needle-nose pliers,** 45° angle, smooth grip, with opening spring | | | |
| **Electronic flat-nose pliers,** smooth grip, with opening spring | | | |
| **Electronic round-nose pliers,** smooth grip, with opening spring | | | |

Front cutter

Needle-nose pliers

Flat/round-nose pliers

### Technical data

0.3 - 2.0 mm, soft wire (AL/CU) up to 220 N/mm² tensile strength

1.0 mm, medium hard wire up to 750 N/mm² tensile strength

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| MICROFOX-E | 1212494 | 1 |
| MICROFOX-EO | 1212495 | 1 |

### Technical data

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| MICROFOX-P | 1212491 | 1 |
| MICROFOX-PC | 1212492 | 1 |

### Technical data

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| MICROFOX-F | 1212493 | 1 |
| MICROFOX-R | 1212490 | 1 |

## ESD MICROFOX pliers, for applications in ESD protected areas

ESD MICROFOX pliers offer the following features:

– The special conductive plastic grip ensures slow and safe removal of electrostatic energy according to standards and directives such as DIN EN 61340-5
– Ergonomically designed 2-component grip for fatigue-proof and non-slip use
– Manufactured from high-grade special tool steel
– Opening spring for uniform, smooth opening
– Screwed precision-joint for permanent stability and optimum results
– Mirror-polished and phosphate-treated metal surfaces for optimum rust protection and no glare when working

### Cutting pliers

– Additional inductive hardened cutting for long-term, stable cutting performance
– Precision-ground for exact cutting applications with minimum effort
– Various head shapes, even for areas that are difficult to access

### Gripping and bending pliers

– Smooth grip to prevent damage to components when gripping and bending

ESD

**ESD diagonal cutter**

**Technical data**

| | |
|---|---|
| Cutting capacity | 0.2 - 2.0 mm, soft wire (AL/CU) up to 220 N/mm² tensile strength |
| | 1.0 mm, medium hard wire up to 750 N/mm² tensile strength |

**Ordering data**

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **ESD electronic diagonal cutter,** round head, without chamfer, with opening spring | **MICROFOX-S ESD** | **1212480** | 1 |
| **ESD electronic front cutter,** without chamfer, with opening spring | | | |
| **ESD electronic needle-nose pliers,** smooth grip, with opening spring | | | |
| **ESD electronic needle-nose pliers,** 45° angle, smooth grip, with opening spring | | | |
| **ESD electronic flat-nose pliers,** smooth grip, with opening spring | | | |
| **ESD electronic round-nose pliers,** smooth grip, with opening spring | | | |

ESD

**ESD front cutter**

ESD

**ESD needle-nose pliers**

ESD

**ESD flat/round-nose pliers**

### Technical data

0.2 - 2.0 mm, soft wire (AL/CU) up to 220 N/mm² tensile strength

1.0 mm, medium hard wire up to 750 N/mm² tensile strength

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| MICROFOX-E ESD | 1212485 | 1 |

### Technical data

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| MICROFOX-P ESD | 1212482 | 1 |
| MICROFOX-PC ESD | 1212483 | 1 |

### Technical data

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| MICROFOX-F ESD | 1212484 | 1 |
| MICROFOX-R ESD | 1212481 | 1 |

## WIREFOX stripping tool for solar cables

- For standard 2.5, 4, and 6 mm² solar cables
- Pre-defined length stop, specifically designed for MC3 and MC4 connectors from Multi-Contact and SOLARLOK connectors from Tyco
- Quick and easy handling
- Replaceable blade

**Stripping tool for 2.5 - 6 mm² solar cables**

**Ordering data**

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Stripping tool,** for 2.5 - 6 mm² solar cables, 8.5 mm stripping length | WIREFOX-D SR 6 | 1212507 | 1 |

## CRIMPFOX crimping pliers for solar connectors

- Safe crimping of MC3 and MC4 solar connectors from Multi-Contact and SOLARLOK connectors from Tyco
- Ergonomically designed grip
- Optimized mechanical transmission reduces the force required by up to 25%

**Crimping pliers for MC3, MC4, and SOLARLOK solar connectors**

**Ordering data**

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Crimping pliers,** for MC3 solar connectors, pressure lock can be unlocked, lateral entry, with 2.5 - 6 mm² locator | CRIMPFOX-SR 6-1 | 1212467 | 1 |
| **Crimping pliers,** for MC4 solar connectors, pressure lock can be unlocked, lateral entry, with 2.5 - 6 mm² locator | CRIMPFOX-SR 6-2 | 1212468 | 1 |
| **Crimping pliers,** for SOLARLOK solar connectors, pressure lock can be unlocked, lateral entry, with 2.5 - 6 mm² locator | CRIMPFOX-SR 6-3 | 1212469 | 1 |

## New solar connector dies for CRIMPFOX-M universal crimping pliers

– Crimp inserts for safe crimping of MC3 and MC4 solar connectors from Multi-Contact and SOLARLOK connectors from Tyco
– Crimp inserts can be changed quickly without the need for tools

**Notes:**

For more crimping dies for ferrules, cable lugs, slip-on sleeves, turned contacts, coaxial, RJ45, and RJ11 connectors, visit www.phoenixcontact.net/catalog

**Crimping pliers with exchangeable dies for MC3, MC4, and SOLARLOK solar connectors**

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Basic pliers,** for accommodating dies for various contact types, pressure lock can be unlocked, lateral entry | black | **CRIMPFOX-M** | **1212072** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Die,** for MC3 solar connectors, lateral entry, 2.5 - 6 mm² | **CRIMPFOX-M SR 6-1/DIE** | **1212471** | 1 |
| **Die,** for MC4 solar connectors, lateral entry, 2.5 - 6 mm² | **CRIMPFOX-M SR 6-2/DIE** | **1212472** | 1 |
| **Die,** for SOLARLOK solar connectors, lateral entry, 2.5 - 6 mm² | **CRIMPFOX-M SR 6-3/DIE** | **1212473** | 1 |

## UNIFOX-RVT M blind rivet pliers

Blind rivet pliers

- Compact, ergonomically shaped pliers
- 3 inserts for rivet diameter of 2.4 - 3.2 mm, 4 mm, and 4.8 - 5.0 mm
- Special rivets are available for fixing RW... and UW... high-current panel feed-through terminal blocks that are specifically designed for terminal blocks

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Blind rivet pliers** | black | **UNIFOX-RVT M** | **1212476** | 1 |
| **Rivet,** aluminum<br>Rivet diameter/length | | | | |
| 2.4/8 mm, for UW 4... terminal blocks | | **RVT-AL/ST 2,4L/8** | **3240548** | 500 |
| 3/6 mm | | **RVT-AL/ST 3/6** | **3240504** | 500 |
| 3/8 mm | | **RVT-AL/ST 3/8** | **3240505** | 500 |
| 3/10 mm | | **RVT-AL/ST 3/10** | **3240506** | 500 |
| 3/12 mm, for UW 10..., UW 16..., and RW 5... terminal blocks | | **RVT-AL/ST 3/12** | **3240507** | 500 |
| 3.2/6 mm | | **RVT-AL/ST 3,2/6** | **3240509** | 500 |
| 3.2/8 mm | | **RVT-AL/ST 3,2/8** | **3240510** | 500 |
| 3.2/10 mm | | **RVT-AL/ST 3,2/10** | **3240511** | 500 |
| 3.2/12 mm | | **RVT-AL/ST 3,2/12** | **3240512** | 500 |
| 4/6 mm | | **RVT-AL/ST 4/6** | **3240513** | 500 |
| 4/8 mm | | **RVT-AL/ST 4/8** | **3240514** | 500 |
| 4/10 mm | | **RVT-AL/ST 4/10** | **3240515** | 500 |
| 4/12 mm | | **RVT-AL/ST 4/12** | **3240516** | 500 |
| 4/14 mm, for UW 25... and RW 8... terminal blocks | | **RVT-AL/ST 4/14** | **3240517** | 500 |
| 4.8/6 mm | | **RVT-AL/ST 4,8/6** | **3240518** | 500 |
| 4.8/8 mm | | **RVT-AL/ST 4,8/8** | **3240519** | 500 |
| 4.8/10 mm | | **RVT-AL/ST 4,8/10** | **3240520** | 500 |
| 4.8/12 mm | | **RVT-AL/ST 4,8/12** | **3240521** | 500 |
| 4.8/16 mm | | **RVT-AL/ST 4,8/16** | **3240522** | 500 |

### Accessories

| | | | |
|---|---|---|---|
| **Plug-on part,** long, specially designed for 3240548 rivet, for fixing UW 4... panel feed-through terminal blocks | **UNIFOX-RVT M/BIT 2,4L** | **1212477** | 1 |

## ASD hexagonal socket wrench bit set for battery-powered and torque screwdrivers

– Easy handling thanks to the integrated magnet with spring function
– Suitable for ASD 21 torque battery-powered screwdrivers and TSD... torque screwdrivers

Hexagonal socket wrench bit set

| Description | Ordering data | | |
|---|---|---|---|
| | Type | Order No. | Pcs./ Pkt. |
| **Battery-powered screwdriver bit set**, 1 attachment set each in 5.5 mm, 8 mm, 13 mm, adapter to ¼" | **ASD BIT SET HN** | **1209952** | 1 |
| **Nut,** hexagonal, 5.5 mm | **BHN 5,5** | **1209965** | 1 |
| Hexagonal, 8 mm | **BHN 8** | **1209978** | 1 |
| Hexagonal, 10 mm | **BHN 10** | **1209981** | 1 |
| Hexagonal, 13 mm | **BHN 13** | **1209994** | 1 |
| **Adapter** for ¼" | **BF 6,3** | **1209936** | 1 |

## SHN hexagonal socket wrench

– Ergonomically designed 2-component grip for fatigue-proof and non-slip use

Hexagonal socket wrench

| Description | Ordering data | | |
|---|---|---|---|
| | Type | Order No. | Pcs./ Pkt. |
| **Socket wrench,** hexagonal, 5.5 mm | **SHN 5.5** | **1209855** | 10 |
| Hexagonal, 8 mm | **SHN 8** | **1209868** | 10 |
| Hexagonal, 13 mm | **SHN 13** | **1209923** | 10 |

## CF 1000-10 stripping and crimping machine for 4 ... 10 mm²

**Notes:**

See data sheet for further technical data.

**Stripping and crimping machine for 4 ... 10 mm²**

- Processes loose ferrules according to DIN 46228-4
- Strips and crimps conductors in one step, processes up to 1200 conductors per hour
- Pull-out force according to IEC/EN 60999 and IEC/EN 60947
- Rugged design
- Quickly change cross-section without the need for additional settings
- Quantity counter
- Suitable for bulk processing

### Technical data

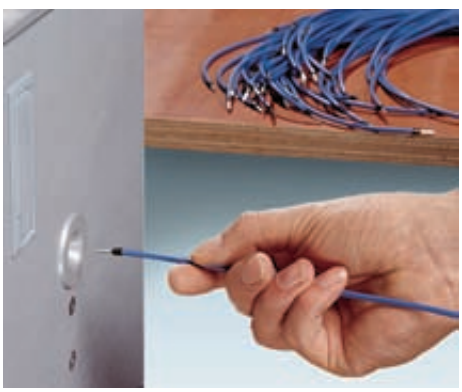
| Dimensions | | Width | Length | Height |
|---|---|---|---|---|
| | [mm] | **240** | **490** | **390** |
| **General data** | | | | |
| Weight | [kg] | 29 | | |
| Air consumption per compression | [l] | 1.2 | | |
| Working cycle | [s] | 1.5 | | |
| Compression | | trapezoidal | | |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Stripping and crimping machine,** 230 V version, electro-pneumatic, for loose ferrules with insulating collar, 4 mm², 6 mm², and 10 mm², without conversion kit | **CF 1000-10** | **1212456** | 1 |
| **Stripping and crimping machine,** 120 V version, electro-pneumatic, for loose ferrules with insulating collar, 4 mm², 6 mm², and 10 mm², without conversion kit | **CF 1000-10 120V** | **1212457** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Conversion kit,** complete, for CF 1000-10, for loose ferrules with insulating collar | | | |
| 4 mm², 10 - 12 mm stripping length | **CF 1000-10-TOOLKIT 4/10-12** | **1212458** | 1 |
| 6 mm², 12 mm stripping length | **CF 1000-10-TOOLKIT 6/12** | **1212459** | 1 |
| 10 mm², 12 mm stripping length | **CF 1000-10-TOOLKIT 10/12** | **1212460** | 1 |
| **Protective cover** | **CF 1000-COVER** | **1208306** | 1 |



## CF 500 crimping machine, new die for assembling FBS ... plug-in bridges

The CF 500 is characterized by a high press capacity in a compact design.

Easy to replace dies for assembling the following plug-in bridges and processing ferrules, cable lugs, and contacts:

– FBS ...-4, FBS ...-5, FBS ...-6, and FBS ...-8 plug-in bridges from the CLIPLINE complete accessories range
– Ferrules up to 50 mm²
– TWIN ferrules up to 2 x 10 mm²
– Insulated cable lugs up to 6 mm²
– Uninsulated cable lugs up to 6 mm²
– Tube lugs up to 10 mm²
– Slip-on sleeves and slip-on connectors up to 6 mm²
– Turned contacts up to 10 mm²

**Notes:**

See data sheet for further technical data.

For more information about dies, visit: www.phoenixcontact.net/catalog

**Crimping machine for all applications**

### Technical data

| Dimensions | | Width | Length | Height |
|---|---|---|---|---|
| | [mm] | **140** | **220** | **320** |
| **General data** | | | | |
| Weight | [kg] | 10 | | |
| Power supply | [V] | 100 ... 240 | | |
| Power consumption | [VA] | 160 | | |
| Pressure | [kN] | 10 | | |
| Working cycle | [s] | 1 | | |

### Ordering data

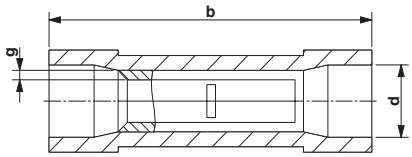
| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Crimping machine,** 230 V version, with quantity counter, for various contact types, ferrules, insulated and uninsulated cable lugs, flat connectors and sleeves, turned contacts, easy die replacement, with foot pedal | **CF 500-230V** | **1208348** | 1 |
| **Crimping machine,** 120 V version, with quantity counter, for various contact types, ferrules, insulated and uninsulated cable lugs, flat connectors and sleeves, turned contacts, easy die replacement, with foot pedal | **CF 500-120V** | **1208351** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **CF 500 die,** for assembling FBS ... plug-in bridges | **CF 500/DIE FBS** | **1212461** | 1 |
| **CF 500 protective cover,** for FBS ... plug-in bridges | **CF 500/COV FBS** | **1212462** | 1 |

## Butt connector, fully insulated

– Conductor through connection protection
– Hard-soldered crimping zone for maximum conductor pull-out force in connection with CRIMPFOX RCI... pliers
– Electrogalvanized
– Halogen-free



Butt connector

### Technical data

**General data**

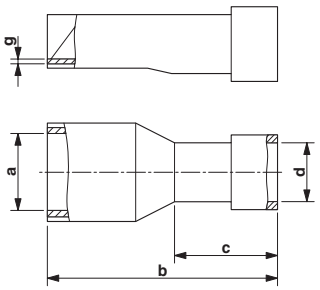
| | | |
|---|---|---|
| Material / coating | | CU / Electrogalvanized |
| Temperature range | [°C] | -20 ... 105 |

### Ordering data

| Description | Cross-section [mm²] | Cross-section AWG | Color | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Butt connector,** insulated | | | | | | | | | | | | | |
| | 0.5 - 1.5 | 20 - 16 | red | - | 25.00 | - | 4.00 | - | - | 0.75 | **C-JCI 1,5** | **3240061** | 50 |
| | 1.5 - 2.5 | 16 - 14 | blue | - | 25.30 | - | 4.50 | - | - | 0.80 | **C-JCI 2,5** | **3240062** | 50 |
| | 4 - 6 | 12 - 10 | yellow | - | 27.50 | - | 6.00 | - | - | 1.00 | **C-JCI 6** | **3240063** | 25 |

## Slip-on sleeves, fully insulated

– Easy and reliable conductor entry thanks to "EASY ENTRY"
– Hard-soldered crimping zone for maximum conductor pull-out force in connection with CRIMPFOX RCI... pliers
– Electrogalvanized
– Halogen-free



Slip-on sleeve

### Technical data

**General data**

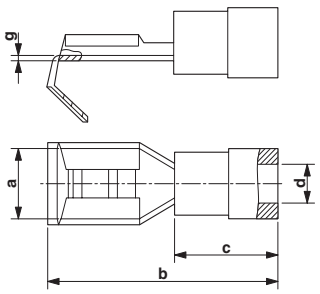
| | | |
|---|---|---|
| Material / coating | | Brass / Electrogalvanized |
| Temperature range | [°C] | -20 ... 105 |

### Ordering data

| Description | Cross-section [mm²] | Cross-section AWG | Color | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Slip-on sleeve,** fully insulated, for connectors: | | | | | | | | | | | | | |
| 2.8 x 0.5 mm | 0.5 - 1.5 | 20 - 16 | red | 2.80 | 19.00 | 10.50 | 4.30 | - | - | 0.25 | **C-SCFFI 1,5/2,8X0,5** | **3240534** | 50 |
| 2.8 x 0.8 mm | 0.5 - 1.5 | 20 - 16 | red | 2.80 | 19.00 | 10.50 | 4.30 | - | - | 0.25 | **C-SCFFI 1,5/2,8X0,8** | **3240535** | 50 |
| 4.8 x 0.5 mm | 0.5 - 1.5 | 20 - 16 | red | 4.80 | 19.50 | 10.50 | 4.30 | - | - | 0.40 | **C-SCFFI 1,5/4,8X0,5** | **3240536** | 50 |
| 4.8 x 0.8 mm | 0.5 - 1.5 | 20 - 16 | red | 4.80 | 19.50 | 10.50 | 4.30 | - | - | 0.40 | **C-SCFFI 1,5/4,8X0,8** | **3240537** | 50 |
| 6.3 x 0.8 mm | 0.5 - 1.5 | 20 - 16 | red | 6.30 | 21.50 | 10.50 | 4.30 | - | - | 0.40 | **C-SCFFI 1,5/6,3X0,8** | **3240538** | 50 |
| 4.8 x 0.5 mm | 1.5 - 2.5 | 16 - 14 | blue | 4.80 | 20.00 | 11.00 | 5.00 | - | - | 0.40 | **C-SCFFI 2,5/4,8X0,5** | **3240539** | 50 |
| 4.8 x 0.8 mm | 1.5 - 2.5 | 16 - 14 | blue | 4.80 | 20.00 | 11.00 | 5.00 | - | - | 0.40 | **C-SCFFI 2,5/4,8X0,8** | **3240540** | 50 |
| 6.3 x 0.8 mm | 1.5 - 2.5 | 16 - 14 | blue | 6.30 | 22.00 | 11.00 | 5.00 | - | - | 0.40 | **C-SCFFI 2,5/6,3X0,8** | **3240547** | 25 |
| 6.3 x 0.8 mm | 4 - 6 | 12 - 10 | yellow | 6.30 | 26.00 | 14.00 | 6.60 | - | - | 0.40 | **C-SCFFI 6/6,3X0,8** | **3240541** | 25 |

## Slip-on distributor, insulated

- Easy and reliable conductor entry thanks to "EASY ENTRY"
- Hard-soldered crimping zone for maximum conductor pull-out force in connection with CRIMPFOX RCI... pliers
- Electrogalvanized
- Halogen-free



Slip-on distributor

### Technical data

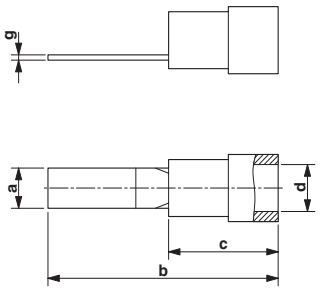
| General data | |
|---|---|
| Material / coating | Brass / Electrogalvanized |
| Temperature range [°C] | -20 ... 105 |

### Ordering data

| Description | Cross-section [mm²] | Cross-section AWG | Color | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Slip-on distributor,** insulated, for 6.3 x 0.8 mm connectors and sleeves | | | | | | | | | | | | | |
| | 0.5 - 1.5 | 20 - 16 | red | 6.30 | 22.50 | 10.50 | 41.00 | - | - | 0.40 | **C-SCFMI 1,5/6,3X0,8** | **3240529** | 50 |
| | 1.5 - 2.5 | 16 - 14 | blue | 6.30 | 23.00 | 11.00 | 11.00 | - | - | 0.40 | **C-SCFMI 2,5/6,3X0,8** | **3240530** | 50 |

## Flat pin cable lugs, insulated

- Easy and reliable conductor entry thanks to "EASY ENTRY"
- Hard-soldered crimping zone for maximum conductor pull-out force in connection with CRIMPFOX RCI... pliers
- Electrogalvanized
- Halogen-free



Flat pin cable lugs

### Technical data

| General data | |
|---|---|
| Material / coating | CU / Electrogalvanized |
| Temperature range [°C] | -20 ... 105 |

### Ordering data

| Description | Cross-section [mm²] | Cross-section AWG | Color | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Flat pin cable lug,** insulated, pin dimensions: | | | | | | | | | | | | | |
| 19.5 x 2.8 mm | 0.5 - 1.5 | 20 - 16 | red | 2.80 | 19.50 | 10.50 | 4.10 | - | - | 0.75 | **C-BCSI 1,5/9X2,8** | **3240531** | 100 |
| 20 x 2.8 mm | 1.5 - 2.5 | 16 - 14 | blue | 2.80 | 20.00 | 11.00 | 4.50 | - | - | 0.80 | **C-BCSI 2,5/9X2,8** | **3240532** | 100 |
| 24 x 2.8 mm | 4 - 6 | 12 - 10 | yellow | 4.50 | 32.00 | 14.00 | 6.60 | - | - | 1.00 | **C-BCSI 6/10X2,8** | **3240546** | 100 |
| 32 x 4.5 mm | 4 - 6 | 12 - 10 | yellow | 2.80 | 24.00 | 14.00 | 6.60 | - | - | 1.00 | **C-BCSI 6/18X4,5** | **3240533** | 100 |

## Cable duct cutters

Cable duct cutter

### CUTFOX-CD cable duct cutter

- Easy, burr-free cutting with minimum effort thanks to the special cutting geometry and optimum leverage
- Non-slip ergonomic grip
- With spring reset
- 45° limit stop
- 75 mm cutting length

### PPS CD M cable duct cutter

- Leverage and special cutting geometry enables easy, burr-free cutting with minimum effort
- Grip protection for safety
- Metric measuring rail with adjustable limit stop
- 125 mm cutting length
- Material thickness of up to 2.5 mm

**Technical data**

| Dimensions | Width | Length | Height |
|---|---|---|---|
| [mm] | - | 245 | - |
| **General data** | | | |
| Weight [kg] | 0.43 | | |

**Ordering data**

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Cable duct cutter**, for cutting plastic cable ducts, covers, and profiles, 45° limit stop also for bevel cuts, 75 mm cutting length | black | CUTFOX-CD | 1212474 | 1 |
| **Cable duct cutter,** for cutting cable ducts and their covers and profiles, with metric measuring rail, 125 mm cutting width | black | PPS CD M | 1207569 | 1 |

**Accessories**

| | | | |
|---|---|---|---|
| **Replacement blade,** for PPS CD M | PPS CD BLADE | 1207572 | 1 |
| **Replacement counter support blade (grip protection),** for PPS CD M | PPS CD M COHO | 1208995 | 1 |
| **Workbench,** with plywood panel 700 x 1200 x 50 mm, without mounting screws and bore holes | PPS TABLE | 1206285 | 1 |

## Halogen-free cable ducts and accessories

For example, in areas with high safety requirements, such as tower blocks, office buildings, and public facilities with high foot traffic, e.g., airports, halogen-free cable ducts are recommended. The cable ducts offer the following features:

– Installed conductors are securely held in place by means of wire retaining clips that can be snapped onto bars on the side
– The wide, diagonal heads of the cable duct bars make it easy to fit the cover
– Predetermined breaking point enables tool-free, burr-free removal of bars
– Fast and seamless creation of T and cross connections by means of an additional predetermined breaking point in the cable duct base
– Cover is securely held in place for both horizontal and vertical mounting

**Notes:**

For cable ducts cut to customer requirements, visit: www.phoenixcontact.net/catalog

**Halogen-free cable ducts**

### Technical data

| General data | | |
|---|---|---|
| Material | | PC/ABS |
| Components | | Halogen-free |
| Inflammability class acc. to UL 94 | | V0 |
| Temperature range | [°C] | -25 ... 90 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Cable duct, halogen-free,** comprising **mounting base** and **upper part** | | | | |
| W x H: 25 x 25 mm | gray | **CD-HF 25X25** | **3240340** | 25 |
| W x H: 25 x 40 mm | gray | **CD-HF 25X40** | **3240341** | 24 |
| W x H: 25 x 60 mm | gray | **CD-HF 25X60** | **3240342** | 30 |
| W x H: 25 x 80 mm | gray | **CD-HF 25X80** | **3240343** | 10 |
| W x H: 30 x 40 mm | gray | **CD-HF 30X40** | **3240344** | 20 |
| W x H: 30 x 60 mm | gray | **CD-HF 30X60** | **3240345** | 24 |
| W x H: 30 x 80 mm | gray | **CD-HF 30X80** | **3240346** | 12 |
| W x H: 30 x 100 mm | gray | **CD-HF 30X100** | **3240347** | 24 |
| W x H: 40 x 40 mm | gray | **CD-HF 40X40** | **3240348** | 25 |
| W x H: 40 x 60 mm | gray | **CD-HF 40X60** | **3240349** | 20 |
| W x H: 40 x 80 mm | gray | **CD-HF 40X80** | **3240350** | 10 |
| W x H: 40 x 100 mm | gray | **CD-HF 40X100** | **3240351** | 20 |
| W x H: 60 x 40 mm | gray | **CD-HF 60X40** | **3240352** | 20 |
| W x H: 60 x 60 mm | gray | **CD-HF 60X60** | **3240353** | 12 |
| W x H: 60 x 80 mm | gray | **CD-HF 60X80** | **3240354** | 10 |
| W x H: 60 x 100 mm | gray | **CD-HF 60X100** | **3240355** | 8 |
| W x H: 80 x 25 mm | gray | **CD-HF 80X25** | **3240356** | 12 |
| W x H: 80 x 40 mm | gray | **CD-HF 80X40** | **3240357** | 15 |
| W x H: 80 x 60 mm | gray | **CD-HF 80X60** | **3240358** | 10 |
| W x H: 80 x 80 mm | gray | **CD-HF 80X80** | **3240359** | 6 |
| W x H: 80 x 100 mm | gray | **CD-HF 80X100** | **3240360** | 8 |
| W x H: 100 x 40 mm | gray | **CD-HF 100X40** | **3240361** | 10 |
| W x H: 100 x 60 mm | gray | **CD-HF 100X60** | **3240362** | 8 |
| W x H: 100 x 80 mm | gray | **CD-HF 100X80** | **3240363** | 6 |
| W x H: 100 x 100 mm | gray | **CD-HF 100X100** | **3240364** | 6 |
| W x H: 120 x 60 mm | gray | **CD-HF 120X60** | **3240365** | 6 |
| W x H: 120 x 80 mm | gray | **CD-HF 120X80** | **3240366** | 8 |

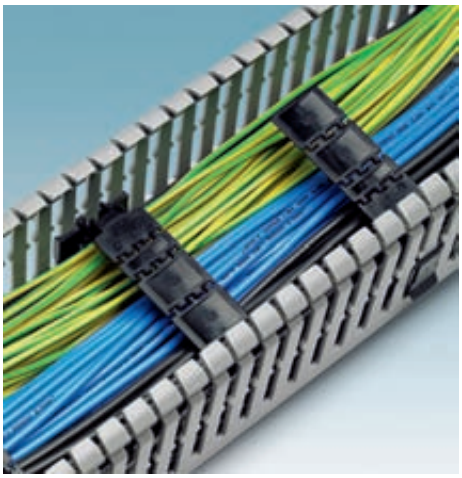
### Accessories

| | | | |
|---|---|---|---|
| **Cable duct, halogen-free, upper part** | | | |
| For a width of 25 mm | **CD-HF COVER 25** | **3240369** | 14 |
| For a width of 30 mm | **CD-HF COVER 30** | **3240370** | 10 |
| For a width of 40 mm | **CD-HF COVER 40** | **3240371** | 14 |
| For a width of 60 mm | **CD-HF COVER 60** | **3240372** | 10 |
| For a width of 80 mm | **CD-HF COVER 80** | **3240373** | 10 |
| For a width of 100 mm | **CD-HF COVER 100** | **3240367** | 7 |
| For a width of 120 mm | **CD-HF COVER 120** | **3240368** | 6 |
| **Universal wire holding bracket,** pre-perforated for cable duct widths of 40, 60, 80 and 100 mm | **CD WR** | **3240284** | 10 |
| **Plastic body-bound rivet,** 4 mm diameter, for a material thickness of 1.5 ... 6 mm | **RVT-PA 4** | **3240498** | 100 |
| 6 mm diameter, material thickness of 2 ... 8 mm | **RVT-PA 6** | **3240499** | 100 |
| **Rivet setting tool,** for use with RVT-PA 4 plastic body-bound rivets | **UNIFOX-RVT P 4** | **1212478** | 1 |
| **Rivet setting tool,** for use with RVT-PA 6 plastic body-bound rivets | **UNIFOX-RVT P 6** | **1212509** | 1 |

## Cable ducts and accessories

**Notes:**

For cable ducts cut to customer requirements, visit:
www.phoenixcontact.net/catalog



- Installed conductors are securely held in place by means of wire retaining clips that can be snapped onto bars on the side
- The wide, diagonal heads of the cable duct bars make it easy to fit the cover
- Predetermined breaking point enables tool-free, burr-free removal of bars
- Fast and seamless creation of T and cross connections by means of an additional predetermined breaking point in the cable duct base
- Cover is securely held in place for both horizontal and vertical mounting
- Plastic body-bound rivets enable easy fixing of cable ducts using the rivet setting tool

Cable ducts

### Technical data

| General data | |
|---|---|
| Material | PVC |
| Inflammability class acc. to UL 94 | V0 |
| Temperature range [°C] | -5 ... 60 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Cable duct,** consisting of a **lower** and an **upper part** | | | | |
| W x H: 25 x 25 mm | gray | **CD 25X25** | **3240187** | 25 |
| W x H: 25 x 40 mm | gray | **CD 25X40** | **3240188** | 24 |
| W x H: 25 x 60 mm | gray | **CD 25X60** | **3240191** | 30 |
| W x H: 25 x 80 mm | gray | **CD 25X80** | **3240197** | 10 |
| W x H: 30 x 40 mm | gray | **CD 30X40** | **3240278** | 20 |
| W x H: 30 x 60 mm | gray | **CD 30X60** | **3240280** | 24 |
| W x H: 30 x 80 mm | gray | **CD 30X80** | **3240282** | 12 |
| W x H: 30 x 100 mm | gray | **CD 30X100** | **3240283** | 24 |
| W x H: 40 x 40 mm | gray | **CD 40X40** | **3240189** | 25 |
| W x H: 40 x 60 mm | gray | **CD 40X60** | **3240192** | 20 |
| W x H: 40 x 80 mm | gray | **CD 40X80** | **3240198** | 10 |
| W x H: 40 x 100 mm | gray | **CD 40X100** | **3240294** | 20 |
| W x H: 60 x 40 mm | gray | **CD 60X40** | **3240190** | 20 |
| W x H: 60 x 60 mm | gray | **CD 60X60** | **3240193** | 12 |
| W x H: 60 x 80 mm | gray | **CD 60X80** | **3240199** | 10 |
| W x H: 60 x 100 mm | gray | **CD 60X100** | **3240263** | 8 |
| W x H: 80 x 25 mm | gray | **CD 80X25** | **3240281** | 12 |
| W x H: 80 x 40 mm | gray | **CD 80X40** | **3240335** | 15 |
| W x H: 80 x 60 mm | gray | **CD 80X60** | **3240194** | 10 |
| W x H: 80 x 80 mm | gray | **CD 80X80** | **3240200** | 6 |
| W x H: 80 x 100 mm | gray | **CD 80X100** | **3240264** | 8 |
| W x H: 100 x 40 mm | gray | **CD 100X40** | **3240279** | 10 |
| W x H: 100 x 60 mm | gray | **CD 100X60** | **3240195** | 8 |
| W x H: 100 x 80 mm | gray | **CD 100X80** | **3240201** | 6 |
| W x H: 100 x 100 mm | gray | **CD 100X100** | **3240205** | 6 |
| W x H: 120 x 60 mm | gray | **CD 120X60** | **3240196** | 6 |
| W x H: 120 x 80 mm | gray | **CD 120X80** | **3240202** | 8 |

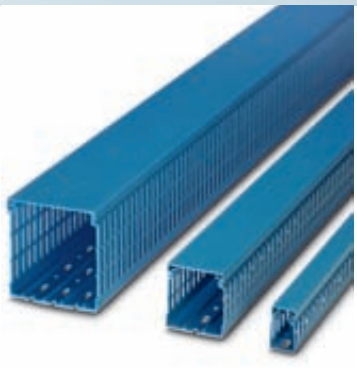
### Accessories

| | | | |
|---|---|---|---|
| **Cable duct, upper part** | | | |
| For a width of 25 mm | **CD COVER 25** | **3240285** | 14 |
| For a width of 30 mm | **CD COVER 30** | **3240295** | 10 |
| For a width of 40 mm | **CD COVER 40** | **3240286** | 14 |
| For a width of 60 mm | **CD COVER 60** | **3240287** | 10 |
| For a width of 80 mm | **CD COVER 80** | **3240288** | 10 |
| For a width of 100 mm | **CD COVER 100** | **3240289** | 6 |
| For a width of 120 mm | **CD COVER 120** | **3240290** | 6 |
| **Universal wire holding bracket,** pre-perforated for cable duct widths of 40, 60, 80 and 100 mm | **CD WR** | **3240284** | 10 |
| **Plastic body-bound rivet,** 4 mm diameter, for a material thickness of 1.5 ... 6 mm | **RVT-PA 4** | **3240498** | 100 |
| 6 mm diameter, material thickness of 2 ... 8 mm | **RVT-PA 6** | **3240499** | 100 |
| **Rivet setting tool,** for use with RVT-PA 4 plastic body-bound rivets | **UNIFOX-RVT P 4** | **1212478** | 1 |
| **Rivet setting tool,** for use with RVT-PA 6 plastic body-bound rivets | **UNIFOX-RVT P 6** | **1212509** | 1 |

## Blue cable ducts and accessories

**Notes:**

For cable ducts cut to customer requirements, visit: www.phoenixcontact.net/catalog



Cable ducts

- Cable ducts can be assembled quickly and burr-free using a cable duct cutter
- UNIFOX-RVT M blind rivet pliers enable quick and easy fixing

### Technical data

| General data | | |
|---|---|---|
| Material | | PVC |
| Inflammability class acc. to UL 94 | | V0 |
| Temperature range | [°C] | -5 ... 60 |

### Ordering data

| Description | Color | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **Cable duct,** consisting of a **lower** and an **upper part** | | | | |
| W x H: 25 x 25 mm | blue | **CD 25X25 BU** | **3240301** | 25 |
| W x H: 25 x 40 mm | blue | **CD 25X40 BU** | **3240302** | 24 |
| W x H: 25 x 60 mm | blue | **CD 25X60 BU** | **3240303** | 30 |
| W x H: 25 x 80 mm | blue | **CD 25X80 BU** | **3240304** | 10 |
| W x H: 30 x 40 mm | blue | **CD 30X40 BU** | **3240305** | 20 |
| W x H: 30 x 60 mm | blue | **CD 30X60 BU** | **3240306** | 24 |
| W x H: 30 x 80 mm | blue | **CD 30X80 BU** | **3240307** | 12 |
| W x H: 30 x 100 mm | blue | **CD 30X100 BU** | **3240308** | 24 |
| W x H: 40 x 40 mm | blue | **CD 40X40 BU** | **3240309** | 25 |
| W x H: 40 x 60 mm | blue | **CD 40X60 BU** | **3240310** | 20 |
| W x H: 40 x 80 mm | blue | **CD 40X80 BU** | **3240311** | 10 |
| W x H: 40 x 100 mm | blue | **CD 40X100 BU** | **3240312** | 20 |
| W x H: 60 x 40 mm | blue | **CD 60X40 BU** | **3240313** | 20 |
| W x H: 60 x 60 mm | blue | **CD 60X60 BU** | **3240314** | 12 |
| W x H: 60 x 80 mm | blue | **CD 60X80 BU** | **3240315** | 10 |
| W x H: 60 x 100 mm | blue | **CD 60X100 BU** | **3240316** | 8 |
| W x H: 80 x 25 mm | blue | **CD 80X25 BU** | **3240317** | 12 |
| W x H: 80 x 40 mm | blue | **CD 80X40 BU** | **3240318** | 15 |
| W x H: 80 x 60 mm | blue | **CD 80X60 BU** | **3240319** | 10 |
| W x H: 80 x 80 mm | blue | **CD 80X80 BU** | **3240320** | 6 |
| W x H: 80 x 100 mm | blue | **CD 80X100 BU** | **3240321** | 8 |
| W x H: 100 x 40 mm | blue | **CD 100X40 BU** | **3240322** | 10 |
| W x H: 100 x 60 mm | blue | **CD 100X60 BU** | **3240323** | 8 |
| W x H: 100 x 80 mm | blue | **CD 100X80 BU** | **3240324** | 6 |
| W x H: 100 x 100 mm | blue | **CD 100X100 BU** | **3240325** | 6 |
| W x H: 120 x 60 mm | blue | **CD 120X60 BU** | **3240326** | 6 |
| W x H: 120 x 80 mm | blue | **CD 120X80 BU** | **3240327** | 8 |

### Accessories

| | | | |
|---|---|---|---|
| **Cable duct, upper part** | | | |
| For a width of 25 mm | **CD COVER 25 BU** | **3240330** | 14 |
| For a width of 30 mm | **CD COVER 30 BU** | **3240331** | 10 |
| For a width of 40 mm | **CD COVER 40 BU** | **3240332** | 14 |
| For a width of 60 mm | **CD COVER 60 BU** | **3240333** | 10 |
| For a width of 80 mm | **CD COVER 80 BU** | **3240334** | 10 |
| For a width of 100 mm | **CD COVER 100 BU** | **3240328** | 6 |
| For a width of 120 mm | **CD COVER 120 BU** | **3240329** | 6 |
| **Universal wire holding bracket,** pre-perforated for cable duct widths of 40, 60, 80 and 100 mm | **CD WR** | **3240284** | 10 |
| **Plastic body-bound rivet,** 4 mm diameter, for a material thickness of 1.5 ... 6 mm | **RVT-PA 4** | **3240498** | 100 |
| 6 mm diameter, material thickness of 2 ... 8 mm | **RVT-PA 6** | **3240499** | 100 |
| **Rivet setting tool,** for use with RVT-PA 4 plastic body-bound rivets | **UNIFOX-RVT P 4** | **1212478** | 1 |
| **Rivet setting tool,** for use with RVT-PA 6 plastic body-bound rivets | **UNIFOX-RVT P 6** | **1212509** | 1 |

**M12 flush-type connectors**
with 25 mm square flange
**page: 106**

**M12 flush-type connectors**
for rear mounting with litz wire,
M16 x 1.5 fastening thread
**page: 107**

**M12 flush-type connectors**
for PCB mounting, wave soldering,
M16 x 1.5 fastening thread
**page: 108**

**M12 connectors,**
free assembly, 12/17-pos.,
with Piercecon connection
**page: 112**

**M12 sensor/actuator cables**
with plastic knurl
**page: 114**

**7/8" power cable** and T-adapter
**page: 118**

**Valve connectors**
**page: 123**

**Ethernet M12 connectors** for $CAT6_A$
**page: 132**

**Panel feed-throughs and connecting cables** for EtherCAT and Sercos
**page: 138**

**RJ45 and fiber optic connectors**
for Ethernet/IP
**page: 144**

**Assembled cables** for DeviceNet and CANopen™
**page: 148**

**Assembled cables** for PROFIBUS PA
**page: 155**

**Ethernet patch cables, M12 and RJ45** for CAT6$_A$

**page: 134**

**QUICKON panel feed-throughs**
with push-in connection

**page: 158**

**D series contact inserts and modular contact inserts**
with crimp connection

**page: 160**

**ADVANCE sleeve housing**
for use offshore

**page: 166**

## M12 flush-type connector, one-piece, 25 mm square flange, with 0.5 m litz wires

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**4-pos., A-encoded**

**4-pos., D-encoded**

**5-pos., A-encoded**

**5-pos., B-encoded**

| | Ordering data | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1419991** | 1 | **1440957** | 1 | **1440973** | 1 | **1440999** | 1 |
| Female | **1420003** | 1 | **1440960** | 1 | **1440986** | 1 | **1441558** | 1 |

| | Technical data | Technical data | Technical data | Technical data |
|---|---|---|---|---|
| Electrical data | | | | |
| Rated voltage | 250 V | 250 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 |
| Insulation resistance | 100 MΩ | 100 MΩ | 100 MΩ | 100 MΩ |
| Surge voltage category | II | II | II | II |
| Mechanical data | | | | |
| Fastening thread | Square flange | Square flange | Square flange | Square flange |
| 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 |
| Conductor cross-section | 0.34 mm² | 0.34 mm² | 0.34 mm² | 0.34 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 |

## M12 flush-type connector, one-piece, 25 mm square flange, with 0.5 m litz wires

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**8-pos.**

**12-pos.**

**17-pos.**

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1441561** | 1 | **1441587** | 1 | **1441600** | 1 |
| Female | **1441574** | 1 | **1441590** | 1 | **1441613** | 1 |

| | Technical data | Technical data | Technical data |
|---|---|---|---|
| Electrical data | | | |
| Rated voltage | 30 V | 30 V | 30 V |
| Nominal current $I_N$ | 2 A | 1.5 A | 1.5 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 | | | |
| Fastening thread | Square flange | Square flange | Square flange |
| 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 | 0.25 mm² | 0.14 mm² | 0.14 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 |

## M12 flush-type connector, rear mounting, with 0.5 m litz wires

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**4-pos., A-encoded**

**4-pos., D-encoded**

**5-pos., A-encoded**

**5-pos., B-encoded**

| | Ordering data | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1419629** | 1 | **1419603** | 1 | **1419645** | 1 | **1419661** | 1 |
| Female | **1419632** | 1 | **1419616** | 1 | **1419658** | 1 | **1419674** | 1 |

| | Technical data | Technical data | Technical data | Technical data |
|---|---|---|---|---|
| Electrical data | | | | |
| Rated voltage | 250 V | 250 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 |
| Insulation resistance | 100 MΩ | 100 MΩ | 100 MΩ | 100 MΩ |
| Surge voltage category | II | II | II | II |
| Mechanical data | | | | |
| Fastening thread | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 |
| 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 acc. to UL 94 | V0 | V0 | V0 | V0 |
| Pollution degree | 3 | 3 | 3 | 3 |
| Degree of protection | IP67 | IP67 | IP67 | IP67 |
| Conductor cross-section | 0.34 mm² | 0.34 mm² | 0.34 mm² | 0.34 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 |

## M12 flush-type connector, rear mounting, with 0.5 m litz wires

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**8-pos.**

**12-pos.**

**17-pos.**

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1419687** | 1 | **1419700** | 1 | **1419726** | 1 |
| Female | **1419690** | 1 | **1419713** | 1 | **1419739** | 1 |

| | Technical data | Technical data | Technical data |
|---|---|---|---|
| Electrical data | | | |
| Rated voltage | 30 V | 30 V | 30 V |
| Nominal current $I_N$ | 2 A | 1.5 A | 1.5 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 | | | |
| Fastening thread | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 |
| 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 | 0.25 mm² | 0.14 mm² | 0.14 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 |

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

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**4-pos., A-encoded**

**4-pos., D-encoded**

**5-pos., A-encoded**

**5-pos., B-encoded**

| | Ordering data | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1419742** | 20 | **1441749** | 20 | **1441765** | 20 | **1441781** | 20 |
| Female | **1419755** | 20 | **1441752** | 20 | **1441778** | 20 | **1441794** | 20 |

| | Technical data | Technical data | Technical data | Technical data |
|---|---|---|---|---|
| Electrical data | | | | |
| Rated voltage | 250 V | 250 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 |
| Insulation resistance | 100 MΩ | 100 MΩ | 100 MΩ | 100 MΩ |
| Surge voltage category | II | II | II | II |
| Mechanical data | | | | |
| Fastening thread | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 |
| 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 acc. to UL 94 | V0 | V0 | V0 | V0 |
| Pollution degree | 3 | 3 | 3 | 3 |
| Degree of protection | IP67 | IP67 | IP67 | IP67 |
| Temperature data | | | | |
| Ambient temperature (operation) | -25°C ... 85°C | -25°C ... 85°C | -25°C ... 85°C | -25°C ... 85°C |

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

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**8-pos.**

**12-pos.**

**17-pos.**

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1441804** | 20 | **1441820** | 20 | **1441846** | 20 |
| Female | **1441817** | 20 | **1441833** | 20 | **1441859** | 20 |

| | Technical data | Technical data | Technical data |
|---|---|---|---|
| Electrical data | | | |
| Rated voltage | 30 V | 30 V | 30 V |
| Nominal current $I_N$ | 2 A | 1.5 A | 1.5 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 | | | |
| Fastening thread | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 |
| 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 |
| Temperature data | | | |
| Ambient temperature (operation) | -25°C ... 85°C | -25°C ... 85°C | -25°C ... 85°C |

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

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**4-pos., A-encoded**

**4-pos., D-encoded**

**5-pos., A-encoded**

**5-pos., B-encoded**

| | Ordering data | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1419768** | 20 | **1441862** | 20 | **1441888** | 20 | **1441901** | 20 |
| Female | **1419771** | 20 | **1441875** | 20 | **1441891** | 20 | **1441914** | 20 |

| | Technical data | Technical data | Technical data | Technical data |
|---|---|---|---|---|
| Electrical data | | | | |
| Rated voltage | 250 V | 250 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 |
| Insulation resistance | 100 MΩ | 100 MΩ | 100 MΩ | 100 MΩ |
| Surge voltage category | II | II | II | II |
| Mechanical data | | | | |
| Fastening thread | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 |
| 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 acc. to UL 94 | V0 | V0 | V0 | V0 |
| Pollution degree | 3 | 3 | 3 | 3 |
| Degree of protection | IP67 | IP67 | IP67 | IP67 |
| Temperature data | | | | |
| Ambient temperature (operation) | -25°C ... 85°C | -25°C ... 85°C | -25°C ... 85°C | -25°C ... 85°C |

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

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**8-pos.**

**12-pos.**

**17-pos.**

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1441927** | 20 | **1441943** | 20 | **1441969** | 20 |
| Female | **1441930** | 20 | **1441956** | 20 | **1441972** | 20 |

| | Technical data | Technical data | Technical data |
|---|---|---|---|
| Electrical data | | | |
| Rated voltage | 30 V | 30 V | 30 V |
| Nominal current $I_N$ | 2 A | 1.5 A | 1.5 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 | | | |
| Fastening thread | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 |
| 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 |
| Temperature data | | | |
| Ambient temperature (operation) | -25°C ... 85°C | -25°C ... 85°C | -25°C ... 85°C |

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

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**M12 contact carrier, 12-pos.**

**M12 contact carrier, 17-pos.**

**M12 housing screw connection, for male contact carrier**

**M12 housing screw connection, for female contact carrier**

| | Ordering data | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1441985** | 60 | **1442007** | 60 | **-** | - | **-** | - |
| Female | **1441970** | 60 | **1441998** | 60 | **-** | - | **-** | - |
| Male connector, with shield contact | **1442065** | 60 | **1442081** | 60 | **-** | - | **-** | - |
| Female connector, with shield contact | **1442052** | 60 | **1442078** | 60 | **-** | - | **-** | - |
| With O-ring | **-** | - | **-** | - | **1551493** | 60 | **1552243** | 60 |
| With flat gasket | **-** | - | **-** | - | **1436709** | 10 | **1432460** | 10 |

| | Technical data | Technical data | Technical data | Technical data |
|---|---|---|---|---|
| Electrical data | | | | |
| Rated voltage | 30 V | 30 V | - | - |
| Nominal current $I_N$ | 1.5 A | 1.5 A | - | - |
| Volume resistance | 3 mΩ | 3 mΩ | - | - |
| Insulation resistance | 100 MΩ | 100 MΩ | - | - |
| Surge voltage category | II | II | - | - |
| Mechanical data | | | | |
| Fastening thread | - | - | M12 x 1 | M12 x 1 |
| 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 | - | - |
| Degree of protection | IP67 | IP67 | - | - |
| Temperature data | | | | |
| Ambient temperature (operation) | -25°C ... 85°C | -25°C ... 85°C | -40°C ... 85°C | -40°C ... 85°C |

## M12 flush-type connector, rear mounting, with shielded PUR cable

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**4-pos., A-encoded**

**5-pos., A-encoded**

**8-pos., A-encoded**

| | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|
| **Description** | **Cable length** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | 1 m | **1419399** | 1 | **1419409** | 1 | **1419425** | 1 |
| Male | 2 m | **1419386** | 1 | **1419412** | 1 | **1419438** | 1 |
| Female | 1 m | **1419302** | 1 | **1419328** | 1 | **1419357** | 1 |
| Female | 2 m | **1419315** | 1 | **1419331** | 1 | **1419344** | 1 |

| | Technical data | Technical data | Technical data |
|---|---|---|---|
| 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 | | | |
| Fastening thread | M16 x 1.5 | M16 x 1.5 | M16 x 1.5 |
| Material contact / contact surface | CuZn / Ni/Au | CuZn / Ni/Au | CuZn / 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 |
| Cable type | PUR halogen-free black | PUR halogen-free black | PUR halogen-free black |
| Temperature data | | | |
| Ambient temperature (operation) | -25°C ... 80°C | -25°C ... 80°C | -25°C ... 80°C |

## M12 flush-type connector with M20 screw-in thread, high-grade steel

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

**5-pos., A-encoded**

**5-pos., B-encoded**

**8-pos., A-encoded**

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1452068** | 1 | **1452084** | 1 | **1452107** | 1 |
| Female | **1452071** | 1 | **1452097** | 1 | **1452110** | 1 |

| | Technical data | Technical data | Technical data |
|---|---|---|---|
| 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 | | | |
| Fastening thread | M20 | M20 | M20 |
| 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/IP69K | IP67/IP69K | IP67/IP69K |
| Conductor cross-section | 0.34 mm² | 0.34 mm² | 0.25 mm² |
| Cable type | TPE litz wire | TPE litz wire | TPE litz wire |
| Litz wire length | 0.5 m | 0.5 m | 0.5 m |
| Temperature data | | | |
| Ambient temperature (operation) | -25°C ... 85°C | -25°C ... 85°C | -25°C ... 85°C |

## M12 connector, 12/17-pos., with Piercecon® connection method

**Notes:**

For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

Technical data in accordance with DIN IEC 61076-2-101

12-pos.

17-pos.

| | Ordering data | | Ordering data | |
|---|---|---|---|---|
| **Description** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| Male | **1559592** | 1 | **1559602** | 1 |
| Female | **1559631** | 1 | **1559644** | 1 |

| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Rated voltage | 30 V | 30 V |
| Nominal current $I_N$ | 1.5 A | 1.5 A |
| Volume resistance | 5 mΩ | 5 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 | PA |
| Material of grip body | Zinc die-cast, nickel-plated | Zinc die-cast, nickel-plated |
| Inflammability class acc. to UL 94 | V0 | V0 |
| Pollution degree | 3 | 3 |
| Degree of protection | IP67 | IP67 |
| Outside diameter | 5.4 mm ... 8.2 mm | 5.4 mm ... 8.2 mm |
| Connection cross-section min./max. | 0.14 mm² | 0.14 mm² |
| Temperature data | | |
| Ambient temperature (operation) | -25°C ... 85°C | -25°C ... 85°C |

## Cable ring for M12 connectors, 12/17-pos.

12-pos.

17-pos.

| | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|
| **Description** | **Cable length** | **Order No.** | Pcs./Pkt. | **Order No.** | Pcs./Pkt. |
| PVC cable | 100 m | **1441532** | 1 | **1441545** | 1 |

| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Outside diameter | 5.90 mm | 6.60 mm |
| Conductor cross-section | 0.14 mm² | 0.14 mm² |
| Cable type | PVC black | PVC black |
| Temperature data | | |
| Ambient temperature (operation) | -25°C ... 90°C | -25°C ... 90°C |

## M8 connector, 3/4-pos., with QUICKON connection method

| Notes: |
|---|
| For connector pin assignment and dimensional drawings, please visit: **www.phoenixcontact.net/catalog** |
| Technical data in accordance with DIN IEC 61076-2-104 |

3-pos.

4-pos.

| Description | Cross-section [mm²] | Ordering data | | Ordering data | |
|---|---|---|---|---|---|
| | | Order No. | Pcs./ Pkt. | Order No. | Pcs./ Pkt. |
| Male | 0.08 - 0.25 | **1441008** | 1 | **1441011** | 1 |
| Male | 0.25 - 0.50 | **1441024** | 1 | **1441037** | 1 |
| Female | 0.08 - 0.25 | **1441040** | 1 | **1441053** | 1 |
| Female | 0.25 - 0.50 | **1441066** | 1 | **1441079** | 1 |

| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Rated voltage | 60 V | 30 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 | TPU | TPU |
| Material of grip body | PA 6 | PA 6 |
| Inflammability class acc. to UL 94 | V0 | V0 |
| Pollution degree | 3 | 3 |
| Degree of protection | IP65/67 | IP65/67 |
| Outside diameter | 2.5 mm ... 5 mm +/-0.2 mm | 2.5 mm ... 5 mm +/-0.2 mm |
| Temperature data | | |
| Ambient temperature (operation) | -25°C ... 80°C | -25°C ... 80°C |

## M12 SAC cable, 3-pos., plastic knurl

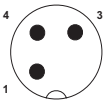
**Notes:**

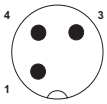
For information about the cable qualities, see page 124

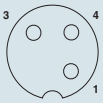
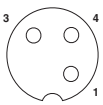
For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

**Free end**

**M12 male connector**




| | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|
| **Free end** | | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | | 1.5 m<br>3 m<br>5 m<br>10 m | **1456006**<br>**1442324**<br>**1442337**<br>**1442340** | 1.5 m<br>3 m<br>5 m<br>10 m | **1442557**<br>**1442560**<br>**1442573**<br>**1442586** |
| **M12 female connector, straight** | | | | | | | |
| |  | 1.5 m<br>3 m<br>5 m<br>10 m | **1442434**<br>**1442447**<br>**1442450**<br>**1442463** | 0.3 m<br>0.6 m<br>1.5 m<br>3 m | **1442793**<br>**1442803**<br>**1442816**<br>**1442829** | | |
| **M12 female connector, angled** | | | | | | | |
| |  | 1.5 m<br>3 m<br>5 m<br>10 m | **1442670**<br>**1442683**<br>**1442696**<br>**1442706** | | | | |

| Cable description | Cable type | Color coding | Pin assignment |
|---|---|---|---|
| PUR halogen-free – Black<br>E221474 | **PUR** | BN | 1 |
| | | BK | 4 |
| | | BU | 3 |

| | | Technical data |
|---|---|---|
| | | **M12<br>3-pos.** |
| 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 |
| Material, knurls | | PA |
| Degree of protection | | IP65/IP68/IP69K |
| Temperature data | | |
| Male/female connector | [°C] | -25 ... 90 |

## M12 SAC cable, 4-pos., plastic knurl

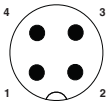
**Notes:**

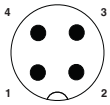
For information about the cable qualities, see page 124

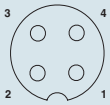
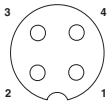
For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

**Free end**

**M12 male connector**




| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Free end** | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | 1.5 m | **1442353** | 1.5 m | **1442599** |
| | | | 3 m | **1442366** | 3 m | **1442609** |
| | | | 5 m | **1442379** | 5 m | **1442612** |
| | | | 10 m | **1442382** | 10 m | **1442625** |
| **M12 female connector, straight** | | | | | | |
|   | | | 0.3 m | **1442832** | | |
| | | | 0.6 m | **1442845** | | |
| | 1.5 m | **1442476** | 1.5 m | **1442858** | | |
| | 3 m | **1442489** | 3 m | **1442861** | | |
| | 5 m | **1442492** | | | | |
| | 10 m | **1442502** | | | | |
| **M12 female connector, angled** | | | | | | |
|   | 1.5 m | **1442719** | | | | |
| | 3 m | **1442722** | | | | |
| | 5 m | **1442735** | | | | |
| | 10 m | **1442748** | | | | |

| Cable description | Cable type | Color coding | | Pin assignment |
|---|---|---|---|---|
| PUR halogen-free – Black<br>E221474 | **PUR** | BN | | 1 |
| | | WH | | 2 |
| | | BK | | 4 |
| | | BU | | 3 |

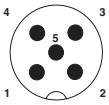
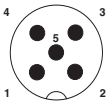
| | | Technical data |
|---|---|---|
| | | **M12 4-pos.** |
| Nominal current $I_N$ | [A] | 4 |
| Rated voltage | [V] | 250 |
| Volume resistance | | ≤ 5 mΩ |
| Contact material | | CuSn |
| Contact surface material | | Ni/Au |
| Material of grip body | | TPU, hardly inflammable, self-extinguishing |
| Material, knurls | | PA |
| Degree of protection | | IP65/IP68/IP69K |
| Temperature data | | |
| Male/female connector | [°C] | -25 ... 90 |

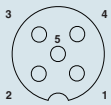
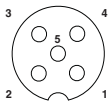
## M12 SAC cable, 5-pos., plastic knurl

**Notes:**

For information about the cable qualities, see page 124

For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

| Free end | M12 male connector |
|---|---|
| | |
| |   |

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Free end** | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | 1.5 m | **1442395** | 1.5 m | **1442638** |
| | | | 3 m | **1442405** | 3 m | **1442641** |
| | | | 5 m | **1442418** | 5 m | **1442654** |
| | | | 10 m | **1442421** | 10 m | **1442667** |
| **M12 female connector, straight** | | | | | | |
|  | | | 0.3 m | **1442874** | | |
| | | | 0.6 m | **1442887** | | |
| | 1.5 m | **1442515** | 1.5 m | **1442890** | | |
| | 3 m | **1442528** | 3 m | **1442900** | | |
| | 5 m | **1442531** | | | | |
| | 10 m | **1442544** | | | | |
| **M12 female connector, angled** | | | | | | |
|  | 1.5 m | **1442751** | | | | |
| | 3 m | **1442764** | | | | |
| | 5 m | **1442777** | | | | |
| | 10 m | **1442780** | | | | |

| Cable description | Cable type | Color coding | Pin assignment |
|---|---|---|---|
| PUR halogen-free – Black<br>E221474 | **PUR** | BN | 1 |
| | | WH | 2 |
| | | BK | 4 |
| | | BU | 3 |
| | | GNYE | 5 |

| | | Technical data |
|---|---|---|
| | | **M12 5-pos.** |
| 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 |
| Material, knurls | | PA |
| Degree of protection | | IP65/IP68/IP69K |
| Temperature data | | |
| Male/female connector | [°C] | -25 ... 90 |

## M12 SPEEDCON Y-distributor, shielded

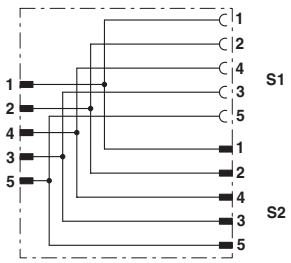
| Notes: |
|---|
| Other wiring available on request |
| For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog** |

Y male connector, 5-pos., parallel

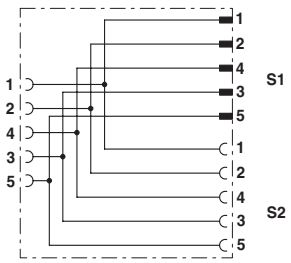
Y female connector, 5-pos., parallel

| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Rated voltage | 48 V (60 V DC) | 48 V (60 V DC) |
| Nominal current $I_N$ | 4 A | 4 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 | CuZn | CuZn |
| Contact surface material | Ni/Au | Ni/Au |
| Contact carrier material | TPU GF | TPU GF |
| Material of grip body | TPU, hardly inflammable, self-extinguishing | TPU, hardly inflammable, self-extinguishing |
| Inflammability class acc. to UL 94 | HB | HB |
| Degree of protection | IP65/67 | IP65/67 |
| Temperature data | | |
| Ambient temperature (operation) | -25°C ... 90°C | -25°C ... 90°C |

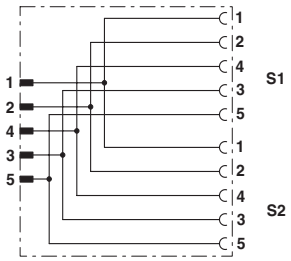
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Y male connector** to: | | | | | | |
| Male and female connector | **SAC-5PY-M/F-M VP SH** | **1438079** | 5 | | | |
| 2 x female connectors | **SAC-5PY-M/2XF VP SH** | **1419920** | 5 | | | |
| **Y female connector** to: | | | | | | |
| Male and female connector | | | | **SAC-5PY-F/M-F VP SH** | **1419933** | 5 |
| 2 x male connectors | | | | **SAC-5PY-F/2XM VP SH** | **1419946** | 5 |



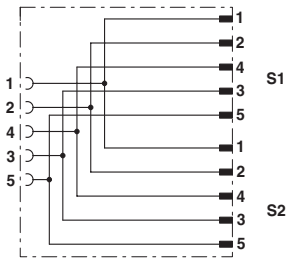

Contact assignment: SAC-5PY-M/F-M VP SH




Contact assignment: SAC-5PY-F/M-F VP SH




Contact assignment: SAC-5PY-M/2XF VP SH




Contact assignment: SAC-5PY-F/2XM VP SH

## 7/8" SAC power cable, 5-pos., PVC, 1.5 mm²

**Notes:**

For information about the cable qualities, see page 124

For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

**Free end**

**7/8" male connector**

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **7/8" female connector, straight** | | **Order No.** | | **Order No.** | | **Order No.** |
| | 1.5 m | **1443307** | 0.3 m<br>0.6 m<br>1 m<br>1.5 m<br>2 m | **1443404**<br>**1443417**<br>**1443420**<br>**1443433**<br>**1443446** | | |
| | 3 m | **1443310** | | | | |
| | 5 m | **1443323** | | | | |
| | 7.5 m | **1443336** | | | | |
| | 10 m | **1443349** | | | | |
| **7/8" female connector, angled** | | | | | | |
| | 1.5 m | **1443352** | | | 0.3 m<br>0.6 m<br>1 m<br>1.5 m<br>2 m | **1443459**<br>**1443462**<br>**1443475**<br>**1443488**<br>**1443491** |
| | 3 m | **1443365** | | | | |
| | 5 m | **1443378** | | | | |
| | 7.5 m | **1443381** | | | | |
| | 10 m | **1443394** | | | | |

| Cable description | Cable type |
|---|---|
| PVC 1.5 mm² - Gray | **430** |

| Color coding | | Pin assignment |
|---|---|---|
| BK1 | 1 | 1 |
| BK2 | 2 | 2 |
| BK3 | 3 | 4 |
| BK4 | 4 | 5 |
| GNYE | | 3 |

| | | Technical data |
|---|---|---|
| | | **7/8", 1.5 mm²** |
| Nominal current $I_N$ | [A] | 10 |
| Rated voltage | [V] | 600 |
| Volume resistance | | ≤ 5 mΩ |
| Contact material | | CuZn |
| Contact surface material | | AU |
| Material of grip body | | TPU |
| Degree of protection | | IP67 |
| Temperature data | | |
| Male/female connector | [°C] | -40 ... 90 |

## 7/8" SAC power cable, 5-pos., PVC, 2.5 mm²

**Notes:**

For information about the cable qualities, see page 124

For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

| Free end | 7/8" male connector |
|---|---|

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **7/8" female connector, straight** | | **Order No.** | | **Order No.** | | **Order No.** |
| | 1.5 m | **1443501** | 0.3 m<br>0.6 m<br>1 m<br>1.5 m<br>2 m | **1443608**<br>**1443611**<br>**1443624**<br>**1443637**<br>**1443640** | | |
| | 3 m | **1443514** | | | | |
| | 5 m | **1443527** | | | | |
| | 7.5 m | **1443530** | | | | |
| | 10 m | **1443543** | | | | |
| **7/8" female connector, angled** | | | | | | |
| | 1.5 m | **1443556** | | | 0.3 m<br>0.6 m<br>1 m<br>1.5 m<br>2 m | **1443653**<br>**1443666**<br>**1443679**<br>**1443682**<br>**1443695** |
| | 3 m | **1443569** | | | | |
| | 5 m | **1443572** | | | | |
| | 7.5 m | **1443585** | | | | |
| | 10 m | **1443598** | | | | |

| Cable description | Cable type |
|---|---|
| PVC 2.5 mm² - Gray | **431** |

| Color coding | | Pin assignment |
|---|---|---|
| BK1 | 1 | 1 |
| BK2 | 2 | 2 |
| BK3 | 3 | 4 |
| BK4 | 4 | 5 |
| GNYE | | 3 |

| | | Technical data |
|---|---|---|
| | | **7/8", 2.5 mm²** |
| Nominal current $I_N$ | [A] | 13 |
| Rated voltage | [V] | 600 |
| Volume resistance | | ≤ 5 mΩ |
| Contact material | | CuZn |
| Contact surface material | | AU |
| Material of grip body | | TPU |
| Degree of protection | | IP67 |
| Temperature data | | |
| Male/female connector | [°C] | -40 ... 90 |

## 7/8" SAC power cable, 5-pos., PUR, 1.5 mm²

**Notes:**

For information about the cable qualities, see page 124

For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

**Free end**

**7/8" male connector**

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **7/8" female connector, straight** | | **Order No.** | | **Order No.** | | **Order No.** |
| | 1.5 m | **1443705** | 0.3 m | **1443802** | | |
| | | | 0.6 m | **1443815** | | |
| | | | 1 m | **1443828** | | |
| | | | 1.5 m | **1443831** | | |
| | | | 2 m | **1443844** | | |
| | 3 m | **1443718** | | | | |
| | 5 m | **1443721** | | | | |
| | 7.5 m | **1443734** | | | | |
| | 10 m | **1443747** | | | | |
| **7/8" female connector, angled** | | | | | | |
| | | | | | 0.3 m | **1443857** |
| | | | | | 0.6 m | **1443860** |
| | | | | | 1 m | **1443873** |
| | 1.5 m | **1443750** | | | 1.5 m | **1443886** |
| | | | | | 2 m | **1443899** |
| | 3 m | **1443763** | | | | |
| | 5 m | **1443776** | | | | |
| | 7.5 m | **1443789** | | | | |
| | 10 m | **1443792** | | | | |

| Cable description | Cable type |
|---|---|
| PUR/PVC 1.5 mm² - Gray | **440** |

| Color coding | | Pin assignment |
|---|---|---|
| BK1 | **1** | 1 |
| BK2 | **2** | 2 |
| BK3 | **3** | 4 |
| BK4 | **4** | 5 |
| GNYE | | 3 |

| | | Technical data |
|---|---|---|
| | | **7/8", 1.5 mm²** |
| Nominal current $I_N$ | [A] | 10 |
| Rated voltage | [V] | 600 |
| Volume resistance | | ≤ 5 mΩ |
| Contact material | | CuZn |
| Contact surface material | | AU |
| Material of grip body | | TPU |
| Degree of protection | | IP67 |
| Temperature data | | |
| Male/female connector | [°C] | -40 ... 90 |

## 7/8" SAC power cable, 5-pos., PUR, 2.5 mm²

**Notes:**

For information about the cable qualities, see page 124

For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

| Free end | 7/8" male connector |
|---|---|

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **7/8" female connector, straight** | | **Order No.** | | **Order No.** | | **Order No.** |
| | 1.5 m | **1443909** | 0.3 m<br>0.6 m<br>1 m<br>1.5 m<br>2 m | **1419823**<br>**1419836**<br>**1419849**<br>**1419852**<br>**1419865** | | |
| | 3 m | **1443912** | | | | |
| | 5 m | **1443925** | | | | |
| | 7.5 m | **1443938** | | | | |
| | 10 m | **1443941** | | | | |
| **7/8" female connector, angled** | | | | | | |
| | 1.5 m | **1443954** | | | 0.3 m<br>0.6 m<br>1 m<br>1.5 m<br>2 m | **1419878**<br>**1419881**<br>**1419894**<br>**1419904**<br>**1419917** |
| | 3 m | **1443967** | | | | |
| | 5 m | **1443970** | | | | |
| | 7.5 m | **1419807** | | | | |
| | 10 m | **1419810** | | | | |

| Cable description | Cable type |
|---|---|
| PUR/PVC 2.5 mm² - Gray | **441** |

| Color coding | | Pin assignment |
|---|---|---|
| BK1 | 1 | 1 |
| BK2 | 2 | 2 |
| BK3 | 3 | 4 |
| BK4 | 4 | 5 |
| GNYE | | 3 |

| | | Technical data |
|---|---|---|
| | | **7/8", 2.5 mm²** |
| Nominal current $I_N$ | [A] | 13 |
| Rated voltage | [V] | 600 |
| Volume resistance | | ≤ 5 mΩ |
| Contact material | | CuZn |
| Contact surface material | | AU |
| Material of grip body | | TPU |
| Degree of protection | | IP67 |
| Temperature data | | |
| Male/female connector | [°C] | -40 ... 90 |

## 7/8" T-distributor for power connectors

**Notes:**

For connector pin assignment, please visit:
**www.phoenixcontact.net/catalog**

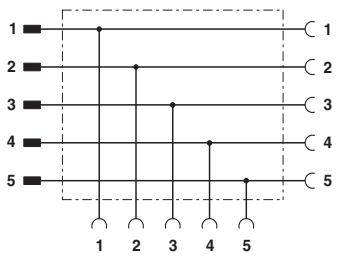
7/8" T-distributor

### Technical data

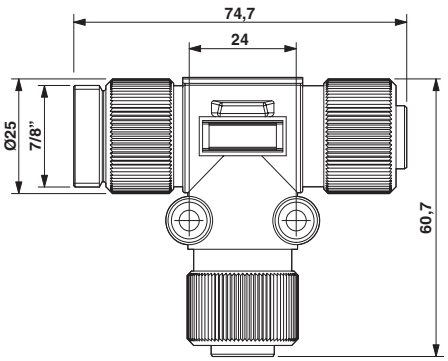
| | |
|---|---|
| Electrical data | |
| Rated voltage | 250 V |
| Nominal current $I_N$ | 10 A |
| Volume resistance | ≤ 5 mΩ |
| Insulation resistance | ≥ 10 MΩ |
| Surge voltage category / Pollution degree | II / 3 |
| Material data | |
| Contact material | CuZn |
| Contact surface material | AU |
| Contact carrier material | PA 66 |
| Material of grip body | TPU |
| Inflammability class acc. to UL 94 | HB |
| Degree of protection | IP67 |
| Temperature data | |
| Ambient temperature (operation) | -40°C ... 80°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **7/8" T-distributor** | | | |
| 5-pos., parallel | **SAC-5P-MINT/2XMIN VP** | **1543977** | 1 |




Contact assignment of the 7/8" T-distributor




7/8" T-distributor

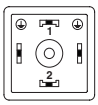
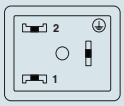
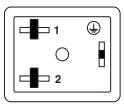
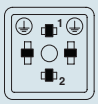
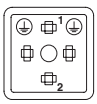
## Valve connector with free cable end and varistor protective circuit

**Notes:**

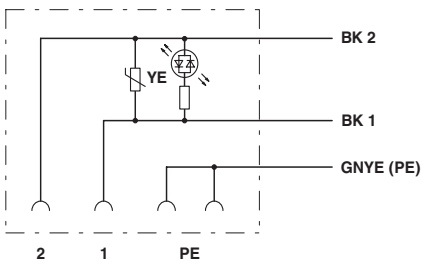
For information about the cable qualities, see page 124

For connector dimensional drawings, please visit: **www.phoenixcontact.net/catalog**

**Free end**

| | | Ordering data | |
|---|---|---|---|
| **Valve connector, type A** | | | **Order No.** |
| |  | 1.5 m<br>3 m<br>5 m<br>10 m | **1443103**<br>**1443116**<br>**1443129**<br>**1443132** |
| **Valve connector, type B** | | | |
| |  | 1.5 m<br>3 m<br>5 m<br>10 m | **1443145**<br>**1443158**<br>**1443161**<br>**1443174** |
| **Valve connector, type BI** | | | |
| |  | 1.5 m<br>3 m<br>5 m<br>10 m | **1443187**<br>**1443190**<br>**1443200**<br>**1443213** |
| **Valve connector, type C** | | | |
| |  | 1.5 m<br>3 m<br>5 m<br>10 m | **1443226**<br>**1443239**<br>**1443242**<br>**1443255** |
| **Valve connector, type CI** | | | |
| |  | 1.5 m<br>3 m<br>5 m<br>10 m | **1443268**<br>**1443271**<br>**1443284**<br>**1443297** |

| Cable description | Cable type | Number of positions | Color coding | | Pin assignment |
|---|---|---|---|---|---|
| | | | BK1 | 1 | 1 |
| PUR halogen-free 0.5 mm² – Black | **PUR** | 3-pos. | BK2 | 2 | 2 |
| | | | GNYE | | PE |




**Circuit diagram**

| | | Technical data | Technical data | Technical data |
|---|---|---|---|---|
| | | **Valve connector, type A** | **Valve connector, type B/BI** | **Valve connector, type C/CI** |
| Nominal current $I_N$ | [A] | 4 | 4 | 4 |
| Rated voltage | [V] | 24 | 24 | 24 |
| Volume resistance | | ≤ 5 mΩ | ≤ 5 mΩ | ≤ 5 mΩ |
| Material contact valve connector | | CuSn | CuSn | CuSn |
| Material contact surface valve plug | | Sn | Sn | Sn |
| Material housing valve connector | | TPU | TPU | TPU |
| Degree of protection | | IP65/IP67 | IP65/IP67 | IP65/IP67 |
| Temperature data | | | | |
| Valve connectors | [°C] | -20 ... 85 | -20 ... 85 | -20 ... 85 |

## Symbol key

With UL Style

With UL Style

Transmission properties

Good oil resistance

Suitable for use with flexible cable conduits

Transmission properties

Halogen-free

Flame-retardant

UV-resistant

Good resistance to chemicals

## PUR halogen-free

Permanently flexible control lines for use in drag chains, rotary/swivel tables, and as machine control lines under extreme operating conditions. Suitable for bending cycle loads, long service life. The special PUR outer sheath offers excellent resistance to oil according to DIN EN 60811-2-1, as well as grease, cooling agents, and other aggressive substances.

Further features: halogen-free and PVC-free, no silicone or substances that would hinder coating with paint or varnish, resistant to hydrolysis and flame-retardant to UL-FT2.

| | |
|---|---|
| **Outer sheath material** | **PUR** |
| **Minimum bending cycles** | **4 million** |
| **Minimum bending radius** | **10 x D** |
| **Traverse path** | **10 m** |
| **Acceleration** | **10 m/s²** |
| **Speed** | **3 m/s** |
| **Tested at** | **20°C to 25°C** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **PUR** Black | **3-pos.** | M12 | 3 x 0.34 mm² (42 x 0.1 mm) | | Brown, blue, black | PP | Flexible: -5°C to 80°C<br>Fixed: -40°C to 80°C | 114 |
| | | Valve connectors | 3 x 0.5 mm² (28 x 0.15 mm) | | Black 1, black 2, green/yellow | PP | Flexible: -15°C to 80°C<br>Fixed: -40°C to 80°C | 123 |
| | **4-pos.** | M12 | 4 x 0.34 mm² (42 x 0.1 mm) | | Brown, white, blue, black | PP | Flexible: -5°C to 80°C<br>Fixed: -40°C to 80°C | 115 |
| | **5-pos.** | M12 | 5 x 0.34 mm² (42 x 0.1 mm) | | Brown, white, blue, black, green/yellow | PP | Flexible: -5°C to 80°C<br>Fixed: -40°C to 80°C | 116 |

## PUR/PVC

The cables are designed for rugged performance in machine tool and assembly/production line applications, as well as production applications involving metal cutting.

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 offers excellent resistance to oil and chemicals according to HD 22.10 and VDE 0282-10 and is flame-retardant according to EN 60332-1-2, UL VW1, and CSA FT1.

| | |
|---|---|
| **Outer sheath material** | **PUR** |
| **Minimum bending radii** | |
| **Flexible** | **15 x D** |
| **Fixed** | **7.5 x D** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **440**<br>Gray | **5-pos.** | 7/8" | 5 x 1.5 mm²<br>(30 x 0.25 mm) | | Black 1,<br>black 2,<br>black 3,<br>black 4,<br>green/yellow | PVC | Flexible:<br>-5°C to 90°C<br><br>Fixed:<br>-40°C to 90°C | 120 |
| **441**<br>Gray | **5-pos.** | 7/8" | 5 x 2.5 mm²<br>(50 x 0.25 mm) | | Black 1,<br>black 2,<br>black 3,<br>black 4,<br>green/yellow | PVC | Flexible:<br>-5°C to 90°C<br><br>Fixed:<br>-40°C to 90°C | 121 |

## PVC

These very reasonably priced high-quality cables are suitable for use under dry conditions and for average mechanical loads associated with machine tools, packing machines, and assembly/production lines.

The cable offers a certain degree of resistance to oil and chemicals and is less susceptible to wear. Flame-retardant according to IEC 60332-1-2 and UL 1581 Cable Flame Test.

| | |
|---|---|
| **Outer sheath material** | **PVC** |
| **Minimum bending radii** | |
| **Flexible** | **12.5 x D** |
| **Fixed** | **4 x D** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **430**<br>Gray | **5-pos.** | 7/8" | 5 x 1.5 mm²<br>(30 x 0.25 mm) | | Black 1,<br>black 2,<br>black 3,<br>black 4,<br>green/yellow | PVC | Flexible:<br>-5°C to 90°C<br><br>Fixed:<br>-40°C to 90°C | 118 |
| **431**<br>Gray | **5-pos.** | 7/8" | 5 x 2.5 mm²<br>(50 x 0.25 mm) | | Black 1,<br>black 2,<br>black 3,<br>black 4,<br>green/yellow | PVC | Flexible:<br>-5°C to 90°C<br><br>Fixed:<br>-40°C to 90°C | 119 |

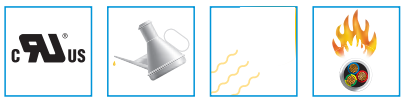
## DeviceNet™/CANopen cable - Type 923

DeviceNet/CANopen cable for flexible installation. The cable is suitable for use with drag chain and for use in harsh industrial environments. The cable is also oil-resistant.

| | |
|---|---|
| **Outer sheath material** | **PUR** |
| **Number of bending cycles** | **5 million** |
| **Minimum bending radius** | **10 x D** |
| **Traverse path** | **10 m** |
| **Acceleration** | **7 m/s²** |
| **Speed** | **180 m/min** |
| **Tested at** | **20°C to 25°C** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **923 PUR** Gray | **4-pos.** | M12, 7/8" | 1 x 2 x 22 AWG (19 x 0.15 mm) + 1 x 2 x 24 AWG (19 x 0.15 mm) | | Red, black, blue, white | PO, PE | -40°C to 80°C | 148 |

## DeviceNet™ cable - Type 928



DeviceNet/CANopen cable for fixed installation. The cable is suitable for use in harsh industrial environments. The cable is also oil-resistant.

| | |
|---|---|
| **Outer sheath material** | **PVC** |
| **Minimum bending radius** | **10 x D** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **928** Gray | **4-pos.** | 7/8" | 1 x 2 x 18 AWG 19 x 0.26 mm) + 1 x 2 x 15 AWG (19 x 0.34 mm) | | White, blue, black, red | PVC | Fixed: -40°C to 80°C | 149 |

## PROFIBUS PA cable - Type 961

PROFIBUS PA cable for fixed installation. The cable is UV resistant and flame-retardant to UL1685. This makes it suitable for use both outdoors and indoors. Cable type 961 is available in a blue version designed specifically for use in Ex areas.

| | |
|---|---|
| **Outer sheath material** | **PVC** |
| **Minimum bending radius** | **10 x D** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **961 PVC** Blue | **2-pos.** | 7/8" | 5 x 20 AWG (7 x 0.3 mm) | | Blue, orange | PO | -30°C to 105°C | 155 |

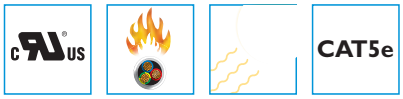
## EtherCAT cable - Type 93G

EtherCAT cable for flexible installation. The cable offers a certain degree of resistance to oil. With UV resistance according to UL1581 Sec.1200, it is also suitable for use in harsh industrial environments. The cable's transmission properties satisfy CAT5e.

| | |
|---|---|
| **Outer sheath material** | **PVC** |
| **Minimum bending radius** | **7 x D** |
| **Tested at** | **20°C to 25°C** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **93G**<br>**PVC**<br>Green | **4-pos.** | M12,<br>PP,<br>RJ45 | 4 x 22 AWG<br>(7 x 0.25 mm) | | White,<br>yellow,<br>blue,<br>orange | PE | -40°C to 70°C | 138 |

## SERCOS III cable - Type 93K




SERCOS III cable for flexible installation. The cable offers a certain degree of resistance to oil. With UV resistance according to UL1581 Sec.1200, it is also suitable for use in harsh industrial environments. The cable's transmission properties satisfy CAT5e.

| | |
|---|---|
| **Outer sheath material** | **PVC** |
| **Minimum bending radius** | **7 x D** |
| **Tested at** | **20°C to 25°C** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **93K**<br>**PVC**<br>Red | **4-pos.** | M12,<br>PP,<br>RJ45 | 4 x 22 AWG<br>(7 x 0.25 mm) | | White,<br>yellow,<br>blue,<br>orange | PE | -40°C to 70°C | 142 |

## Ethernet cable - Type 94F CAT6$_A$

Ethernet cable for flexible installation. The cable is resistant to oil and chemicals and is flame-retardant. It is also halogen-free and its transmission properties satisfy CAT6$_A$.

| | |
|---|---|
| **Outer sheath material** | **PUR** |
| **Minimum bending radius** | **10 x D** |

| Type | Number of positions | Use | Structure | Cross-section | Conductor colors | Conductor insulation | Temperature range | Page |
|---|---|---|---|---|---|---|---|---|
| **94F**<br>**PUR**<br>Blue | **8-pos.** | M12,<br>PP,<br>RJ45 | 4 x 2 x 26 AWG<br>(7 x 0.16 mm)<br>Twisted pair | | White, blue,<br>white, orange,<br>white, green,<br>white, brown | PE | -40°C to 70°C | 134 |

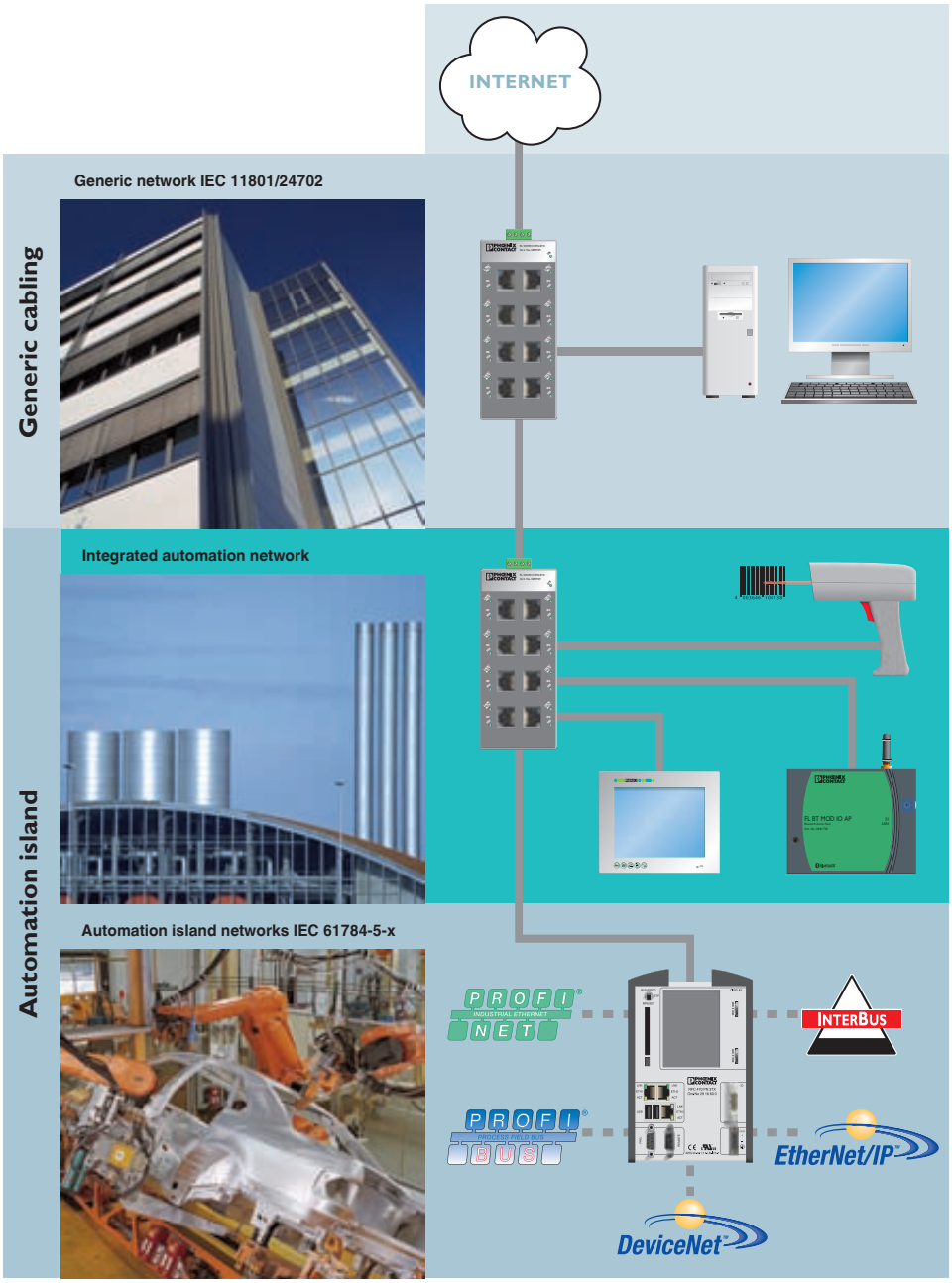
## 10 Gigabit Ethernet - Levels of industrial communication cabling

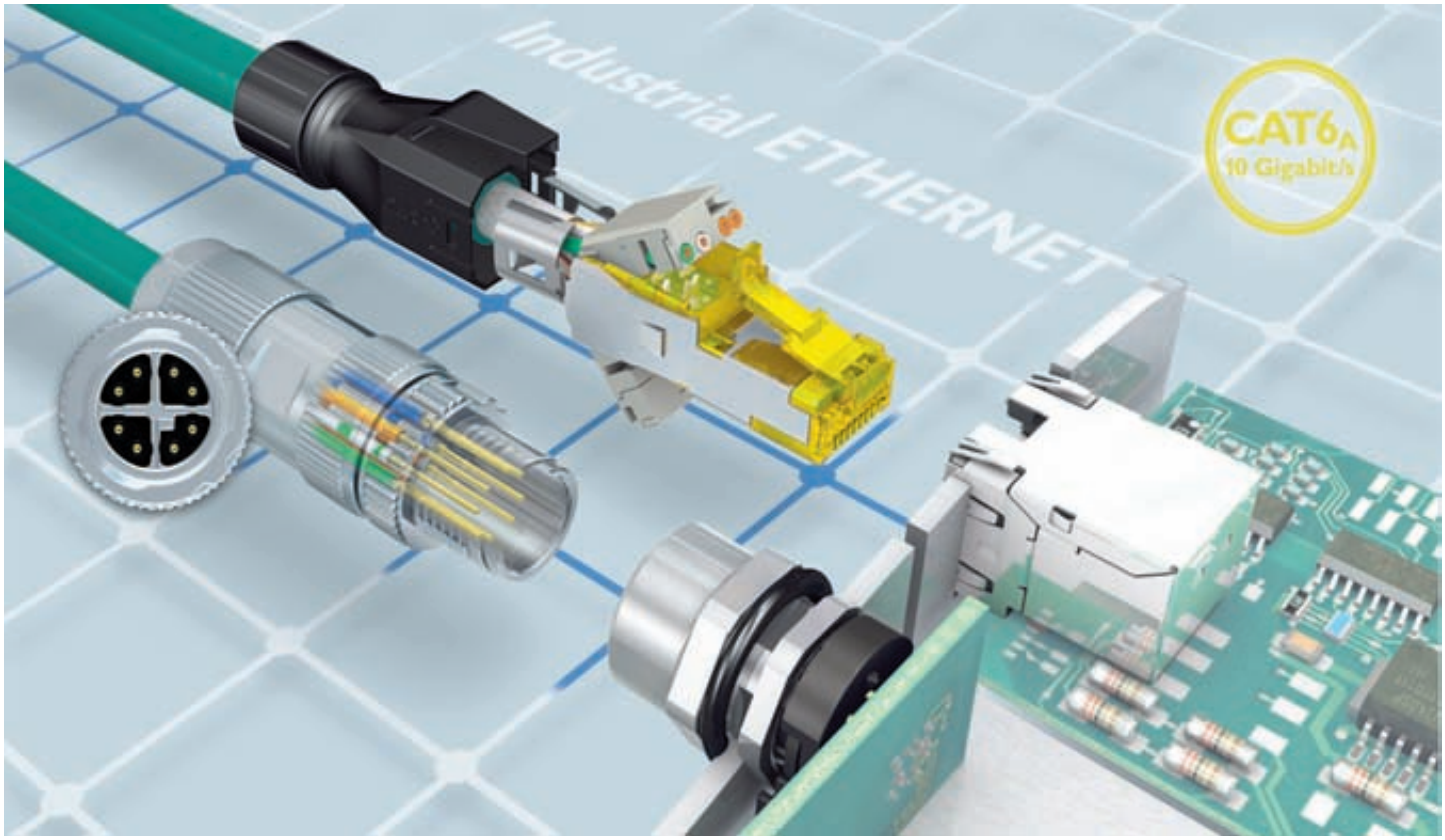
Communication cabling in office environments is based on structured building cabling in accordance with IEC 11801. An IEC 24702 version is available for limited use (due to a lack of flexibility) in industrial environments.

Today, fieldbus systems are used in the field as an automation island network. The automation technology application is implemented as an automation island in one or more interconnected automation island networks.

Modern automation solutions overcome the limits of these systems. Devices with high data transmission rates are an integral part of the automation island and several applications use one device or exchange information.

All the requirements are satisfied by the integral automation network and the applications can include additional devices outside fieldbus systems. A technology combining high-performance and future security is available with the 10 Gigabit Ethernet standard. Connectors and cables suitable for industrial applications from Phoenix Contract according to transmission category $CAT6_A$ allow reliable high-frequency data transmission via Class $E_A$ transmission channels.






## CAT6A and CAT6$_A$ for automation technology

ISO/IEC 11801 describes the cabling infrastructure along with the channel and component category. Each channel class denoting the complete cabling path corresponds to a component category denoting the requirements for the components used in the corresponding channel.

ISO/IEC TR 24750, which describes limit values meeting the requirements of IEEE 802.3an, permits the use of 10 Gigabit Ethernet via existing cabling. Depending on the version of the channel, this may be possible but there is no way of knowing in advance. As such, it is rather impractical to design new installations in accordance with this standard.

If a Class $E_A$ channel is dimensioned with CAT6$_A$ components in accordance with ISO/IEC 11801 Am1 and Am2, 10 Gigabit Ethernet becomes possible by design.

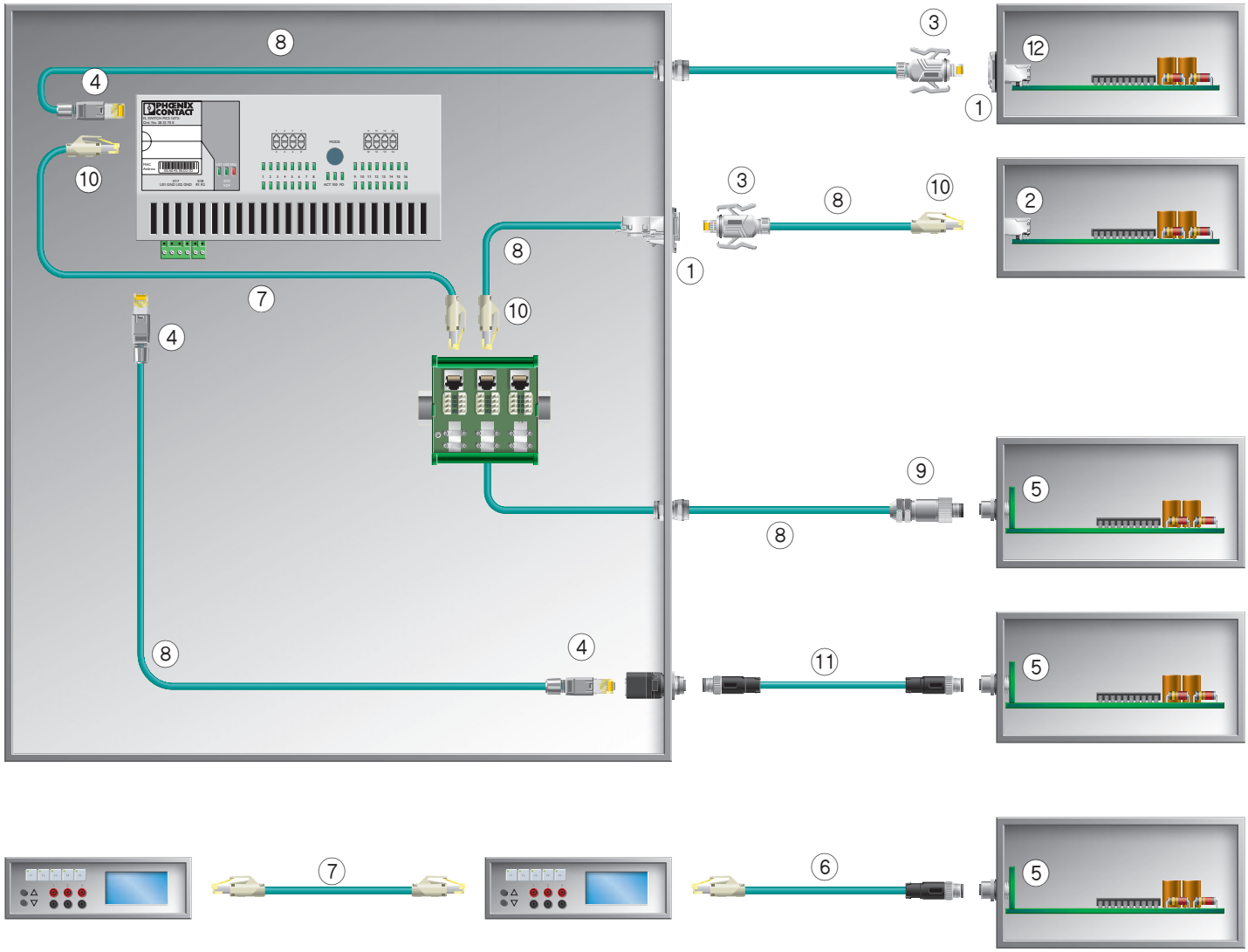
EIA/TIA 568B.2-10 is a similar standard. This was developed for the US market and uses the term CAT6A for both the channel and components.

The ISO/IEC standards contain more demanding limit values than EIA/TIA, which significantly exceed the requirements of IEEE 802.3an. This means there are sensible margins for ensuring reliable transmission of 10 Gigabit Ethernet in an industrial environment.

All Phoenix Contact products for 10 Gigabit Ethernet satisfy the stringent requirements under Category CAT6$_A$.

| | International standard | | US standard | |
|---|---|---|---|---|
| **Frequency bandwidth** | ISO/IEC 11801 Am1 (channel) | ISO/IEC 11801 Am2 (components) | EIA/TIA 568B.2-10 (channel) | EIA/TIA 568B.2-10 (components) |
| **1 – 250 MHz** | Class E | CAT6 | CAT6 | CAT6 |
| **1 – 330 MHz (330 - 500 MHz with reduced quality)** | | | CAT6A | CAT6A |
| **1 – 500 MHz** | Class $E_A$ | CAT6$_A$ | | |

## 10 Gigabit Industrial Ethernet - Topology



## It's all about the A - Only CAT6$_A$ makes you future-proof

Are you considering 10 Gigabit cabling for an industrial application? Make sure you are following the right standard. Only CAT6$_A$ components guarantee secure 10 Gigabit data transmission.

The growing number of devices involved, decentralization, larger amounts of data, and challenging realtime requirements are increasing demands in terms of data transmission rates. Current systems use the Fast Ethernet standard with 100 Mbps. The new 10 Gigabit Ethernet standard satisfies the increasing demands without system interruptions. As a leading company in the field of industrial communication, the solutions offered by Phoenix Contact in this area provide users with maximum future security. This enables system planners, device manufacturers, and machine/system manufacturers to ensure their concepts satisfy future requirements at an early stage.

The new CAT6$_A$ connectors and cables from Phoenix Contact are specially designed for Ethernet transmission with 10 Gbps and comply with CAT6$_A$, the most demanding Ethernet standard. The product range is being constantly developed. For more information on the products referred to here and the world of solutions offered by Phoenix Contact, please visit www.phoenixcontact.net/catalog.

| No. | Order designation | Order No. | Page |
|---|---|---|---|
| ① | IP67 panel mounting frame, for PCB mounting, type version 6 | 1689446 | 195 (HK2009) |
| ② | RJ45 CAT6$_A$ female insert | 1420401 | 132 |
| ③ | RJ45 IP67 connector consisting of CAT6$_A$ male insert and sleeve housing, type version 6 | 1652732<br>1418853 | 194 (HK2009)<br>132 |
| ④ | RJ45 IP20 CAT6$_A$ connector, can be assembled without tools | 1419001 | 132 |
| ⑤ | M12 CAT6$_A$ flush-type connector, for PCB mounting | 1440669 | 132 |
| ⑥ | CAT6$_A$ patch cable, M12 IP67 to RJ45 IP20 | 1440614 | 134 |
| ⑦ | CAT6$_A$ patch cable, RJ45 IP20 to RJ45 IP20 | 1418866 | 134 |
| ⑧ | 94F Ethernet cable (100 m ring) | 1416347 | 208 (HK2009) |
| ⑨ | M12 CAT6$_A$ connector, can be assembled without tools | 1417430 | 132 |
| ⑩ | RJ45 IP20 CAT6$_A$ crimp connector; consisting of male insert and sleeve housing | 1654743<br>1418853 | 208 (HK2009)<br>132 |
| ⑪ | CAT6$_A$ patch cable, M12 IP67 to M12 IP67 | 1440478 | 134 |
| ⑫ | RJ45 CAT6 female insert | 1653087 | 132 |

**Note**

Page references accompanied by (HK2009) refer to the corresponding page in the PLUSCON 2009 catalog.

## Ethernet RJ45 and M12 CAT6$_A$, connector, panel feed-through, female insert

RJ45 connector

M12 connector

| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Rated voltage | 50 V | 48 V |
| Nominal current $I_N$ | 1.75 A | 0.5 A |
| Material data | | |
| Contact material | CuSn | CuSn |
| Contact surface material | Gold over nickel | Ni/Au |
| Contact carrier material | PC | PP |
| Inflammability class acc. to UL 94 | V2 | V0 |
| Mechanical data | | |
| Color | yellow | - |
| Pollution degree | 1 | 2 |
| Degree of protection | IP20 | IP65/IP67/IP69K |
| Connection data | | |
| Type of connection | IDC fast connection | Piercecon® |
| Conductor cross-section | 0.13 mm² ... 0.21 mm² | 0.14 mm² |
| Connection cross-section AWG | 26 ... 24 | 26 |
| Cable cross-section | 4.5 mm ... 8 mm | 4 mm ... 8 mm |
| Insertion/withdrawal cycles | ≥ 750 | ≥ 100 |
| Temperature data | | |
| Ambient temperature (operation) | -20°C ... 70°C | -40°C ... 85°C (male/female connector) |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **RJ45 connector**, IP20, CAT6$_A$, 8-pos., with QUICKON fast connection technology, for 26 ... 24 AWG 1-wire and 7-wire conductors, color: black | **VS-08-RJ45-10G/Q** | **1419001** | 1 | | | |
| **RJ45 male insert,** CAT6$_A$, 10 Gbps | **VS-08-RJ45-10G/C** | **1418853** | 5 | | | |
| **RJ45 female insert**, CAT6$_A$ | **VS-08-BU-RJ45-10G/LH-1** | **1420401** | 1 | | | |
| **M12 connector,** CAT6$_A$, male connector, 8-pos., shielded, for 4 mm ... 8 mm cable diameter | | | | | | |
| straight | | | | **VS-08-M12MS-10G-P SCO** | **1417430** | 1 |
| angled | | | | **VS-08-M12MR-10G-P SCO** | **1417443** | 1 |
| **Flush-type socket**, CAT6$_A$, Ethernet, 8-pos., M12 SPEEDCON, rear/screw mounting with PG9 thread, with straight solder connection | | | | **SACC-DSI-FS-8CON-L180-10G SCO** | **1440669** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Crimp tool,** pliers with die, for VS-08-ST-H…-RJ45 | **VS-CT-RJ45-H** | **1653265** | 1 | | | |

## CAT5e patch panel

### Ethernet

RJ45 patch panel

| | Technical data |
|---|---|
| Electrical data | |
| Rated voltage | 60 V |
| Material data | |
| Housing material | PVC |
| Inflammability class acc. to UL 94 | V0 |
| Mechanical data | |
| Conductor cross-section | 0.2 mm² ... 1.5 mm² (solid) |
| Conductor cross-section | 0.2 mm² ... 1 mm² (stranded) |
| External cable diameter | 5 mm ... 8.5 mm |
| Temperature data | |
| Ambient temperature (operation) | -15°C ... 50°C |

**Ordering data**

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Patch panel,** RJ45, DIN rail mounting, IP20, with spring-cage connection, CAT5e, shielding via jumper can be selected<br><br>1 slot | **VS-PP-R-1XRJ45-SCC** | **1416790** | 1 |

## Ethernet M12 CAT6$_A$, patch cable

| M12 connector | RJ45 connector, IP20 |
|---|---|
| | |

**Notes:**
For information about the cable qualities, see page 127

| | | Ordering data | Ordering data | | Ordering data |
|---|---|---|---|---|---|
| **Free end** | | **Order No.** | | **Order No.** | **Order No.** |
| | 1 m | **1440533** | | | |
| | 2 m | **1440546** | | | |
| | 5 m | **1440559** | | | |
| | 10 m | **1440562** | | | |
| | 15 m | **1440575** | | | |
| | 20 m | **1440588** | | | |
| **M12 connector** | | | | | |
| | 0.5 m | **1440465** | | | |
| | 1 m | **1440478** | | | |
| | 2 m | **1440481** | | | |
| | 5 m | **1440494** | | | |
| | 10 m | **1440504** | | | |
| | 15 m | **1440517** | | | |
| | 20 m | **1440520** | | | |
| **RJ45 connector, IP20** | | | | | |
| | 0.5 m | **1440591** | | | |
| | 1 m | **1440601** | 1 m | **1418866** | |
| | 2 m | **1440614** | | | |
| | 5 m | **1440627** | 5 m | **1418879** | |
| | 10 m | **1440630** | | | |
| | 15 m | **1440643** | | | |
| | 20 m | **1440656** | | | |

CAT6A 10 Gigabit/s

| Pin | | Conductor color |
|---|---|---|
| **M12** | **RJ45** | |
| 6 | 1 | WH |
| 4 | 2 | OG |
| 1 | 5 | WH |
| 7 | 4 | BU |
| 5 | 3 | WH |
| 8 | 6 | GN |
| 2 | 7 | WH |
| 3 | 8 | BN |

*) RJ45 assignment as per TIA568B

| | | Technical data |
|---|---|---|
| Nominal current $I_N$ | [A] | 1.75 |
| Rated voltage | [V] | 30 |
| Transmission characteristics (category) | | CAT6$_A$ |
| Conductor structure | | 4x2xAWG26/7; S-FTP |
| Material of outer sheath | | PUR |
| Color of outer sheath | | water blue RAL 5021 |
| Temperature data | | |
| Ambient temperature (operation) | [°C] | -10 ... 50 |

## Ethernet RJ45, CAT5e, patch cable

| RJ45 connector, IP20, straight | RJ45 connector, IP20, angled |
|---|---|
| | |

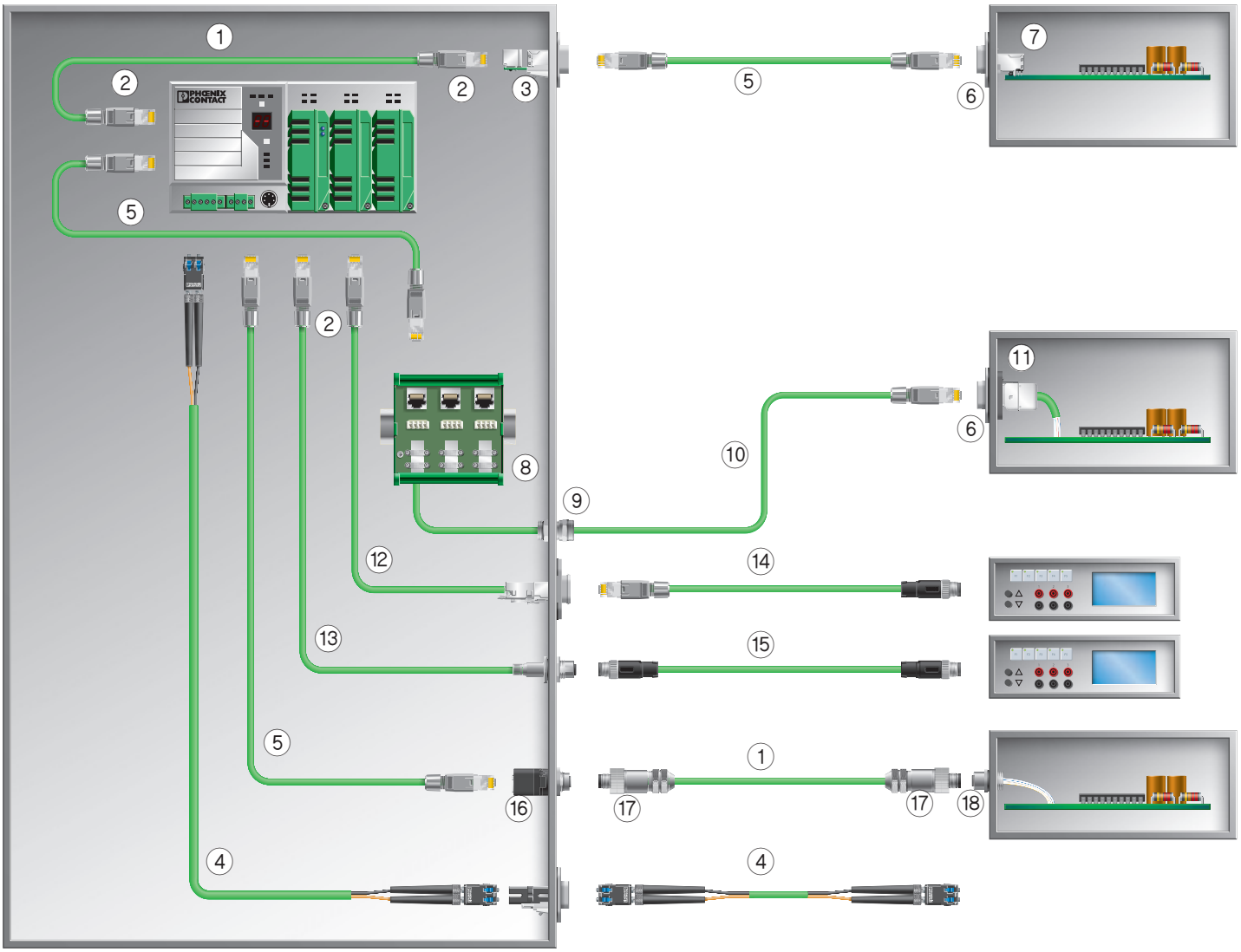
| | Ordering data | | Ordering data | | Ordering data |
|---|---|---|---|---|---|
| **RJ45 connector, IP20, straight** | | **Order No.** | | **Order No.** | **Order No.** |
| | 0.3 m | **1417993** | 0.3 m | **1418002** | |
| | 0.5 m | **1418028** | 0.5 m | **1418031** | |
| | 1 m | **1418057** | 1 m | **1418070** | |
| | 2 m | **1418109** | 2 m | **1418125** | |
| | 5 m | **1418141** | 5 m | **1418154** | |
| **RJ45 connector, IP20, angled** | | | | | |
| | | | 0.3 m | **1418015** | |
| | | | 0.5 m | **1418044** | |
| | | | 1 m | **1418099** | |
| | | | 2 m | **1418138** | |
| | | | 5 m | **1418167** | |

| Pin RJ45*) | RJ45*) | Conductor color |
|---|---|---|
| 1 | 1 | WH |
| 2 | 2 | OG |
| 5 | 5 | WH |
| 4 | 4 | BU |
| 3 | 3 | WH |
| 6 | 6 | GN |
| 7 | 7 | WH |
| 8 | 8 | BN |

*) RJ45 assignment as per TIA568B

| | | Technical data |
|---|---|---|
| Transmission characteristics (category) | | CAT5 (IEC 11801:2002), CAT5e (TIA 568B:2001) |
| Conductor structure | | 4x2xAWG26/7; S-FTP |
| Material of outer sheath | | PUR |
| Color of outer sheath | | water blue RAL 5021 |
| Degree of protection | | IP20 |
| Temperature data | | |
| Ambient temperature (operation) | [°C] | -10 ... 50 |

## EtherCAT - Topology



The assembled cables and connections on the devices provide an integrated cabling concept for an EtherCAT system to IP20.

EtherCAT supports a wide variety of topologies, such as line, tree, ring, star, and combinations thereof. Both copper and fiber optic cabling can be used for this bus system.

The well established RJ45 and M12 connector types are used with the copper components. The copper-based cabling uses 4-pos. cables.

In terms of fiber optic connectors, SCRJ has emerged as the preferred option for industrial applications. The fiber optic cabling uses 2-wire cables.

| No. | Order designation | Order No. | Page |
|---|---|---|---|
| ① | EtherCAT cable, by the meter | 1419152 | 138 |
| ② | RJ45 IP20 connector,<br>can be assembled without tools | 1658435 | 226<br>(HK2009) |
| ③ | RJ45 female insert, female connector/female connector, Freenet | 1405617 | 229<br>(HK2009) |
| ④ | Assembled fiber optic cable<br>with SCRJ IP20 connector | 1656738 | 244<br>(HK2009) |
| ⑤ | Assembled cable with RJ45 IP20 connectors | 1419145 | 138 |
| ⑥ | RJ45 panel mounting frame, IP20 | 1689433 | 227<br>(HK2009) |
| ⑦ | RJ45 female insert,<br>for PCB mounting | 1688586 | 227<br>(HK2009) |
| ⑧ | RJ45 IP20 patch panel<br>for DIN rail mounting | 1658626 | 230<br>(HK2009) |
| ⑨ | IP68 cable gland | 1690558 | 521<br>(HK2009) |
| ⑩ | Assembled cable with RJ45 connector<br>at free cable end | 1419149 | 138 |
| ⑪ | RJ45 female insert with cable connection | 1689459 | 227<br>(HK2009) |
| ⑫ | Assembled cable with RJ45 male connector<br>and RJ45 female connector | 1419142 | 138 |
| ⑬ | Assembled cable with M12 flush-type socket<br>and free cable end | 1419135 | 138 |
| ⑭ | Assembled cable with RJ45 male connector<br>and M12 male connector | 1419147 | 138 |
| ⑮ | Assembled cable<br>with M12 connectors | 1419148 | 138 |
| ⑯ | Control cabinet feed-through,<br>M12/RJ45, 180° | 1657494 | 234<br>(HK2009) |
| ⑰ | M12 connector, shielded,<br>can be assembled without tools | 1554513 | 234<br>(HK2009) |
| ⑱ | M12 flush-type connector,<br>with litz wires | 1535202 | 234<br>(HK2009) |

**Note**

Page references accompanied by (HK2009) refer to the corresponding page in the PLUSCON 2009 catalog.

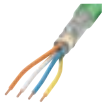
## EtherCAT pre-assembled type 93G cables

### PVC cable for use in harsh industrial environments.

The ordering matrix with possible head cable variations provides an overview of the products and makes it easier to select the desired items; the **top row** contains the connectors for one end of the cable and the **first column** contains the connectors for the other end of the cable.

**Notes:**

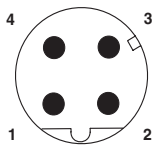
For information about the cable qualities, see page 127

| | Free end | | RJ45 male connector, IP20 | | M12 male connector | |
|---|---|---|---|---|---|---|
| |  | | | | | |
| | | OE | | IP20 | | MSDS |
| | Ordering data | | Ordering data | | Ordering data | |
| | | Order No. | | Order No. | | Order No. |
| **Free end** OE | 100 m | 1419152 | 2 m | 1419149 | 2 m | 1419151 |
| **RJ45 male connector, IP20** IP20 | | | 2 m | 1419145 | 2 m | 1419147 |
| **M12 male connector** MSDS | | | | | 2 m | 1419148 |
| **RJ45 female connector** FPN | | | 2 m | 1419142 | | |

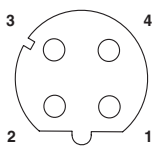
**Notes:**

| | |
|---|---|
| **OE** | Free end |
| **IP20** | RJ45 male connector with IP20 protection |
| **MSDS** | M12 male connector, straight |
| **FSDBPS** | M12 flush-type socket, rear mounting, D-encoded |
| **MSDBPS** | M12 flush-type connector, rear mounting, D-encoded |
| **FPN** | RJ45 female connector with IP20 protection |

| Pin | | Conductor color | | Signal |
|---|---|---|---|---|
| M12 | RJ45 | | | |
| 1 | 1 | YE | | TD+ |
| 3 | 2 | OG | | TD– |
| 2 | 3 | WH | | RD+ |
| 4 | 6 | BU | | RD– |




**Connector pin assignment:**
**M12 male connector, 4-pos., D-encoded**




**Connector pin assignment:**
**M12 female connector, 4-pos., D-encoded**

**M12 SPEEDCON flush-type socket, rear mounting**

**FSDBPS**

| Ordering data | |
|---|---|
| | Order No. |
| 0.5 m | **1419134** |
| 1 m | **1419135** |
| 2 m | **1419136** |
| 5 m | **1419137** |
| 2 m | **1419146** |

**M12 SPEEDCON flush-type connector, rear mounting**

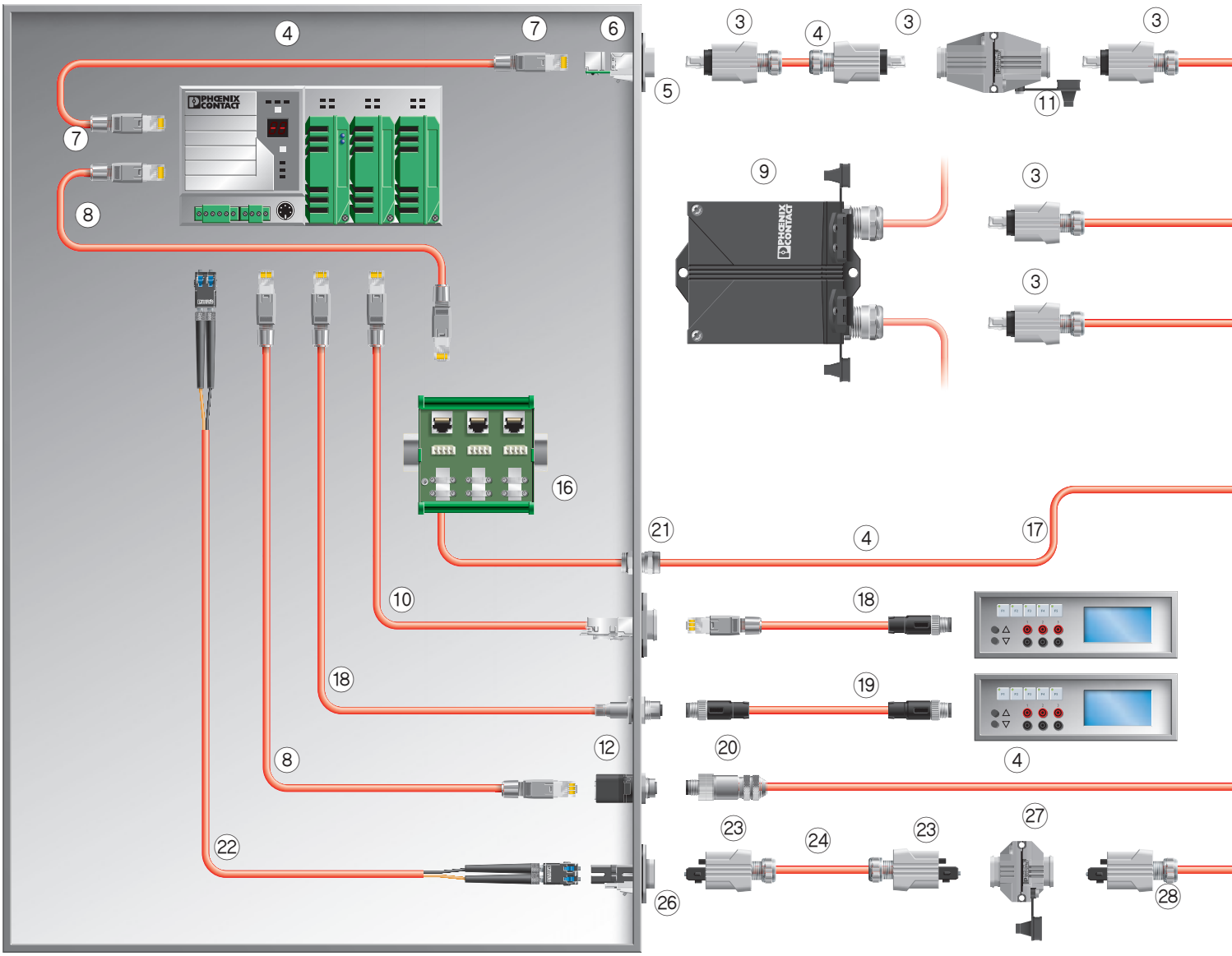
**MSDBPS**

| Ordering data | |
|---|---|
| | Order No. |
| 0.5 m | **1419138** |
| 1 m | **1419139** |
| 2 m | **1419140** |
| 5 m | **1419141** |

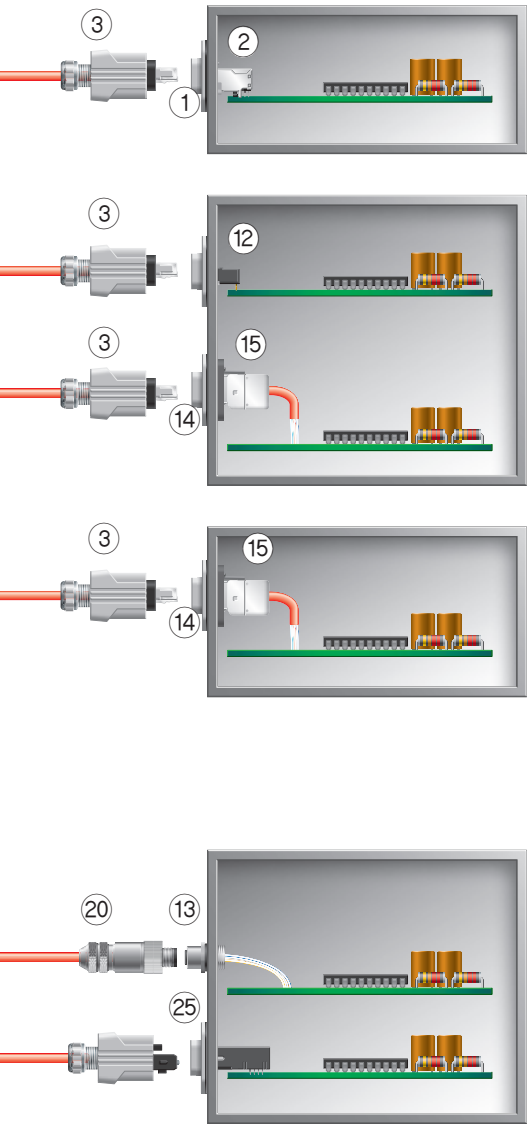
**Technical data**

| | | Cable: 93G |
|---|---|---|
| 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 | | 6.50 mm |
| Conductor resistance | | ≤ 120 Ω/km |
| Type of shield | | Tinned copper braided shield |
| 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 |

## Sercos III - Topology




| No. | Order designation | Order No. POF | Page | Order No. HCS | Page |
|---|---|---|---|---|---|
| 22 | Assembled fiber optic cable with SCRJ IP20 connector | 1656738 | 244 (HK2009) | 1654934 | 245 (HK2009) |
| 23 | SCRJ IP67 push/pull connector, with fast connection technology | 1608032 | 242 (HK2009) | 1608045 | 242 (HK2009) |
| 24 | fiber optic cable, for flexible installation, by the meter | 1609413 | 242 (HK2009) | 1609426 | 242 (HK2009) |
| 25 | SCRJ IP67 panel mounting frame for push/pull locking, for transceiver for PCB mounting | 1608061 | 243 (HK2009) | 1608061 | 243 (HK2009) |
| 26 | SCRJ IP67 panel mounting frame for push/pull locking, with SCRJ coupling, Freenet system | 1608210 | 243 (HK2009) | 1608210 | 243 (HK2009) |
| 27 | SCRJ IP67 coupling for push/pull locking | 1405206 | 243 (HK2009) | 1405206 | 243 (HK2009) |
| 28 | Assembled fiber optic cable with SCRJ IP67 connector | 1608757 | 244 (HK2009) | 1608702 | 244 (HK2009) |




| No. | Order designation | Order No. | Page |
|---|---|---|---|
| ① | RJ45 IP67 panel mounting frame for push/pull locking, for PCB mounting | 1608029 | 229 (HK2009) |
| ② | RJ45 female insert, for PCB mounting | 1653087 | 229 (HK2009) |
| ③ | RJ45 IP67 push/pull connector, can be assembled without tools | 1608016 | 194 (HK2009) |
| ④ | Cable for flexible installation, by the meter | 1419173 | 142 |
| ⑤ | RJ45 IP67 panel mounting frame for push/pull locking, for Freenet female inserts | 1405358 | 229 (HK2009) |
| ⑥ | RJ45 female insert, female connector/female connector, Freenet | 1405617 | 229 (HK2009) |
| ⑦ | RJ45 IP20 connector, can be assembled without tools | 1658435 | 226 (HK2009) |
| ⑧ | Assembled cable with RJ45 IP20 connectors | 1419166 | 142 |
| ⑨ | Terminal outlet with 2 x RJ45 IP67 connections, for push/pull locking | 1404281 | 232 (HK2009) |
| ⑩ | Assembled cable with RJ45 IP20 male and female connectors | 1419163 | 142 |
| ⑪ | RJ45 IP67 coupling for push/pull locking | 1405183 | 200 (HK2009) |
| ⑫ | M12/RJ45 control cabinet feed-through, 180° | 1657494 | 234 (HK2009) |
| ⑬ | M12 flush-type connector, with litz wires | 1535202 | 234 (HK2009) |
| ⑭ | RJ45 IP67 panel mounting frame for push/pull locking, Freenet | 1608197 | 229 (HK2009) |
| ⑮ | RJ45 female insert, with cable connection, can be assembled without tools, Freenet | 1652936 | 229 (HK2009) |
| ⑯ | RJ45 IP20 patch panel for DIN rail mounting | 1658613 | 230 (HK2009) |
| ⑰ | Assembled cable with M12 flush-type socket | 1419155 | 142 |
| ⑱ | Assembled cable with RJ45 connector to M12 male connector | 1419168 | 142 |
| ⑲ | Assembled cable with M12 connectors | 1419169 | 142 |
| ⑳ | M12 IP65/67 connector, shielded, can be assembled without tools | 1554513 | 234 (HK2009) |
| ㉑ | IP68 cable gland | 1690558 | 521 (HK2009) |

**Note**

Page references accompanied by (HK2009) refer to the corresponding page in the PLUSCON 2009 catalog.

## SERCOS III pre-assembled type 93K cables

### PVC cable for use in harsh industrial environments.

The ordering matrix with possible head cable variations provides an overview of the products and makes it easier to select the desired items; the **top row** contains the connectors for one end of the cable and the **first column** contains the connectors for the other end of the cable.

**Notes:**

For information about the cable qualities, see page 127

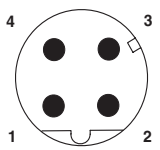
SERCOS interface

| | Free end | RJ45 male connector, IP20 | RJ45 push/pull, metal |
|---|---|---|---|
| | | | |
| | OE | IP20 | PPCME |
| | Ordering data | Ordering data | Ordering data |
| | Order No. | Order No. | Order No. |
| **Free end** OE | 100 m 1419173 | 2 m 1419170 | 5 m 1419174 |
| **RJ45 male connector, IP20** IP20 | | 2 m 1419166 | 5 m 1419176 |
| **RJ45 push/pull, metal** PPCME | | | 5 m 1419178 |
| **RJ45 push/pull, plastic** PPCPL | | | |
| **M12 male connector** MSDS | | | 5 m 1419177 |
| **RJ45 female connector** FPN | | 2 m 1419163 | |

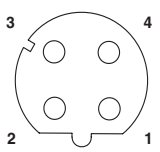
**Notes:**

| | |
|---|---|
| **OE** | Free end |
| **IP20** | RJ45 male connector with IP20 protection |
| **PPCME** | RJ45 push/pull |
| **MSDS** | M12 male connector, straight |
| **FSDBPS** | M12 flush-type socket, rear mounting, D-encoded |
| **MSDBPS** | M12 flush-type connector, rear mounting, D-encoded |
| **FPN** | RJ45 female connector with IP20 protection |

| Pin | | Conductor color | | Signal |
|---|---|---|---|---|
| M12 | RJ45 | | | |
| 1 | 1 | YE | | TD+ |
| 3 | 2 | OG | | TD– |
| 2 | 3 | WH | | RD+ |
| 4 | 6 | BU | | RD– |




**Connector pin assignment:**
**M12 male connector, 4-pos., D-encoded**




**Connector pin assignment:**
**M12 female connector, 4-pos., D-encoded**

| RJ45 push/pull, plastic | | M12 male connector | | M12 SPEEDCON flush-type socket, rear mounting | | M12 SPEEDCON flush-type connector, rear mounting | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | PPCPL | | MSDS | | FSDBPS | | MSDBPS |
| Ordering data | | Ordering data | | Ordering data | | Ordering data | |
| | Order No. | | Order No. | | Order No. | | Order No. |
| | | | | 0.5 m | **1419154** | 0.5 m | **1419158** |
| | | | | 1 m | **1419155** | 0.5 m | **1419159** |
| | | 2 m | **1419172** | 2 m | **1419156** | 0.5 m | **1419160** |
| 5 m | **1419175** | | | 5 m | **1419157** | 0.5 m | **1419161** |
| | | | | | | | |
| | | 2 m | **1419168** | 2 m | **1419167** | | |
| 5 m | **1419179** | | | | | | |
| | | | | | | | |
| 5 m | **1419181** | | | | | | |
| | | | | | | | |
| | | 2 m | **1419169** | | | | |
| 5 m | **1419180** | | | | | | |

| | | Technical data |
|---|---|---|
| | | Cable: 93K |
| 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 material | | Tin-plated Cu litz wires |
| Material of outer sheath | | PVC |
| Color of outer sheath | | Red RAL 3020 |
| Color, single wire | | Yellow, orange, white, blue |
| Ambient temperature | | |
| Fixed installation | [°C] | -40 ... 70 |
| Flexible installation | [°C] | -40 ... 70 |

## Ethernet/IP
## RJ45 bayonet connector, panel mounting frame

RJ45 connectors and panel mounting frame with integrated RJ45 female connectors and bayonet locking are suitable for use with Ethernet/IP.

RJ45 connector, bayonet locking

RJ45 panel mounting frame, bayonet locking

| | Technical data | Technical data |
|---|---|---|
| Material data | | |
| Housing material | Zinc die-cast | Zinc die-cast |
| Mechanical data | | |
| Degree of protection | IP67 | IP67 |
| Connection data | | |
| Type of connection | IDC connection | - |
| Conductor cross-section | 0.11 mm² ... 0.23 mm² | - |
| Connection cross-section AWG | 27 ... 24 | - |
| Cable cross-section | 5 mm ... 10 mm | - |
| Insertion/withdrawal cycles | 750 | 750 |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 70°C | -40°C ... 70°C |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **RJ45 connector,** IP67, with bayonet locking, metal housing, CAT5e, 8-pos., IDC connection method, for 26 AWG 7-wire conductors, for cable diameter<br>5.0 mm ... 8.0 mm | **VS-V1-C-RJ45-MNNA-PG9-8-I-5-S** | **1419182** | 1 | | | |
| **RJ45 panel mounting frame,** IP67, for bayonet locking, metal, **with female/female contact insert**, for round mounting cutout, with seal, without mounting screws | | | | **VS-V1-F-RJ45-MNNA-1-C-S-JJ-S** | **1419184** | 1 |
| **RJ45 panel mounting frame,** IP67, for bayonet locking, metal, **with contact insert for cable connection,** for round mounting cutout, with seal, without mounting screws | | | | **VS-V1-F-RJ45-MNNA-1-C-S-JI-S** | **1419185** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Protective cover,** IP67, plastic, for covering the contact insert in the RJ45, LC, and SCRJ connector | **VS-V1-C-PC-POBK** | **1419183** | 10 | | | |
| **Protective cover,** IP67, plastic, for covering the contact insert in the RJ45, LC, and SCRJ **panel mounting frame** | | | | **VS-V1-F-PC-POBK** | **1419186** | 10 |

## Ethernet/IP fiber optic bayonet connector, panel mounting frame

The fiber optic connectors and corresponding mounting frames with bayonet locking are used with Ethernet/IP.

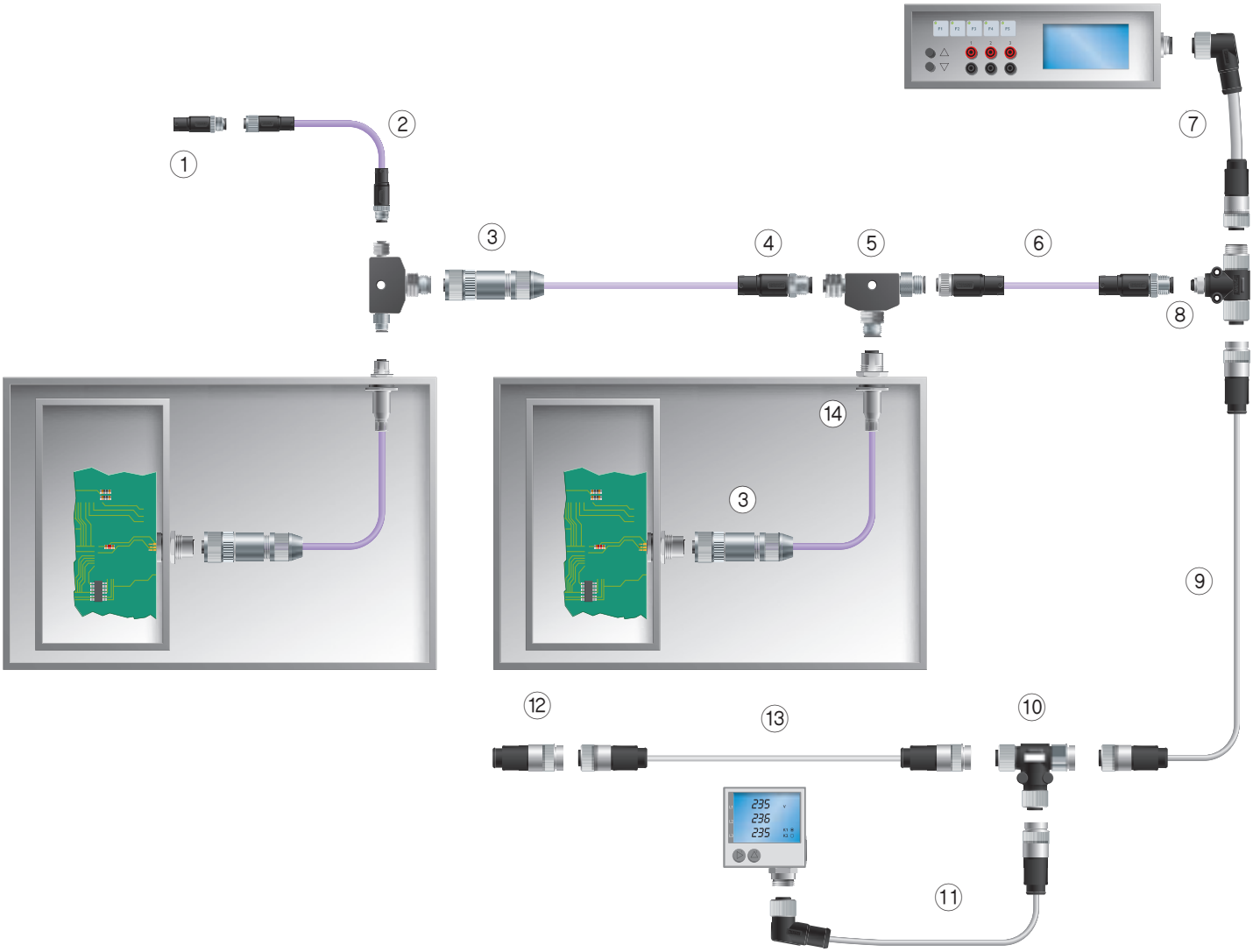
Fiber optic connector, bayonet locking

Fiber optic panel mounting frame, bayonet locking

| | Technical data | Technical data |
|---|---|---|
| Material data | | |
| Housing material | Zinc die-cast | Zinc die-cast |
| Cable cross-section | 5 mm ... 9.6 mm | - |
| Insertion/withdrawal cycles | 500 | 500 |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 70°C | -40°C ... 70°C |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **SCRJ fiber optic connector,** IP67, with bayonet locking, metal housing, duplex, with adhesive connection technology, for 5.0 mm ... 8.0 mm cable diameter | | | | | | |
| For multi-mode fiber | **VS-V1-C-SCRJ-MNNA-PG9-A1-G** | **1419187** | 1 | | | |
| For single mode fiber | **VS-V1-C-SCRJ-MNNA-PG9-B1-G** | **1419188** | 1 | | | |
| **SCRJ fiber optic connector,** IP67, with bayonet locking, metal housing, duplex, with adhesive connection technology, for 5.0 mm ... 8.0 mm cable diameter | | | | | | |
| For POF fiber | **VS-V1-C-SCRJ-MNNA-PG9-A4A-G** | **1419189** | 1 | | | |
| **LC fiber optic connector,** IP67, with bayonet locking, metal housing, duplex, with adhesive connection technology, for 5.0 mm ... 8.0 mm cable diameter | | | | | | |
| For multi-mode fiber | **VS-V1-C-LC-MNNA-PG9-A1-G** | **1419190** | 1 | | | |
| For single mode fiber | **VS-V1-C-LC-MNNA-PG9-B1-G** | **1419191** | 1 | | | |
| **SCRJ panel mounting frame,** IP67, for bayonet locking, metal, SCRJ to 2 x SC, for round mounting cutout, with seal, without mounting screws, **with coupling for:** | | | | | | |
| Multi-mode, PCF, and POF | | | | **VS-V1-F-SCRJ-MNNA-PG9-C-S-A1** | **1420197** | 1 |
| Single mode | | | | **VS-V1-F-SCRJ-MNNA-PG9-C-S-B1** | **1420207** | 1 |
| **LC panel mounting frame,** IP67, for bayonet locking, metal, for round mounting cutout, with seal, without mounting screws, **with coupling for:** | | | | | | |
| Multi-mode | | | | **VS-V1-F-LC-MNNA-PG9-C-S-A1** | **1420210** | 1 |
| Single mode | | | | **VS-V1-F-LC-MNNA-PG9-C-S-B1** | **1420223** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Protective cover,** IP67, plastic, for covering the contact insert in the RJ45, LC, and SCRJ connector | **VS-V1-C-PC-POBK** | **1419183** | 10 | | | |
| **Protective cover,** IP67, plastic, for covering the contact insert in the RJ45, LC, and SCRJ **panel mounting frame** | | | | **VS-V1-F-PC-POBK** | **1419186** | 10 |

## DeviceNet - Topology




DeviceNet is a CANopen-based fieldbus and is mainly used in the field of automation technology. A DeviceNet network can accommodate up to 64 bus devices. Like CANopen, DeviceNet uses a line topology. A further two wires are available for the supply voltage.

The existing cabling range for DeviceNet has been extended to include two new cables assembled with 7/8" connectors. The shield is on pin 1 in the connector.

The 928 cable is a trunk line and the 923 cable is a drop cable.

| No. | Order designation | Order No. | Page |
|---|---|---|---|
| ① | M8 termination resistor | 1435988 | 296 (HK2009) |
| ② | Assembled cable with M8 male connector and M8 female connector | 1575822 | 278 (HK2009) |
| ③ | M12 connector, for free assembly | 1508352 | 283 (HK2009) |
| ④ | Assembled cable with M12 connector and free cable end | 1518177 | 279 (HK2009) |
| ⑤ | M12 T-distributor | 1541186 | 296 (HK2009) |
| ⑥ | Assembled cable with M12 male connector and M12 female connector | 1518274 | 279 (HK2009) |
| ⑦ | Assembled cable, type 928, with 7/8" angled male connector to 7/8" straight female connector, trunk line | 1417760 | 149 |
| ⑧ | M12 7/8" T-distributor | 1401028 | 150 |
| ⑨ | Assembled cable, type 923, with 7/8" straight male connector to 7/8" straight female connector, drop cable | 1418646 | 148 |
| ⑩ | 7/8" T-distributor | 1401029 | 150 |
| ⑪ | Assembled cable, type 923, with 7/8" straight male connector to 7/8" angled female connector, drop cable | 1418808 | 148 |
| ⑫ | 7/8" termination resistor | 1474701 | 150 |
| ⑬ | Assembled cable, type 923, with 7/8" straight male connector to 7/8" straight female connector, drop cable | 1418633 | 148 |
| ⑭ | M12 panel feed-through with cable and free cable end | 1525623 | 281 (HK2009) |

**Note**

Page references accompanied by (HK2009) refer to the corresponding page in the PLUSCON 2009 catalog.

## DeviceNet 7/8" assembled drop cable, type 923

**Notes:**

For information about the cable qualities, see page 126

| Free end | 7/8" male connector |
|---|---|
| | |
| | |

| | | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|---|
| **Free end** | | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | | 2 m | **1418523** | 2 m | **1418578** |
| | | | | 5 m | **1418536** | 5 m | **1418581** |
| | | | | 10 m | **1418549** | 10 m | **1418594** |
| | | | | 15 m | **1418552** | 15 m | **1418604** |
| | | | | 20 m | **1418565** | 20 m | **1418617** |
| **7/8" socket, straight** | | | | | | | |
| | | | | 0.3 m | **1418620** | 0.3 m | **1418701** |
| | | | | 0.5 m | **1418633** | 0.5 m | **1418714** |
| | | | | 1 m | **1418646** | 1 m | **1418727** |
| | | 2 m | **1418426** | 2 m | **1418659** | 2 m | **1418730** |
| | | 5 m | **1418439** | 5 m | **1418662** | 5 m | **1418743** |
| | | 10 m | **1418442** | 10 m | **1418675** | 10 m | **1418756** |
| | | 15 m | **1418455** | 15 m | **1418688** | 15 m | **1418769** |
| | | 20 m | **1418468** | 20 m | **1418691** | 20 m | **1418772** |
| **7/8" socket, angled** | | | | | | | |
| | | | | 0.3 m | **1418785** | 0.3 m | **1420045** |
| | | | | 0.5 m | **1418798** | 0.5 m | **1420058** |
| | | | | 1 m | **1418808** | 1 m | **1420061** |
| | | 2 m | **1418471** | 2 m | **1418811** | 2 m | **1420074** |
| | | 5 m | **1418484** | 5 m | **1418824** | 5 m | **1420087** |
| | | 10 m | **1418497** | 10 m | **1418837** | 10 m | **1420090** |
| | | 15 m | **1418507** | 15 m | **1420029** | 15 m | **1420100** |
| | | 20 m | **1418510** | 20 m | **1420032** | 20 m | **1420113** |

| Color coding | | Pin assignment 7/8" |
|---|---|---|
| Shield | | 1 |
| RD | | 2 |
| BK | | 3 |
| WH | | 4 |
| BU | | 5 |

| | | Technical data |
|---|---|---|
| Nominal current $I_N$ | [A] | 5.2 |
| Rated voltage | [V] | 30 |
| Volume resistance | | < 5 mΩ |
| Contact material | | CuZn |
| Contact surface material | | Au |
| Material of grip body | | TPU |
| Degree of protection | | IP65/IP67/IP69K |
| Temperature data | | |
| Ambient temperature (operation) | [°C] | -25 ... 80 |

## DeviceNet 7/8" assembled trunk line, type 928

**Notes:**
For information about the cable qualities, see page 126

| Free end | 7/8" male connector | |
|---|---|---|
| | | |
| | | |

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Free end** | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | 2 m | **1417553** | 2 m | **1417605** |
| | | | 5 m | **1417566** | 5 m | **1417618** |
| | | | 10 m | **1417579** | 10 m | **1417621** |
| | | | 15 m | **1417582** | 15 m | **1417634** |
| | | | 20 m | **1417595** | 20 m | **1417647** |
| **7/8" socket, straight** | | | | | | |
| | | | 0.3 m | **1417650** | 0.3 m | **1417731** |
| | | | 0.5 m | **1417663** | 0.5 m | **1417744** |
| | | | 1 m | **1417676** | 1 m | **1417757** |
| | 2 m | **1417456** | 2 m | **1417689** | 2 m | **1417760** |
| | 5 m | **1417469** | 5 m | **1417692** | 5 m | **1417773** |
| | 10 m | **1417472** | 10 m | **1417702** | 10 m | **1417786** |
| | 15 m | **1417485** | 15 m | **1417715** | 15 m | **1417799** |
| | 20 m | **1417498** | 20 m | **1417728** | 20 m | **1417809** |
| **7/8" socket, angled** | | | | | | |
| | | | 0.3 m | **1417812** | 0.3 m | **1417896** |
| | | | 0.5 m | **1417825** | 0.5 m | **1417906** |
| | | | 1 m | **1417838** | 1 m | **1417919** |
| | 2 m | **1417508** | 2 m | **1417841** | 2 m | **1417922** |
| | 5 m | **1417511** | 5 m | **1417854** | 5 m | **1417935** |
| | 10 m | **1417524** | 10 m | **1417867** | 10 m | **1417948** |
| | 15 m | **1417537** | 15 m | **1417870** | 15 m | **1417951** |
| | 20 m | **1417540** | 20 m | **1417883** | 20 m | **1417964** |

| Color coding | | Pin assignment 7/8" |
|---|---|---|
| Shield | | 1 |
| RD | | 2 |
| BK | | 3 |
| WH | | 4 |
| BU | | 5 |

| | | Technical data |
|---|---|---|
| Nominal current $I_N$ | [A] | 5.2 |
| Rated voltage | [V] | 30 |
| Volume resistance | | < 5 mΩ |
| Contact material | | CuZn |
| Contact surface material | | Au |
| Material of grip body | | TPU |
| Degree of protection | | IP65/IP67/IP69K |
| Temperature data | | |
| Ambient temperature (operation) | [°C] | -25 ... 80 |

## DeviceNet T-distributor and termination resistor

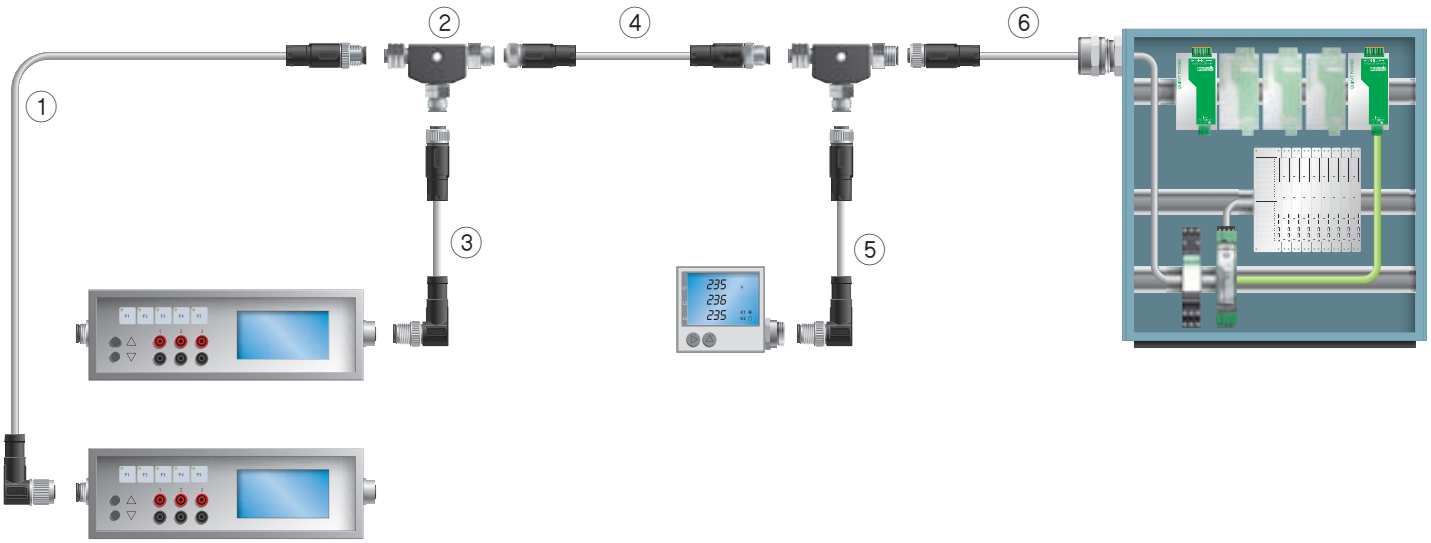
T-distributor

Termination resistor

| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Rated voltage | 60 V | 60 V |
| Volume resistance | ≤ 5 mΩ | ≤ 5 mΩ |
| Insulation resistance | ≥ 10 MΩ | ≥ 10 MΩ |
| Surge voltage category / Pollution degree | II / 3 | II / 3 |
| Material data | | |
| Contact material | CuZn | CuZn |
| Contact surface material | AU | AU |
| Contact carrier material | PA 66 | PA 66 |
| Material of grip body | TPU | TPU |
| Degree of protection | IP67 | IP67 |
| Temperature data | | |
| Ambient temperature (operation) | -25°C ... 90°C (male/female connector) | -40°C ... 80°C (male/female connector) |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **T-distributor**, 5-pos., 7/8" 16UNF female connector to 7/8" 16UNF female connector and 7/8" 16UNF male connector, high-grade steel knurl | **SAC-5P-MINT/2XMIN DN** | **1401029** | 1 | | | |
| **T-distributor**, 5-pos., M12 female connector to 7/8" 16UNF female connector and 7/8" 16UNF male connector, high-grade steel knurl | **SAC-5P-M12T/2XMIN DN** | **1401028** | 1 | | | |
| **T-distributor**, 4-pos., M12 female connector to M12 female and M12 male connector, high-grade steel knurl | **SAC-4P-M12T/2XM12 CCL** | **1559783** | 5 | | | |
| **Termination resistor,** 5-pos., 7/8" 16UNF male connector | | | | **SAC-5P-MINMS TR-DN** | **1434701** | 1 |

## CANopen - Topology




CANopen has a line topology. This fieldbus is mainly used for automation technology applications and for networking within complex devices.

The bus is terminated with a termination resistor at both ends.

The existing cabling range for CANopen has been extended to include two new cables assembled with M12 connectors. The shield is on pin 1 in the connector.

| No. | Order designation | Order No. | Page |
|---|---|---|---|
| ① | Assembled cable with straight M12 male connector to angled M12 female connector, 2 m | 1419068 | 153 |
| ② | M12 T-distributor | 1541186 | 296 (HK2009) |
| ③ | Assembled cable with angled M12 male connector to straight M12 female connector, 5 m | 1419061 | 153 |
| ④ | Assembled cable with straight M12 male connector to straight M12 female connector, 2 m | 1419052 | 153 |
| ⑤ | Assembled cable with angled M12 male connector to straight M12 female connector, 5 m | 1419061 | 153 |
| ⑥ | Assembled cable with straight M12 female connector to free cable end, 15 m | 1419032 | 153 |

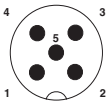
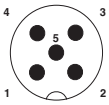
**Note**

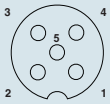
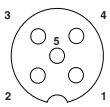
Page references accompanied by (HK2009) refer to the corresponding page in the PLUSCON 2009 catalog.

## CANopen M12 SPEEDCON assembled cables, type 923

**Notes:**

For information about the cable qualities, see page 126

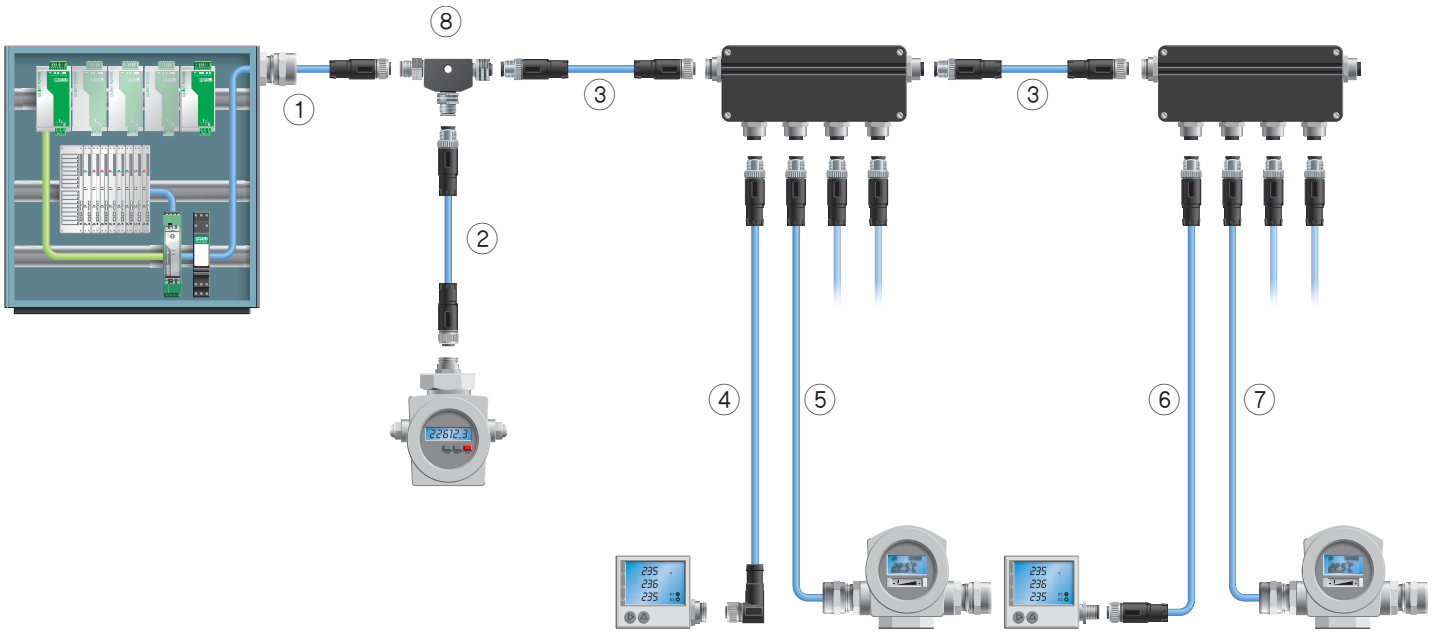
| | Free end | M12 male connector | |
|---|---|---|---|
| | |  |  |

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Free end** | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | 2 m | **1419039** | 2 m | **1419044** |
| | | | 5 m | **1419040** | 5 m | **1419045** |
| | | | 10 m | **1419041** | 10 m | **1419046** |
| | | | 15 m | **1419042** | 15 m | **1419047** |
| | | | 20 m | **1419043** | 20 m | **1419048** |
| **M12 female connector, straight** | | | | | | |
|  | | | 0.3 m | **1419049** | 0.3 m | **1419057** |
| | | | 0.5 m | **1419050** | 0.5 m | **1419058** |
| | | | 1 m | **1419051** | 1 m | **1419059** |
| | 2 m | **1419081** | 2 m | **1419052** | 2 m | **1419060** |
| | 5 m | **1419030** | 5 m | **1419053** | 5 m | **1419061** |
| | 10 m | **1419031** | 10 m | **1419054** | 10 m | **1419062** |
| | 15 m | **1419032** | 15 m | **1419055** | 15 m | **1419063** |
| | 20 m | **1419033** | 20 m | **1419056** | 20 m | **1419064** |
| **M12 female connector, angled** | | | | | | |
|  | | | 0.3 m | **1419065** | 0.3 m | **1419073** |
| | | | 0.5 m | **1419066** | 0.5 m | **1419074** |
| | | | 1 m | **1419067** | 1 m | **1419075** |
| | 2 m | **1419034** | 2 m | **1419068** | 2 m | **1419076** |
| | 5 m | **1419035** | 5 m | **1419069** | 5 m | **1419077** |
| | 10 m | **1419036** | 10 m | **1419070** | 10 m | **1419078** |
| | 15 m | **1419037** | 15 m | **1419071** | 15 m | **1419079** |
| | 20 m | **1419038** | 20 m | **1419072** | 20 m | **1419080** |

| Color coding | | Pin assignment M12 |
|---|---|---|
| Shield | | 1 |
| RD | | 2 |
| BK | | 3 |
| WH | | 4 |
| BU | | 5 |

| | | Technical data |
|---|---|---|
| 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 |
| Degree of protection | | IP65/IP67/IP69K |
| Temperature data | | |
| Ambient temperature (operation) | [°C] | -40 ... 80 |

## PROFIBUS PA - Topology




PROFIBUS PA (process automation) is used to control measuring instruments via a process control system in process engineering applications.

This version of PROFIBUS is suitable for use in potentially explosive areas (Ex zone 0 and 1).

A bus topology is typically used with PROFIBUS PA. Devices are connected at any point via a short branch line and a passive connection point.

To prevent reflections and other forms of disturbance, the bus will need to have a cable termination (which is also part of the connector) at each end.

| No. | Order designation | Order No. | Page |
|---|---|---|---|
| ① | Assembled cable with M12 female connector (straight) and free cable end, 2 m | 1419082 | 155 |
| ② | Assembled cable with M12 female connector (straight) and M12 male connector (straight) 1 m | 1419104 | 155 |
| ③ | Assembled cable with M12 female connector (straight) and M12 male connector (straight), 5 m | 1419106 | 155 |
| ④ | Assembled cable with M12 male connector (straight) and M12 female connector (angled) 5 m | 1419122 | 155 |
| ⑤ | Assembled cable with M12 male connector (straight) and free cable end, 5 m | 1419093 | 155 |
| ⑥ | Assembled cable with M12 female connector (straight) and M12 male connector (straight) 2 m | 1419105 | 155 |
| ⑦ | Assembled cable with M12 male connector (straight) and free cable end, 20 m | 1419096 | 155 |
| ⑧ | 7/8" T-distributor | 1430035 | 279 (HK2009) |

**Note**

Page references accompanied by (HK2009) refer to the corresponding page in the PLUSCON 2009 catalog.

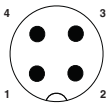
## PROFIBUS PA, M12 high-grade steel, assembled cables, type 961

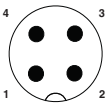
**Notes:**

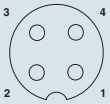
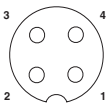
For information about the cable qualities, see page 126

**Free end**

**M12 male connector**






| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Free end** | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | 2 m | **1419092** | 2 m | **1419097** |
| | | | 5 m | **1419093** | 5 m | **1419098** |
| | | | 10 m | **1419094** | 10 m | **1419099** |
| | | | 15 m | **1419095** | 15 m | **1419100** |
| | | | 20 m | **1419096** | 20 m | **1419101** |
| **M12 female connector, straight** | | | | | | |
|   | | | 0.3 m | **1419102** | 0.3 m | **1419110** |
| | | | 0.5 m | **1419103** | 0.5 m | **1419111** |
| | | | 1 m | **1419104** | 1 m | **1419112** |
| | 2 m | **1419082** | 2 m | **1419105** | 2 m | **1419113** |
| | 5 m | **1419083** | 5 m | **1419106** | 5 m | **1419114** |
| | 10 m | **1419084** | 10 m | **1419107** | 10 m | **1419115** |
| | 15 m | **1419085** | 15 m | **1419108** | 15 m | **1419116** |
| | 20 m | **1419086** | 20 m | **1419109** | 20 m | **1419117** |
| **M12 female connector, angled** | | | | | | |
|   | | | 0.3 m | **1419118** | 0.3 m | **1419126** |
| | | | 0.5 m | **1419119** | 0.5 m | **1419127** |
| | | | 1 m | **1419120** | 1 m | **1419128** |
| | 2 m | **1419087** | 2 m | **1419121** | 2 m | **1419129** |
| | 5 m | **1419088** | 5 m | **1419122** | 5 m | **1419130** |
| | 10 m | **1419089** | 10 m | **1419123** | 10 m | **1419131** |
| | 15 m | **1419090** | 15 m | **1419124** | 15 m | **1419132** |
| | 20 m | **1419091** | 20 m | **1419125** | 20 m | **1419133** |

| Color coding | Pin assignment M12 |
|---|---|
| OG | 1 |
| n.c. | 2 |
| BU | 3 |
| Shield | 4 |

| | | Technical data |
|---|---|---|
| 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/IP68/IP69K |
| Temperature data | | |
| Male/female connector | [°C] | -25 ... 90 |

## 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 cable wires no longer have to be stripped
– Easy assembly without special tools
– Good reliability thanks to proven connection contacts
– Rugged housing with up to IP68 protection
– Convenient on-site installation

Devices no longer need to be opened and preparatory work before installation can be carried out anywhere within the cable's swiveling range. This is particularly useful if the devices requiring connection are above head height or near ground level.

## Product overview

1 **H-distributor**
- a) With QUICKON nut
- b) Without QUICKON nut

2 **Cable connector**
- a) With QUICKON nut
- b) Without QUICKON nut

3 **Panel feed-through with connected cables**
- a) With QUICKON nut
- b) Without QUICKON nut

4 **Panel feed-through with slip-on connection**
- a) With QUICKON nut
- b) Without QUICKON nut

5 **Panel feed-through with push-in connection**
- a) With QUICKON nut
- b) Without QUICKON nut

6 **QUICKON connector with QUICKON nut**

7 **QUICKON nut**

### Method of operation QUICKON nut

The wires of a cable are fixed using the QUICKON nut. When the QUICKON nut is screwed together with a component of the system, the wires are pushed into IDC terminal blocks and thus connected.

In order to cut through the insulation of the conductor, the screw force of the QUICKON nut increases considerably right from the beginning. This must be done in order to bring the conductor to the end position and to ensure tightness and strain relief (in the same way as with a standard cable gland).

The QUICKON connection with QUICKON nut and IDC terminal blocks can be rewired up to 10 times with the same cable cross-section. To do so, the cable must be cut off and the connection must be completely re-established.

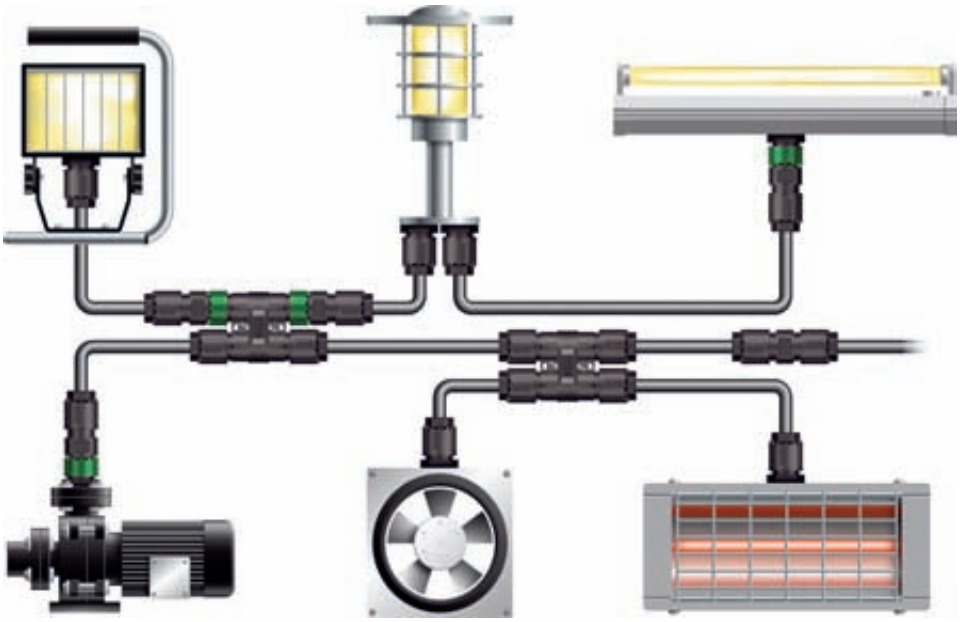
### Method of operation QUICKON connector

If you want the option of unscrewing the connection more than once without trimming the cable, it is better to use the QUICKON connector with the green knurled nut.

Like flat plug-in contacts, the QUICKON connector uses the IDC terminal blocks in the H-distributor, cable connector, and panel feed-through in order to make contact.

The QUICKON connector is equipped with a capacitive PE contact, polarized to prevent incorrect connection, and is touch-proof according to DIN EN 50274.

## Typical fields of application



## Assembly steps:

1. Strip the cable.

2. Insert the cable into the QUICKON nut and secure it.

3. Cut cable ends flush.

4. Screw QUICKON nut tight.

## Accessories

① Assembly clip
② DIN rail adapter
③ Marker labels
④ IP68 closing cap
⑤ IP68 captive protective cap
⑥ M25 locking nut
⑦ Insulating sleeve for flat connector
⑧ Sealing cap for IP54 connection dome
⑨ Sealing cap for IP50 connector
⑩ Socket wrench for QUICKON nut (wrench size 22)
⑪ Keying profiles
⑫ Seal for AS-Interface cables

The complete product range can be found on page 388 onwards in the **Connection technology for field devices and field cabling - PLUSCON 2009** catalog.

A sample box containing QUICKON products can be ordered for a small fee by quoting Order No. 1580000.

## Panel feed-throughs with push-in connection

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- For internal push-in connection, solid conductors are simply stripped and inserted in the connection
- For additional products, see PLUSCON 2009 catalog from page 388

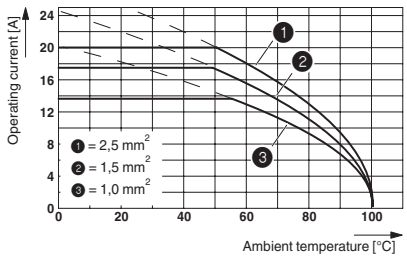
Panel feed-throughs with QUICKON nuts

Panel feed-throughs without QUICKON nuts, order QUICKON nuts or connectors separately

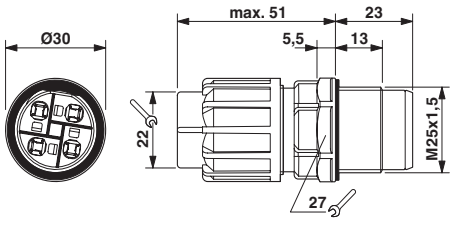
| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Rated voltage (III/3) | 630 V | 630 V |
| Rated current | 20 A | 20 A |
| Surge voltage category / Pollution degree | III / 3 | III / 3 |
| Material data | | |
| Housing material | PA | PA |
| Contact material | CuZn | CuZn |
| Inflammability class acc. to UL 94 | V0 | V0 |
| Mechanical data | | |
| Impact category | IK07 | IK07 |
| Degree of protection | IP68, 24 h / 2 m | IP68 |
| Connector data QUICKON connection | | |
| Core insulation | PVC / PE / Rubber / TPE | PVC / PE / Rubber / TPE |
| Connection frequency | 10 | 10 |
| Conductor cross-section [mm²] solid / stranded | 1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm² | 1 mm² ... 2.5 mm² / 1 mm² ... 2.5 mm² |
| Conductor cross-section [AWG] | 16 ... 14 | 16 ... 14 |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 80°C | -40°C ... 80°C |
| Temperature when conductor connected | -5°C ... 50°C | -5°C ... 50°C |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **QUICKON panel feed-through**, black, **3+PE-pos.**, with QUICKON nut, with push-in spring-cage connection | | | | | | |
| 6 mm ... 10 mm | **QPD W 3PE2,5 6-10 M25 DT BK** | **1582169** | 1 | | | |
| 9 mm ... 14 mm | **QPD W 3PE2,5 9-14 M25 DT BK** | **1582181** | 1 | | | |
| **QUICKON panel feed-through**, gray, **4-pos.**, with QUICKON nut, with push-in spring-cage connection | | | | | | |
| 6 mm ... 10 mm | **QPD W 4X2,5 6-10 M25 DT GY** | **1582295** | 1 | | | |
| 9 mm ... 14 mm | **QPD W 4X2,5 9-14 M25 DT GY** | **1582323** | 1 | | | |
| **QUICKON panel feed-through**, black, **3+PE-pos.**, without QUICKON nut, with push-in spring-cage connection | | | | | | |
| | | | | **QPD W 3PE2,5 M25 DT BK** | **1582193** | 1 |
| **QUICKON panel feed-through**, gray, **4-pos.**, without QUICKON nut, with push-in spring-cage connection | | | | | | |
| | | | | **QPD W 4X2,5 M25 DT GY** | **1582358** | 10 |

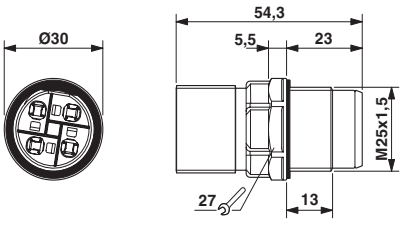
| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **QUICKON connectors,** black, 3+PE-pos., for cable diameter: | | | | | | |
| 6 mm ... 10 mm | | | | **QPD P 3PE2,5 6-10 BK** | **1582202** | 1 |
| 9 mm ... 14 mm | | | | **QPD P 3PE2,5 9-14 BK** | **1582205** | 1 |




Derating diagram




Dimensional drawing: QPD W...




Dimensional drawing: QPD W...

## D series contact inserts, crimp connection

– Contact carriers fitted with turned CK 1,6-ED... crimp contacts, order crimp contacts separately
– The contact carriers can also be fitted with contacts for fiber optics (polymer fibers), visit www.phoenixcontact.com
– HC-D 7-I-CT.../HC-D 8-I-CT... contact inserts already have an IP65 sealing screw

**Notes:**

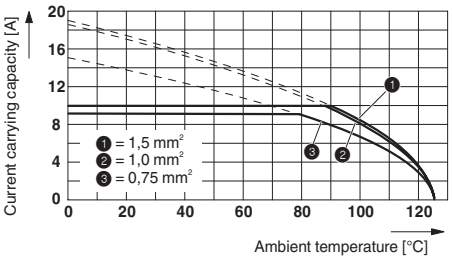
Connectors may only be operated when under no load.

D7/D8 series inserts may only be installed in plastic housing at voltages > 42 V, as a connection cannot be established between the protective conductor and housing.

For D15 and D25 series contact inserts, keying pins and sockets are required to prevent incorrect contact if inserted at an angle.

For additional accessories, e.g., keying elements, assembly and removal tools, see PLUSCON catalog.

For mounting cutout drawings when housing is not used, visit www.phoenixcontact.net/catalog




**Derating diagram: Series HC-D 7-I-CT..**

**7+PE-pos.**

### Technical data

| | Female connector | Male connector |
|---|---|---|
| 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 |
| Seal material | | NBR (profile gasket) |
| Inflammability class acc. to UL 94 | V0 | V0 |
| Mechanical data | | |
| Number of positions | 7+PE | 7+PE |
| 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 / 6 mm (2.5 mm²) | 8 mm / 6 mm (2.5 mm²) |
| Insertion/withdrawal cycles | ≥ 500 | ≥ 500 |
| Ambient temperature (operation) | -40°C ... 125°C | -40°C ... 125°C |

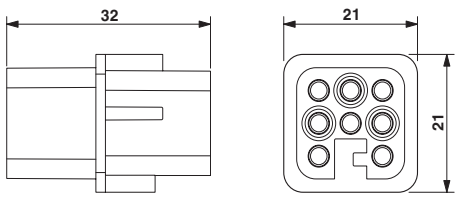
### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Contact insert,** contact marking: 1 ... X, for turned contacts CK 1,6 ED... | | | |
| Female | **HC-D 7-I-CT-F** | **1584347** | 10 |
| Male | **HC-D 7-I-CT-M** | **1584334** | 10 |

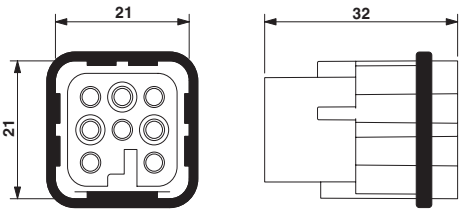
### Accessories

| | | | |
|---|---|---|---|
| **PE screw**, for contact inserts: | | | |
| **Dummy sockets,** for contact carriers with type CK 1,6-ED... turned female contacts | **CK1,6-ED-BB** | **1645888** | 50 |

| | |
|---|---|
| **Housing** HC standard | HC-D 7 ... see PLUSCON catalog |
| **Derating diagram** | See above |
| **Connector pin assignment** | [6] on page 163 |




**Female insert**




**Male insert**

8-pos.

15+PE-pos.

25+PE-pos.

## Technical data

| Female | Male |
|---|---|
| 50 V | 50 V |
| 0.8 kV | 0.8 kV |
| 10 A | 10 A |
| III / 3 | III / 3 |
| | |
| Copper alloy | Copper alloy |
| Ag (alternatively Au) | Ag (alternatively Au) |
| PA | PA |
| | NBR (profile gasket) |
| V0 | V0 |
| | |
| 8 | 8 |
| 0.14 mm² ... 2.5 mm² | 0.14 mm² ... 2.5 mm² |
| 26 ... 14 | 26 ... 14 |
| 8 mm / 6 mm (2.5 mm²) | 8 mm / 6 mm (2.5 mm²) |
| ≥ 500 | ≥ 500 |
| -40°C ... 125°C | -40°C ... 125°C |

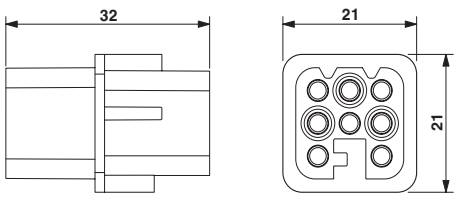
## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **HC-D 8-I-CT-F** | **1584363** | 10 |
| **HC-D 8-I-CT-M** | **1584350** | 10 |

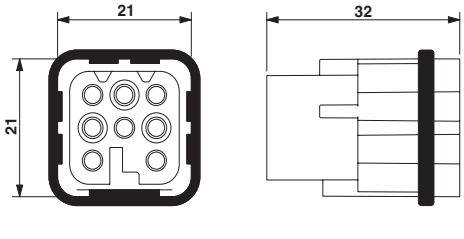
## Accessories

| | | |
|---|---|---|
| **CK1,6-ED-BB** | **1645888** | 50 |

HC-D 7 ... see PLUSCON catalog
[1] on page 163
[7] on page 163




Female insert




Male insert

## Technical data

| |
|---|
| |
| 250 V |
| 4 kV |
| 10 A |
| III / 3 |
| |
| Copper alloy |
| Ag (alternatively Au) |
| PA |
| - |
| V0 |
| |
| 15+PE |
| 0.14 mm² ... 2.5 mm² |
| 26 ... 14 |
| 8 mm / 6 mm (2.5 mm²) |
| ≥ 500 |
| -40°C ... 125°C |

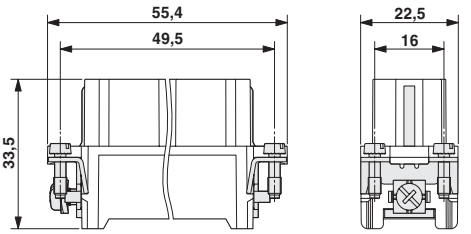
## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **HC-D 15-I-CT-F** | **1584389** | 10 |
| **HC-D 15-I-CT-M** | **1584376** | 10 |

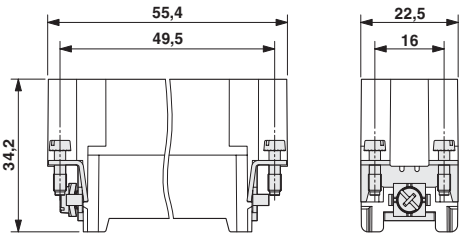
## Accessories

| | | |
|---|---|---|
| **HC-A-PES** | **1584868** | 10 |

HC-D 15 ... see PLUSCON catalog
[2] on page 163
[8] on page 163




Female insert




Male insert

## Technical data

| |
|---|
| |
| 250 V |
| 4 kV |
| 10 A |
| III / 3 |
| |
| Copper alloy |
| Ag (alternatively Au) |
| PA |
| - |
| V0 |
| |
| 25+PE |
| 0.14 mm² ... 2.5 mm² |
| 26 ... 14 |
| 8 mm / 6 mm (2.5 mm²) |
| ≥ 500 |
| -40°C ... 125°C |

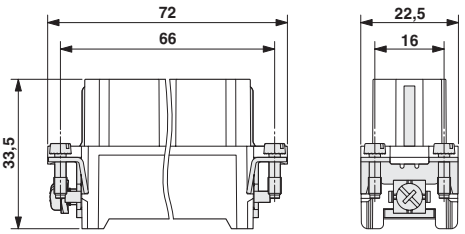
## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **HC-D 25-I-CT-F** | **1584402** | 10 |
| **HC-D 25-I-CT-M** | **1584392** | 10 |

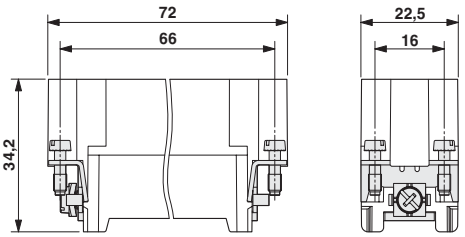
## Accessories

| | | |
|---|---|---|
| **HC-A-PES** | **1584868** | 10 |

HC-D 25 ... see PLUSCON catalog
[3] on page 163
[9] on page 163




Female insert




Male insert

## D series contact inserts, crimp connection

– Contact carriers fitted with turned CK 1,6-ED... crimp contacts, order crimp contacts separately

| Notes: |
|---|
| Connectors may only be operated when under no load. |
| For D40 and D64 series contact inserts, keying pins and sockets are required to prevent incorrect contact if inserted at an angle. |
| The PE connection is established using tension sleeve technology. |
| For mounting cutout drawings when housing is not used, visit www.phoenixcontact.net/catalog |

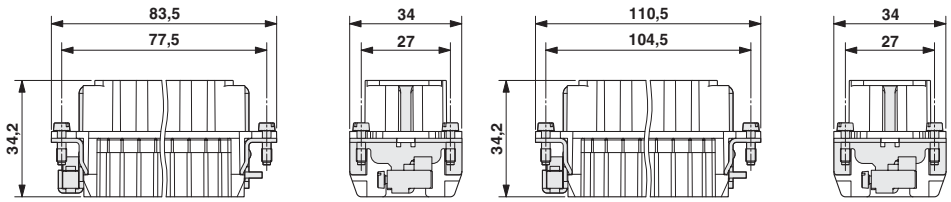
40+PE-pos.

64+PE-pos.

| | Technical data | 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 |
| 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 |
| Number of positions | 40+PE | 64+PE |
| 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 / 6 mm (2.5 mm²) | 8 mm / 6 mm (2.5 mm²) |
| Insertion/withdrawal cycles | ≥ 500 | ≥ 500 |
| Ambient temperature (operation) | -40°C ... 125°C | -40°C ... 125°C |

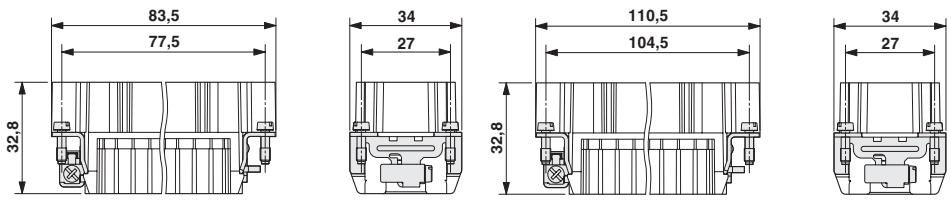
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Contact insert,** contact marking: 1 ... X, for turned contacts CK 1,6 ED... | | | | | | |
| Female | **HC-D 40-I-CT-F** | **1584428** | 10 | **HC-D 64-I-CT-F** | **1584444** | 10 |
| Male | **HC-D 40-I-CT-M** | **1584415** | 10 | **HC-D 64-I-CT-M** | **1584431** | 10 |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **PE screw**, for contact inserts: | **HC-B-PES** | **1604997** | 10 | **HC-B-PES** | **1604997** | 10 |
| **Housing** HC standard<br>**Housing** HC-ADVANCE<br>**Derating diagram** | HC-B 16/HC-B 32 ... see PLUSCON catalog<br>HC-B 16 ... see PLUSCON catalog<br>[4] on page 163 | | | HC-B 24/HC-B 48 ... see PLUSCON catalog<br>HC-B 24 ... see PLUSCON catalog<br>[5] on page 163 | | |




Female insert

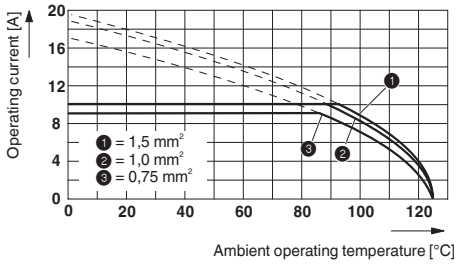
Female insert



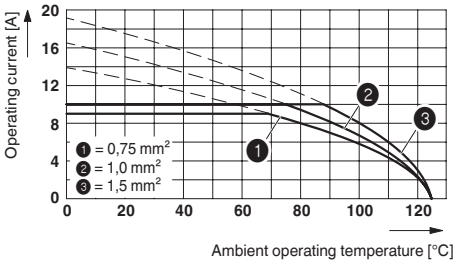

Male insert

Male insert

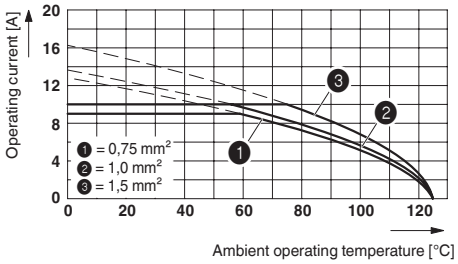
## D series contact inserts, derating diagrams



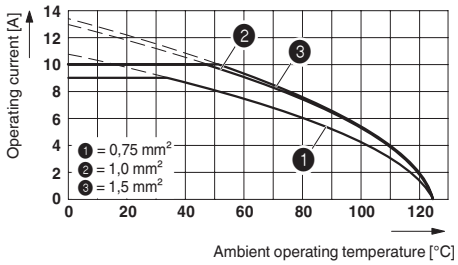

[1] Derating diagram: HC-D 8...



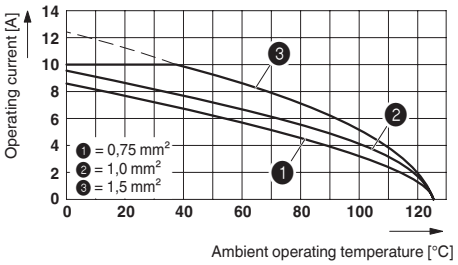

[2] Derating diagram: HC-D 15...




[3] Derating diagram: HC-D 25...

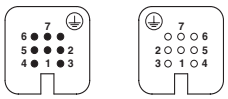



[4] Derating diagram: HC-D 40...

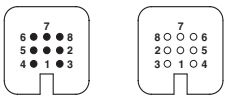



[5] Derating diagram: HC-D 64...

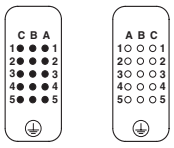
## D series contact inserts, connector pin assignments



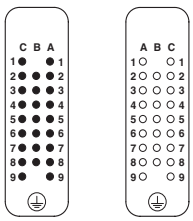

[6] Connector pin assignment: HC-D 7...



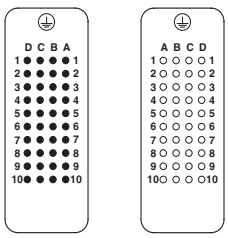

[7] Connector pin assignment: HC-D 8...



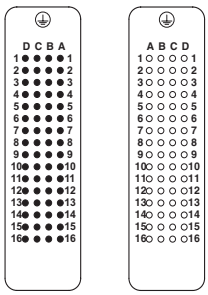

[8] Connector pin assignment: HC-D 15...




[9] Connector pin assignment: HC-D 25...




[10] Connector pin assignment: HC-D 40...

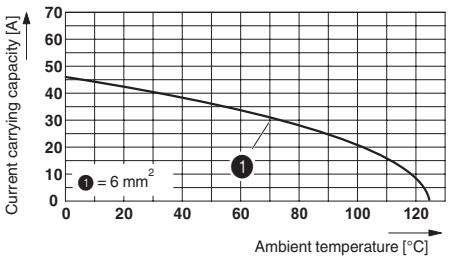



[11] Connector pin assignment: HC-D 64...

## Modular contact inserts
## Modules for crimp contacts

– 35 A module for crimp contacts, order crimp contacts separately.
– Can be plugged into HC-M-02-MOD-BU/HC-M-02-MOD-ST 2-pos. module with axial screw connection.

| Notes: |
|---|
| Connectors may only be operated when under no load. |
| HC-B 6 ... standard housing. For HC-B 48, see PLUSCON catalog. |
| HC-B 6 ... ADVANCE housing. For HC-B 24, see PLUSCON catalog and page 166. |
| Order CK 4,0-ED crimp contacts separately, see PLUSCON catalog |
| For hinged retaining frames, see PLUSCON catalog |
| For connector pin assignment, see [1] on page 165 |




**Derating diagram (6 modules in HC-B 24 housing)**

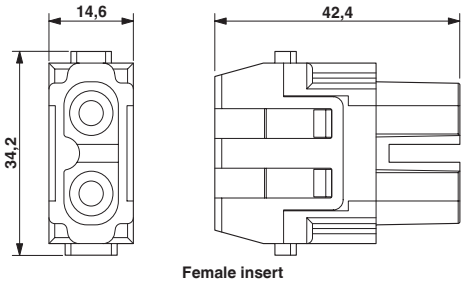
**2-pos. crimp connection**

### Technical data

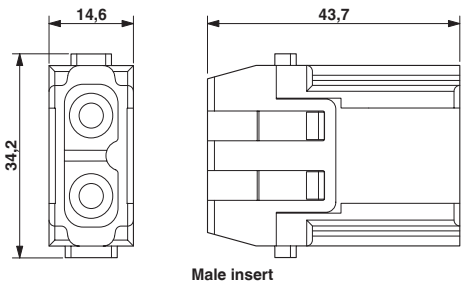
| | |
|---|---|
| Electrical data in acc. with IEC 61076-2-101 | |
| Rated voltage | 1000 V |
| Rated surge voltage | 8 kV |
| Rated current | 35 A |
| Surge voltage category | III |
| Material data | |
| Contact material | Copper alloy |
| Contact surface material | Ag |
| Contact carrier material | PC |
| Inflammability class acc. to UL 94 | V0 |
| Mechanical data | |
| Number of positions (without PE) | 2 |
| Number of module slots | 1 |
| Pollution degree | 3 |
| 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 (for 1.5 mm² ... 2.5 mm²) |
| Insertion/withdrawal cycles | ≥ 500 |
| Temperature data | |
| Ambient temperature (operation) | -40°C ... 125°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Contact insert module** | | | |
| Female | **HC-M-02-MOD-BUC** | **1587519** | 2 |
| Male | **HC-M-02-MOD-STC** | **1587506** | 2 |

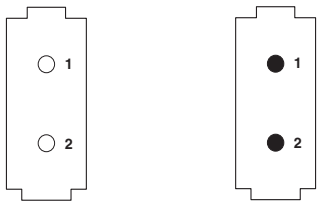



**Female insert**




**Male insert**

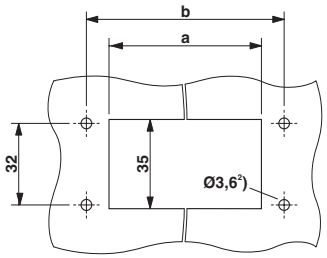
## HEAVYCON modular contact inserts, connector pin assignments




Female connector | Male connector

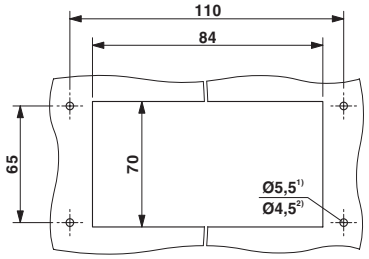
[1] Connector pin assignments: HC-M-02-MOD-...C

## HEAVYCON ADVANCE sleeve housing, mounting cutout




| Type | a [mm] | b [mm] |
|---|---|---|
| HC-B 6-TMS... | 52 | 70 |
| HC-B 10-TMS... | 65 | 83 |
| HC-B 16-TMS... | 86 | 103 |
| HC-B 24-TMS... | 112 | 130 |

[2] Mounting cutout: HC-B 6-TMS ... HC-B 24-TMS...
²) When self-tapping Torx screws are used (Torx20, M 4)




[3] Mounting cutout: HC-B 32-TMS...
¹) When steel screws are used (M5)
²) When self-tapping Torx screws are used (Torx20, M5)

## ADVANCE sleeve housing, offshore version

– HEAVYCON ADVANCE sleeve housing forms a seal directly on the device panel
– For use under harsh environmental conditions, such as offshore applications
– With conductive profile gasket for high shield attenuation

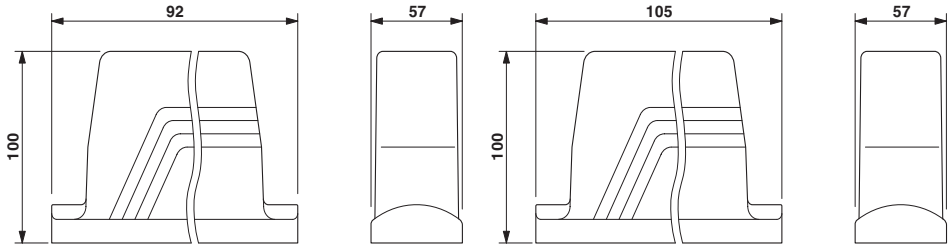
Type B6

Type B10

| | Technical data | Technical data |
|---|---|---|
| Material | | |
| Housing material | Die-cast aluminum, salt water resistant | Die-cast aluminum, salt water resistant |
| Housing surface material | Uncoated | Uncoated |
| Seal material | NBR, conductive | NBR, conductive |
| Material, lock | High-grade steel | High-grade steel |
| Mechanical data | | |
| Tightening torque of locking screw | 3 Nm | 3 Nm |
| Design | B6 | B10 |
| Degree of protection | IP65 / IP68 (0.2 bar, 24h) / IP69K | IP65 / IP68 (0.2 bar, 24h) / IP69K |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 125°C | -40°C ... 125°C |

| Description | Screw thread | Conductor exit | Ordering data Type | Order No. | Pcs./ Pkt. | Ordering data Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|---|---|
| **Sleeve housing,** with screw locking (high-grade steel M6 locking screw for 5 mm Socket wrench) | | | | | | | | |
| | 1x M20 | Straight | **HC-B 6-TMS-100/O1STM20G-EEE** | **1580480** | 10 | | | |
| | 1x M20 | Lateral | **HC-B 6-TMS-100/O1STM20S-EEE** | **1587645** | 10 | | | |
| | 1x M25 | Straight | | | | **HC-B 10-TMS-100/O1STM25G-EEE** | **1580486** | 10 |
| | 1x M25 | Lateral | | | | **HC-B 10-TMS-100/O1STM25S-EEE** | **1587658** | 10 |
| | 1x M32 | Straight | **HC-B 6-TMS-100/O1STM32G-EEE** | **1580477** | 10 | **HC-B 10-TMS-100/O1STM32G-EEE** | **1580483** | 10 |
| | 1x M32 | Lateral | | | | | | |
| | 1x M40 | Straight | | | | | | |
| | 1x M40 | Lateral | | | | | | |
| | 1 x M50 | Straight | | | | | | |
| | 1 x M50 | Lateral | | | | | | |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **Panel mounting flange** (2 pcs. per housing) | **HC-B-AF** | **1686533** | 20 | **HC-B-AF** | **1686533** | 20 |
| **IP65 protective cover,** for panel mounting side, with retaining cord | **HC-B 6-TMS-SD-IP65** | **1690778** | 10 | **HC-B 10-TMS-SD-IP65** | **1690781** | 10 |
| **HC-... contact inserts** | B 6; BB 10; DD 24; M | | | B 10; BB 18; DD 42; K 8/24; M; HV | | |
| **Mounting cutout drawing** | See also PLUSCON catalog [2] on page 165 | | | See also PLUSCON catalog [2] on page 165 | | |



Type B16

Type B24

Type B32

## Technical data

| | |
|---|---|
| Die-cast aluminum, salt water resistant | |
| Uncoated | |
| NBR, conductive | |
| High-grade steel | |
| 3 Nm | |
| B16 | |
| IP65 / IP68 (0.2 bar, 24h) / IP69K | |
| -40°C ... 125°C | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **HC-B 16-TMS-100/O1STM32G-EEE** | **1587661** | 10 |
| **HC-B 16-TMS-100/O1STM32S-EEE** | **1587674** | 10 |
| **HC-B 16-TMS-100/O1STM40G-EEE** | **1580507** | 10 |

## Accessories

| | | |
|---|---|---|
| **HC-B-AF** | **1686533** | 20 |
| **HC-B 16-TMS-SD-IP65** | **1690794** | 10 |

B 16; BB 32; D 40; DD 72; HS 6; K 6/12; K 6/36; K 12/2; M; HV
See also PLUSCON catalog
[2] on page 165

## Technical data

| | |
|---|---|
| Die-cast aluminum, salt water resistant | |
| Uncoated | |
| NBR, conductive | |
| High-grade steel | |
| 3 Nm | |
| B24 | |
| IP65 / IP68 (0.2 bar, 24h) / IP69K | |
| -40°C ... 125°C | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **HC-B 24-TMS-100/O1STM32G-EEE** | **1580504** | 10 |
| **HC-B 24-TMS-100/O1STM32S-EEE** | **1587687** | 10 |

## Accessories

| | | |
|---|---|---|
| **HC-B-AF** | **1686533** | 20 |
| **HC-B 24-TMS-SD-IP65** | **1690804** | 10 |

B 24; BB 46; D 64; DD 108; K 4/8; M; HV
See also PLUSCON catalog
[2] on page 165

## Technical data

| | |
|---|---|
| Die-cast aluminum, salt water resistant | |
| Uncoated | |
| NBR, conductive | |
| High-grade steel | |
| 3 Nm | |
| B32 | |
| IP65 / IP68 (0.2 bar, 24h) / IP69K | |
| -40°C ... 125°C | |

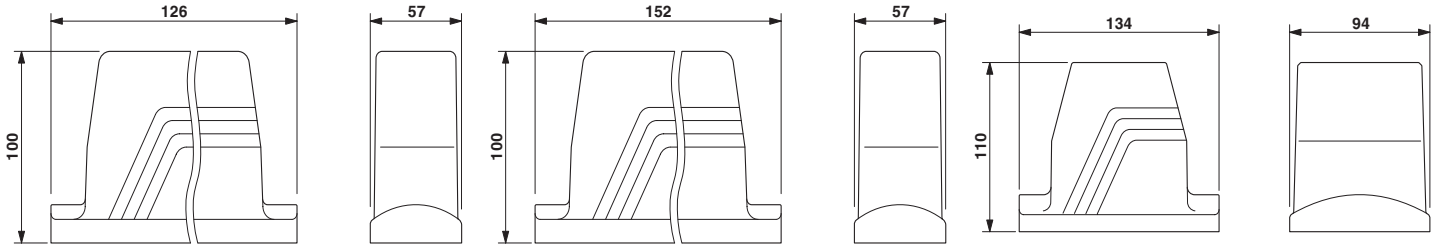
## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **HC-B 32-TMS-100-O1STM32G-EEE** | **1580516** | 6 |
| **HC-B 32-TMS-100-O1STM32S-EEE** | **1580517** | 6 |
| **HC-B 32-TMS-100-O1STM40G-EEE** | **1580518** | 6 |
| **HC-B 32-TMS-100-O1STM40S-EEE** | **1580519** | 6 |
| **HC-B 32-TMS-100-O1STM50G-EEE** | **1580522** | 6 |
| **HC-B 32-TMS-100-O1STM50S-EEE** | **1580521** | 6 |

## Accessories

| | | |
|---|---|---|
| **HC-B 32/48-AF** | **1580524** | 20 |
| **HC-B 32-TMS-SD-IP65** | **1580539** | 6 |

2 x B 16; 2 x D 40; 2 x DD 72; 2 x HS 6; 2 x K...; 2 x M...; 2 x HV
See also PLUSCON catalog
[3] on page 165



## Accessories
## Docking frame for HEAVYCON modular

– The docking frame can be used to combine a wide range of modules to create one plug-in connection (IP20).

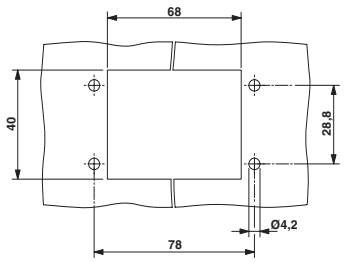
| Notes: |
|---|
| Use of docking frames, e.g., in the back panel of control cabinet racks. |
| A metal mounting panel must be grounded separately, as the plastic frame does not have a PE connection. |
| Docking frames ensure correct contacting of plug and socket modules |

**Floating assembly, location ID A/B/C/etc.**

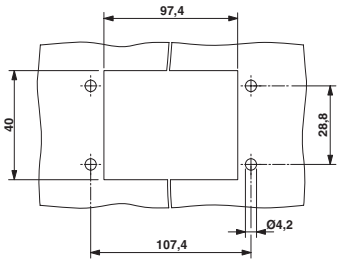
**Fixed assembly, location ID a/b/c/etc.**

| | Technical data | Technical data |
|---|---|---|
| Material data | | |
| Material | PC | PC |
| Inflammability class acc. to UL 94 | V0 | V0 |
| Insertion/withdrawal cycles | ≥ 500 | ≥ 500 |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 125°C | -40°C ... 125°C |

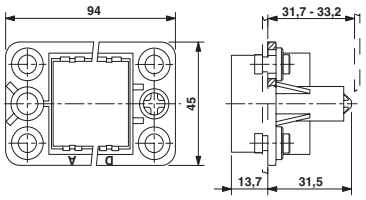
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Docking frame** for: | | | | | | |
| Four module slots | **HC-B 16-ANDOCK-MOD-T** | **1587454** | 2 | **HC-B 16-ANDOCK-MOD-A** | **1587467** | 2 |
| Six module slots | **HC-B 24-ANDOCK-MOD-T** | **1587470** | 2 | **HC-B 24-ANDOCK-MOD-A** | **1587483** | 2 |
| | **Accessories** | | | **Accessories** | | |
| **Special washer** for floating assembly of docking frame, for M4 cylinder head screws | **HC-MOD-ANDOCK-USCH** | **1587496** | 2 | | | |
| **Note about special washer** | The special washer enables rack compensation of +/-2 mm in the x and y-axis for docking frames. | | | | | |



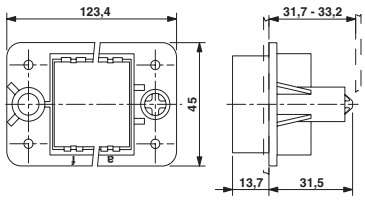

**Mounting cutout for HC-B 16-ANDOCK-MOD...**




**Mounting cutout for HC-B 24-ANDOCK-MOD...**




**Dimensional drawing of HC-B 16-ANDOCK-MOD...**




**Dimensional drawing of HC-B 24-ANDOCK-MOD...**

## Accessories
## Replacement bearing blocks, replacement profile gaskets

– Profile gaskets must be stuck to the housing.
– Bearing blocks are used to mount the protective cover on the supporting base element.

Replacement profile gasket

Replacement bearing block

| | Technical data | Technical data | |
|---|---|---|---|
| | - | HC...KUD | HC...AL |
| Material data | | | |
| Material | NBR | PA | Aluminum, die-cast |
| Temperature data | | | |
| Ambient temperature (operation) | -40°C ... 125°C | -40°C ... 125°C | -40°C ... 125°C |

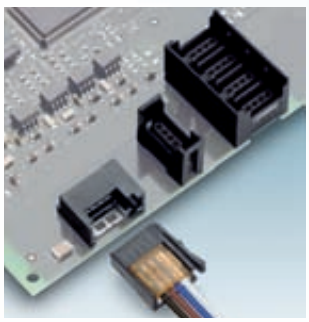
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Replacement profile gasket** for supporting base elements in series: | | | | | | |
| D15 | **HC-D 15-PR-DI** | **1661189** | 10 | | | |
| D25 | **HC-D 25-PR-DI** | **1408054** | 10 | | | |
| **Replacement bearing block** for housing: | | | | | | |
| B/D series with plastic protective cover | | | | **HC-B/D-ERSLABO-KUD** | **1408070** | 1 |
| B series with ALU protective cover | | | | **HC-B-ERSLABO-SD-AL** | **1408067** | 1 |

High-current-compatible PCB terminal block for ME MAX housing

**MKDSO 2,5 HV/...KMGY** page 173

3-pos. and 4-pos. CIOC miniature connectors with 2 mm pitch

**CIOC 3....** page 175
**CIOC 4...** page 175



3-pos. and 4-pos. CIOC miniature headers with a 2 mm pitch for CIOC...2...M connector

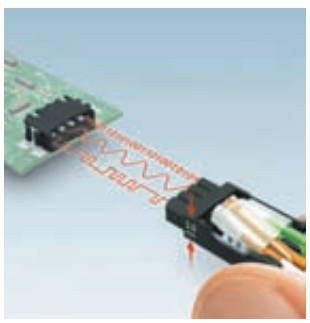
**CIOC 3...FV...** page 177
**CIOC 4...FV...** page 177

16 A connectors for ME/ME MAX electronic housing

**GMSTBT 2,5 HV/...ST-7,25** page 178

16 A connectors for 600 V UL applications. Suitable for use with ME/ME MAX electronic housing.

**GMSTBO 2,5 HV/...G...7,25 THR** page 180



Compact pierce contact and spring-cage connectors with conductor cross-section up to 0.75 mm²

**PTPM 0,2...P** page 183
**PTPM 0,4...P** page 183
**PTSM 0,5...P-2,5** page 183

SMT and THR base strips for pierce contact and spring-cage connectors with 2.5 mm pitch

**PTSM 0,5/...HH-2,5-THR R...** page 185
**PTSM 0,5/...HV-2,5-THR R...** page 185
**PTSM 0,5/...HH-2,5-SMD R...** page 185

Connectors with a screw connection up to 2.5 mm²

**PT 1,5/...-PH-5,0** page 187
**PT 1,5/...-PH-5,0 CLIP** page 187

UM-PRO press-drawn section panel mounting base

**UM-PRO profiles** page188

## Connection cross-section of up to 2.5 mm²

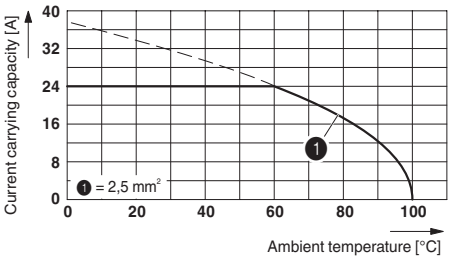
- PCB terminal block for ME MAX electronic housing
- PCB terminal block is orthogonal to the PCB
- "Left" and "right" design
- 7.5 mm pitch
- 2 and 3-pos.

### For accessories, see COMBICON catalog

| For all types | Type | page |
|---|---|---|
| | Marker cards **SK 7,5/3,8** | 489 |
| | Screwdriver **SZS 0,6 x 3,5 Order No. 1205053** | |

### Current carrying capacity curve

**Type: MKDSO 2,5 HV/3L-7,5 KMGY**
Tested in accordance with DIN EN 60512-5-2: 2003-01
Reduction factor: 1
No. of positions: 3




### Technical data

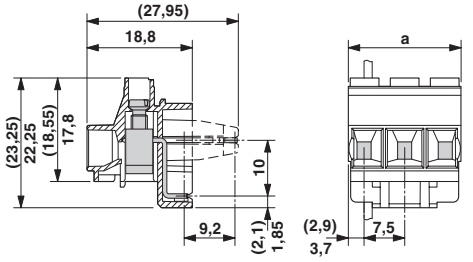
| | | MKDSO 2,5 HV / ...L... | | | MKDSO 2,5 HV / ..R... | | |
|---|---|---|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 24 / - | | | 24 / - | | |
| Rated insulation voltage at pollution degree 2 | [V] | 630 | | | 630 | | |
| Pitch | [mm] | 7.5 | | | 7.5 | | |
| Connection capacity | | | | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 2.5 / 0.2 - 2.5 / 24 - 14 | | | 0.2 - 2.5 / 0.2 - 2.5 / 24 - 14 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 2.5 | | | 0.25 - 2.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.25 - 2.5 | | | 0.25 - 2.5 | | |
| Multi-conductor connection capacity (2 cond. with same cross-section) | | | | | | | |
| Solid / stranded | [mm²] | 0.2 - 0.75 / 0.25 - 0.75 | | | 0.2 - 0.75 / 0.25 - 0.75 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 0.75 | | | 0.25 - 0.75 | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 0.25 - 1.5 | | | 0.25 - 1.5 | | |
| Insulation coordination | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 600 | 630 | 1000 | 600 | 630 | 1000 |
| Rated surge voltage | [kV] | 6 | 6 | 6 | 6 | 6 | 6 |
| General data | | | | | | | |
| Stripping length | [mm] | 8 | | | 8 | | |
| Screw thread | | M3 | | | M3 | | |
| Tightening torque | [Nm] | 0.5 - 0.6 | | | 0.5 - 0.6 | | |
| Type of insulation material / group of insulation material | | PA / I | | | PA / I | | |
| Inflammability class acc. to UL 94 | | V0 | | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.4 / 0.8 mm x 1 mm | | | 1.4 / 0.8 mm x 1 mm | | |

| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 7.50 |
| 3 | 15.00 |

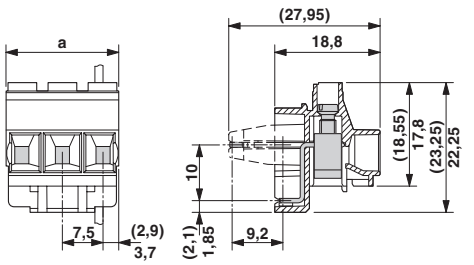
PCB terminal block with screw connection and "left" pin strip leading off at a right angle

PCB terminal block with screw connection and "right" pin strip leading off at a right angle

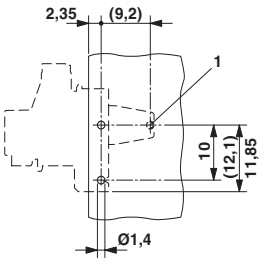
## Dimensional drawing



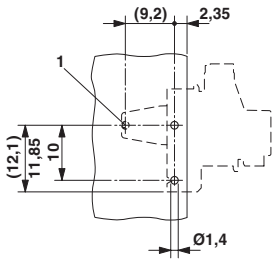

## Dimensional drawing




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PCB terminal block, high-current-compatible, only for ME MAX housing, 7.5 mm pitch, color: light gray | | |
| MKDSO 2,5 HV / 2L-7,5 KMGY | 2199676 | 50 |
| MKDSO 2,5 HV / 3L-7,5 KMGY | 2890946 | 50 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PCB terminal block, high-current-compatible, only for ME MAX housing, 7.5 mm pitch, color: light gray | | |
| MKDSO 2,5 HV / 2R-7,5 KMGY | 2199773 | 50 |
| MKDSO 2,5 HV / 3R-7,5 KMGY | 2890959 | 50 |

## Connectors with displacement connection

- 3 and 4-pos. CIOC miniature connectors with 2 mm pitch
- For sensor/actuator wiring
- Fast and safe displacement connection
- Gold-plated contact system
- Connection of AWG conductors with a 7-strand conductor structure and PVC insulation; other conductor types can be used on request
- Conductor connection using conventional pliers
- Transparent and colored covers enable you to check that the displacement connection has been contacted correctly
- Panel feed-through with CIOC ...-FL
- Additional CIOC 3-2...-FL versions available on request

**Notes:**

In compliance with DIN EN 61984, COMBICON connectors come without switching capacity. When used appropriately, they must not be inserted or disconnected when carrying voltage or under load.

For 3-pos. items, please enquire about the minimum order amount and delivery time.

[1]) Different value for CIOC 3-20... and CIOC 4-20... = 24 - 20 AWG

### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 3 / - | | |
| Rated insulation voltage at pollution degree 2 | [V] | - | | |
| Pitch | [mm] | 2 | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | - / - / 26 - 24[1]) | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 32 | | |
| Rated surge voltage | [kV] | | | |
| Approval data (UL/CUL) | | | | |
| Nominal voltage | [V] | 32 | | |
| Nominal current | [A] | 3 | | |
| Connection capacity AWG | AWG | 26-20 | | |
| General data | | | | |
| Type of insulation material / group of insulation material | | PBT/PC / - | | |
| Inflammability class acc. to UL 94 | | V0 | | |

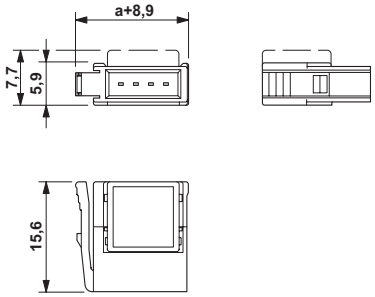
| No. of pos. | Dim. a [mm] |
|---|---|
| 3 | 4.00 |
| 4 | 6.00 |
| | |
| 3 | 4.00 |
| 4 | 6.00 |
| | |
| 3 | 4.00 |
| 4 | 6.00 |
| | |
| 3 | 4.00 |
| 4 | 6.00 |
| | |
| 3 | 4.00 |
| 4 | 6.00 |
| | |
| 3 | 4.00 |
| 4 | 6.00 |
| | |
| 3 | 4.00 |
| 4 | 6.00 |

Connector with male contact

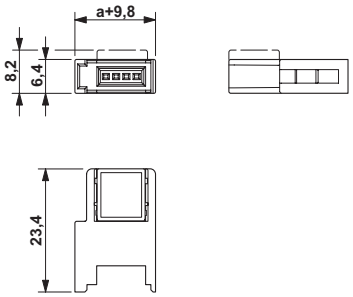
Connector with female contact

Connector as panel feed-through with female contact

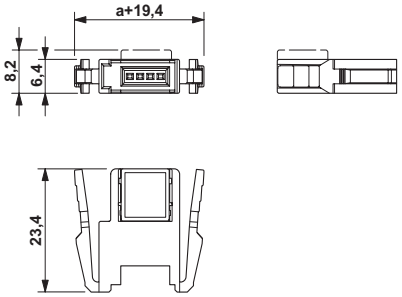
## Dimensional drawing




## Dimensional drawing




## Dimensional drawing




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| 1.0 mm outside conductor diameter, 26 - 24 AWG, color: red (CIOC 3-... on request) | | |
| CIOC 3-24-1,0-M | 1701390 | 50 |
| CIOC 4-24-1,0-M | 1700994 | 50 |
| 1.2 mm outside conductor diameter, 26 - 24 AWG, color: Yellow | | |
| CIOC 3-24-1,2-M | 1701391 | 50 |
| CIOC 4-24-1,2-M | 1701016 | 50 |
| 1.6 mm outside conductor diameter, 26 - 24 AWG, color: orange (CIOC 3-... on request) | | |
| CIOC 3-24-1,6-M | 1701392 | 50 |
| CIOC 4-24-1,6-M | 1701032 | 50 |
| 1.2 mm outside conductor diameter, 24 - 20 AWG, color: green (CIOC 3-... on request) | | |
| CIOC 3-20-1,2-M | 1701393 | 50 |
| CIOC 4-20-1,2-M | 1701058 | 50 |
| 1.6 mm outside conductor diameter, 24 - 20 AWG, color: blue (CIOC 3-... on request) | | |
| CIOC 3-20-1,6-M | 1701394 | 50 |
| CIOC 4-20-1,6-M | 1701074 | 50 |
| 2.0 mm outside conductor diameter, 24 - 20 AWG, color: transparent | | |
| CIOC 3-20-2,0-M | 1701396 | 50 |
| CIOC 4-20-2,0-M | 1701090 | 50 |

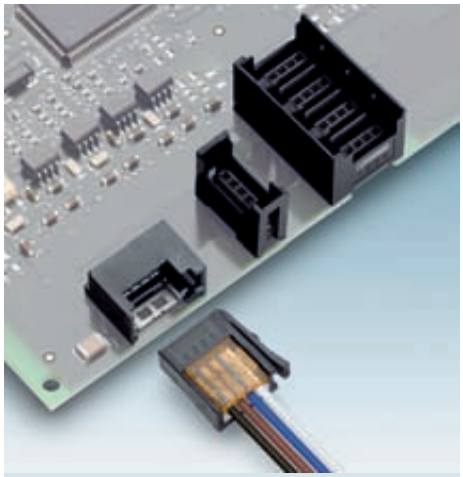
## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| 1.0 mm outside conductor diameter, 26 - 24 AWG, color: red (CIOC 3-... on request) | | |
| CIOC 3-24-1,0-F | 1701397 | 50 |
| CIOC 4-24-1,0-F | 1701113 | 50 |
| 1.2 mm outside conductor diameter, 26 - 24 AWG, color: Yellow | | |
| CIOC 3-24-1,2-F | 1701398 | 50 |
| CIOC 4-24-1,2-F | 1701139 | 50 |
| 1.6 mm outside conductor diameter, 26 - 24 AWG, color: orange (CIOC 3-... on request) | | |
| CIOC 3-24-1,6-F | 1701399 | 50 |
| CIOC 4-24-1,6-F | 1701155 | 50 |
| 1.2 mm outside conductor diameter, 24 - 20 AWG, color: green (CIOC 3-... on request) | | |
| CIOC 3-20-1,2-F | 1701400 | 50 |
| CIOC 4-20-1,2-F | 1701171 | 50 |
| 1.6 mm outside conductor diameter, 24 - 20 AWG, color: blue (CIOC 3-... on request) | | |
| CIOC 3-20-1,6-F | 1701402 | 50 |
| CIOC 4-20-1,6-F | 1701197 | 50 |
| 2.0 mm outside conductor diameter, 24 - 20 AWG, color: transparent | | |
| CIOC 3-20-2,0-F | 1701403 | 50 |
| CIOC 4-20-2,0-F | 1701210 | 50 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| 1.0 mm outside conductor diameter, 26 - 24 AWG, color: Red | | |
| | | |
| CIOC 4-24-1,0-FL | 1701236 | 50 |
| 1.2 mm outside conductor diameter, 26 - 24 AWG, color: Yellow | | |
| | | |
| CIOC 4-24-1,2-FL | 1701252 | 50 |
| 1.6 mm outside conductor diameter, 26 - 24 AWG, color: Orange | | |
| | | |
| CIOC 4-24-1,6-FL | 1701278 | 50 |
| 1.2 mm outside conductor diameter, 24 - 20 AWG, color: green | | |
| | | |
| CIOC 4-20-1,2-FL | 1701294 | 50 |
| 1.6 mm outside conductor diameter, 24 - 20 AWG, color: blue (CIOC 3-... on request) | | |
| CIOC 3-20-1,6-FL | 1701404 | 50 |
| CIOC 4-20-1,6-FL | 1701317 | 50 |
| 2.0 mm outside conductor diameter, 24 - 20 AWG, color: transparent | | |
| | | |
| CIOC 4-20-2,0-FL | 1701333 | 50 |

## Single and four-row headers for wave soldering and SMD processes



**Notes:**

In compliance with DIN EN 61984, COMBICON connectors come without switching capacity. When used appropriately, they must not be inserted or disconnected when carrying voltage or under load.

– 3 and 4-pos. CIOC miniature headers with 2 mm pitch for CIOC ...-2...-M connector
– Gold-plated contact system
– Enables space-saving installation of I/O modules and signal distributors

**CIOC 4-1-FH-SMD-B**
– Single-row, horizontal header
– Delivery form: Tape-on-reel packing according to IEC 60286-3, reel diameter: 380 mm, tape width: 32 mm

**CIOC ...-1-FV-A**
– Single-row header

**CIOC ...-4-FV**
– Four-row header

| Technical data | | CIOC 4-1-FV-A | | | CIOC 4-4-FV | | | CIOC 4-1-FH-SMD-B | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | | | | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 3 / - | | | 3 / - | | | 3 / - | | |
| Rated insulation voltage at pollution degree 2 | [V] | - | | | - | | | - | | |
| Pitch | [mm] | 2 | | | 2 | | | 2 | | |
| Insulation coordination | | | | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 32 | | | 32 | | | 32 | | |
| Rated surge voltage | [kV] | | | | | | | | | |
| Approval data (UL/CUL) | | | | | | | | | | |
| Nominal voltage | [V] | 32 | | | 32 | | | 32 | | |
| Nominal current | [A] | 3 | | | 3 | | | 3 | | |
| Connection capacity AWG | AWG | - | | | - | | | - | | |
| General data | | | | | | | | | | |
| Type of insulation material / group of insulation material | | PA / - | | | PA / - | | | LCP / IIIa | | |
| Inflammability class acc. to UL 94 | | V0 | | | V0 | | | V0 | | |

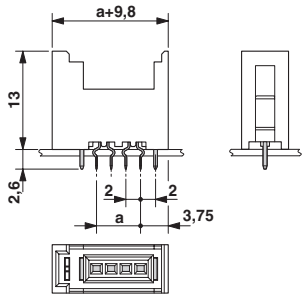
| No. of pos. | Dim. a [mm] |
|---|---|
| 3 | 4.00 |
| 4 | 6.00 |

Single-row header

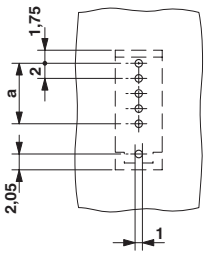
Four-row header

Single-row horizontal header, taped, SMD

## Dimensional drawing



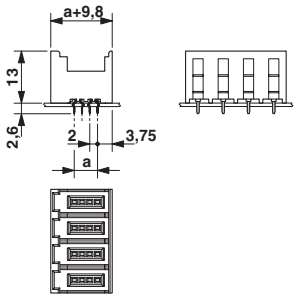

## Drilling diagram



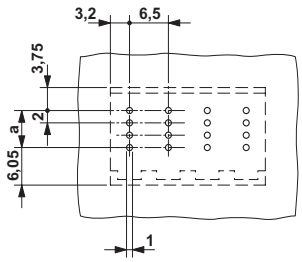

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| Pitch: 2 mm, color: black | | |
| CIOC 3-1-FV-A | 1701551 | 100 |
| CIOC 4-1-FV-A | 1701388 | 100 |

## Dimensional drawing



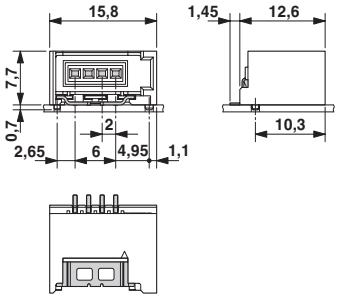

## Drilling diagram



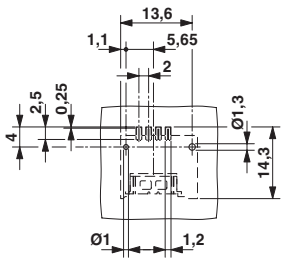

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| Pitch: 2 mm, color: black | | |
| CIOC 3-4-FV | 1701552 | 50 |
| CIOC 4-4-FV | 1701401 | 50 |

## Dimensional drawing




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| Pitch: 2 mm, color: black | | |
| CIOC 4-1-FH-SMD-B R32 | 1701322 | 400 |

## 16 A connector for 600 V UL applications

- Suitable for ME/ME MAX electronic housing
- 7.25 mm pitch for unlimited 600 V UL approval
- Orthogonal screw/plug-in connection
- 2 and 3 positions suitable for 17.5/35 mm and 22.5/45 mm housing width

**Notes:**

In compliance with DIN EN 61984, COMBICON connectors come without switching capacity. When used appropriately, they must not be inserted or disconnected when carrying voltage or under load.

**GMSTBT 2,5 HV/...-ST-7,25 GY7035**

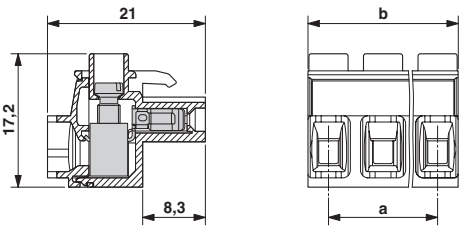
| No. of pos. | Dimension b [mm] |
|---|---|
| 2 | 14.95 |
| 3 | 19.95 |

**COMBICON screw connector, high-current-compatible, suitable for GMSTBO 2,5 HV... headers**

### For accessories, see COMBICON catalog

| For all types | Type | page |
|---|---|---|
| | Keying profile **CP-MSTB Order No. 1734634** | |
| | Marker cards **SK 7,5/3,8** | 489 |
| | Screwdriver **SZS 0,6 x 3,5 Order No. 1205053** | |

### Dimensional drawing




### Representative derating curve

### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 16 / 2.5 | | |
| Rated insulation voltage at pollution degree 2 | [V] | 1000 | | |
| Pitch | [mm] | 7.25 | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 2.5 / 0.2 - 2.5 / 24 - 12 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 2.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.25 - 2.5 | | |
| Multi-conductor connection capacity (2 cond. with same cross-section) | | | | |
| Solid / stranded | [mm²] | 0.1 - 1 / 0.2 - 1.5 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 1 | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 0.5 - 1 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 8 |
| General data | | | | |
| Stripping length | [mm] | 8 | | |
| Screw thread | | M3 | | |
| Tightening torque | [Nm] | 0.5 - 0.6 | | |
| Type of insulation material / group of insulation material | | PA / I | | |
| Inflammability class acc. to UL 94 | | V0 | | |

| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 7.25 |
| 3 | 14.50 |

### Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Pitch: 7.25 mm, color: light gray** | | |
| **GMSTBT 2,5 HV/2-ST-7,25 GY7035** | **2199757** | 50 |
| **GMSTBT 2,5 HV/3-ST-7,25 GY7035** | **2199553** | 50 |

## 16 A connector for 600 V UL applications

- Suitable for ME/ME MAX electronic housing
- 7.25 mm pitch for unlimited 600 V UL approval
- Orthogonal screw/plug-in connection
- THR solderable
- 2 and 3 positions suitable for 17.5/35 mm and 22.5/45 mm housing width
- "Left" and "right" design
- Delivery form: Box packaging bulk material or tape-on-reel packing for automated mounting

**Notes:**

**GMSTBO 2,5 HV/...-GL/GR**

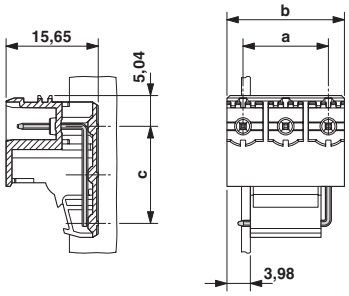
| No. of pos. | Dimension b [mm] | Dimension c [mm] |
|---|---|---|
| 2 | 14.95 | 8.00 |
| 3 | 19.95 | 16.00 |

**Header with "left" pin strip leading off at a right angle, box packaging**

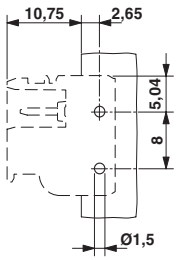
### For accessories, see COMBICON catalog

| For all types | Type | page |
|---|---|---|
| | Keying section **CR-MSTBO G1 Order No. 2199618** | |
| | Marker cards **SK 7,5/3,8** | 489 |

### Dimensional drawing




### Drilling diagram




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 16 / - | | |
| Rated insulation voltage at pollution degree 2 | [V] | 630 | | |
| Pitch | [mm] | 7,25 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 400 | 630 | 630 |
| Rated surge voltage | [kV] | 6 | 6 | 6 |
| General data | | | | |
| Type of insulation material / group of insulation material | | LCP / IIIa | | |
| Inflammability class acc. to UL 94 | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.5 / 1.0 x 1.0 mm | | |

| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 7.25 |
| 3 | 14.50 |

### Ordering data

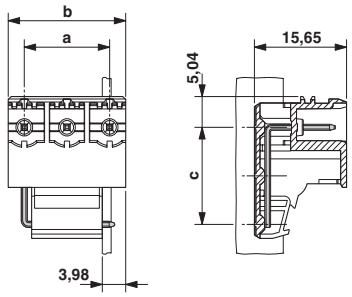
| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **Pitch: 7.25 mm, color: black** | | |
| **GMSTBO 2,5 HV/2-GL-7,25 THR** | **2199867** | 50 |
| **GMSTBO 2,5 HV/3-GL-7,25 THR** | **2199663** | 50 |

Header with "right" pin strip leading off at a right angle, box packaging

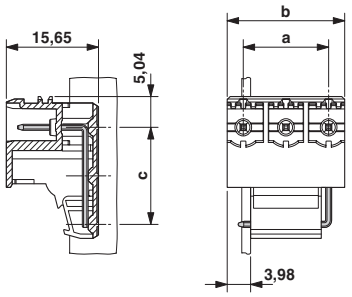
Header with "left" pin strip leading off at a right angle, tape-on-reel packing

Header with "right" pin strip leading off at a right angle, tape-on-reel packing

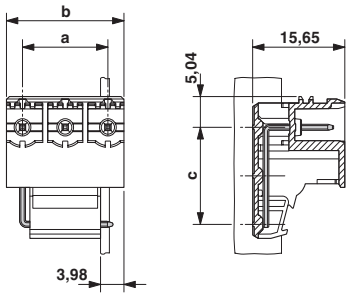
## Dimensional drawing



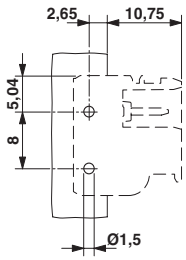

## Dimensional drawing



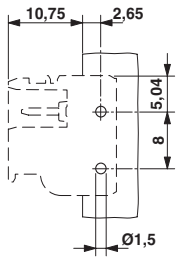

## Dimensional drawing



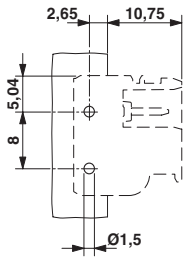

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| Pitch: 7.25 mm, color: black | | |
| GMSTBO 2,5 HV/2-GR-7,25 THR | 2199760 | 50 |
| GMSTBO 2,5 HV/3-GR-7,25 THR | 2199566 | 50 |

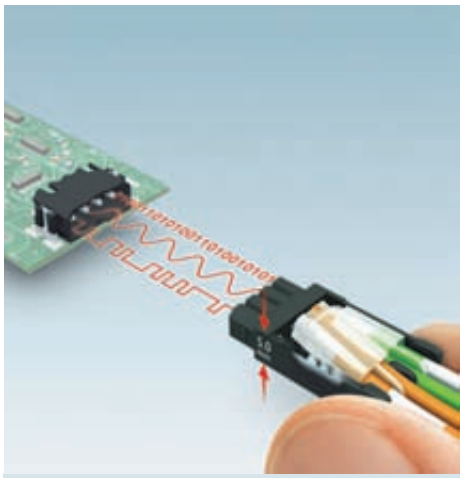
## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| Pitch: 7.25 mm, color: black | | |
| GMSTBO 2,5 HV / 2-GL-7,25THRR32 | 2279703 | 110 |
| GMSTBO 2,5 HV/3-GL-7,25 THRR44 | 2200263 | 70 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| Pitch: 7.25 mm, color: black | | |
| GMSTBO 2,5 HV / 2-GR-7,25THRR32 | 2279606 | 110 |
| GMSTBO 2,5 HV/3-GR-7,25 THRR44 | 2200262 | 70 |

## Compact pierce contact and spring-cage connectors with conductor cross-section up to 0.75 mm²



- Miniature connector with 2.5 mm pitch
- Spring-cage and pierce contact technology
- Conductor connection up to 0.75 mm²
- Can be plugged into reflow solderable base strips
- High current carrying capacity of up to 6 A

| Notes: |
|---|
| Larger numbers of positions on request. |
| Do not use ferrules with pierce connectors. |
| 1) UL/CUL on request |
| 2) Stranded conductor cross-section of up to 0.75 mm² supported, for a rated insulation voltage of 40 V for III/2. |

### For accessories, see COMBICON catalog

| For all types | Type | page |
|---|---|---|
| | Screwdriver SZS 0,4 X 2,0 **Order No. 1205202** | |
| | Ferrules with and without plastic sleeve | 502 |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |

## Technical data

| | | PTPM 0,2/...-P-2,5 | | | PTPM 0,4/...-P-2,5 | | | PTSM 0,5/...-P-2,5 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | | | | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 2 / 0.14 | | | 4 / 0.34 | | | 6 / 0.5²) | | |
| Rated insulation voltage at pollution degree 2 | [V] | 160 | | | 125 | | | 160 | | |
| Pitch | [mm] | 2.5 | | | 2.5 | | | 2.5 | | |
| Connection capacity | | | | | | | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | - / 0.14 - 0.14 / 26 - 26 | | | - / 0.25 - 0.34 / 24 - 22 | | | 0.14 - 0.5 / 0.2 - 0.5²) / 24 - 20 | | |
| Insulation coordination | | | | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 40 | 160 | 160 | 32 | 125 | 125 | 100 | 160 | 320 |
| Rated surge voltage | [kV] | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Approval data (UL/CUL) | Use Group | B | C | D | B | C | D | B | C | D |
| Nominal voltage | [V] | - | 1) | - | - | 1) | - | - | 1) | - |
| Nominal current | [A] | - | 1) | - | - | 1) | - | - | 1) | - |
| Connection capacity AWG | AWG | - | - | - | - | - | - | - | - | - |
| Approval data (CSA) | Use Group | B | C | D | B | C | D | B | C | D |
| Nominal voltage | [V] | - | - | - | - | - | - | - | - | - |
| Nominal current | [A] | - | - | - | - | - | - | - | - | - |
| Connection capacity AWG | AWG | - | - | - | - | - | - | - | - | - |
| General data | | | | | | | | | | |
| Type of insulation material / group of insulation material | | PA/PC / III | | | PA/PC / III | | | PA / I | | |
| Inflammability class acc. to UL 94 | | V0/V2 | | | V0/V2 | | | V0 | | |

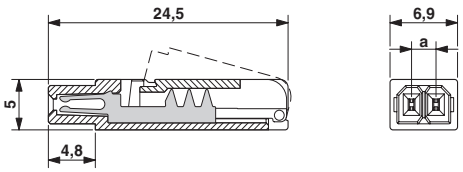
| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 2.50 |
| 3 | 5.00 |
| 4 | 7.50 |
| 5 | 10.00 |
| 6 | 12.50 |
| 7 | 15.00 |
| 8 | 17.50 |

Pierce contact connector for THR and SMD headers

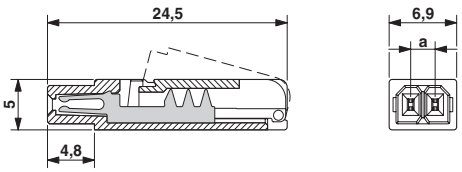
Pierce contact connector for THR and SMD headers

Spring-cage connector for THR and SMD headers

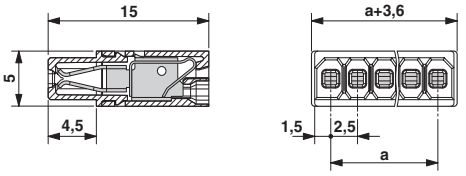
## Dimensional drawing




## Dimensional drawing




## Dimensional drawing




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PTPM 0,2 / 2-P-2,5 | 1780477 | 250 |
| PTPM 0,2 / 4-P-2,5 | 1780480 | 250 |
| PTPM 0,2 / 6-P-2,5 | 1780493 | 100 |
| PTPM 0,2 / 8-P-2,5 | 1780503 | 100 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PTPM 0,4 / 2-P-2,5 | 1780529 | 250 |
| PTPM 0,4 / 4-P-2,5 | 1780532 | 250 |
| PTPM 0,4 / 6-P-2,5 | 1780545 | 100 |
| PTPM 0,4 / 8-P-2,5 | 1780558 | 100 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PTSM 0,5 / 2-P-2,5 | 1778832 | 250 |
| PTSM 0,5 / 3-P-2,5 | 1778845 | 250 |
| PTSM 0,5 / 4-P-2,5 | 1778858 | 250 |
| PTSM 0,5 / 5-P-2,5 | 1778861 | 100 |
| PTSM 0,5 / 6-P-2,5 | 1778874 | 100 |
| PTSM 0,5 / 7-P-2,5 | 1778887 | 100 |
| PTSM 0,5 / 8-P-2,5 | 1778890 | 100 |

## SMT and THR base strips for pierce contact and spring-cage connectors with 2.5 mm pitch

| Notes: |
|---|
| Larger numbers of positions on request. |
| 1) UL/CUL on request |

- Specifically designed for use in reflow and SMT processes
- High current carrying capacity of 6 A
- Rugged soldering anchors for safe mechanical fastening on the surface
- Delivery in tape-on-reel packing as per IEC 60286-3 for automated mounting

### Technical data

| | | PTSM 0,5/...-HH-2,5-THR R.. | | | PTSM 0,5/...-HV-2,5-THR R.. | | | PTSM 0,5/...-HH-2,5-SMD R.. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | | | | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 6 / - | | | 6 / - | | | 6 / - | | |
| Rated insulation voltage at pollution degree 2 | [V] | 160 | | | 160 | | | 160 | | |
| Pitch | [mm] | 2.5 | | | 2.5 | | | 2.5 | | |
| Insulation coordination | | | | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 50 | 160 | 160 | 50 | 160 | 160 | 50 | 160 | 160 |
| Rated surge voltage | [kV] | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Approval data (UL/CUL) | Use Group | B | C | D | B | C | D | B | C | D |
| Nominal voltage | [V] | - | 1) | - | - | 1) | - | - | 1) | - |
| Nominal current | [A] | - | 1) | - | - | 1) | - | - | 1) | - |
| Connection capacity AWG | AWG | - | - | - | - | - | - | - | - | - |
| Approval data (CSA) | Use Group | B | C | D | B | C | D | B | C | D |
| Nominal voltage | [V] | - | - | - | - | - | - | - | - | - |
| Nominal current | [A] | - | - | - | - | - | - | - | - | - |
| Connection capacity AWG | AWG | - | - | - | - | - | - | - | - | - |
| General data | | | | | | | | | | |
| Type of insulation material / group of insulation material | | LCP / IIIa | | | LCP / IIIa | | | LCP / IIIa | | |
| Inflammability class acc. to UL 94 | | V0 | | | V0 | | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.1 / 0.6 x 0.6 mm | | | 1.1 / 0.6 x 0.6 mm | | | - / - | | |

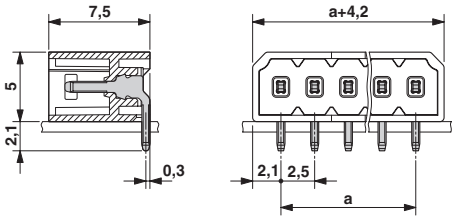
| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 2.50 |
| 3 | 5.00 |
| 4 | 7.50 |
| 5 | 10.00 |
| 6 | 12.50 |
| 7 | 15.00 |
| 8 | 17.50 |

Horizontal header for THR applications

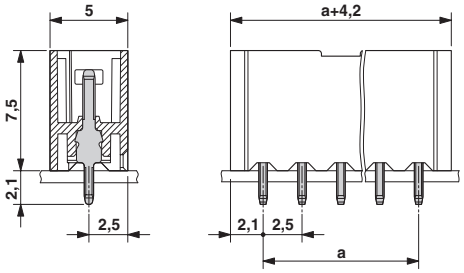
Vertical header for THR applications

Horizontal header for SMD applications

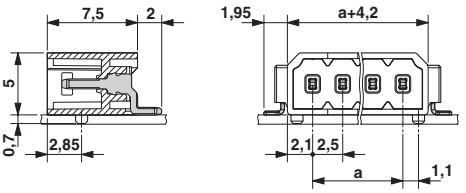
## Dimensional drawing



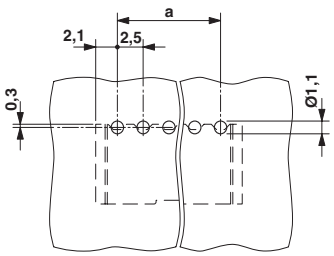

## Dimensional drawing



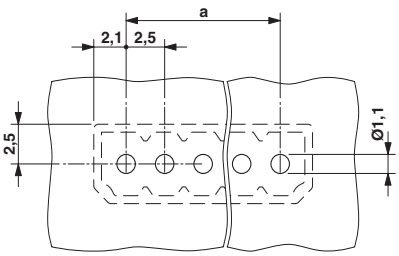

## Dimensional drawing



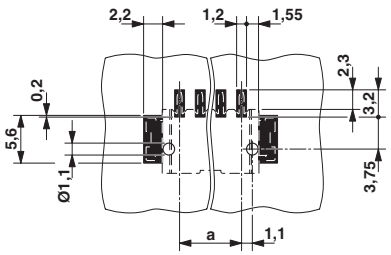

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PTSM 0,5 / 2-HH-2,5-THR R16 | 1778625 | 500 |
| PTSM 0,5 / 3-HH-2,5-THR R32 | 1778638 | 500 |
| PTSM 0,5 / 4-HH-2,5-THR R32 | 1778641 | 500 |
| PTSM 0,5 / 5-HH-2,5-THR R32 | 1778654 | 500 |
| PTSM 0,5 / 6-HH-2,5-THR R32 | 1778667 | 500 |
| PTSM 0,5 / 7-HH-2,5-THR R44 | 1778670 | 500 |
| PTSM 0,5 / 8-HH-2,5-THR R44 | 1778683 | 500 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PTSM 0,5 / 2-HV-2,5-THR R32 | 1778557 | 330 |
| PTSM 0,5 / 3-HV-2,5-THR R32 | 1778560 | 330 |
| PTSM 0,5 / 4-HV-2,5-THR R32 | 1778573 | 330 |
| PTSM 0,5 / 5-HV-2,5-THR R32 | 1778586 | 330 |
| PTSM 0,5 / 6-HV-2,5-THR R32 | 1778599 | 330 |
| PTSM 0,5 / 7-HV-2,5-THR R44 | 1778609 | 330 |
| PTSM 0,5 / 8-HV-2,5-THR R44 | 1778612 | 330 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| PTSM 0,5 / 2-HH-2,5-SMD R32 | 1778764 | 600 |
| PTSM 0,5 / 3-HH-2,5-SMD R32 | 1778777 | 600 |
| PTSM 0,5 / 4-HH-2,5-SMD R32 | 1778780 | 600 |
| PTSM 0,5 / 5-HH-2,5-SMD R32 | 1778793 | 600 |
| PTSM 0,5 / 6-HH-2,5-SMD R44 | 1778803 | 600 |
| PTSM 0,5 / 7-HH-2,5-SMD R44 | 1778816 | 600 |
| PTSM 0,5 / 8-HH-2,5-SMD R44 | 1778829 | 600 |

## Connectors with a screw connection up to 2.5 mm²

- High terminal block capacity thanks to rectangular terminal block space
- Tension sleeve principle
- Connectors can be plugged in horizontally
- Connectors with a rugged and reliable contact system
- Monoblock design

| Notes: |
|---|
| Derating curve available on request. |
| 1) UL/CUL on request |

### For accessories, see COMBICON catalog

| For all types | Type | page |
|---|---|---|
| | Screwdriver **SZS 0,6 x 3,5** **Order No. 1205053** | |
| | Keying profile CP-PTDA **Order No. 1731361** | |

## Technical data

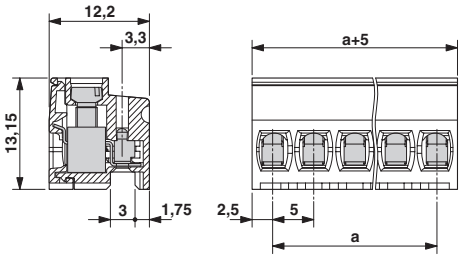
| | | PT 1,5/...-PH-5,0 | | | PT 1,5/...-PH-5,0 CLIP | | |
|---|---|---|---|---|---|---|---|
| Technical data in accordance with IEC / DIN VDE | | | | | | | |
| Rated current / conductor cross-section | [A] / [mm²] | 10 / 1.5 | | | 10 / 1.5 | | |
| Rated insulation voltage at pollution degree 2 | [V] | 400 | | | 400 | | |
| Pitch | [mm] | 5 | | | 5 | | |
| Connection capacity | | | | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 2.5 / 0.2 - 2.5 / 26 - 12 | | | 0.2 - 1.5 / 0.2 - 1.5 / 26 - 14 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 1 | | | 0.25 - 1 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.25 - 1 | | | 0.25 - 1 | | |
| Multi-conductor connection capacity (2 cond. with same cross-section) | | | | | | | |
| Solid / stranded | [mm²] | - / - | | | - / - | | |
| Stranded with ferrules without plastic sleeve | [mm²] | - | | | - | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | - | | | - | | |
| Insulation coordination | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 250 | 400 | 630 | 250 | 400 | 630 |
| Rated surge voltage | [kV] | 4 | 4 | 4 | 4 | 4 | 4 |
| Approval data (UL/CUL) | Use Group | B | C | D | B | C | D |
| Nominal voltage | [V] | - | 1) | - | - | 1) | - |
| Nominal current | [A] | - | 1) | - | - | 1) | - |
| Connection capacity AWG | AWG | - | - | - | - | - | - |
| Approval data (CSA) | Use Group | B | C | D | B | C | D |
| Nominal voltage | [V] | - | - | - | - | - | - |
| Nominal current | [A] | - | - | - | - | - | - |
| Connection capacity AWG | AWG | - | - | - | - | - | - |
| General data | | | | | | | |
| Stripping length | [mm] | 6 | | | 6 | | |
| Tightening torque | [Nm] | 0.35 - 0.4 | | | 0.35 - 0.4 | | |
| Type of insulation material / group of insulation material | | PA / I | | | PA / I | | |
| Inflammability class acc. to UL 94 | | V0 | | | V0 | | |

| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 5.00 |
| 3 | 10.00 |
| 4 | 15.00 |
| 5 | 20.00 |
| 6 | 25.00 |
| 7 | 30.00 |
| 8 | 35.00 |
| 9 | 40.00 |
| 10 | 45.00 |
| 11 | 50.00 |
| 12 | 55.00 |
| 13 | 60.00 |
| 14 | 65.00 |
| 15 | 70.00 |
| 16 | 75.00 |

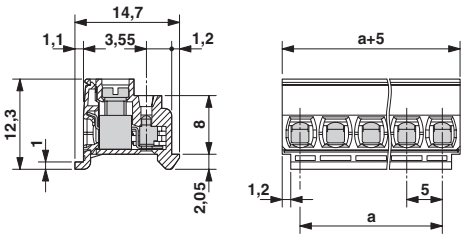
PCB screw termination blocks, can be plugged in horizontally

PCB screw termination blocks for "housing assembly"

## Dimensional drawing




## Dimensional drawing




## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **5.0 mm pitch, color: green** | | |
| PT 1,5 / 2-PH-5,0 | 1755583 | 250 |
| PT 1,5 / 3-PH-5,0 | 1755596 | 250 |
| PT 1,5 / 4-PH-5,0 | 1755606 | 250 |
| PT 1,5 / 5-PH-5,0 | 1755619 | 100 |
| PT 1,5 / 6-PH-5,0 | 1755622 | 100 |
| PT 1,5 / 7-PH-5,0 | 1755635 | 100 |
| PT 1,5 / 8-PH-5,0 | 1755648 | 100 |
| PT 1,5 / 9-PH-5,0 | 1755651 | 100 |
| PT 1,5/10-PH-5,0 | 1755664 | 100 |
| PT 1,5/11-PH-5,0 | 1755677 | 50 |
| PT 1,5/12-PH-5,0 | 1755680 | 50 |
| PT 1,5/13-PH-5,0 | 1755693 | 50 |
| PT 1,5/14-PH-5,0 | 1755703 | 50 |
| PT 1,5/15-PH-5,0 | 1755716 | 50 |
| PT 1,5/16-PH-5,0 | 1755729 | 50 |

## Ordering data

| Type | Order No. | Pcs./Pkt. |
|---|---|---|
| **5.0 mm pitch, color: green** | | |
| PT 1,5 / 2-PH-5,0 CLIP | 1755732 | 250 |
| PT 1,5 / 3-PH-5,0 CLIP | 1755745 | 250 |
| PT 1,5 / 4-PH-5,0 CLIP | 1755758 | 250 |
| PT 1,5 / 5-PH-5,0 CLIP | 1755761 | 100 |
| PT 1,5 / 6-PH-5,0 CLIP | 1755774 | 100 |
| PT 1,5 / 7-PH-5,0 CLIP | 1755787 | 100 |
| PT 1,5 / 8-PH-5,0 CLIP | 1755790 | 100 |
| PT 1,5 / 9-PH-5,0 CLIP | 1755800 | 100 |
| PT 1,5/10-PH-5,0 CLIP | 1755813 | 100 |
| PT 1,5/11-PH-5,0 CLIP | 1755826 | 50 |
| PT 1,5/12-PH-5,0 CLIP | 1755839 | 50 |
| PT 1,5/13-PH-5,0 CLIP | 1755842 | 50 |
| PT 1,5/14-PH-5,0 CLIP | 1755855 | 50 |
| PT 1,5/15-PH-5,0 CLIP | 1755868 | 50 |
| PT 1,5/16-PH-5,0 CLIP | 1755871 | 50 |

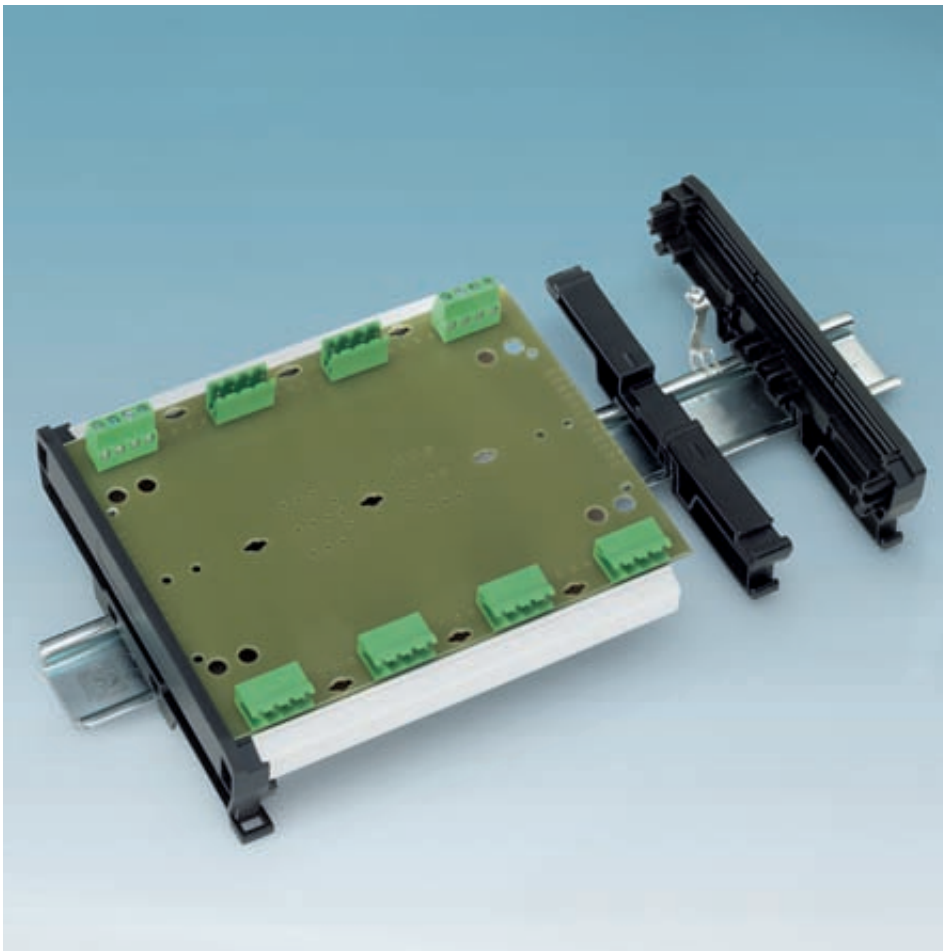
## UM-PRO press-drawn section panel mounting base

### Description

The three UM-PRO press-drawn section housings (72/108/122) combine short assembly times and a high degree of freedom when selecting the connection method. Thanks to the use of plastic polyamide and a special profile geometry, they are suitable for operating temperatures of up to 100°C and high mechanical loads.

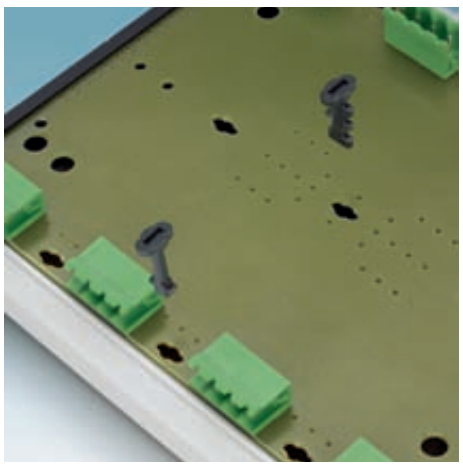
Since they are the **only** profile housings made of halogen-free high-temperature plastic, they satisfy the requirements for UL device approval and marketing on the US market.

Their low height favors arrangements consisting of flat electronic components, which can be mounted on standard DIN rails or directly on the wall. The top PCB can be populated right up to the edge and secured using quick-fastening techniques. The connectors thus remain freely accessible for wiring by end customers. Further options, such as the free positioning of covers or the selectable BUS option for coupling the modules with one another, provide additional benefits for the customer.



**Fast housing assembly: Plugging instead of screwing**

The fact that profile pieces can be snapped quickly and securely in place using UM-PRO...COVER side parts helps mitigate increasing cost pressures during the final device assembly stages.

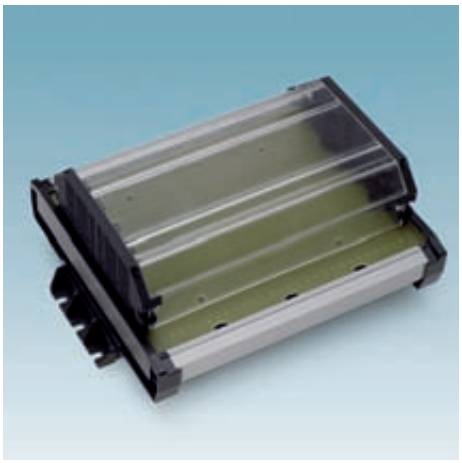


**Integration of various connection methods**

Since the top PCB fits flush against the side of the profile, it can be populated right up to the edge. This PCB can also be secured with the UM-PRO PCB S(C)-LOCK locking element. The connectors remain freely accessible for wiring by end customers.

**Integrated PE contact**

The UM-PRO PE CONTACT potential ground contact, which can be integrated on either side, establishes an electrical connection between the inserted PCB and the DIN rail. This eliminates the need for additional PE terminal blocks and extensive cabling work.



**Flexible positioning of covers**

The ability to position the covers as required means that sensitive areas on the board can be protected independently. The UM-PRO LID... snap-in lids are easy to mount and remove using just a screwdriver. It is easy to combine connection methods with a variety of space requirements.

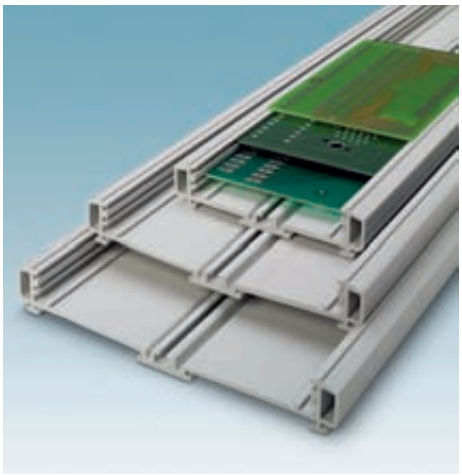
**Main features**

- Plug-in assembly reduces assembly time and associated costs
- The 72/108 and 122 mm widths ensure a compatible high-end alternative to the familiar UM profiles
- Temperature range up to 100°C extends the areas of application
- Well-designed profile geometry increases the form stability
- 3 profile guideways facilitate various PCB configurations
- Mounting close to the edge creates wiring benefits
- Freely positionable covers offer flexibility
- PE contacts that can be fitted on both sides ensure safety
- Device communication can be extended by BUS cross contacting
- Labeling area for standard SK strips
- Additional foot elements increase mechanical stability

**BUS cross contacting of housing**

The integrated design of the standard MINI COMBICON connectors at the lowest PCB level supports cost-effective device networking.

## UM-PRO press-drawn section panel mounting base



### Main properties and benefits

- Plug-in assembly reduces assembly time and thus saves costs
- The 72/108 and 122 mm widths provide compatible high-end alternatives to popular UM profiles
- Temperature range up to 100°C extends the possible fields of application
- Well-designed profile geometry increases the form stability
- 3 profile guideways support various PCB configurations
- Mounting close to the edge provides wiring advantages
- Freely positionable covers offer flexibility
- PE contacts that can be fitted on both sides ensure safety
- Device communication can be extended by BUS cross contacting
- Labeling area for standard SK strips
- Additional foot elements increase mechanical stability

**Notes:**

[1]) Please indicate the desired length in [cm].

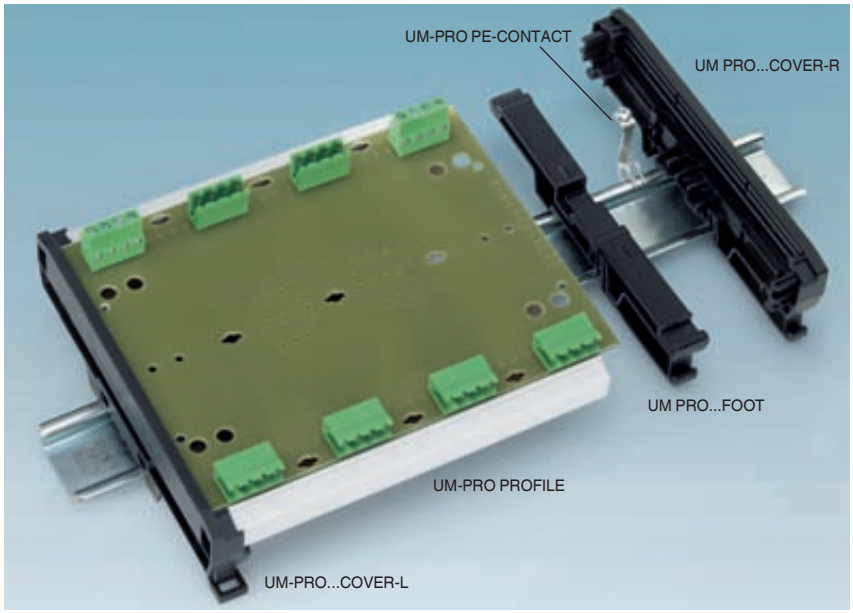
**Press-drawn section, width: 72, 108 or 122 mm**

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Press-drawn section cut to customer-specific length**, color: light gray (similar to RAL 7035) Specify length in [cm] according to order key | **UM-PRO PROFILE** | **2200148** | 1 |
| **Lateral elements** with mounting foot for NS35 DIN rails, with groove for accommodating PE contact metal, can be inserted in UM-PRO profiles, color: black (similar to RAL 9005) | | | |
| Version: left, width: 72 mm | **UM-PRO 72 COVER-L BK** | **2200151** | 10 |
| Version: left, width: 108 mm | **UM-PRO 108 COVER-L BK** | **2200155** | 10 |
| Version: left, width: 122 mm | **UM-PRO 122 COVER-L BK** | **2200158** | 10 |
| Version: right, width: 72 mm | **UM-PRO 72 COVER-R BK** | **2200152** | 10 |
| Version: right, width: 108 mm | **UM-PRO 108 COVER-R BK** | **2200156** | 10 |
| Version: right, width: 122 mm | **UM-PRO 122 COVER-R BK** | **2200159** | 10 |
| **Lid** for covering Version for low A/U U-shaped profile cover, 73 mm wide | **UM-PRO LID-73N BK** | **2200174** | 10 |
| Version for U-shaped profile cover, 122 mm, 92 mm wide | **UM-PRO LID-92 BK** | **2200172** | 10 |
| Version for high U-shaped profile cover, 108 mm, 73 mm wide | **UM-PRO LID-73 BK** | **2200173** | 10 |
| **U-shaped profile cover, low version,** high-temperature-resistant PC material, 73 mm wide (internal dimensions: 69 mm), suitable for UM-PRO 108/122[1]) | **UM-PRO A/U N 73 CM** | **2200310** | 1 |
| **U-shaped profile, high version,** high-temperature-resistant PC material, available design width: 73 mm (internal dimensions: 69 mm). Please observe the order key. | **UM-PRO A/U CM** | **2200311** | 1 |
| **U-shaped profile cover,** high-temperature-resistant PC material, 92 mm wide (internal dimensions: 88 mm), suitable for UM-PRO 122 | **UM-PRO A/U 92 CM** | **2200312** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Foot element** for DIN rails, for mounting under press-drawn section | | | |
| Width: 72 mm | **UM-PRO 72 FOOT BK** | **2200153** | 10 |
| Width: 108 mm | **UM-PRO 108 FOOT BK** | **2200157** | 10 |
| Width: 122 mm | **UM-PRO 122 FOOT BK** | **2200160** | 10 |
| **PE contact metal** for snapping into lateral elements | | | |
| Version for top PCB level | **UM-PRO PE CONTACT L1** | **2200161** | 20 |
| Version for middle PCB level | **UM-PRO PE CONTACT L2** | **2200162** | 20 |
| Version for bottom PCB level | **UM-PRO PE CONTACT L3** | **2200163** | 20 |
| **Add-on element** for fixing PCBs | | | |
| Version for top PCB, lateral, black | **UM-PRO PCB S-LOCK BK** | **2200168** | 100 |
| Version for top PCB, central, black | **UM-PRO PCB C-LOCK L1 BK** | **2200164** | 50 |
| Version for middle PCB, central, black | **UM-PRO PCB C-LOCK L2 BK** | **2200165** | 50 |
| Version for bottom PCB, central, black | **UM-PRO PCB C-LOCK L3 BK** | **2200166** | 50 |
| **Mounting flange,** for direct wall mounting. Color: black | **UM-PRO MOUNT BK** | **2200171** | 10 |
| **Screwdriver** | **SZF 0-0,4X2,5** | **1204504** | 10 |




## UM-PRO order key

| Quantity | Order No. | | Profile width | | Length [cm] | | Color |
|---|---|---|---|---|---|---|---|
| 1 | 22 00 14 8 | / | UM-PRO | / | 22.5 | / | GY7035 |
| | | | UM-PRO 72≙ 72 mm<br>UM-PRO 108 ≙ 108 mm<br>UM -PRO122 ≙ 122 mm | | 3.0 cm, minimum<br>100.0 cm, maximum | | GY7035 ≙ light gray |

**General note:**

The area that can be equipped is reduced by 3 mm at both edges of the press-drawn sections.

**Ordering information:**

In order to determine the profile length, 1.6 cm must be subtracted from the PCB length. The overall length of the module, i.e., including the lateral elements, is equal to the PCB length plus 0.4 cm.

**Ordering example:**

For a PCB of 160 x 107.5 x 1.5 mm, the profile length is:

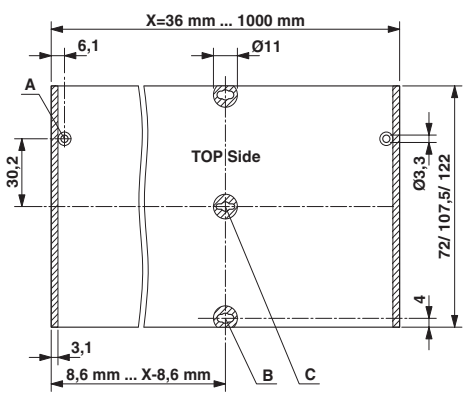
2200148/UM-PRO 108/14,4/GY7035

## Order key for UM-PRO profile covers

| Quantity | Order No. | | Width cover [mm] | | Length [cm] |
|---|---|---|---|---|---|
| 1 | 22 00 31 1 | / | AU 73 | / | 8.4 |
| | | | AU 73 ≙ 73 mm | | 3.0 cm, minimum<br>100.0 cm, |

## UM-PRO PCB

A = drill hole for optional PE contact; B = for optional S-Lock PCB lock in top level; C = for optional C-Lock PCB lock (all levels)



Surge protection
Type 1 lightning arrester based on a varistor

**VALVETRAB MS 12.5 kA**
**VAL-MS-T1/T2 ...** page 196

Surge protection
Type 2 surge arrester

**VALVETRAB MS**
**VAL-MS...** page 198

Surge protection
Type 2 surge arrester,
PV systems

**VALVETRAB MS**
**VAL-MS...** page 200

Surge protection
for antenna connections

**COAXTRAB**
**CN-LAMBDA/4...** page 202

Monitoring
Type A differential current monitoring

**RCM-A...** page 204

Monitoring
Type B differential current monitoring

**RCM-B...** page 205

Monitoring
Converter differential current monitoring

**SCT...** page 204

Uninterruptible power supply
UPS unit

**UPS-CP...** page 206

Uninterruptible power supply
Battery unit

**UPS-CP-BAT...** page 208

Uninterruptible power supply
Accessories

**UPS-SNMP...** page 210
**UPS-6REL...** page 210

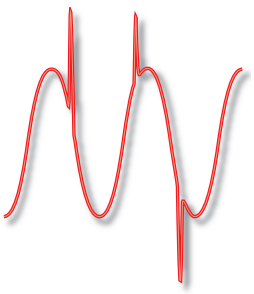
Uninterruptible power supply
Bypass

**UPS-CP-BP...** page 211

# There are a number of dangers:

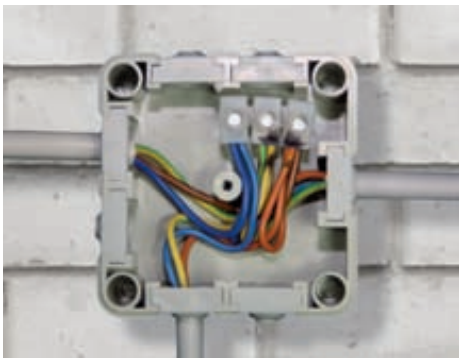
## Surge voltage damage

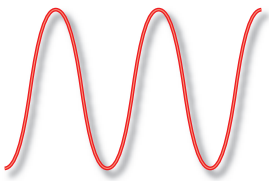
The number of electrical devices damaged or destroyed by surge voltages is increasing year on year. This can prove expensive in terms of repairs and downtimes. In an industrial environment, the hazards are not only restricted to systems and devices. Building automation applications and even residential buildings may be affected.



## Insulation damage and residual currents

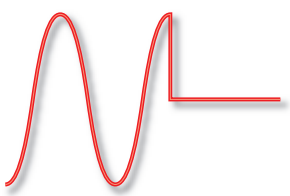
Damage to insulation between live conductors and ground causes residual currents, which present a hazard to personnel and a fire risk. Fuses and residual current circuit breakers provide protection against these types of effects. They shut down the affected devices and system parts in the event of danger.





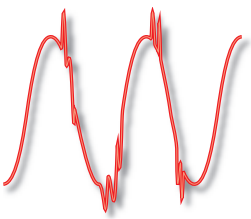
## Power failure

Unexpected power supply interruptions may cause extensive hardware damage and result in the loss of important data. As most of these interruptions last less than a second, personnel will not even be aware of them. However, interruptions lasting longer than just 10 ms are capable of disrupting the operation of IT systems.



## Interference voltages

Switching operations triggered mechanically or electronically generate pulse-like and high-frequency interference voltages. These voltages spread unopposed across the cable network. All the devices within the cable network area affected. Data errors, uncontrolled functions, and system crashes can result, with electronic and data-processing devices at particular risk.



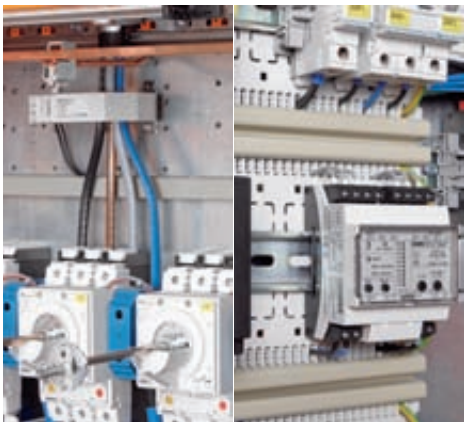
# We offer protection:

## Effective surge protection

Surge protection devices provide an effective method of limiting high-energy transients. This makes it possible to protect devices and systems against the destructive effects of surge voltage couplings. Significant improvements can be achieved in terms of operability and availability.

## Monitoring

Special monitoring and test devices can detect faults before systems or devices have to be shut down. This supports a structured approach to the required repairs or servicing work. Dangers can be addressed without unnecessary interruptions to system operation.



## Uninterruptible power supply units

Uninterruptible power supply devices use batteries to provide a supply voltage. This makes it possible to bridge power supply downtimes and enables systems to continue operating without any interruption.

## EMC solutions

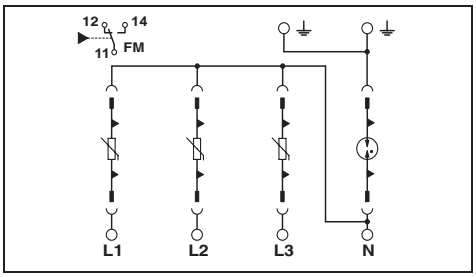
Interference suppressor filters limit conducted high-frequency interference voltages. Data-processing devices are able to continue working without any interruptions and provide reliable results.

## VAL-MS-T1/T2 335/12.5... type 1 lightning arrester

- For Lightning Protection Levels III and IV
- Seamless pluggability of even N/PE spark gap
- Secure hold of connectors in the event of high lightning current loads and strong vibration thanks to new latching
- Thermal disconnect device for each individual connector
- High continuous voltage of 335 V AC (L-N) for 230/400 V AC networks with high voltage fluctuations
- Optical, mechanical status indication for the individual arresters
- With or without floating remote indication contact
- Mechanical keying of all slots
- Connectors can be checked with CHECKMASTER

**5-conductor system; L1, L2, L3, N, PE**

Total width 71.2 mm




### Technical data

| | | |
|---|---|---|
| **Electrical data** | | |
| IEC category / EN type | | I, II / T1, T2 |
| Nominal voltage $U_N$ | | 240 V AC (230/400 V AC ... 240/415 V AC) |
| Highest continuous voltage $U_C$ | | |
| | L-N / N-PE / L-PEN | 335 V AC / 264 V AC / - |
| Lightning test curr. $I_{imp}$ (10/350) µs | | |
| | Peak value | 50 kA |
| | Charge | 25 As |
| | Specific energy | 625.00 kJ/Ω |
| Follow current quenching capacity $I_{fi}$ | | |
| | L-N / N-PE / L-PEN | - / 100 A (264 V AC) / - |
| Nominal discharge surge current $I_n$ (8/20) µs | | |
| | L-N / N-PE / L-PEN | 12.5 kA / 50 kA / - |
| Max. discharge surge current $I_{max.}$ (8/20) µs | | |
| | L-N / N-PE / L-PEN | 50 kA / 50 kA / - |
| Residual voltage at 5 kA | L-N / N-PE / L-PEN | ≤ 1 kV / ≤ 0.5 kV / - |
| Protection level $U_p$ | | |
| | L-N / N-PE / L-PEN | ≤ 1.2 kV / ≤ 1.7 kV / - |
| Response time $t_A$ | | |
| | L-N / N-PE / L-PEN | ≤ 25 ns / ≤ 100 ns / - |
| Backup fuse max. in acc. with IEC | | 160 A (gL/gG) |
| **General data** | | |
| Connection data (solid / stranded / AWG) | | 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 |
| Temperature range | | -40°C ... 80°C |
| Inflammability class in acc. with UL 94 | | V0 |
| Test standards | | IEC 61643-1 / DIN EN 61643-11/A11 |
| **Remote indication contact** | | PDT, 1-pos. |
| Connection data (solid / stranded / AWG) | | 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 |
| Max. operating voltage | | 250 V AC |
| Max. operating current | | 1.5 A (250 V AC) / 1.5 A (30 V DC) |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **VALVETRAB-MS,** varistor-based lightning arrester | | | |
| with remote indication contact | **VAL-MS-T1/T2 335/12.5/3+1-FM** | **2800183** | 1 |
| without remote indication contact | **VAL-MS-T1/T2 335/12.5/3+1** | **2800184** | 1 |

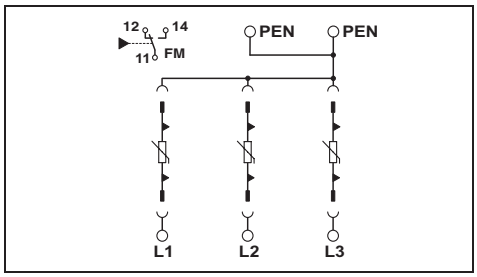
### Accessories

| | | | |
|---|---|---|---|
| **Replacement connector** | | | |
| L-N / L-PEN | **VAL-MS-T1/T2 335/12.5 ST** | **2800190** | 1 |
| N-PE | **F-MS-T1/T2 50 ST** | **2800191** | 1 |
| **Labeling material** (see TRABTECH catalog) | **ZBN 18,...** | | |

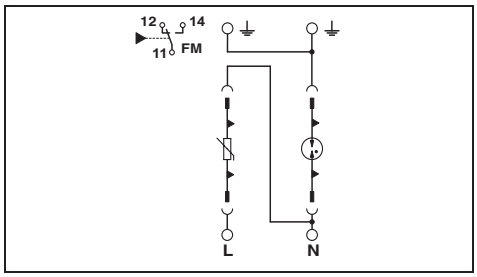
4-conductor system; L1, L2, L3, PEN

3-conductor system; L, N, PE

Total width 53.4 mm




Total width 35.6 mm




## Technical data

| | |
|---|---|
| I, II / T1, T2 | I, II / T1, T2 |
| 240 V AC (230/400 V AC ... 240/415 V AC) | 240 V AC (230 V AC ... 240 V AC) |
| - / - / 335 V AC | 335 V AC / 264 V AC / - |
| 37.5 kA | 25 kA |
| 18.75 As | 12.5 As |
| 352.00 kJ/Ω | 160.00 kJ/Ω |
| - / - / - | - / 100 A (264 V AC) / - |
| - / - / 37.5 kA (all channels) | 12.5 kA / 50 kA / - |
| - / - / 150 kA (all channels) | 50 kA / 50 kA / - |
| - / - / ≤ 1 kV | ≤ 1 kV / ≤ 0.5 kV / - |
| - / - / ≤ 1.2 kV | ≤ 1.2 kV / ≤ 1.7 kV / - |
| - / - / ≤ 25 ns | ≤ 25 ns / ≤ 100 ns / - |
| 160 A (gL/gG) | 160 A (gL/gG) |
| 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 | 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 |
| -40°C ... 80°C | -40°C ... 80°C |
| V0 | V0 |
| IEC 61643-1 / DIN EN 61643-11/A11 | IEC 61643-1 / DIN EN 61643-11/A11 |
| PDT, 1-pos. | PDT, 1-pos. |
| 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 |
| 250 V AC | 250 V AC |
| 1.5 A (250 V AC) / 1.5 A (30 V DC) | 1.5 A (250 V AC) / 1.5 A (30 V DC) |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **VAL-MS-T1/T2 335/12.5/3+0-FM** | **2800188** | 1 |
| **VAL-MS-T1/T2 335/12.5/3+0** | **2800189** | 1 |

## Accessories

| | | |
|---|---|---|
| **VAL-MS-T1/T2 335/12.5 ST** | **2800190** | 1 |
| **ZBN 18,...** | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **VAL-MS-T1/T2 335/12.5/1+1-FM** | **2800186** | 1 |
| **VAL-MS-T1/T2 335/12.5/1+1** | **2800187** | 1 |

## Accessories

| | | |
|---|---|---|
| **VAL-MS-T1/T2 335/12.5 ST** | **2800190** | 1 |
| **F-MS-T1/T2 50 ST** | **2800191** | 1 |
| **ZBN 18,...** | | |

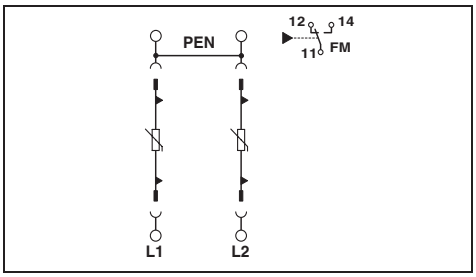
## Type 2 surge arrester

- Type 2 seamless plug-in surge arrester
- Also suitable for industry solutions, e.g., in the wind and rail industry
- Disconnect device on each individual connector
- Optical, mechanical status indication for the individual arresters
- With or without floating remote indication contact
- Mechanical keying of all slots

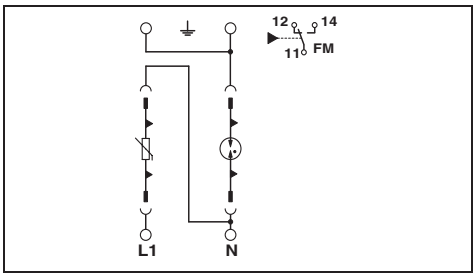
**3-conductor power supply systems (L1, L2, PEN)**

**3-conductor power supply systems (L1, N, PE)**

Total width 35.6 mm




Total width 35.6 mm




| | | Technical data | Technical data |
|---|---|---|---|
| **Electrical data** | | | |
| IEC category / EN type | | II / T2 | II / T2 |
| Nominal voltage $U_N$ | | 230 V AC (400 V AC) | 230 V AC |
| Highest continuous voltage $U_C$ | | | |
| | L-N / N-PE / L-PEN | - / - / 275 V AC | 275 V AC / 260 V AC / - |
| | L-PE | - | - |
| Nominal discharge surge current $I_n$ (8/20) µs | | | |
| | L-N / N-PE / L-PEN | - / - / 40 kA (all channels) | 20 kA / 20 kA / - |
| | L-PE | - | - |
| Max. discharge surge current $I_{max.}$ (8/20) µs | | | |
| | L-N / N-PE / L-PEN | - / - / 80 kA (all channels) | 40 kA / 40 kA / - |
| | L-PE | - | - |
| Residual voltage at 5 kA | L-N / N-PE / L-PEN | - / - / ≤ 1.1 kV | ≤ 1.1 kV / ≤ 150 V / - |
| | L-PE | - | ≤ 1.2 kV (at 5 kA) |
| Protection level $U_p$ | | | |
| | L-N / N-PE / L-PEN | - / - / ≤ 1.35 kV | ≤ 1.35 kV / ≤ 1.5 kV / - |
| | L-PE | - | ≤ 1.6 kV |
| Response time $t_A$ | | | |
| | L-N / N-PE / L-PEN | - / - / ≤ 25 ns | ≤ 25 ns / ≤ 100 ns / - |
| | L-PE | - | - |
| Backup fuse max. in acc. with IEC | | 125 A (gL/gG) | 125 A (gL/gG) |
| **General data** | | | |
| Connection data (solid / stranded / AWG) | | 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 | 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 |
| Temperature range | | -40°C ... 80°C | -40°C ... 80°C |
| Inflammability class in acc. with UL 94 | | V0 | V0 |
| Test standards | | IEC 61643-1 / DIN EN 61643-11/A11 | IEC 61643-1 / DIN EN 61643-11/A11 |
| **Remote indication contact** | | PDT, 1-pos. | PDT, 1-pos. |
| Connection data (solid / stranded / AWG) | | 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 |
| Max. operating voltage | | 250 V AC | 250 V AC |
| Max. operating current | | 1.5 A AC (250 V AC) / 1.5 A DC (30 V DC) | 1.5 A AC (250 V AC) / 1.5 A DC (30 V DC) |

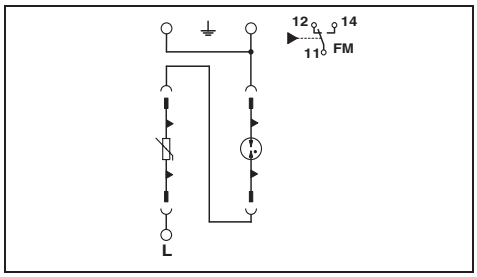
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **VALVETRAB MS** | | | | | | |
| with remote indication contact | **VAL-MS 230/2+0-FM** | **2800102** | 1 | **VAL-MS 230/1+1-FM** | **2804432** | 1 |
| without remote indication contact | **VAL-MS 230/2+0** | **2800103** | 1 | **VAL-MS 230/1+1** | **2804429** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Replacement connector** | | | | | | |
| 1L-N/PE | **VAL-MS 230 ST** | **2798844** | 10 | **VAL-MS 230 ST** | **2798844** | 10 |
| N-PE | | | | **F-MS 12 ST** | **2817990** | 10 |
| **Base element,** for individual assembly with protective connectors | | | | | | |
| with remote indication contact | **VAL-MS/2+0-BE/FM** | **2805321** | 1 | **VAL-MS/1+1-BE/FM** | **2920531** | 1 |
| without remote indication contact | **VAL-MS/2+0-BE** | **2804584** | 1 | **VAL-MS/1+1-BE** | **2920528** | 1 |

**Free of leakage current, for nominal voltages up to 690 V AC, e.g., rotor protection for wind power plants**

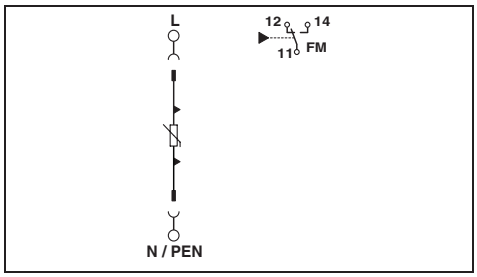
**For nominal voltages up to 60 V AC**

**Free of leakage current, for nominal voltages up to 48 V AC, e.g., for rail applications**

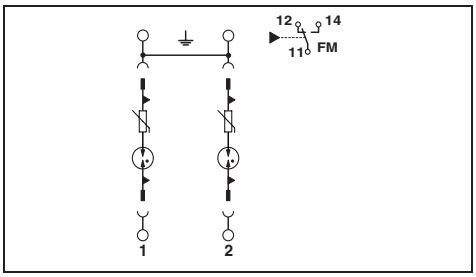
Total width 35.6 mm




Total width 17.7 mm




Total width 35.6 mm




## Technical data

| | |
|---|---|
| II / T2 | |
| 690 V AC | |
| - / - / - | |
| 800 V AC | |
| - / - / - | |
| 15 kA | |
| - / - / - | |
| 30 kA | |
| - / - / - | |
| ≤ 2.4 kV (at 5 kA) | |
| - / - / - | |
| ≤ 5 kV | |
| - / - / - | |
| ≤ 100 ns | |
| 100 A (gL / gG) | |
| 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 | |
| -40°C ... 80°C | |
| V0 | |
| IEC 61643-1 / DIN EN 61643-11 / DIN EN 61643-11/A11 | |
| PDT, 1-pos. | |
| 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | |
| 250 V AC | |
| 1.5 A AC (250 V AC) / 1.5 A DC (30 V DC) | |

## Technical data

| | |
|---|---|
| II / T2 | |
| 60 V AC/DC | |
| 75 V AC / - / 75 V AC | |
| - | |
| 15 kA / - / 15 kA | |
| - | |
| 40 kA / - / 40 kA | |
| - | |
| ≤ 325 V / - / ≤ 325 V | |
| - | |
| ≤ 500 V / - / ≤ 500 V | |
| - | |
| ≤ 25 ns / - / ≤ 25 ns | |
| - | |
| 125 A AC (gL/gG) | |
| 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 | |
| -40°C ... 80°C | |
| V0 | |
| IEC 61643-1 / DIN EN 61643-11 / DIN EN 61643-11/A11 | |
| PDT, 1-pos. | |
| 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | |
| 250 V AC / 125 V DC | |
| 1 A AC (ohmic) / 0.2 A DC (ohmic) | |

## Technical data

| Base element | Connector |
|---|---|
| - | II / T2 |
| 240 V AC (415 V AC) | 48 V AC (5 V...48 V AC) |
| - / - / - | - |
| | 75 V AC |
| - / - / - | - |
| - | 10 kA |
| - / - / - | - |
| - | 20 kA |
| - / - / - | - |
| - | ≤ 350 V (at 5 kA) |
| - / - / - | - |
| | ≤ 1.4 kV |
| - / - / - | - |
| | ≤ 100 ns |
| 63 A (gL / gG) | 63 A (gL / gG) |
| 1 ... 35 mm² / 1 ... 25 mm² / 18 - 2 | ... / ... / - |
| -40°C ... 80°C | -40°C ... 80°C |
| V0 | V0 |
| IEC 61643-1 / DIN EN 61643-11 / DIN EN 61643-11/A11 | IEC 61643-1 / EN 61643-11 / EN 61643-11/A11 |
| PDT, 1-pos. | |
| 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | ... / ... / - |
| 250 V | |
| 1.5 A AC (250 V AC) / 1.5 A DC (30 V DC) | / |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **VAL-MS 800/30 VF/FM** | **2805402** | 1 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **VAL-MS 60/FM** | **2868033** | 1 |
| **VAL-MS 60** | **2868020** | 1 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|

## Accessories

| | | |
|---|---|---|
| **VAL-MS 750/30-ST** | **2920256** | 10 |
| **F-MS 2200/30 ST** | **2805392** | 10 |
| **VAL-MS 1+1-BE/FM/HD/S1A** | **2800257** | 1 |

## Accessories

| | | |
|---|---|---|
| **VAL-MS 60 ST** | **2807573** | 10 |
| **VAL-MS BE/FM** | **2817738** | 10 |
| **VAL-MS BE** | **2817741** | 10 |

## Accessories

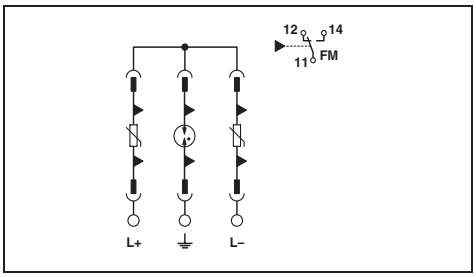
| | | |
|---|---|---|
| **VAL-MS 75 VF ST** | **2805318** | 10 |
| **VAL-MS/2+0-BE/FM/S2** | **2800246** | 1 |

## Type 2 surge arrester for PV systems

- Type 2 seamless plug-in surge arrester
- Suitable for DC applications such as PV systems
- Arrester for 600 V/1000 V systems
- Optical, mechanical status indication for the individual arresters
- With or without floating remote indication contact
- Mechanical keying of all slots
- Connectors can be checked with CHECKMASTER

**Insulated PV applications up to 1000 V DC, free of leakage current**

Total width 53.4 mm




### Technical data

| | | |
|---|---|---|
| **Electrical data** | | |
| IEC category / EN type | | II / T2 |
| No-load voltage $U_{OC}$ max. | | ≤ 1000 V DC |
| Highest continuous voltage $U_C$ | | |
| | (L+) - (L-) / (L+/L-) - PE | 1000 V DC |
| Max. short-circuit current $I_{SC\,max}$ | | ≤ 80 A DC |
| Nominal discharge surge current $I_n$ (8/20) µs | | 15 kA |
| Max. discharge surge current $I_{max.}$ (8/20) µs | | 30 kA |
| Protection level $U_p$ | | |
| | (L+) - (L-) / (L+/L-) - PE | ≤ 5 kV / ≤ 3 kV |
| Response time $t_A$ | | |
| | (L+) - (L-) / (L+/L-) - PE | ≤ 25 ns / ≤ 100 ns |
| **General data** | | |
| Connection data (solid / stranded / AWG) | | 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 |
| Temperature range | | -40°C ... 80°C |
| Degree of protection in acc. with IEC 60529 / EN 60529 | | IP20 |
| Housing material | | PBT / PA |
| Inflammability class in acc. with UL 94 | | V0 |
| Test standards | | DIN EN 61643-11 / IEC 61643-1 / IEC 60364-7-712 |
| **Remote indication contact** | | PDT, 1-pos. |
| Connection data (solid / stranded / AWG) | | 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 |
| Max. operating voltage | | 250 V AC |
| Max. operating AC current | | 1.5 A (250 V AC) |
| Connection method | | Screw connection |

### Ordering data

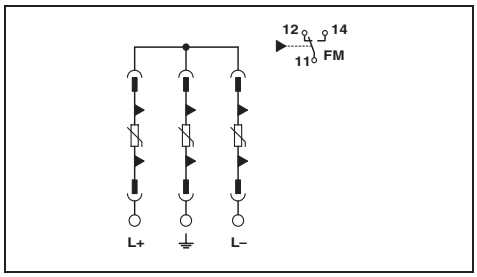
| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **VALVETRAB-MS** | | | |
| (L+)-PE & (L-)-PE & (L+)-(L-) | **VAL-MS 1000DC/2+F-FM** | **2800176** | 1 |
| (L+)-PE & (L-)-PE & (L+)-(L-) (L+)-(L-) (L+)-(L-/PE) | **VAL-MS 1000DC/2+F** | **2800177** | 1 |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Replacement connector** | | | | |
| 1000 V DC | 1L-N/PE | **VAL-MS 1000PV ST** | **2805185** | 1 |
| 600 V DC | 1L-N/PE | | | |
| 1000 V DC | N-PE | **F-MS 1100/30 ST** | **2800178** | 1 |
| **Labeling material** (see TRABTECH catalog) | | **ZBN 18,...** | | |

**Insulated or grounded PV applications up to 1000 V DC**

Total width 53.4 mm




| Technical data | |
|---|---|
| | |
| II / T2 | |
| ≤ 1000 V DC | |
| | |
| 1000 V DC | |
| ≤ 80 A DC | |
| 15 kA | |
| 30 kA | |
| | |
| ≤ 5 kV / ≤ 5 kV | |
| | |
| ≤ 25 ns / ≤ 25 ns | |
| | |
| 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 | |
| -40°C ... 80°C | |
| IP20 | |
| PBT / PA | |
| V0 | |
| DIN EN 61643-11 / IEC 61643-1 / IEC 60364-7-712 | |
| PDT, 1-pos. | |
| 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | |
| 250 V AC | |
| 1.5 A (250 V AC) | |
| Screw connection | |

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **VAL-MS 1000DC/2+V-FM** | **2920502** | 1 |
| **VAL-MS 1000DC/2+V** | **2805091** | 1 |

**Accessories**

| | | |
|---|---|---|
| **VAL-MS 1000PV ST** | **2805185** | 1 |

**ZBN 18,...**



**Insulated or grounded PV applications up to 600 V DC**

Total width 53.4 mm




| Technical data | |
|---|---|
| | |
| II / T2 | |
| ≤ 600 V DC | |
| | |
| 600 V DC | |
| ≤ 80 A DC | |
| 15 kA | |
| 40 kA | |
| | |
| ≤ 3 kV / ≤ 3 kV | |
| | |
| ≤ ≤ 25 ns / ≤ 25 ns | |
| | |
| 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 | |
| -40°C ... 80°C | |
| IP20 | |
| PBT / PA | |
| V0 | |
| DIN EN 61643-11 / IEC 61643-1 / IEC 60364-7-712 | |
| PDT, 1-pos. | |
| 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | |
| 250 V AC | |
| 1.5 A (250 V AC) | |
| Screw connection | |

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **VAL-MS 600DC/2+V-FM** | **2800195** | 1 |
| **VAL-MS 600DC/2+V** | **2805457** | 1 |

**Accessories**

| | | |
|---|---|---|
| **VAL-MS 600PV ST** | **2805431** | 1 |

**ZBN 18,...**



**Fuse-free grounded PV applications up to 1000 V DC**

Total width 35.6 mm




| Technical data | |
|---|---|
| | |
| II / T2 | |
| ≤ 1000 V DC | |
| | |
| 1000 V DC | |
| ≤ 80 A DC | |
| 15 kA | |
| 30 kA | |
| | |
| ≤ 5 kV / - | |
| | |
| ≤ 25 ns / ≤ 25 ns | |
| | |
| 1.5 ... 35 mm² / 1.5 ... 25 mm² / 15 - 2 | |
| -40°C ... 80°C | |
| IP20 | |
| PBT / PA | |
| V0 | |
| DIN EN 61643-11 / IEC 61643-1 / IEC 60364-7-712 | |
| PDT, 1-pos. | |
| 0.14 ... 1.5 mm² / 0.14 ... 1.5 mm² / 28 - 16 | |
| 250 V AC | |
| 1.5 A (250 V AC) | |
| Screw connection | |

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **VAL-MS 1000DC/1+V-FM** | **2804490** | 1 |
| **VAL-MS 1000DC/1+V** | **2804542** | 1 |

**Accessories**

| | | |
|---|---|---|
| **VAL-MS 1000PV ST** | **2805185** | 1 |

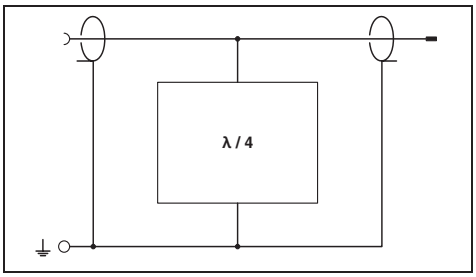
**ZBN 18,...**

## Surge protection for transceiver systems

### Protection for mobile phone antennas

- Protective adapter for antenna connections
- Maintenance-free surge protection with Lambda/4 technology
- Low protection level
- High HF power in the kW range
- Connection: N connector

**TETRA GSM systems (380 MHz - 470 MHz)**




## Technical data

| | |
|---|---|
| Technical data | |
| **Electrical data** | |
| IEC category / EN type | C2 / C3 / D1 |
| Nominal current $I_N$ | - |
| Nominal discharge surge current $I_n$ (8/20) µs | |
| Core/shield / Core/ground | 20 kA / 20 kA |
| Total surge current (8/20) µs | 30 kA |
| Output voltage limitation at 1 kV / µs | |
| Core/shield / Core/ground | ≤ 55 V (6 kV/3 kA) / ≤ 55 V (6 kV/3 kA) |
| Frequency range | 380 MHz ... 470 MHz |
| Standing wave ratio SWR in a 50 Ω system | Typ. 1.05 (≤ 1,15) |
| Perm. HF power $P_{max}$ with VSWR =1.1/∞ in a 50 Ω system: | ≤ 800 W / - |
| **General data** | |
| Temperature range | -40°C ... 90°C |
| Degree of protection in acc. with IEC 60529 / EN 60529 | IP68 |
| Connection method | N connector |
| Test standards | IEC 61643-21 |

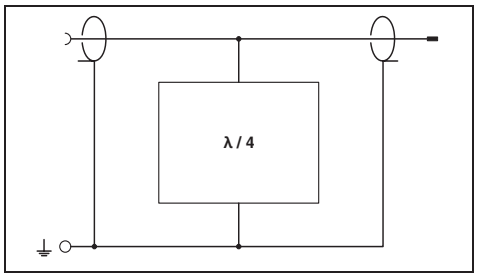
## Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **COAXTRAB,** protective adapter for antenna connections with Lambda/4 technology, connection: N connector | | | |
| Female/female | **CN-LAMBDA/4-0.47-BB** | **2800021** | 1 |
| Male/female | **CN-LAMBDA/4-0.47-SB** | **2800022** | 1 |
| **COAXTRAB,** protective adapter for antenna connections with Lambda/4 technology, connection: N connector | | | |
| Female/female | | | |
| Male/female | | | |

## Accessories

| | | | |
|---|---|---|---|
| **Adapter,** insertion loss <0.3 dB at 2.4 GHz | | | |
| N (male) -> SMA (female) | **RAD-ADP-N/M-SMA/F** | **2917036** | 1 |
| **Adapter cable,** pigtail, insertion loss 1.5 dB at 2.4 GHz; impedance 50 Ω; | | | |
| 50 cm long, MCX (male) -> N (male) | **RAD-PIG-EF316-MCX-N** | **2867681** | 1 |

**800/900 MHz and 1800/1900 MHz GSM systems, and UMTS**




## Technical data

| | |
|---|---|
| | |
| | C2 / C3 / D1 |
| | 5 A (25°C) |
| | |
| | 50 kA / 50 kA |
| | 60 kA |
| | |
| | ≤ 12 V (6 kV/3 kA) / ≤ 12 V (6 kV/3 kA) |
| | 0.82 GHz ... 2.2 GHz |
| | Typ. 1.1 (≤ 1.20 (0.82 GHz...2.2 GHz)) |
| | ≤ 500 W / - |
| | |
| | -40°C ... 90°C |
| | IP68 |
| | N connector |
| | IEC 61643-21 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **CN-LAMBDA/4-2.2-BB** | **2800024** | 1 |
| **CN-LAMBDA/4-2.2-SB** | **2800025** | 1 |

## Accessories

| | | |
|---|---|---|
| **RAD-ADP-N/M-SMA/F** | **2917036** | 1 |
| **RAD-PIG-EF316-MCX-N** | **2867681** | 1 |

## Residual current monitoring (RCM)

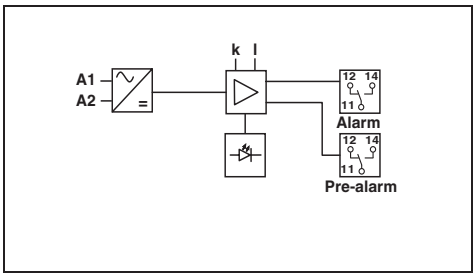
Detect errors before they actually occur. Differential current monitoring contributes to preventive fire protection and prevents system downtimes. Installation in grounded systems (TN-S and TT).

- Use in various voltage and frequency ranges
- Adjustable residual response current of 30 mA to 3 A
- Adjustable pre-alarm threshold and delay time
- Actual differential current can be read via the LED display
- Remote signaling for main and pre-alarm
- RJ45, 4-pair, 1:1 (line) for converter connection type B, see online catalog/e-shop

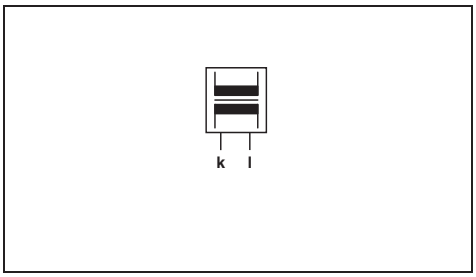
**RCM type A for pulsating DC and AC residual currents with 50/60 Hz**

**Converter for RCM type A**

Total width 71.6 mm




Total width 32 mm




### Technical data

| | |
|---|---|
| **Electrical data** | |
| Nominal voltage range | 85 V AC ... 264 V AC |
| Nominal frequency $f_N$ | 50 Hz (60 Hz) |
| Rated current $I_n$ | - |
| Max. required back-up fuse | 16 A (B) |
| **RCM data** | |
| Rated response differential current $I_{dyn}$ | 3 A |
| Differential current acquisition characteristic | Type A (50 / 60 Hz) |
| Response differential current $I_{\Delta n}$ | 30, 100, 300, 1000, 3000 mA (adjustable) |
| Discrimination threshold main alarm | 80% ... 100% (of the set response differential current $I_{\Delta n}$) |
| Discrimination threshold pre-alarm | 10% ... 90% (of the main alarm threshold, adjustable) |
| Response time for 2 x $I_{\Delta n}$ | 0.1 s ... 1 s (adjustable) |
| Thermal permanent differential current $I_{cth}$ | - |
| Thermal rated short-time differential current $I_{th}$ | - |
| Rated surge voltage resistance $U_{imp}$ | 4 kV |
| **General data** | |
| Connection data (solid / stranded / AWG) | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 |
| Ambient temperature (operation) | -25°C ... 65°C |
| Degree of protection | IP20 |
| Maximum permissible outside diameter of cables | - |
| Housing material | polycarbonate |
| Test standards | DIN EN 62020 / DIN EN 60664 |
| Test standards | - |
| Pollution degree | 2 |
| Surge voltage category | III |
| **Mounting** | |
| Mounting type | 35 mm DIN rail |
| **Remote indication contact** | PDT contact |
| Connection data (solid / stranded / AWG) | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / - |
| Max. operating voltage | 230 V AC |
| Max. operating current | 5 A (cos phi > 0.9) |

### Technical data

| | ...SCT-20 | ...SCT-30 | ...SCT-35 | ...SCT-70 |
|---|---|---|---|---|
| **Electrical data** | | | | |
| Nominal voltage range | - | - | - | - |
| Nominal frequency $f_N$ | - | - | - | - |
| Rated current $I_n$ | 50 A | 100 A | 125 A | 200 A |
| Max. required back-up fuse | - | - | - | - |
| **RCM data** | | | | |
| Rated response differential current $I_{dyn}$ | 3 A | 3 A | 3 A | 3 A |
| Differential current acquisition characteristic | Type A (50 / 60 Hz) | Type A (50 / 60 Hz) | Type A (50 / 60 Hz) | Type A (50 / 60 Hz) |
| Response differential current $I_{\Delta n}$ | 0.03 A ... 3 A | 0.03 A ... 3 A | 0.03 A ... 3 A | 0.03 A ... 3 A |
| Discrimination threshold main alarm | - | - | - | - |
| Discrimination threshold pre-alarm | - | - | - | - |
| Response time for 2 x $I_{\Delta n}$ | - | - | - | - |
| Thermal permanent differential current $I_{cth}$ | 1.5 x $I_n$ | 1.5 x $I_n$ | 1.5 x $I_n$ | 1.5 x $I_n$ |
| Thermal rated short-time differential current $I_{th}$ | 10 x $I_n$ (for 1 s) | 10 x $I_n$ (for 1 s) | 10 x $I_n$ (for 1 s) | 10 x $I_n$ (for 1 s) |
| Rated surge voltage resistance $U_{imp}$ | 8 kV | 8 kV | 8 kV | 8 kV |
| **General data** | | | | |
| Connection data (solid / stranded / AWG) | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 | | | |
| Ambient temperature (operation) | -20°C ... 65°C | | | |
| Degree of protection | IP20 (terminal blocks) | | | |
| Maximum permissible outside diameter of cables | 13.00 mm | 20.00 mm | 23.00 mm | 46.00 mm |
| Housing material | polycarbonate | | | |
| Test standards | DIN EN 62020 / VDE 0663 / DIN EN 60044-1/ VDE 0414 | | | |
| Pollution degree | 2 | 2 | 2 | 2 |
| Surge voltage category | IV | IV | IV | IV |
| **Mounting** | | | | |
| Mounting type | 35 mm DIN rail | 35 mm DIN rail | Screw mounting | Screw mounting |
| **Remote indication contact** | - | | | |
| Connection data (solid / stranded / AWG) | - ... - / - ... - / - | | | |
| Max. operating voltage | - | | | |
| Max. operating current | - | | | |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Evaluation unit** | | | |
| | **RCM-A/50/85-264V** | **2806016** | 1 |
| **Current transformer** | | | |
| 20 mm Ø | | | |
| 30 mm Ø | | | |
| 35 mm Ø | | | |
| 70 mm Ø | | | |
| 105 mm Ø | | | |
| 140 mm Ø | | | |
| 210 mm Ø | | | |

### Ordering data

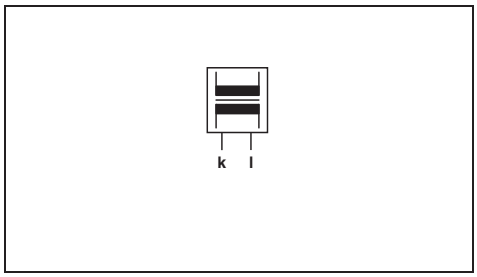
| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **RCM-A-SCT- 20** | **2806045** | 1 |
| **RCM-A-SCT- 30** | **2806058** | 1 |
| **RCM-A-SCT- 35** | **2806061** | 1 |
| **RCM-A-SCT- 70** | **2806074** | 1 |

**Converter for RCM type A**

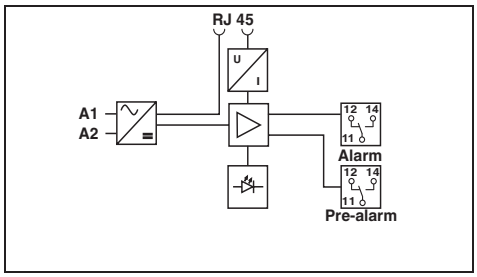
**RCM type B for smooth and pulsating DC and AC residual currents up to 100 kHz**

**Converter for RCM type B**

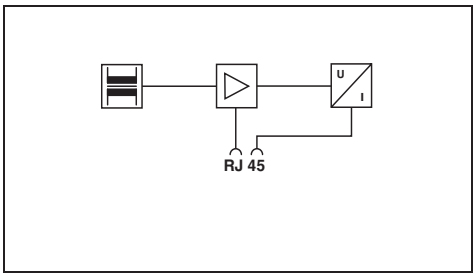
Total width 33 mm




Total width 71.6 mm




Total width 65.5 mm




## Technical data

| ...SCT-105 | ...SCT-140 | ...SCT-210 |
|---|---|---|
| - | - | - |
| - | - | - |
| 250 A | 350 A | 400 A |
| - | - | - |
| 3 A | 3 A | 3 A |
| Type A (50 / 60 Hz) | Type A (50 / 60 Hz) | Type A (50 / 60 Hz) |
| 0.03 A ... 3 A | 0.03 A ... 3 A | 0.03 A ... 3 A |
| - | - | - |
| - | - | - |
| - | - | - |
| 1.5 x $I_n$ | 1.5 x $I_n$ | 1.5 x $I_n$ |
| 10 x $I_n$ (for 1 s) | 10 x $I_n$ (for 1 s) | 10 x $I_n$ (for 1 s) |
| 8 kV | 8 kV | 8 kV |
| 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 | | |
| -20°C ... 65°C | | |
| IP20 (terminal blocks) | | |
| 70.00 mm | 93.00 mm | 140.00 mm |
| polycarbonate | | |
| DIN EN 62020 / VDE 0663 / DIN EN 60044-1/ VDE 0414 | | |
| 2 | 2 | 2 |
| IV | IV | IV |
| Screw mounting | Screw mounting | Screw mounting |
| - | | |
| - ... - / - ... - / - | | |
| - | | |
| - | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **RCM-A-SCT-105** | **2806087** | 1 |
| **RCM-A-SCT-140** | **2806090** | 1 |
| **RCM-A-SCT-210** | **2806100** | 1 |

## Technical data

| |
|---|
| 85 V AC ... 264 V AC |
| 50 Hz (60 Hz) |
| - |
| 16 A (B) |
| 3 A |
| Type B (DC up to 100 kHz) |
| 30, 100, 300, 1000, 3000 mA (adjustable) |
| 80% ... 100% (of the set response differential current $I_{\Delta n}$) |
| 10% ... 90% (of the main alarm threshold, adjustable) |
| 0.1 s ... 1 s (adjustable) |
| - |
| - |
| 4 kV |
| 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 |
| -25°C ... 65°C |
| IP20 |
| - |
| polycarbonate |
| DIN EN 62020 / DIN EN 60664 / DIN VDE 0664-110 |
| - |
| 2 |
| III |
| 35 mm DIN rail |
| PDT contact |
| 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / - |
| 230 V AC |
| 5 A (cos phi > 0.9) |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **RCM-B/50/85-264V** | **2806210** | 1 |

## Technical data

| ...SCT-35 | ...SCT-70 | ...SCT-105 | ...SCT-140 |
|---|---|---|---|
| - | - | - | - |
| - | - | - | - |
| 125 A | 200 A | 300 A | 630 A |
| - | - | - | - |
| 3 A | 3 A | 3 A | 3 A |
| Type B (DC up to 100 kHz) | Type B (DC up to 100 kHz) | Type B (DC up to 100 kHz) | Type B (DC up to 100 kHz) |
| 0.03 A ... 3 A | 0.03 A ... 3 A | 0.1 A ... 3 A | 0.3 A ... 3 A |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| 150 A (50 Hz/20 kHz) | 150 A (50 Hz/20 kHz) | 150 A (50 Hz/20 kHz) | 150 A (50 Hz/20 kHz) |
| 3 kA for 1 s (50 Hz/20 kHz) | 3 kA for 1 s (50 Hz/20 kHz) | 3 kA for 1 s (50 Hz/20 kHz) | 3 kA for 1 s (50 Hz/20 kHz) |
| 8 kV | 8 kV | 8 kV | 8 kV |
| - ... - / - ... - / - | | | |
| -20°C ... 65°C | | | |
| IP20 | | | |
| 23.00 mm | 46.00 mm | 70.00 mm | 93.00 mm |
| polycarbonate | | | |
| DIN EN 62020 / VDE 0663 / DIN EN 60044-1/ VDE 0414 / DIN V VDE V 0664-110 | | | |
| 2 | 2 | 2 | 2 |
| IV | IV | IV | IV |
| Screw mounting | Screw mounting | Screw mounting | Screw mounting |
| - | | | |
| - ... - / - ... - / - | | | |
| - | | | |
| - | | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **RCM-B-SCT- 35** | **2806223** | 1 |
| **RCM-B-SCT- 70** | **2806236** | 1 |
| **RCM-B-SCT-105** | **2806249** | 1 |
| **RCM-B-SCT-140** | **2806252** | 1 |

## Uninterruptible power supply

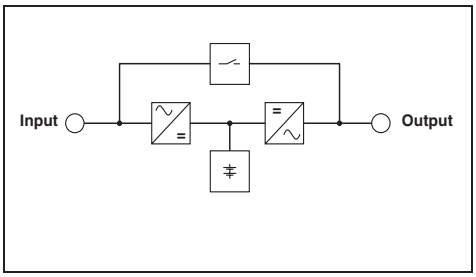
### UPS devices

- Class VFI-SS-111 single-phase UPS (according to DIN EN 62040-3)
- True Online Technology for maximum voltage quality
- Use as rack (19") or tower device with rotatable control panel
- Hot-swappable battery replacement on the front
- Long battery life thanks to ripple-free charging
- Mains-independent operation
- Comprehensive accessories for enhanced functions
- Supports a variety of operating systems

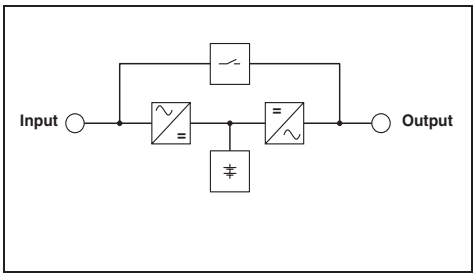
1 kVA nominal power

2 kVA nominal power

Total width 482.6 mm




Total width 482.6 mm




| | Technical data | Technical data |
|---|---|---|
| Common characteristics | | |
| Apparent power | 1000 VA | 2000 VA |
| Nominal power (real power) | 800 W | 1600 W |
| Power factor | 0.8 | 0.8 |
| UPS topology | Double conversion technology | Double conversion technology |
| Classification | VFI-SS-111 | VFI-SS-111 |
| UPS input side | | |
| AC input voltage range | 160 ... 288 V AC | 160 ... 288 V AC |
| AC frequency range | 50 Hz ... 60 Hz +/-5 Hz (automatic detection) | 50 Hz ... 60 Hz +/-5 Hz (automatic detection) |
| Nominal input current | 3.8 A | 8 A |
| Power factor (cos phi) | 0.99 (with linear load) | 0.99 (with linear load) |
| Current distortion (THDi) | < 6% (at full load) | < 6% (at full load) |
| UPS output side | | |
| Output voltage range | 230 V AC +/-1% (220/230/240 V AC adjustable) | 230 V AC +/-1% (220/230/240 V AC adjustable) |
| Nominal output current | 4.35 A | 8.7 A |
| AC frequency range | 50/60 Hz (automatic detection) | 50/60 Hz (automatic detection) |
| Battery system | | |
| Battery type | VRLA | VRLA |
| Backup time | ≥ 6 min | ≥ 6 min |
| Charging time | 4 h (90% charge) | 4 h (90% charge) |
| Type of battery replacement | Hot-swappable | Hot-swappable |
| General data | | |
| Ambient temperature (operation) | 0°C ... 40°C | 0°C ... 40°C |
| Ambient temperature (storage/transport) | 0°C ... 45°C | 0°C ... 45°C |
| Degree of protection | IP20 | IP20 |
| Height unit | 2 HU | 2 HU |
| Design | 19" rack/fixed housing | 19" rack/fixed housing |
| Depth | 490.00 mm | 680.00 mm |
| Permissible humidity (operation) | 0% ... 90% (no condensation) | 0% ... 90% (no condensation) |
| Noise level | 50.00 dB(A) | 50.00 dB(A) |
| Weight | 17.00 kg | 30.00 kg |

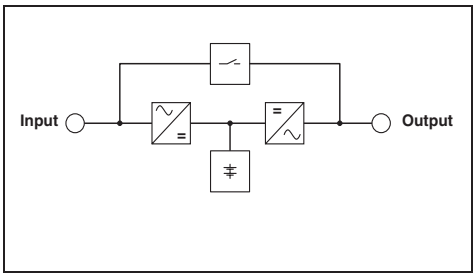
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **UPS compact** | | | | | | |
| | **UPS-CP-1KVA/240AC** | **2800274** | 1 | **UPS-CP-2KVA/240AC** | **2800275** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Replacement battery** | | | | | | |
| | **UPS-BAT-KIT-3X7AH** | **2800424** | 1 | **UPS-BAT-KIT-6X7AH** | **2800425** | 1 |
| **Required battery module** | | | | | | |
| **Optional battery module** | | | | | | |
| | **UPS-CP-BAT-1KVA-P1** | **2800280** | 1 | **UPS-CP-BAT-2/3KVA-P3** | **2800283** | 1 |
| | **UPS-CP-BAT-1KVA-P2** | **2800281** | 1 | **UPS-CP-BAT-2/3KVA-P4** | **2800284** | 1 |
| **DIN rail** | | | | | | |
| For 19" rack installation | **UPS-CP-19"MR** | **2800288** | 1 | **UPS-CP-19"MR** | **2800288** | 1 |

3 kVA nominal power

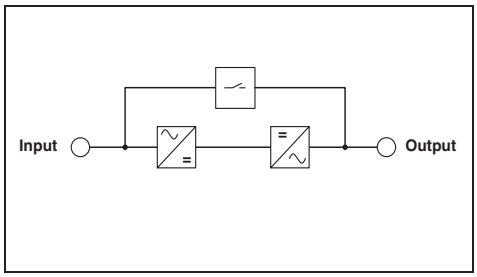
4.5 kVA nominal power

6 kVA nominal power

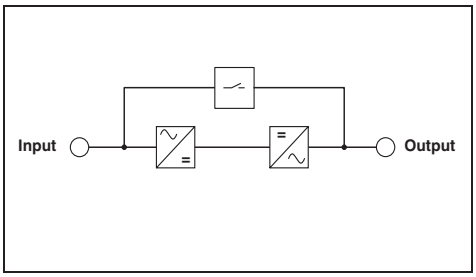
Total width 482.6 mm




Total width 482.6 mm




Total width 482.6 mm




## Technical data

| | |
|---|---|
| 3000 VA | |
| 2400 W | |
| 0.8 | |
| Double conversion technology | |
| VFI-SS-111 | |
| 160 ... 288 V AC | |
| 50 Hz ... 60 Hz +/-5 Hz (automatic detection) | |
| 11.5 A | |
| 0.99 (with linear load) | |
| < 6% (at full load) | |
| 230 V AC +/-1% (220/230/240 V AC adjustable) | |
| 13.04 A | |
| 50/60 Hz (automatic detection) | |
| VRLA | |
| ≥ 5 min | |
| 4 h (90% charge) | |
| Hot-swappable | |
| 0°C ... 40°C | |
| 0°C ... 45°C | |
| IP20 | |
| 2 HU | |
| 19" rack/fixed housing | |
| 680.00 mm | |
| 0% ... 90% (no condensation) | |
| 50.00 dB(A) | |
| 33.00 kg | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UPS-CP-3KVA/240AC | 2800276 | 1 |

## Accessories

| | | |
|---|---|---|
| UPS-BAT-KIT-6X9AH | 2800426 | 1 |
| UPS-CP-BAT-2/3KVA-P3 | 2800283 | 1 |
| UPS-CP-BAT-2/3KVA-P4 | 2800284 | 1 |
| UPS-CP-19"MR | 2800288 | 1 |

## Technical data

| | |
|---|---|
| 4500 VA | |
| 3250 W | |
| 0.7 | |
| Double conversion technology | |
| VFI-SS-111 | |
| 160 ... 280 V AC | |
| 50 Hz ... 60 Hz +/-5 Hz (automatic detection) | |
| 18.1 A | |
| 0.99 (with linear load) | |
| < 6% (at full load) | |
| 230 V AC +/-1% (220/230/240 V AC adjustable) | |
| 19.57 A | |
| 50/60 Hz | |
| - | |
| - | |
| - | |
| - | |
| 0°C ... 40°C | |
| 0°C ... 45°C | |
| IP20 | |
| 2 HU | |
| 19" rack/fixed housing | |
| 680.00 mm | |
| 0% ... 90% (no condensation) | |
| 50.00 dB(A) | |
| 22.00 kg | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UPS-CP-4.5KVA/240AC | 2800277 | 1 |

## Accessories

| | | |
|---|---|---|
| UPS-CP-BAT-4.5/6KVA-P5 | 2800285 | 1 |
| UPS-CP-19"MR | 2800288 | 1 |

## Technical data

| | |
|---|---|
| 6000 VA | |
| 4200 W | |
| 0.7 | |
| Double conversion technology | |
| VFI-SS-111 | |
| 160 ... 280 V AC | |
| 50 Hz ... 60 Hz +/-5 Hz (automatic detection) | |
| 23.7 A | |
| 0.99 (with linear load) | |
| < 6% (at full load) | |
| 230 V AC +/-1% (220/230/240 V AC adjustable) | |
| 26.09 A | |
| 50/60 Hz | |
| - | |
| - | |
| - | |
| - | |
| 0°C ... 40°C | |
| 0°C ... 45°C | |
| IP20 | |
| 2 HU | |
| 19" rack/fixed housing | |
| 680.00 mm | |
| 0% ... 90% (no condensation) | |
| 50.00 dB(A) | |
| 22.00 kg | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UPS-CP-6KVA/240AC | 2800278 | 1 |

## Accessories

| | | |
|---|---|---|
| UPS-CP-BAT-4.5/6KVA-P5 | 2800285 | 1 |
| UPS-CP-19"MR | 2800288 | 1 |

## Battery modules and replacement kits

– Battery modules for increasing the bypassing time
– Pre-assembled replacement kits with user-friendly plug-in connection
– Hot-swappable
– Error-free connection thanks to adapted connection method

**For UPS-CP-1KVA, 21 minutes**

**For UPS-CP-1KVA, 41 minutes**

| | Total width 482.6 mm | Total width 482.6 mm |
|---|---|---|
| | **Technical data** | **Technical data** |
| Battery system | | |
| Battery type | VRLA | VRLA |
| Battery capacity | 14.40 Ah | 28.80 Ah |
| Backup time | Additionally 19 min (nominal load) | Additionally 36 min (nominal load) |
| Backup time | - | - |
| Charging time | 4 h (90% charge) | 4 h (90% charge) |
| Type of battery replacement | Hot-swappable | Hot-swappable |
| Charge current | 1.1 A | 1.1 A |
| Charging voltage | 40.5 V DC ... 41.5 V DC | 40.5 V DC ... 41.5 V DC |
| General data | | |
| Ambient temperature (operation) | 0°C ... 40°C | 0°C ... 40°C |
| Ambient temperature (storage/transport) | 0°C ... 45°C | 0°C ... 45°C |
| Degree of protection | IP20 | IP20 |
| Height unit | 2 HU | 2 HU |
| Design | 19" rack/fixed housing | 19" rack/fixed housing |
| Depth | 680.00 mm | 680.00 mm |
| Weight | 29.00 kg | 44.00 kg |

| | **Ordering data** | | | **Ordering data** | | |
|---|---|---|---|---|---|---|
| Description | **Type** | **Order No.** | Pcs./ Pkt. | **Type** | **Order No.** | Pcs./ Pkt. |
| **Optional battery module** | **UPS-CP-BAT-1KVA-P1** | **2800280** | 1 | **UPS-CP-BAT-1KVA-P2** | **2800281** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Replacement battery** | **UPS-BAT-KIT-2X3X7AH** | **2800429** | 1 | **UPS-BAT-KIT-4X3X7AH** | **2800430** | 1 |
| **DIN rail** For 19" rack installation | **UPS-CP-19"MR** | **2800288** | 1 | **UPS-CP-19"MR** | **2800288** | 1 |

**For UPS-CP-2KVA, 9 minutes –
For UPS-CP-3KVA, 6 minutes**

Total width 482.6 mm

## Technical data

VRLA
7.20 Ah
Additionally 8 min (nominal load - 2 kVA)
Additionally 5 min (nominal load - 3 kVA)
4 h (90% charge)
Hot-swappable
2.7 A
81.5 V DC ... 82.5 V DC

0°C ... 40°C
0°C ... 45°C
IP20
2 HU
19" rack/fixed housing
680.00 mm
29.00 kg

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UPS-CP-BAT-2/3KVA-P3 | 2800283 | 1 |

## Accessories

| | | |
|---|---|---|
| UPS-BAT-KIT-6X7AH | 2800425 | 1 |
| UPS-CP-19"MR | 2800288 | 1 |

**For UPS-CP-2KVA, 22 minutes –
For UPS-CP-3KVA, 14 minutes**

Total width 482.6 mm

## Technical data

VRLA
14.40 Ah
Additionally 19 min (nominal load - 2 kVA)
Additionally 12 min (nominal load - 3 kVA)
4 h (90% charge)
Hot-swappable
2.7 A
81.5 V DC ... 82.5 V DC

0°C ... 40°C
0°C ... 45°C
IP20
2 HU
19" rack/fixed housing
680.00 mm
44.00 kg

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UPS-CP-BAT-2/3KVA-P4 | 2800284 | 1 |

## Accessories

| | | |
|---|---|---|
| UPS-BAT-KIT-2X6X7AH | 2800432 | 1 |
| UPS-CP-19"MR | 2800288 | 1 |

**For UPS-CP-4,5KVA, 10 minutes –
For UPS-CP-6KVA, 8 minutes**

Total width 482.6 mm

## Technical data

VRLA
7.00 Ah
10 min (nominal load - 4.5 kVA)
8 min (nominal load - 6 kVA)
4 h (90% charge)
Hot-swappable
5 A
271.5 V DC ... 272.5 V DC

0°C ... 40°C
0°C ... 45°C
IP20
3 HU
19" rack/fixed housing
680.00 mm
70.00 kg

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UPS-CP-BAT-4.5/6KVA-P5 | 2800285 | 1 |

## Accessories

| | | |
|---|---|---|
| UPS-BAT-KIT-20X7AH | 2800427 | 1 |
| UPS-CP-19"MR | 2800288 | 1 |

## Uninterruptible power supply

### UPS accessories

- Network cards for UPS remote control and monitoring
- Relay cards with extended signal outputs for control functions
- External bypass modules for bypassing the UPS during servicing
- Multiple socket strips for connecting additional loads
- Redundancy modules for parallel connection of UPS devices to increase the reliability of the supply

**SNMP interface adapter card**

**6-way relay card**

Total width 20 mm

| | Technical data | | Technical data |
|---|---|---|---|
| Electrical data | ... CARD | ... CARD E | |
| Input | | | |
| Nom. voltage | 9 V AC ... 30 V AC | 9 V AC ... 30 V AC | - |
| Nominal current | 120 mA | 120 mA | - |
| Power supply connection | PCB connector | PCB connector | PCB connector |
| Output | | | |
| Nom. voltage | - | - | 40 V DC |
| Nominal current | - | - | max. 25 mA |
| Load connection | RJ45 | RJ45, RJ12, Mini-DIN | Screw terminal block |
| Available interfaces | Ethernet / 1x V.24 (RS-232) | Ethernet / 3x V.24 (RS-232) | Screw terminal block |
| General data | | | |
| Ambient temperature (operation) | 0°C ... 60°C | 0°C ... 60°C | 0°C ... 40°C |
| Ambient temperature (storage/transport) | - | - | 0°C ... 45°C |
| Degree of protection | - | - | - |
| Design | Slot card | Slot card | Slot card |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Network card** | | | | | | |
| Basic version (RJ45) | **UPS-SNMP-CARD** | **2800289** | 1 | | | |
| Extended version (RJ45, Modbus, AUX port) | **UPS-SNMP-CARD E** | **2800290** | 1 | | | |
| **Relay card** | | | | | | |
| 6-way relay card | | | | **UPS-6REL** | **2800287** | 1 |
| **External bypass module** | | | | | | |
| For UPS-CP 1 - 3 kVA | | | | | | |
| For UPS-CP 4.5 and 6 kVA | | | | | | |
| **Socket strip** | | | | | | |
| With 9 x 10 A IEC outputs | | | | | | |
| With 4 x 16 A IEC outputs | | | | | | |
| With 5 x 16 A + 9 x 10 A IEC outputs | | | | | | |
| **Redundancy module** | | | | | | |
| For two units | | | | | | |
| For three units | | | | | | |

**External bypass module**

**Multiple socket strip**

**Module for redundancy operation with external bypass**

Total width 482.6 mm

| Technical data | |
|---|---|
| ... 1/2/3KVA | ... 4.5/6KVA |
| 220 V AC ... 240 V AC | 220 V AC ... 240 V AC |
| max. 16 A | max. 32 A |
| Socket C20 - IEC 60320 | Cable L/N/PE; 2.8 m; open ends |
| 220 V AC ... 240 V AC | 220 V AC ... 240 V AC |
| max. 16 A (thermal fuse) | max. 32 A |
| 6 x C13/10 A - IEC 60320 | Cable L/N/PE; 2.8 m; open ends |
| - | - |
| 0°C ... 40°C | 0°C ... 40°C |
| 0°C ... 45°C | 0°C ... 45°C |
| IP20 | IP20 |
| 19" rack patch module | 19" rack patch module |

| Ordering data | | |
|---|---|---|
| **Type** | **Order No.** | Pcs./ Pkt. |
| **UPS-CP-BP-1/2/3KVA** | **2800291** | 1 |
| **UPS-CP-BP-4.5/6KVA** | **2800292** | 1 |

Total width 482.6 mm

| Technical data | | |
|---|---|---|
| ... 9X10A-IEC | ... 4X16A-IEC | ... 5X16A/9X10A-IEC |
| 220 V AC ... 240 V AC | 220 V AC ... 240 V AC | 220 V AC ... 240 V AC |
| max. 16 A | max. 16 A | max. 32 A |
| C20 - IEC 60320 | C20 - IEC 60320 | Terminal block base - L/N/PE |
| 220 V AC ... 240 V AC | 220 V AC ... 240 V AC | 220 V AC ... 240 V AC |
| max. 10 A (thermal fuse) | max. 16 A (thermal fuse) | max. 16 A (10 A/thermal fuse) |
| 9 x C13 - IEC 60320 | 4 x C19 - IEC 60320 | 4 x C19/16 A - IEC 60320 |
| | | - |
| 0°C ... 40°C | 0°C ... 40°C | 0°C ... 40°C |
| 0°C ... 45°C | 0°C ... 45°C | 0°C ... 45°C |
| IP20 | IP20 | IP20 |
| 19" rack patch module | 19" rack patch module | 19" rack patch module |

| Ordering data | | |
|---|---|---|
| **Type** | **Order No.** | Pcs./ Pkt. |
| **UPS-CP-MS-9X10A-IEC** | **2800293** | 1 |
| **UPS-CP-MS-4X16A-IEC** | **2800294** | 1 |
| **UPS-CP-MS-5X16A/9X10A-IEC** | **2800296** | 1 |

Total width 482.6 mm

| Technical data | |
|---|---|
| ... 32A-4.5/6KV | ... 63A-4.5/6KV |
| 220 V AC ... 240 V AC | 220 V AC ... 240 V AC |
| max. 32 A | max. 63 A |
| Cable L/N/PE; 2.8 m; open ends | Cable L/N/PE; 2.8 m; open ends |
| 220 V AC ... 240 V AC | 220 V AC ... 240 V AC |
| max. 32 A | max. 63 A |
| Cable L/N/PE; 2.8 m; open ends | Cable L/N/PE; 2.8 m; open ends |
| - | - |
| 0°C ... 40°C | 0°C ... 40°C |
| 0°C ... 45°C | 0°C ... 45°C |
| IP20 | IP20 |
| 19" rack patch module | 19" rack patch module |

| Ordering data | | |
|---|---|---|
| **Type** | **Order No.** | Pcs./ Pkt. |
| **UPS-CP-PU-240AC/32A-4.5/6KV** | **2800297** | 1 |
| **UPS-CP-PU-240AC/63A-4.5/6KV** | **2800298** | 1 |

PSR-TRISAFE modular
**Master module** page 216
**Safe digital I/O extensions** page 217

PSR safety relay
**Safety relay for manually monitored and automatic start** page 218
**Safe coupling relay** page 219

PLC series with push-in connection method
**with PDT relay** page 220
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CONTACTRON hybrid motor starter
**"4 in 1" reversing starter with motor protection and emergency stop** page 230
**"3 in 1" direct starter with motor protection and emergency stop** page 232
**"2 in 1" reversing starter** page 234
**"1 in 1" direct starter** page 235
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INTERFACE Cabling
**Front adapters for**
**- SIMATIC S7 300** page 238
**- Honeywell C300** page 240
**- GE-FANUC RXI** page 242
**- Phoenix Contact Inline** page 243
**Termination boards for Honeywell C300** page 241
**Relay output modules** page 244

INTERFACE Cabling
**System cable with D-SUB strip and one open end** page 246
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**3-way isolating amplifier** page 250
**Output isolating amplifier** page 252
**NAMUR isolating amplifier** page 253
**Temperature transducer** page 258

MINI Analog
**MINI Analog multiplexer** page 261

MACX Analog
**AC current transducer** page 262

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Foundation Fieldbus and PROFIBUS PA
**FF/PA device coupler** page 267
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PSI-MOS/PSI-REP infrastructure components
**Copper DeviceNet** page 269
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**fiber optic/copper ControlNet** page 273

DSL permanent line modem for point-to-point and linear structures in 2 and 4-wire operation
**DSL/Ethernet** page 275
**DSL/Serial** page 276
**DSL/PROFIBUS** page 277

SUBCON-PLUS… PROFIBUS fast connection connector, angled 90°. Choice of screw or insulation displacement connection (IDC), suitable for flexible and fixed conductors.
**PROFIBUS connector with**
**- IDC connection** page 278
**- Screw connection** page 279

QUINT POWER with SFB technology
**24 V DC/40 A** page 280

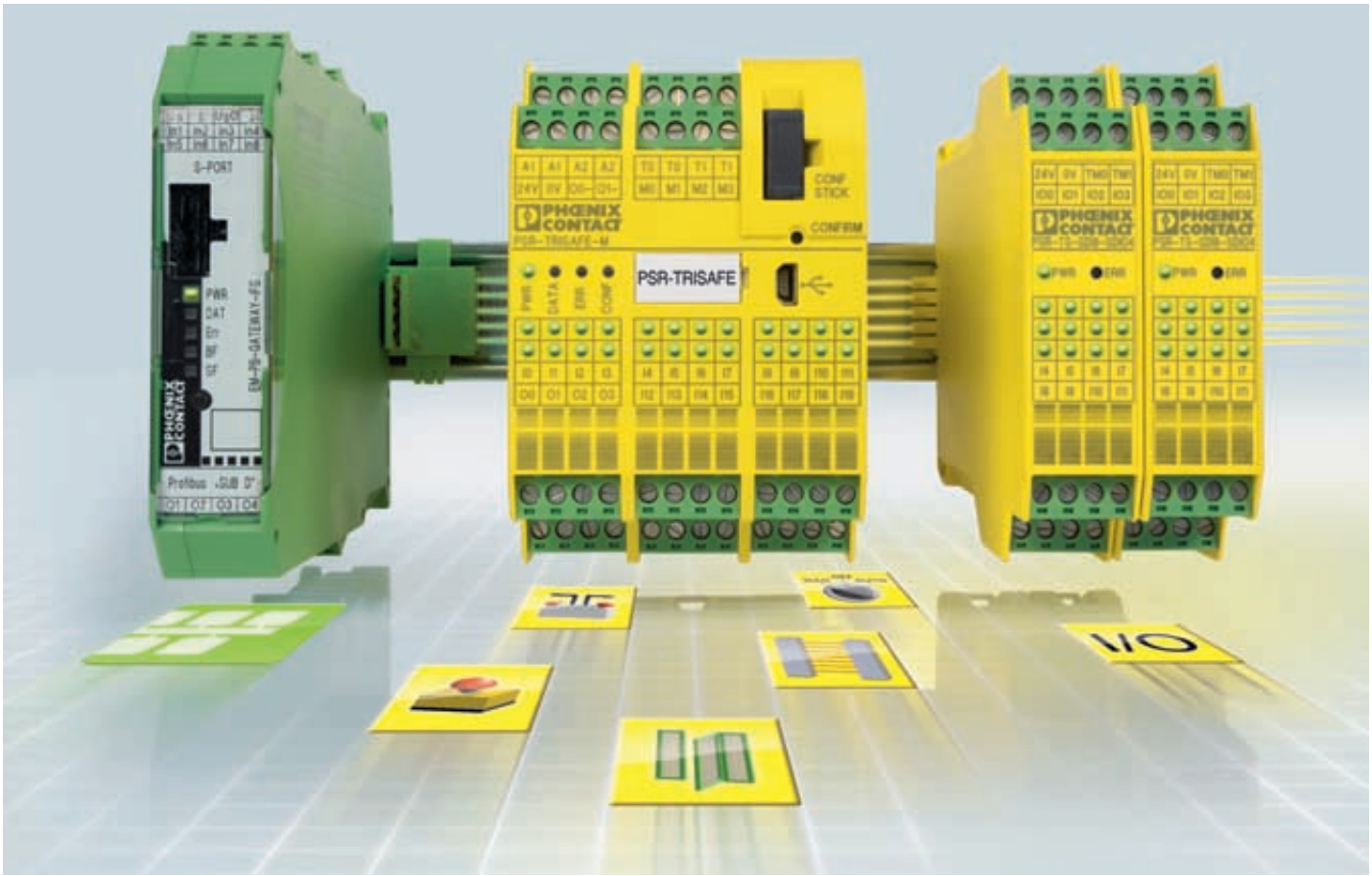
TRIO DIODE redundancy module
**12-24 V DC/2 x 10 A** page 281

MINI POWER
**DC/DC converter** page 282

STEP POWER
**1 AC/24 V DC** page 284
**1 AC/12 V DC** page 285

INTERFACE Wireless
**RAD Line Ethernet** page 286
**WirelessHART gateway** page 287

INTERFACE Monitoring
**Effective power monitoring relay** page 288




PSR-TRISAFE modular supports quick and easy implementation of the entire range of safety function requirements.

PSR-TRISAFE modular offers many benefits:

– Multi-functional use for a wide range of safety functions
– Flexibility in terms of adding safe inputs and outputs
– Simple graphical configuration rather than extensive programming
– Fast startup thanks to user-friendly simulation and testing options

**Flexible extendable master module**

The PSR-TRISAFE-M contains 20 safe inputs, 4 safe outputs, and 4 alarm outputs. If additional inputs or outputs are required, the master module offers the necessary flexibility so that it can be extended easily.

Safe digital I/O modules are available for the purpose of extending the system.

**Integration within a bus system**

Adaptable fieldbus gateways, available as an option, can be used to integrate the PSR-TRISAFE system into a bus system (such as a PROFIBUS DP network). This enables communication with the higher-level control system for diagnostic and visualization purposes.

**INTERFACE DIN rail T-BUS**

INTERFACE DIN rail T-BUS connectors are used to link safe and standard extension modules to the safety module. A green T-BUS connector is mounted under each green module for connecting modules with each other. Yellow PSR-TBUS connectors are used to adapt yellow modules (both master and safe extension devices). As many as ten I/O modules can be linked to one master via this method.

### User-friendly software thanks to drag & drop

SAFECONF software supports quick and easy configuration of the PSR-TRISAFE module. The required functions and components can be dragged with the mouse to the connection editor, where they can be linked together. This method eliminates the need for programming. The whole process of creating, testing, and transferring a project to the safety module can be performed in just three steps.

SAFECONF configuration software can be downloaded free of charge from www.phoenixcontact.com.

## Project completion in just three steps

### 1. Easy selection and linking of safety functions

Intuitive blocks are available for the safety function concerned (e.g., emergency stop monitoring or safety door monitoring). These are simply moved with the mouse to the connection area where they can be connected together. There are no additional windows or submenus requiring further data input. This means the safety logic is very clearly arranged.

### 2. Hardware integration via drag & drop

It is just as quick and easy to link the hardware with the safety logic. The safety module and its connection terminal blocks are shown directly under the window for selecting blocks. This makes it easy to move the relevant inputs and outputs via drag & drop to the connection area, where they can be connected to the safety blocks.

### 3. Testing and transfer

Automatic testing of the configuration prior to transfer provides additional safety. This ensures, for example, that inputs or outputs which are not connected are recognized by the blocks. In addition, the entire circuit can be tested on the computer in simulation mode. This makes it possible to validate changes at the office before these are implemented within the system during operation.

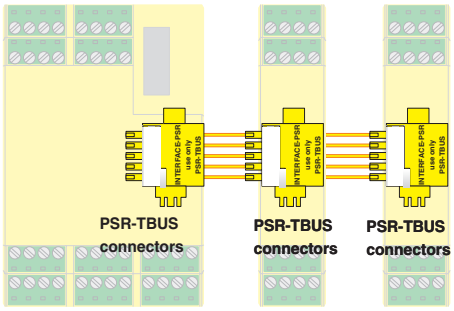
Once testing is complete, the configuration is transferred to the safety module using a standard USB cable. The transfer must be acknowledged manually on the device to prevent any unintentional data changes. The configuration is now active and can be started up.

## PSR-TRISAFE-M

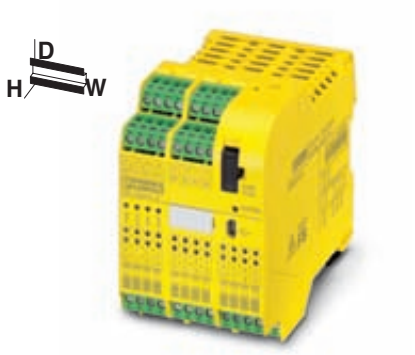
Freely configurable safety module for monitoring emergency stops, safety doors, light grids, etc.

– Safe and standard extension via INTERFACE DIN rail T-BUS
– With 20 safe inputs, 4 safe outputs, 4 alarm outputs, and 2 clock outputs on a design width of just 67.5 mm
– Easily graphically configurable with the SAFECONF software
– Incl. IFS-CONFSTICK memory stick for easy storage and backup of the configuration
– Including PSR-TBUS connector (DIN rail connector) for adapting safe extension modules
– Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508

| Notes: |
|---|
| Type of housing:<br>Polyamide PA non-reinforced, color: yellow. |
| For marking systems and mounting material, see CLIPLINE catalog |
| For extension modules for PSR-TRISAFE modular, see from page 217 |

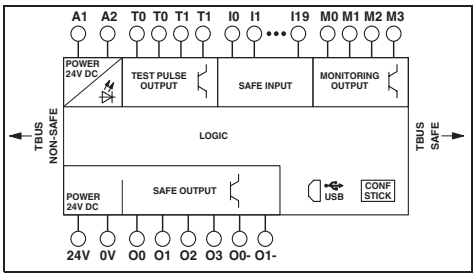



T-BUS connectors implement the cross-wiring between modules.




Safety module that can be extended

Applied for:
UL Listed / CUL Listed / TUEV-RH




## Technical data

| | | |
|---|---|---|
| **Module data** | | |
| Nominal input voltage $U_N$ | | 24 V DC |
| Permissible range (with reference to $U_N$) | | 0.85 ... 1.1 |
| Typ. current consumption (with reference to $U_N$) | | 200 mA |
| Max. response time | | 30 ms |
| Interfaces | | USB, DIN rail T-BUS for extension modules and bus couplers |
| **Input data** | | |
| Number of safe inputs | | 20 |
| Nominal voltage | | 24 V DC |
| Electrical isolation | | Yes |
| **Output data** | | |
| Safe semiconductor outputs | | 4 (Cat.4 / ISO 13849) |
| Nominal voltage | | 24 V DC |
| Limiting continuous current | | 2 A (see derating curve) |
| Electrical isolation | | Yes, to logic and inputs A1, A2 |
| Ground switching outputs | | 2 |
| Clock outputs | | 2 |
| Alarm outputs | | 4 |
| **General data** | | |
| Ambient temperature range | | -20°C ... 55°C |
| Pollution degree / Surge voltage category | | 2 / III |
| Screw connection (solid / stranded / AWG) | | 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 12 |
| Spring-cage connection (solid / stranded / AWG) | | 0.2 - 1.5 mm² / 0.2 - 1.5 mm² / 24 - 16 |
| Dimensions | Screw version | 67.5 mm / 114.5 mm / 99 mm |
| W / H / D | Spring-cage version | 67.5 mm / 114.5 mm / 112 mm |

## Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Freely configurable master module,** for monitoring emergency stops, safety doors, light grids, etc., with 20 safe inputs and 4 safe outputs, 4 alarm outputs and 2 clock outputs, safe and standard extension, including memory stick and PSR-TBUS connector | | | |
| With screw connection | **PSR-SCP- 24DC/TS/M** | **2986012** | 1 |
| With spring-cage connection | **PSR-SPP- 24DC/TS/M** | **2986025** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **Multi-functional memory block** for the INTERFACE system | **IFS-CONFSTICK** | **2986122** | 1 |
| **PSR-TBUS DIN rail connector**, for supplying/controlling/monitoring (depending on the module) | **PSR-TBUS** | **2890425** | 50 |

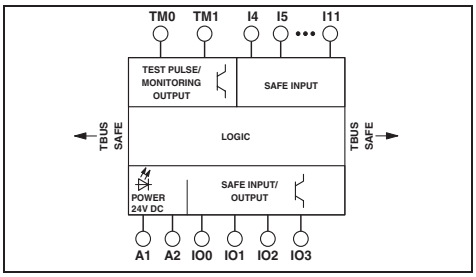
## PSR-TS-SDI8-SDIO4

I/O extension for PSR-TRISAFE-M
– 8 safe digital inputs
– 4 safe digital outputs or 4 additional digital inputs (that can be configured using SAFECONF)
– 2 alarm outputs or 2 clock outputs (that can be configured using SAFECONF)
– Slim 22.5 mm housing
– Including PSR-TBUS connector (DIN rail connector) for adapting to the master module
– Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508

| Notes: |
|---|
| Type of housing:<br>Polyamide PA non-reinforced, color: yellow. |
| For marking systems and mounting material, see CLIPLINE catalog |
| For PSR-TRISAFE-M master module, see page 216 |

**Extension module with 8 safe inputs, plus 4 safe outputs or 4 safe inputs**

Applied for:
UL Listed / CUL Listed / TUEV-RH




## Technical data

| | | |
|---|---|---|
| **Module data** | | |
| Nominal input voltage $U_N$ | | 24 V DC |
| Permissible range (with reference to $U_N$) | | 0.85 ... 1.1 |
| Typ. current consumption (with reference to $U_N$) | | 90 mA |
| Max. response time | | 30 ms |
| Interfaces | | DIN rail T-BUS for extension modules and bus couplers |
| **Input data** | | |
| Number of safe inputs | | 12 (of which 4 x can be configured as input or output) |
| Nominal voltage | | 24 V DC |
| Electrical isolation | | Yes |
| **Output data** | | |
| Safe semiconductor outputs | | 4 (if the four parameterizable inputs/outputs are used as outputs) |
| Nominal voltage | | 24 V DC |
| Limiting continuous current | | 0.5 A (see derating curve) |
| Electrical isolation | | Yes, to logic |
| Ground switching outputs | | 0 |
| Clock outputs | | 2 (when using 2 clock/alarm outputs as clock output) |
| Alarm outputs | | 2 (when using 2 clock/alarm outputs as alarm output) |
| **General data** | | |
| Ambient temperature range | | -20°C ... 55°C |
| Pollution degree / Surge voltage category | | 2 / III |
| Screw connection (solid / stranded / AWG) | | 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 12 |
| Spring-cage connection (solid / stranded / AWG) | | 0.2 - 1.5 mm² / 0.2 - 1.5 mm² / 24 - 16 |
| Dimensions | Screw version | 22.5 mm / 114.5 mm / 99 mm |
| W / H / D | Spring-cage version | 22.5 mm / 114.5 mm / 112 mm |

## Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Extension module**, 8 safe inputs and 4 safe freely parameterizable channels (as safe inputs or outputs), including PSR-TBUS connector | | | |
| With screw connection | **PSR-SCP- 24DC/TS/SDI8/SDIO4** | **2986038** | 1 |
| With spring-cage connection | **PSR-SPP- 24DC/TS/SDI8/SDIO4** | **2986041** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **PSR-TBUS DIN rail connector**, for supplying/controlling/monitoring (depending on the module) | **PSR-TBUS** | **2890425** | 50 |

## PSR-ESAM4

Safety relay for emergency stop and safety door monitoring
- Single and two-channel control
- Manually monitored and automatic activation in one device
- Slim 22.5 mm housing
- Two or three enabling current paths
- Up to Cat. 4/PL e according to ISO 13849-1, SILCL 3 according to IEC 62061, SIL 3 according to IEC 61508

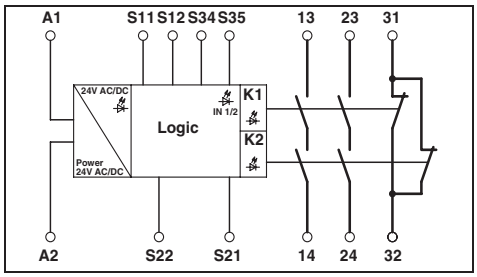
**Notes:**

Type of housing:
Polyamide PA non-reinforced, color: yellow.

For marking systems and mounting material, see CLIPLINE catalog

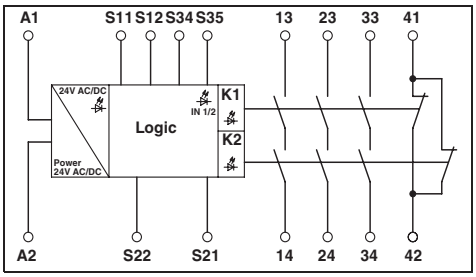
**Safety relay for manually monitored and automatic start, 2 enabling current paths, reinforced insulation**

Applied for:
UL Listed / CUL Listed / TUEV-RH



**Safety relay for manually monitored and automatic start, 3 enabling current paths, basic insulation**

Applied for:
UL Listed / CUL Listed / TUEV-RH




### Technical data

| | | | |
|---|---|---|---|
| Input data | | | |
| Nominal input voltage $U_N$ | | 24 V AC/DC | 24 V AC/DC |
| Permissible range (with reference to $U_N$) | | 0.85 ... 1.1 | 0.85 ... 1.1 |
| Typ. current consumption (with reference to $U_N$) | | 140 mA AC / 65 mA DC | 140 mA AC / 65 mA DC |
| Typ. response time (K1, K2) at $U_N$ | | 20 ms (Monitored/manual start) | 20 ms (Monitored/manual start) |
| Typ. release time (K1, K2) at $U_N$ | | 45 ms (single-channel) / 10 ms (two-channel) | 45 ms (single-channel) / 10 ms (two-channel) |
| Output data | | | |
| Contact type | | 2 enabling current paths, 1 signaling current path | 3 enabling current paths, 1 signaling current path |
| Contact material | | $AgSnO_2$, + 0.2 µm Au | $AgSnO_2$, + 0.2 µm Au |
| Max. / min. switching voltage | | 250 V AC/DC / 15 V AC/DC | 250 V AC/DC / 15 V AC/DC |
| Limiting continuous current | | 6 A | 6 A |
| Max. / min. inrush current | | 6 A / 25 mA | 6 A / 25 mA |
| Min. switching power | | 0.4 W | 0.4 W |
| Switching capacity (360/h cycles) | | 24 V DC 6 A; 230 V AC 5 A | 24 V DC 6 A; 230 V AC 5 A |
| Switching capacity (3600/h cycles) | | 24 V (DC 13) 3 A; 230 V (AC 15) 3 A | 24 V (DC 13) 3 A; 230 V (AC 15) 3 A |
| Short-circuit protection of the output circuits | | 10 A gL/gG NEOZED, 6 A gL/gG NEOZED | 10 A gL/gG NEOZED, 6 A gL/gG NEOZED |
| General data | | | |
| Ambient temperature range | | -20°C ... 55°C | -20°C ... 55°C |
| Air and creepage distances between the circuits | | DIN EN 50178/VDE 0160 | DIN EN 50178/VDE 0160 |
| Rated voltage | | 250 V | 250 V |
| Rated surge voltage / insulation | | 6 kV/safe isolation, reinforced insulation | 4 kV / basic insulation |
| Pollution degree / Surge voltage category | | 2 / III | 2 / III |
| Screw connection (solid / stranded / AWG) | | 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 | 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 |
| Spring-cage connection (solid / stranded / AWG) | | 0.2 - 1.5 $mm^2$ / 0.2 - 1.5 $mm^2$ / 24 - 16 | 0.2 - 1.5 $mm^2$ / 0.2 - 1.5 $mm^2$ / 24 - 16 |
| Dimensions | Screw version | 22.5 mm / 114.5 mm / 99 mm | 22.5 mm / 114.5 mm / 99 mm |
| W / H / D | Spring-cage version | 22.5 mm / 114.5 mm / 112 mm | 22.5 mm / 114.5 mm / 112 mm |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Emergency stop and safety door monitoring,** single and two-channel, activation: automatic and manually monitored | | | |
| With screw connection | **PSR-SCP- 24UC/ESAM4/2X1/1X2** | **2900525** | 1 |
| With spring-cage connection | **PSR-SPP- 24UC/ESAM4/2X1/1X2** | **2900526** | 1 |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSR-SCP- 24UC/ESAM4/3X1/1X2/B** | **2900509** | 1 |
| **PSR-SPP-24UC/ESAM4/3X1/1X2/B** | **2900510** | 1 |

## PSR-FSP/2X1

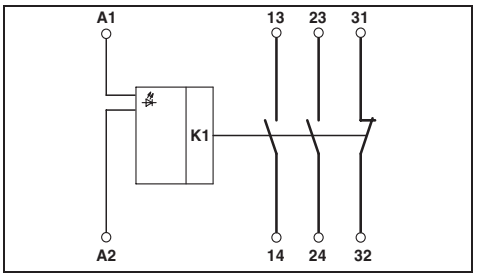
Emergency stop coupling relay for failsafe controllers in process technology

- Couples digital output signals from failsafe controllers to I/O devices (valves, etc.) for electrical isolation and power adaptation
- Two enabling current paths
- 17.5 mm slim housing
- Long service life due to filtering of controller test pulse, prevents early relay failure
- Simple proof test as per IEC 61508 due to integrated signaling contact
- Like all PSR safety relays, equipped with positively driven contacts as per EN 50205
- Up to SIL 3 according to IEC 61508

| Notes: |
|---|
| Type of housing:<br>Polyamide PA non-reinforced, color: yellow. |
| For marking systems and mounting material, see CLIPLINE catalog |

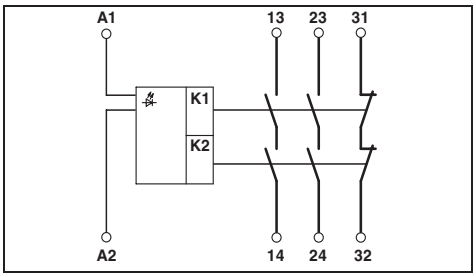
**Safe coupling relay with 2 enabling current paths, SIL 2 according to IEC 61508**

Applied for:
UL Listed / CUL Listed / TUEV-RH



**Safe coupling relay with 2 enabling current paths, SIL 3 according to IEC 61508**

Applied for:
UL Listed / CUL Listed / TUEV-RH




### Technical data

| | | |
|---|---|---|
| **Input data** | | |
| Nominal input voltage $U_N$ | 24 V DC | 24 V DC |
| Permissible range (with reference to $U_N$) | 0.85 ... 1.1 | 0.85 ... 1.1 |
| Typ. current consumption (with reference to $U_N$) | 55 mA | 55 mA |
| Typ. response time (K1, K2) at $U_N$ | 50 ms | 50 ms |
| Typ. release time (K1, K2) at $U_N$ | 50 ms | 50 ms |
| **Output data** | | |
| Contact type | 2 enabling current paths undelayed, 2 delayed | 2 enabling current paths undelayed, 2 delayed |
| Contact material | AgCuNi, + 0.2 µm Au | AgCuNi, + 0.2 µm Au |
| Max. / min. switching voltage | 250 V AC/DC / 15 V AC/DC | 250 V AC/DC / 15 V AC/DC |
| Limiting continuous current | 5 A (N/O contact), 100 mA (N/C contact) | 5 A (N/O contact), 100 mA (N/C contact) |
| Max. / min. inrush current | - / 5 mA | - / 5 mA |
| Min. switching power | 75 mW | 75 mW |
| Switching capacity (3600/h cycles) | 24 V (DC 13) 5 A; 250 V (AC 15) 5 A | 24 V (DC 13) 5 A; 250 V (AC 15) 5 A |
| Short-circuit protection of the output circuits | 10 A gL/gG (N/O contact), 6 A gL/gG NEOZED (N/C contact) | 10 A gL/gG (N/O contact), 6 A gL/gG NEOZED (N/C contact) |
| **General data** | | |
| Ambient temperature range | -20°C ... 55°C | -20°C ... 55°C |
| Air and creepage distances between the circuits | DIN EN 50178/VDE 0160 | DIN EN 50178/VDE 0160 |
| Rated voltage | 250 V | 250 V |
| Rated surge voltage / insulation | 6 kV/safe isolation, reinforced insulation | 6 kV/safe isolation, reinforced insulation |
| Pollution degree / Surge voltage category | 2 / III | 2 / III |
| Screw connection (solid / stranded / AWG) | 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 12 | 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 12 |
| Spring-cage connection (solid / stranded / AWG) | 0.2 - 1.5 mm² / 0.2 - 1.5 mm² / 24 - 16 | 0.2 - 1.5 mm² / 0.2 - 1.5 mm² / 24 - 16 |
| Dimensions Screw version | 17.5 mm / 114.5 mm / 99 mm | 17.5 mm / 114.5 mm / 99 mm |
| W / H / D Spring-cage version | 17.5 mm / 114.5 mm / 112 mm | 17.5 mm / 114.5 mm / 112 mm |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Emergency stop coupling relay,** for failsafe controllers, two enabling current paths | | | |
| With screw connection | **PSR-SCP- 24DC/FSP2/2X1/1X2** | **2986575** | 1 |
| With spring-cage connection | **PSR-SPP- 24DC/FSP2/2X1/1X2** | **2986588** | 1 |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Emergency stop coupling relay,** for failsafe controllers, two enabling current paths | | | |
| With screw connection | **PSR-SCP- 24DC/FSP/2X1/1X2** | **2986960** | 1 |
| With spring-cage connection | **PSR-SPP- 24DC/FSP/2X1/1X2** | **2986957** | 1 |

## Universal PLC series with PDT relay

PLC-…**PIT** relay interfaces supplement the proven PLC series. The innovative **PIT** push-in technology is a new addition.

Thanks to insertion forces that are up to 50% lower, the PIT connection enables easy and direct insertion of solid and stranded conductors with ferrules with a minimum cross-section of 0.34 mm².

The PLC-R...21 is a relay series that can be used universally and consists of basic terminal blocks and pluggable miniature relays with PDT contact. It offers the following advantages:

– Functional plug-in bridges
– Input or output interface.

In the standard version, the PLC interfaces are supplied equipped with a relay or solid-state relay. They can also be combined individually.

### Input voltages from 5 V to 230 V

The versions with input voltages from 5 V up to 230 V meet the demands of every industrial application. An input circuit – which consists of a status indicator, free-wheeling diode, and protection against polarity reversal – is integrated in the module.

### Rugged miniature relay

PLC-R... is equipped with a rugged miniature relay. Its main features include:

– RT III protection
– Environmentally friendly, cadmium-free contact material
– As an alternative with a gold layer for small switching capacities
– Safe isolation in acc. with DIN EN 50178 (VDE 0160)
– 4 $kV_{rms}$ electrical isolation between coil and contact

The relay is securely fastened using an engagement lever. Should it become worn, it can be disengaged, and – without disconnecting the wiring – can be replaced quickly and economically.

**Notes:**

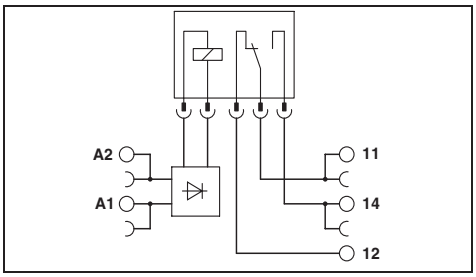
Type of insulation housing:
Polyester PBT, non-reinforced, color: green.

For marking systems and mounting material, see CLIPLINE catalog.

Separating plate PLC-ATP must be installed for voltages larger than 250 V (L1, L2, L3) between identical terminal blocks in adjacent modules. Potential bridging is then carried out with FBST 8-PLC... or FBST 500....

For diagrams of operating voltage ranges, see page 229

**1 PDT**
**with power contact**

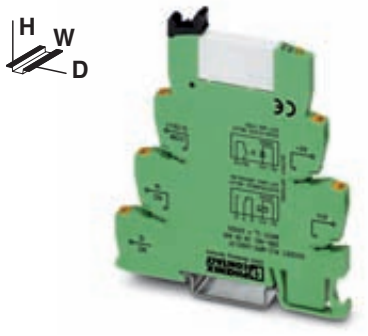



## Technical data

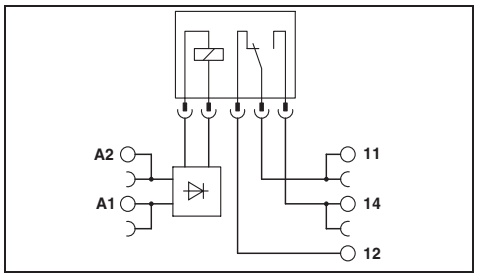
| | | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|---|---|
| **Input data** | | | | | | | | |
| Permissible range (with reference to $U_N$) | | See diagram | | | | | | |
| Typ. input current at $U_N$ | [mA] | 15.3 | 9 | 11 | 9.2 | 4.8 | 3.5 | 3.2 |
| Typ. response time at $U_N$ | [ms] | 5 | 5 | 6 | 5 | 5 | 6 | 7 |
| Typ. release time at $U_N$ | [ms] | 8 | 8 | 15 | 8 | 8 | 15 | 15 |
| Input circuit DC | | Yellow LED, protection against polarity reversal, free-wheeling | | | | | | |
| Input circuit AC/DC | | Yellow LED, Bridge rectifier | | | | | | |
| **Output data** | | | | | | | | |
| Contact type | | Single contact, 1 PDT | | | | | | |
| Contact material | | AgSnO | | | | | | |
| Max. switching voltage | | 250 V AC/DC | | | | | | |
| Min. switching voltage | | 12 V AC/DC | | | | | | |
| Limiting continuous current | | 6 A | | | | | | |
| Max. inrush current | | (on request) | | | | | | |
| Min. switching current | | 10 mA | | | | | | |
| Max. interrupting rating, ohmic load | 24 V DC | 140 W | | | | | | |
| | 48 V DC | 20 W | | | | | | |
| | 60 V DC | 18 W | | | | | | |
| | 110 V DC | 23 W | | | | | | |
| | 220 V DC | 40 W | | | | | | |
| | 250 V AC | 1500 VA | | | | | | |
| **General data** | | | | | | | | |
| Test voltage input/output | | 4 kV AC (50 Hz, 1 min.) | | | | | | |
| Ambient temperature range | | -25°C ... 60°C | | | | | | |
| Nominal operating mode | | 100% operating factor | | | | | | |
| Inflammability class in acc. with UL 94 | | V0 | | | | | | |
| Mechanical service life | | 2 x $10^7$ cycles | | | | | | |
| Standards/regulations | | IEC 60664, IEC 60664 A, DIN VDE 0110, DIN EN 50178/ DIN VDE 0160 (in relevant parts), DIN EN 50178/VDE 0160, IEC 60255/DIN VDE 0435 (in relevant parts) | | | | | | |
| Pollution degree/surge voltage category | | 3 / III | | | | | | |
| Mounting position/mounting | | Any / In rows with zero spacing | | | | | | |
| PIT connection (solid / stranded / AWG) | | 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 | | | | | | |
| Dimensions | W / H / D | 6.2 mm / 94 mm / 80 mm | | | | | | |

## Ordering data

| Description | | Input voltage $U_N$ | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|
| **PLC-INTERFACE**, with **push-in connection** | | | | | |
| | ① | 12 V DC | **PLC-RPIT- 12DC/21** | **2900316** | 10 |
| | ② | 24 V DC | **PLC-RPIT- 24DC/21** | **2900299** | 10 |
| | ③ | 24 V AC/DC | **PLC-RPIT- 24UC/21** | **2900300** | 10 |
| | ④ | 48 V DC | **PLC-RPIT- 48DC/21** | **2900301** | 10 |
| | ⑤ | 60 V DC | **PLC-RPIT- 60DC/21** | **2900303** | 10 |
| | ⑥ | 120 V AC (110 V DC) | **PLC-RPIT-120UC/21** | **2900304** | 10 |
| | ⑦ | 230 V AC (220 V DC) | **PLC-RPIT-230UC/21** | **2900305** | 10 |




**1 PDT**
**with multi-layer contact**




## Technical data

| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|
| See diagram | | | | | | |
| 15.3 | 9 | 11 | 9.2 | 4.8 | 3.5 | 3.2 |
| 5 | 5 | 6 | 5 | 5 | 6 | 7 |
| 8 | 8 | 15 | 8 | 8 | 15 | 15 |
| Yellow LED, protection against polarity reversal, free-wheeling | | | | | | |
| Yellow LED, Bridge rectifier | | | | | | |

| | |
|---|---|
| Single contact, 1 PDT | |
| AgSnO, hard gold-plated | |
| 30 V AC / 36 V DC | (250 V AC/DC) |
| 100 mV | (12 V AC/DC) |
| 50 mA | (6 A) |
| 50 mA | |
| 1 mA | (10 mA) |
| 1.2 W | (140 W) |
| - | (20 W) |
| - | (18 W) |
| - | (23 W) |
| - | (40 W) |
| - | (1500 VA) |

4 kV AC (50 Hz, 1 min.)
-25°C ... 60°C
100% operating factor
V0
2 x $10^7$ cycles
IEC 60664, IEC 60664 A, DIN VDE 0110, DIN EN 50178/ DIN VDE 0160 (in relevant parts), DIN EN 50178/VDE 0160, IEC 60255/DIN VDE 0435 (in relevant parts)

3 / III
Any / In rows with zero spacing
0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 14
6.2 mm / 94 mm / 80 mm

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PLC-RPIT- 12DC/21AU** | **2900317** | 10 |
| **PLC-RPIT- 24DC/21AU** | **2900306** | 10 |
| **PLC-RPIT- 24UC/21AU** | **2900307** | 10 |
| **PLC-RPIT- 48DC/21AU** | **2900308** | 10 |
| **PLC-RPIT- 60DC/21AU** | **2900309** | 10 |
| **PLC-RPIT-120UC/21AU** | **2900310** | 10 |
| **PLC-RPIT-230UC/21AU** | **2900311** | 10 |

## Universal PLC series with solid-state relays

PLC-…**PIT** relay interfaces supplement the proven PLC series. The innovative **PIT** push-in technology is a new addition.

Thanks to insertion forces that are up to 50% lower, the PIT connection enables easy and direct insertion of solid and stranded conductors with ferrules with a minimum cross-section of 0.34 mm².

PLC-O... is the solid-state relay series that can be used universally and consists of plug-in solid-state relays and basic terminal blocks.

### Universal, modular and flexible

The PLC-O... is used as an input or output interface. All components can be ordered separately and combined individually.

### Input voltages from 5 V to 230 V

PLC-O... on the control side is available for all conventional industrial voltages. An input circuit, which consists of a status indicator and protection against polarity reversal, is already present.

### High-performance solid-state relay

A solid-state relay that is typically very rugged is used especially for high switching frequencies. It features:

– Switching capacity up to 24 V DC/3 A or 230 V AC / 0.75 A
– IP67-protected solid-state relay electronics
– 2.5 $kV_{rms}$ electrical isolation between input/output
– Alternative input or power solid-state relay
– Wear-resistant and bounce-free switching
– Resistant to vibrations and shocks
– Integrated protection circuit
– Zero voltage switch at AC output

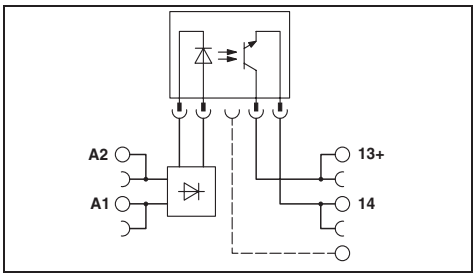
**Notes:**

Type of insulation housing:
Polyester PBT, non-reinforced, color: green.

For marking systems and mounting material, see CLIPLINE catalog.

Separating plate PLC-ATP must be installed for voltages larger than 250 V (L1, L2, L3) between identical terminal blocks in adjacent modules. Potential bridging is then carried out with FBST 8-PLC... or FBST 500....

**Solid-state input relay 100 mA, maximum**

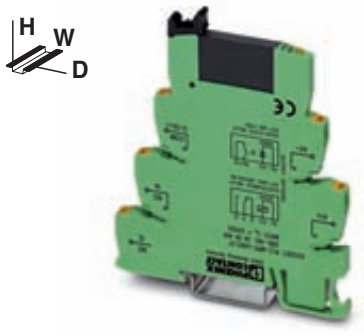



## Technical data

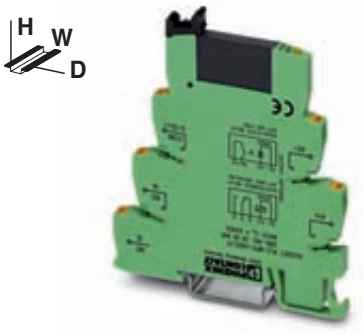
| | | ① | ② | ③ | ④ | ⑤ |
|---|---|---|---|---|---|---|
| **Input data** | | | | | | |
| Permissible range (with reference to $U_N$) | | 0.8 - 1.2 | 0.8 - 1.2 | 0.8 - 1.2 | 0.9 - 1.1 | 0.9 - 1.1 |
| Switching level (with reference to $U_N$) | 1 signal ("H") | ≥ 0.8 | ≥ 0.8 | ≥ 0.8 | ≥ 0.9 | ≥ 0.8 |
| | 0 signal ("L") | ≤ 0.4 | ≤ 0.3 | ≤ 0.4 | ≤ 0.3 | ≤ 0.3 |
| Typ. input current at $U_N$ | [mA] | 8.5 | 9 | 5 | 3.5 | 3.5 |
| Typ. switch-on time at $U_N$ | [ms] | 0.02 | 0.03 | 0.04 | 3 | 3 |
| Typ. switch-off time at $U_N$ | [ms] | 0.3 | 0.3 | 2 | 4 | 5 |
| Transmission frequency $f_{limit}$ | [Hz] | 300 | 300 | 100 | 10 | 10 |
| Input circuit DC | | Yellow LED, protection against polarity reversal, free-wheeling | | | | |
| Input circuit AC/DC | | Yellow LED, Bridge rectifier | | | | |
| **Output data** | | | | | | |
| Max. switching voltage | | 48 V DC | | | | |
| Min. switching voltage | | 3 V DC | | | | |
| Limiting continuous current | | 100 mA | | | | |
| Max. inrush current | | - | | | | |
| Min. switching current | | - | | | | |
| Output circuit | | 2-wire, floating | | | | |
| Output protection | | Protection against polarity reversal, surge protection | | | | |
| Voltage drop at max. limiting continuous current | | ≤ 1 V | | | | |
| Leakage current in off state | | - | | | | |
| Phase angle (cos φ) | | - | | | | |
| Max. load value | | - | | | | |
| **General data** | | | | | | |
| Test voltage input/output | | 2.5 kV (50 Hz, 1 min.) | | | | |
| Ambient temperature range | | -25°C ... 60°C | | | | |
| Nominal operating mode | | 100% operating factor | | | | |
| Inflammability class in acc. with UL 94 | | V0 | | | | |
| Standards/regulations | | IEC 60664, IEC 60664 A, DIN VDE 0110, basic insulation | | | | |
| Pollution degree/surge voltage category | | 2 / III | | | | |
| Mounting position/mounting | | Any / In rows with zero spacing | | | | |
| PIT connection (solid / stranded / AWG) | | 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 | | | | |
| Dimensions | W / H / D | 6.2 mm / 94 mm / 80 mm | | | | |

## Ordering data

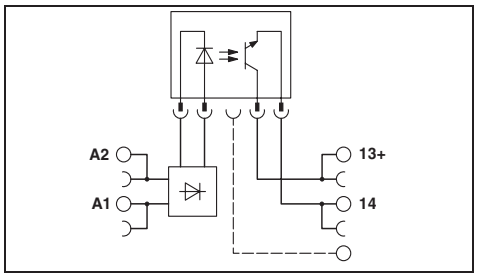
| Description | | Input voltage $U_N$ | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|
| **PLC-INTERFACE**, with **push-in connection** | | | | | |
| | ① | 24 V DC | **PLC-OPIT- 24DC / 48DC/100** | **2900352** | 10 |
| | ② | 48 V DC | **PLC-OPIT- 48DC / 48DC/100** | **2900353** | 10 |
| | ③ | 60 V DC | **PLC-OPIT- 60DC / 48DC/100** | **2900354** | 10 |
| | ④ | 120 V AC (110 V DC) | **PLC-OPIT-120UC / 48DC/100** | **2900355** | 10 |
| | ⑤ | 230 V AC (220 V DC) | **PLC-OPIT-230UC / 48DC/100** | **2900356** | 10 |

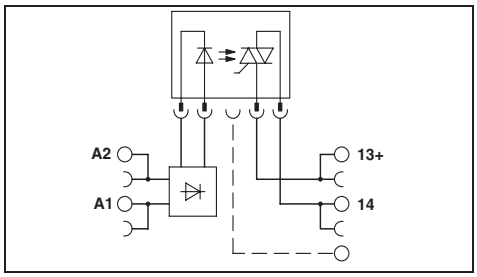



**Solid-state power relay**
**3 A, maximum**




**Solid-state power relay**
**0.75 A, maximum**




## Technical data

| | ① | ② | ③ | ④ | ⑤ |
|---|---|---|---|---|---|
| | | | | | |
| | 0.8 - 1.2 | 0.8 - 1.2 | 0.8 - 1.2 | 0.9 - 1.1 | 0.9 - 1.1 |
| | ≥ 0.8 | ≥ 0.8 | ≥ 0.8 | ≥ 0.8 | ≥ 0.8 |
| | ≤ 0.4 | ≤ 0.4 | ≤ 0.3 | ≤ 0.3 | ≤ 0.3 |
| | 8.5 | 9 | 5 | 3.5 | 3.5 |
| | 0.02 | 0.03 | 0.04 | 3.5 | 4 |
| | 0.3 | 0.3 | 0.5 | 7 | 7 |
| | 300 | 300 | 100 | 10 | 10 |
| | Yellow LED, protection against polarity reversal, free-wheeling | | | | |
| | Yellow LED, Bridge rectifier | | | | |
| | | | | | |
| | 33 V DC | | | | |
| | 3 V DC | | | | |
| | 3 A | | | | |
| | 15 A (10 ms) | | | | |
| | - | | | | |
| | 2-wire, floating | | | | |
| | Protection against polarity reversal, surge protection | | | | |
| | ≤ 200 mV | | | | |
| | - | | | | |
| | - | | | | |
| | - | | | | |
| | | | | | |
| | 2.5 kV (50 Hz, 1 min.) | | | | |
| | -25°C ... 60°C | | | | |
| | 100% operating factor | | | | |
| | V0 | | | | |
| | IEC 60664, IEC 60664 A, DIN VDE 0110, basic insulation | | | | |
| | | | | | |
| | 2 / III | | | | |
| | Any / In rows with zero spacing | | | | |
| | 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 | | | | |
| | 6.2 mm / 94 mm / 80 mm | | | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PLC-OPIT- 24DC / 24DC/2** | **2900364** | 10 |
| **PLC-OPIT- 48DC / 24DC/2** | **2900365** | 10 |
| **PLC-OPIT- 60DC / 24DC/2** | **2900366** | 10 |
| **PLC-OPIT-120UC / 24DC/2** | **2900367** | 10 |
| **PLC-OPIT-230UC / 24DC/2** | **2900368** | 10 |

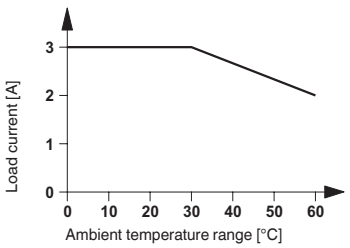
## Technical data

| | ① | ② | ③ | ④ | ⑤ |
|---|---|---|---|---|---|
| | | | | | |
| | 0.8 - 1.2 | 0.8 - 1.2 | 0.8 - 1.2 | 0.9 - 1.1 | 0.8 - 1.1 |
| | ≥ 0.8 | ≥ 0.8 | ≥ 0.8 | ≥ 0.8 | ≥ 0.8 |
| | ≤ 0.25 | ≤ 0.25 | ≤ 0.3 | ≤ 0.25 | ≤ 0.25 |
| | 8 | 9 | 6 | 4 | 3.5 |
| | 10 | 10 | 10 | 10 | 10 |
| | 10 | 10 | 10 | 10 | 10 |
| | 10 | 10 | 10 | 3 | 3 |
| | Yellow LED, protection against polarity reversal, free-wheeling | | | | |
| | Yellow LED, Bridge rectifier | | | | |
| | | | | | |
| | 253 V AC | | | | |
| | 24 V AC | | | | |
| | 0.75 A | | | | |
| | 30 A (10 ms) | | | | |
| | 10 mA | | | | |
| | 2-wire, floating | | | | |
| | RCV circuit | | | | |
| | < 1 V | | | | |
| | < 1 mA (in off state) | | | | |
| | 0.5 | | | | |
| | 4.5 A²s | | | | |
| | | | | | |
| | 2.5 kV (50 Hz, 1 min.) | | | | |
| | -25°C ... 60°C | | | | |
| | 100% operating factor | | | | |
| | V0 | | | | |
| | IEC 60664, IEC 60664 A, DIN VDE 0110, basic insulation | | | | |
| | | | | | |
| | 2 / III | | | | |
| | Any / In rows with zero spacing | | | | |
| | 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 | | | | |
| | 6.2 mm / 94 mm / 80 mm | | | | |

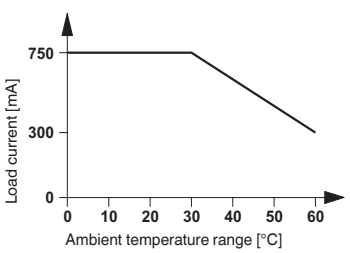
## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PLC-OPIT- 24DC/230AC/1** | **2900369** | 10 |
| **PLC-OPIT- 48DC/230AC/1** | **2900370** | 10 |
| **PLC-OPIT- 60DC/230AC/1** | **2900371** | 10 |
| **PLC-OPIT-120UC/230AC/1** | **2900372** | 10 |
| **PLC-OPIT-230UC/230AC/1** | **2900374** | 10 |

**Derating curve for PLC-OPIT...24DC/2 solid-state relay**




**Derating curve for PLC-OPIT...230AC/1 solid-state relay**



## PLC actuator series

PLC-…**PIT** relay interfaces supplement the proven PLC series. The innovative **PIT** push-in technology is a new addition.

Thanks to insertion forces that are up to 50% lower, the PIT connection enables easy and direct insertion of solid and stranded conductors with ferrules with a minimum cross-section of 0.34 mm².

In interface applications between the PLC and actuators, such as motors, contactors or solenoid valves, often only an N/O function is required. The PLC-...ACT output interface is used here.

### No need for output terminal blocks

A unique feature is that all the actuator connections, including the load return line, are connected directly to the PLC actuator relay. This eliminates the need for additional output terminal blocks.

The savings:

– Elimination of the need for output terminal blocks
– Space savings of approx. 80%
– Time saving of approx. 60%
– Reduction in wiring thanks to plug-in bridges

### Optimum use of plug-in bridges

The A1/A2 connection on the coil side and the load supply (13) on the contact side, as well as the load return line (BB) can be bridged with the user-friendly FBST... plug-in bridge system.

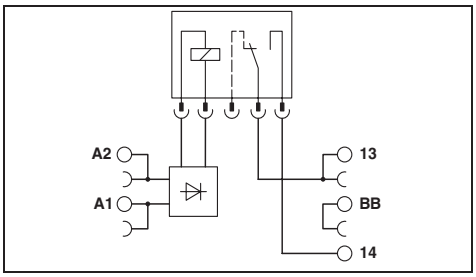
No stripping, no fitting of ferrules, no connecting.

Further advantages:

– Integrated input circuit
– Relay with safe isolation in acc. with DIN EN 50178 (VDE 0160)
– Inflammability class V0 in acc. with UL 94

| Notes: |
|---|
| Type of insulation housing:<br>Polyester PBT, non-reinforced, color: green. |
| For marking systems and mounting material, see CLIPLINE catalog. |
| Separating plate PLC-ATP must be installed for voltages larger than 250 V (L1, L2, L3) between identical terminal blocks in adjacent modules. Potential bridging is then carried out with FBST 8-PLC... or FBST 500.... |
| For diagrams of operating voltage ranges, see page 229 |

**1 N/O contact with power contact**



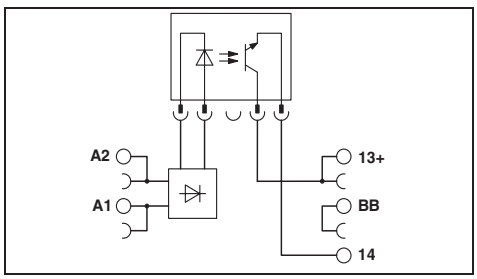

## Technical data

| | | ② |
|---|---|---|
| **Input data** | | |
| Permissible range (with reference to $U_N$) | | See diagram |
| Switching level (with reference to $U_N$) | 1 signal ("H") | |
| | 0 signal ("L") | |
| Typ. input current at $U_N$ | [mA] | 9 |
| Typ. response time/switch-on time at $U_n$ | [ms] | 5 |
| Typ. release time/switch-off time at $U_n$ | [ms] | 8 |
| Transmission frequency $f_{limit}$ | [Hz] | |
| Input circuit DC | | Yellow LED, protection against polarity reversal, free-wheeling |
| **Output data** | | |
| Contact type | | Single contact, 1 N/O contact |
| Contact material | | AgSnO |
| Max. switching voltage | | 250 V AC/DC |
| Min. switching voltage | | 12 V AC/DC |
| Limiting continuous current | | 6 A |
| Max. inrush current | | (on request) |
| Min. switching current | | 10 mA |
| Max. interrupting rating, ohmic load | 24 V DC | 140 W |
| | 48 V DC | 20 W |
| | 60 V DC | 18 W |
| | 110 V DC | 23 W |
| | 220 V DC | 40 W |
| | 250 V AC | 1500 VA |
| Output circuit | | - |
| Output protection | | - |
| Voltage drop at max. limiting continuous current | | - |
| **General data** | | |
| Test voltage input/output | | 4 kV AC (50 Hz, 1 min.) |
| Ambient temperature range | | -25°C ... 60°C |
| Inflammability class in acc. with UL 94 | | V0 |
| Mechanical service life | | 2 x $10^7$ cycles |
| Standards/regulations | | IEC 60664, IEC 60664 A, DIN VDE 0110, DIN EN 50178/ DIN VDE 0160 (in relevant parts), DIN EN 50178/VDE 0160, IEC 60255/DIN VDE 0435 (in relevant parts) |
| Pollution degree/surge voltage category | | 3 / III |
| PIT connection (solid / stranded / AWG) | | 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 |
| Dimensions | W / H / D | 6.2 mm / 94 mm / 80 mm |

## Ordering data

| Description | Input voltage $U_N$ | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **PLC-INTERFACE**, with **push-in connection** | | | | |
| ① | 5 V DC | | | |
| ② | 24 V DC | **PLC-RPIT- 24DC / 1/ACT** | **2900312** | 10 |

**Solid-state power relay**
**3 A, maximum**



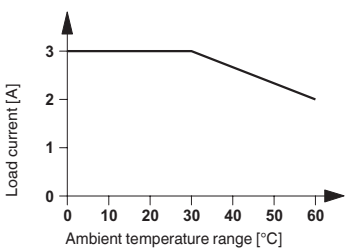

## Technical data

| ① | ② |
|---|---|
| | |
| 0.8 - 1.2 | 0.8 - 1.2 |
| ≥ 0.8 | ≥ 0.8 |
| ≤ 0.25 | ≤ 0.4 |
| 9.5 | 8.5 |
| 0.02 | 0.02 |
| 0.3 | 0.3 |
| 300 | 300 |
| Yellow LED, protection against polarity reversal, free-wheeling | |
| | |
| - | |
| - | |
| 33 V DC | |
| 3 V DC | |
| 3 A | |
| 15 A (10 ms) | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| 2-wire, floating | |
| Protection against polarity reversal, surge protection | |
| ≤ 200 mV | |
| | |
| 2.5 kV (50 Hz, 1 min.) | |
| -25°C ... 60°C | |
| V0 | |
| - | |
| IEC 60664, IEC 60664 A, DIN VDE 0110, basic insulation | |
| | |
| 2 / III | |
| 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 | |
| 6.2 mm / 94 mm / 80 mm | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PLC-OPIT- 5DC / 24DC/2/ACT** | **2900375** | 10 |
| **PLC-OPIT- 24DC / 24DC/2/ACT** | **2900376** | 10 |

**Derating curve for PLC-OPIT...24DC/2/ACT solid-state relay**



## PLC sensor series

PLC-…**PIT** relay interfaces supplement the proven PLC series. The innovative **PIT** push-in technology is a new addition.

Thanks to insertion forces that are up to 50% lower, the PIT connection enables easy and direct insertion of solid and stranded conductors with ferrules with a minimum cross-section of 0.34 mm².

In interface applications between the PLC and sensors, such as proximity switches, limit switches or auxiliary contacts, an N/O function is often required. The PLC-...SEN input interface is used here.

### No need for power terminal blocks

All the sensor connections, including the voltage supply for the sensors/switches, are connected directly to the PLC sensor interface. This eliminates the need for additional modular terminal blocks.

The savings:

– Elimination of the need for modular terminal blocks
– Space savings of approx. 80%
– Time saving of approx. 60%
– Reduction in wiring thanks to plug-in bridges

### Optimum use of plug-in bridges

All power supply units of the sensors/switches (BB), the sensor ground (A2) and the common supply potential of the PLC (13) can be bridged with the user-friendly FBST... plug-in bridge system.

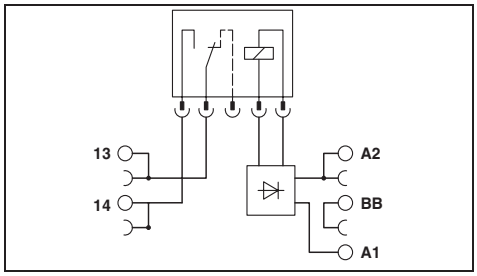
No stripping, no fitting of ferrules, no connecting.

Further advantages:

– Integrated input circuit
– Relay with safe isolation in acc. with DIN EN 50178 (VDE 0160)
– Inflammability class V0 in acc. with UL 94

| Notes: |
|---|
| Type of insulation housing:<br>Polyester PBT, non-reinforced, color: green. |
| For marking systems and mounting material, see CLIPLINE catalog. |
| Separating plate PLC-ATP must be installed for voltages larger than 250 V (L1, L2, L3) between identical terminal blocks in adjacent modules. Potential bridging is then carried out with FBST 8-PLC... or FBST 500.... |
| For diagrams of operating voltage ranges, see page 229 |

**1 N/O contact with multi-layer contact**

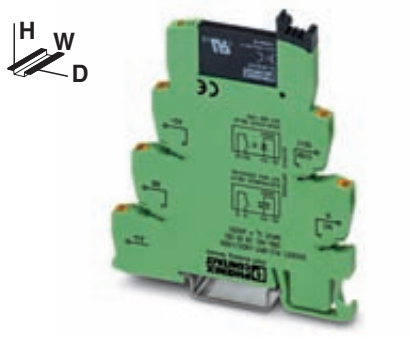



## Technical data

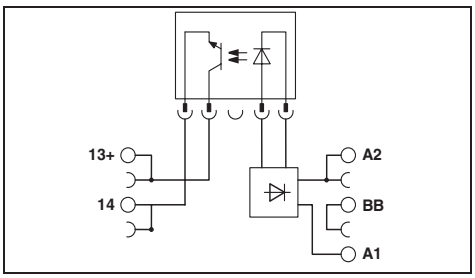
| | | ① | ② | ③ |
|---|---|---|---|---|
| **Input data** | | | | |
| Permissible range (with reference to $U_N$) | | See diagram | | |
| Switching level (with reference to $U_N$) | 1 signal ("H") | | | |
| | 0 signal ("L") | | | |
| Typ. input current at $U_N$ | [mA] | 9 | 3.5 | 3.2 |
| Typ. response time/switch-on time at $U_n$ | [ms] | 5 | 6 | 7 |
| Typ. release time/switch-off time at $U_n$ | [ms] | 8 | 15 | 15 |
| Transmission frequency $f_{limit}$ | [Hz] | | | |
| Input circuit DC | | Yellow LED, protection against polarity reversal, free-wheeling | | |
| Input circuit AC/DC | | Yellow LED, Bridge rectifier | | |
| **Output data** | | | | |
| Contact type | | Single contact, 1 N/O contact | | |
| Contact material | | AgSnO, hard gold-plated | | |
| Max. switching voltage | | 30 V AC / 36 V DC | (250 V AC/DC) | |
| Min. switching voltage | | 100 mV | (12 V AC/DC) | |
| Limiting continuous current | | 50 mA | (6 A) | |
| Max. inrush current | | 50 mA | | |
| Min. switching current | | 1 mA | (10 mA) | |
| Max. interrupting rating, ohmic load | 24 V DC | 1.2 W | (140 W) | |
| | 48 V DC | - | (20 W) | |
| | 60 V DC | - | (18 W) | |
| | 110 V DC | - | (23 W) | |
| | 220 V DC | - | (40 W) | |
| | 250 V AC | - | (1500 VA) | |
| Output circuit | | - | | |
| Output protection | | - | | |
| Voltage drop at max. limiting continuous current | | - | | |
| **General data** | | | | |
| Test voltage input/output | | 4 kV AC (50 Hz, 1 min.) | | |
| Ambient temperature range | | -25°C ... 60°C | | |
| Inflammability class in acc. with UL 94 | | V0 | | |
| Mechanical service life | | 2 x $10^7$ cycles | | |
| Standards/regulations | | IEC 60664, IEC 60664 A, DIN VDE 0110, DIN EN 50178/ DIN VDE 0160 (in relevant parts), DIN EN 50178/VDE 0160, IEC 60255/DIN VDE 0435 (in relevant parts) | | |
| Pollution degree/surge voltage category | | 3 / III | | |
| Mounting position/mounting | | Any / In rows with zero spacing | | |
| PIT connection (solid / stranded / AWG) | | 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 | | |
| Dimensions | W / H / D | 6.2 mm / 94 mm / 80 mm | | |

## Ordering data

| Description | Input voltage $U_N$ | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **PLC-INTERFACE**, with **push-in connection** | | | | |
| ① | 24 V DC | **PLC-RPIT- 24DC / 1AU/SEN** | **2900313** | 10 |
| ② | 120 V AC (110 V DC) | **PLC-RPIT-120UC / 1AU/SEN** | **2900314** | 10 |
| ③ | 230 V AC (220 V DC) | **PLC-RPIT-230UC / 1AU/SEN** | **2900315** | 10 |




**Solid-state input relay**
**100 mA, maximum**




## Technical data

| ① | ② | ③ |
|---|---|---|
| | | |
| 0.8 - 1.2 | 0.8 - 1.1 | 0.8 - 1.1 |
| ≥ 0.8 | ≥ 0.8 | ≥ 0.8 |
| ≤ 0.4 | ≤ 0.3 | ≤ 0.3 |
| 8.5 | 3.5 | 3.5 |
| 0.02 | 6 | 3 |
| 0.3 | 10 | 5 |
| 300 | 10 | 10 |
| Yellow LED, protection against polarity reversal, free-wheeling | | |
| Yellow LED, Bridge rectifier | | |
| | | |
| - | | |
| - | | |
| 48 V DC | | |
| 3 V DC | | |
| 100 mA | | |
| - | | |
| - | | |
| - | | |
| - | | |
| - | | |
| - | | |
| - | | |
| - | | |
| 2-wire, floating | | |
| Protection against polarity reversal, surge protection | | |
| ≤ 1 V | | |
| | | |
| 2.5 kV (50 Hz, 1 min.)(50 Hz, 1 min.) | | |
| -25°C ... 60°C | | |
| V0 | | |
| - | | |
| IEC 60664, IEC 60664 A, DIN VDE 0110 | | |
| | | |
| 2 / III | | |
| Any / In rows with zero spacing | | |
| 0.14 - 2.5 mm² / 0.14 - 2.5 mm² / 26 - 14 | | |
| 6.2 mm / 94 mm / 80 mm | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PLC-OPIT- 24DC / 48DC/100/SEN** | **2900358** | 10 |
| **PLC-OPIT-120UC / 48DC/100/SEN** | **2900359** | 10 |
| **PLC-OPIT-230UC / 48DC/100/SEN** | **2900361** | 10 |

## 6.2 mm basic terminal blocks with one contact featuring push-in connection method

| Nominal input voltage | 1 PDT basic terminal block, empty | Actuator basic terminal block, empty | Sensor basic terminal block, empty |
|---|---|---|---|
| 5 V DC | PLC-BPIT-5DC/21[1]) Order No.: 2900443 | PLC-BPIT-5DC/1/ACT[1]) Order No.: 2900448 | |
| 12 V DC | PLC-BSP-12DC/21[2]) Order No.: 2900444 | | |
| 24 V DC | PLC-BPIT-24DC/21[3]) Order No.: 2900445 | PLC-BPIT-24DC/1/ACT[3]) Order No.: 2900449 | PLC-BPIT-24DC/1/SEN[3]) Order No.: 2900262 |
| 24 V AC/DC | PLC-BPIT-24UC/21[4]) Order No.: 2900446 | | |
| 48 V DC | PLC-BPIT-48DC/21[3]) Order No.: 2900447 | | |
| 60 V DC | PLC-BPIT-60DC/21[5]) Order No.: 2900279 | | |
| 120 V AC/DC | PLC-BPIT-120UC/21[5]) Order No.: 2900280 | | PLC-BPIT-120UC/1/SEN[5]) Order No.: 2900451 |
| 230 V AC/DC | PLC-BPIT-230UC/21[5]) Order No.: 2900281 | | PLC-BPIT-230UC/1/SEN[5]) Order No.: 2900452 |

**Compatible components:**

[1]) REL-MR-4,5DC/21, REL-MR-4,5DC/21AU, OPT-5DC/24DC/2, OPT-5DC/48DC/100

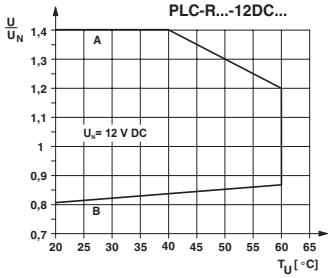
[2]) REL-MR-12DC/21, REL-MR-12DC/21AU

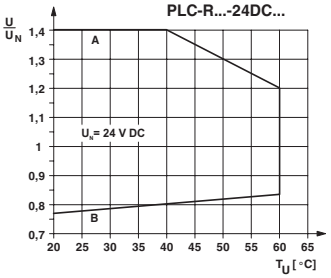
[3]) REL-MR-24DC/21, REL-MR-24DC/21AU, OPT-24DC/24DC/2, OPT-24DC/48DC/100, OPT-24DC/230AC/1

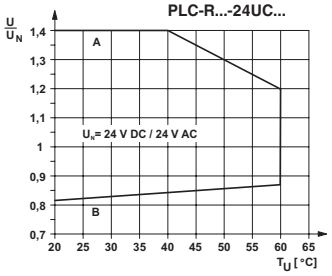
[4]) REL-MR-24DC/21, REL-MR-24DC/21AU

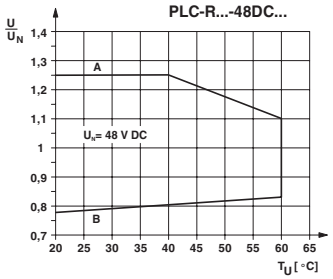
[5]) REL-MR-60DC/21, REL-MR-60DC/21AU, OPT-60DC/24DC/2, OPT-60DC/48DC/100, OPT-60DC/230AC/1

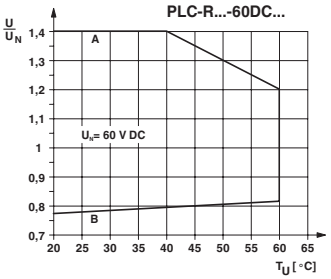
## Operating voltage ranges for PLC-INTERFACE, 6.2 mm versions, equipped with relay

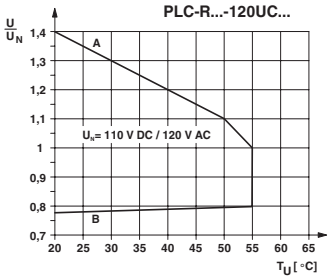


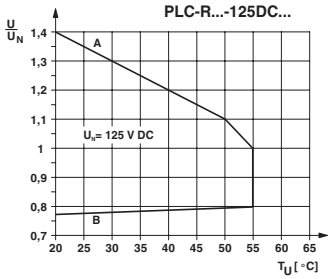



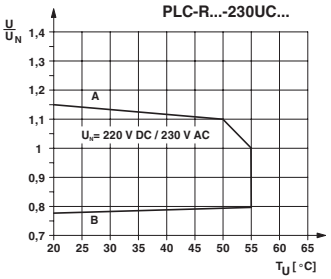




**General conditions:**
Direct alignment in the block, all devices 100% operating factor, horizontal or vertical mounting.

**Curve A**
Maximum permissible continuous voltage $U_{max}$ with limiting continuous current on the contact side (see respective technical data).

**Curve B**
Minimum permissible operate voltage $U_{op}$ after pre-excitation[1]) (see respective technical data).

[1]) **Pre-excitation**: Relay has been operated in a thermally steady state at the ambient temperature $T_U$ with nominal voltage $U_N$ and limiting continuous current on the contact side (see respective technical data) (warm coil). After being switched off for a short time, the relay must reliably pick up again at $U_{op}$. The $U_{op}$ values for cold coils ($T_{coil} = T_U = 20$ °C) indicated by other manufacturers yield better values, but are not practical.

## "4 in 1" hybrid motor starter with reversing function, motor protection, and emergency stop

The 22.5 mm wide 3-phase "4 in 1" hybrid motor starters with current monitoring combine four functions in one device: right contactor, left contactor, motor protection relay, and emergency stop up to category 3.

The devices offer the following advantages

– They save wiring
– Bi-metal function can be set up to 9 A
– Long service life

Safety level according to:

– IEC 61508-1: SIL3
– ISO 13849: PL e

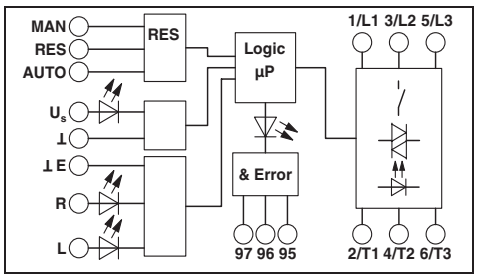
**"4 in 1" hybrid motor starter, for reversing 3~ AC motors up to 550 V AC/3 x 0.6 A**

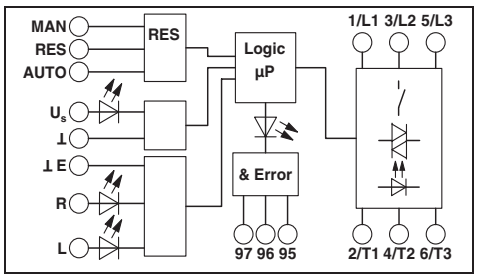
**"4 in 1" hybrid motor starter, for reversing 3~ AC motors up to 550 V AC/3 x 2 A**

**Notes:**

Type of housing:
Polyamide PA non-reinforced, color: green.

For marking systems and mounting material, see CLIPLINE catalog




### Technical data

| Input data | ELR H5-IES-SC- 24DC/500AC- | ELR H5-IES-SC-230AC/500AC- |
|---|---|---|
| Rated control supply voltage $U_S$ | 24 V DC | 230 V AC |
| Rated control supply voltage range with reference to $U_S$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated control supply current $I_S$ at $U_S$ | 40 mA | 4 mA |
| Rated actuating voltage $U_C$ R/L | 24 V DC | 230 V AC |
| Rated actuating voltage range with reference to $U_C$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated actuating current $I_C$ at $U_C$ | 3 mA | 7 mA |
| Input circuit | Protection against polarity reversal, surge protection | Surge protection |
| Operating voltage / status / error indicator | Green LED / Yellow LED / Red LED | |
| **Output data load side** | | |
| Output voltage range | 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| Load current | max. 600 mA (see derating curve) | max. 600 mA (see derating curve) |
| Surge current | 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| Min. load current | 100 mA | 100 mA |
| Residual voltage | < 0.2 V | < 0.2 V |
| Leakage current | 0 mA | 0 mA |
| Output protection | Surge protection | |
| **General data** | | |
| Rated insulation voltage | 500 V | |
| Rated surge voltage | 6 kV | 4 kV |
| Reversing frequency | max. 2 Hz | max. 2 Hz |
| Ambient temperature range | -25°C ... 70°C | |
| Electrical service life | 3 x $10^7$ cycles | |
| Standards/regulations | DIN EN 50178 / EN 60947 | |
| Degree of protection in acc. with IEC 60529 / EN 60529 | IP20 | |
| Mounting position | optional (observe derating) | |
| Mounting | Can be aligned with spacing = 20 mm | |
| Screw connection (solid / stranded / AWG) | 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| Dimensions W / H / D | 22.5 mm / 114.5 mm / 99 mm | |
| **Safety data** | | |
| EC-type examination certificate according to ATEX | Applied for | Applied for |

### Technical data

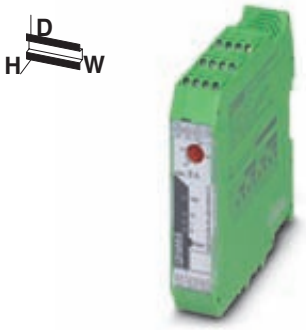
| Input data | ELR H5-IES-SC- 24DC/500AC- | ELR H5-IES-SC-230AC/500AC- |
|---|---|---|
| Rated control supply voltage $U_S$ | 24 V DC | 230 V AC |
| Rated control supply voltage range with reference to $U_S$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated control supply current $I_S$ at $U_S$ | 40 mA | 4 mA |
| Rated actuating voltage $U_C$ R/L | 24 V DC | 230 V AC |
| Rated actuating voltage range with reference to $U_C$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated actuating current $I_C$ at $U_C$ | 3 mA | 7 mA |
| Input circuit | Protection against polarity reversal, surge protection | Surge protection |
| Operating voltage / status / error indicator | Green LED / Yellow LED / Red LED | |
| **Output data load side** | | |
| Output voltage range | 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| Load current | max. 2.4 A (see derating curve) | max. 2.4 A (see derating curve) |
| Surge current | 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| Min. load current | 180 mA | 180 mA |
| Residual voltage | < 0.3 V | < 0.3 V |
| Leakage current | 0 mA | 0 mA |
| Output protection | Surge protection | |
| **General data** | | |
| Rated insulation voltage | 500 V | |
| Rated surge voltage | 6 kV | 4 kV |
| Reversing frequency | max. 2 Hz | max. 2 Hz |
| Ambient temperature range | -25°C ... 70°C | |
| Electrical service life | 3 x $10^7$ cycles | |
| Standards/regulations | DIN EN 50178 / EN 60947 | |
| Degree of protection in acc. with IEC 60529 / EN 60529 | IP20 | |
| Mounting position | optional (observe derating) | |
| Mounting | Can be aligned with spacing = 20 mm | |
| Screw connection (solid / stranded / AWG) | 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| Dimensions W / H / D | 22.5 mm / 114.5 mm / 99 mm | |
| **Safety data** | | |
| EC-type examination certificate according to ATEX | Applied for | Applied for |

### Ordering data

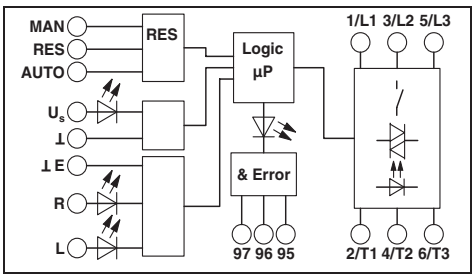
| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **"4 in 1" hybrid motor starter** | | | |
| | **ELR H5-IES-SC- 24DC/500AC-0,6** | **2900582** | 1 |
| | **ELR H5-IES-SC-230AC/500AC-0,6** | **2900692** | 1 |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **ELR H5-IES-SC- 24DC/500AC-2** | **2900414** | 1 |
| **ELR H5-IES-SC-230AC/500AC-2** | **2900420** | 1 |



**"4 in 1" hybrid motor starter, for reversing 3~ AC motors up to 550 V AC/3 x 9 A**



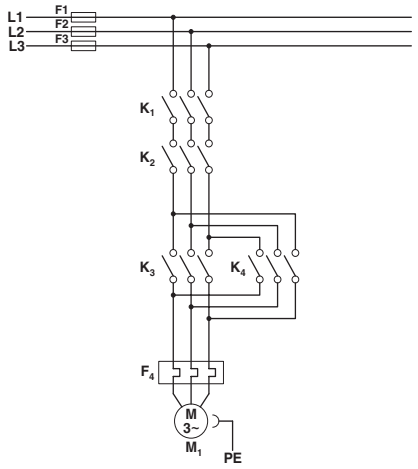

## Technical data

| | |
|---|---|
| ELR H5-IES-SC- 24DC/500AC- | ELR H5-IES-SC-230AC/500AC- |
| 24 V DC | 230 V AC |
| 0.8 ... 1.25 | 0.4 ... 1.1 |
| 40 mA | 4 mA |
| 24 V DC | 230 V AC |
| 0.8 ... 1.25 | 0.4 ... 1.1 |
| 3 mA | 7 mA |
| Protection against polarity reversal, surge protection | Surge protection |
| Green LED / Yellow LED / Red LED | |
| 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| max. 9 A | max. 9 A |
| (see derating curve) | (see derating curve) |
| 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| 1.5 A | 1.5 A |
| < 0.5 V | < 0.5 V |
| 0 mA | 0 mA |
| Surge protection | |
| 500 V | |
| 6 kV | 4 kV |
| max. 2 Hz | max. 2 Hz |
| -25°C ... 70°C | |
| 3 x $10^7$ cycles | |
| DIN EN 50178 / EN 60947 | |
| IP20 | |
| optional (observe derating) | |
| Can be aligned with spacing = 20 mm | |
| 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| 22.5 mm / 114.5 mm / 99 mm | |
| Applied for | Applied for |

## Ordering data

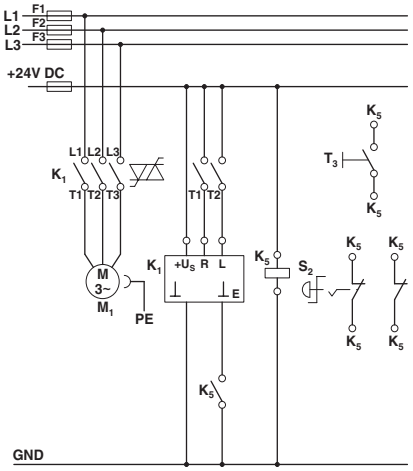
| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **ELR H5-IES-SC- 24DC/500AC-9** | **2900421** | 1 |
| **ELR H5-IES-SC-230AC/500AC-9** | **2900422** | 1 |

**Conventional structure**
Main current path for reversing contactor as per category 3



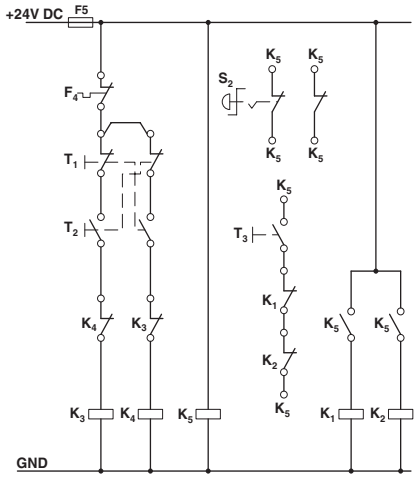

K1 + K2 = Emergency stop contactor
K3 = Left contactor
K4 = Right contactor
F4 = Motor protection relay

**Structure with CONTACTRON**
Main and control current path for "4 in 1" hybrid motor starter with reversing function as per category 3

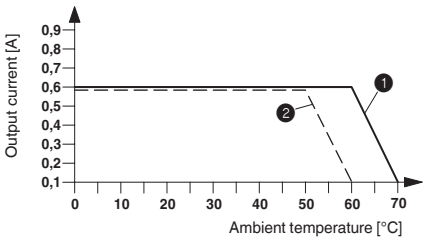



K1 = Hybrid "4 in 1" motor starter with reversing function
K5 = PSR SCP-24DC.../safety relay
T1 = Left, T2 = Right, T3 = Reset
S2 = EMERGENCY STOP

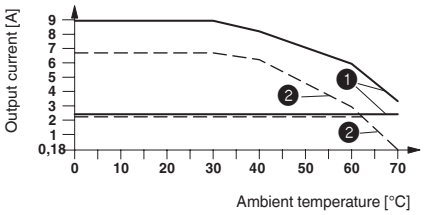
**Conventional structure**
Control current path for reversing contactor as per category 3



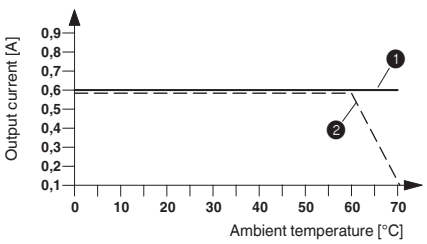

K1 + K2 = Emergency stop contactor
K3 = Left contactor
K4 = Right contactor
K5 = PSR SCP-24DC.../safety relay
T1 = Left, T2 = Right, T3 = Reset
S2 = EMERGENCY STOP
F4 = Motor protection relay



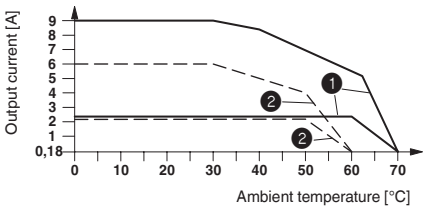

**Derating curve for ELR H5-IES-SC-230AC/500AC-0.6 100% operating time**




**Derating curve for ELR H5-IES-SC- 24DC/500AC-2 and ELR H5-IES-SC-24DC/500AC-9 100% operating time**




**Derating curve for ELR H5-IES-SC- 24DC/500AC-0.6 100% operating time**




**Derating curve for ELR H5-IES-SC-230AC/500AC-2 and ELR H5-IES-SC-230AC/500AC-9 100% operating time**

1 Aligned with > 20 mm spacing
2 Aligned without spacing

## "3 in 1" hybrid motor starter with motor protection and emergency stop

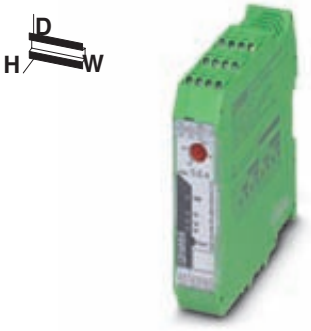
The 22.5 mm wide 3-phase "3 in 1" hybrid motor starters with current monitoring combine three functions in one device: right contactor, motor protection relay, and emergency stop up to category 3.

The devices offer the following advantages

– They save wiring
– Bi-metal function can be set up to 9 A
– Long service life

Safety level according to:

– IEC 61508-1: SIL3
– ISO 13849: PL e





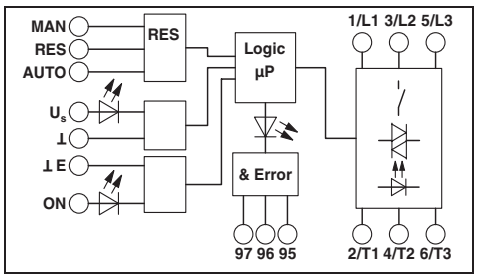

**"3 in 1" hybrid motor starter, for starting 3~ AC motors up to 550 V AC/3 x 0.6 A**

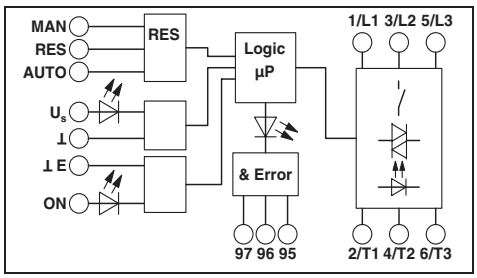
**"3 in 1" hybrid motor starter, for starting 3~ AC motors up to 550 V AC/3 x 2 A**

**Notes:**

Type of housing:
Polyamide PA non-reinforced, color: green.

For marking systems and mounting material, see CLIPLINE catalog




### Technical data

| Input data | ELR H3-IES-SC- 24DC/500AC- | ELR H3-IES-SC-230AC/500AC- |
|---|---|---|
| Rated control supply voltage $U_S$ | 24 V DC | 230 V AC |
| Rated control supply voltage range with reference to $U_S$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated control supply current $I_S$ at $U_S$ | 40 mA | 4 mA |
| Rated actuating voltage $U_C$ ON | 24 V DC | 230 V AC |
| Rated actuating voltage range with reference to $U_C$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated actuating current $I_C$ at $U_C$ | 3 mA | 7 mA |
| Input circuit | Protection against polarity reversal, surge protection | Surge protection |
| Operating voltage / status / error indicator | Green LED / Yellow LED / Red LED | |
| **Output data load side** | | |
| Output voltage range | 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| Load current | max. 600 mA (see derating curve) | max. 600 mA (see derating curve) |
| Surge current | 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| Min. load current | 100 mA | 100 mA |
| Residual voltage | < 0.2 V | < 0.2 V |
| Leakage current | 0 mA | 0 mA |
| Output protection | Surge protection | |
| **General data** | | |
| Rated insulation voltage | 500 V | |
| Rated surge voltage | 6 kV | 4 kV |
| Switching frequency | max. 2 Hz | max. 2 Hz |
| Ambient temperature range | -25°C ... 70°C | |
| Electrical service life | 3 x $10^7$ cycles | |
| Standards/regulations | DIN EN 50178 / EN 60947 | |
| Degree of protection in acc. with IEC 60529 / EN 60529 | IP20 | |
| Mounting position | optional (observe derating) | |
| Mounting | Can be aligned with spacing = 20 mm | |
| Screw connection (solid / stranded / AWG) | 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| Dimensions W / H / D | 22.5 mm / 114.5 mm / 99 mm | |
| **Safety data** | | |
| EC-type examination certificate according to ATEX | Applied for | Applied for |

### Ordering data

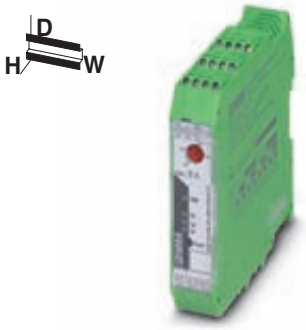
| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **"3 in 1" hybrid motor starter** | | | |
| | **ELR H3-IES-SC- 24DC/500AC-0,6** | **2900566** | 1 |
| | **ELR H3-IES-SC-230AC/500AC-0,6** | **2900689** | 1 |

### Technical data

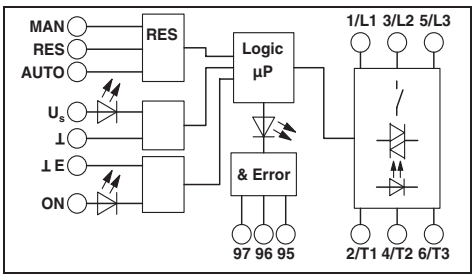
| Input data | ELR H3-IES-SC- 24DC/500AC- | ELR H3-IES-SC-230AC/500AC- |
|---|---|---|
| Rated control supply voltage $U_S$ | 24 V DC | 230 V AC |
| Rated control supply voltage range with reference to $U_S$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated control supply current $I_S$ at $U_S$ | 40 mA | 4 mA |
| Rated actuating voltage $U_C$ ON | 24 V DC | 230 V AC |
| Rated actuating voltage range with reference to $U_C$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated actuating current $I_C$ at $U_C$ | 3 mA | 7 mA |
| Input circuit | Protection against polarity reversal, surge protection | Surge protection |
| Operating voltage / status / error indicator | Green LED / Yellow LED / Red LED | |
| **Output data load side** | | |
| Output voltage range | 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| Load current | max. 2.4 A (see derating curve) | max. 2.4 A (see derating curve) |
| Surge current | 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| Min. load current | 180 mA | 180 mA |
| Residual voltage | < 0.3 V | < 0.3 V |
| Leakage current | 0 mA | 0 mA |
| Output protection | Surge protection | |
| **General data** | | |
| Rated insulation voltage | 500 V | |
| Rated surge voltage | 6 kV | 4 kV |
| Switching frequency | max. 2 Hz | max. 2 Hz |
| Ambient temperature range | -25°C ... 70°C | |
| Electrical service life | 3 x $10^7$ cycles | |
| Standards/regulations | DIN EN 50178 / EN 60947 | |
| Degree of protection in acc. with IEC 60529 / EN 60529 | IP20 | |
| Mounting position | optional (observe derating) | |
| Mounting | Can be aligned with spacing = 20 mm | |
| Screw connection (solid / stranded / AWG) | 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| Dimensions W / H / D | 22.5 mm / 114.5 mm / 99 mm | |
| **Safety data** | | |
| EC-type examination certificate according to ATEX | Applied for | Applied for |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **ELR H3-IES-SC- 24DC/500AC-2** | **2900567** | 1 |
| **ELR H3-IES-SC-230AC/500AC-2** | **2900568** | 1 |



**"3 in 1" hybrid motor starter, for starting 3~ AC motors up to 550 V AC/3 x 9 A**



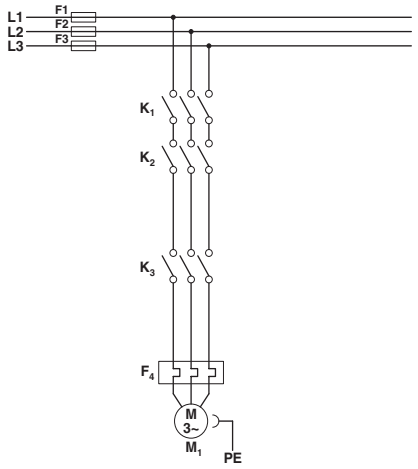

## Technical data

| | |
|---|---|
| ELR H3-IES-SC- 24DC/500AC- | ELR H3-IES-SC-230AC/500AC- |
| 24 V DC | 230 V AC |
| 0.8 ... 1.25 | 0.4 ... 1.1 |
| | |
| 40 mA | 4 mA |
| 24 V DC | 230 V AC |
| 0.8 ... 1.25 | 0.4 ... 1.1 |
| | |
| 3 mA | 7 mA |
| Protection against polarity reversal, surge protection | Surge protection |
| Green LED / Yellow LED / Red LED | |
| | |
| 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| max. 9 A | max. 9 A |
| (see derating curve) | (see derating curve) |
| | |
| 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| 1.5 A | 1.5 A |
| < 0.5 V | < 0.5 V |
| 0 mA | 0 mA |
| Surge protection | |
| | |
| 500 V | |
| 6 kV | 4 kV |
| max. 2 Hz | max. 2 Hz |
| -25°C ... 70°C | |
| 3 x $10^7$ cycles | |
| DIN EN 50178 / EN 60947 | |
| IP20 | |
| optional (observe derating) | |
| Can be aligned with spacing = 20 mm | |
| 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| 22.5 mm / 114.5 mm / 99 mm | |
| | |
| Applied for | Applied for |

## Ordering data

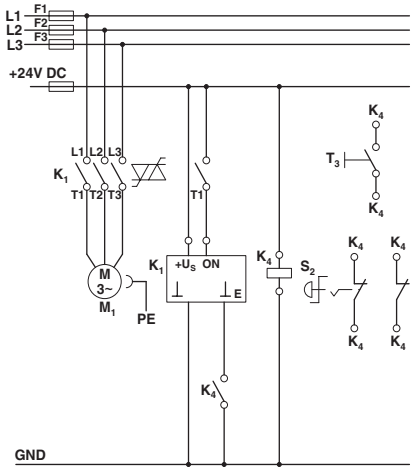
| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **ELR H3-IES-SC- 24DC/500AC-9** | **2900569** | 1 |
| **ELR H3-IES-SC-230AC/500AC-9** | **2900570** | 1 |

**Conventional structure**
Main current path for contactor as per category 3



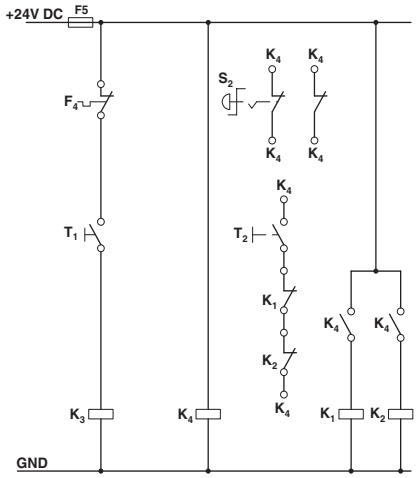

K1 + K2 = Emergency stop contactor
K3 = Right contactor
F4 = Motor protection relay

**Structure with CONTACTRON**
Main and control current path for "3 in 1" hybrid motor starter as per category 3

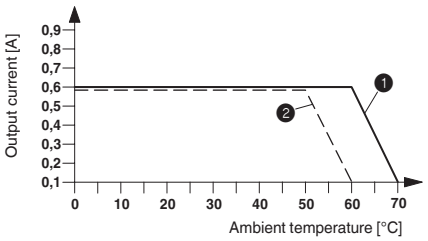



K1 = Hybrid "3 in 1" motor starter
K4 = PSR SCP-24DC.../safety relay
T1 = Right, T3 = Reset
S2 = EMERGENCY STOP

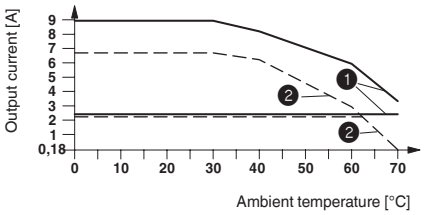
**Conventional structure**
Control current path for contactor as per category 3



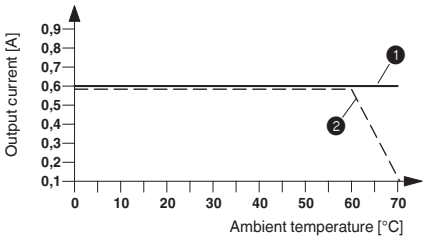

K1 + K2 = Emergency stop contactor
K3 = Right contactor
K4 = PSR SCP-24DC.../safety relay
T1 = Right, T3 = Reset
S2 = EMERGENCY STOP
F4 = Motor protection relay



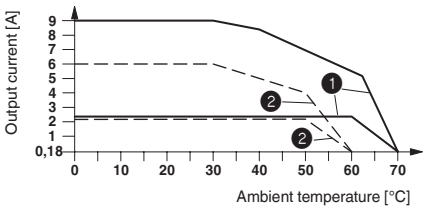

**Derating curve for ELR H3-IES-SC-230AC/500AC-0.6 100% operating time**




**Derating curve for ELR H3-IES-SC- 24DC/500AC-2 and ELR H3-IES-SC-24DC/500AC-9 100% operating time**




**Derating curve for ELR H3-IES-SC-24DC/500AC-0.6 100% operating time**




**Derating curve for ELR H3-IES-SC-230AC/500AC-2 and ELR H3-IES-SC-230AC/500AC-9 100% operating time**

❶ Aligned with > 20 mm spacing
❷ Aligned without spacing

## "2 in 1" hybrid motor starter with reversing function

3-phase hybrid motor starter for reversing three-phase induction motors with integrated locking and load wiring, with a design width of 22.5 mm.

The devices offer the following advantages

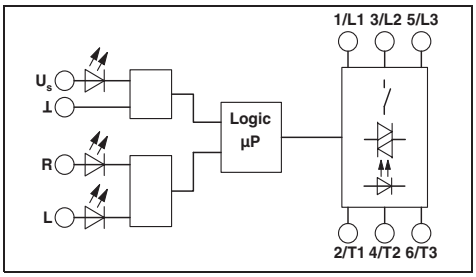
– They save wiring
– Up to 9 A
– Low-wear switching
– Long service life
– Space-saving

**Notes:**

Type of housing:
Polyamide PA non-reinforced, color: green.

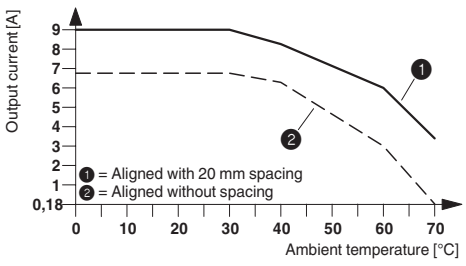
For marking systems and mounting material, see CLIPLINE catalog

**"2 in 1" hybrid motor starter, for reversing 3~ AC motors up to 550 V AC/3 x 9 A**

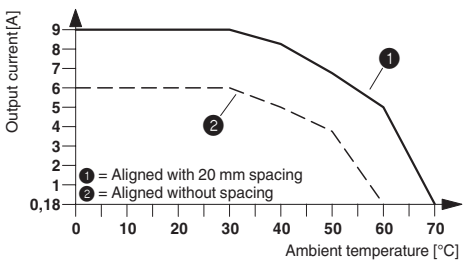



### Technical data

| Input data | ELR H5-SC- 24DC/500AC-9 | ELR H5-SC-230AC/500AC-9 |
|---|---|---|
| Rated control supply voltage $U_S$ | 24 V DC | 230 V AC |
| Rated control supply voltage range with reference to $U_S$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated control supply current $I_S$ at $U_S$ | 40 mA | 4 mA |
| Rated actuating voltage $U_C$ R/L | 24 V DC | 230 V AC |
| Rated actuating voltage range with reference to $U_C$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated actuating current $I_C$ at $U_C$ | 3 mA | 7 mA |
| Input circuit | Protection against polarity reversal, surge protection | Surge protection |
| Operating voltage / status / error indicator | Green LED / Yellow LED / Red LED | |
| **Output data load side** | | |
| Output voltage range | 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| Load current | max. 9 A (see derating curve) | max. 9 A (see derating curve) |
| Surge current | 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| Min. load current | 1.5 A | 1.5 A |
| Residual voltage | < 0.5 V | < 0.5 V |
| Leakage current | 0 mA | 0 mA |
| Output protection | Surge protection | |
| **General data** | | |
| Rated insulation voltage | 500 V | |
| Rated surge voltage | 6 kV | 4 kV |
| Reversing frequency | max. 2 Hz | max. 2 Hz |
| Ambient temperature range | -25°C ... 70°C | |
| Electrical service life | 3 x $10^7$ cycles | |
| Standards/regulations | DIN EN 50178 / EN 60947 | |
| Degree of protection in acc. with IEC 60529 / EN 60529 | IP20 | |
| Mounting position | optional (observe derating) | |
| Mounting | Can be aligned with spacing = 20 mm | |
| Screw connection (solid / stranded / AWG) | 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| Dimensions W / H / D | 22.5 mm / 114.5 mm / 99 mm | |




**Derating curve for ELR H3-SC-24DC/500AC-9 100% operating time**




**Derating curve for ELR H3-SC-230AC/500AC-9 100% operating time**

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **"2 in 1" hybrid motor starter** | | | |
| | **ELR H5-SC- 24DC/500AC-9** | **2900538** | 1 |
| | **ELR H5-SC-230AC/500AC-9** | **2900539** | 1 |

## "1 in 1" hybrid motor starter

3-phase hybrid motor starter for starting three-phase induction motors, with a design width of 22.5 mm.

The devices offer the following advantages

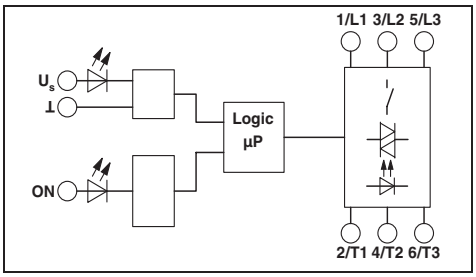
– Low-wear switching
– Up to 9 A
– Long service life
– Space-saving

**Notes:**

Type of housing:
Polyamide PA non-reinforced, color: green.

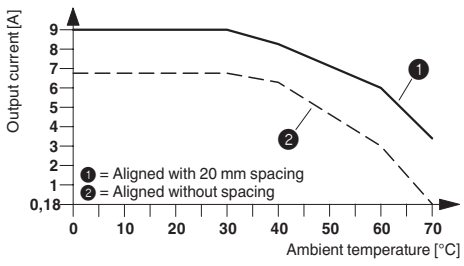
For marking systems and mounting material, see CLIPLINE catalog

**"1 in 1" hybrid motor starter, for starting 3~ AC motors up to 550 V AC/3 x 9 A**

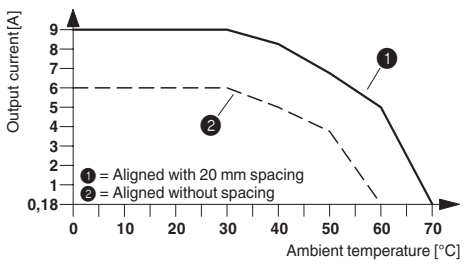



### Technical data

| Input data | ELR H3-SC- 24DC/500AC-9 | ELR H3-SC-230AC/500AC-9 |
|---|---|---|
| Rated control supply voltage $U_S$ | 24 V DC | 230 V AC |
| Rated control supply voltage range with reference to $U_S$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated control supply current $I_S$ at $U_S$ | 40 mA | 4 mA |
| Rated actuating voltage $U_C$ ON | 24 V DC | 230 V AC |
| Rated actuating voltage range with reference to $U_C$ | 0.8 ... 1.25 | 0.4 ... 1.1 |
| Rated actuating current $I_C$ at $U_C$ | 3 mA | 7 mA |
| Input circuit | Protection against polarity reversal,surge protection | Surge protection |
| Operating voltage / status / error indicator | Green LED / Yellow LED / Red LED | |
| **Output data load side** | | |
| Output voltage range | 42 V AC ... 550 V AC | 42 V AC ... 550 V AC |
| Load current | max. 9 A (see derating curve) | max. 9 A (see derating curve) |
| Surge current | 100 A (t = 10 ms) | 100 A (t = 10 ms) |
| Min. load current | 1.5 A | 1.5 A |
| Residual voltage | < 0.5 V | < 0.5 V |
| Leakage current | 0 mA | 0 mA |
| Output protection | Surge protection | |
| **General data** | | |
| Rated insulation voltage | 500 V | |
| Rated surge voltage | 6 kV | 4 kV |
| Switching frequency | max. 2 Hz | max. 2 Hz |
| Ambient temperature range | -25°C ... 70°C | |
| Electrical service life | 3 x $10^7$ cycles | |
| Standards/regulations | DIN EN 50178 / EN 60947 | |
| Degree of protection in acc. with IEC 60529 / EN 60529 | IP20 | |
| Mounting position | optional (observe derating) | |
| Mounting | Can be aligned with spacing = 20 mm | |
| Screw connection (solid / stranded / AWG) | 0.14 - 2.5 $mm^2$ / 0.14 - 2.5 $mm^2$ / 26 - 12 | |
| Dimensions W / H / D | 22.5 mm / 114.5 mm / 99 mm | |




**Derating curve for ELR H5-SC-24DC/500AC-9 100% operating time**




**Derating curve for ELR H5-SC-230AC/500AC-9 100% operating time**

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **"1 in 1" hybrid motor starter** | | | |
| | **ELR H3-SC- 24DC/500AC-9** | **2900530** | 1 |
| | **ELR H3-SC-230AC/500AC-9** | **2900531** | 1 |

## CONTACTRON bridge

The flexible CONTACTRON loop bridge (BRIDGE-…) simplifies the supply and looping through of phases L1, L2, and L3. It is available in 2 to 10-way versions for modules in the CONTACTRON family with 22.5 mm housing width.

Features of the 3-phase loop bridge:

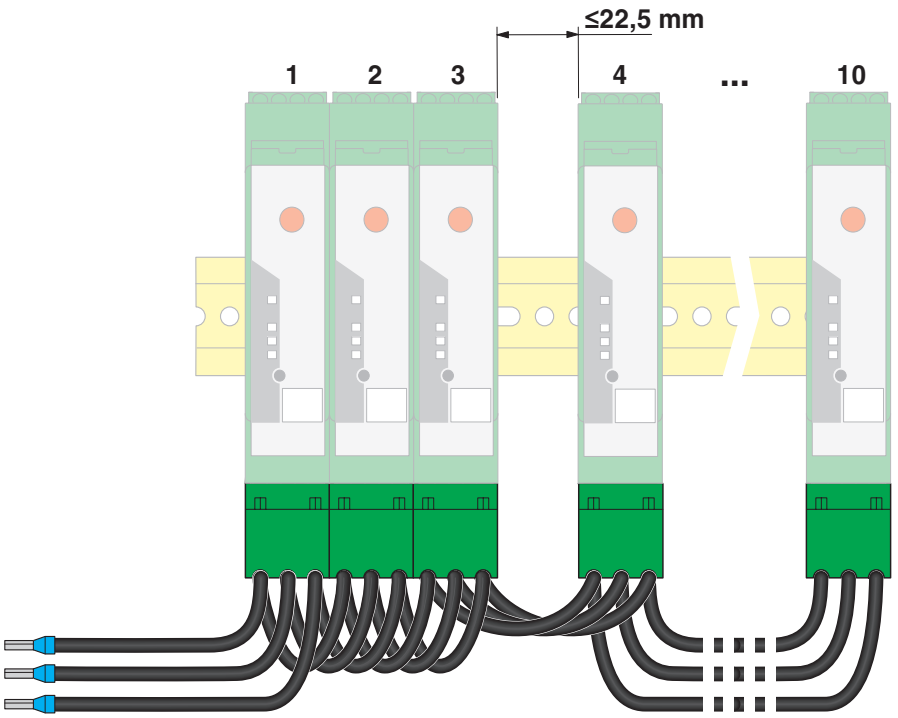
– Saves considerable wiring
– Suitable for CONTACTRON series
  - ELR H3…
  - ELR H5…
  - ELR (W)3…
  - EMM…IFS
– Bridging of 2 to 10 devices with maximum module spacing of 22.5 mm
– Up to 575 V AC/3 x 25 A
– Connecting cables with ferrules
– Additional bridge versions available on request

### Technical data

| | |
|---|---|
| General data | |
| Nominal voltage $U_N$ | 575 V AC |
| Nominal current at $U_N$ | 25 A |
| Cross-section | 2.5 mm² |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **3-phase loop bridge** | | | |
| 2-way | **BRIDGE- 2** | **2900746** | 1 |
| 3-way | **BRIDGE- 3** | **2900747** | 1 |
| 4-way | **BRIDGE- 4** | **2900748** | 1 |
| 5-way | **BRIDGE- 5** | **2900749** | 1 |
| 6-way | **BRIDGE- 6** | **2900750** | 1 |
| 7-way | **BRIDGE- 7** | **2900751** | 1 |
| 8-way | **BRIDGE- 8** | **2900752** | 1 |
| 9-way | **BRIDGE- 9** | **2900753** | 1 |
| 10-way | **BRIDGE-10** | **2900754** | 1 |



## VIP – VARIOFACE Professional front adapters for SIMATIC S7-300

### Three connection options are available:

– Transfer of max. 32 channels via two 50-pos. system cables (32-channel cards or this design)
– Transfer of 4 x 8 channels via two 14-pos. system cables (32-channel cards or this design)
– Transfer of 2 x 8 channels via two 14-pos. system cables (16-channel cards or this design)

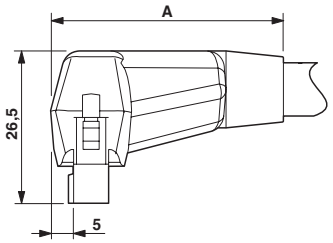
### The front adapters have the following features:

– Can be screwed with I/O module
– Voltage supply via terminal blocks with spring-cage double connection
– Encapsulated socket strips for module side
Special lengths can be configured using separate order numbers.

### Ordering example:

A front adapter with a connected 50-pos. system cable (32-channel cards), 12.75 m in length:

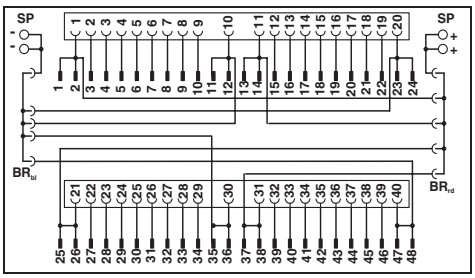
**1 pcs. 2900885/12,75**




| | A |
|---|---|
| ...FLK14... | 37 |
| ...FLK50... | 42 |

**Front adapter with system cable 1 x 32 channels can be connected**

Applied for: CUL




### Technical data

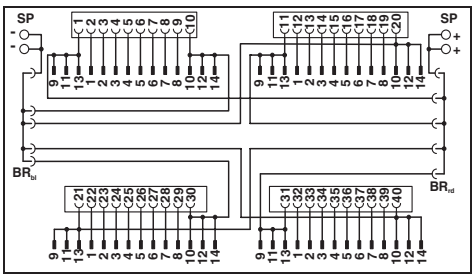
| | | |
|---|---|---|
| Max. perm. operating voltage | | < 50 V AC / 60 V DC |
| Max. perm. current carrying capacity per path | | 1 A (per path) |
| Max. perm. current (separate power supply) | | 8 A |
| Rated surge voltage | | 0.8 kV |
| Max. conductor resistance | | 0.16 Ω/m |
| Conductor cross-section | | AWG 26 / 0.14 mm² |
| Conductor structure: stranded wires / material | | 7 / Cu tin-plated |
| Outside diameter | | 10.3 mm |
| Ambient temperature range | | -20°C ... 50°C |
| Standards/regulations | | IEC 60664, IEC 62103, DIN EN 50178 |
| Connection method | Front adapter | Can be plugged onto 40-pos. I/O modules / separate power supply through terminal blocks with spring-cage double connection |
| | System cable | Flat-ribbon cable connector in acc. with IEC 60603-13 |
| Connection data (solid / stranded / AWG) | | 0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14 |

### Ordering data

| Description | Cable length | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **VIP VARIOFACE front adapter,** with connected system cables for SIMATIC S7 300 | | | | |
| | 0.5 m | **VIP-PA-FLK50 / 0,5M/S7** | **2322443** | 1 |
| | 1 m | **VIP-PA-FLK50 / 1,0M/S7** | **2322456** | 1 |
| | 1.5 m | **VIP-PA-FLK50 / 1,5M/S7** | **2322469** | 1 |
| | 2 m | **VIP-PA-FLK50 / 2,0M/S7** | **2321800** | 1 |
| | 2.5 m | **VIP-PA-FLK50 / 2,5M/S7** | **2322472** | 1 |
| | 3 m | **VIP-PA-FLK50 / 3,0M/S7** | **2322485** | 1 |
| | 4 m | **VIP-PA-FLK50 / 4,0M/S7** | **2322498** | 1 |
| | 5 m | **VIP-PA-FLK50 / 5,0M/S7** | **2322508** | 1 |
| | 6 m | **VIP-PA-FLK50 / 6,0M/S7** | **2322511** | 1 |
| | 7 m | **VIP-PA-FLK50 / 7,0M/S7** | **2322524** | 1 |
| | 8 m | **VIP-PA-FLK50 / 8,0M/S7** | **2322537** | 1 |
| | 10 m | **VIP-PA-FLK50/10,0M/S7** | **2322540** | 1 |
| **VIP VARIOFACE front adapter,** as above, in variable lengths | | **VIP-PA-FLK50-S7/ ...** | **2900885** | 1 |

**Front adapter with system cable**
**4 x 8 channels can be connected**

Applied for: CUL




## Technical data

< 50 V AC / 60 V DC
1 A (per path)
8 A

0.8 kV
0.16 Ω/m
AWG 26 / 0.14 mm²
7 / Cu tin-plated
6.4 mm
-20°C ... 50°C
IEC 60664, IEC 62103, DIN EN 50178
Can be plugged onto 40-pos. I/O modules / separate power supply through terminal blocks with spring-cage double connection

Flat-ribbon cable connector in acc. with IEC 60603-13

0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14

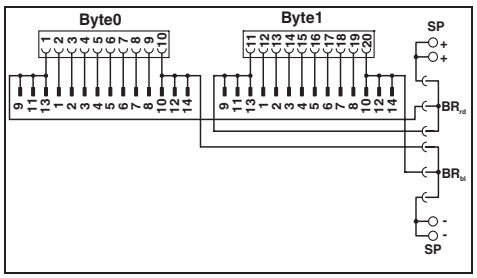
## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| VIP-PA-FLK50/4X14 / 0,5M/S7 | 2322553 | 1 |
| VIP-PA-FLK50/4X14 / 1,0M/S7 | 2322566 | 1 |
| VIP-PA-FLK50/4X14 / 1,5M/S7 | 2322579 | 1 |
| VIP-PA-FLK50/4X14 / 2,0M/S7 | 2321910 | 1 |
| VIP-PA-FLK50/4X14 / 2,5M/S7 | 2322582 | 1 |
| VIP-PA-FLK50/4X14 / 3,0M/S7 | 2322595 | 1 |
| VIP-PA-FLK50/4X14 / 4,0M/S7 | 2322605 | 1 |
| VIP-PA-FLK50/4X14 / 5,0M/S7 | 2322618 | 1 |
| VIP-PA-FLK50/4X14 / 6,0M/S7 | 2322621 | 1 |
| VIP-PA-FLK50/4X14 / 7,0M/S7 | 2322634 | 1 |
| VIP-PA-FLK50/4X14 / 8,0M/S7 | 2322647 | 1 |
| VIP-PA-FLK50/4X14/10,0M/S7 | 2322650 | 1 |
| VIP-PA-FLK50-4X14-S7/ ... | 2900886 | 1 |



**Front adapter with system cable**
**2 x 8 channels can be connected**

Applied for: CUL




## Technical data

< 50 V AC / 60 V DC
1 A (per path)
8 A

0.8 kV
0.16 Ω/m
AWG 26 / 0.14 mm²
7 / Cu tin-plated
6.4 mm
-20°C ... 50°C
IEC 60664, IEC 62103, DIN EN 50178
Can be plugged onto 20-pos. I/O modules / separate power supply through terminal blocks with spring-cage double connection

Flat-ribbon cable connector in acc. with IEC 60603-13

0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| VIP-PA-FLK14 / 0,5M/S7 | 2322663 | 1 |
| VIP-PA-FLK14 / 1,0M/S7 | 2322676 | 1 |
| VIP-PA-FLK14 / 1,5M/S7 | 2322689 | 1 |
| VIP-PA-FLK14 / 2,0M/S7 | 2321790 | 1 |
| VIP-PA-FLK14 / 2,5M/S7 | 2322692 | 1 |
| VIP-PA-FLK14 / 3,0M/S7 | 2322702 | 1 |
| VIP-PA-FLK14 / 4,0M/S7 | 2322715 | 1 |
| VIP-PA-FLK14 / 5,0M/S7 | 2322728 | 1 |
| VIP-PA-FLK14 / 6,0M/S7 | 2322731 | 1 |
| VIP-PA-FLK14 / 7,0M/S7 | 2322744 | 1 |
| VIP-PA-FLK14 / 8,0M/S7 | 2322757 | 1 |
| VIP-PA-FLK14/10,0M/S7 | 2322760 | 1 |
| VIP-PA-FLK14-S7/ ... | 2900887 | 1 |

**Front adapters for 32-channel cards of the SIMATIC® S7-300**

| Card type | VIP-PA-FLK50/...M/S7 |
|---|---|
| Digital input | 6ES7 321-1BL00-0AA0 |
| Digital output | 6ES7 322-1BL00-0AA0 |
| Digital input/output | 6ES7 323-1BL00-0AA0 |
| Analog input | 6ES7 331-7PF01-0AB0*<br>6ES7 331-7PF11-0AB0*<br>6ES7 331-7NF00-0AB0*<br>6ES7 331-7NF10-0AB0*<br>6ES7 331-1KF01-0AB0* |
| Analog output | 6ES7 332-5HF00-0AB0* |
| CPU | 312C<br>313C<br>314C |
| Other modules | 6ES7 350-2AH01-0AE0*<br>6ES7 357-4AH01-0AE0* |

| Card type | VIP-PA-FLK50/4X14/...M/S7 |
|---|---|
| Digital input | 6ES7 321-1BL00-0AA0 |
| Digital output | 6ES7 322-1BL00-0AA0 |
| Digital input/output | 6ES7 323-1BL00-0AA0 |
| CPU | 313C<br>314C |

* Only in connection with
VIP-2/SC/FLK50 (1-40)/S7, Order No.: 2315243,
UM 45-FLK50/ZFKDS/S7-300, Order No.: 2968111,
FLKM 50/KDS3-MT/PPA/S7-300, Order No.: 2304490.
All bridges (BR) on the adapter must be disconnected.

**Front adapters for 16-channel cards of the SIMATIC® S7-300**

| Card type | VIP-PA-FLK14/...M/S7 |
|---|---|
| Digital input | 6ES7 321-1BH02-0AA0<br>6ES7 321-1BH10-0AA0<br>6ES7 321-1BH50-0AA0*<br>6ES7 321-7BH01-0AB0* |
| Digital output | 6ES7 322-1BH01-0AA0<br>6ES7 322-1BH10-0AA0<br>6ES7 322-8BF00-0AB0* |
| Digital input/output | 6ES7 323-1BH01-0AA0 |
| Analog input | 6ES7 331-7KF02-0AB0*<br>6ES7 331-7HF01-0AB0*<br>6ES7 331-7KB02-0AB0*<br>6ES7 331-7TF01-0AB0* |
| Analog output | 6ES7 332-5HD01-0AB0*<br>6ES7 332-5HB01-0AB0*<br>6ES7 332-7ND02-0AB0* |
| Analog input/output | 6ES7 334-0CE01-0AA0*<br>6ES7 334-0KE00-0AB0*<br>6ES7 335-7HG01-0AB0* |
| Other modules | 6ES7 338-4BC01-0AB0*<br>6ES7 350-1AH03-0AE0*<br>6ES7 351-1AH01-0AE0*<br>6ES7 352-1AH01-0AE0*<br>6ES7 353-1AH01-0AE0*<br>6ES7 354-1AH01-0AE0*<br>6ES7 355-0VH10-0AE0*<br>6ES7 355-1VH10-0AE0* |

* Only in connection with
VIP-2/SC/2FLK14 (1-20)S7, Order No.: 2315230
UM 45-2FLK14/ZFKDS/S7, Order No.: 2965156
FLKM-2FLK14/KDS 3-MT/PPA/S7, Order No.: 2295062
All bridges (BR) on the adapter must be disconnected.

**Note:**
The front adapters are delivered non-isolated.
By removing the bridges, electrical isolation (in groups of 8) can be obtained.

**Explanation:**
Flat-ribbon cable strip
Connection to I/O card

SP: Separate power terminals
$BR_{bl}$: Plug-in bridge, blue
$BR_{rd}$: Plug-in bridge, red

## Honeywell C300, Series C I/O front adapters

The front adapters mean that pre-assembled system cables can be directly connected to I/O modules.

### FLKM-PA-D37/HW/C300
– Front adapter with D-SUB connector
– Connection of a maximum of 16 digital channels
– Connection via suitable VARIOFACE modules and D-SUB system cable

### FLKM-PA-D37/HW/AN/C300
– Front adapter with D-SUB connector
– Connection of analog modules
– Connection via suitable VARIOFACE modules and D-SUB system cable

### FLKM 50-PA-HW/C300
– Front adapter with flat-ribbon cable connector (FLK)
– Connection of a maximum of 16 channels
– Connection via suitable VARIOFACE modules and FLK system cable

Honeywell C300 front adapter

### Technical data

| | |
|---|---|
| Max. perm. operating voltage | < 50 V AC / 60 V DC |
| Max. permissible current | 1 A (per path)<br>4 A (Per connection, supply via separate power supply) |
| Ambient temperature (operation) | -20°C ... 50°C |
| Ambient temperature (storage/transport) | -20°C ... 70°C |
| Mounting position | Any |
| Standards/regulations | IEC 60664 / DIN EN 50178 / IEC 62103 |

### Ordering data

| Description | No. of pos. | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|---|
| **VARIOFACE front adapter** for Series C I/O, | | | | |
| With D-SUB pin strip for digital I/O modules | 37 | **FLKM-PA-D37/HW/C300** | **2322029** | 1 |
| With D-SUB pin strip for analog I/O modules | 37 | **FLKM-PA-D37/HW/AN/C300** | **2900622** | 1 |
| With FLK pin strip for digital and analog I/O modules | 50 | **FLKM 50-PA-HW/C300** | **2322016** | 1 |

**Front adapter for I/O modules of Series C300, Series C I/O**

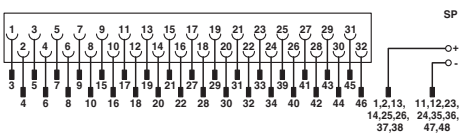
| Card type | FLKM-PA-D37/HW/C300 |
|---|---|
| Digital input | TDIL 01*<br>TDIL 11* |
| Digital output | TDOB 01*<br>TDOB 11* |

| Card type | FLKM-PA-D37/HW/AN/C300 |
|---|---|
| Analog input | TAIX 01**<br>TAIX 11** |
| Analog output | TAOX 01**<br>TAOX 11** |

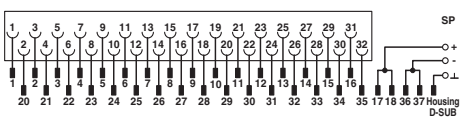
| Card type | FLKM 50-PA-HW/C300 |
|---|---|
| Digital input | TDIL 01*<br>TDIL 11* |
| Digital output | TDOB 01*<br>TDOB 11* |
| Analog input | TAIX 01<br>TAIX 11 |
| Analog input | TAOX 01<br>TAOX 01 |

* Two front adapters are needed for each module.

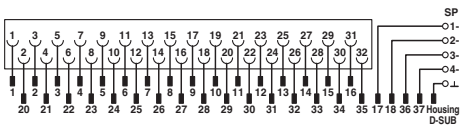
** For three-conductor operation (channels 13 - 16) of input modules: only in connection with VIP-3/SC/D37SUB/M/HW/C300, Order No. 2900675




Connection scheme: FLKM 50-PA-HW/C300




Connection scheme: FLKM-PA-D37/HW/C300




Connection scheme: FLKM-PA-D37/HW/AN/C300

**Explanation:**
Connector
Connection to I/O card
Screw terminal blocks for separate supply

## Honeywell C300, Series C I/O interface modules

These VARIOFACE modules are used in combination with the respective front adapters.

### VIP-2/SC/D37SUB/M

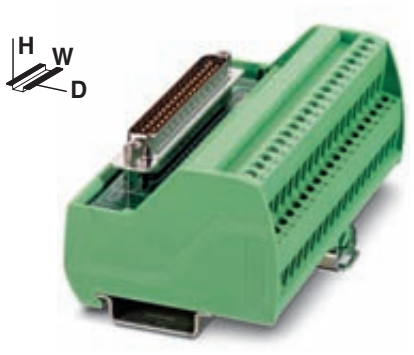
– In conjunction with FLKM-PA-D37/HW/C300 or FLKM-PA-D37/HW/AN/C300 front adapter
– Universal module
– Field connection via double-level terminal blocks

### VIP-2/SC/D37SUB/M/SO

– In conjunction with FLKM-PA-D37/HW/C300 or FLKM-PA-D37/HW/AN/C300 front adapter
– System-specific labeling
– Field connection via double-level terminal blocks

### VIP-2/SC/D37SUB/M/SO

– In conjunction with FLKM-PA-D37/HW/AN/C300 front adapter
– System-specific labeling
– For TAIX01, TAIX11 analog input modules
– Field connection via three-level terminal blocks



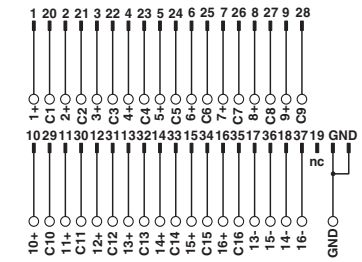

**37-pos.
with screw connection**

### Technical data

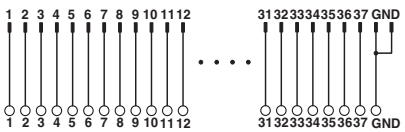
| | VIP-2/SC ... | VIP-3/SC ... C300 |
|---|---|---|
| Max. perm. operating voltage | 125 V AC/DC | 24 V DC |
| Max. perm. current (per branch) | 2 A | 2 A |
| Ambient temperature range | -20°C ... 50°C | -20°C ... 50°C |
| Mounting position | Any | Any |
| Standards/regulations | DIN EN 50178, | |
| Connection method | Screw connection | Screw connection |
| PCB connection | Male connector; | Male connector; |
| D-SUB connection | 4-40 UNC thread | 4-40 UNC thread |
| Connection data (solid / stranded / AWG) | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 | |
| Dimensions H / D | 65.5 mm / 45.5 mm | |

### Ordering data

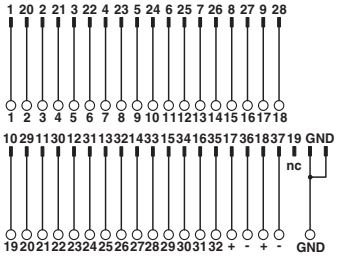
| Description | No. of pos. | Module width W | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|---|---|
| **VARIOFACE interface modules with D-SUB pin strip,** | | | | | |
| With universal labeling | 37 | 101 mm | **VIP-2/SC/D37SUB/M** | **2900676** | 1 |
| With system specific labeling | 37 | 88 mm | **VIP-2/SC/D37SUB/M/SO** | **2900786** | 1 |
| For analog input modules | 37 | 88 mm | **VIP-3/SC/D37SUB/M/HW/C300** | **2900675** | 1 |




**Connection scheme: VIP-3/SC/D37SUB/M/HW/C300**




**Connection scheme: VIP-2/SC/D37SUB/M**




**Connection scheme: VIP-2/SC/D37SUB/M/SO**

## GE Fanuc/RX3i
## Front adapters

The front adapters mean that pre-assembled system cables can be directly connected to I/O modules.

– Transfer of max. 32 channels over one 50-pos. system cable
– Can be plugged onto I/O modules
– Connection via suitable VARIOFACE termination boards

RX3i front adapter

### Technical data

| | |
|---|---|
| Max. perm. operating voltage | < 50 V AC / 60 V DC |
| Max. permissible current | 1 A (per path)<br>8 A (Per connection, supply via separate power supply) |
| Ambient temperature (operation) | -20°C ... 50°C |
| Ambient temperature (storage/transport) | -20°C ... 70°C |
| Mounting position | Any |
| Standards/regulations | IEC 60664 / DIN EN 50178 / IEC 62103 |

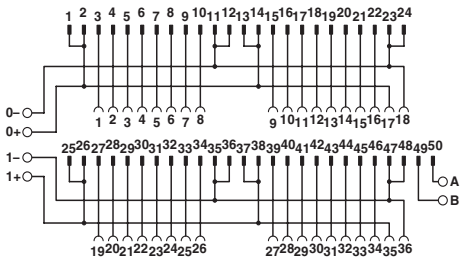
### Ordering data

| Description | No. of pos. | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|---|
| **VARIOFACE front adapter**, for PACSystems RX3i, | | | | |
| For digital output and analog modules | 50 | **FLKM 50-PA-GE/TKFC/RXI** | **2321473** | 1 |
| For digital input modules | 50 | **FLKM 50-PA-GE/TKFC/RXI/IN** | **2321486** | 1 |

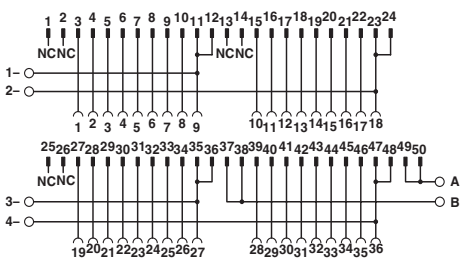
**Front adapter for I/O modules of RX3i series**

| Card type | FLKM 50-PA/GE/TKFC/RXI |
|---|---|
| **Digital output** | IC 694 MDL 754 |
| **Analog** | IC 695 ALG 608*<br>IC 695 ALG 616*<br>IC 695 ALG 626*<br>IC 695 ALG 629*<br>IC 695 ALG 704*<br>IC 695 ALG 708*<br>IC 695 ALG 728* |

| Card type | FLKM 50-PA/GE/TKFC/RXI/IN |
|---|---|
| **Digital input** | IC 694 MDL 660 |




Connection scheme: FLKM 50-PA-GE/TKFC/RXI




Connection scheme: FLKM 50-PA-GE/TKFC/RXI/IN

* Only in connection with VIP-3/SC/FLK50, Order No. 2315081. No voltage may be supplied through the slip-on connections on the front adapter.

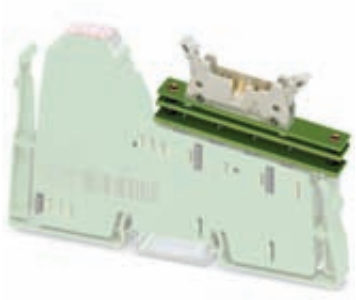
**Explanation:**
Flat-ribbon cable strip
Connection to I/O card
Screw terminal blocks for separate supply

## Phoenix Contact Inline Front adapters

The front adapters mean that pre-assembled system cables can be connected directly to Inline. The front adapters are simply plugged onto the relevant Inline modules.

– Transfer of 8 channels via a 14-pos. system cable
– IB IL 24 DI8/HD-PAC and IB IL 24 DO8/HD-PAC can be connected

Perfectly-fitting VARIOFACE termination boards round off this system concept.



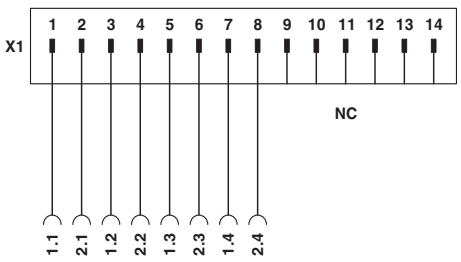
**Front adapters for Inline**

### Technical data

| | |
|---|---|
| Max. perm. operating voltage | < 50 V DC |
| Max. permissible current | 1 A (per path) |
| Ambient temperature (operation) | -20°C ... 50°C |
| Ambient temperature (storage/transport) | -20°C ... 70°C |
| Mounting position | Any |
| Standards/regulations | IEC 60664 / DIN EN 50178 / IEC 62103 |

### Ordering data

| Description | No. of pos. | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|---|
| **VARIOFACE front adapter,** for 8-channel Inline modules<br>Input: IB IL 24 DI/HD-PAC<br>Output: IB IL 24 DO8/HD-PAC | | **FLKM 14-PA-INLINE/DIO8** | **2900889** | 1 |




**Connection scheme: FLKM 14-PA-INLINE/DIO8**

**Explanation:**
Flat-ribbon cable strip
Connection to I/O card
Screw terminal blocks for separate supply

## Output modules with relays, 1 PDT with detectable manual operation

These VARIOFACE output modules are used in combination with the respective front adapters.

The modules are connected via 14 or 50-pos. system cable. These relay modules offer the following features:

– Plug-in miniature relays each with a PDT contact and detectable manual operation
– Slim design width of just 92 mm (8 channels) or 285 mm (32 channels)
– LED status indicator and free-wheeling diode per signal path (integrated in relay)
– Supply voltage indicator (LED)

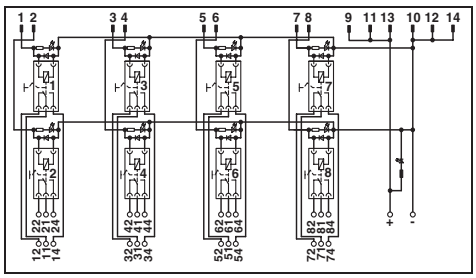
**Output module with 8 miniature relays, 1 PDT with detectable manual operation**

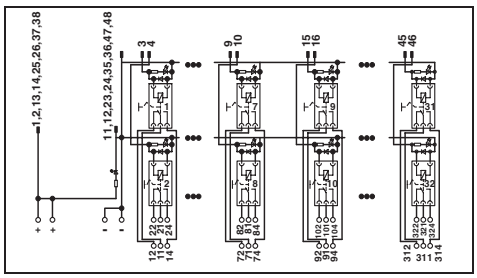
**Output module with 32 miniature relays, 1 PDT with detectable manual operation**

**Notes:**

Type of insulation housing:
Terminal blocks: Polyamide PA, non-reinforced, color: green.
Housing: PA, color: green

For marking systems and mounting material, see CLIPLINE catalog




### Technical data

| | | | |
|---|---|---|---|
| Coil side | | | |
| Operating voltage $U_N$ | | 24 V DC | 24 V DC |
| Typ. input current at $U_N$ | | 18 mA | 18 mA |
| Typ. response time at $U_N$ | | 9 ms | 9 ms |
| Typ. release time at $U_N$ | | 6 ms | 6 ms |
| Input circuit | | Free-wheeling diode (integrated in relay) | Free-wheeling diode (integrated in relay) |
| Status display/channel | | Yellow LED (integrated in relay) | Yellow LED (integrated in relay) |
| Type of connection | | Flat-ribbon cable connector in acc. with IEC 60603-13 | Flat-ribbon cable connector in acc. with IEC 60603-13 |
| No. of pos. | | 14 | 50 |
| Contact side | | | |
| Contact type | | Single contact, 1 PDT | Single contact, 1 PDT |
| Contact material | | AgNi | AgNi |
| Max. switching voltage | | 250 V AC/DC | 250 V AC/DC |
| Min. switching voltage | | 12 V AC/DC | 12 V AC/DC |
| Limiting continuous current | | 5 A | 5 A |
| Min. switching current | | 100 mA | 100 mA |
| Max. interrupting rating: | 24 V DC | 120 W | 120 W |
| | 48 V DC | 62 W | 62 W |
| | 60 V DC | 42 W | 42 W |
| | 110 V DC | 55 W | 55 W |
| | 220 V DC | 66 W | 66 W |
| | 250 V AC | 1250 VA | 1250 VA |
| Type of connection | | Screw connection | Screw connection |
| Connection data (solid / stranded / AWG) | | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 |
| General data | | | |
| Rated surge voltage | | 4 kV | 4 kV |
| Ambient temperature range | | -20°C ... 50°C | -20°C ... 50°C |
| Nominal operating mode | | 100% operating factor | 100% operating factor |
| Mechanical service life | | 5 x $10^6$ cycles | 5 x $10^6$ cycles |
| Standards/regulations | | DIN EN 50178 | DIN EN 50178 |
| Mounting position | | Any | Any |
| Mounting | | In rows with zero spacing | In rows with zero spacing |
| Dimensions | H / D | 64 mm / 111 mm | 64 mm / 111 mm |

### Ordering data

| Description | Module width W | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **VARIOFACE output module,** with 8 miniature relays, plugged in, for 24 V DC (including relays) | 92 | **UM- 8RM/KSR-G24/21/MS/PLC** | **2900890** | 1 |
| **VARIOFACE output module,** with 32 miniature relays, plugged in, for 24 V DC (including relays) | 285 | **UM-32RM/KSR-G24/21/MS/PLC** | **2900891** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plug-in miniature relay with manual test function**, with power contact | **REL-MR- 24DC/21HC/MS** | **2987888** | 10 |

### Technical data

### Ordering data

### Accessories

| | | | |
|---|---|---|---|
| **REL-MR- 24DC/21HC/MS** | **2987888** | 10 |

## Output modules with relays, 1 PDT with or without manual operation and fuses

These VARIOFACE output modules are used in combination with the respective front adapters.

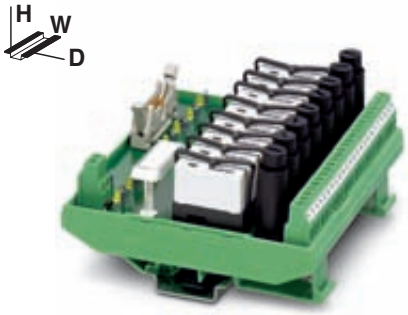
The modules are connected via 14-pos. system cable. These relay modules offer the following features:

– Plug-in miniature relays each with a PDT contact with or without manual operation
– Fuse per output circuit as short-circuit protection
– Slim design width of just 127 mm
– LED status indicator and free-wheeling diode per signal path
– Supply voltage indicator (LED)
– Protection against polarity reversal diode

**Notes:**

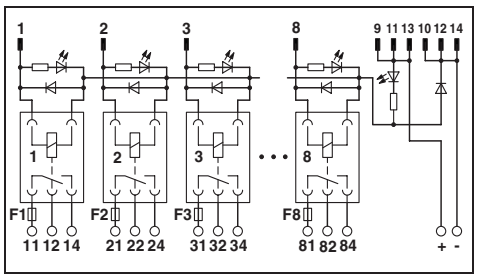
Type of insulation housing:
Terminal blocks: Polyamide PA, non-reinforced, color: green.
Housing: PA, color: green

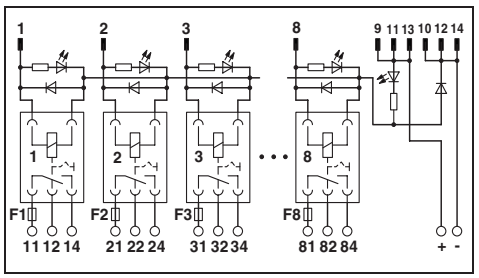
For marking systems and mounting material, see CLIPLINE catalog




**Output module with 8 miniature relays, 1 PDT and fuse per output circuit**

**Output module with 8 miniature relays, 1 PDT with detectable manual operation and fuse per output circuit**




### Technical data

| | | | |
|---|---|---|---|
| **Coil side** | | | |
| Operating voltage $U_N$ | | 24 V DC | 24 V DC |
| Typ. input current at $U_N$ | | 17 mA | 18 mA |
| Typ. response time at $U_N$ | | 8 ms | 9 ms |
| Typ. release time at $U_N$ | | 10 ms | 6 ms |
| Input circuit | | Free-wheeling diode | Free-wheeling diode (integrated in relay) |
| Status display/channel | | Yellow LED | Yellow LED (integrated in relay) |
| Type of connection | | Flat-ribbon cable connector in acc. with IEC 60603-13 | Flat-ribbon cable connector in acc. with IEC 60603-13 |
| No. of pos. | | 14 | 14 |
| **Contact side** | | | |
| Contact type | | Single contact, 1 PDT | Single contact, 1 PDT |
| Contact material | | AgNi | AgNi |
| Max. switching voltage | | 250 V AC/DC | 250 V AC/DC |
| Min. switching voltage | | 12 V AC/DC | 12 V AC/DC |
| Output fuse | | 4 A 5x20 fuse (slow-blow) | 4 A 5x20 fuse (slow-blow) |
| Limiting continuous current | | 3.9 A (observe derating) | 3.9 A (observe derating) |
| Min. switching current | | 100 mA | 100 mA |
| Max. interrupting rating: | 24 V DC | 93 W | 93 W |
| | 48 V DC | 62 W | 62 W |
| | 60 V DC | 42 W | 42 W |
| | 110 V DC | 55 W | 55 W |
| | 220 V DC | 66 W | 66 W |
| | 250 V AC | 975 VA | 975 VA |
| Type of connection | | Screw connection | Screw connection |
| Connection data (solid / stranded / AWG) | | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 12 |
| **General data** | | | |
| Rated surge voltage | | 4 kV | 4 kV |
| Ambient temperature range | | -20°C ... 50°C | -20°C ... 50°C |
| Nominal operating mode | | 100% operating factor | 100% operating factor |
| Mechanical service life | | 3 x $10^7$ cycles | 5 x $10^6$ cycles |
| Standards/regulations | | DIN EN 50178 | DIN EN 50178 |
| Mounting position | | Any | Any |
| Mounting | | In rows with zero spacing | In rows with zero spacing |
| Dimensions | H / D | 60 mm / 111 mm | 64 mm / 111 mm |

### Ordering data

| Description | Module width W | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|
| **VARIOFACE output module,** with 8 miniature relays, plugged in, for 24 V DC (including relays) | 127 | UM- 8RM/KSR-G24/21/SI/PLC | 2900892 | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plug-in miniature relay**, with power contact | REL-MR- 24DC/21HC | 2961312 | 10 |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| UM- 8RM/KSR-G24/21/MS/SI/PLC | 2900893 | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Plug-in miniature relay**, with power contact | REL-MR- 24DC/21HC/MS | 2987888 | 10 |

## System cable with D-SUB female connector or pin strip and one open end

- 1:1 connection
- D-SUB female connector or pin strip at one end
- Connector according to IEC 60807-2/DIN 41652
- Gland: 2 UNC 4-40 screws
- Open end at the other end
- Individual wire marking: 1, 2, 3, 4, etc.
- Individual wires fitted with ferrules
- Shield connection: H05V-K 1 mm² cable, black, 0.5 m in length

**Female connector at one end and open end at the other end**

**Pin strip at one end and open end at the other end**

| | | Technical data | Technical data |
|---|---|---|---|
| Max. perm. operating voltage | | 125 V AC/DC | 125 V AC/DC |
| Max. perm. current carrying capacity per path | | 2 A | 2 A |
| Max. conductor resistance | | 0.09 Ω/m | 0.09 Ω/m |
| Ambient temperature range | | -20°C ... 50°C | -20°C ... 50°C |
| Shield | | Tinned copper-braided shield, approx. 85% covering | Tinned copper-braided shield, approx. 85% covering |
| Insertion/withdrawal cycles | | > 200 | > 200 |
| Conductor cross-section | | 24 AWG/0.25 mm² | 24 AWG/0.25 mm² |
| Outside diameter | | | |
| | 9-pos. | 7.5 mm | 7.5 mm |
| | 15-pos. | 9 mm | 9 mm |
| | 25-pos. | 10.5 mm | 10.5 mm |

| | | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|---|
| Description | No. of pos. | Cable length | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Round cable** with an open end | | | | | | | | |
| | 9 | 0.5 m | CABLE-D- 9SUB/F/OE/0,25/S/0,5M | 2926014 | 1 | CABLE-D- 9SUB/M/OE/0,25/S/0,5M | 2926360 | 1 |
| | 9 | 1 m | CABLE-D- 9SUB/F/OE/0,25/S/1,0M | 2926027 | 1 | CABLE-D- 9SUB/M/OE/0,25/S/1,0M | 2926373 | 1 |
| | 9 | 1.5 m | CABLE-D- 9SUB/F/OE/0,25/S/1,5M | 2926030 | 1 | CABLE-D- 9SUB/M/OE/0,25/S/1,5M | 2926386 | 1 |
| | 9 | 2 m | CABLE-D- 9SUB/F/OE/0,25/S/2,0M | 2926043 | 1 | CABLE-D- 9SUB/M/OE/0,25/S/2,0M | 2926399 | 1 |
| | 9 | 3 m | CABLE-D- 9SUB/F/OE/0,25/S/3,0M | 2926056 | 1 | CABLE-D- 9SUB/M/OE/0,25/S/3,0M | 2926409 | 1 |
| | 9 | 4 m | CABLE-D- 9SUB/F/OE/0,25/S/4,0M | 2926069 | 1 | CABLE-D- 9SUB/M/OE/0,25/S/4,0M | 2926412 | 1 |
| | 9 | 6 m | CABLE-D- 9SUB/F/OE/0,25/S/6,0M | 2926072 | 1 | CABLE-D- 9SUB/M/OE/0,25/S/6,0M | 2926425 | 1 |
| **Round cable,** same as before, however in variable lengths | | | CABLE-D- 9SUB-F-OE-0,25-S/ ... | 2900903 | 1 | CABLE-D- 9SUB-M-OE-0,25-S/ ... | 2900909 | 1 |
| **Round cable** with an open end | | | | | | | | |
| | 15 | 0.5 m | CABLE-D-15SUB/F/OE/0,25/S/0,5M | 2926085 | 1 | CABLE-D-15SUB/M/OE/0,25/S/0,5M | 2926438 | 1 |
| | 15 | 1 m | CABLE-D-15SUB/F/OE/0,25/S/1,0M | 2926098 | 1 | CABLE-D-15SUB/M/OE/0,25/S/1,0M | 2926441 | 1 |
| | 15 | 1.5 m | CABLE-D-15SUB/F/OE/0,25/S/1,5M | 2926108 | 1 | CABLE-D-15SUB/M/OE/0,25/S/1,5M | 2926454 | 1 |
| | 15 | 2 m | CABLE-D-15SUB/F/OE/0,25/S/2,0M | 2926111 | 1 | CABLE-D-15SUB/M/OE/0,25/S/2,0M | 2926467 | 1 |
| | 15 | 3 m | CABLE-D-15SUB/F/OE/0,25/S/3,0M | 2926124 | 1 | CABLE-D-15SUB/M/OE/0,25/S/3,0M | 2926470 | 1 |
| | 15 | 4 m | CABLE-D-15SUB/F/OE/0,25/S/4,0M | 2926137 | 1 | CABLE-D-15SUB/M/OE/0,25/S/4,0M | 2926483 | 1 |
| | 15 | 6 m | CABLE-D-15SUB/F/OE/0,25/S/6,0M | 2926140 | 1 | CABLE-D-15SUB/M/OE/0,25/S/6,0M | 2926496 | 1 |
| **Round cable,** same as before, however in variable lengths | | | CABLE-D-15SUB-F-OE-0,25-S/ ... | 2900905 | 1 | CABLE-D-15SUB-M-OE-0,25-S/ ... | 2900910 | 1 |
| **Round cable** with an open end | | | | | | | | |
| | 25 | 0.5 m | CABLE-D-25SUB/F/OE/0,25/S/0,5M | 2926153 | 1 | CABLE-D-25SUB/M/OE/0,25/S/0,5M | 2926506 | 1 |
| | 25 | 1 m | CABLE-D-25SUB/F/OE/0,25/S/1,0M | 2926166 | 1 | CABLE-D-25SUB/M/OE/0,25/S/1,0M | 2926519 | 1 |
| | 25 | 1.5 m | CABLE-D-25SUB/F/OE/0,25/S/1,5M | 2926179 | 1 | CABLE-D-25SUB/M/OE/0,25/S/1,5M | 2926522 | 1 |
| | 25 | 2 m | CABLE-D-25SUB/F/OE/0,25/S/2,0M | 2926182 | 1 | CABLE-D-25SUB/M/OE/0,25/S/2,0M | 2926535 | 1 |
| | 25 | 3 m | CABLE-D-25SUB/F/OE/0,25/S/3,0M | 2926195 | 1 | CABLE-D-25SUB/M/OE/0,25/S/3,0M | 2926548 | 1 |
| | 25 | 4 m | CABLE-D-25SUB/F/OE/0,25/S/4,0M | 2926205 | 1 | CABLE-D-25SUB/M/OE/0,25/S/4,0M | 2926551 | 1 |
| | 25 | 6 m | CABLE-D-25SUB/F/OE/0,25/S/6,0M | 2926218 | 1 | CABLE-D-25SUB/M/OE/0,25/S/6,0M | 2926564 | 1 |
| **Round cable,** same as before, however in variable lengths | | | CABLE-D-25SUB-F-OE-0,25-S/ ... | 2900906 | 1 | CABLE-D-25SUB-M-OE-0,25-S/ ... | 2900911 | 1 |

Special lengths of D-SUB cable with open ends can be configured using separate order numbers.

**Ordering example:**

One system cable assembled with a 37-pos. D-SUB female connector and one open end, 12.75 m in length:

**1 pcs. 2900907/12,75**

**Female connector at one end and open end at the other end**

**Pin strip at one end and open end at the other end**

| | | Technical data | Technical data |
|---|---|---|---|
| Max. perm. operating voltage | | 125 V AC/DC | 125 V AC/DC |
| Max. perm. current carrying capacity per path | | 2 A | 2 A |
| Max. conductor resistance | | 0.09 Ω/m | 0.09 Ω/m |
| Ambient temperature range | | -20°C ... 50°C | -20°C ... 50°C |
| Shield | | Tinned copper-braided shield, approx. 85% covering | Tinned copper-braided shield, approx. 85% covering |
| Insertion/withdrawal cycles | | > 200 | > 200 |
| Conductor cross-section | | 24 AWG/0.25 mm² | 24 AWG/0.25 mm² |
| Outside diameter | | | |
| | 37-pos. | 12 mm | 12 mm |
| | 50-pos. | 13.5 mm | 13.5 mm |

| | | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|---|
| Description | No. of pos. | Cable length | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Round cable** with an open end | | | | | | | | |
| | 37 | 0.5 m | CABLE-D-37SUB/F/OE/0,25/S/0,5M | 2926221 | 1 | CABLE-D-37SUB/M/OE/0,25/S/0,5M | 2926577 | 1 |
| | 37 | 1 m | CABLE-D-37SUB/F/OE/0,25/S/1,0M | 2926234 | 1 | CABLE-D-37SUB/M/OE/0,25/S/1,0M | 2926580 | 1 |
| | 37 | 1.5 m | CABLE-D-37SUB/F/OE/0,25/S/1,5M | 2926247 | 1 | CABLE-D-37SUB/M/OE/0,25/S/1,5M | 2926593 | 1 |
| | 37 | 2 m | CABLE-D-37SUB/F/OE/0,25/S/2,0M | 2926250 | 1 | CABLE-D-37SUB/M/OE/0,25/S/2,0M | 2926603 | 1 |
| | 37 | 3 m | CABLE-D-37SUB/F/OE/0,25/S/3,0M | 2926263 | 1 | CABLE-D-37SUB/M/OE/0,25/S/3,0M | 2926616 | 1 |
| | 37 | 4 m | CABLE-D-37SUB/F/OE/0,25/S/4,0M | 2926276 | 1 | CABLE-D-37SUB/M/OE/0,25/S/4,0M | 2926629 | 1 |
| | 37 | 6 m | CABLE-D-37SUB/F/OE/0,25/S/6,0M | 2926289 | 1 | CABLE-D-37SUB/M/OE/0,25/S/6,0M | 2926632 | 1 |
| **Round cable,** same as before, however in variable lengths | | | CABLE-D-37SUB-F-OE-0,25-S/ ... | 2900907 | 1 | CABLE-D-37SUB-M-OE-0,25-S/ ... | 2900912 | 1 |
| **Round cable** with an open end | | | | | | | | |
| | 50 | 0.5 m | CABLE-D-50SUB/F/OE/0,25/S/0,5M | 2926292 | 1 | CABLE-D-50SUB/M/OE/0,25/S/0,5M | 2926645 | 1 |
| | 50 | 1 m | CABLE-D-50SUB/F/OE/0,25/S/1,0M | 2926302 | 1 | CABLE-D-50SUB/M/OE/0,25/S/1,0M | 2926658 | 1 |
| | 50 | 1.5 m | CABLE-D-50SUB/F/OE/0,25/S/1,5M | 2926315 | 1 | CABLE-D-50SUB/M/OE/0,25/S/1,5M | 2926661 | 1 |
| | 50 | 2 m | CABLE-D-50SUB/F/OE/0,25/S/2,0M | 2926328 | 1 | CABLE-D-50SUB/M/OE/0,25/S/2,0M | 2926674 | 1 |
| | 50 | 3 m | CABLE-D-50SUB/F/OE/0,25/S/3,0M | 2926331 | 1 | CABLE-D-50SUB/M/OE/0,25/S/3,0M | 2926687 | 1 |
| | 50 | 4 m | CABLE-D-50SUB/F/OE/0,25/S/4,0M | 2926344 | 1 | CABLE-D-50SUB/M/OE/0,25/S/4,0M | 2926690 | 1 |
| | 50 | 6 m | CABLE-D-50SUB/F/OE/0,25/S/6,0M | 2926357 | 1 | CABLE-D-50SUB/M/OE/0,25/S/6,0M | 2926700 | 1 |
| **Round cable,** same as before, however in variable lengths | | | CABLE-D-50SUB-F-OE-0,25-S/ ... | 2900908 | 1 | CABLE-D-50SUB-M-OE-0,25-S/ ... | 2900913 | 1 |

## Modules with RJ45 connector

– 1:1 connection
– 8-pos. RJ45 connector
– Screw or spring-cage connection (direct plug-in method)
– Connector housing led to separate connection terminal blocks

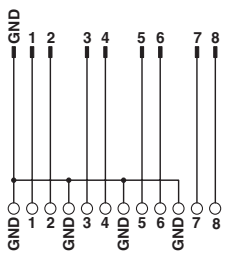
**8-pos.**
**with srew connection**

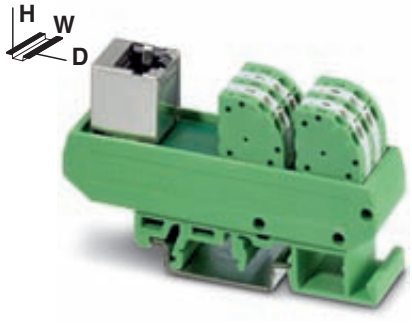
### Technical data

| | |
|---|---|
| Operating voltage | 48 V AC/DC |
| Max. perm. current (per branch) | 1 A |
| Ambient temperature range | -20°C ... 50°C |
| Mounting position | Any |
| Standards/regulations | DIN EN 50178 |
| Connection data (solid / stranded / AWG) | 0.2 - 4 mm² / 0.2 - 2.5 mm² / 24 - 12 |
| Dimensions H / D | 69 mm / 62 mm |

### Ordering data

| Description | No. of pos. | Module width W | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|
| **VARIOFACE module,** with RJ45 connector and screw connection terminal blocks RJ45 | 8 | 26.90 | **VIP-3/SC/RJ45** | **2900701** | 1 |
| **VARIOFACE module**, with RJ45 connector and spring-cage connection (direct plug-in method) | 8 | 25.00 | | | |






**8-pos.**
**with spring-cage connection**

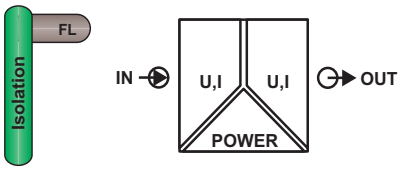
## Technical data

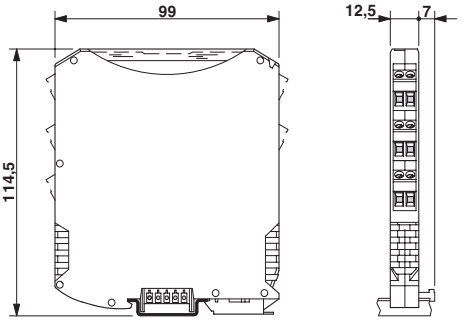
48 V AC/DC
1 A
-20°C ... 50°C
Any
DIN EN 50178
0.2 - 1.5 mm² / 0.2 - 1.5 mm² / 24 - 16
51 mm / 91 mm

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **UMK-RJ45/S/8PTDA** | **2900682** | 1 |

## Configurable 3-way isolating amplifiers



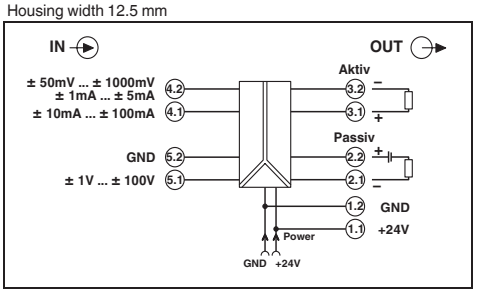




Ex n

SIL 2

**Isolating amplifier with over 1600 signal combinations**

Applied for:
PxC-EX
Housing width 12.5 mm




- Analog isolating amplifier for isolating, filtering, amplifying, and converting standard analog signals
- Configurable input and output signals, including bipolar current and voltage signals
- 3-way electrical isolation
- Over 1600 signal conversions can be set via DIP switches on the front
- 10 kHz limit frequency for time-critical applications
- Output active or passive
- Plug-in screw or spring-cage connection method
- Power supply via DIN rail connector possible
- Status indicator for supply voltage
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

The desired input and output signal combination must be specified when ordering pre-configured modules (refer to the order key). If specification details are incorrect or missing, the devices will be supplied with the standard configuration (input signal 0 ... 10 V, output signal 0 ... 20 mA).

**Notes:**

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

### Technical data

| | | |
|---|---|---|
| **Input data** | | |
| Input signal (can be configured using DIP switches) | | 0 ... 10 V, please indicate if different setting when ordering |
| Maximum input signal | | ±100 V | ±100 mA |
| Input resistance | | Approx. 1 MΩ (±1 V DC ... ±100 V DC) | Approx. 10 Ω (±10 mA DC ... ±100 mA DC) |
| **Output data** | | U output | I output |
| Output signal (can be configured using DIP switches) | | 0 ... 20 mA, please indicate if different setting when ordering |
| Load $R_B$ | | ≥ 1 kΩ (10 V) | active: ≤ 600 Ω (20 mA) (passive: ≤ (UB-2 V) / $I_{outmax}$) |
| **General data** | | | |
| Supply voltage $U_B$ | | 12 V DC ... 24 V DC (-20% / +25%) | |
| Power dissipation | | < 0.7 W (at 24 V DC / 20 mA) Typ. 0.6 W | |
| Maximum transmission error | | ≤ 0.1% (compared to the final value) | |
| Temperature coefficient | | 0.0075%/K | |
| ZERO / SPAN adjustment | | ±4% / ±4% | |
| Limit frequency (3 dB) | | 10 kHz (can be switched to 30 Hz) | |
| Step response (10-90%) | | 35 µs (at 10 kHz) 11 ms (at 30 Hz) | |
| Electrical isolation | | | |
| | Input/output/power supply | 2.5 kV (50 Hz, 1 min., test voltage) 300 $V_{rms}$ (rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) | |
| Degree of protection | | IP20 | |
| Ambient temperature (operation) | | -20°C ... 70°C | |
| Mounting | | Any | |
| Housing material | | polyamide (PA 6.6) | |
| Screw connection (solid / stranded / AWG) | | 0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14 | |
| Spring-cage connection (solid / stranded / AWG) | | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 | |
| **Conformance / approvals** | | | |
| Conformance | | CE-compliant | |
| ATEX | | Applied for | |
| IECEx | | Applied for | |
| UL, USA / Canada | | UL applied for | |
| Functional safety (SIL) | | Applied for | |
| GL | | GL applied for | |

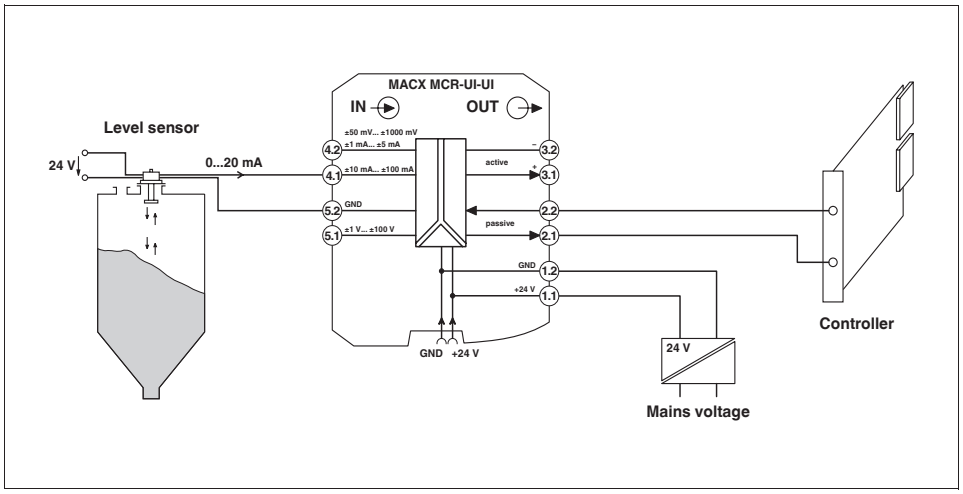
### Ordering data

| Description | | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|---|
| **MCR 3-way isolating amplifier**, for electrical isolation of analog signals, | | | | |
| Order configuration | Screw connection | **MACX MCR-UI-UI** | **2811284** | 1 |
| Order configuration | Spring-cage connection | **MACX MCR-UI-UI-SP** | **2811572** | 1 |
| Standard configuration | Screw connection | **MACX MCR-UI-UI-NC** | **2811446** | 1 |
| Standard configuration | Spring-cage connection | **MACX MCR-UI-UI-SP-NC** | **2811556** | 1 |

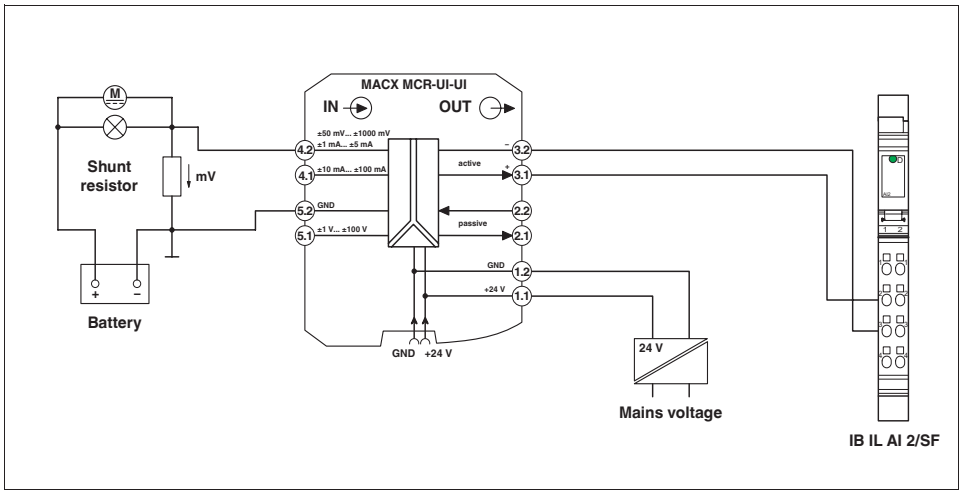
**Order key MACX MCR-UI-UI-..** (standard configuration entered as example)

| Order No. | Input | | | Output | | Limit frequency | Factory calibration certificate |
|---|---|---|---|---|---|---|---|
| 2811284 | IN03 | | | OUT01 | | 10K | NONE |
| 2811284 ≙ ...-UI-UI | IN40 ≙ 0 to 50 mV<br>IN24 ≙ 0 to 60 mV<br>IN41 ≙ 0 to 75 mV<br>IN25 ≙ 0 to 100 mV<br>IN43 ≙ 0 to 120 mV | IN53 ≙ -50 to +50 mV<br>IN13 ≙ -60 to +60 mV<br>IN54 ≙ -75 to +75 mV<br>IN14 ≙ -100 to +100 mV<br>IN56 ≙ -120 to +120 mV | IN70 ≙ 0 to 1.0 mA<br>IN71 ≙ 0 to 1.5 mA<br>IN72 ≙ 0 to 2.0 mA<br>IN73 ≙ 0 to 3.0 mA<br>IN36 ≙ 0 to 5 mA | OUT19 ≙ 0 to 2.5 V<br>OUT05 ≙ 0 to 5 V<br>OUT03 ≙ 0 to 10 V | OUT15 ≙ 0 to 5 mA<br>OUT16 ≙ 0 to 10 mA<br>OUT01 ≙ 0 to 20 mA | 30 ≙ 30 Hz<br>10K ≙ 10 kHz | NONE ≙ Without factory<br>YES ≙ With factory calibration certificate (a fee is charged) |
| 2811572 ≙ ...-UI-UI-SP | IN44 ≙ 0 to 150 mV<br>IN26 ≙ 0 to 200 mV<br>IN27 ≙ 0 to 300 mV<br>IN28 ≙ 0 to 500 mV<br>IN66 ≙ 0 to 1000 | IN57 ≙ -150 to +150 mV<br>IN15 ≙ -200 to +200 mV<br>IN16 ≙ -300 to +300 mV<br>IN17 ≙ -500 to +500 mV<br>IN78 ≙ -1000 to +1000 | IN37 ≙ 0 to 10 mA<br>IN74 ≙ 0 to 15 mA<br>IN01 ≙ 0 to 20 mA<br>IN75 ≙ 0 to 30 mA<br>IN76 ≙ 0 to 50 mA | OUT20 ≙ -2.5 to +2.5 V<br>OUT13 ≙ -5 to +5 V<br>OUT14 ≙ -10 to +10 V<br><br>OUT24 ≙ 0.5 to +2.5 V<br>OUT06 ≙ 1 to 5 V | OUT21 ≙ -5 to +5 mA<br>OUT22 ≙ -10 to +10 mA<br>OUT23 ≙ -20 to +20 mA<br><br>OUT25 ≙ 1 to 5 mA<br>OUT26 ≙ 2 to 10 mA | | YESPLUS ≙ Factory calibration certificate with 5 measuring points (a fee is charged) |
| | IN29 ≙ 0 to 1.0 V<br>IN50 ≙ 0 to 1.5 V<br>IN30 ≙ 0 to 2.0 V<br>IN52 ≙ 0 to 3.0 V<br>IN05 ≙ 0 to 5 V | IN18 ≙ -1.0 to +1.0 V<br>IN63 ≙ -1.5 to +1.5 V<br>IN19 ≙ -2.0 to +2.0 V<br>IN65 ≙ -3.0 to +3.0 V<br>IN21 ≙ -5 to +5 V | IN77 ≙ 0 to 100 mA<br><br>IN83 ≙ -1.0 to +1.0 mA<br>IN84 ≙ -1.5 to +1.5 mA<br>IN85 ≙ -2.0 to +2.0 mA | OUT04 ≙ 2 to 10 V<br><br>OUT27 ≙ 2.5 to 0 V<br>OUT11 ≙ 5 to 0 V | OUT02 ≙ 4 to 20 mA<br><br>OUT28 ≙ 5 to 0 mA<br>OUT29 ≙ 10 to 0 mA | | |
| | IN03 ≙ 0 to 10 V<br>IN67 ≙ 0 to 15 V<br>IN32 ≙ 0 to 20 V<br>IN39 ≙ 0 to 30 V<br>IN68 ≙ 0 to 50 V<br>IN69 ≙ 0 to 100 V | IN22 ≙ -10 to +10 V<br>IN79 ≙ -15 to +15 V<br>IN23 ≙ -20 to +20 V<br>IN80 ≙ -30 to +30 V<br>IN81 ≙ -50 to +50 V<br>IN82 ≙ -100 to +100 V | IN86 ≙ -3.0 to +3.0 mA<br>IN33 ≙ -5 to +5 mA<br>IN34 ≙ -10 to +10 mA<br>IN87 ≙ -15 to +15 mA<br>IN35 ≙ -20 to +20 mA<br>IN88 ≙ -30 to +30 mA<br>IN89 ≙ -50 to +50 mA<br>IN90 ≙ -100 to +100 mA | OUT09 ≙ 10 to 0 V | OUT07 ≙ 20 to 0 mA | | |
| | IN06 ≙ 1 to 5 V<br>IN04 ≙ 2 to 10 V | | IN91 ≙ 1 to 5 mA<br>IN92 ≙ 2 to 10 mA<br>IN02 ≙ 4 to 20 mA | | | | |

**Application example: Level measurement and active analog input card**

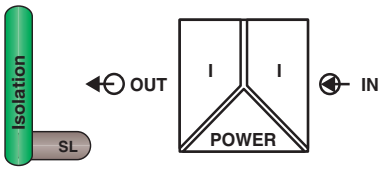


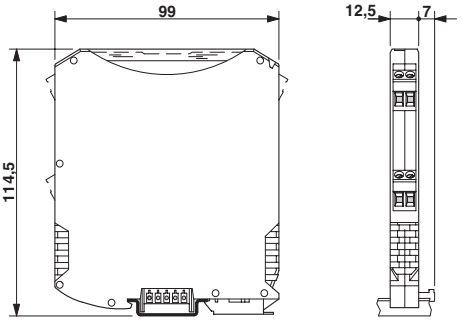

**Application example: Shunt measurement and Inline terminal with passive analog input channels within an Inline station**




(For information about Phoenix Contact automation solutions, please refer to the AUTOMATION catalog or visit www.phoenixcontact.com)

## Output isolating amplifier




Ex n

SIL 2

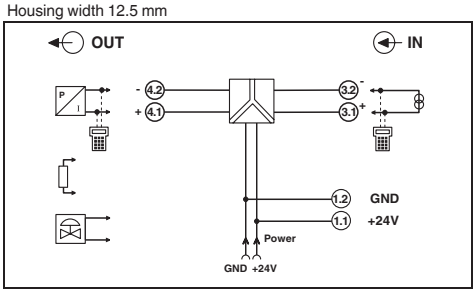
HART-compatible

- 0/4 mA ... 20 mA input
- 0/4 mA ... 20 mA output
- 3-way electrical isolation
- HART-compatible
- Line fault detection (LF)
- Plug-in screw or spring-cage connection method
- Power supply via DIN rail connector possible
- Status indicator for supply voltage
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

Housing width 12.5 mm



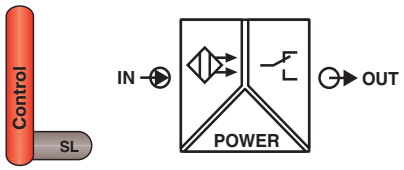

### Technical data

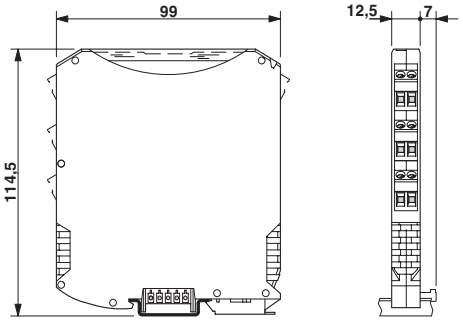
| | |
|---|---|
| **Input data** | |
| Input signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Input voltage | 5.4 V (at 20 mA) |
| Input impedance in the event of a cable break at the output | > 100 kΩ (if there is a line fault) |
| **Output data** | |
| Output signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Load | < 800 Ω (at 20 mA) |
| Output ripple | < 20 $mV_{rms}$ |
| **General data** | |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current consumption | < 46 mA (at 24 V DC / 20 mA) |
| Power dissipation | < 1.1 W (at 24 V DC / 20 mA) |
| Temperature coefficient | < 0.01%/K |
| Step response (10-90%) | < 140 µs |
| Maximum transmission error | < 0.1% (of final value) |
| Electrical isolation | |
| Input/output/power supply | 1.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Humidity | 10% ... 95% (no condensation) |
| SMART communication | Yes |
| Signal bandwidth | as per HART specifications |
| Protocols supported | HART |
| Screw connection (solid / stranded / AWG) | 0.2 ... 2.5 $mm^2$ / 0.2 ... 2.5 $mm^2$ / 24 - 14 |
| Spring-cage connection (solid / stranded / AWG) | 0.2 ... 1.5 $mm^2$ / 0.2 ... 1.5 $mm^2$ / 24 - 16 |
| Housing material | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | V0 |
| **Conformance / approvals** | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II 3 G Ex nA II T4 X |
| Functional safety (SIL) | SIL 2 according to EN 61508 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Output isolating amplifier** | | | |
| Screw connection | **MACX MCR-SL-IDSI-I** | **2865971** | 1 |
| Spring-cage conn. | **MACX MCR-SL-IDSI-I-SP** | **2924223** | 1 |

## NAMUR isolation amplifier



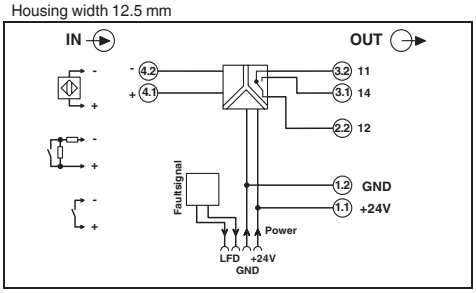




Ex n

SIL 2

Single-channel, output PDT

Housing width 12.5 mm




- Input for NAMUR proximity initiator or switch
- Relay signal output (PDT)
- 3-way electrical isolation
- Line fault detection (LFD) can be enabled and disabled
- Direction of operation can be selected
- Plug-in screw or spring-cage connection method
- Power supply and error indication possible via the DIN rail connector
- Status indicator for supply voltage, switching state, and line faults
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

For information about resistance circuits, please refer to the INTERFACE catalog.

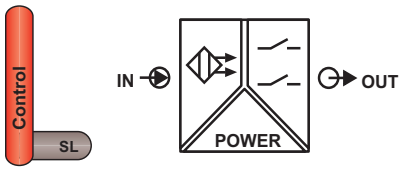
### Technical data

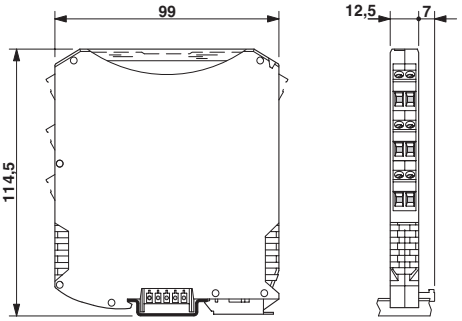
| | |
|---|---|
| **Input data** | |
| Input signal | NAMUR proximity sensors (EN 60947-5-6)<br>Floating switch contacts<br>Switch contacts with resistance circuit |
| No-load voltage | 8 V DC ±10% |
| Switching points | > 2.1 mA (conductive) / < 1.2 mA (blocking) |
| Switching hysteresis | < 0.2 mA |
| Line error detection | Break 0.05 mA < $I_{IN}$ < 0.35 mA<br>Short circuit 100 Ω < $R_{Sensor}$ < 360 Ω |
| **Switching output** | Relay output |
| Contact type | 1 PDT |
| Contact material | $AgSnO_2$, hard gold-plated |
| Max. switching voltage | 250 V AC (2 A) / 120 V DC (0.2 A) / 30 V DC (2 A) |
| Max. switching capacity | 500 VA |
| Recommended minimum load | 5 V / 10 mA |
| Mechanical service life | $10^7$ cycles |
| Switching behavior | Can be inverted via slide switch |
| Max. switching frequency | 20 Hz (without load) |
| **General data** | |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current consumption | 21 mA (24 V DC) |
| Power dissipation | < 650 mW |
| Electrical isolation | |
| Input/supply, T connector | 1.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, basic insulation as per EN 61010, EN 50178) |
| Output/input, supply, T connector | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category III; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Humidity | 10% ... 95% (no condensation) |
| Screw connection (solid / stranded / AWG) | 0.2 ... 2.5 $mm^2$ / 0.2 ... 2.5 $mm^2$ / 24 - 14 |
| Spring-cage connection (solid / stranded / AWG) | 0.2 ... 1.5 $mm^2$ / 0.2 ... 1.5 $mm^2$ / 24 - 16 |
| Housing material | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | V0 |
| **Conformance / approvals** | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II 3 G Ex nAC IIC T4 X |
| Functional safety (SIL) | SIL 2 according to EN 61508 |

### Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **NAMUR isolation amplifier** | | | |
| Screw connection | **MACX MCR-SL-NAM-R** | **2865997** | 1 |
| Spring-cage conn. | **MACX MCR-SL-NAM-R-SP** | **2924252** | 1 |

## NAMUR isolation amplifier




Ex n

SIL 2

**Single-channel, output 2 N/O contact**

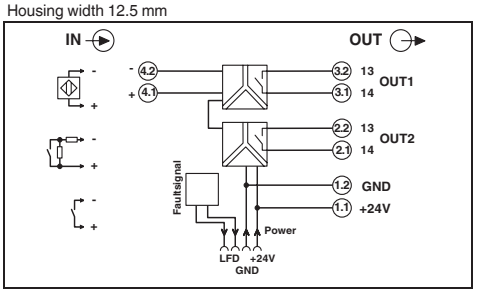
- Input for NAMUR proximity initiator or switch
- Two relay signal outputs (N/O contact); output 2 can be used as an error message output
- 3-way electrical isolation
- Line fault detection (LFD) can be enabled and disabled
- Direction of operation can be selected
- Plug-in screw or spring-cage connection method
- Power supply and error indication possible via the DIN rail connector
- Status indicator for supply voltage, switching state, and line faults
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

For information about resistance circuits, please refer to the INTERFACE catalog.

Housing width 12.5 mm



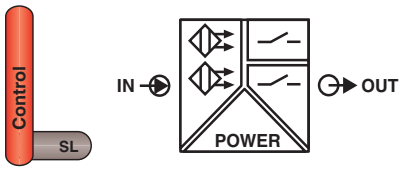

### Technical data

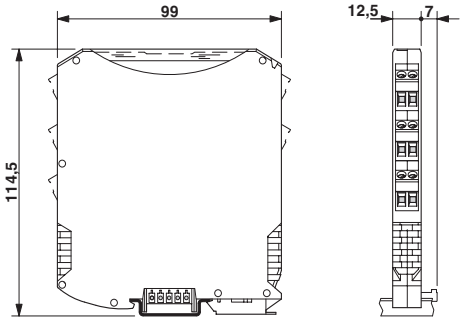
| | |
|---|---|
| **Input data** | |
| Input signal | NAMUR proximity sensors (EN 60947-5-6)<br>Floating switch contacts<br>Switch contacts with resistance circuit |
| No-load voltage | 8 V DC ±10% |
| Switching points | > 2.1 mA (conductive) / < 1.2 mA (blocking) |
| Switching hysteresis | < 0.2 mA |
| Line error detection | Break 0.05 mA < $I_{IN}$ < 0.35 mA<br>Short circuit 100 Ω < $R_{Sensor}$ < 360 Ω |
| **Switching output** | **Relay output** |
| Contact type | 2 N/O contacts |
| Contact material | $AgSnO_2$, hard gold-plated |
| Max. switching voltage | 250 V AC (2 A) / 120 V DC (0.2 A) / 30 V DC (2 A) |
| Max. switching capacity | 500 VA |
| Recommended minimum load | 5 V / 10 mA |
| Mechanical service life | $10^7$ cycles |
| Switching behavior | Can be inverted via slide switch |
| Max. switching frequency | 20 Hz (without load) |
| **General data** | |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current consumption | 30 mA (24 V DC) |
| Power dissipation | < 950 mW |
| Electrical isolation | |
| Input/supply, T connector | 1.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, basic insulation as per EN 61010, EN 50178) |
| Output 1/output 2/input, power supply, T connector | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category III; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Humidity | 10% ... 95% (no condensation) |
| Screw connection (solid / stranded / AWG) | 0.2 ... 2.5 $mm^2$ / 0.2 ... 2.5 $mm^2$ / 24 - 14 |
| Spring-cage connection (solid / stranded / AWG) | 0.2 ... 1.5 $mm^2$ / 0.2 ... 1.5 $mm^2$ / 24 - 16 |
| Housing material | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | V0 |
| **Conformance / approvals** | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II 3 G Ex nAC IIC T4 X |
| Functional safety (SIL) | SIL 2 according to EN 61508 |

### Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **NAMUR isolation amplifier** | | | |
| Screw connection | **MACX MCR-SL-NAM-2RO** | **2865010** | 1 |
| Spring-cage conn. | **MACX MCR-SL-NAM-2RO-SP** | **2924265** | 1 |

## NAMUR isolation amplifier




Ex n

SIL 2

**Two-channel,**
**output 1 N/O contact per channel**

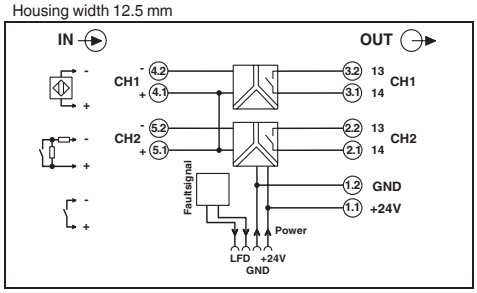
- Input for NAMUR proximity initiator or switch
- Relay signal output (N/O contact)
- 3-way electrical isolation
- Line fault detection (LFD) can be enabled and disabled
- Direction of operation can be selected
- Plug-in screw or spring-cage connection method
- Power supply and error indication possible via the DIN rail connector
- Status indicator for supply voltage, switching state, and line faults
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

For information about resistance circuits, please refer to the INTERFACE catalog.

Housing width 12.5 mm



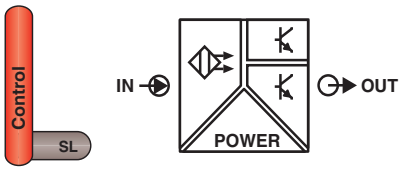

## Technical data

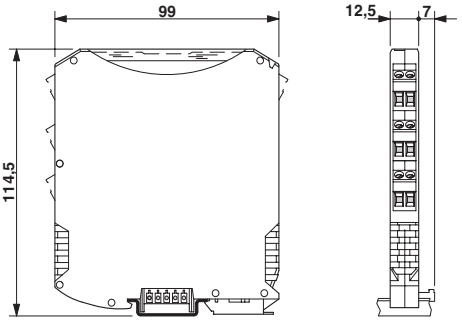
| | |
|---|---|
| **Input data** | |
| Input signal | NAMUR proximity sensors (EN 60947-5-6)<br>Floating switch contacts<br>Switch contacts with resistance circuit |
| No-load voltage | 8 V DC ±10% |
| Switching points | > 2.1 mA (conductive) / < 1.2 mA (blocking) |
| Switching hysteresis | < 0.2 mA |
| Line error detection | Break 0.05 mA < $I_{IN}$ < 0.35 mA<br>Short circuit 100 Ω < $R_{Sensor}$ < 360 Ω |
| **Switching output** | Relay output |
| Contact type | 2 N/O contacts |
| Contact material | $AgSnO_2$, hard gold-plated |
| Max. switching voltage | 250 V AC (2 A) / 120 V DC (0.2 A) / 30 V DC (2 A) |
| Max. switching capacity | 500 VA |
| Recommended minimum load | 5 V / 10 mA |
| Mechanical service life | $10^7$ cycles |
| Switching behavior | Can be inverted via slide switch |
| Max. switching frequency | 20 Hz (without load) |
| **General data** | |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current consumption | 35 mA (24 V DC) |
| Power dissipation | < 1 W |
| Electrical isolation | |
| Input/supply, T connector | 1.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, basic insulation as per EN 61010, EN 50178) |
| Output 1/output 2/input, power supply, T connector | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category III; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Humidity | 5% ... 95% (no condensation) |
| Screw connection (solid / stranded / AWG) | 0.2 ... 2.5 $mm^2$ / 0.2 ... 2.5 $mm^2$ / 24 - 14 |
| Spring-cage connection (solid / stranded / AWG) | 0.2 ... 1.5 $mm^2$ / 0.2 ... 1.5 $mm^2$ / 24 - 16 |
| Housing material | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | V0 |
| **Conformance / approvals** | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II 3 G Ex nAC IIC T4 X |
| Functional safety (SIL) | SIL 2 according to EN 61508 |

## Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **NAMUR isolation amplifier** | | | |
| Screw connection | **MACX MCR-SL-2NAM-RO** | **2865049** | 1 |
| Spring-cage conn. | **MACX MCR-SL-2NAM-RO-SP** | **2924294** | 1 |

## NAMUR isolation amplifier




Ex n

SIL 2

**Single-channel, output transistor (passive)**

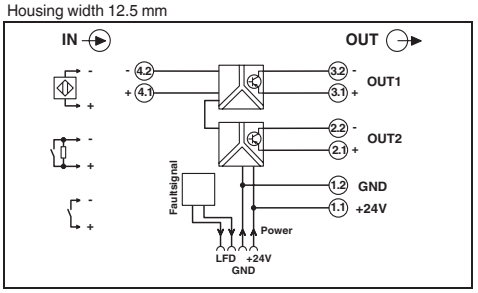
- Input for NAMUR proximity initiator or switch
- 2 transistor signal outputs (passive); output 2 can also be used as an error message output
- 3-way electrical isolation
- Line fault detection (LFD) can be enabled and disabled
- Direction of operation can be selected
- Plug-in screw or spring-cage connection method
- Power supply and error indication possible via the DIN rail connector
- Status indicator for supply voltage, switching state, and line faults
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

For information about resistance circuits, please refer to the INTERFACE catalog.

Housing width 12.5 mm



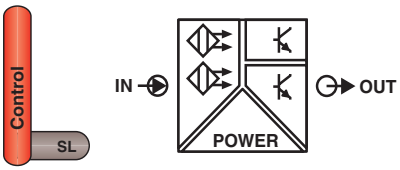

### Technical data

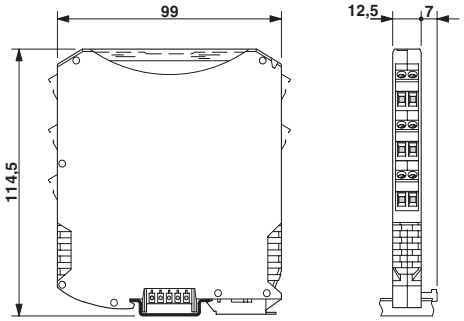
| | | |
|---|---|---|
| **Input data** | | |
| Input signal | | NAMUR proximity sensors (EN 60947-5-6)<br>Floating switch contacts<br>Switch contacts with resistance circuit |
| No-load voltage | | 8 V DC ±10% |
| Switching points | | > 2.1 mA (conductive) / < 1.2 mA (blocking) |
| Line error detection | | Break 0.05 mA < $I_{IN}$ < 0.35 mA<br>Short circuit 100 Ω < $R_{Sensor}$ < 360 Ω |
| **Switching output** | | 2 transistor outputs, passive |
| Max. switching voltage | | 30 V DC (per output) |
| Max. switching current | | 50 mA (short circuit resistant) |
| Drop (ΔU) | | < 1.4 V |
| Switching behavior | | can be inverted using DIP switch |
| Max. switching frequency | | 5 kHz |
| **General data** | | |
| Supply voltage range | | 19.2 V DC ... 30 V DC |
| Current consumption | | < 28 mA (24 V DC) |
| Power dissipation | | 800 mW |
| Electrical isolation | | |
| | Input/output, supply, T connector | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| | Output/supply, T-connector | 1.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| | Output 1/output 2 | 1 kV (50 Hz, 1 min., test voltage)<br>50 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | | -20°C ... 60°C (any mounting position) |
| Humidity | | 10% ... 95% (no condensation) |
| Screw connection (solid / stranded / AWG) | | 0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14 |
| Spring-cage connection (solid / stranded / AWG) | | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Housing material | | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | | V0 |
| **Conformance / approvals** | | |
| Conformance | | CE-compliant, additionally EN 61326 |
| ATEX | | Ex II 3 G Ex nA II T4 X |
| Functional safety (SIL) | | SIL 2 according to EN 61508 |

### Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **NAMUR isolation amplifier** | | | |
| Screw connection | **MACX MCR-SL-NAM-2T** | **2865023** | 1 |
| Spring-cage conn. | **MACX MCR-SL-NAM-2T-SP** | **2924278** | 1 |

## NAMUR isolation amplifier




Ex n

SIL 2

**Two-channel,**
**output 1 transistor (passive) per channel**

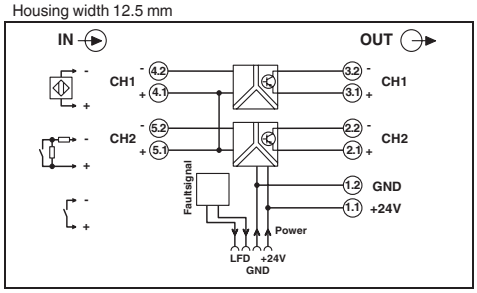
- Input for NAMUR proximity initiator or switch
- Signal output transistor (passive)
- 3-way electrical isolation
- Line fault detection (LFD) can be enabled and disabled
- Direction of operation can be selected
- Plug-in screw or spring-cage connection method
- Power supply and error indication possible via the DIN rail connector
- Status indicator for supply voltage, switching state, and line faults
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

For information about resistance circuits, please refer to the INTERFACE catalog.

Housing width 12.5 mm



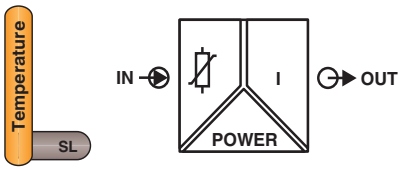

### Technical data

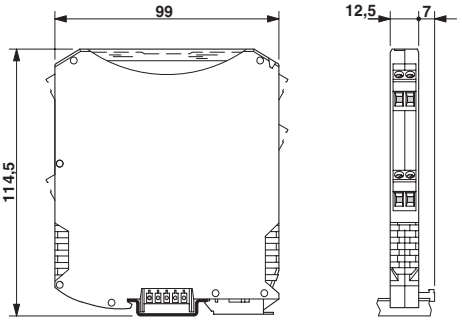
| | |
|---|---|
| **Input data** | |
| Input signal | NAMUR proximity sensors (EN 60947-5-6)<br>Floating switch contacts<br>Switch contacts with resistance circuit |
| No-load voltage | 8 V DC ±10% |
| Switching points | > 2.1 mA (conductive) / < 1.2 mA (blocking) |
| Line error detection | Break 0.05 mA < $I_{IN}$ < 0.35 mA<br>Short circuit 100 Ω < $R_{Sensor}$ < 360 Ω |
| **Switching output** | Transistor output, passive |
| Max. switching voltage | 30 V DC (per output) |
| Max. switching current | 50 mA (short circuit resistant) |
| Drop (ΔU) | < 1.4 V |
| Switching behavior | can be inverted using DIP switch |
| Max. switching frequency | 5 kHz |
| **General data** | |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current consumption | < 34 mA (24 V DC) |
| Power dissipation | 1000 mW |
| Electrical isolation | |
| Input/output, supply, T connector | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage,<br>surge voltage category II; pollution degree 2,<br>safe isolation as per EN 61010, EN 50178) |
| Output/supply, T-connector | 1.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage,<br>surge voltage category II; pollution degree 2,<br>safe isolation as per EN 61010, EN 50178) |
| Output 1/output 2 | 1 kV (50 Hz, 1 min., test voltage)<br>50 $V_{rms}$ (Rated insulation voltage,<br>surge voltage category II; pollution degree 2,<br>safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Humidity | 10% ... 95% (no condensation) |
| Screw connection (solid / stranded / AWG) | 0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14 |
| Spring-cage connection (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Housing material | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | V0 |
| **Conformance / approvals** | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II 3 G Ex nA II T4 X |
| Functional safety (SIL) | SIL 2 according to EN 61508 |

### Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **NAMUR isolation amplifier** | | | |
| Screw connection | **MACX MCR-SL-2NAM-T** | **2865036** | 1 |
| Spring-cage conn. | **MACX MCR-SL-2NAM-T-SP** | **2924281** | 1 |

## Temperature transducer




Ex n

SIL 2

**For resistance thermometers and resistance-type sensors**

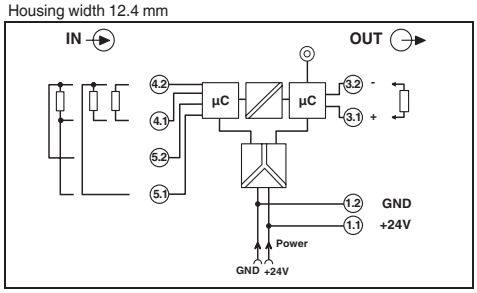
- Input for resistance thermometers and resistance-type sensors
- 0 ... 20 mA or 4 ... 20 mA output
- 3-way electrical isolation
- Configuration via software (FDT/DTM): Sensor type, connection method, measuring range, measuring unit, filter, alarm signal, and output range
- Programming during operation and also voltage-free using IFS-USB-PROG-ADAPTER programming adapter
- Plug-in screw or spring-cage connection method
- Power supply via DIN rail connector possible
- Status indicator for supply voltage, cable, sensor, and module errors
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

The IFS-CONF configuration software can be downloaded from the Internet (www.phoenixcontact.com).

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

Housing width 12.4 mm



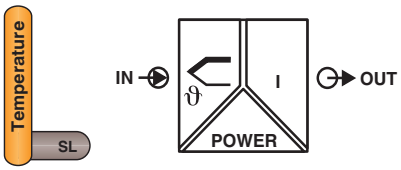

### Technical data

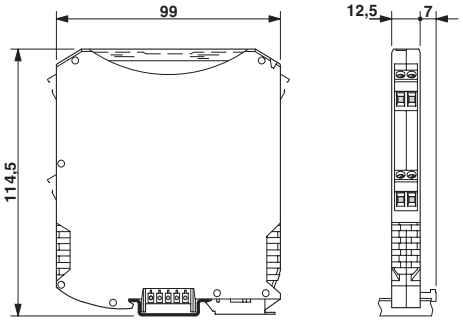
| | |
|---|---|
| **Input data** | |
| Resistance thermometers | Pt, Ni, Cu sensors: 2, 3, 4-wire |
| Resistor | 0 Ω ... 2000 Ω |
| Cable resistance | 50 Ω per line |
| Sensor input current | (200 µA ... 1 mA) |
| Measuring range span | min. 50 K |
| **Output data** | |
| Output signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Load | ≤ 500 Ω |
| Behavior in the event of a sensor error | As per NE 43 or can be freely defined |
| Output ripple | < 50 $\mu A_{PP}$ |
| **General data** | |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Current consumption | < 40 mA (24 V DC) |
| Power dissipation | < 1 W |
| Temperature coefficient | 0.01%/K |
| Step response (0–99%) | Typ. 800 ms (with SIL)<br>max. 1200 ms (with SIL)<br>Typ. 700 ms (without SIL)<br>max. 1100 ms (without SIL) |
| Transmission error, total | 0.05% x 100 [K] / measuring range span [K] + 0.05% |
| ZERO / SPAN adjustment | ±5% / ±5% |
| Electrical isolation | |
| Input/output/power supply | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Humidity | 5% ... 95% (no condensation) |
| Screw connection (solid / stranded / AWG) | 0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14 |
| Spring-cage connection (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Housing material | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | V0 |
| **Conformance / approvals** | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II 3G Ex nA ic IIC T4 X |
| Functional safety (SIL) | SIL 2 according to EN 61508 |

### Ordering data

| Description | | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|---|
| **Temperature transducer** | | | | |
| Order configuration | Screw connection | **MACX MCR-SL-RTD-I** | **2865065** | 1 |
| Order configuration | Spring-cage conn. | **MACX MCR-SL-RTD-I-SP** | **2924317** | 1 |
| Standard configuration | Screw connection | **MACX MCR-SL-RTD-I-NC** | **2865078** | 1 |
| Standard configuration | Spring-cage conn. | **MACX MCR-SL-RTD-I-SP-NC** | **2924320** | 1 |
| **Programming adapter** with USB interface, for programming with the IFS-CONF software | | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |

## Temperature transducer




Ex n

SIL 2

**For thermocouples and mV sources**

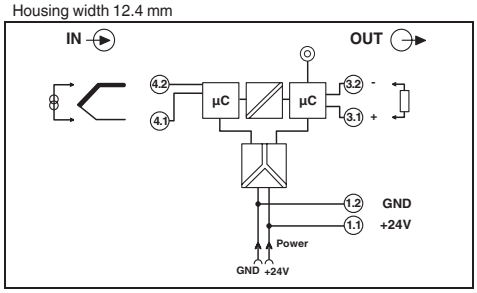
- Input for thermocouples and mV sources
- 0 ... 20 mA or 4 ... 20 mA output
- 3-way electrical isolation
- Configuration via software (FDT/DTM): Sensor type, connection method, measuring range, measuring unit, filter, alarm signal, and output range
- Programming during operation and also voltage-free using IFS-USB-PROG-ADAPTER programming adapter
- Plug-in screw connection method
- Power supply via DIN rail connector possible
- Status indicator for supply voltage, cable, sensor, and module errors
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible

**Notes:**

The IFS-CONF configuration software can be downloaded from the Internet (www.phoenixcontact.com).

For information about the supply and error evaluation module, DIN rail connectors, and marking material, please refer to the INTERFACE catalog.

Housing width 12.4 mm




### Technical data

| | | |
|---|---|---|
| **Input data** | | |
| Thermocouple sensors | | E, J, K, N as per IEC / EN 60584, L as per DIN 43760 |
| Voltage | | -20 mV ... 70 mV |
| Measuring range span | | (Min. 50 K for thermocouples, 3 mV for mV sources) |
| **Output data** | | |
| Output signal | | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Load | | max. 500 Ω |
| Behavior in the event of a sensor error | | As per NE 43 or can be freely defined |
| Output ripple | | < 50 $\mu A_{PP}$ |
| **General data** | | |
| Supply voltage range | | 19.2 V DC ... 30 V DC |
| Current consumption | | < 40 mA (24 V DC) |
| Power dissipation | | < 1 W |
| Temperature coefficient | | 0.01%/K |
| Step response (0–99%) | | Typ. 800 ms (with SIL)<br>max. 1200 ms (with SIL)<br>Typ. 700 ms (without SIL)<br>max. 1100 ms (without SIL) |
| Transmission error, total | | 0.05% x 200 [K]/Measuring range span [K] + 0.05% |
| Cold junction errors | | ±1 K |
| ZERO / SPAN adjustment | | ±5% / ±5% |
| Electrical isolation | | |
| | Input/output/power supply | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| Ambient temperature range | | -20°C ... 60°C (any mounting position) |
| Humidity | | 5% ... 95% (no condensation) |
| Screw connection (solid / stranded / AWG) | | 0.2 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 14 |
| Housing material | | polyamide (PA 6.6) |
| Inflammability class in acc. with UL 94 | | V0 |
| **Conformance / approvals** | | |
| Conformance | | CE-compliant, additionally EN 61326 |
| ATEX | | Ex II 3G Ex nA ic IIC T4 X |
| Functional safety (SIL) | | SIL 2 according to EN 61508 |

### Ordering data

| Description | | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|---|
| **Temperature transducer** | | | | |
| Order configuration | Screw connection | **MACX MCR-SL-TC-I** | **2924333** | 1 |
| Standard configuration | Screw connection | **MACX MCR-SL-TC-I-NC** | **2924346** | 1 |
| **Programming adapter** with USB interface, for programming with the IFS-CONF software | | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |

## Order key and temperature ranges for MACX-MCR-SL-RTD-I(-SP) temperature transducers

**Order key for MACX-MCR-SL-RTD-I(-SP) temperature transducers** (standard configuration entered as an example)

| Order No. | Sensor type | Safety Integrity Level (SIL) | Connection method | Measuring range: Start | Measuring range: Finish | Unit of measurement | Output range | Filter: Oversampling | Filter: Moving average value |
|---|---|---|---|---|---|---|---|---|---|
| 2865065 | PT100 | ON | 3 | 0 | 100 | C | OUT02 | 5 | 1 |
| 2865065 ≙ MACX MCR-SL-RTD-I<br>2924317 ≙ MACX MCR-SL-RTD-I-SP | See below | ON ≙ Active<br>NONE ≙ Not active<br>ON only if output range = OUT02 | 2 ≙ 2-wire<br>3 ≙ 3-wire<br>4 ≙ 4-wire | See below | See below | C ≙ °C<br>F ≙ °F<br>O ≙ Ω | OUT01 ≙ 0 to 20 mA<br>OUT02 ≙ 4 to 20 mA | 1 ≙ 1 value<br>3 ≙ 3 values<br>5 ≙ 5 values<br>7 ≙ 7 values<br>10 ≙ 10 values<br>20 ≙ 20 values | 1 ≙ 1 value<br>2 ≙ 2 values<br>3 ≙ 3 values<br>4 ≙ 4 values |

| | | | | | Smallest measuring range |
|---|---|---|---|---|---|
| RES01 | ≙ Resistor | 0 | 2000 | Ω | 25 Ω |
| PT50 | ≙ Pt 50 as per IEC/EN 60751 | -200 | 850 | °C | 50 K |
| PT100 | ≙ Pt 100 as per IEC/EN 60751 | -200 | 850 | °C | 50 K |
| PT200 | ≙ Pt 200 as per IEC/EN 60751 | -200 | 850 | °C | 50 K |
| PT500 | ≙ Pt 500 as per IEC/EN 60751 | -200 | 850 | °C | 50 K |
| PT100S | ≙ Pt 100 as per Sama RC21-4-1966 | -200 | 600 | °C | 50 K |
| PT500S | ≙ Pt 500 as per Sama RC21-4-1966 | -200 | 600 | °C | 50 K |
| NI100DIN | ≙ Ni 100 as per DIN 43760 | -60 | 250 | °C | 50 K |
| NI500DIN | ≙ Ni 500 as per DIN 43760 | -60 | 250 | °C | 50 K |
| CU50 | ≙ Cu 50 | -50 | 200 | °C | 50 K |
| CU53 | ≙ Cu 53 | -50 | 180 | °C | 50 K |

| ... | Alarm signal: Short circuit/ Overrange | Alarm signal: Sensor break/ Underrange | Factory calibration certificate |
|---|---|---|---|
| | I035 | I215 | NONE |
| | I000 ≙ 0 mA<br>I035 ≙ 3.5 mA<br>I215 ≙ 21.5 mA<br>I035 only if output range = OUT02<br>Alarm signals can also be configured individually using software. | I000 ≙ 0 mA<br>I035 ≙ 3.5 mA<br>I215 ≙ 21.5 mA | NONE ≙ Without factory calibration<br>YES ≙ With factory calibration<br>YESPLUS ≙ Factory calibration certificate with 5 measuring points (a fee is charged) |

**Conversion aid for temperature from °C to °F:**

$$T\,[°F] = \frac{9}{5}\,T\,[°C] + 32$$

## Order key and temperature ranges for MACX-MCR-SL-TC-I temperature transducers

**Order key for MACX-MCR-SL-TC-I temperature transducers** (standard configuration entered as an example)

| Order No. | Sensor type | Safety Integrity Level (SIL) | Cold junction compensation | Measuring range: Start | Measuring range: Finish | Unit of measurement | Output range | Filter: Oversampling | Filter: Moving average value |
|---|---|---|---|---|---|---|---|---|---|
| 2924333 | J | ON | 1 | 0 | 1000 | C | OUT02 | 5 | 1 |
| MACX MCR-SL-TC-I | See below | ON ≙ Active<br>NONE ≙ Not Active<br>ON only if output range = OUT02 | 1 ≙ Activated<br>0 ≙ Switched off (e.g., for mV voltage measurement) | See below | See below | C ≙ °C<br>F ≙ °F<br>V ≙ mV | OUT01 ≙ 0 to 20 mA<br>OUT02 ≙ 4 to 20 mA | 1 ≙ 1 value<br>3 ≙ 3 values<br>5 ≙ 5 values<br>7 ≙ 7 values<br>10 ≙ 10 values<br>20 ≙ 20 values | 1 ≙ 1 value<br>2 ≙ 2 values<br>3 ≙ 3 values<br>4 ≙ 4 values |

| | | | | | Smallest measuring range |
|---|---|---|---|---|---|
| V03 | ≙ Voltage (mV) | -20 | +80 | mV | 3 mV |
| E | ≙ NiCr-CuNi as per IEC/EN 60548 | -226 | 1000 | °C | 50 K |
| J | ≙ Fe-CuNi as per IEC/EN 60548 | -210 | 1200 | °C | 50 K |
| K | ≙ NiCr-Ni as per IEC/EN 60548 | -200 | 1372 | °C | 50 K |
| N | ≙ NiCrSi-NiSi as per IEC/EN 60548 | -200 | 1300 | °C | 50 K |
| L | ≙ Fe-CuNi as per DIN 43760 | -200 | 900 | °C | 50 K |

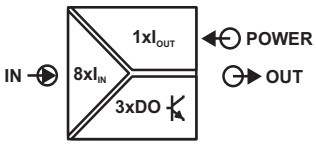
| ... | Alarm signal: Overrange | Alarm signal: Sensor break/ Underrange | Factory calibration certificate |
|---|---|---|---|
| | I035 | I215 | NONE |
| | I000 ≙ 0 mA<br>I035 ≙ 3.5 mA<br>I215 ≙ 21.5 mA<br>I035 only if output range = OUT02<br>Alarm signals can also be configured individually using software. | I000 ≙ 0 mA<br>I035 ≙ 3.5 mA<br>I215 ≙ 21.5 mA | NONE ≙ Without factory calibration<br>YES ≙ With factory calibration<br>YESPLUS ≙ Factory calibration certificate with 5 measuring points (a fee is charged) |

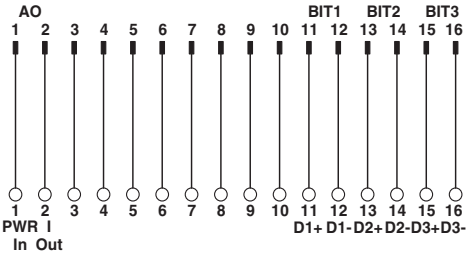
**Conversion aid for temperature from °C to °F:**

$$T\,[°F] = \frac{9}{5}\,T\,[°C] + 32$$

## MINI Analog multiplexer

Accessories




FLK pin strip assignment

Ex n

Applied for:
PxC-EX
Housing width 50.4 mm

- Generates an analog output from up to eight analog input signals – parallel analog signals are transmitted serially via a cable.
- The desired number of channels is selected via DIP switches (8, 6, 4 or 2 channels).
- The channel currently switched is indicated as a bit pattern via three digital outputs.
- Two clock cycles for execution can be selected via DIP switches (one or two-second clock).
- Supplied by an output loop.
- For 4 ... 20 mA current signals.
- Can be easily snapped onto MINI Analog modules with screw connection method.
- Huge reduction in analog inputs at controllers.
- System cabling on the output side using pre-assembled FLK cables with open ends.

**Notes:**

For six, four or two channels you will also need the corresponding number of feed-through terminal blocks (i.e., two, four or six).

### Technical data

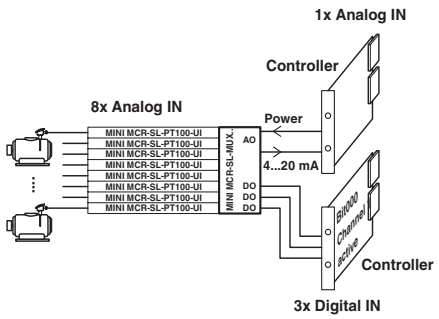
| | |
|---|---|
| **Input data** | |
| Description | 2, 4, 6 or 8-channel (can be switched over) |
| Can be configured/parameterized | Via DIP switches |
| Input signal | 4 ... 20 mA |
| Maximum input signal | < 30 mA |
| Switching cycles | 2 or 1 sec. (can be selected) |
| **Output data** | |
| Output signal | 4 ... 20 mA |
| Maximum output signal | 30 mA |
| Load $R_B$ | $((U_{supply} - 7\ V) / I_{max})$ |
| Status indication Active input | 1, 2, 3-bit digital output (can be selected) |
| Switching output | 3 x PNP optocouplers |
| Maximum switching voltage | 30 V DC |
| **General data** | |
| Supply voltage $U_B$ | 7 V DC ... 30 V DC (Loop-powered) |
| Current consumption | < 3.5 mA (without signal current) |
| Power consumption | < 24 mW (without signal current) |
| Maximum transmission error | 0.3% |
| Temperature coefficient | < 0.01%/K |
| Ambient temperature (operation) | -20°C ... 60°C |
| Housing material | PBT |
| Connection to control level | Flat-ribbon cable connector in acc. with IEC 60603-13 |
| Insertion/withdrawal cycles (System adapter / FLK 16) | 10 / min. 200 |
| **Conformance / approvals** | |
| Conformance | CE-compliant |
| ATEX | Applied for |

### Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **Multiplexer** for MINI Analog modules with screw connection | **MINI MCR-SL-MUX-V8-FLK 16** | **2811815** | 1 |

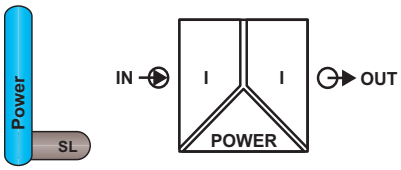
### Accessories

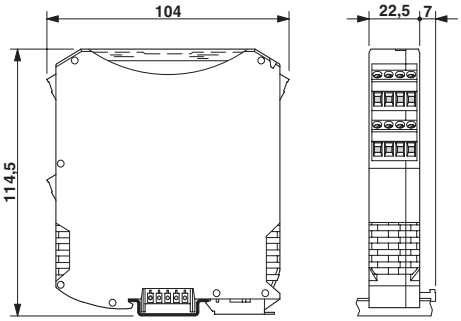
| | | | |
|---|---|---|---|
| **MINI Analog feed-through terminal block** | **MINI MCR-SL-TB** | **2811420** | 1 |
| **Round cable** with an open end (see INTERFACE catalog) | **VIP-CAB-FLK16/FR/OE/0,14/ ...** | | |
| **Round cable** with an open end (see INTERFACE catalog) | **CABLE-FLK16/OE/0,14/ ...** | | |




**Monitoring of eight motor temperatures with just one analog control input**

## Current transducer



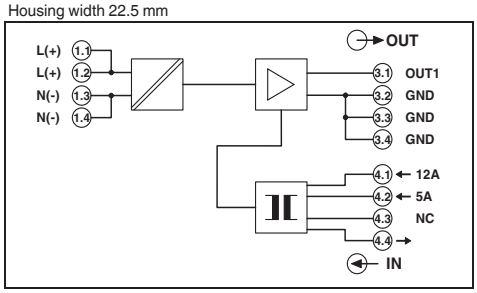




Ex n

SIL 2

**For sinusoidal alternating currents**
**0 ... 5 A/0 ... 12 A**

Housing width 22.5 mm



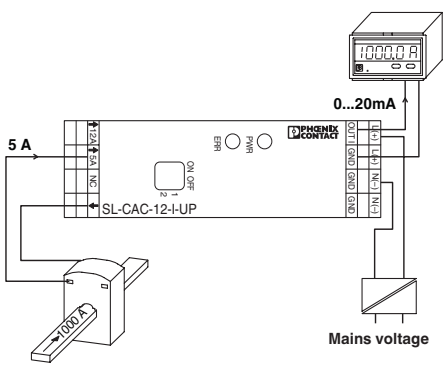

- Conversion of 5 A or 12 A sinusoidal alternating currents into 0 ... 20 mA or 4 ... 20 mA standard analog signals
- Wide-range version from 19.2 ... 253 V AC/DC
- 3-way isolation
- Input/output can be configured using the DIP switch
- Operating state indication via LED

### Technical data

| | |
|---|---|
| **Input data** | |
| Input current (configurable) | 0 A AC ... 5 A AC (configurable) / 0 A AC ... 12 A AC (configurable) |
| Nominal frequency | 50 Hz |
| Frequency range | 45 Hz ... 65 Hz |
| Curve type | Sine |
| Overload capacity | 1 x $I_N$ (continuous) |
| Surge strength | 8 x $I_N$ (1 s) |
| Connection method | Screw terminal block |
| **Output data** | |
| Output signal (configurable) | 0 ... 20 mA / 4 ... 20 mA |
| Maximum output signal | 25 mA |
| Load $R_B$ | < 500 Ω (at 20 mA) |
| Ripple | < 10 $mV_{PP}$ (for 500 Ω at 20 mA) |
| **General data** | |
| Supply voltage $U_B$ | 19.2 V AC/DC ... 253 V AC/DC |
| Current consumption | < 33 mA (at 24 V DC) |
| Maximum transmission error | ≤ 0.5% (of nominal range value under nominal conditions) |
| Temperature coefficient | < 0.02%/K |
| Step response (10-90%) | < 300 ms |
| Safe isolation | acc. to EN 61010 |
| Rated insulation voltage | 300 V AC (to ground) |
| Surge voltage category Input/output | III |
| Pollution degree | 2 |
| Test voltage input/output | 4 kV (50 Hz, 1 min.) |
| Test voltage output/power supply | 2 kV (50 Hz, 1 min.) |
| Degree of protection | IP20 |
| Ambient temperature range | -20°C ... 65°C |
| Housing material | Polyamide PA non-reinforced |
| Screw connection (solid / stranded / AWG) | 0.2 ... 2.5 $mm^2$ / 0.2 ... 2.5 $mm^2$ / 24 - 14 |
| **Conformance / approvals** | |
| Conformance | CE-compliant |
| ATEX | Ⓔx II 3 G Ex nA II T4 X |
| UL, USA / Canada | UL applied for |

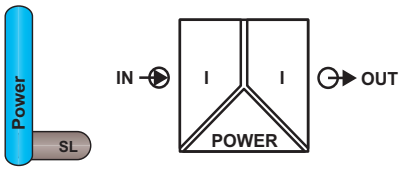
### Ordering data

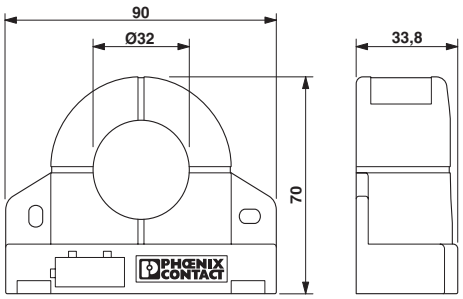
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **MCR current measuring transducers** for sinusoidal alternating currents<br>Supply voltage 19.2 V AC/DC ... 253 V AC/DC | **MACX MCR-SL-CAC-12-I-UP** | **2810638** | 1 |




**Current measurement**

## Current transducer

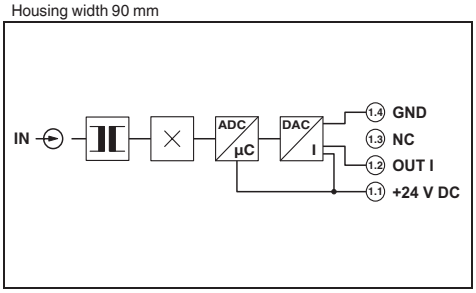


**For DC, AC, and distorted currents**
**0 ... 100 A/0 ... 200 A/0 ... 300 A**

- Universal current measurement, no shunt required
- Compact dimensions also enable distributed use
- Variable mounting on DIN rail and mounting plate
- Simple connection method thanks to COMBICON plug-in connection terminal blocks

Housing width 90 mm

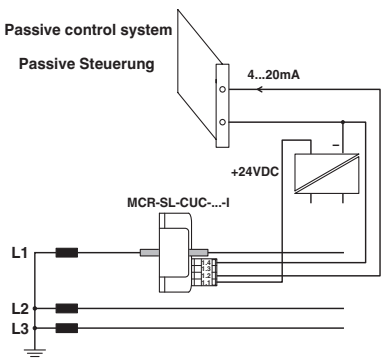



### Technical data

| | | | |
|---|---|---|---|
| Input data | ... -CUC-100-I | ... -CUC-200-I | ... -CUC-300-I |
| Input current | 0 ... 100 A | 0 ... 200 A | 0 ... 300 A |
| Frequency range | 20 Hz ... 6000 Hz | | |
| Curve type | AC, DC or distorted currents | | |
| Overload capacity | 6 x $I_{IN}$ | 3 x $I_{IN}$ | 3.33 x $I_{IN}$ |
| Connection method | Clamp-on cable design, diameter 1.20 in | | |
| Output data | | | |
| Output signal | 4 ... 20 mA | | |
| Maximum output signal | < 25 mA | | |
| Load $R_B$ | < 300 Ω | | |
| General data | | | |
| Supply voltage $U_B$ | 20 V DC ... 30 V DC | | |
| Maximum transmission error | < ±1% (of final value) | | |
| Temperature coefficient | Typ. 0.02%/K (0 ... 60°C) 0.04%/K (-40 ... 65°C) | | |
| Step response (10-90%) | 150 ms | | |
| Safe isolation | acc. to EN 61010 | | |
| Rated insulation voltage | 300 V AC | | |
| Surge voltage category / pollution degree | III / 2 | | |
| Test voltage input/output | 3.5 kV (50 Hz, 1 min.) | | |
| Test voltage input/power supply | 3.5 kV (50 Hz, 1 min.) | | |
| Degree of protection | IP20 | | |
| Ambient temperature range | -40°C ... 65°C | | |
| Housing material | Frianyl B63 V0 GV30 | | |
| Spring-cage connection (solid / stranded / AWG) | 0.25 ... 2.5 mm² / 0.2 ... 2.5 mm² / 24 - 12 | | |
| Conformance / approvals | | | |
| Conformance | CE-compliant | | |
| UL, USA / Canada | UL applied for | | |

### Ordering data

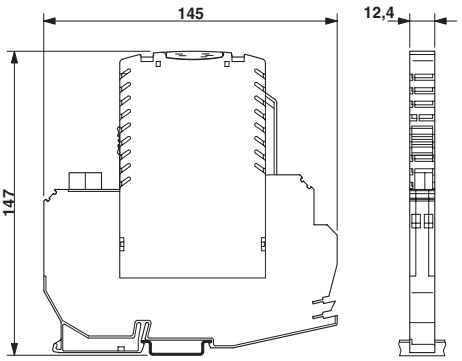
| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **Universal current transducer** | | | |
| Input current range: 0 ... 100 A | **MCR-SL-CUC-100-I** | **2308027** | 1 |
| Input current range: 0 ... 200 A | **MCR-SL-CUC-200-I** | **2308030** | 1 |
| Input current range: 0 ... 300 A | **MCR-SL-CUC-300-I** | **2308043** | 1 |




Current monitoring

## Analog IN
## Repeater power supply, Ex i
## - Plug-in

- Single-channel
- Supplies measuring transducers with 16 V
- Design width of just 12.4 mm
- 4 ... 20 mA input, [Ex ia] IIC
- 4 ... 20 mA output (active or passive)
- HART-compatible (bidirectional), configuration device can be connected on the Ex and non-Ex side
- 3-way electrical isolation
- 19.2 ... 30 V DC power supply
- Module can be plugged into base element without wiring
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible




SIL 2

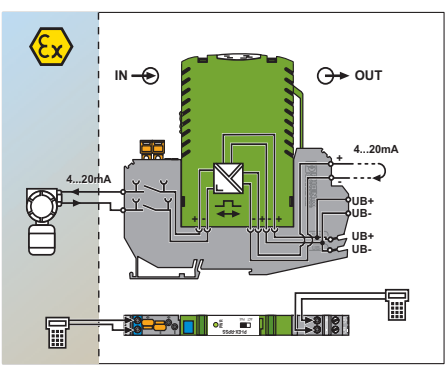
Ex:

**Notes:**

For information about base elements, surge protection, and other accessories, please refer to the INTERFACE catalog.

### Technical data

| | | |
|---|---|---|
| **Input data** | | |
| Input signal | | 4 mA ... 20 mA |
| Transmitter supply voltage | | > 16 V (at 20 mA) |
| **Output data** | | |
| Output signal range | | 4 mA ... 20 mA (active)<br>4 mA ... 20 mA (passive, 14 ... 26 V ext. source voltage) |
| Load | | < 600 Ω (at 20 mA) |
| Output ripple | | < 20 $mV_{rms}$ |
| Output behavior in the event of an error | | 0 mA (Cable break in the input)<br>≥ 24 mA (Cable short circuit in the input) |
| **General data** | | |
| Supply voltage range | | 19.2 V DC ... 30 V DC |
| Current consumption | | < 60 mA (at 24 V DC) |
| Power dissipation | | < 1.1 W (at 24 V DC / 20 mA) |
| Temperature coefficient | | < 0.01%/K |
| Step response (10-90%) | | < 600 µs (for 4 mA ... 20 mA step) |
| Transmission error | Typ./max. | < 0.05% (of final value) / < 0.1% (of final value) |
| Underload/overload range | | as per NE 43 |
| Electrical isolation | | |
| | Input/output/power supply | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| | Input/output | 375 V (Peak value in accordance with EN 60079-11) |
| | Input/power supply | 375 V (Peak value in accordance with EN 60079-11) |
| Ambient temperature range | | -20°C ... 60°C |
| Status indication | | Green LED (supply voltage, PWR) |
| Signal bandwidth | | 0 Hz ... 3 kHz (from Ex area to non-Ex area)<br>200 Hz ... 10 kHz (from non-Ex area to Ex area) |
| Protocols supported | | HART |
| Degree of protection | | IP20 |
| Housing material | | PBT and polyamide PA non-reinforced |
| Inflammability class in acc. with UL 94 | | V0 |
| **Safety data as per ATEX** | | |
| Max. voltage $U_o$ | | 25.2 V |
| Max. current $I_o$ | | 93 mA |
| Max. power $P_o$ | | 590 mW |
| Gas group | | II B II C |
| - max. external inductivity Lo | [mH] | 4 2 |
| - max. external capacity Co | [µF] | 0.82 0.107 |
| Maximum voltage $U_m$ | | 253 V AC |
| **Conformance / approvals** | | |
| Conformance | | CE-compliant, additionally EN 61326 |
| ATEX | | Ex II (1) G [Ex ia] IIC<br>Ex II (1) D [Ex iaD]<br>Ex II 3 (1) G Ex nA [ia] IIC T4 |
| Functional safety (SIL) | | SIL 2 according to EN 61508 |

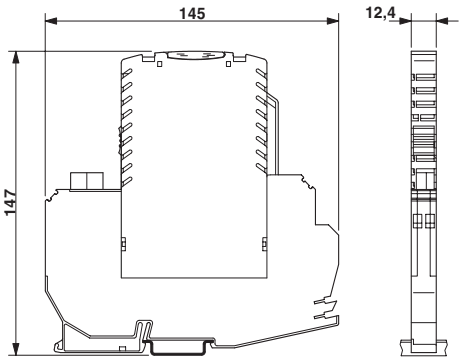



### Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **Repeater power supply, smart,** intrinsically safe input | **PI-EX-RPSS** | **2865243** | 1 |

## Analog IN
## Input isolating amplifier, Ex i
## - Plug-in

- Single-channel
- Design width of just 12.4 mm
- 0/4 ... 20 mA input, [Ex ia] IIC (passive)
- 0/4 mA ... 20 mA output (active or passive)
- HART-compatible (bidirectional), configuration device can be connected on the Ex and non-Ex side
- 3-way electrical isolation
- 19.2 ... 30 V DC power supply
- Module can be plugged into base element without wiring
- Up to SIL 2 according to EN 61508
- Installation in zone 2 permissible




SIL 2

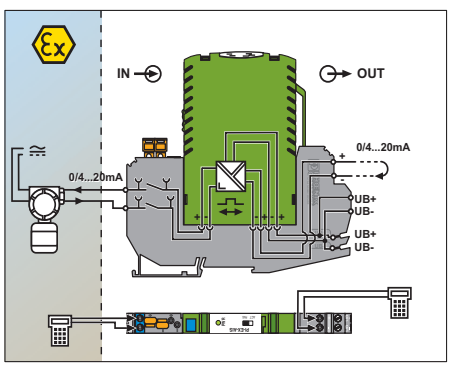
Ex:

**Notes:**

For information about base elements, surge protection, and other accessories, please refer to the INTERFACE catalog.

### Technical data

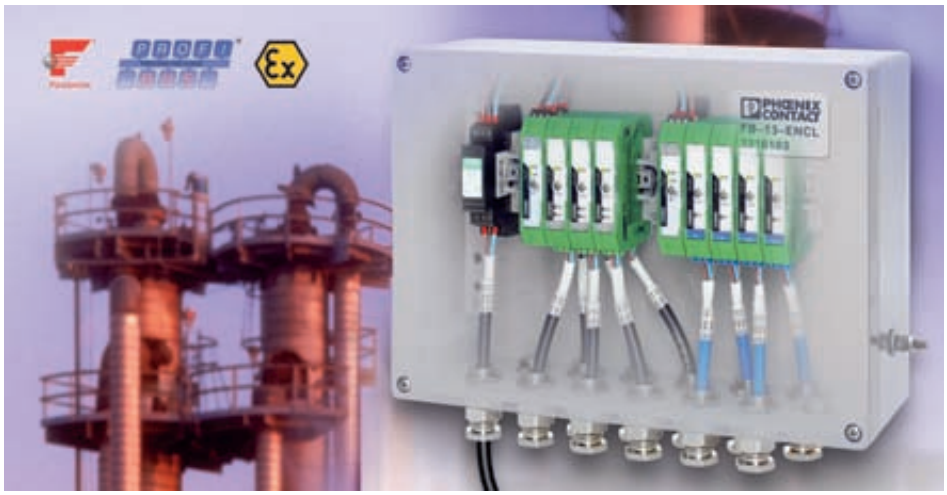
| | | |
|---|---|---|
| **Input data** | | |
| Input signal | | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Voltage drop | | < 3.5 V |
| **Output data** | | |
| Output signal range | | 0 mA ... 20 mA (active)<br>4 mA ... 20 mA (active)<br>0 mA ... 20 mA (passive, 14 ... 26 V ext. source voltage)<br>4 mA ... 20 mA (passive, 14 ... 26 V ext. source voltage) |
| Load | | ≤ 600 Ω (at 20 mA) |
| Output ripple | | < 20 $mV_{rms}$ |
| Output behavior in the event of an error | | 0 mA (Cable break in the input)<br>0 mA (Cable short circuit in the input) |
| **General data** | | |
| Supply voltage range | | 19.2 V DC ... 30 V DC |
| Current consumption | | < 36 mA (at 24 V) |
| Power dissipation | | < 0.9 W (at 24 V DC / 20 mA) |
| Temperature coefficient | | < 0.01%/K |
| Step response (10-90%) | | < 600 µs (for 4 mA ... 20 mA step) |
| Transmission error | Typ./max. | < 0.1% (of final value) / < 0.2% (of final value) |
| Electrical isolation | | |
| | Input/output/power supply | 2.5 kV (50 Hz, 1 min., test voltage)<br>300 $V_{rms}$ (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178) |
| | Input/output | 375 V (Peak value in accordance with EN 60079-11) |
| | Input/power supply | 375 V (Peak value in accordance with EN 60079-11) |
| Ambient temperature range | | -20°C ... 60°C |
| Status indication | | Green LED (supply voltage, PWR) |
| Signal bandwidth | | 0 Hz ... 3 kHz (from Ex area to non-Ex area)<br>200 Hz ... 10 kHz (from non-Ex area to Ex area) |
| Protocols supported | | HART |
| Degree of protection | | IP20 |
| Housing material | | PBT and polyamide PA non-reinforced |
| Inflammability class in acc. with UL 94 | | V0 |
| **Safety data as per ATEX** | | |
| Max. voltage $U_i$ | | 30 V |
| Max. current $I_i$ | | 150 mA |
| Max. inductance $L_i$ | | Negligible |
| Max. capacitance $C_i$ | | Negligible |
| Maximum voltage $U_m$ | | 253 V AC |
| **Conformance / approvals** | | |
| Conformance | | CE-compliant, additionally EN 61326 |
| ATEX | | II (1) G [Ex ia] IIC<br>II (1) D [Ex iaD]<br>II 3 (1) G Ex nA [ia] IIC T4 |
| Functional safety (SIL) | | SIL 2 according to EN 61508 |

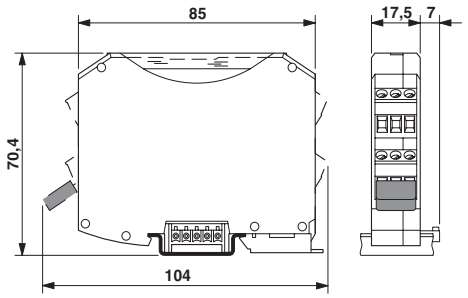



### Ordering data

| Description | Type | Order No. | Pcs. Pkt. |
|---|---|---|---|
| **Input isolating amplifier, smart,** intrinsically safe input | | | |
| | **PI-EX-AIS** | **2865696** | 1 |

## Device couplers






The fieldbus device couplers are suitable for Foundation Fieldbus and PROFIBUS PA. They provide an interface between the fieldbus trunk line and field devices. The compact width on the DIN rail reduces the required dimensions and weight of the field housing.

### FB-ET

– Connects to the trunk line and provides voltage limitation.
– Includes a pre-installed external dummy plug, ensuring availability at all times.
– A selector switch is provided to select the correct shield/ground connection.
– Diagnostic LEDs include DC OK, low voltage warning, and communication on the segment. The external dummy plug has a status LED.

### FB-2SP and FB-ISO

– Couple field devices to the bus and limit possible short-circuit currents according to the specified setpoint.
– Voltage and communication are routed via the ME 17,5 TBUS… connectors installed on the DIN rail.
– Provide non-incendive, FISCO ic and FNICO spur connections.
– Hot-swappable and scalable.
– Single-sided connector configuration simplifies wiring in field housing.
– Can be installed together in the same field housing.
– Diagnostic LEDs indicate DC OK and errors at the spur connection.

### FB-ISO only

– Comprehensive electrical isolation between the channels.
– Provides an intrinsically safe, FISCO connection.
– Single-loop integrity is achieved by the connection of a single FB-ISO coupler to a single device. With a separate circuit for each device, the redundancy achieved by the segment power supply is not compromised.

| | |
|---|---|
| **Supply** | |
| Supply voltage range | |
| Rated current | |
| Nominal current consumption | |
| **Fieldbus interface** | |
| Rated voltage | |
| Rated current | |
| Electrical isolation | |
| Termination resistor | |
| Surge protection | |
| **General data** | |
| Screw connection (solid / stranded / AWG) | |
| Weight | |
| Degree of protection | |
| Ambient temperature (operation) | |
| Max. permissible relative humidity (operation) | |
| **Conformance / approvals** | |
| Conformance | |
| NE | |
| ATEX | |
| IECEx | |
| CSA, USA/Canada | |
| Foundation Fieldbus | |

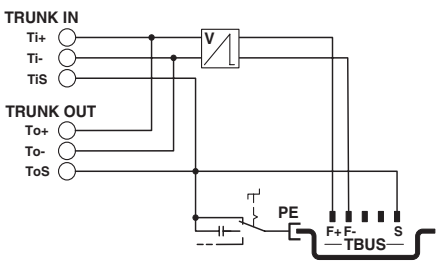
| Description |
|---|
| **Device coupler,** for Foundation Fieldbus and PROFIBUS PA |
| - Trunk module with external termination resistor and T-BUS connector<br>- 2 spur connections, includes T-BUS connector |
| - 1 spur connection, electrically isolated, intrinsically safe, includes T-BUS connector |

### Device coupler with T-BUS for trunk line connection and termination

Applied for:
CSA / IECEx

| Technical data | |
|---|---|
| 10.3 V DC ... 32 V DC input on trunk line side | |
| ≤ 1 A (Trunk line input side to T-BUS) | |
| 8 mA (without termination resistor) | |
| - | |
| - | |
| - | |
| 100 Ω, external removable connector included<br>Active if voltage exceeds 39 V (typ.) or 41 V (max.) | |
| 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 12 | |
| 66 g | |
| IP20 | |
| -40°C ... 85°C | |
| 95% (no condensation) | |
| CE-compliant, additionally EN 61326<br>NAMUR NE 21<br>ATEX applied for<br>IECEx applied for<br>CSA applied for<br>FF-846 | |

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs./ Pkt. |
| FB-ET | 2316048 | 1 |

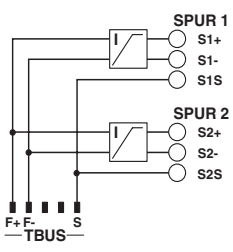


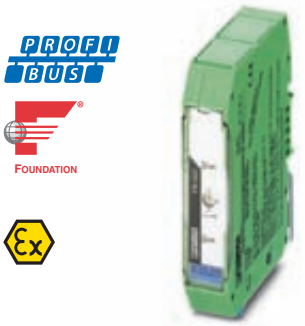
### Device coupler with T-BUS for 2 spur connections

Applied for:
CSA / IECEx

| Technical data | |
|---|---|
| 10.3 V DC ... 32 V DC input on trunk line side | |
| - | |
| 6 mA | |
| ≤ 32 V (per spur connection) | |
| 15 mA (per spur connection, adjustable via selector switch, -40…85°C)<br>25 mA (per spur connection, adjustable via selector switch, -40…80°C)<br>35 mA (per spur connection, adjustable via selector switch, -40…75°C)<br>45 mA (per spur connection, adjustable via selector switch, -40…70°C) | |
| - | |
| - | |
| - | |
| 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 12 | |
| 64 g | |
| IP20 | |
| -40°C ... 85°C (depending on set rated current) | |
| 95% (no condensation) | |
| CE-compliant, additionally EN 61326<br>NAMUR NE 21<br>ATEX applied for<br>IECEx applied for<br>CSA applied for<br>FF-846 | |

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs./ Pkt. |
| FB-2SP | 2316051 | 1 |



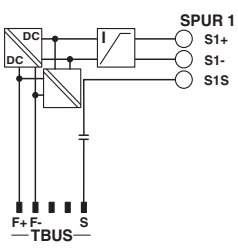



### Device coupler with T-BUS for 1 electrically isolated spur connection

Applied for:
CSA / IECEx

| Technical data | |
|---|---|
| 16 V DC ... 32 V DC input on trunk line side | |
| - | |
| 10 mA | |
| ≥ 10 V (per spur connection) | |
| 15 mA (per spur connection, adjustable via selector switch)<br>25 mA (per spur connection, adjustable via selector switch)<br>35 mA (per spur connection, adjustable via selector switch) | |
| 500 V AC (between input and output, routine test) | |
| - | |
| - | |
| 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 12 | |
| 105 g | |
| IP20 | |
| -40°C ... 60°C | |
| 95% (no condensation) | |
| CE-compliant, additionally EN 61326<br>NAMUR NE 21<br>ATEX applied for<br>IECEx applied for<br>CSA applied for<br>- | |

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs./ Pkt. |
| FB-ISO | 2316064 | 1 |



## Repeater, segment coupler, and bridge for DeviceNet, CAN, and CANopen

The new infrastructure components for CAN-based transmission systems (e.g., DeviceNet, CAN, and CANopen) can be used to implement interference-free and high-performance networks. Important requirements such as segmentation, electrical isolation, and increased network expansion can now be implemented as easily as almost any network structure.

### For flexible and high-performance CAN networks

Depending on the transmission speed, the signal runtimes in cables and devices limit the maximum achievable network expansion, as the CSMA/CA method only works in a limited time slot. Repeaters and segment couplers can be configured so that either physically restricted and highly dynamic networks or physically extensive networks can be implemented.

### Modular station structure thanks to integrated backplane bus

Depending on the desired number of channels and device function, star distributors can be freely combined. Cross-wiring for the data signal and power supply is implemented automatically via the backplane bus. The optional system power supply unit integrates seamlessly into the modular system.

### Practical connection method

The data signal and power supply are connected via COMBICON plug-in screw terminal blocks. To replace a device, simply insert the new device, no screws are required. For easy segment termination, each data interface has integrated termination resistors.

### PSI-REP-DNET CAN repeater

The repeater provides an electrically isolated connection for two segments with the same data rate. It is configured via DIP switches. By monitoring the protocol, a faulty segment can be detected and separated from the still operational network. Segmentation considerably increases the availability and performance of the network.

### PSI-SC-DNET CAN segment coupler

A segment coupler connects two segments with different data rates. To do this, the device is configured using the supplied software tool so that only data telegrams with specific identifiers are transmitted to the other segment. A segment coupler can be used to connect remote network segments using a slower CAN data rate.

### PSI-BRIDGE-DNET CAN bridge

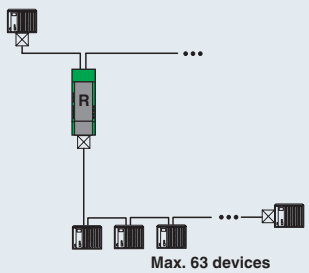
The bridge connects two segments of a network via different infrastructure solutions. The segments can operate at the same or different data rates. Modem/DSL paths, wireless connections or Ethernet networks can be used as an infrastructure solution via the FL COM server. An RS-422 interface is integrated as standard for connecting the desired infrastructure. The bridge is configured using the supplied software tool so that only data telegrams with specific identifiers are transmitted to the other segment. The advantage of the bridge is that it supports the combined use of alternative infrastructure components with CAN-based networks.

| | |
|---|---|
| Supply | |
| Supply voltage range | |
| Nominal current consumption | |
| RS-422 interface | |
| Termination resistor | |
| Transmission speed | |
| Transmission length | |
| Connection method | |
| CAN interface | |
| Termination resistor | |
| Transmission speed | |
| Transmission length | |
| Connection method | |
| General data | |
| Bit distortion, input | |
| Bit distortion, output | |
| Bit delay | |
| Alarm output | |
| Test voltage | |
| Ambient temperature range | |
| Electrical isolation | |
| Dimensions | W / H / D |
| Conformance / approvals | |
| ATEX | |
| UL, USA / Canada | |

| Description |
|---|
| **Modular repeater** for electrical isolation and increasing the range |
| **Modular segment coupler** for connecting slow network segments |
| **Modular bridge** for connecting alternative infrastructure solutions |

**System power supply unit,** primary-switched

**Stub line**




**☒= Switch on bus termination resistor**

Modular repeater for DeviceNet/CAN/CANopen, two channels in copper technology

Modular segment coupler for DeviceNet/CAN/CANopen, two channels in copper technology

Modular bridge for DeviceNet/CAN/CANopen, two channels in copper technology

## Technical data

| | | |
|---|---|---|
| | | |
| 10 V DC ... 32 V DC | 10 V DC ... 32 V DC | 10 V DC ... 32 V DC |
| 80 mA (24 V DC) | 80 mA (24 V DC) | 80 mA (24 V DC) |
| | | RS-422 interface in acc. with ITU-T V.11, EIA/TIA-422, DIN 66348-1 |
| - | - | Integrated, cannot be switched |
| - | - | 500 kbps, maximum |
| - | - | Up to 1200 m |
| - | - | COMBICON plug-in screw terminal block |
| CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen | CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen | CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen |
| 120 Ω, integrated and can be connected | 120 Ω, integrated and can be connected | 120 Ω, integrated and can be connected |
| 1000 kbps, maximum | 1000 kbps, maximum | 1000 kbps, maximum |
| max. 5000 m (Dependent on the data rate and the protocol used) | max. 5000 m (Dependent on the data rate and the protocol used) | max. 5000 m (Dependent on the data rate and the protocol used) |
| COMBICON plug-in screw terminal block | COMBICON plug-in screw terminal block | COMBICON plug-in screw terminal block |
| ±35% (permitted) | ±35% (permitted) | ±35% (permitted) |
| < 6.25% | < 6.25% | < 6.25% |
| < 1 bit (or a telegram length, can be configured) | < 1 bit (or a telegram length, can be configured) | - |
| 60 V DC, 0.5 A | 60 V DC, 0.5 A | 60 V DC, 0.5 A |
| 1.5 $kV_{rms}$ (50 Hz, 1 min.) | 1.5 $kV_{rms}$ (50 Hz, 1 min.) | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| -20°C ... 60°C | -20°C ... 60°C | -20°C ... 60°C |
| CAN //Supply | CAN //Supply | CAN //Supply |
| 35 mm / 119 mm / 116 mm | 35 mm / 119 mm / 116 mm | 35 mm / 119 mm / 116 mm |
| II 3 G Ex nA II T4 X | II 3 G Ex nA II T4 X | II 3 G Ex nA II T4 X |
| UL applied for | UL applied for | UL applied for |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSI-REP-DNET CAN** | **2313423** | 1 |

### Accessories

| | | |
|---|---|---|
| **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSI-SC-DNET CAN** | **2313449** | 1 |

### Accessories

| | | |
|---|---|---|
| **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |

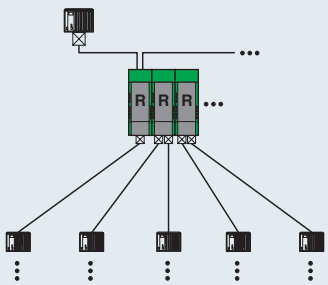
## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSI-BRIDGE-DNET CAN** | **2313533** | 1 |

### Accessories

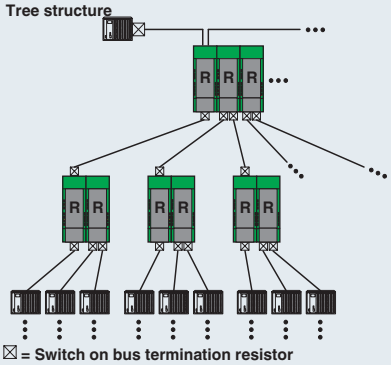
| | | |
|---|---|---|
| **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |

**Star structure**



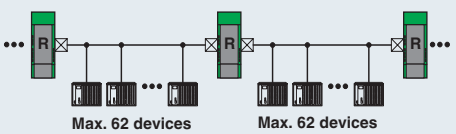

☒ = Switch on bus termination resistor

**Tree structure**




☒ = Switch on bus termination resistor

**Linear structure**




☒ = Switch on bus termination resistor

## Fiber optic converters for DeviceNet, CAN, and CANopen

The new PSI-MOS fiber optic converters enable easy and interference-free networking via fiber optics for DeviceNet, CAN, and CANopen users. The main advantage is the electrically isolated connection of bus devices, which means that the negative effects of voltage equalization currents and electromagnetic interference on the bus cables are a thing of the past. In addition, bus cable short circuits only affect the specific potential segment. This increases overall availability, and improves flexibility in terms of the design of the bus topology. The use of fiber optic technology enables longer branch lines and star and tree structures to be created.

### Flexible and high-performance CAN networks

Depending on the transmission speed, the signal runtimes in cables and devices limit the maximum achievable network expansion, as the CSMA/CA method only works in a limited time slot. PSI-MOS devices can be configured so that either physically restricted and highly dynamic networks or physically extensive networks can be implemented.

### Modular station structure thanks to integrated backplane bus

Depending on the desired number of channels and device function, star distributors can be freely combined. Cross-wiring for the data signal and power supply is implemented automatically via the backplane bus. The optional system power supply unit integrates seamlessly into the modular system.

### Comprehensive diagnostics

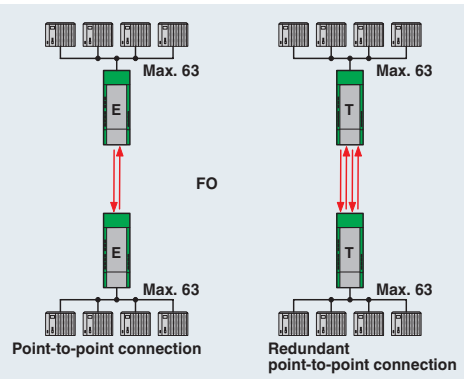
Particular importance has been placed on the diagnostics of the entire system. Automatic, permanent evaluation of the received optical power is indicated on the PSI-MOS via a four-stage bar graph. If the optical power is insufficient, an error is indicated via a floating switch contact.

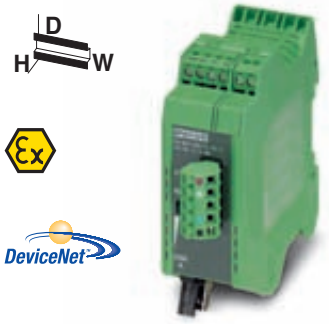
### Practical connection method

The data signal and power supply are connected via COMBICON plug-in screw terminal blocks. To replace a device, simply insert the new device, no screws are required. The copper-based data interface has an integrated termination resistor.

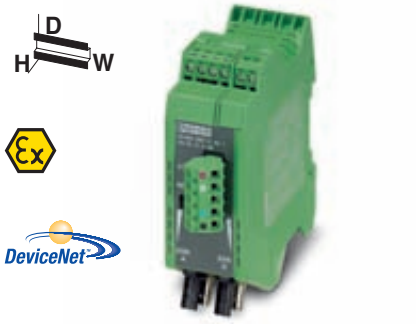
| | |
|---|---|
| Supply | |
| Supply voltage range | |
| Nominal current consumption | |
| CAN interface | |
| Termination resistor | |
| Transmission speed | |
| Transmission length | |
| Connection method | |
| Optical interface | |
| Connection | |
| Wavelength | |
| Transmission length Incl. 3 dB system reserve | |
| General data | |
| Bit delay | |
| Alarm output | |
| Test voltage | |
| Ambient temperature range | |
| Electrical isolation | |
| Dimensions | W / H / D |
| Conformance / approvals | |
| ATEX | |
| UL, USA / Canada | |

| Description |
|---|
| **Fiber optic converter,** termination device for converting data signals to a fiber optic cable |
| **Fiber optic converter,** T-coupler for converting data signals to two fiber optic cables |
| **DIN rail connector** (optional), for routing through the supply voltage and data signal, two pieces are required per device |
| **System power supply unit,** primary-switched |





**Modular fiber optic converter for DeviceNet/CAN/CANopen, one optical channel**



**Modular fiber optic converter for DeviceNet/CAN/CANopen, two optical channels**

| Technical data | |
|---|---|
| | |
| 10 V DC ... 32 V DC | 10 V DC ... 32 V DC |
| 130 mA (24 V DC) | 150 mA (24 V DC) |
| CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen | CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen |
| 120 Ω, integrated and can be connected | 120 Ω, integrated and can be connected |
| 1000 kbps, maximum | 1000 kbps, maximum |
| max. 5000 m (Dependent on the data rate and the protocol used) | max. 5000 m (Dependent on the data rate and the protocol used) |
| | |
| COMBICON plug-in screw terminal block | COMBICON plug-in screw terminal block |
| | |
| B-FOC | B-FOC |
| 850 nm | 850 nm |
| 1600 m (with F-K 200/230 8 dB/km with quick mounting connector)<br>2600 m (with F-G 50/125 2.5 dB/km)<br>2800 m (with F-G 62,5/125 3.0 dB/km) | 1600 m (with F-K 200/230 8 dB/km with quick mounting connector)<br>2600 m (with F-G 50/125 2.5 dB/km)<br>2800 m (with F-G 62,5/125 3.0 dB/km) |
| | |
| < 1 bit (or a telegram length, can be configured) | < 1 bit (or a telegram length, can be configured) |
| | |
| 60 V DC, 0.5 A | 60 V DC, 0.5 A |
| 1.5 $kV_{rms}$ (50 Hz, 1 min.) | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| -20°C ... 60°C | -20°C ... 60°C |
| CAN //Supply | CAN //Supply |
| 35 mm / 119 mm / 102 mm | 35 mm / 119 mm / 102 mm |
| | |
| Ex II 3 G Ex nA II T4 X<br>Ex II (2) GD [Ex op is] IIC (PTB 06 ATEX 2042 U) | Ex II 3 G Ex nA II T4 X<br>Ex II (2) GD [Ex op is] IIC (PTB 06 ATEX 2042 U) |
| UL applied for | UL applied for |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSI-MOS-DNET/FO 850 E** | **2313999** | 1 |

## Accessories

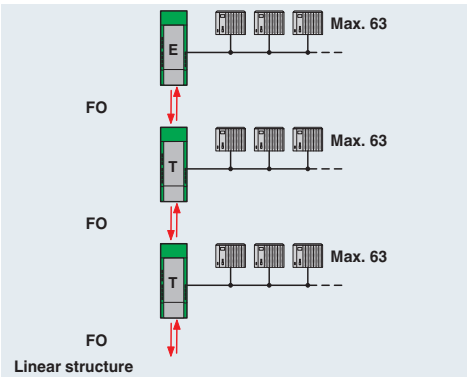
| | | |
|---|---|---|
| **ME 17,5 TBUS 1,5 / 5-ST-3,81 GN** | **2709561** | 10 |
| **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |

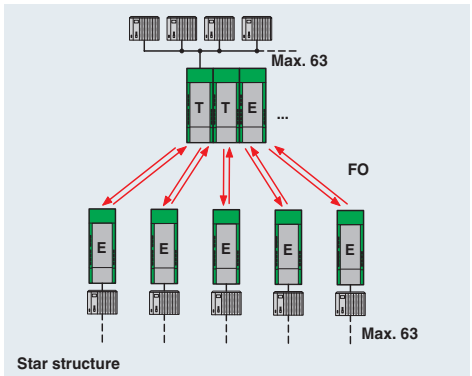
## Ordering data

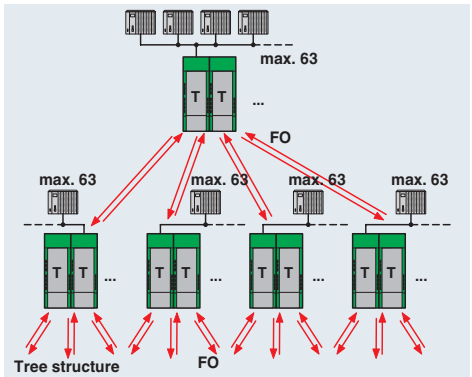
| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSI-MOS-DNET/FO 850 T** | **2313986** | 1 |

## Accessories

| | | |
|---|---|---|
| **ME 17,5 TBUS 1,5 / 5-ST-3,81 GN** | **2709561** | 10 |
| **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |



## Fiber optic converter and repeater for ControlNet

With the new infrastructure components for ControlNet, copper-based and fiber optic networks can benefit from the advantages of active devices. The main advantage is the electrically isolated connection of bus devices, which means that the negative effects of voltage equalization currents and electromagnetic interference on the bus cables are a thing of the past. In addition, bus cable short circuits only affect the specific potential segment. In addition to interference-free and electrically isolated networking, the use of fiber optic technology also enables longer branch lines and star and tree structures to be created. This increases the overall availability of your system, and improves flexibility in terms of the design of the bus topology.

### Modular station structure thanks to integrated backplane bus

Depending on the desired number of channels and device function, star distributors can be freely combined. Each channel can be configured in copper or fiber optic technology as required. Cross-wiring for the data signal and power supply is implemented automatically via the backplane bus. The optional system power supply unit integrates seamlessly into the modular system.

### Comprehensive diagnostics

Particular importance has been placed on the diagnostics of the entire system. Automatic, permanent evaluation of the received optical power is indicated on PSI-MOS devices via a four-stage bar graph. If the optical power is insufficient, an error is indicated via a floating switch contact.

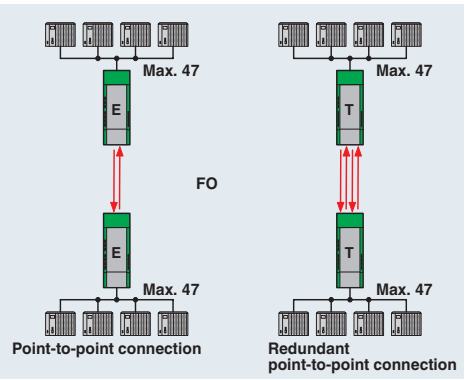
### Practical connection method

The power supply is connected via COMBICON plug-in screw terminal blocks. To replace a device, simply insert the new device, no screws are required.

| | |
|---|---|
| Supply | |
| Supply voltage | |
| Nominal current consumption | |
| ControlNet interface | |
| Transmission speed | |
| Transmission length | |
| Connection method | |
| Optical interface | |
| Connection | |
| Wavelength | |
| Transmission length Incl. 3 dB system reserve | |

| | |
|---|---|
| General data | |
| Bit delay | |
| Alarm output | |
| Test voltage | |
| Ambient temperature range | |
| Electrical isolation | |
| Dimensions | W / H / D |
| Conformance / approvals | |
| ATEX | |
| UL, USA / Canada | |

| Description |
|---|
| **Repeater** for electrical isolation and increasing the range |
| **Fiber optic converter,** termination device for converting data signals to a fiber optic cable |
| **Fiber optic converter,** T-coupler for converting data signals to two fiber optic cables |
| **DIN rail connector** (optional), for routing through the supply voltage and data signal, two pieces are required per device |
| **System power supply unit,** primary-switched |



**Modular repeater for ControlNet, two channels in copper technology**

**Modular fiber optic converter for ControlNet, one optical channel**

**Modular fiber optic converter for ControlNet, two optical channels**

## Technical data

| | |
|---|---|
| Supply voltage | 24 V DC ±25% |
| Current consumption | 65 mA (24 V DC) |
| Interface | ControlNet interface, according to EN 50170 |
| Transmission speed | 5 Mbps |
| Transmission length | max. 1000 m |
| Connection | BNC 75 Ω |
| Fiber optic type | - |
| Wavelength | - |
| Transmission length | |
| Jitter | < 3 bits |
| Output | 60 V DC, 0.5 A |
| Insulation voltage | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| Ambient temperature | -20°C ... 60°C |
| Power supply | ControlNet // power supply |
| Dimensions | 35 mm / 117 mm / 117 mm |
| Ex approval | Ex II 3 G Ex nA II T4 X |
| | UL applied for |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| PSI-REP-CNET | 2313737 | 1 |

## Accessories

| | | |
|---|---|---|
| ME 17,5 TBUS 1,5 / 5-ST-3,81 GN | 2709561 | 10 |
| MINI-SYS-PS-100-240AC/24DC/1.5 | 2866983 | 1 |

## Technical data

| | |
|---|---|
| Supply voltage | 24 V DC ±25% |
| Current consumption | 85 mA (24 V DC) |
| Interface | ControlNet interface, according to EN 50170 |
| Transmission speed | 5 Mbps |
| Transmission length | max. 1000 m |
| Connection | BNC 75 Ω |
| Fiber optic type | B-FOC |
| Wavelength | 850 nm |
| Transmission length | 1000 m (with F-K 200/230 8 dB/km with quick mounting connector)<br>2600 m (with F-G 50/125 2.5 dB/km)<br>2800 m (with F-G 62,5/125 3.0 dB/km) |
| Jitter | < 3 bits |
| Output | 60 V DC, 0.5 A |
| Insulation voltage | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| Ambient temperature | -20°C ... 60°C |
| Power supply | ControlNet // power supply |
| Dimensions | 35 mm / 117 mm / 102 mm |
| Ex approval | Ex II 3 G Ex nA II T4 X<br>Ex II (2) GD [Ex op is] IIC (PTB 06 ATEX 2042 U) |
| | UL applied for |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| PSI-MOS-CNET/FO 850 E | 2313711 | 1 |

## Accessories

| | | |
|---|---|---|
| ME 17,5 TBUS 1,5 / 5-ST-3,81 GN | 2709561 | 10 |
| MINI-SYS-PS-100-240AC/24DC/1.5 | 2866983 | 1 |

## Technical data

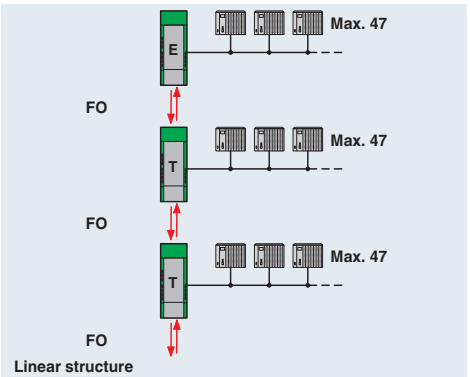
| | |
|---|---|
| Supply voltage | 24 V DC ±25% |
| Current consumption | 100 mA (24 V DC) |
| Interface | ControlNet interface, according to EN 50170 |
| Transmission speed | 5 Mbps |
| Transmission length | max. 1000 m |
| Connection | BNC 75 Ω |
| Fiber optic type | B-FOC |
| Wavelength | 850 nm |
| Transmission length | 1000 m (with F-K 200/230 8 dB/km with quick mounting connector)<br>2600 m (with F-G 50/125 2.5 dB/km)<br>2800 m (with F-G 62,5/125 3.0 dB/km) |
| Jitter | < 3 bits |
| Output | 60 V DC, 0.5 A |
| Insulation voltage | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| Ambient temperature | -20°C ... 60°C |
| Power supply | ControlNet // power supply |
| Dimensions | 35 mm / 117 mm / 102 mm |
| Ex approval | Ex II 3 G Ex nA II T4 X<br>Ex II (2) GD [Ex op is] IIC (PTB 06 ATEX 2042 U) |
| | UL applied for |

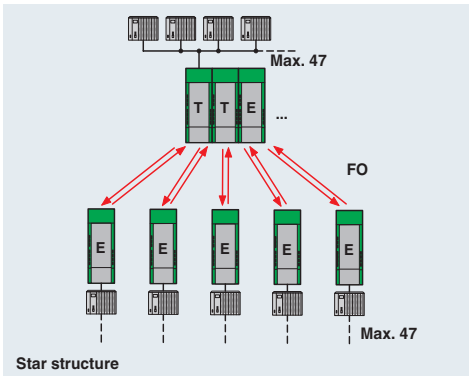
## Ordering data

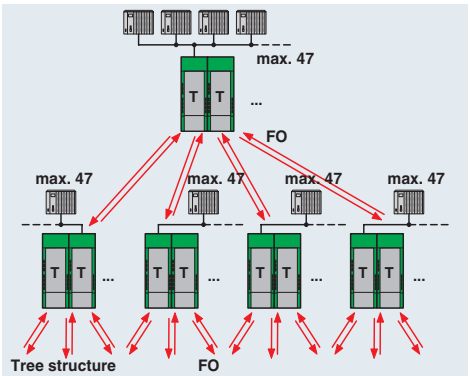
| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| PSI-MOS-CNET/FO 850 T | 2313724 | 1 |

## Accessories

| | | |
|---|---|---|
| ME 17,5 TBUS 1,5 / 5-ST-3,81 GN | 2709561 | 10 |
| MINI-SYS-PS-100-240AC/24DC/1.5 | 2866983 | 1 |



**Industrial Modem Line – The complete modem range**

Industrial modems can be used to connect to machines and systems worldwide for efficient remote maintenance, continuous data acquisition, and automatic alarm generation.

The Industrial Modem Line is optimized for harsh industrial environments – and thus guarantees reliable data links.

**The modem range offers the following:**

– **Universal data links:**
Worldwide and control-independent
– **Secure communication:**
Integrated security functions offer manipulation and expertise protection
– **Efficient remote access solutions:**
Reliable and high-performance use in industrial environments

**Optimized remote access for every application**

The Industrial Modem Line offers the right modem for every communication interface, whether Ethernet, serial interface or I/O data.

This means that all connection paths are kept open. Whether conventional via analog dial-up connections or wireless in the GSM mobile phone network, you can access the Internet reliably via VPN tunnel using GPRS and EDGE. Or use our new SHDSL modems for a DSL high-speed permanent line.

**DSL high-speed modems**

The new DSL permanent line modems enable symmetrical data rates of up to 30 Mbps. An old, existing copper cable is sufficient even for broadband Ethernet connections.

**No configuration:**

Automatic data rate detection on the DSL path and protocol transparency simplify startup considerably.

Numerous diagnostic functions, a logbook, and two alarm outputs ensure secure and reliable operation.

The three versions of the new DSL permanent line modem offer symmetrical data transmission on 2 or 4-wire cables. Transmission lengths of up to 10 km can be achieved for Ethernet, PROFIBUS, and serial interfaces.

## DSL permanent line modem

### PSI-MODEM-SHDSL/ETH

With the new DSL ETHERNET permanent line modem, existing copper cables can be used for modern, broadband Ethernet applications.

### Applications:

– Suitable for the plant's own cables, not for public telephone networks
– Point-to-point connection
– Linear structure, up to 255 devices

### SHDSL technology

– Symmetrical data transmission
– Up to 30 Mbps (4-wire)
– Up to 15.3 Mbps (2-wire)

### Ethernet interface

– Transparent protocol
– IPv4 and IPv6-compatible
– 10/100 Mbps
– Auto-MDI(X)

### Alarm outputs

– Two digital outputs
– Can be configured individually

### Configuration

– Automatic detection
  - Optimum DSL speed
  - Ethernet parameters
  - Plug and play
– With configuration software
  - Customer-specific parameters
  - Guided project configuration
  - Plausibility checks included

### Configuration software also supports:

– Online diagnostics
  - Diagnostic function
  - Logbook function with plain text
– Saving/printing
  - Of device configurations
  - Of project configurations

**DSL Ethernet permanent line modem**

### Technical data

| | | |
|---|---|---|
| **Supply** | | |
| Supply voltage | | 18 V DC ... 32 V DC |
| Supply voltage | | 24 V DC ±5% (as an alternative or redundant, via backplane bus contact and system current supply) |
| Nominal current consumption | | < 180 mA (at 24 V) |
| **Ethernet interface** | | |
| Connection method | | RJ45 female connector, shielded |
| Transmission speed | | 10/100 Mbps |
| Transmission length | | max. 100 m (shielded twisted pair) |
| **SHDSL interface** | | SHDSL interface according to ITU-T G.991.2bis |
| Connection method | | 2 x 2-pos. COMBICON plug-in screw terminal blocks |
| Transmission speed | | 4-wire operation: 64 kbps ... 30 Mbps<br>2-wire operation: 32 kbps ... 15.3 Mbps |
| Transmission length | | Up to 10 km (Depending on data rate and cable cross-section) |
| **USB interface** | | USB 2.0 |
| Connection method | | Mini-USB type B, 5-pos. |
| Transmission length | | max. 5 m (only for configuration and diagnostics) |
| **Functions** | | |
| Management | | Automatic detection (DSL, Ethernet), user-friendly configuration software, including plausibility checks, diagnostics, logbook |
| **Input/output** | | |
| Switching input | | - |
| Switching output | | 2 x $U_{Nom}$/150 mA (the digital outputs cannot be used for power supply via the T-BUS), short-circuit-proof |
| **General data** | | |
| Ambient temperature (operation) | | -20°C ... 60°C (for derating, see technical documentation) |
| Electrical isolation | | Power supply // Ethernet // DSL // FE |
| Test voltage | | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| Electromagnetic compatibility | | Conformance with EMC Directive 2004/108/EC |
| Dimensions | W / H / D | 35 mm / 114.5 mm / 99 mm |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **DSL Ethernet permanent line modem**, for point-to-point and linear structures on the plant's own 2 and 4-wire cables | **PSI-MODEM-SHDSL/ETH** | **2313643** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **System power supply unit,** primary-switched | **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |
| **DIN rail connector** (optional), for routing through the supply voltage and data signal, two pieces are required per device | **ME 17,5 TBUS 1,5 / 5-ST-3,81 GN** | **2709561** | 10 |
| **DATATRAB,** surge protection for two signal pairs of the analog and digital (DSL) telecommunication interface | **DT-TELE-RJ45** | **2882925** | 1 |

## DSL permanent line modem

**DSL V.24 (RS-232)/RS-422/RS-485 permanent line modem**

### PSI-MODEM-SHDSL/SERIAL

With the new DSL SERIAL permanent line modem, existing copper cables can be used for serial data transmission.

### Applications:

– Suitable for the plant's own cables, not for public telephone networks
– Point-to-point connection
– Linear structure, up to 255 devices

### SHDSL technology

– Symmetrical data transmission
– Up to 30 Mbps (4-wire)
– Up to 15.3 Mbps (2-wire)

### Serial interfaces

– V.24 (RS-232), up to 430 kbps
– RS-422, up to 2000 kbps
– RS-485, up to 1500 kbps

### Alarm outputs

– Two digital outputs
– Can be configured individually

### Configuration

– With configuration software
  - Customer-specific parameters
  - Guided project configuration
  - Plausibility checks included

### Configuration software also supports:

– Online diagnostics
  - Diagnostic function
  - Logbook function with plain text
– Saving/printing
  - Of device configurations
  - Of project configurations

### Technical data

| | | |
|---|---|---|
| **Supply** | | |
| Supply voltage | | 18 V DC ... 32 V DC |
| Supply voltage | | 24 V DC ±5% (as an alternative or redundant, via backplane bus contact and system current supply) |
| Nominal current consumption | | < 180 mA (at 24 V) |
| **V.24 (RS-232) interface** | | |
| Connection method | | 9-pos. D-SUB male connector |
| Data format/encoding | | Serial asynchronous UART/NRZ, 7/8 data, 1/2 stop, 1 parity, 10/11-bit character length |
| Transmission speed | | 1.2/2.4/4.8/9.6/19.2/38.4/56.8/75/93.75/115.2/136/187.5/375 / 430 kbps, NRZ |
| Transmission length | | max. 15 m |
| **SHDSL interface** | | SHDSL interface according to ITU-T G.991.2bis |
| Connection method | | 2 x 2-pos. COMBICON plug-in screw terminal blocks |
| Transmission speed | | 4-wire operation: 64 kbps ... 30 Mbps<br>2-wire operation: 32 kbps ... 15.3 Mbps |
| Transmission length | | Up to 10 km (Depending on data rate and cable cross-section) |
| **USB interface** | | USB 2.0 |
| Connection method | | Mini-USB type B, 5-pos. |
| Transmission length | | max. 5 m (only for configuration and diagnostics) |
| **Functions** | | |
| Management | | Automatic detection (optimum DSL data rate), user-friendly configuration software, including plausibility checks, diagnostics, logbook |
| **Input/output** | | |
| Switching input | | - |
| Switching output | | 2 x $U_{Nom}$/150 mA (the digital outputs cannot be used for power supply via the T-BUS), short-circuit-proof |
| **General data** | | |
| Ambient temperature (operation) | | -20°C ... 60°C (for derating, see technical documentation) |
| Electrical isolation | | Power supply // Ethernet // DSL // FE |
| Test voltage | | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| Electromagnetic compatibility | | Conformance with EMC Directive 2004/108/EC |
| Dimensions | W / H / D | 35 mm / 114.5 mm / 99 mm |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **DSL serial permanent line modem**, for point-to-point and linear structures on the plant's own 2 and 4-wire cables | **PSI-MODEM-SHDSL/SERIAL** | **2313669** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **System power supply unit,** primary-switched | **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |
| **DIN rail connector** (optional), for routing through the supply voltage and data signal, two pieces are required per device | **ME 17,5 TBUS 1,5 / 5-ST-3,81 GN** | **2709561** | 10 |
| **DATATRAB,** surge protection for two signal pairs of the analog and digital (DSL) telecommunication interface | **DT-TELE-RJ45** | **2882925** | 1 |

## DSL permanent line modem

### PSI-MODEM-SHDSL/PB

With the new DSL PROFIBUS permanent line modem, existing copper cables can be used for PROFIBUS applications.

### Applications:

– Suitable for the plant's own cables, not for public telephone networks
– Point-to-point connection
– Linear structure, up to 255 devices

### SHDSL technology

– Symmetrical data transmission
– Up to 30 Mbps (4-wire)
– Up to 15.3 Mbps (2-wire)

### PROFIBUS interface

– Up to 500 kbps

### Alarm outputs

– Two digital outputs
– Can be configured individually

### Configuration

– With configuration software
  - Customer-specific parameters
  - Guided project configuration
  - Plausibility checks included

### Configuration software also supports:

– Online diagnostics
  - Diagnostic function
  - Logbook function with plain text
– Saving/printing
  - Of device configurations
  - Of project configurations

DSL PROFIBUS permanent line modem

### Technical data

| | |
|---|---|
| **Supply** | |
| Supply voltage | 18 V DC ... 32 V DC |
| Supply voltage | 24 V DC ±5% (as an alternative or redundant, via backplane bus contact and system current supply) |
| Nominal current consumption | < 180 mA (at 24 V) |
| **RS-485 interface** | PROFIBUS acc. to IEC 61158, RS-485 2-wire, half duplex, automatic control |
| Connection method | 9-pos. D-SUB female connector |
| Transmission speed | 9.6/19.2/45.45/93.75/187.5/500 kbps, set via configuration software |
| Transmission length | max. 1200 m (depending on the data rate, with shielded, twisted pair data cable) |
| **SHDSL interface** | SHDSL interface according to ITU-T G.991.2bis |
| Connection method | 2 x 2-pos. COMBICON plug-in screw terminal blocks |
| Transmission speed | 4-wire operation: 64 kbps ... 30 Mbps<br>2-wire operation: 32 kbps ... 15.3 Mbps |
| Transmission length | Up to 10 km (Depending on data rate and cable cross-section) |
| **USB interface** | USB 2.0 |
| Connection method | Mini-USB type B, 5-pos. |
| Transmission length | max. 5 m (only for configuration and diagnostics) |
| **Functions** | |
| Management | Automatic detection (optimum DSL data rate), user-friendly configuration software, including plausibility checks, diagnostics, logbook |
| **Input/output** | |
| Switching input | - |
| Switching output | 2 x $U_{Nom}$/150 mA (the digital outputs cannot be used for power supply via the T-BUS), short-circuit-proof |
| **General data** | |
| Ambient temperature (operation) | -20°C ... 60°C (for derating, see technical documentation) |
| Electrical isolation | Power supply // Ethernet // DSL // FE |
| Test voltage | 1.5 $kV_{rms}$ (50 Hz, 1 min.) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Dimensions W / H / D | 35 mm / 114.5 mm / 99 mm |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **DSL PROFIBUS permanent line modem**, for point-to-point and linear structures on the plant's own 2 and 4-wire cables | **PSI-MODEM-SHDSL/PB** | **2313656** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **System power supply unit,** primary-switched | **MINI-SYS-PS-100-240AC/24DC/1.5** | **2866983** | 1 |
| **DIN rail connector** (optional), for routing through the supply voltage and data signal, two pieces are required per device | **ME 17,5 TBUS 1,5 / 5-ST-3,81 GN** | **2709561** | 10 |
| **DATATRAB,** surge protection for two signal pairs of the analog and digital (DSL) telecommunication interface | **DT-TELE-RJ45** | **2882925** | 1 |

## SUBCON-PLUS-PROFIBUS
## D-SUB fast connection

### PROFIBUS connectors with fast connection

The new SUBCON-PLUS-PROFIB/ ... connector range is specifically designed for use in PROFIBUS systems up to 12 Mbps.

The compact 90° design and transparent terminal cover support the system installer and ensure fast startup.

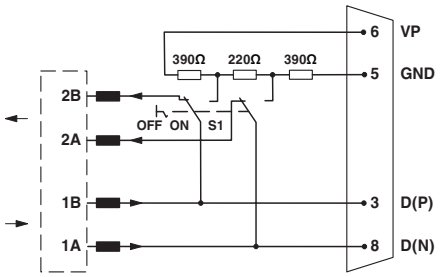
The product offers the following features:

– Screw or IDC connection method
– Suitable for solid and stranded copper conductors
– Transparent terminal covers for safe connection of bus cables and easy troubleshooting
– Metal housing for high level of immunity to interference at maximum transmission speed
– With or without additional programming device connection
– Angled 90° cable entry
– Compact design for applications where space is limited

Screw or IDC connection method is available for the cable connection. Under field conditions, this enables quick and safe connection of the incoming and outgoing bus cable.

The cable entry is designed for all standard PROFIBUS cables with an outside diameter of 8 mm.

In addition, all versions already have an integrated termination resistor. This can be switched on externally via a slide switch. At the same time the outgoing bus segment is switched off. This makes it easy to start up segment by segment while incorrect terminations are avoided.




**Functional diagram of the connector range SUBCON-PLUS-PROFIB/ ...**

**PROFIBUS connector, IDC connection (insulation displacement connection)**

### Technical data

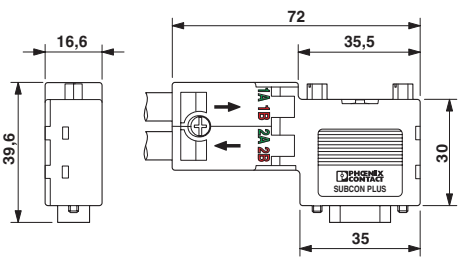
| | | |
|---|---|---|
| Cable entry | | Left |
| Pin assignment | | 3, 5, 6, 8 |
| Connection cross-section | solid | 0.32 mm² |
| | stranded | 0.32 mm² |
| | AWG | 22 |
| Insertion/withdrawal cycles | | > 200 |
| Cable cross-section (max./min.) | | 8.4 mm / 7.6 mm |
| Ambient temperature (operation) | | -20°C ... 75°C |
| Degree of protection | | IP40 |
| Housing material | | ABS, metal-plated |
| Termination resistor | | 220 Ω (Can be connected externally) |
| Termination resistor | | 390 Ω (Can be connected externally) |
| SUBCON fixing | | 4-40 UNC 0.4 Nm |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **PROFIBUS connector**, up to 12 Mbps, integrated termination resistor which can be switched on externally, 9-pos. D-SUB male connector, pin assignment 3,5,6,8<br>- IDC connection, angled 90°<br>- IDC connection, angled 90°, with second 9-pos. D-SUB female connector (PG) | **SUBCON-PLUS-PROFIB/90/IDC** | **2313672** | 1 |
| **PROFIBUS connector**, up to 12 Mbps, integrated termination resistor which can be switched on externally, 9-pos. D-SUB male connector, pin assignment 3,5,6,8<br>- Screw connection, angled 90°<br>- Screw connection, angled 90°, with second 9-pos. D-SUB female connector (PG) | | | |

### Accessories

| | | | |
|---|---|---|---|
| **PROFIBUS cable, Fast Connect type,** up to 12 Mbps, for permanent connection (02YSY (ST)CY 1X2X22 AWG)<br>(Length in meters as per customer specifications) | **PSM-CABLE-PROFIB/FC** | **2744652** | 1 |
| **Quick stripping tool** for PROFIBUS cable, Fast Connect type | **PSM-STRIP-FC/PROFIB** | **2744623** | 1 |
| **Stripping tool,** for conductors and cables | **QUICK WIREFOX 6** | **1204384** | 1 |
| **Screwdriver** | **SZK PH1** | **1205150** | 10 |
| **Screwdriver** | | | |



**PROFIBUS connector, IDC connection (insulation displacement connection) with PG female connector**

**PROFIBUS connector, screw connection**

**PROFIBUS connector, screw connection, with PG female connector**

### Technical data

| | | |
|---|---|---|
| Left | Left | Left |
| 3, 5, 6, 8 | 3, 5, 6, 8 | 3, 5, 6, 8 |
| 0.32 mm² | 0.14 mm² - 1.5 mm² | 0.14 mm² - 1.5 mm² |
| 0.32 mm² | 0.14 mm² - 1 mm² | 0.14 mm² - 1 mm² |
| 22 | 26 - 16 | 26 - 16 |
| > 200 | > 200 | > 200 |
| 8.4 mm / 7.6 mm | 8.4 mm / 7.6 mm | 8.4 mm / 7.6 mm |
| -20°C ... 75°C | -20°C ... 75°C | -20°C ... 75°C |
| IP40 | IP40 | IP40 |
| ABS, metal-plated | ABS, metal-plated | ABS, metal-plated |
| 220 Ω (Can be connected externally) | 220 Ω (Can be connected externally) | 220 Ω (Can be connected externally) |
| 390 Ω (Can be connected externally) | 390 Ω (Can be connected externally) | 390 Ω (Can be connected externally) |
| 4-40 UNC 0.4 Nm | 4-40 UNC 0.4 Nm | 4-40 UNC 0.4 Nm |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **SUBCON-PLUS-PROFIB/90/PG/IDC** | **2313685** | 1 |

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **SUBCON-PLUS-PROFIB/90/SC** | **2313698** | 1 |

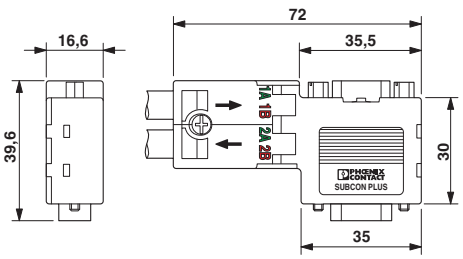
| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **SUBCON-PLUS-PROFIB/90/PG/SC** | **2313708** | 1 |

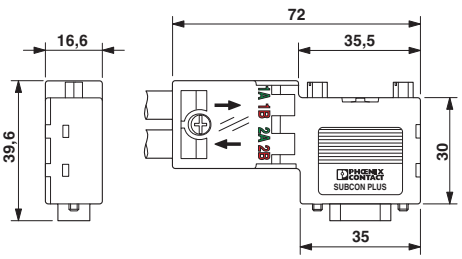
### Accessories

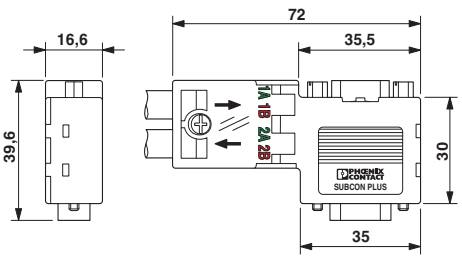
| | | |
|---|---|---|
| **PSM-CABLE-PROFIB/FC** | **2744652** | 1 |
| **PSM-STRIP-FC/PROFIB** | **2744623** | 1 |
| **QUICK WIREFOX 6** | **1204384** | 1 |
| **SZK PH1** | **1205150** | 10 |

| | | |
|---|---|---|
| **PSM-CABLE-PROFIB/FC** | **2744652** | 1 |
| **PSM-STRIP-FC/PROFIB** | **2744623** | 1 |
| **QUICK WIREFOX 6** | **1204384** | 1 |
| **SZK PH1** | **1205150** | 10 |
| **SZF 0-0,4X2,5** | **1204504** | 10 |

| | | |
|---|---|---|
| **PSM-CABLE-PROFIB/FC** | **2744652** | 1 |
| **PSM-STRIP-FC/PROFIB** | **2744623** | 1 |
| **QUICK WIREFOX 6** | **1204384** | 1 |
| **SZK PH1** | **1205150** | 10 |
| **SZF 0-0,4X2,5** | **1204504** | 10 |



## QUINT POWER power supply unit, 40 A with SFB technology

Benefit from the functional advantages of the QUINT POWER SFB power supply unit with 40 A output current. The unique SFB technology and preventive function monitoring increase the availability of your application:

### SFB technology with 215 A for 12 ms:

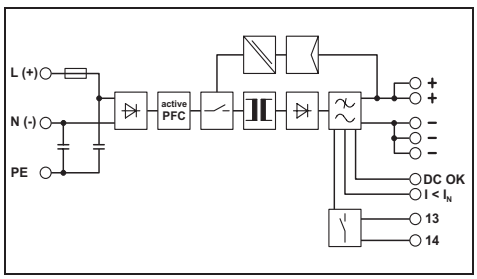
Standard circuit breakers up to B25/C13 trip reliably, faulty current paths are disconnected selectively.

### Preventive:

Function monitoring indicates critical operating states before they can lead to errors in the system.

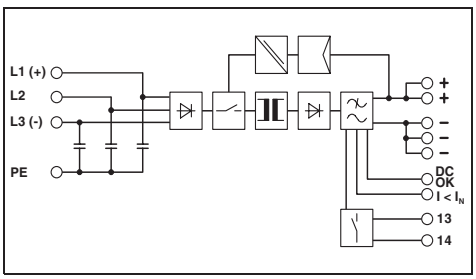
**Power supply unit, 1 AC, 24 V DC, 40 A**

Applied for:
UL Listed / UL / GL / LR / NV / BV / NK / ABS



**Power supply unit, 3 AC, 24 V DC, 40 A**

Applied for: GL / LR / NV / BV / NK / ABS




| | Technical data | Technical data |
|---|---|---|
| **Input data** | | |
| Nominal input voltage range | 100 V AC ... 240 V AC | 3x 400 V AC ... 500 V AC |
| Input voltage range AC/DC | 85 V AC ... 264 V AC / 90 V DC ... 350 V DC | 320 V AC ... 575 V AC / 450 V DC ... 800 V DC |
| Frequency range | 45 Hz ... 65 Hz / 0 Hz | 45 Hz ... 65 Hz / 0 Hz |
| Current consumption (nominal load) | Approx. 8.8 A (120 V AC) / Approx. 4.6 A (230 V AC) | Approx. 3x 3.1 A (400 V AC) / Approx. 3x 2.7 A (500 V AC) |
| Inrush current limitation at 25°C (typ.) / $I^2t$ | < 50 A / < 3.4 $A^2s$ | < 20 A / < 1 $A^2s$ |
| Mains buffering ($I_N$, typ.) | > 20 ms (120 V AC) / > 20 ms (230 V AC) | > 25 ms (400 V AC) / > 35 ms (500 V AC) |
| Input fuse | 20 A (slow-blow, internal) | - |
| Recommended backup fuse, miniature circuit breaker | 16 A, 20 A (characteristic B) | 6 A, 10 A, 16 A (characteristic B) |
| **Output data** | | |
| Nominal output voltage | 24 V DC ±1% | 24 V DC ±1% |
| Setting range of the output voltage | 18 V DC ... 29.5 V DC (> 24 V constant capacity) | 18 V DC ... 29.5 V DC (> 24 V constant capacity) |
| Output current / POWER BOOST / SFB (12 ms) | 40 A / 45 A / 215 A | 40 A / 45 A / 215 A |
| Magnetic fuse tripping | max. 25 A (characteristic B), max. 13 A (Characteristic C) | max. 25 A (characteristic B), max. 13 A (Characteristic C) |
| Can be connected in parallel / series | Yes / Yes | Yes / Yes |
| Max. power dissipation (idling/nominal load) | 13.5 W / 97 W | 18 W / 63 W |
| Efficiency (typ.) | > 92% (for 230 V AC and nominal values) | > 94% (at 400 V AC and nominal values) |
| Residual ripple | < 100 $mV_{PP}$ | < 40 $mV_{PP}$ |
| **Signaling** | | |
| Signaling DC OK | LED, active switching output, relay contact | LED, active switching output, relay contact |
| Boost signaling | LED, active switching output | LED, active switching output |
| **General data** | | |
| Weight / Dimensions W x H x D | 3.3 kg / 180 x 130 x 125 mm | 2.5 kg / 96 x 130 x 176 mm |
| Mounting position | Horizontal NS 35 DIN rail, EN 60715 | Horizontal NS 35 DIN rail, EN 60715 |
| Spacing when mounting | Can be aligned: 5 mm horizontally, 15 mm next to active components, 5 cm vertically | Can be aligned: 5 mm horizontally, 15 mm next to active components, 5 cm vertically |
| Input connection data (solid / stranded / AWG) | 0.2 - 6 $mm^2$ / 0.2 - 4 $mm^2$ / 18 - 10 | 0.2 - 6 $mm^2$ / 0.2 - 4 $mm^2$ / 18 - 10 |
| Output connection data (solid / stranded / AWG) | 0.5 - 16 $mm^2$ / 0.5 - 16 $mm^2$ / 8 - 6 | 0.5 - 16 $mm^2$ / 0.5 - 16 $mm^2$ / 8 - 6 |
| Signal connection data (solid / stranded / AWG) | 0.2 - 6 $mm^2$ / 0.2 - 4 $mm^2$ / 18 - 10 | 0.2 - 6 $mm^2$ / 0.2 - 4 $mm^2$ / 18 - 10 |
| MTBF (at nominal load, 40°C) | > 500,000 h in acc. with IEC 61709 (SN 29500) | > 500,000 h in acc. with IEC 61709 (SN 29500) |
| Ambient temperature (operation) | -25°C ... 70°C (> 60°C derating) | -25°C ... 70°C (> 60°C derating) |
| **Standards/regulations** | | |
| Insulation voltage input/output | 2 kV AC (routine test) / 4 kV AC (type test) | 2 kV AC (routine test) / 4 kV AC (type test) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC | Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC |
| Electrical safety, safety transformer | IEC 60950/VDE 0805 (SELV), IEC 61558-2-17 | IEC 60950/VDE 0805 (SELV), IEC 61558-2-17 |
| Electronic equipm. for electrical power installations | EN 50178/VDE 0160 (PELV) | EN 50178/VDE 0160 (PELV) |
| Safe isolation | DIN VDE 0100-410, DIN VDE 0106-101 | DIN VDE 0100-410, DIN VDE 0106-101 |
| UL approvals | UL applied for | UL Listed UL 508, UL/C-UL Recognized UL 60950 (3-wire + PE, star net) |
| Limitation of harmonic line currents | EN 61000-3-2 | EN 61000-3-2 |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Power supply unit**, primary-switched | | | | | | |
| | **QUINT-PS / 1AC/24DC/40** | **2866789** | 1 | **QUINT-PS / 3AC/24DC/40** | **2866802** | 1 |

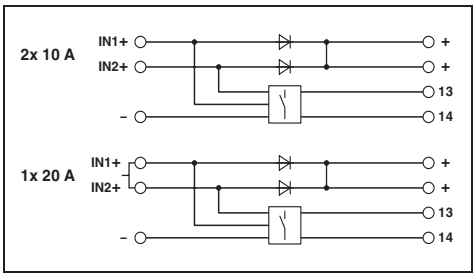
## TRIO-DIODE redundancy module, 2 x 10 A

The redundancy module can be used to isolate two power supply units of the same type. In critical applications, it provides 100% redundancy for maximum system availability:

**Stranded:**
Nominal voltage of 12 to 24 V DC, nominal current of 2 x 10 A or 1 x 20 A

**Function monitoring:**
The output voltages of the connected power supply units are monitored. On the front of the device, the LED indicates the correct function of the redundant solution; the floating relay contact enables remote monitoring.

**Redundancy module,**
**12 - 24 V DC, 2 x 10 A, 1 x 20 A**




### Technical data

| | |
|---|---|
| **Input data/output data** | |
| Nominal input voltage range | 12 V DC ... 24 V DC |
| Input voltage range | 10 V DC ... 30 V DC |
| Nominal current | 2x 10 A (-25°C to +55°C)<br>1x 20 A (-25°C to +55°C) |
| Maximum current | 2x 15 A (-25°C to +40°C)<br>1x 30 A (-25°C to +40°C) |
| Transient surge protection | Varistor |
| Voltage drop, input/output | Approx. 0.5 V |
| Max. power dissipation (nominal load) | Approx. 10 W |
| **Signaling** | |
| Redundancy indication OK | LED, relay contact |
| **General data** | |
| Weight / Dimensions W x H x D | 0.37 kg / 32 x 130 x 115 mm |
| Mounting position | Horizontal NS 35 DIN rail, EN 60715 |
| Spacing when mounting | Can be aligned: 0 cm horizontally, 5 cm vertically |
| Type of connection | Screw connection |
| Input connection data (solid / stranded / AWG) | 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 14 |
| Output connection data (solid / stranded / AWG) | 0.5 - 6 mm² / 0.5 - 4 mm² / 20 - 10 |
| Signal connection data (solid / stranded / AWG) | 0.2 - 2.5 mm² / 0.2 - 2.5 mm² / 24 - 14 |
| Degree of protection / protection class | IP20 / III, without PE connection |
| Ambient temperature (operation) | -25°C ... 70°C (> 55°C derating) |
| Ambient temperature (storage/transport) | -40°C ... 85°C |
| Max. permissible relative humidity (operation) | ≤ 95% (at 25°C, no condensation) |
| **Standards/regulations** | |
| Insulation voltage: input, output/housing | 500 V / 500 V |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC |
| Electrical safety | EN 60950/VDE 0805 (SELV) |
| Electronic equipm. for electrical power installations | EN 50178/VDE 0160 (PELV) |
| UL approvals | UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Redundancy module** | **TRIO-DIODE/12-24DC/2X10/1X20** | **2866514** | 1 |

## MINI POWER DC/DC converters

DC/DC converters are used in applications where unregulated DC voltages result in interference at the load. They provide a regulated DC voltage and thus ensure error-free operation of the connected load:

**Safe:**
Regulated and stable output voltage of 5 to 15 V DC, 24 V DC or 48 V DC.

**Modular electronic housing:**
Suitable for the requirements of MCR technology.

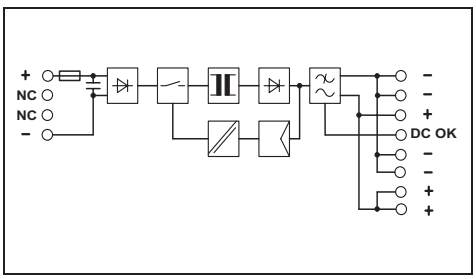
**Easy-maintenance connection method:**
Keyed COMBICON connectors ensure fast connection of modules.

**Function monitoring:**
Active function monitoring is implemented by the switching output. The LED indicates the status of the output voltage for local service personnel.

**Design meets the high requirements of industry:**
Thanks to the wide temperature range of -25°C to +70°C, MINI DC/DC converters are ideal for applications that require high temperature resistance.

Error-free operation is also ensured in the event of mechanical strain: shock according to IEC 60068-2-27 up to 30g, vibration according to IEC 60068-2-6 up to 2.3g.

**DC/DC converter,**
**12 - 24 V DC/5 - 15 V DC/2 A**




### Technical data

| | |
|---|---|
| **Input data** | |
| Nominal input voltage range | 12 V DC ... 24 V DC |
| Input voltage range | 10 V DC ... 32 V DC |
| Current consumption (nominal load) | Approx. 2.3 A (12 V DC) / Approx. 1.1 A (24 V DC) |
| Inrush current limitation at 25°C (typ.) / $I^2t$ | < 10 A / 0.2 $A^2s$ |
| Input fuse | 6.3 A (slow-blow, internal) |
| **Output data** | |
| Nominal output voltage | 12 V DC ±1% |
| Setting range of the output voltage | 5 V DC ... 15 V DC (> 12 V constant capacity) |
| Output current | 2 A |
| Can be connected in parallel / series | Yes / No |
| Max. power dissipation (idling/nominal load) | 1 W / 4.2 W |
| Efficiency (typ.) | > 88% (at 24 V DC and nominal values) |
| Residual ripple | < 20 $mV_{PP}$ |
| **Signaling** | |
| Signaling DC OK | LED, active switching output |
| **General data** | |
| Weight / Dimensions W x H x D | 0.2 kg / 22.5 x 99 x 107 mm |
| Mounting position | Horizontal NS 35 DIN rail, EN 60715 |
| Spacing when mounting | Can be aligned: 0 cm horizontally, 5 cm vertically |
| Type of connection | Plug-in screw connection |
| Input connection data (solid / stranded / AWG) | 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14 |
| Output connection data (solid / stranded / AWG) | 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14 |
| Signal connection data (solid / stranded / AWG) | 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14 |
| Degree of protection / protection class | IP20 / III |
| MTBF (at nominal load, 40°C) | > 500,000 h in acc. with IEC 61709 (SN 29500) |
| Ambient temperature (operation) | -25°C ... 70°C (> +60°C derating) |
| Ambient temperature (storage/transport) | -40°C ... 85°C |
| Max. permissible relative humidity (operation) | ≤ 95% (at +25°C, no condensation) |
| **Standards/regulations** | |
| Insulation voltage input/output | 1.5 kV (type test) / 1 kV (routine test) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC |
| Electrical safety, safety transformer | EN 60950/VDE 0805 (SELV), EN 61558-2-17 |
| Electronic equipm. for electrical power installations | EN 50178/VDE 0160 (PELV) |
| Safe isolation | DIN VDE 0100-410, DIN VDE 0106-101 |
| UL approvals | UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 |

### Ordering data

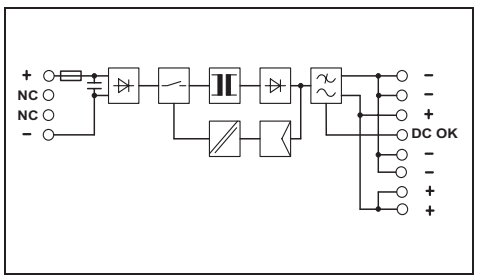
| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Power supply unit**, primary-switched | **MINI-PS- 12- 24DC / 5-15DC/2** | **2320018** | 1 |

**DC/DC converter,**
**12 - 24 V DC/24 V DC/1 A**

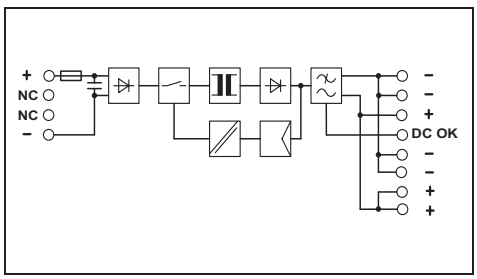
**DC/DC converter,**
**48 - 60 V DC/24 V DC/1 A**

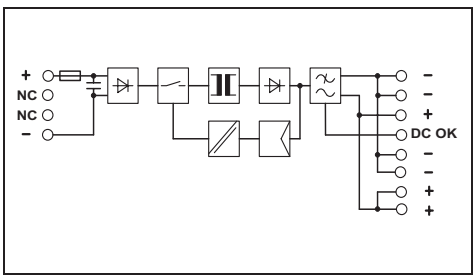
**DC/DC converter,**
**12 - 24 V DC/48 V DC/0.7 A**

Ex:




Ex:




## Technical data

| | |
|---|---|
| 12 V DC ... 24 V DC<br>10 V DC ... 32 V DC<br>Approx. 2.6 A (12 V DC) / Approx. 1.3 A (24 V DC)<br>< 15 A / 1.8 A²s<br>6.3 A (slow-blow, internal) | |
| 24 V DC ±1%<br>22.5 V DC ... 28.5 V DC (> 24 V constant capacity) | |
| 1 A<br>Yes / No<br>1.2 W / 5 W<br>> 83% (at 24 V DC and nominal values)<br>< 30 $mV_{PP}$ | |
| LED, active switching output | |
| 0.2 kg / 22.5 x 99 x 107 mm<br>Horizontal NS 35 DIN rail, EN 60715<br>Can be aligned: 0 cm horizontally, 5 cm vertically<br>Plug-in screw connection<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>IP20 / III<br>> 500,000 h in acc. with IEC 61709 (SN 29500)<br>-25°C ... 70°C (> 60°C derating)<br>-40°C ... 85°C<br>≤ 95% (at 25°C, no condensation) | |
| 1.5 kV (type test) / 1 kV (routine test)<br>Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC<br>EN 60950/VDE 0805 (SELV), EN 61558-2-17<br>EN 50178/VDE 0160 (PELV)<br>DIN VDE 0100-410, DIN VDE 0106-101<br>UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950, UL/C-UL Listed UL 1604 Class I, Division 2, Groups A, B, C, D | |

## Technical data

| | |
|---|---|
| 48 V DC ... 60 V DC<br>36 V DC ... 75 V DC<br>Approx. 0.6 A (48 V DC) / Approx. 0.5 A (60 V DC)<br>< 15 A / 1.8 A²s<br>3.15 A (slow-blow, internal) | |
| 24 V DC ±1%<br>22.5 V DC ... 28.5 V DC (> 24 V constant capacity) | |
| 1 A<br>Yes / No<br>1.2 W / 5 W<br>> 85% (at 60 V DC and nominal values)<br>< 40 $mV_{PP}$ | |
| LED, active switching output | |
| 0.2 kg / 22.5 x 99 x 107 mm<br>Horizontal NS 35 DIN rail, EN 60715<br>Can be aligned: 0 cm horizontally, 5 cm vertically<br>Plug-in screw connection<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>IP20 / II<br>> 500,000 h in acc. with IEC 61709 (SN 29500)<br>-25°C ... 70°C (> 60°C derating)<br>-40°C ... 85°C<br>≤ 95% (at 25°C, no condensation) | |
| 1.5 kV (type test) / 1 kV (routine test)<br>Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC<br>EN 60950/VDE 0805 (SELV), EN 61558-2-17<br>EN 50178/VDE 0160 (PELV)<br>DIN VDE 0100-410, DIN VDE 0106-101<br>UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950, UL/C-UL Listed UL 1604 Class I, Division 2, Groups A, B, C, D | |

## Technical data

| | |
|---|---|
| 12 V DC ... 24 V DC<br>10 V DC ... 32 V DC<br>Approx. 3.2 A (12 V DC) / Approx. 1.6 A (24 V DC)<br>< 10 A / 0.3 A²s<br>6.3 A (slow-blow, internal) | |
| 48 V DC ±1%<br>30 V DC ... 56 V DC (> 48 V constant capacity) | |
| 0.7 A<br>Yes / No<br>1.5 W / 4.5 W<br>> 87% (at 24 V DC and nominal values)<br>< 20 $mV_{PP}$ | |
| LED, active switching output | |
| 0.2 kg / 22.5 x 99 x 107 mm<br>Horizontal NS 35 DIN rail, EN 60715<br>Can be aligned: 0 cm horizontally, 5 cm vertically<br>Plug-in screw connection<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 20 - 14<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 14<br>IP20 / III<br>> 500,000 h in acc. with IEC 61709 (SN 29500)<br>-25°C ... 70°C (> +60°C derating)<br>-40°C ... 85°C<br>≤ 95% (at +25°C, no condensation) | |
| 1.5 kV (type test) / 1 kV (routine test)<br>Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC<br>EN 60950/VDE 0805 (SELV), EN 61558-2-17<br>EN 50178/VDE 0160 (PELV)<br>DIN VDE 0100-410, DIN VDE 0106-101<br>UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **MINI-PS- 12- 24DC/24DC/1** | **2866284** | 1 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **MINI-PS- 48- 60DC/24DC/1** | **2866271** | 1 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **MINI-PS- 12- 24DC/48DC/0.7** | **2320021** | 1 |

## STEP POWER power supply units, in slim or flat housing

STEP POWER power supply units are ideal for installation distributors and flat control panels:

**Slim:**
18 mm design width, one terminal pitch, with 24 or 12 V DC output voltage.

**Flat:**
43 mm depth instead of the usual 61 mm, with 24 or 12 V DC output voltage.

**STEP POWER has the following advantages:**
**Save energy:** The newly developed ASIC (application specific integrated circuit) enables maximum energy efficiency and unrivaled low standby losses.

**Flexible mounting on the DIN rail and on even surfaces:**
Two base latches can be used to snap the STEP POWER power supply units onto a DIN rail. Direct wall mounting is also supported.

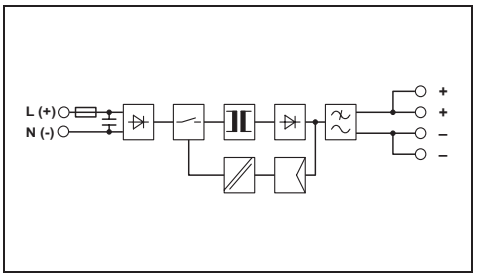
**Wide temperature range from -25 to +70°C:**
Due to their wide temperature range, the STEP POWER power supply units are also suitable for outdoor applications.

**Worldwide use thanks to wide-range input:**
Due to the wide-range input, the power supply units can be used worldwide and operate reliably even in the event of high voltage fluctuations caused by unstable power supply networks.

**U/I characteristic curve for the supply of capacitive loads:**
In the event of an overload, the power supply unit does not shut down, but continues to supply the maximum short-circuit current. Capacitive loads as well as loads with DC/DC converters in the input circuit are thus supplied reliably.

**Power supply unit, 1 AC, 24 V DC, 0.75 A, flat design**

Ex:




### Technical data

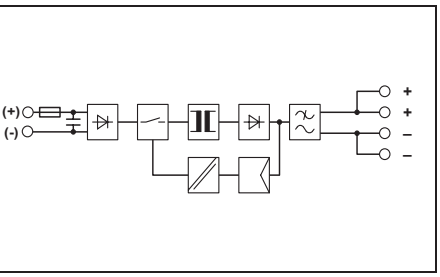
| | |
|---|---|
| **Input data** | |
| Nominal input voltage range | 100 V AC ... 240 V AC |
| Input voltage range AC/DC | 85 V AC ... 264 V AC / 95 V DC ... 250 V DC |
| Frequency range | 45 Hz ... 65 Hz / 0 Hz |
| Current consumption (nominal load) | Approx. 0.37 A (120 V AC) / Approx. 0.25 A (230 V AC) |
| Inrush current limitation at 25°C (typ.) / $I^2t$ | < 15 A / < 0.1 $A^2s$ |
| Mains buffering ($I_N$, typ.) | > 15 ms (120 V AC) / > 70 ms (230 V AC) |
| Input fuse | 1.25 A (slow-blow, internal) |
| Recommended backup fuse, miniature circuit breaker | 6 A, 10 A, 16 A (characteristic B) |
| **Output data** | |
| Nominal output voltage | 24 V DC ±1% |
| Output current | 0.75 A |
| Can be connected in parallel / series | Yes / Yes |
| Max. power dissipation (idling/nominal load) | 0.5 W / 3.6 W |
| Efficiency (typ.) | > 84% (for 230 V AC and nominal values) |
| Residual ripple | < 75 $mV_{PP}$ |
| **Signaling** | |
| Signaling DC OK | LED |
| **General data** | |
| Weight / Dimensions W x H x D | 0.1 kg / 36 x 90 x 43 mm |
| Mounting position | Horizontal NS 35 DIN rail, EN 60715 |
| Spacing when mounting | Can be aligned: 0 cm horizontally, 3 cm vertically |
| Type of connection | Screw connection |
| Input connection data (solid / stranded / AWG) | 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 |
| Output connection data (solid / stranded / AWG) | 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 |
| Degree of protection / protection class | IP20 / II |
| MTBF (at nominal load, 40°C) | > 500,000 h in acc. with IEC 61709 (SN 29500) |
| Ambient temperature (operation) | -25°C ... 70°C (> 55° C derating) |
| **Standards/regulations** | |
| Insulation voltage input/output | 2 kV AC (routine test) / 4 kV AC (type test) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC |
| Electrical safety, safety transformer | IEC 60950/VDE 0805 (SELV), IEC 61558-2-17 |
| Electronic equipm. for electrical power installations | EN 50178/VDE 0160 (PELV) |
| Safe isolation | DIN VDE 0100-410, DIN VDE 0106-1010 |
| UL approvals | UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950, NEC Class 2 as per UL 1310, UL listed ANSI/ISA-12.12.01 class I, division 2, groups A, B, C, D |
| Limitation of harmonic line currents | EN 61000-3-2 |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Power supply unit**, primary-switched | **STEP-PS/1AC/24DC/0.75/FL** | **2868622** | 1 |

**Power supply unit, 1 AC, 12 V DC, 1.5 A, flat design**

Ex:




## Technical data

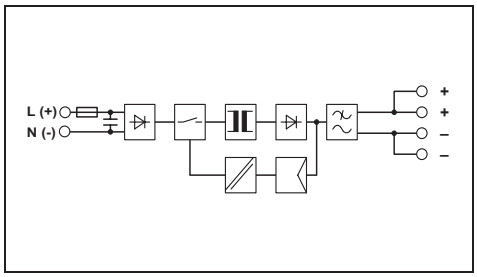
| | |
|---|---|
| | |
| 100 V AC ... 240 V AC | |
| 85 V AC ... 264 V AC / 95 V DC ... 250 V DC | |
| 45 Hz ... 65 Hz / 0 Hz | |
| Approx. 0.33 A (120 V AC) / Approx. 0.18 A (230 V AC) | |
| < 15 A / < 0.1 $A^2s$ | |
| > 15 ms (120 V AC) / > 70 ms (230 V AC) | |
| 1.25 A (slow-blow, internal) | |
| 6 A, 10 A, 16 A (characteristic B) | |
| | |
| 12 V DC ±1% | |
| 1.5 A | |
| Yes / Yes | |
| 0.4 W / 3.2 W | |
| > 84% (for 230 V AC and nominal values) | |
| < 75 $mV_{PP}$ | |
| | |
| LED | |
| | |
| 0.1 kg / 36 x 90 x 43 mm | |
| Horizontal NS 35 DIN rail, EN 60715 | |
| Can be aligned: 0 cm horizontally, 3 cm vertically | |
| Screw connection | |
| 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 | |
| 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 | |
| IP20 / II | |
| > 500,000 h in acc. with IEC 61709 (SN 29500) | |
| -25°C ... 70°C (> 55° C derating) | |
| | |
| 2 kV AC (routine test) / 4 kV AC (type test) | |
| Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC | |
| IEC 60950/VDE 0805 (SELV), IEC 61558-2-17 | |
| EN 50178/VDE 0160 (PELV) | |
| DIN VDE 0100-410, DIN VDE 0106-1010 | |
| UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950, NEC Class 2 as per UL 1310, UL listed ANSI/ISA-12.12.01 class I, division 2, groups A, B, C, D | |
| | |
| EN 61000-3-2 | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **STEP-PS/1AC/12DC/1.5/FL** | **2868554** | 1 |

**Power supply unit, 1 AC, 24 V DC, 0.5 A, slim design**

Applied for:
UL Listed / UL




## Technical data

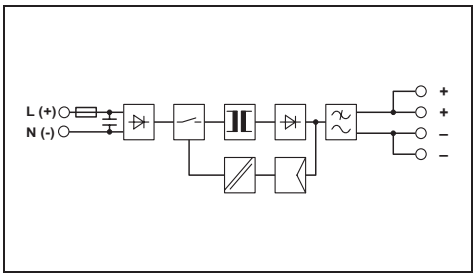
| | |
|---|---|
| | |
| 100 V AC ... 240 V AC | |
| 85 V AC ... 264 V AC / 95 V DC ... 250 V DC | |
| 45 Hz ... 65 Hz / 0 Hz | |
| Approx. 0.28 A (120 V AC) / Approx. 0.13 A (230 V AC) | |
| < 15 A / < 0.1 $A^2s$ | |
| > 15 ms (120 V AC) / > 90 ms (230 V AC) | |
| 1.25 A (slow-blow, internal) | |
| 6 A, 10 A, 16 A (characteristic B) | |
| | |
| 24 V DC ±1% | |
| 0.5 A | |
| Yes / Yes | |
| 0.3 W / 2.2 W | |
| > 84% (for 230 V AC and nominal values) | |
| < 60 $mV_{PP}$ | |
| | |
| LED | |
| | |
| 0.1 kg / 18 x 90 x 61 mm | |
| Horizontal NS 35 DIN rail, EN 60715 | |
| Can be aligned: 0 cm horizontally, 3 cm vertically | |
| Screw connection | |
| 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 | |
| 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 | |
| IP20 / II | |
| > 500,000 h in acc. with IEC 61709 (SN 29500) | |
| -25°C ... 70°C (> 55° C derating) | |
| | |
| 2 kV AC (routine test) / 4 kV AC (type test) | |
| Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC | |
| IEC 60950/VDE 0805 (SELV), IEC 61558-2-17 | |
| EN 50178/VDE 0160 (PELV) | |
| DIN VDE 0100-410, DIN VDE 0106-1010 | |
| UL applied for | |
| | |
| EN 61000-3-2 | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **STEP-PS/1AC/24DC/0.5** | **2868596** | 1 |

**Power supply unit, 1 AC, 12 V DC, 1 A, slim design**

Applied for:
UL Listed / UL




## Technical data

| | |
|---|---|
| | |
| 100 V AC ... 240 V AC | |
| 85 V AC ... 264 V AC / 95 V DC ... 250 V DC | |
| 45 Hz ... 65 Hz / 0 Hz | |
| Approx. 0.26 A (120 V AC) / Approx. 0.13 A (230 V AC) | |
| < 15 A / < 0.1 $A^2s$ | |
| > 15 ms (120 V AC) / > 90 ms (230 V AC) | |
| 1.25 A (slow-blow, internal) | |
| 6 A, 10 A, 16 A (characteristic B) | |
| | |
| 12 V DC ±1% | |
| 1 A | |
| Yes / Yes | |
| 0.4 W / 2.8 W | |
| > 83% (for 230 V AC and nominal values) | |
| < 30 $mV_{PP}$ | |
| | |
| LED | |
| | |
| 0.1 kg / 18 x 90 x 61 mm | |
| Horizontal NS 35 DIN rail, EN 60715 | |
| Can be aligned: 0 cm horizontally, 3 cm vertically | |
| Screw connection | |
| 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 | |
| 0.2 - 2.5 $mm^2$ / 0.2 - 2.5 $mm^2$ / 24 - 12 | |
| IP20 / II | |
| > 500,000 h in acc. with IEC 61709 (SN 29500) | |
| -25°C ... 70°C (> 55° C derating) | |
| | |
| 2 kV AC (routine test) / 4 kV AC (type test) | |
| Conformance with EMC Directive 2004/108/EC and Low Voltage Directive 2006/95/EC | |
| IEC 60950/VDE 0805 (SELV), IEC 61558-2-17 | |
| EN 50178/VDE 0160 (PELV) | |
| DIN VDE 0100-410, DIN VDE 0106-1010 | |
| UL applied for | |
| | |
| EN 61000-3-2 | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **STEP-PS/1AC/12DC/1** | **2868538** | 1 |

## RAD-Line Ethernet with Trusted Wireless

**RAD-ISM-900-EN-BD(-BUS)** industrial wireless transceivers provide Ethernet or serial data from remote locations to IP-based networks.

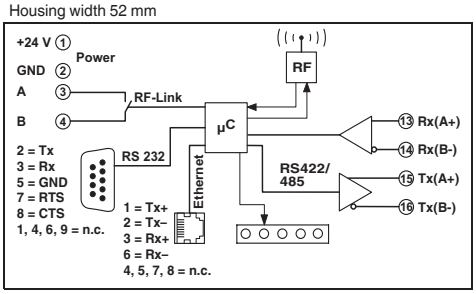
- Transceivers utilize the MOTR-9™ operating in the 902-928 MHz ISM band. Frequency hopping provides high tolerance to interference.
- Adjustable transmission power up to 1 W.
- Integrated web server allows configuration as master, slave or repeater.
- Upgradeable firmware.
- Configurable security through 128/192/256-bit AES encryption.
- Integrated serial ports allow V.24 (RS-232)/RS-422/RS-485 protocols to be transmitted to serial clients.
- Can function as a Modbus RTU/TCP gateway.
- Up to eight I/O modules can be connected directly to the **RAD-ISM-900-EN-BD-BUS** for expansion.

**Notes:**

The products are only available for export outside the EU and the European Economic Area.

**Wireless transceiver for Ethernet and serial interfaces (V.24 (RS-232), RS-422/RS-485)**

Housing width 52 mm




## Technical data

| | | | |
|---|---|---|---|
| **Wireless path** | | | |
| Direction | | Bi-directional | |
| Frequency range | | 902 MHz ... 928 MHz | |
| Transmission power | | 10 ... 30 dBm | |
| **Serial port** | | V.24 (RS-232) | RS-485 |
| Connection method | | 9-pos. D-SUB (female connector) | COMBICON plug-in screw terminal block |
| Serial transmission speed | | 300 ... 57.6 kbps | |
| Data format/encoding | | Asynchronous | |
| Data flow control/protocols | | RTS/CTS | |
| **General data** | | | |
| Supply voltage | | 12 V DC ... 30 V DC | |
| Current consumption | Max. | 250 mA (@ 24 V DC) | |
| Degree of protection | | IP20 | |
| Ambient temperature range | | -40°C ... 65°C | |
| Housing material | | Polyamide PA non-reinforced with aluminum heatsink | |
| Dimensions W / H / D | | 52 / 99 / 115 mm | |
| Screw connection (solid / stranded / AWG) | | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 14 | |
| **Conformance / approvals** | | | |
| Conformance | | FCC Directive, Part 15.247<br>ISC Directive RSS 210 | |
| UL, USA / Canada | | Class I, Div. 2, Groups A, B, C, D | |

## Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Wireless module** with Ethernet and serial interfaces | | | |
| Bus foot for I/O extension modules | **RAD-ISM-900-EN-BD-BUS** | **2900017** | 1 |
| Cannot be extended | **RAD-ISM-900-EN-BD** | **2900016** | 1 |

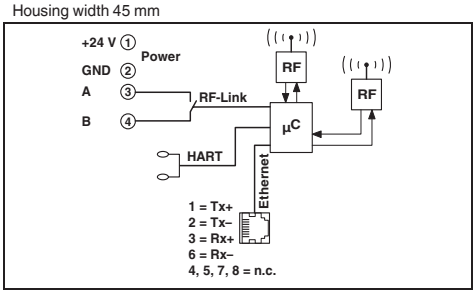
## WirelessHART gateway

The **RAD-WHG/WLAN-XD** is a WirelessHART gateway with integrated 802.11b/g WLAN transceiver. It converts HART data to Modbus TCP or HART UDP for easy integration into almost any host system.

– Simple programming and diagnostics using an embedded web server or HART programmer
– WirelessHART gateway supports 250 WirelessHART devices
– 802.11b/g client can be used as WirelessHART backhaul connection with 802.11i (WPA2) 128-bit AES encryption
– Fully meshed routing (self-organizing and self-healing network) with WirelessHART
– WirelessHART uses channel hopping as a means of tolerating interference

WirelessHART gateway

Housing width 45 mm

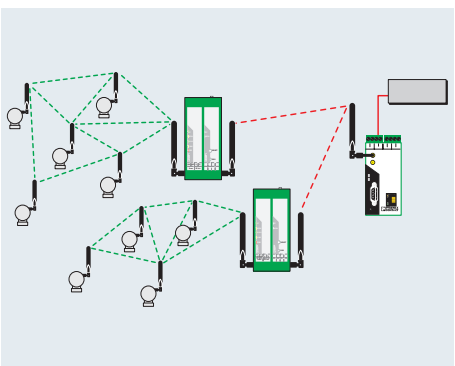



### Technical data

| | | |
|---|---|---|
| **Wireless path** | | |
| Interface description | | WLAN as per IEEE 802.11 b/g |
| Direction | | Bi-directional |
| Frequency range | | 2.4 GHz ... 2.472 GHz |
| Transmission power | | 0 ... 20 dBm |
| Number of channels | | 13 |
| Type of connection | | RP-SMA (female) |
| **Wireless path** | | |
| Interface description | | WirelessHART |
| Frequency range | | 2.4 GHz ... 2.4835 GHz |
| Transmission power | | 0 ... 10 dBm |
| Number of channels | | 15 |
| Type of connection | | RP-SMA (female) |
| **Ethernet interface** | | |
| Connection method | | RJ45 |
| Transmission speed | | 10/100 Mbps Ethernet |
| **General data** | | |
| Supply voltage | | 9 V DC ... 30 V DC |
| Current consumption | Typ. / Max. | 125 mA (@ 24 V DC) / 300 mA (@ 24 V DC) |
| Degree of protection | | IP20 |
| Ambient temperature range | | -40°C ... 70°C |
| Housing material | | Polyamide PA non-reinforced |
| Dimensions W / H / D | | 45 / 99 / 114.5 mm |
| Screw connection (solid / stranded / AWG) | | 0.2 ... 4 mm² / 0.2 ... 2.5 mm² / 24 - 14 |
| **Conformance / approvals** | | |
| Conformance | | CE-compliant<br>FCC Directive, Part 15.247 |
| CSA, USA/Canada | | CSA applied for |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **WirelessHART gateway** | **RAD-WHG/WLAN-XD** | **2900178** | 1 |



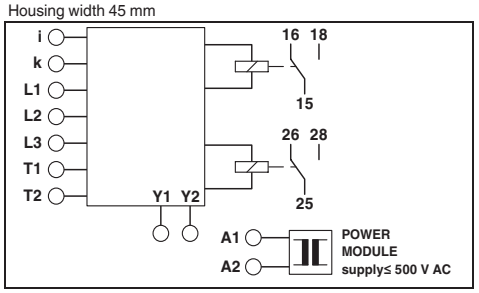
## Effective power monitoring

The effective power in single and 3-phase networks can be monitored with the **EMD-FL-RP-480** effective power monitoring relay.

- Monitoring range up to 7.2 kW
- 2 threshold values, can be adjusted separately
- Adjustable starting override
- Adjustable response delay
- Error memory (optional)
- Temperature monitoring of the motor winding
- Supply voltage can be selected via power module
- Detection of switched off loads
- 2 output relays each with one PDT contact

**Effective power monitoring in single and 3-phase networks with integrated motor winding temperature monitoring**

Housing width 45 mm




### Technical data

| | |
|---|---|
| **Functions** | |
| | Underload, overload, window, winding temperature monitoring |
| **Input** | |
| Description of the input | Voltage input |
| Measured value | AC sine (10 Hz ... 400 Hz) |
| Measuring ranges $P_N$ | Can be switched between 0.75 kW, 1.5 kW, 3 kW and 6 kW |
| Nominal input voltage $U_N$ | 480 V (3 N ~ 480/277 V) |
| Input ranges | 1(N) ~ 0 V AC ... 480 V AC (single-phase load)<br>3 (N) ~ 0 V AC ... 480 V AC (3-phase load) |
| Input ranges | 0.15 A ... 6 A (Range: 0.75 kW and 1.5 kW)<br>0.3 A ... 12 A (Range: 3 kW and 6 kW) |
| Min. setting range | 5% ... 110% (of $P_N$) |
| Max. setting range | 10% ... 120% (of $P_N$) |
| **Relay output** | |
| Contact type | 2 floating PDT contacts |
| Switching capacity | 750 VA (3 A/250 V AC, module aligned, ≤ 5 mm spacing)<br>1250 VA (5 A/250 V AC, module not aligned, ≥ 5 mm spacing) |
| Electrical service life | 2 x $10^5$ cycles at ohmic load, 1000 VA |
| Mechanical service life | Approx. 2 x $10^7$ cycles |
| Output fuse | 5 A (fast-blow) |
| **General data** | |
| Supply voltage | 110 V AC ... 500 V AC (see power modules) |
| Nominal power consumption | 3.5 VA (3 W) |
| Recovery time | 500 ms |
| Degree of protection | IP40 (housing) / IP20 (connection terminal blocks) |
| Ambient temperature range | -25°C ... 55°C |
| Housing material | Polyamide PA, self-extinguishing |
| Dimensions W / H / D | 45 / 90 / 113 mm |
| Screw connection (solid / stranded / AWG) | 0.5 ... 2.5 $mm^2$ / 0.25 ... 2.5 $mm^2$ / 20 - 14 |
| **Conformance / approvals** | |
| Conformance | CE-compliant |
| UL, USA / Canada | UL applied for |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Electronic monitoring module** for effective power monitoring in single and 3-phase networks with integrated motor winding temperature monitoring | | | |
| | **EMD-FL-RP-480** | **2900177** | 1 |
| **Power module,** plug-in, please order at the same time! | | | |
| 88 ... 121 V AC supply voltage | **EMD-SL-PS45-110AC** | **2885281** | 1 |
| 108 ... 132 V AC supply voltage | **EMD-SL-PS45-120AC** | **2885744** | 1 |
| 195 ... 264 V AC supply voltage | **EMD-SL-PS45-230AC** | **2885294** | 1 |
| 323 ... 456 V AC supply voltage | **EMD-SL-PS45-400AC** | **2885304** | 1 |
| 425 ... 550 V AC supply voltage | **EMD-SL-PS45-500AC** | **2885317** | 1 |

Nanoline controller family

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Safety

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Operation and monitoring

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Operation and monitoring

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Axioline

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Axioline input and output modules

**Digital input module** page 327
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Inline Modular


**PROFINET bus coupler** page 332
**Communication terminal** page 333
**Boost terminal** page 334
**Digital input and output terminals** page 335
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Intrinsically safe Inline Modular terminals


**Power terminal** page 338
**Digital input and output terminal** page 339
**Analog input and output terminal** page 340
**Temperature measurement terminal** page 341

Inline Block IO


**I/O module for SERCOS III** page 342

Fieldline Modular

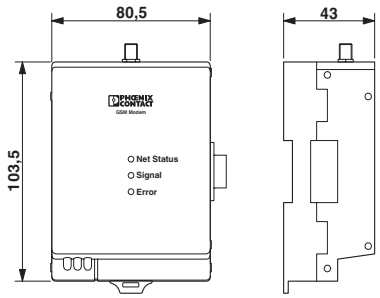

**PROFIBUS bus coupler with enhanced functions** page 343

## Nanoline communication extension module

The GSM module can be used to send SMS messages under project control. Independent of project programming, the GSM module provides remote access by SMS messaging to:

– Read and write registers, flags, timers and counters.
– Switch outputs on and off.
– Read inputs.
– System faults and warning messages.

Messages can be protected by a 16-character alphanumeric case-sensitive password. Access can be left open to all incoming calls or selectively limited to the telephone numbers listed in the address book.



GSM communication extension module

### Technical data

| | |
|---|---|
| **Wireless interface** | |
| Wireless standard | GSM SMS |
| Frequency band | 850/900/1800/1900 MHz |
| Antenna connection method | SMA (female) |
| **Power supply for module electronics** | |
| Type of connection | Screw connection |
| Supply voltage range | 12 V DC ... 24 V DC (9.6…28.8 V DC) |
| **General data** | |
| Wireless licenses | R&TTE, FCC, AT&T, PTCRB |
| Weight | 178 g |
| Width | 80.5 mm |
| Height | 103.5 mm |
| Depth | 43 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25°C ... 55°C |
| Permissible humidity (operation) | 90% |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| GSM communication extension module | **NLC-COM-GSM** | **2701344** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **GSM dual band antenna**, with omnidirectional characteristic, 2 m antenna cable with SMA circular connector, degree of protection: IP65, dimensions: 76 x 20 mm | **PSI-GSM-900/1800-ANT** | **2708902** | 1 |
| **Multiband antenna**, for UTMS and quadband GSM, with omnidirectional characteristic, 2 m antenna cable with SMA circular connector, degree of protection: IP65, dimensions: 76 x 20 mm | **PSI-GSM/UMTS-QB-ANT** | **2313371** | 1 |
| **GSM quad band antenna**, with omnidirectional characteristic, 2 m antenna cable with SMA circular connector, degree of protection: IP65, dimensions: 76 x 20 mm | **PSI-GSM-QB-ANT** | **2313135** | 1 |

## nanoNavigator software

nanoNavigator is a free software download for quick and easy setup, programming and maintenance. Once downloaded, programming and simulation can begin before any hardware even arrives. nanoNavigator supports programming by two methods: flowchart and ladder diagram.

The intuitive flowchart programming option offers several major benefits over more traditional methods. A background in programming is not required in order to produce a working program, and programs can be produced in minutes with little help from manuals or training. Those with programming experience will find virtually no learning curve with this intuitive language. Once created, flowchart programs are easy to understand and maintain by almost anyone, even without any special training.

Experienced programmers may prefer the more traditional ladder diagram option. However there is no reason to choose; projects can be created using a combination of flowchart and ladder diagram programming, a very unique feature for a product in this class.

Once a PC and nanoNavigator are connected to the Nanoline base unit via one of the optional serial connection modules, the user has complete control. After the project is loaded, nanoNavigator can start and stop the project, monitor the progress through the diagrams and data (inputs, outputs, registers, flags, timers and counters). nanoNavigator is not limited to just monitoring – it can also force inputs and outputs as well as change other data items, making development tasks quick and easy.

In summary nanoNavigator offers the following powerful features:

– Two programming languages: flowchart and ladder diagram
– Projects can comprise multiple diagrams, not just one
– Projects can be created in a combination of programming languages
– Project monitoring and troubleshooting
– Project simulation
– Can be downloaded free of charge

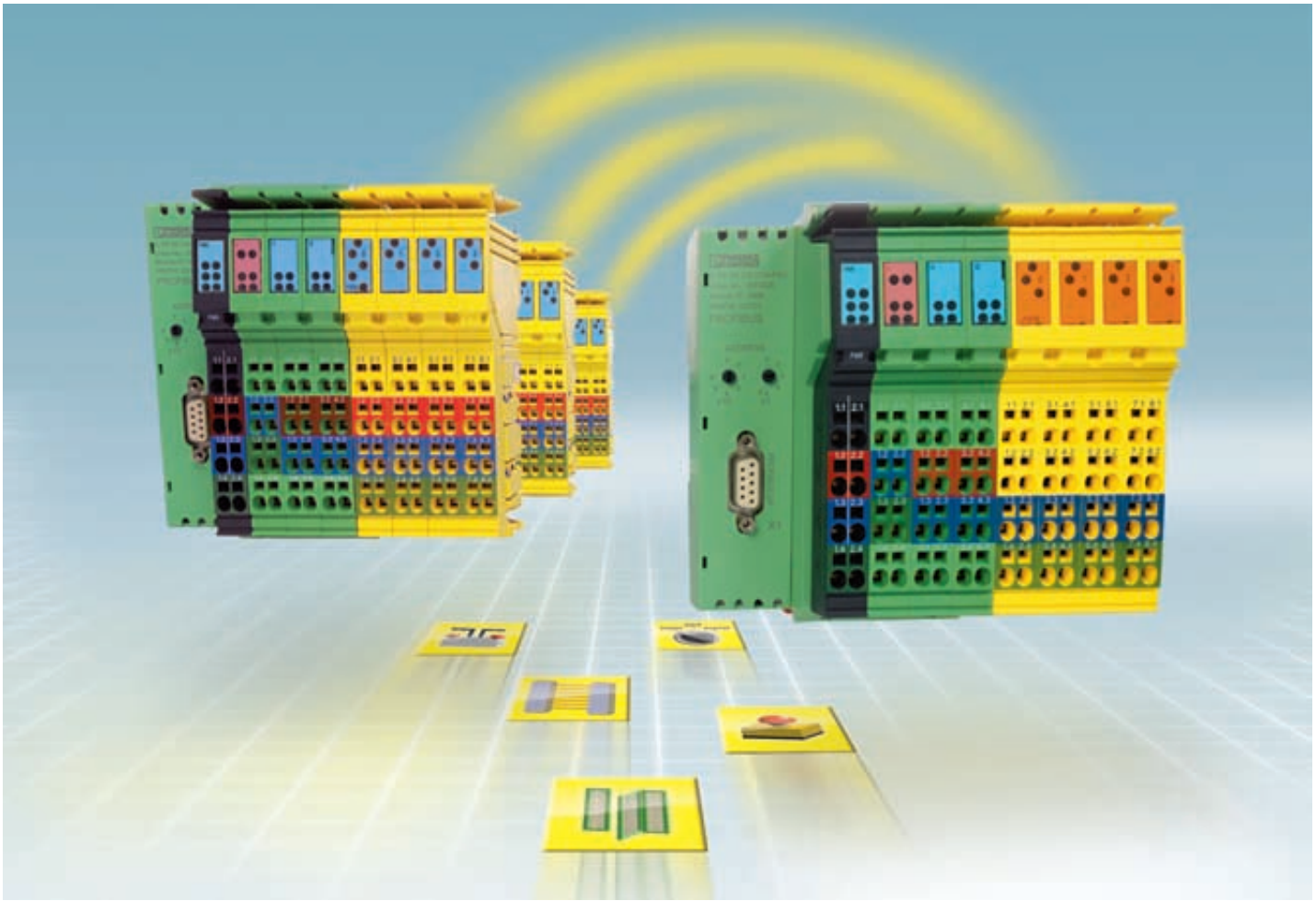
**Programming software for the Nanoline family of controllers**

### Technical data

| | |
|---|---|
| **Hardware requirements** | |
| CPU | Pentium > 400 MHz |
| Main memory | 512 MB (1 GB for Windows Vista) |
| Hard disk memory | 128 MB |
| Optical drive | CD-ROM |
| Interfaces | COM port or USB port |
| Operating equipment | Keyboard, mouse |
| Monitor resolution | SVGA (800 x 600) |
| **Software requirements** | |
| Operating systems | MS Windows 2000, Windows XP, Windows Vista (32 and 64-bit), Windows 7 (32 and 64-bit) |
| **Basic functions** | |
| | Programming with flowcharts<br>Programming with ladder diagram<br>Project configuration<br>Project simulation<br>Execution monitoring |
| **Languages supported** | |
| | German, English, French, Spanish, Italian |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Programming software** | **NLC-NAV-01** | **2701221** | 1 |



SafetyBridge technology is a new safety technology concept that is independent of the control system and network. It can be used to easily integrate functional safety in your machine or system and thus eliminates the need for a safety controller.

SafetyBridge technology supplements the proven Inline I/O system. This means that additional installation guidelines do not have to be observed when installing SafetyBridge modules.

The safe modules can be used in an I/O station and distributed at any point in the network.

Whether used with INTERBUS, PROFIBUS, PROFINET or Ethernet – SafetyBridge technology is control-independent and network-independent, and thus enables flexible use.

The input and logic modules (with a maximum of 8 outputs) exchange safe signals via the automation network. This means that the standard control system and existing network are only used as a transport medium.

The safe logic module performs the task of generating and monitoring the SafetyBridge protocol.

The safety logic is also processed directly in the safe logic module. The configuration of the safety function and the parameterization of the safe SafetyBridge modules is performed seamlessly using SAFECONF software.

The SafetyBridge logic module can currently be combined with a maximum of three SafetyBridge input modules.

## Safe input and logic modules with integrated SafetyBridge technology

These safe input and logic modules with integrated SafetyBridge technology can be used to create a simple, distributed safety solution in automation networks.

The SafetyBridge modules offer the following features:

– Network independence (tested for INTERBUS, PROFIBUS, PROFINET, and Ethernet)
– Control-independent
– Eliminates the need for a safety controller
– Easy device configuration using SAFECONF software
– Safety approvals up to CAT4 according to EN 954-1, PLe according to ISO 13849-1, SILCL according to IEC 62061, and SIL 3 according to IEC 61508

**Safety-related digital logic module**

**Fail-safe digital input module**

| | Technical data | Technical data |
|---|---|---|
| Local bus interface | | |
| Type of connection | Inline data jumper | Inline data jumper |
| Transmission speed | 500 kbaud/2 Mbaud, can be selected | 500 kbaud/2 Mbaud, can be selected |
| Power supply for module electronics | | |
| Supply voltage | 24 V DC (via voltage jumper) | 24 V DC (via voltage jumper) |
| Supply voltage range | 19.2 V DC ... 30 V DC | 19.2 V DC ... 30 V DC |
| Digital inputs | | |
| Connection method | - | 2, 3, 4-wire |
| Maximum number of inputs | - | 8 |
| Digital outputs | | |
| Connection method | 2, 3, 4-wire | - |
| Maximum number of outputs | 8 | - |
| Maximum output current per channel | 2 A | - |
| Protective circuit | Overload protection, short-circuit protection of outputs | - |
| General data | | |
| Type of connection | Spring-cage connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Weight | 200 g | 200 g |
| Width | 48.8 mm | 48.8 mm |
| Ambient temperature (operation) | -25°C ... 55°C | -25°C ... 55°C |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Safety-related digital logic module** | | | | | | |
| - SafetyBridge technology | **IB IL 24 LPSDO 8-PAC** | **2916024** | 1 | | | |
| **Fail-safe digital input module** | | | | | | |
| - For INTERBUS Safety and PROFIsafe | | | | **IB IL 24 PSDI 8-PAC** | **2985688** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Configuration software**, can be downloaded free of charge at www.phoenixcontact.com | **SAFECONF** | **2986119** | 1 | **SAFECONF** | **2986119** | 1 |
| **Zack marker strip, flat** (see CLIPLINE catalog) | ZBF 6... | | | ZBF 6... | | |

## Safety controller

The RFC 470S PN 3TX is a high-performance controller with integrated safety controller.

It offers the following features:

– INTERBUS and PROFINET interfaces onboard
– Integration of a PROFIsafe controller
– Supports direct communication with PROFIsafe modules
– Offers system openness

Safety controller

### Technical data

| | |
|---|---|
| Interfaces | |
| Ethernet | 3 x RJ45 female connectors |
| Parameterization/operation/diagnostics | V.24 (RS-232-C), D-SUB male connector, 10/100 Ethernet (RJ45), 2 x USB |
| INTERBUS master | |
| Number of possible parameter channels | max. 126 |
| Number of I/O nodes | max. 8192 |
| Number of supported devices | max. 512 |
| Direct inputs/outputs | |
| Type of connection | 14-pos. FLK pin strip |
| Number of inputs | 5 |
| Number of outputs | 3 |
| IEC-61131 runtime system | |
| Processing speed | 0.01 ms |
| Program memory | Typ. 8 MB (680 K instructions (IL)) |
| Data memory | 16 MB |
| Retentive data memory | 240 KB (NVRAM) |
| Number of data blocks | (depends on data memory) |
| Number of timers, counters | (depends on data memory) |
| Number of control tasks | 16 |
| Realtime clock | Integrated (battery backup) |
| Power supply | |
| Power supply connection | Screw terminal blocks, plug-in |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including ripple) |
| Typical current consumption | 1 A |
| General data | |
| Weight | 2200 g |
| Width | 124 mm |
| Height | 185 mm |
| Depth | 190 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | 0°C ... 55°C (from 45°C only with fan module) |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Safety controller** | | | |
| | **RFC 470S PN 3TX** | **2916794** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Parameterization memory**<br>- 256 MB | **CF FLASH 256MB** | **2988780** | 1 |
| **Programming cable**, to connect the controller boards to the PC (V.24 (RS-232-C)), length 3 m | **IBS PRG CAB** | **2806862** | 1 |
| **V.24 (RS-232) zero modem connector**<br>- 9-pos. female connector to 9-pos. male connector | **PSM-AD-D9-NULLMODEM** | **2708753** | 1 |
| **Fan module** for Remote Field Controller | **RFC DUAL-FAN** | **2730239** | 1 |
| **AX OPC SERVER**, communication interface for OPC-compatible visualization with PC WORX-based controllers | **AX OPC SERVER** | **2985945** | 1 |
| **SAFETYPROG programming software** | | | |
| - Basic | **SAFETYPROG BASIC** | **2700443** | 1 |
| - Advanced | **SAFETYPROG ADVANCED** | **2700441** | 1 |
| - Professional | **SAFETYPROG PROFESSIONAL** | **2700442** | 1 |
| **Automation software** | PC WORX ... (see AUTOMATION catalog) | | |

## PSD – Signal towers

### Clear indication

Early detection of problems affecting machinery and systems is key to reducing downtime and avoiding the unnecessary costs associated with it.

The modular signal towers in the new PSD (Phoenix Signaling Devices) product range from Phoenix Contact offer considerable signal diversity. This enables unambiguous signaling of machine and system states.

A signal tower consists of up to five signal elements (any combination is possible, but there can be no more than one audible element).

IP65 protection means that this equipment can even be used in harsh environments.

### Optical signal elements

The optical elements are available in a choice of five colors (red, yellow, green, blue, and clear) and five different signal types (steady light, slow flashing light, rotating light, fast flashing light, and random flashing light).

The optical elements are available as light bulbs or future-oriented LEDs boasting a service life of up to 100,000 maintenance-free hours with low energy consumption.

### Audible signal elements

Signaling can also be supported by an audible signaling device, e.g., for machines or system parts that are not easily visible.

Buzzer and siren elements with up to eight different continuous and pulse tones, as well as a voice output element are available to choose from.

For multi-tone elements, the tones can be selected either using up to three control lines or via internal DIP switches. Depending on the audible element, the volume can be adjusted manually via a potentiometer or it is adjusted automatically to the ambient volume level.

### Mounting elements

The signal tower portfolio is completed by a wide range of mounting elements, which ensure optimum mounting of the signal towers according to the conditions. There are different mounting elements for both base mounting and tube mounting.

With base mounting, the signal tower is mounted directly on an angled connector or outlet box or directly on a surface (e.g., a machine cover).

With tube mounting, however, the signal tower is initially mounted on a tube with a foot. The foot in turn can then be mounted either on an angled connector or directly on a surface.

The foldaway base can be used to position the signal tower vertically on a sloping surface or fold it down during machine transportation while still connected in order to save space.

### Erecting a tower

A signal tower can be erected or extended without using any tools in a matter of seconds by simply placing the individual signal elements on top of each other and turning the bayonet locking system.

This automatically establishes an electrical connection between the elements. The control lines are then connected to screw or spring-cage terminal blocks in the connection element (bottom element).

### Assembling the signal tower

How to assemble your signal tower:

1. Select the right mounting method for your signal tower application: base or tube mounting
2. If applicable, select the angled connector or outlet box
3. If applicable, select the foot and the required tube length: 110 mm to 1000 mm
4. Select the right connection element for the mounting method: screw or spring-cage connection
5. Select the required optical elements and, if applicable, the audible element

## Clear optical signaling

- 5 signal types to choose from
- Can be freely combined
- High light and color intensity
- Minimum LED service life of 50,000 h
- All elements for a minimum of 24 V DC
- Tool-free lamp change
- Random flashing beacon ensures display cannot be ignored

**Notes:**

[1]) At 240 V, 5 W lighting

**Optical signal element, red**

**Optical signal element, yellow**

### Technical data

| | | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|---|---|
| PSD electrical data | | | | | | | | |
| Input voltage | | | 24 V DC | 24 V AC/DC | | 24 V DC | | 24 V AC/DC |
| Nominal input voltage range | [V AC/DC] | 12 ... 240 | | | | | | |
| Maximum inrush current | [mA] | 21[1]) | 200 | 500 | | 200 | 500 | |
| Current consumption | [mA] | 21[1]) | 125 | 30 | | 35 | 350 | 70 |
| General data | | | | | | | | |
| Material | | Polycarbonate PC | | | | | | |
| Weight | [g] | 55 | 73 | 58 | 59 | 72 | 78 | 65 |
| Height | [mm] | 66 | | | | | | |
| Diameter | [mm] | 70 | | | | | | |
| Degree of protection | | IP65, when installed or with cover | | | | | | |
| Ambient temperature (operation) | [°C] | -20 ... 60 | -20 ... 50 | | | | | |
| Mounting position | | Any | | | | | | |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Permanent light element**, without light bulb ① | **PSD-S OE RD** | **2700096** | 1 |
| **Flashing light element**, Xenon flash tube ② | **PSD-S OE FL RD** | **2700101** | 1 |
| **LED permanent light element** ③ | **PSD-S OE LED RD** | **2700107** | 1 |
| **LED blinking light element** ④ | **PSD-S OE LED BL RD** | **2700114** | 1 |
| **LED flashing light element**, double flash ⑤ | **PSD-S OE LED FL RD** | **2700115** | 1 |
| **LED random flashing beacon element** ⑥ | **PSD-S OE LED RFL RD** | **2700118** | 1 |
| **LED rotating light element** ⑦ | **PSD-S OE LED RL RD** | **2700116** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Light bulb** for PSD-S OE ... permanent light element, 5 W, 24 V, BA15d base | **PSD-S AS BULB 5W** | **2700142** | 1 |
| **End cover**, black (replacement part) | **PSD-S AS END COVER** | **2700148** | 1 |
| **Labeling field** for towers with tube mounting, complete with assembly material | **PSD-S AS LABEL BOARD** | **2700147** | 1 |

### Technical data

| | | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |
|---|---|---|---|---|---|---|---|---|
| PSD electrical data | | | | | | | | |
| Input voltage | | | 24 V DC | 24 V AC/DC | | 24 V DC | | 24 V AC/DC |
| Nominal input voltage range | [V AC/DC] | 12 ... 240 | | | | | | |
| Maximum inrush current | [mA] | 21[1]) | 200 | 500 | | 200 | 500 | |
| Current consumption | [mA] | 21[1]) | 125 | 30 | | 35 | 350 | 70 |
| General data | | | | | | | | |
| Material | | Polycarbonate PC | | | | | | |
| Weight | [g] | 55 | 73 | 58 | 59 | 72 | 78 | 65 |
| Height | [mm] | 66 | | | | | | |
| Diameter | [mm] | 70 | | | | | | |
| Degree of protection | | IP65, when installed or with cover | | | | | | |
| Ambient temperature (operation) | [°C] | -20 ... 60 | -20 ... 50 | | | | | |
| Mounting position | | Any | | | | | | |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSD-S OE YE** | **2700098** | 1 |
| **PSD-S OE FL YE** | **2700103** | 1 |
| **PSD-S OE LED YE** | **2700122** | 1 |
| **PSD-S OE LED BL YE** | **2700123** | 1 |
| **PSD-S OE LED FL YE** | **2700124** | 1 |
| **PSD-S OE LED RFL YE** | **2700126** | 1 |
| **PSD-S OE LED RL YE** | **2700125** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **PSD-S AS BULB 5W** | **2700142** | 1 |
| **PSD-S AS END COVER** | **2700148** | 1 |
| **PSD-S AS LABEL BOARD** | **2700147** | 1 |

Optical signal element, green

Optical signal element, clear

Optical signal element, blue

## Technical data

| | ① | ② | ③ | ④ |
|---|---|---|---|---|
| | | 24 V DC | 24 V AC/DC | |
| | 12 ... 240 | | | |
| | 21[1]) | 200 | 500 | |
| | 21[1]) | 125 | 25 | |
| | Polycarbonate PC | | | |
| | 55 | 73 | 58 | 59 |
| | 66 | | | |
| | 70 | | | |
| | IP65, when installed or with cover | | | |
| | -20 ... 60 | -20 ... 50 | | |
| | Any | | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| PSD-S OE GN | 2700097 | 1 |
| PSD-S OE FL GN | 2700102 | 1 |
| PSD-S OE LED GN | 2700119 | 1 |
| PSD-S OE LED BL GN | 2700121 | 1 |

## Accessories

| | | |
|---|---|---|
| PSD-S AS BULB 5W | 2700142 | 1 |
| PSD-S AS END COVER | 2700148 | 1 |
| PSD-S AS LABEL BOARD | 2700147 | 1 |

## Technical data

| | ① | ② | ③ | ④ | ⑤ | ⑥ |
|---|---|---|---|---|---|---|
| | | 24 V DC | 24 V AC/DC | | 24 V DC | |
| | 12 ... 240 | | | | | |
| | 21[1]) | 200 | 500 | | 200 | 500 |
| | 21[1]) | 125 | 25 | | 35 | 250 |
| | Polycarbonate PC | | | | | |
| | 55 | 73 | 58 | 59 | 72 | 78 |
| | 66 | | | | | |
| | 70 | | | | | |
| | IP65, when installed or with cover | | | | | |
| | -20 ... 60 | -20 ... 50 | | | | |
| | Any | | | | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| PSD-S OE CL | 2700099 | 1 |
| PSD-S OE FL CL | 2700105 | 1 |
| PSD-S OE LED CL | 2700127 | 1 |
| PSD-S OE LED BL CL | 2700128 | 1 |
| PSD-S OE LED FL CL | 2700129 | 1 |
| PSD-S OE LED RFL CL | 2700130 | 1 |

## Accessories

| | | |
|---|---|---|
| PSD-S AS BULB 5W | 2700142 | 1 |
| PSD-S AS END COVER | 2700148 | 1 |
| PSD-S AS LABEL BOARD | 2700147 | 1 |

## Technical data

| | ① | ② | ③ | ④ | ⑤ | ⑥ |
|---|---|---|---|---|---|---|
| | | 24 V DC | 24 V AC/DC | | 24 V DC | |
| | 12 ... 240 | | | | | |
| | 21[1]) | 200 | 500 | | 200 | 500 |
| | 21[1]) | 125 | 25 | | 35 | 250 |
| | Polycarbonate PC | | | | | |
| | 55 | 73 | 58 | 59 | 72 | 78 |
| | 66 | | | | | |
| | 70 | | | | | |
| | IP65, when installed or with cover | | | | | |
| | -20 ... 60 | -20 ... 50 | | | | |
| | Any | | | | | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| PSD-S OE BU | 2700100 | 1 |
| PSD-S OE FL BU | 2700106 | 1 |
| PSD-S OE LED BU | 2700131 | 1 |
| PSD-S OE LED BL BU | 2700132 | 1 |
| PSD-S OE LED FL BU | 2700134 | 1 |
| PSD-S OE LED RFL BU | 2700135 | 1 |

## Accessories

| | | |
|---|---|---|
| PSD-S AS BULB 5W | 2700142 | 1 |
| PSD-S AS END COVER | 2700148 | 1 |
| PSD-S AS LABEL BOARD | 2700147 | 1 |

## Acoustic signal that cannot be ignored

- Buzzer and siren elements
- Minimum volume of 80 dB(A)
- Adjustable volume
- Multi-tone siren signaling depending on the situation
- Multilingual signaling thanks to voice output

**Buzzer element, continuous/pulse tone**

**Siren element, alternating**

| | Technical data | Technical data |
|---|---|---|
| PSD electrical data | | |
| Input voltage | - | 24 V DC |
| Nominal input voltage range | 12 V AC/DC ... 30 V AC/DC | - |
| Maximum inrush current | max. 200 mA | max. 500 mA |
| Current consumption | 25 mA | 150 mA |
| Signaling | | |
| Type of acoustic signal | Continuous/pulse tone | Continuous tone, alternating |
| Signal frequency | Approx. 1 Hz | - |
| Tone frequency | Approx. 1.75 kHz | approx. 2.5 kHz / 3.5 kHz |
| Volume | 85 dB(A) | 105 dB(A) |
| General data | | |
| Material | Polycarbonate PC | Polycarbonate PC |
| Weight | 73 g | 106 g |
| Height | 72.00 mm | 79.00 mm |
| Diameter | 70.00 mm | 70.00 mm |
| Degree of protection | IP65, when installed | IP40, when installed |
| Ambient temperature (operation) | -20°C ... 50°C | -20°C ... 50°C |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC | Conformance with EMC Directive 2004/108/EC |
| Mounting position | Any | Any |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Buzzer element**, continuous/pulse tone | **PSD-S AE BM2-1 85DB** | **2700136** | 1 | | | |
| **Siren element**<br>- Alternating<br>- Pulse tone, automatic volume control<br>- 8 tones, tone selection via DIP switches<br>- 7 tones, tone selection via 3 signal cables | | | | **PSD-S AE SC1-2 105DB** | **2700139** | 1 |
| **Voice output element**, up to 15 sound sequences, maximum play time of 60 minutes | | | | | | |

Siren element, pulse tone

Siren element, tones can be selected

Voice output element

## Technical data

| | |
|---|---|
| 24 V DC | |
| - | |
| max. 500 mA | |
| 150 mA | |
| Pulse tone, automatic volume control | |
| Approx. 1 Hz | |
| Approx. 2.5 kHz | |
| 80 dB(A) ... max. 100 dB(A) | |
| Polycarbonate PC | |
| 122 g | |
| 110.00 mm | |
| 71.50 mm | |
| IP65, when installed | |
| -20°C ... 50°C | |
| Conformance with EMC Directive 2004/108/EC | |
| Any | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSD-S AE SP1-3 100DB/2** | **2700137** | 1 |

## Technical data

| | PSD-S AE SM8-5 100DB/1 | PSD-S AE SM7-4 100DB/3 |
|---|---|---|
| | 24 V AC/DC | 24 V DC |
| | - | |
| | max. 500 mA | |
| | 80 mA | |
| | 8 tones, adjustable volume | 7 tones, remotely controlled |
| | 1 Hz, 20 Hz, 420 Hz | |
| | approx. 1.6 kHz / 3.4 kHz | |
| | max. 100 dB(A) (for continuous and pulse tone of 3.4 kHz) | |
| | Polycarbonate PC | |
| | 81 g | 80 g |
| | 72.00 mm | |
| | 70.00 mm | |
| | IP65, when installed | |
| | -20°C ... 50°C | |
| | Conformance with EMC Directive 2004/108/EC | |
| | Any | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSD-S AE SM8-5 100DB/1** | **2700138** | 1 |
| **PSD-S AE SM7-4 100DB/3** | **2700141** | 1 |

## Technical data

| | |
|---|---|
| 24 V DC | |
| - | |
| max. 1 A | |
| 100 mA (in standby mode) | |
| Voice, max. 15 texts, max. 1 complete h | |
| - | |
| - | |
| Approx. 88 dB(A) | |
| Polycarbonate PC | |
| 184 g | |
| 110.00 mm | |
| 71.50 mm | |
| IP65, when installed | |
| -20°C ... 50°C | |
| Conformance with EMC Directive 2004/108/EC | |
| Any | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PSD-S AE V15/1** | **2700140** | 1 |

## Connection elements for base and tube mounting

– Screw or spring-cage terminal blocks

Connection elements for base mounting

Connection elements for tube mounting

| | Technical data | Technical data |
|---|---|---|
| PSD electrical data | | |
| Nominal input voltage range | 12 V AC/DC ... 240 V AC/DC | 12 V AC/DC ... 240 V AC/DC |
| General data | | |
| Material | PA-GF | PA-GF |
| Weight | 83 g | 84 g |
| Height | 27.00 mm | 27.00 mm |
| Diameter | 69.00 mm | 69.00 mm |
| Degree of protection | IP65, when installed | IP65, when installed |
| Ambient temperature (operation) | -20°C ... 50°C | -20°C ... 50°C |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Connection element** | | | | | | |
| - With screw connection terminal blocks | **PSD-S CE-SM SCREW** | **2700093** | 1 | **PSD-S CE-TM SCREW** | **2700095** | 1 |
| - With spring-cage terminal blocks | **PSD-S CE-SM SPRING** | **2700091** | 1 | **PSD-S CE-TM SPRING** | **2700092** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Cable gland**, M16 x 1.5 mm, black | **PSD-S AS CABLE GLAND M16X1,5** | **2700145** | 1 | | | |

## Mounting elements for base mounting

– Direct mounting of the signal tower on the angled connector or outlet box
– With or without concealed cable routing
– Angled connector for two-sided mounting for up to 10 signal elements

Outlet box and angled connector for base mounting

Angled connector with concealed cable routing for base mounting

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | PSD-S ME OB | PSD-S ME BR-SM | PSD-S ME BR-SM/1S | PSD-S ME BR-SM/2S |
| General data | | | | |
| Material | PA-GF | PA A3 x 2G5 | PA A3 x 2G5 | PA A3 x 2G5 |
| Weight | 73 g | 40 g | 78 g | 71 g |
| Ambient temperature (operation) | -30°C ... 60°C | -20°C ... 50°C | -20°C ... 60°C | -20°C ... 60°C |
| Mounting type | Base mounting | Base mounting | Base mounting | Base mounting |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Outlet box** with lateral cable entry | | | | | | |
| - For base mounting | **PSD-S ME OB** | **2700153** | 1 | | | |
| **Angled connector** | | | | | | |
| - With visible cable routing | **PSD-S ME BR-SM** | **2700144** | 1 | | | |
| **Angled connector** with concealed cable routing | | | | | | |
| - For single-sided base mounting | | | | **PSD-S ME BR-SM/1S** | **2700160** | 1 |
| - For two-sided base mounting | | | | **PSD-S ME BR-SM/2S** | **2700161** | 1 |

## Mounting feet, tubes, and adapters for tube mounting

– Metal foot for greater stability
– Four different tube lengths for optimum installation height
– Foldaway base for vertical alignment with angled surfaces

Adapter and mounting foot with tube

Mounting feet and tubes

| Description | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Adapter** for single hole mounting | **PSD-S ME A-SH M18** | **2700150** | 1 | | | |
| **Foot** with integrated tube - 110 mm long | **PSD-S ME BT 110** | **2700156** | 1 | | | |
| **Foot** for tube, Ø 25 mm | | | | | | |
| - Plastic | | | | **PSD-S ME B-P** | **2700163** | 1 |
| - Metal | | | | **PSD-S ME B-M** | **2700164** | 1 |
| **Tube**, Ø 25 mm | | | | | | |
| - 250 mm long | | | | **PSD-S ME T-M 250** | **2700157** | 1 |
| - 400 mm long | | | | **PSD-S ME T-M 400** | **2700158** | 1 |
| - 1000 mm long | | | | **PSD-S ME T-M 1000** | **2700154** | 1 |
| **Foldaway base** - 7.5° pitch | | | | **PSD-S ME FB** | **2700151** | 1 |
| **Tube**, for direct mounting on the foldaway base - 45 mm long | | | | **PSD-S ME T-P 45** | **2700152** | 1 |

## Mounting elements for tube mounting

– Mounting the base on the angled connector or outlet box
– With or without concealed cable routing
– Magnetic base for tool-free mounting on metal surfaces

Outlet boxes for tube mounting

Angled connector for tube mounting

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | PSD-S ME OB | PSD-S ME OB/MB | PSD-S ME BR-BM/HCR | PSD-S ME BR-BM |
| General data | | | | |
| Material | PA-GF | PA-GF | ABS-PC | PA A3 x 2G5 |
| Weight | 73 g | 299 g | 80 g | 60 g |
| Ambient temperature (operation) | -30°C ... 60°C | -30°C ... 60°C | -20°C ... 60°C | -20°C ... 50°C |
| Mounting type | Base mounting | Base mounting | Base mounting, concealed cable routing | Base mounting |

| Description | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **Outlet box** with lateral cable entry | | | | | | |
| - For base mounting | **PSD-S ME OB** | **2700153** | 1 | | | |
| - With magnetic base | **PSD-S ME OB/MB** | **2700155** | 1 | | | |
| **Angled connector** | | | | | | |
| - With concealed cable routing | | | | **PSD-S ME BR-BM/HCR** | **2700149** | 1 |
| - With visible cable routing | | | | **PSD-S ME BR-BM** | **2700143** | 1 |

## Web panels

Phoenix Contact offers numerous operation and monitoring devices for visualizing processes. New to the range are web panels in widescreen format. Through the use of web technologies, these panels provide a cost-effective introduction to visualization.

The widescreen web panels offer the following features:

– Larger user interface, but in a similar size
– Bright and extremely clear display
– LED backlit display
– Dust-proof and splash-proof front according to IP65
– Easy installation, low installation depth, and compact design
– Service-friendly and easy to configure

**7.0" TFT widescreen display**

### Technical data

| | |
|---|---|
| **Display data** | |
| Display | 7" TFT active |
| Monitor resolution | 800 x 480 pixels |
| Color spectrum | 65,536 colors |
| Touch screen | Resistive industrial touch screen |
| **Computer data** | |
| Operating systems | Windows CE 5.0 |
| Processor | RISC ARM9 CPU; 200 MHz |
| Main memory | 32 MB SDRAM |
| Data memory | 16 MB Flash |
| Interfaces | 10/100 Mbit Ethernet; 2 x USB Host 2.0 |
| **External dimensions** | |
| Width | 203 mm |
| Height | 147 mm |
| Depth | 5 mm |
| **Installation dimensions** | |
| Width | 195 mm |
| Height | 139 mm |
| Installation depth | 54 mm |
| **General data** | |
| Degree of protection | IP65 (front), IP20 (back) |
| Ambient temperature (operation) | 0°C ... 50°C |
| Permissible humidity (operation) | 20% ... 85% (no condensation) |
| Mounting type | Installation in front plate |
| Vibration (operation) | DIN EN 60068-2-6 |
| Shock | DIN EN 60068-2-27 |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Widescreen web panel**<br>- 7" display<br>- 9" display<br>- 12" display | **WP 07T/WS** | **2700307** | 1 |

9.0" TFT widescreen display

12.0" TFT widescreen display

| Technical data |
|---|
| 9" TFT active |
| 800 x 480 pixels |
| 65,536 colors |
| Resistive industrial touch screen |
| Windows CE 5.0 |
| RISC ARM9 CPU; 200 MHz |
| 32 MB SDRAM |
| 16 MB Flash |
| 10/100 Mbit Ethernet; 2 x USB Host 2.0 |
| 260 mm |
| 172 mm |
| 5 mm |
| 252 mm |
| 164 mm |
| 54 mm |
| IP65 (front), IP20 (back) |
| 0°C ... 50°C |
| 20% ... 85% (no condensation) |
| Installation in front plate |
| DIN EN 60068-2-6 |
| DIN EN 60068-2-27 |

| Technical data |
|---|
| 12" TFT active |
| 800 x 480 pixels |
| 65,536 colors |
| Resistive industrial touch screen |
| Windows CE 5.0 |
| RISC ARM9 CPU; 200 MHz |
| 32 MB SDRAM |
| 16 MB Flash |
| 10/100 Mbit Ethernet; 2 x USB Host 2.0 |
| 330 mm |
| 225 mm |
| 5 mm |
| 322 mm |
| 217 mm |
| 54 mm |
| IP65 (front), IP20 (back) |
| 0°C ... 50°C |
| 20% ... 85% (no condensation) |
| Installation in front plate |
| DIN EN 60068-2-6 |
| DIN EN 60068-2-27 |

Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **WP 09T/WS** | **2700309** | 1 |

Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **WP 12T/WS** | **2700306** | 1 |

## Industrial PCs for the control cabinet

This new line of powerful, rugged and configurable industrial computers is designed for a wide variety of automation applications where control, visualization or data acquisition is required. Systems can be configured from a selection of various screen sizes, CPU, RAM, mass storage choices and mounting options. The ability to custom configure a system provides the flexibility to choose the right hardware to meet the specific application requirements, and the modular design provides the ability to implement various configurations using the same basic hardware platform.

A Valueline system can be used in environments with ambient temperatures of up to 55°C. The integrated error LED provides the ability to quickly diagnose possible instances of overtemperature. The fanless cooling concept and optional electronic mass storage solution results in a system with no moving parts which minimizes maintenance costs.

The hard drive, Compact Flash© devices and battery are easily accessed through a convenient service door and can be quickly removed and replaced for easy maintenance.

Valueline uses leading edge CPU technology that provides various levels of processing power with low power consumption and minimal heat generation. Current solutions include the Celeron® M 1.0 GHz, the Core2™ Duo 1.5 GHz and the Atom™ 1.6 GHz processors.

The rotating hard drives used with Valueline are all industrial drives which makes them more suitable for data-intensive applications requiring round-the-clock operation. These drives provide the support for the high requirements of "always on" applications.

For higher temperatures or applications subject to vibration, Valueline offers a range of electronic configuration options. Various sizes of both SLC and MLC solid-state drives are available in a 2.5" SATA form factor. MLC solid-state drives serve applications that require larger storage sizes, whereas SLC drives serve applications that require higher performance. SLC drives are smaller and typically provide faster write speeds with a longer service life.

Valueline can also be configured with several Compact Flash© (CF) options. All of the CFs used with Valueline are suitable for industrial use and use SLC NAND-based memory technology.

For applications that require fieldbus connectivity, a Valueline system can be configured with 2 additional PCI slots.

For applications that require visualization, a system can be configured to include a display. Current solutions include 12, 15, 17, 19 or 24" displays with integrated resistive touch screens. For applications where no visualization is required, a system can be configured without a display and mounted inside housing using several different mounting methods.

**Notes:**

[1]) Configuration options can affect the operating temperature. See user manual for details.

**Industrial computer, configurable**

## Technical data

| | |
|---|---|
| **Display data** | |
| Display (configuration option) | None<br>12" color touch screen with front USB port<br>15" color touch screen with optional front USB port<br>17" color touch screen with optional front USB port<br>19" color touch screen with front USB port<br>24" color touch screen with front USB port |
| **Computer data** | |
| Processor (configuration option) | Atom™ 1.6 GHz<br>Celeron® M 1.01 GHz<br>Core2™ Duo 1.5 GHz |
| Main memory (configuration option) | 512 MB DDR SODIMM<br>1 GB DDR SODIMM<br>2 GB DDR SODIMM<br>3 GB DDR SODIMM |
| Data memory (configuration option) | 2.5" SATA hard drive<br>2.5" SATA solid-state drive<br>Compact Flash© |
| Optical drive (configuration option) | DVD-RWMbps |
| Interfaces | COM 1 (V.24 (RS-232)), 1x DVI-D, 1x VGA, 4x USB, 2x Compact Flash |
| Slots | None or 2x PCI |
| Monitor output | VGA, DVI-D |
| Network | 2x Ethernet (10/100/1000 Mbps), RJ45 |
| Power supply unit | 24 V DC |
| **General data** | |
| Degree of protection | IP65 (front), IP20 (back) |
| Ambient temperature (operation) | 5°C ... 55°C[1]) |
| Permissible humidity (operation) | 5% ... 95% (no condensation) |
| Mounting type | Panel mount for control cabinet, wall mount, or bookshelf mount |
| Vibration (operation) | DIN EN 60068-2-6 |
| Shock | 15g, 11 ms in accordance with IEC 60068-2-27 |

## Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Industrial computer** | | | |
| | **VALUELINE IPC** | **2913108** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **Mounting kit**, including hardware for installation | | | |
| - panel installation | **VL PANEL MOUNTING KIT** | **2913159** | 1 |
| - bookshelf installation without PCI expansion slots | **VL BOOKSHELF MOUNTING KIT** | **2913160** | 1 |
| - bookshelf installation with PCI expansion slots | **VL BOOKSHELF MOUNTING KIT/EXPANSION** | **2913164** | 1 |
| **Removable hard drive tray** | | | |
| | **HDD TRAY KIT** | **2913185** | 1 |
| **2.5" SATA HDD kit,** including tray | | | |
| - 160 GB | **VL 160 GB HDD KIT** | **2913197** | 1 |
| **2.5" SATA solid-state drive kit**, including tray | | | |
| - 16 GB | **VL 16 GB SSD (SLC) KIT** | **2913199** | 1 |
| - 32 GB | **VL 32 GB SSD (SLC) KIT** | **2913200** | 1 |
| - 64 GB | **VL 64 GB SSHD KIT** | **2913198** | 1 |
| - 128 GB | **VL 128 GB SSD KIT** | **2913201** | 1 |
| **Compact Flash card** | | | |
| - 512 MB | **VL 512 MB CF** | **2913154** | 1 |
| - 1 GB | **VL 1 GB CF** | **2913155** | 1 |
| - 2 GB | **VL 2 GB CF** | **2913156** | 1 |
| - 4 GB | **VL 4 GB CF** | **2913157** | 1 |
| - 8 GB | **VL 8 GB CF** | **2913158** | 1 |

## Panel PCs with touch screen

Panel PC devices from Phoenix Contact are industrial PCs for installation in the control cabinet. New to the range is the PPC 6000 series.

These devices offer the following features:
– Powerful Intel® Core™2 Duo processors
– Improved network connection via 4 x Gigabit Ethernet
– Increased access speed thanks to DDR3 RAM
– Optional expansion by means of 1 or 3 PCI slots
– Cutout-compatible with 5000 series

**Panel PC, 1 slot**

### Technical data

| | |
|---|---|
| **Display data** | |
| Display | 15" TFT active |
| Monitor resolution | 1024 x 768 |
| Display lighting | 250 cd/m² typ., (adjustable) |
| Touch screen | Resistive industrial touch screen |
| **Computer data** | |
| Processor (configuration option) | Celeron M 1.2 GHz<br>Core2Duo 2.26 GHz |
| Main memory (configuration option) | 1 GB DDR3 RAM<br>2 GB DDR3 RAM<br>4 GB DDR3 RAM |
| Data memory (configuration option) | 2.5" HDD, 120 GB (SATA) |
| Optical drive (configuration option) | No CD-ROM |
| Interfaces | COM 1, COM 2 (V.24 (RS-232)), 1xDVI-I, 6x USB<br>1x USB on front |
| Slots | 1x PCI |
| Network | 1x Ethernet (10/100/1000 Mbit) RJ45, 3x Ethernet (10/100/1000 Mbit) RJ45 via Managed Switch |
| Power supply unit | 100 ... 240 V AC, 50/60 Hz<br>24 V DC +/- 20% |
| **General data** | |
| Degree of protection | IP65 (front), IP20 (back) |
| Ambient temperature (operation) | 5°C ... 45°C |
| Permissible humidity (operation) | 10% ... 85% (no condensation) |
| Mounting type | Installation in front plate |
| Vibration (operation) | DIN EN 60068-2-6 |
| Shock | DIN EN 60068-2-27 |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Panel PC** with touch screen and software keyboard, **15" display** | | | |
| - 1 slot | **PPC 6115** | **2913755** | 1 |
| - 3 slots | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Power supply unit**, primary-switched | **TRIO-PS/1AC/24DC/10** | **2866323** | 1 |
| **Firewall/router in PCI format** | | | |
| - 266 MHz processor clock frequency | **FL MGUARD PCI/266** | **2989019** | 1 |
| - 533 MHz processor clock frequency | **FL MGUARD PCI/533** | **2989213** | 1 |
| **Firewall/router in PCI format**, VPN support | | | |
| - 266 MHz processor clock frequency | **FL MGUARD PCI/266 VPN** | **2989514** | 1 |
| - 533 MHz processor clock frequency | **FL MGUARD PCI/533 VPN** | **2989417** | 1 |

**Panel PC, 3 slots**

## Technical data

| |
|---|
| 15" TFT active |
| 1024 x 768 |
| 250 cd/m² typ., (adjustable) |
| Resistive industrial touch screen |
| |
| Celeron M 1.2 GHz |
| Core2Duo 2.26 GHz |
| 1 GB DDR3 RAM |
| 2 GB DDR3 RAM |
| 4 GB DDR3 RAM |
| 3.5 HDD, min. 320 GB (SATA) |
| DVD burner |
| No CD-ROM |
| COM 1, COM 2 (V.24 (RS-232)), 1x DVI-I, 6x USB |
| 1x USB on front |
| 2 x PCI, 1 x PCIe |
| 1x Ethernet (10/100/1000 Mbit) RJ45, 3x Ethernet (10/100/1000 Mbit) RJ45 via Managed Switch |
| |
| 100 ... 240 V AC, 50/60 Hz |
| 24 V DC +/- 20% |
| |
| IP65 (front), IP20 (back) |
| 5°C ... 45°C |
| 10% ... 85% (no condensation) |
| Installation in front plate |
| DIN EN 60068-2-6 |
| DIN EN 60068-2-27 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **PPC 6315** | **2913768** | 1 |

## Accessories

| | | |
|---|---|---|
| **TRIO-PS/1AC/24DC/10** | **2866323** | 1 |
| **FL MGUARD PCI/266** | **2989019** | 1 |
| **FL MGUARD PCI/533** | **2989213** | 1 |
| **FL MGUARD PCI/266 VPN** | **2989514** | 1 |
| **FL MGUARD PCI/533 VPN** | **2989417** | 1 |

## Configurable IPCs with IP65 protection

VMT devices from Phoenix Contact are industrial PCs with IP65 protection. These dust and splash-proof devices are ideal for use close to machinery.

The new VMT 3000 series offers the following features:

– Energy-efficient Intel® ATOM™ processors
– Fanless structure
– Fully enclosed housing with IP65 protection
– Extended temperature range of -20°C to +50°C
– Optimum network connection by means of Gigabit Ethernet or WLAN
– Comprehensive range of accessories available

**IPC with IP65 protection, 8" display**

**IPC with IP65 protection, 12.1" display**

| | Technical data | Technical data |
|---|---|---|
| Display data | | |
| Display | 8" TFT active | 12.1" TFT active |
| Monitor resolution | 800 x 480 (WVGA) | 800 x 600 (SVGA) |
| Display lighting | 400 cd/m², typical (adjustable) | 400 cd/m², typical (adjustable) |
| Touch screen | Resistive industrial touch screen | Resistive industrial touch screen |
| Computer data | | |
| Processor (configuration option) | Atom 1.1 GHz | Atom 1.1 GHz<br>Atom 1.6 GHz |
| Main memory (configuration option) | 1 GB DDR2 RAM<br>2 GB DDR2 RAM | 1 GB DDR2 RAM<br>2 GB DDR2 RAM |
| Data memory (configuration option) | Flash SSD 1 GB<br>Flash SSD 2 GB<br>Flash SSD 4 GB | Flash SSD 1 GB<br>Flash SSD 2 GB<br>Flash SSD 4 GB<br>2.5" HDD, min 40 GB, 24x7 Automotive |
| Interfaces | COM 1 (V.24 (RS-232)), 1x PS/2 (mouse/keyboard), 2x USB, 1x Mini PCI | COM 1 (V.24 (RS-232)), 1x PS/2 (mouse/keyboard), 2x USB, 2x Mini PCI Express |
| Optional interfaces | Wireless LAN | Wireless LAN |
| Graphics card | On-board graphics chip (AGP) | On-board graphics chip (AGP) |
| Network | 2x Ethernet (10/100/1000 Mbit), RJ45 | 2x Ethernet (10/100/1000 Mbit), RJ45 |
| Power supply unit | 24 V DC +/- 20% | 24 V DC +/- 20% |
| External dimensions | | |
| Width | 254 mm | 338 mm |
| Height | 182 mm | 261 mm |
| Depth | 62 mm | 62 mm |
| General data | | |
| Degree of protection | IP65 | IP65 |
| Ambient temperature (operation) | -20°C ... 50°C | -20°C ... 50°C |
| Permissible humidity (operation) | 10% ... 85% (no condensation) | 10% ... 85% (no condensation) |
| Mounting type | Depending on the configuration | Depending on the configuration |
| Vibration (operation) | DIN EN 60068-2-6 | DIN EN 60068-2-6 |
| Shock | DIN EN 60068-2-27 | DIN EN 60068-2-27 |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs./ Pkt. | Type | Order No. | Pcs./ Pkt. |
| **IPC with IP65 protection** with touch screen, configurable | | | | | | |
| - 8" display | **VMT 3008** | **2913852** | 1 | | | |
| - 12.1" display | | | | **VMT 3012** | **2913959** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Connector** | **FMC 1,5 / 4-STF-3,81 BD:PE-24V** | **1701307** | 50 | **MC 1,5 / 4-STF-3,81 BD:PE-24VSO** | **1771240** | 50 |
| **External power supply unit** for an IPC in IP65 housing | **VMT 300X EXT PS** | **2913881** | 1 | **VMT 301X EXT PS** | **2913933** | 1 |
| **Cable assembly kit** for an IPC in IP65 housing | **VMT CABLE ASSEMBLY KIT** | **2913878** | 1 | **VMT CABLE ASSEMBLY KIT** | **2913878** | 1 |

## Mobile tablet PC

The tablet PC from Phoenix Contact can be used to implement mobile applications professionally, both indoors and outdoors. Thanks to their protected and extremely stable housing, these PC solutions are ideal for industrial requirements.

The tablet PC 6000 series offers the following features:
– Wireless connection via WLAN or Bluetooth
– Independence from the mains thanks to battery operation
– Various docking station solutions
– Various carrying straps and supports

**Mobile tablet PC, 13.3" widescreen display**

### Technical data

| | |
|---|---|
| **Display data** | |
| Display | 13.3" TFT active |
| Monitor resolution | 1280 x 800 (WXGA) |
| Display lighting | 400 cd/m², typical (adjustable) |
| Touch screen | Resistive industrial touch screen |
| **Computer data** | |
| Processor | Core Solo 1.067 GHz ULV |
| Main memory | 2 GB DDR2 RAM |
| Data memory | 2.5" HDD, 120 GB (SATA) |
| Interfaces | 2 x USB 2.0, 1 x USB 2.0 recessed, WLAN 802.11 a/b/g, Bluetooth 2.0 Class 1 or Class 2, 1 x Headphone OUT, 1 x MIC IN, 2-megapixel autofocus camera |
| Network | 1x Ethernet (10/100 Mbit), RJ45 |
| Power supply unit | 115/230 V AC/20 V DC external power supply unit |
| **General data** | |
| Degree of protection | IP65 (front), IP54 (back) |
| Ambient temperature (operation) | 0°C ... 40°C |
| Permissible humidity (operation) | 10% ... 85% (no condensation) |
| Mounting type | Mobile application |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Mobile tablet PC** with touch screen, enclosed housing | | | |
| - 13.3" widescreen display | **TPC 6013** | **2913784** | 1 |

## One network, all options

**One network, all options – The turn-key solution for your network**

When it comes to flexible infrastructure design, our range of switches provide the ideal solution. You can choose from our wide range of standard switches, Lean Managed Switches, and Smart Managed Switches. Corresponding cabling is of course also available, so you can implement any application. The data connectors are easy to operate and therefore ideal for use in industrial applications. Read on to learn more about the new features of our turn-key solution.

**Industrial Ethernet is secure**

The mGuard security solution provides maximum system security. The routers with integrated firewall offer an extremely high level of performance and provide protection against failure, sabotage, and data loss.

**Industrial Ethernet is wireless**

Do you want to connect your system parts wirelessly? No problem. Benefit from our wireless expertise. We have further developed Bluetooth and WLAN technology for industrial use. Enjoy the usual benefits of wireless connections with maximum data security and performance.

**Industrial Ethernet goes further**

Our interfaces provide additional expansion options for your infrastructure. Integrate serial devices in your network with a COM server, bridge distances of several kilometers with fiber optic media converters, and access your system worldwide using industrial modems.

## High-performance firewall and router with Gigabit support

Automation networks increasingly require protection against unauthorized external and internal access. In applications where access to automation networks should be monitored and/or controlled, the FL MGUARD GT/GT is the ideal firewall and router module for distributed control cabinet use. The VPN version also offers encrypted data transmission.

– Provides protection against unauthorized access and attacks
– Protection against incorrect addressing
– Up to 1000 Mbps on RJ45 and SFP ports
– Web server for diagnostics, maintenance, and configuration
– Replaceable configuration memory
– Connection for VPN enable button

**Firewall/router**

### Technical data

| | FL MGUARD GT/GT | FL MGUARD GT/GT VPN |
|---|---|---|
| **Ethernet interface** | | |
| Number of ports | 2 | |
| Transmission speed | 10/100/1000 Mbps | |
| Type of connection | RJ45 | |
| **Fiber optic interface** | | |
| Transmission speed | 1000 Mbps (full duplex) | |
| Type of connection | SFP ports | |
| Transmission length | Up to 80 km (Depending on the fiber/SFP module used) | |
| **Other connections** | | |
| Serial (V.24 (RS-232)) | V.24 (RS-232-C), 6-pos. MINI-DIN female connector (PS/2) | |
| **Function** | | |
| Basic functions | Router with intelligent firewall and Gigabit connectivity | Router with intelligent firewall and Gigabit connectivity and VPN |
| SNMP – Simple Network Management Protocol | SNMPv1, v2, v3 | |
| VLAN – Virtual Local Area Network | As per 802.1Q | |
| **Security functions** | | |
| Dynamic Host Configuration Protocol (DHCP) support | Server or Relay Agent | |
| Network Time Protocol (NTP) client | Client | |
| Link Layer Discovery Protocol (LLDP) | As per protocol 802.2 | |
| Remote syslog logging | On externals server | |
| VPN throughput | - | ≥ 70 Mbps |
| Number of VPN tunnels | - | 10 (Up to 250 with license possible) |
| Encryption methods | - | DES, 3DES, AES-128, -192, -256 |
| Internet Protocol Security (IPsec) mode | - | ESP-Tunnel / ESP-Transport |
| Authentication | - | X.509v3 certificates with RSA or PSK |
| Data integrity | - | MD5, SHA-1 |
| 1:1 Network Address Translation (NAT) in the VPN | - | Supported |
| Firewall data throughput | Up to 200 Mbps | |
| Firewall rules | Configurable stateful inspection firewall | |
| Filtering | MAC and IP addresses, ports, protocols | |
| Protection against | IP spoofing, DoS and Syn Flood Protection | |
| Routing | Standard routing, NAT, 1:1 NAT, port forwarding | |
| **Power supply** | | |
| Supply voltage | 24 V DC | |
| Residual ripple | 3.6 $V_{PP}$ | |
| Supply voltage range | 18 V DC ... 32 V DC | |
| Max. current consumption | 270 mA | |
| **General data** | | |
| Weight | 660 g | |
| Width | 128 mm | |
| Height | 110 mm | |
| Depth | 69 mm | |
| Degree of protection | IP20 | |
| Ambient temperature (operation) | -20°C ... 60°C | |
| Permissible humidity (operation) | 5% ... 95% (no condensation) | |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Router/firewall** with Gigabit connectivity | | | |
| | **FL MGUARD GT/GT** | **2700197** | 1 |
| - With VPN | **FL MGUARD GT/GT VPN** | **2700198** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Configuration memory**, replaceable | **FL MEM PLUG** | **2891259** | 1 |

## Gigabit Modular Switch

The modular high-performance Gigabit switch has 12 or 4 integrated ports with 1000 Mbps data transmission and can be extended to up to 28 ports with any transmission medium. It also supports all popular Gigabit and Fast Ethernet transmission standards, IT standard protocols, and the PROFINET and Ethernet/IP automation protocols.

It offers the following features:

- Highly flexible device configuration with FL IF... plug-in media modules for various fiber optic standards and Power over Ethernet
- Connection of connection media that can be assembled in the field, such as POF, HCS, and GI HCS for distances up to 2000 m
- Connection of Gigabit glass fiber via FL SFP plug-in modules for 1000Base-SX, 1000Base-LX, and longhaul
- Quick and easy local diagnostics and configuration options with the new operator/display interface
- Integration into existing network structures with standardized redundancy mechanisms from the IT and automation world
- Security in the automation network according to IEEE 802.1X

**Gigabit Modular Switch head station, 8 - 16 ports**

### Technical data

| | |
|---|---|
| **Ethernet interface** | |
| Interface | Ethernet (RJ45) |
| Number of ports | 8, can be extended to a maximum of 24 ports |
| Transmission speed | 10/100/1000 Mbps |
| Type of connection | 4 integrated Gigabit ports + 4 integrated 100 Mbps ports plus 8 ports via FL IF... |
| **Fiber optic interface** | |
| Interface | 100 Mbps Ethernet fiber optics |
| Number of ports | Can be extended to a maximum of 16 ports |
| Type of connection | via interface module |
| Wavelength | 1310 nm |
| Transmission length | Up to 36 km (depends on IF module) |
| **Fiber optic interface** | |
| Interface | 1000 Mbps Ethernet fiber optics |
| Number of ports | 4 SFP module |
| Transmission speed | 1000 Mbps (full duplex) |
| Type of connection | via SFP module |
| Wavelength | 850 nm / 1310 nm / 1550 nm |
| Transmission length | Up to 80 km (depending on the SFP module used) |
| **Other connections** | |
| Serial (V.24 (RS-232)) | V.24 (RS-232-C), 6-pos. MINI-DIN female connector (PS/2) |
| **Function** | |
| Basic functions | Store-and-forward switch, smart mode, port mirroring, multicast filtering, IGMP snooping, VLAN, Media Redundancy Protocol (MRP according to IEC 62439), Rapid Spanning Tree (RSTP), Fast Ring Detection (FRD), Large Tree Support, IEEE 802.1X security, port security, PROFINET IO device, GMRP, GVRP, SNTP, 2 digital inputs |
| **Power supply** | |
| Supply voltage | 24 V DC |
| Supply voltage range | 18.5 V DC ... 30.2 V DC |
| Typical current consumption | 800 mA (Up to 2.5 A, depending on the configuration) |
| **General data** | |
| Weight | 2700 g |
| Width | 287 mm |
| Height | 125 mm |
| Depth | 115 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -20°C ... 55°C (no condensation) |
| Permissible humidity (operation) | 10% ... 95% (no condensation) |
| Electromagnetic compatibility | Conformance with EMC Directive 89/336/EEC |
| Noise emission | EN 61000-6-3/-4 |
| Noise immunity | EN 61000-6-2:2005 |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Gigabit Modular Switch** | | | |
| - 4 Gigabit ports and 12 Fast Ethernet ports | **FL SWITCH GHS 4G/12** | **2700271** | 1 |
| - 12 Gigabit ports and 8 Fast Ethernet ports | | | |
| **Extension** | | | |
| - 8 Ethernet ports | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Parameterization memory**, replaceable | **SD FLASH 256MB** | **2988120** | 1 |
| **Parameterization memory**, can be replaced with MRM function | **FL SD FLASH/MRM** | **2700270** | 1 |

PROFINET

EtherNet/IP

**Gigabit Modular Switch head station, 12 - 20 ports**

Ethernet

**Extension, 8 ports**

| Technical data | |
|---|---|
| Ethernet (RJ45) | Ethernet |
| 8, can be extended to a maximum of 24 ports | - |
| 10/100/1000 Mbps | 10/100 Mbps |
| 8 integrated ports plus 8 ports via FL IF | 8 ports via FL IF (interface) modules |
| 100 Mbps Ethernet fiber optics | Ethernet FO |
| Can be extended to a maximum of 16 ports | - |
| via interface module | Via interface modules |
| 1310 nm | - |
| Up to 36 km (depends on IF module) | Up to 10000 m (for single mode glass fiber: 36,000 m) |
| 1000 Mbps Ethernet fiber optics | - |
| 4 SFP module | - |
| 1000 Mbps (full duplex) | - |
| via SFP module | - |
| 850 nm / 1310 nm / 1550 nm | - |
| Up to 80 km (depending on the SFP module used) | - |
| V.24 (RS-232-C), 6-pos. MINI-DIN female connector (PS/2) | - |
| Store-and-forward switch, smart mode, port mirroring, multicast filtering, IGMP snooping, VLAN, Media Redundancy Protocol (MRP according to IEC 62439), Rapid Spanning Tree (RSTP), Fast Ring Detection (FRD), Large Tree Support, IEEE 802.1X security, port security, PROFINET IO device, GMRP, GVRP, SNTP, 2 digital inputs | Extension module for Modular Managed Switch |
| 24 V DC | - |
| 18.5 V DC ... 30.2 V DC | - |
| 800 mA (Up to 2.7 A, depending on the configuration) | (via head station) |
| 2700 g | 650 g |
| 287 mm | 127 mm |
| 125 mm | 125 mm |
| 115 mm | 115 mm |
| IP20 | IP20 |
| -20°C ... 55°C (no condensation) | -20°C ... 55°C (no condensation) |
| 10% ... 95% (no condensation) | 10% ... 95% (no condensation) |
| Conformance with EMC Directive 89/336/EEC | Conformance with EMC Directive 89/336/EEC |
| EN 61000-6-3/-4 | EN 61000-6-3/-4 |
| EN 61000-6-2:2005 | EN 61000-6-2:2005 |

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **FL SWITCH GHS 12G/8** | **2989200** | 1 |

**Accessories**

| | | |
|---|---|---|
| **SD FLASH 256MB** | **2988120** | 1 |
| **FL SD FLASH/MRM** | **2700270** | 1 |

**Ordering data**

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **FL FXT** | **2989307** | 1 |

**Accessories**

## SFN switch

Ethernet

Ethernet switch with RJ45 ports

### 16-port Ethernet switches

The **FL SWITCH SFN...** range of switches can be used for a quick and cost-effective Ethernet network. The switches have 16 ports, up to two that can be designated as glass fiber ports.

The switches support transmission speeds of 10 and 100 Mbps at the twisted-pair ports. The glass fiber ports support 100 Mbps exclusively.

The FL SWITCH SFN... switches are suitable for industrial use, featuring metal housing and -10°C to +60°C temperature range.

### 16-port Ethernet switches for extreme environments

The **FL SWITCH SFNT...** standard function unmanaged switches extend the SFN range to meet the demands of extreme environment, wide-temperature applications. The switches have 16 ports, up to two that can be designated as glass fiber ports.

These unmanaged switches allow networks to expand into process industry environments, such as oil/gas, chemical, water/wastewater, wind energy, security, and monitoring. These applications are typically outdoor industry locations requiring constant operation in -40°C to +75°C temperature conditions.

### Features and advantages

– 12 to 48 V DC input voltage range
– Redundant power supply with local (LED) and remote alarm generation (floating contact) to indicate failure of one or both power supplies
– Fiber optic options available for longer distances and electrical noise immunity
– Fiber optic ports available in SC format
– Cable security available via optional FL patch guards

### Technical data

| | FL SWITCH SFN 16TX | FL SWITCH SFNT 16TX |
|---|---|---|
| **Ethernet interface** | | |
| Number of ports | 16 RJ45 ports | |
| Transmission speed | 10/100 Mbps (RJ45) | |
| Type of connection | RJ45 female connector, auto negotiation, and auto crossing | |
| **Fiber optic interface** | | |
| Number of ports | - | |
| Transmission speed | - | |
| Type of connection | - | |
| Transmission length | - | |
| **Function** | | |
| Basic functions | Unmanaged switch / auto negotiation, complies with IEEE 802.3, store-and-forward switching mode, includes alarm contacts | |
| Status and diagnostic indicators | LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port, voltage alarm | |
| **Network expansion parameters** | | |
| Cascading depth | Network, linear, and star structure: any | |
| Maximum conductor length (twisted pair) | 100 m | |
| **Power supply** | | |
| Supply voltage | 24 V DC (redundant) | |
| Residual ripple | 3.6 $V_{PP}$ | |
| Supply voltage range | 12 V DC ... 48 V DC | |
| Typical current consumption | 350 mA (@ 24 V DC) | |
| **General data** | | |
| Width | 70 mm | |
| Height | 135 mm | |
| Depth | 110 mm | |
| Ambient temperature (operation) | -10°C ... 60°C | -40°C ... 75°C |
| Permissible humidity (operation) | 5% ... 95% (no condensation) | |
| Noise immunity | EN 61000-6-2 | |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Ethernet switch** | | | |
| 16 RJ45 ports<br>15 RJ45 ports, 1 FO port<br>14 RJ45 ports, 2 FO ports | **FL SWITCH SFN 16TX** | **2891933** | 1 |
| **Ethernet switch with wide temperature range** | | | |
| Wide temperature range, 16 RJ45 ports<br>Wide temperature range, 15 RJ45 ports, 1 FO port<br>Wide temperature range, 14 RJ45 ports, 2 FO ports | **FL SWITCH SFNT 16TX** | **2891952** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **End clamp,** to screw on NS 35, can be equipped with terminal strip marker KLM-A or ZB 8 | **E/NS 35 N** | **0800886** | 50 |
| **Dust protection cap** for RJ45 female connector | **FL RJ45 PROTECT CAP** | **2832991** | 10 |
| **Patch cable**, CAT5, pre-assembled (see AUTOMATION catalog) | FL CAT5 PATCH ... | | |

## Ethernet

**Ethernet switch with RJ45 ports and 1 FO port**

### Technical data

| FL SWITCH SFN 15TX/FX | FL SWITCH SFNT 15TX/FX |
|---|---|
| 15 RJ45 ports<br>10/100 Mbps (RJ45)<br>RJ45 female connector, auto negotiation, and auto crossing | |
| 1 FO port<br>100 Mbps (SC-D, full duplex)<br>SC duplex<br>2000 m (typ.) | |
| Unmanaged switch / auto negotiation, complies with IEEE 802.3, store-and-forward switching mode, includes alarm contacts<br><br>LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port, voltage alarm | |
| Network, linear, and star structure: any<br>100 m | |
| 24 V DC (redundant)<br>3.6 $V_{PP}$<br>12 V DC ... 48 V DC<br>350 mA (@ 24 V DC) | |
| 70 mm<br>135 mm<br>110 mm | |
| -10°C ... 60°C | -40°C ... 75°C |
| 5% ... 95% (no condensation) | |
| EN 61000-6-2 | |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **FL SWITCH SFN 15TX/FX** | **2891934** | 1 |
| **FL SWITCH SFNT 15TX/FX** | **2891953** | 1 |

### Accessories

| | | |
|---|---|---|
| **E/NS 35 N** | **0800886** | 50 |
| **FL RJ45 PROTECT CAP** | **2832991** | 10 |
| FL CAT5 PATCH ... | | |

## Ethernet

**Ethernet switch with RJ45 ports and 2 FO ports**

### Technical data

| FL SWITCH SFN 14TX/2FX | FL SWITCH SFNT 14TX/2FX |
|---|---|
| 14 RJ45 ports<br>10/100 Mbps (RJ45)<br>RJ45 female connector, auto negotiation, and auto crossing | |
| 2 FO port<br>100 Mbps (SC-D, full duplex)<br>SC duplex<br>2000 m (typ.) | |
| Unmanaged switch / auto negotiation, complies with IEEE 802.3, store-and-forward switching mode, includes alarm contacts<br><br>LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port, voltage alarm | |
| Network, linear, and star structure: any<br>100 m | |
| 24 V DC (redundant)<br>3.6 $V_{PP}$<br>12 V DC ... 48 V DC<br>350 mA (@ 24 V DC) | |
| 70 mm<br>135 mm<br>110 mm | |
| -10°C ... 60°C | -40°C ... 75°C |
| 5% ... 95% (no condensation) | |
| EN 61000-6-2 | |

### Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **FL SWITCH SFN 14TX/2FX** | **2891935** | 1 |
| **FL SWITCH SFNT 14TX/2FX** | **2891954** | 1 |

### Accessories

| | | |
|---|---|---|
| **E/NS 35 N** | **0800886** | 50 |
| **FL RJ45 PROTECT CAP** | **2832991** | 10 |
| FL CAT5 PATCH ... | | |

## Network Address Translation switch

Ethernet

NAT switch

The FL NAT SMN 8TX combines the functions of a NAT router and a switch in a single device. It can be used to assign individual machines or systems with the same IP addresses and to then implement these IP addresses in the IP address area of the higher-level company network.

It offers the following features:

– Easy integration of machines with the same IP address area, thus requiring minimal configuration effort in the machine network
– NAT routing and switch in a single device
– High degree of availability thanks to support of redundant topologies

### Technical data

| | |
|---|---|
| **Ethernet interface** | |
| Number of ports | 8 |
| Transmission speed | 10/100 Mbps |
| Type of connection | RJ45 |
| **Other connections** | |
| Serial (V.24 (RS-232)) | V.24 (RS-232-C), 6-pos. MINI-DIN female connector (PS/2) |
| **Function** | |
| Basic functions | Store-and-forward switch, complies with IEEE 802.3 2, priority classes in acc. with IEEE 802.1 P TCP/IP protocol, BootP-capable, integrated web server function, Rapid Spanning Tree (RSTP), router, 1:1 NAT router |
| Supported browsers | Internet Explorer 5.5 or higher |
| SNMP – Simple Network Management Protocol | MIBs supported: SNMP (Enterprise, MIB II, Bridge, RMON, IF MIB), RMON MIB with the following groups: 1-statistics, 2-history, 3-alarm and 9-event |
| Status and diagnostic indicators | Per Ethernet 2 status LEDs: LINK and status activity with switch-over, 100, full duplex, supply voltage Us1 and Us2 (redundant supply voltage) and FAIL |
| **Power supply** | |
| Supply voltage | 24 V DC |
| Residual ripple | 3.6 $V_{PP}$ (within the permitted voltage range) |
| Supply voltage range | 18 V DC ... 32 V DC |
| Typical current consumption | (at $U_S$ = 24 V DC) |
| **General data** | |
| Weight | 650 g |
| Width | 58 mm |
| Height | 133 mm |
| Depth | 130 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | 0°C ... 55°C |
| Permissible humidity (operation) | 5% ... 95% (no condensation) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Noise emission | EN 61000-6-3:2001+A11 |
| Noise immunity | EN 61000-6-2:2005 |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Smart Managed Narrow NAT switch** with 1:1 NAT router function | | | |
| - 8 RJ45 ports | **FL NAT SMN 8TX** | **2989365** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Configuration memory**, replaceable | **FL MEM PLUG** | **2891259** | 1 |
| **Configuration memory**, can be replaced with MRM function | **FL MEM PLUG/MRM** | **2891275** | 1 |

## LC/LC patch elements

LC/LC patch elements can be used to quickly and easily convert Factoryline angled patch connectors to fiber optic angled patch connectors for LC cables. Incoming fibers with LC connector can be be patched to SC, LC or BFOC (ST®) industrial connector formats using Factoryline single or multi-mode patch cable.

LC/LC patch elements can be used in the following angled patch connectors:
– FL PF ... CAT5
– FL PF ... CAT6
– VC-PP-F-RJ45-CAT6

**LC/LC coupling for angled patch connectors and patch panels with Freenet slots**

### Technical data

| | FL MM PATCH COUPLER LC-LC | FL SM PATCH COUPLER LC-LC |
|---|---|---|
| Material data | | |
| Housing material | PBT | |
| Ferrule material | Zirconia ceramics | |
| Inflammability class acc. to UL 94 | V0 | |
| Mechanical data | | |
| Degree of protection | IP20 | |
| Fiber type | Multi-mode glass fiber | Single mode glass fiber |
| Insertion/withdrawal cycles | ≥ 500 | |
| General data | | |
| Ambient temperature (operation) | -25°C ... 70°C | |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **LC/LC coupling** for mounting in angled patch connectors and patch panels with Freenet slots | | | |
| - For multi-mode fiber | **FL MM PATCH COUPLER LC-LC** | **2700312** | 1 |
| - For single mode fiber | **FL SM PATCH COUPLER LC-LC** | **2700313** | 1 |

## Wireless I/O

The Factoryline Modbus I/O access point integrates I/O signals into the Ethernet network via Bluetooth.

Via the integrated Modbus/TCP server, up to seven of the two new I/O modules can exchange data with the control system or industrial PC in usually 30 ms.

The system offers the following functions:

– Interference-free operation thanks to AFH, Bluetooth channel skipping, low emission mode
– User-defined device name
– Connectable network
– New function for the easy docking and undocking of I/O modules

The FL BT DI 16 M12 can be used to detect 16 inputs in a single module.

The ILB BT ADIO 2/2/16/16 module meets the ATEX Directive and can be used in zone 2 potentially explosive areas.

**Bluetooth Modbus I/O access point, as a wireless access point for wireless I/O devices**

Ex:

### Technical data

| | |
|---|---|
| Wireless interface | |
| Wireless standard | Bluetooth 2.0 |
| Frequency range | ISM 2.4 GHz |
| Transmission power | max. 14 dBm (with automatic control) |
| Number of wireless interfaces | 1 |
| Wireless modules that can be connected | 7 (FLM BT DIO 8/8 M12, ILB BT ADIO 2/2/16/16, FLM BT DI16 M12) |
| Antenna connection method | SMA (female) |
| Antenna | |
| Type of connection | SMA (male) |
| Assembly instructions | External omnidirectional antenna, antennas can be replaced |
| Power supply for module electronics | |
| Supply voltage | 24 V DC |
| Supply voltage range | 9 V DC ... 30 V DC |
| Digital inputs | |
| Type of connection | - |
| Connection method | - |
| Number of inputs | - |
| Input characteristic curve | - |
| Security | |
| | 128-bit data encryption<br>Authentication<br>PIN<br>Non-discoverable |
| General data | |
| Wireless licenses | Europe, additional countries in the e-shop |
| Weight | 95 g |
| Width | 80 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25°C ... 55°C |
| Mounting type | Wall mounting, DIN rail mounting optional |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Bluetooth Modbus I/O access point** | **FL BT MOD IO AP** | **2884758** | 1 |
| **Fieldline Modular wireless I/O device**<br>- 16 inputs | | | |
| **Inline Block wireless I/O device**<br>- Adjustable transmission power<br>- 4 dBm transmission power | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Simulation software** to support the planning of wireless systems in industrial environments | **FL WST BASIC** | **2692254** | 1 |
| **DIN rail adapter** | **FL BT ADAPTER** | **2884949** | 1 |
| **M12 screw plug**<br>for the unused M12 female connectors of the sensor/actuator cable, boxes and flush-type connectors | | | |

Bluetooth

**Fieldline Modular wireless I/O device, 16 digital inputs**

Bluetooth

**Inline Block wireless I/O device for connection to FLM BT BS 3 and FL BT MOD IO AP**

## Technical data

| | |
|---|---|
| Bluetooth 1.2 | |
| 2.402 GHz ... 2.48 GHz (ISM bandwidth) | |
| 8 dBm (6.3 mW, controlled automatically) | |
| 1 | |
| 1 (FLM BT BS 3, FL BT MOD IO AP) | |
| SMA (female) | |
| SMA (male) | |
| Ominidirectional antenna is included | |
| 24 V DC ±25% | |
| 19.2 V DC ... 32 V DC | |
| M12 male connector connector | |
| 2 or 3-wire (optionally 4-wire) | |
| 16 | |
| - | |
| 128-bit data encryption | |
| Authentication | |
| PIN | |
| Non-discoverable | |
| Europe, additional countries in the e-shop | |
| 300 g | |
| 70.5 mm | |
| IP65 | |
| -25°C ... 60°C | |
| Wall mounting, optionally on mounting plate | |

## Technical data

| | ILB BT ADIO 2/2/16/16 | ILB BT ADIO 2/2/16/16-4 |
|---|---|---|
| | Bluetooth 1.2 | |
| | 2.402 GHz ... 2.48 GHz (ISM bandwidth) | |
| | 16 dBm (Can be set between 0 dBm/1 mW and 16 dBm/39.8 mW in 4 dB increments) | 4 dBm (2.5 mW, controlled automatically) |
| | 1 | |
| | 1 (FLM BT BS 3, FL BT MOD IO AP) | |
| | SMA (female) | |
| | SMA (male) | |
| | Ominidirectional antenna is included | |
| | 24 V DC | |
| | 19.2 V DC ... 30 V DC (including ripple) | |
| | Spring-cage connection | |
| | 1-wire | |
| | 16 | |
| | IEC 61131-2 type 1 | |
| | 128-bit data encryption | |
| | Authentication | |
| | PIN | |
| | Non-discoverable | |
| | Europe, additional countries in the e-shop | |
| | 305 g | |
| | 117 mm | |
| | IP20 | |
| | -25°C ... 60°C | |
| | DIN rail mounting | |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **FLM BT DI 16 M12** | **2693208** | 1 |

## Ordering data

| Type | Order No. | Pcs./ Pkt. |
|---|---|---|
| **ILB BT ADIO 2/2/16/16** | **2884282** | 1 |
| **ILB BT ADIO 2/2/16/16-4** | **2692704** | 1 |

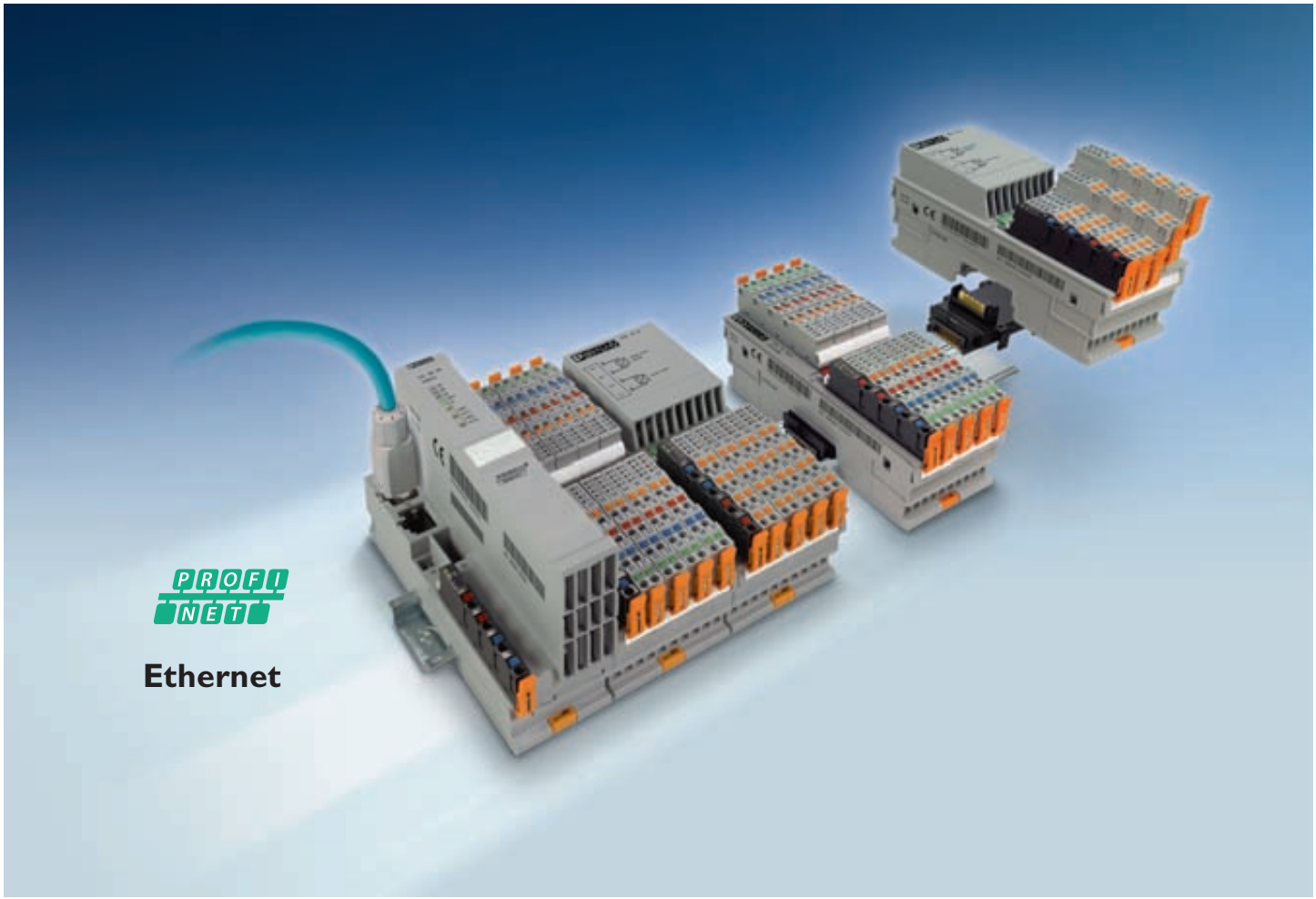
## Accessories

| | | |
|---|---|---|
| **FL WST BASIC** | **2692254** | 1 |
| **PROT-M12** | **1680539** | 5 |

## Accessories

| | | |
|---|---|---|
| **FL WST BASIC** | **2692254** | 1 |

## Axioline – Realtime I/O




The new Axioline realtime I/O system satisfies requirements for very short response times, offers ruggedness in terms of its design and mechanics, and is easy to operate.

Each Axioline station consists of a bus coupler for Ethernet-based protocols and block-based modular I/O modules. Once inserted into a bus base module, these modules can then be arranged side by side.

In addition, all the supply and I/O device connections can be plugged in.

The following communication protocols are currently supported:

– PROFINET RT
– PROFINET IRT

There is a start portfolio for I/O modules offering the following key functions:

– Digital inputs and outputs
– Analog inputs and outputs
– Temperature measurement inputs

### Fast response times

The extremely fast Axioline system bus runs in synchronism with the higher-level network. The cycle time for the system increases by just 1 µs for every I/O module. This means Axioline is faster than any higher-level bus. Synchronization with the higher-level bus enables Axioline to achieve response times of less than 100 µs.

Minimized response times ensure higher output while reducing wear on machine mechanics. Synchronization also supports new approaches within drive applications. The high speed enables higher scanning rates for measurement-related applications.

**A fast and seamless flow of information from production to office environments - IT-powered automation makes it possible.**

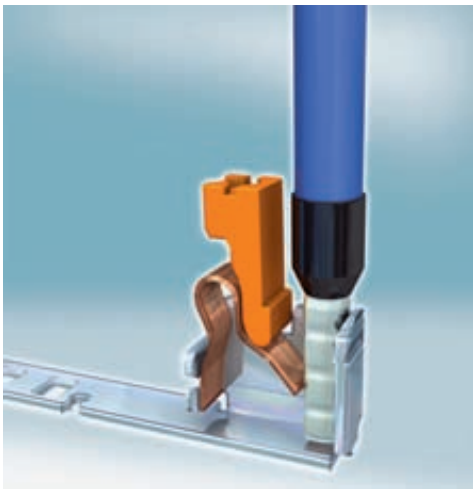
### Rugged design and mechanics

Comprehensive continuous shock testing has established the mechanical safety of the Axioline product range. Axioline can be used within an extended temperature range as standard.

Thanks to its adjustable filter times and specialized engineering, Axioline demonstrates a high level of electromagnetic compatibility. This is evident not only in terms of its resistance to disturbances from external sources, but also its significantly lower emission levels. These factors play a key role in making the system extremely future-proof.

### Ease of operation

All the components of the Axioline system, such as the bus base, electronic module, and I/O connector, can be easily assembled without the need for tools.



PIT (push-in terminal) from Phoenix Contact, the direct connection method used, enables easy wiring without the need for tools.

The outlets at both ends facilitate cabling. This, coupled with the option of using Phoenix Contact labeling materials, helps avoid confusion in the control cabinet.

Startup+

Each bus coupler has an additional service interface, which supports local diagnostics and parameterization of the I/O and station, as well as simple I/O testing. The software required for this is called STARTUP+ and can be downloaded from the Phoenix Contact homepage.

### General technical data

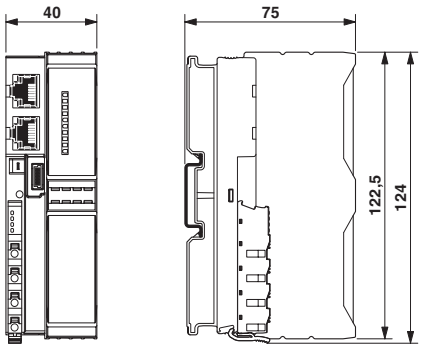
| | |
|---|---|
| **Ambient conditions** | |
| Temperature range (operation) | -25°C to +60°C |
| Relative humidity (operation) | 5% < RH < 95% (no condensation) |
| Relative humidity (storage) | 5% to 95% (no condensation) |
| Vibration | 5g according to EN 60068-2-6 |
| Shock | 25g according to EN 60068-2-27 |
| Continuous shock | 10g according to EN 60068-2-29 |
| Degree of protection | IP20 |
| **Electromagnetic compatibility** | |
| Noise emission | Class B according to EN 61000-6-3 |
| Noise immunity | According to EN 61000-4 |
| **Supply voltage** | |
| Nominal value | 24 V DC |
| Ripple | ±5% according to EN 61131-2 |
| Permissible range | 19.2 V to 30.0 V |
| **System times** | |
| System bus cycle time | 2 µs |
| Offset per module | 1 µs |

## Axioline bus coupler for PROFINET IO

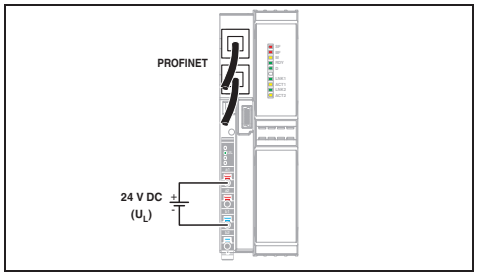
The bus coupler is the link between a PROFINET network and the Axioline system. 63 Axioline devices can be connected to an existing PROFINET system in any position using the bus coupler. In addition, the Axioline station can be started up independently of the higher-level network via either a serial interface or an Ethernet port at the bus coupler.

The module offers the following features:

- PROFINET RT and PROFINET IRT support
- Minimum PROFINET cycle time for RT and IRT is 250 µs
- PROFINET conformance class C
- Firmware can be updated
- Ethernet protocols: PROFINET IO, LLDP, PTCP, SNMP, MRP, STP/RSTP, DDI, BootP, TFTP, FTP
- PDEV



Axioline bus coupler for PROFINET IO




### Technical data

| | |
|---|---|
| **Interface** | |
| Fieldbus system | PROFINET |
| Type of connection | RJ45 female connector, auto negotiation |
| No. | 2 |
| Transmission speed | 100 Mbps (full duplex) |
| Transmission length | max. 100 m |
| **PROFINET IO** | |
| Device function | PROFINET IO device |
| Update rate | 250 µs |
| **Service interface** | |
| Type of connection | IFS-USB-PROG-ADAPTER |
| **Local bus interface** | |
| Name | Axio bus |
| Type of connection | Connection for bus base module |
| Transmission speed | 100 Mbps |
| Number of supported devices | max. 63 (per station) |
| **Power supply for module electronics** | |
| Supply of communications power UL | 24 V DC |
| Maximum permissible voltage range | 19.2 V DC ... 30 V DC including all tolerances, including ripple |
| Communications power $U_{bus}$ | 5 V DC (via bus base module) |
| Current supply at $U_{bus}$ | 2 A |
| Protective circuit | Surge protection of the supply voltage<br>Polarity reversal protection of the supply voltage |
| **General data** | |
| Type of connection | Spring-cage connection with direct plug-in method |
| Connection data (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Weight | 173 g |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Axioline bus coupler**<br>- For PROFINET IO | **AXL BK PN** | **2688019** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Programming adapter** with USB interface, for programming with the IFS-CONF software | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |

## Axioline digital input modules

These modules are designed for use within an Axioline station.

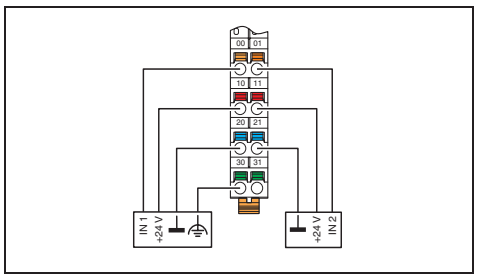
The digital input modules are used to connect 24 V DC sensors. Sensors with up to four wires can be connected.

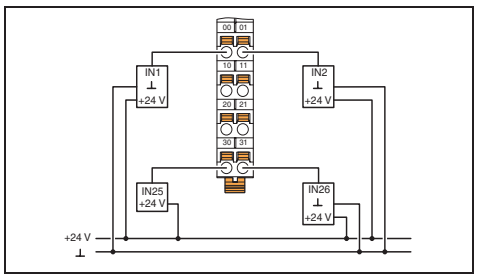
The filter times of both modules can be adjusted in increments.

– 16 or 32 digital inputs according to EN 61131-2 type 1 and type 3
– Maximum input frequency: 5 kHz

**Axioline digital input module, 16 inputs: 24 V DC, 2, 3 or 4-wire connection method**

**Axioline digital input module, 32 inputs: 24 V DC, single-wire connection method**




| | Technical data | Technical data |
|---|---|---|
| **Local bus interface** | | |
| Name | Axio bus | Axio bus |
| Type of connection | Bus base module | Bus base module |
| **Power supply for module electronics** | | |
| Communications power $U_{bus}$ | 5 V DC (via bus base module) | 5 V DC (via bus base module) |
| Current consumption from $U_{bus}$ | 120 mA | 120 mA |
| **I/O supply** | | |
| Supply of digital input modules $U_I$ | 24 V DC | 24 V DC |
| Maximum permissible voltage range | 19.2 V DC ... 30 V DC including all tolerances, including ripple | 19.2 V DC ... 30 V DC including all tolerances, including ripple |
| Current consumption from $U_I$ | max. 4 A (2 A or each group of 8 inputs) | 50 mA |
| Protective circuit | Surge protection of the supply voltage<br>Polarity reversal protection of the supply voltage | Surge protection of the supply voltage<br>Polarity reversal protection of the supply voltage |
| **Digital inputs** | | |
| Connection method | 2, 3, 4-wire | 1-wire |
| Number of inputs | 16 | 32 |
| Description of the inputs | EN 61131-2 types 1 and 3 | EN 61131-2 types 1 and 3 |
| Nominal input voltage $U_{IN}$ | 24 V DC | 24 V DC |
| Nominal input current at $U_{IN}$ | 2.4 mA | 2.4 mA |
| Input filter time | 500 µs (default)<br>< 100 µs | 3000 µs (default)<br>1000 µs<br>< 100 µs |
| Protective circuit | Polarity reversal protection of the inputs | Polarity reversal protection of the inputs<br>Overload protection of the inputs |
| **General data** | | |
| Type of connection | Spring-cage connection with direct plug-in method | Spring-cage connection with direct plug-in method |
| Connection data (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Weight | 231 g | 167 g |
| Width | 53.6 mm | 53.6 mm |
| Height | 131 mm | 126.5 mm |
| Depth | 51.5 mm | 51.5 mm |

| Description | Ordering data<br>Type | Order No. | Pcs./ Pkt. | Ordering data<br>Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|---|---|---|
| **Axioline digital input module,** complete with accessories (bus base module) | | | | | | |
| - 16 inputs | **AXL DI 16/4** | **2688022** | 1 | | | |
| - 32 inputs | | | | **AXL DI 32/1** | **2688035** | 1 |
| | **Accessories** | | | **Accessories** | | |
| **Axioline bus base module** (replacement part) | **AXL BS** | **2688129** | 5 | **AXL BS** | **2688129** | 5 |

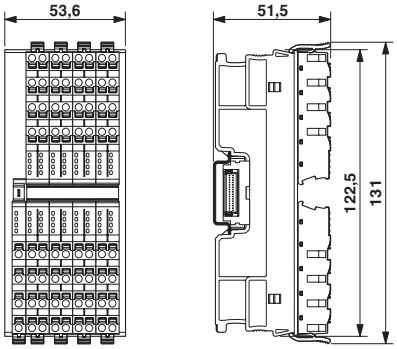
## Axioline digital output modules

This module is designed for use within an Axioline station.

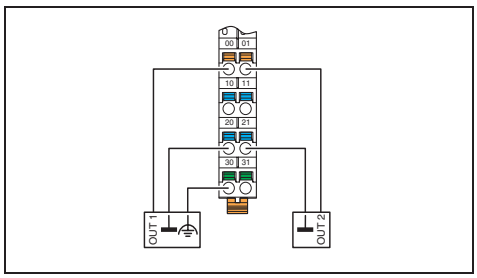
The digital input modules are used to connect 24 V DC sensors. Sensors with up to four wires can be connected.

The digital output modules are used to output 24 V DC digital signals. Actuators with up to three wires can be connected.

– 24 V DC, 500 mA
– Minimum update time < 100 µs, bus synchronous



**Axioline digital output module, 16 outputs: 24 V DC, 500 mA, 2 and 3-wire connection method**




### Technical data

| | |
|---|---|
| **Local bus interface** | |
| Name | Axio bus |
| Type of connection | Bus base module |
| **Power supply for module electronics** | |
| Communications power $U_{bus}$ | 5 V DC (via bus base module) |
| Current consumption from $U_{bus}$ | 120 mA |
| **I/O supply** | |
| Supply of digital output modules $U_O$ | 24 V DC |
| Maximum permissible voltage range | 19.2 V DC ... 30 V DC including all tolerances, including ripple |
| Current consumption from $U_O$ | 8 A |
| Protective circuit | Surge protection of the supply voltage<br>Polarity reversal protection of the supply voltage |
| **Digital outputs** | |
| Connection method | 2, 3-wire |
| Number of outputs | 16 |
| Output voltage | 24 V |
| Maximum output current per channel | 500 mA |
| Maximum output current per module | 8 A |
| Behavior with overload | Shutdown with automatic restart |
| Protective circuit | Short-circuit protection, overload protection of the outputs |
| **General data** | |
| Type of connection | Spring-cage connection with direct plug-in method |
| Connection data (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Weight | 234 g |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Axioline digital output module,** complete with accessories (bus base module)<br>- 16 outputs | **AXL DO 16/3** | **2688048** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL BS** | **2688129** | 5 |

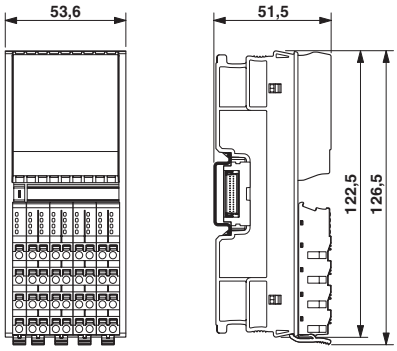
## Axioline analog input module

This module is designed for use within an Axioline station.

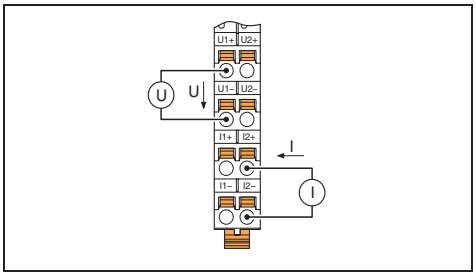
The module is used to acquire standard analog current and voltage signals. It is connected using 2-wire technology and a shield connection.

It offers the following features:

– 8 analog differential signal inputs
– Current and voltage measuring ranges
– 0 … 1000 Ω, 0 … 20 kΩ potentiometric inputs
– Input filter selection
– Minimum update time of 250 µs, bus synchronous
– 16-bit measured value representation
– Stored device rating plate



**Axioline analog input module, 8 inputs: 0 - 10 V, ±10 V, 0 - 20 mA, 4 - 20 mA, ±20 mA, 2-wire connection method**




### Technical data

| | |
|---|---|
| **Local bus interface** | |
| Name | Axio bus |
| Type of connection | Bus base module |
| **Power supply for module electronics** | |
| Communications power $U_{bus}$ | 5 V DC (via bus base module) |
| Current consumption from $U_{bus}$ | max. 130 mA |
| **I/O supply** | |
| Supply of analog modules $U_A$ | 24 V DC |
| Maximum permissible voltage range | 19.2 V DC ... 30 V DC including all tolerances, including ripple |
| Protective circuit | Surge protection<br>Protection against polarity reversal<br>Transient protection |
| **Analog inputs** | |
| Connection method | 2-wire (shielded, twisted pair) |
| Number of inputs | 8 (2 differential inputs, voltage or current can be chosen separately) |
| Voltage input signal | 0 V ... 5 V / ±5 V / 0 V ... 10 V / ±10 V |
| Current input signal | 0 mA ... 20 mA / 4 mA ... 20 mA / ±20 mA |
| Protective circuit | Transient protection of inputs |
| **Characteristics** | |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Input filter | 30 Hz, 12 kHz and mean-value generation (can be parameterized) |
| Accuracy | 0.1% (of measuring range final value for active mean-value generation and 30 Hz filter) |
| **General data** | |
| Type of connection | Spring-cage connection with direct plug-in method |
| Connection data (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Weight | 204 g |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Axioline analog input module,** complete with accessories (bus base module)<br>- 8 inputs | **AXL AI 8** | **2688064** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL BS** | **2688129** | 5 |

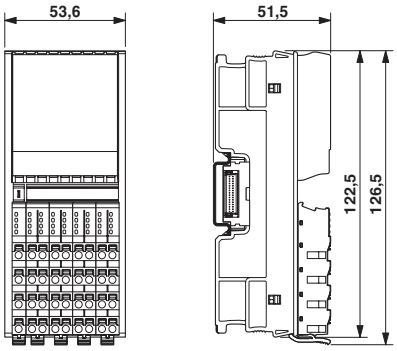
## Axioline analog output module

This module is designed for use within an Axioline station.

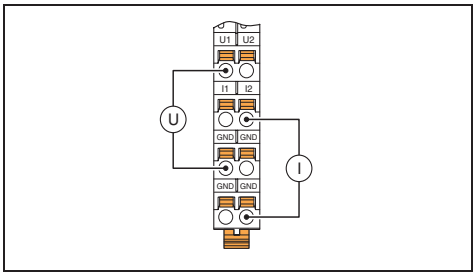
The module is used to output standard analog current and voltage signals. It is connected using 2-wire technology and a shield connection.

It offers the following features:

– 8 analog bipolar outputs
– Current and voltage ranges
– Minimum update time of 250 µs, bus synchronous
– 16-bit output value
– Overload and short-circuit protected
– Stored device rating plate



**Axioline analog output module, 8 outputs: 0 - 10 V, ±10 V, 0 - 5 V, ±5 V, 0 - 20 mA, 4 - 20 mA, ±20 mA, 2-wire connection method**




### Technical data

| | |
|---|---|
| **Local bus interface** | |
| Name | Axio bus |
| Type of connection | Bus base module |
| **Power supply for module electronics** | |
| Communications power $U_{bus}$ | 5 V DC (via bus base module) |
| Current consumption from $U_{bus}$ | max. 120 mA |
| **I/O supply** | |
| Supply of analog modules $U_A$ | 24 V DC |
| Maximum permissible voltage range | 19.2 V DC ... 30 V DC including all tolerances, including ripple |
| **Analog outputs** | |
| Connection method | 2-wire (shielded) |
| Number of outputs | 8 |
| Voltage output signal | 0 V ... 5 V / ±5 V / 0 V ... 10 V / ±10 V |
| Current output signal | 0 mA ... 20 mA / 4 mA ... 20 mA / ±20 mA |
| Load/output load current output | Up to 500 Ω |
| Protective circuit | Short-circuit and overload protection<br>Transient surge protection |
| **Characteristics** | |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Accuracy | Typ. 0.1% (of output range final value) |
| **General data** | |
| Connection data (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Weight | 260 g |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Axioline analog output module,** complete with accessories (bus base module)<br>- 8 outputs | **AXL AO 8** | **2688080** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL BS** | **2688129** | 5 |

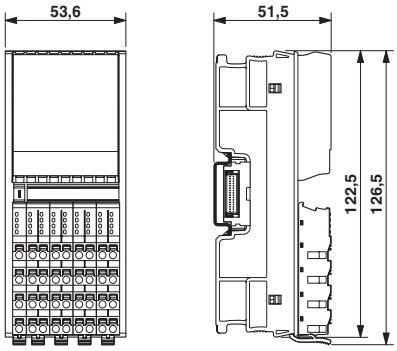
## Axioline temperature module

This module is designed for use within an Axioline station.

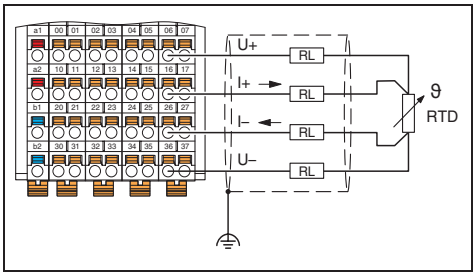
It is used to measure resistive temperature sensors. It is connected using 2, 3 or 4-wire technology and a shield connection. All popular platinum and nickel sensors according to DIN EN 60751 and SAMA; CU10, CU50, and CU53 sensors, and various KTY8x sensor types are supported.

The module offers the following features:

– 8 inputs for temperature shunts
– 500 Ω and 5 kΩ linear inputs
– "Channel Scout" function
– Measured value representation in 16-bit format or floating point format
– Programmable filters
– Minimum update time of 250 µs, bus synchronous
– Short-circuit protected
– Single-channel diagnostics
– Stored device rating plate



**Axioline temperature module, 8 inputs for connecting temperature shunts**




### Technical data

| | |
|---|---|
| **Local bus interface** | |
| Name | Axio bus |
| Type of connection | Bus base module |
| **Power supply for module electronics** | |
| Communications power $U_{bus}$ | 5 V DC (via bus base module) |
| Current consumption from $U_{bus}$ | 130 mA |
| **I/O supply** | |
| Supply of analog modules $U_A$ | 24 V DC |
| Maximum permissible voltage range | 19.2 V DC ... 30 V DC including all tolerances, including ripple |
| Protective circuit | Surge protection of the supply voltage<br>Polarity reversal protection of the supply voltage |
| **Analog inputs** | |
| Connection method | 2, 3, 4-wire (shielded) |
| Number of inputs | 8 |
| Protective circuit | Short-circuit protection, overload protection of the inputs<br>Transient protection of inputs |
| Sensor types (RTD) that can be used | Pt-, Ni-, KTY-, Cu-Sensoren |
| Linear resistance measuring range | 500 Ω / 5 kΩ |
| **Characteristics** | |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Input filter time | 40 ms / 60 ms / 100 ms / 120 ms (adjustable) |
| Accuracy | Typ. ±0.5°C |
| **General data** | |
| Type of connection | Spring-cage connection with direct plug-in method |
| Connection data (solid / stranded / AWG) | 0.2 ... 1.5 mm² / 0.2 ... 1.5 mm² / 24 - 16 |
| Weight | 200 g |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Axioline analog input module,** complete with accessories (bus base module)<br>- 8 inputs for connecting temperature shunts | **AXL RTD 8** | **2688077** | 1 |

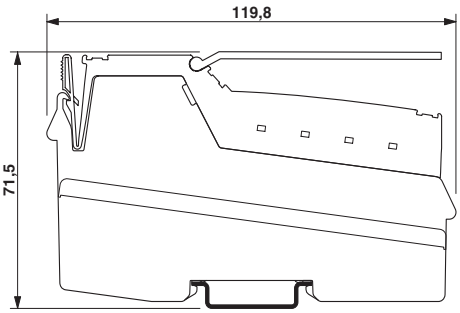
### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL BS** | **2688129** | 5 |

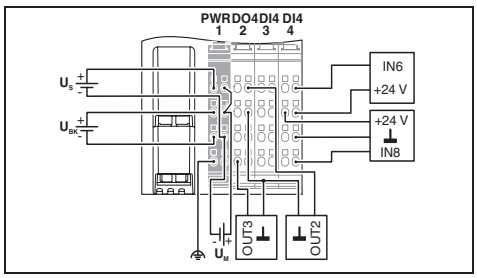
## PROFINET bus coupler with I/Os on board

The new PROFINET bus coupler with I/Os onboard offers the following special features:

– 8 digital inputs, 4 digital outputs onboard
– Automatic speed detection of the system bus
– Up to 61 modules (16 PCP devices) can be connected to the bus coupler
– Approved for PROFIsafe applications
– Design width of 80 mm



**Inline Modular PROFINET bus coupler, Inputs: 24 V DC, outputs 24 V DC, 500 mA**




### Technical data

| | |
|---|---|
| **Interface** | |
| Fieldbus system | PROFINET |
| Type of connection | SC-RJ |
| Number | 2 |
| Transmission speed | 10/100 Mbps (100 Mbps according to PROFINET standard) |
| **PROFINET IO** | |
| Device function | PROFINET IO device |
| Specification | 3.1 |
| Update rate | max. 1 ms (depending on the size of the bus system) |
| **Local bus interface** | |
| Type of connection | Inline data jumper |
| **Power supply for module electronics** | |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC -15% / +20% (in acc. with EN 61131-2) (including ripple) |
| Power supply at $U_L$ | max. 0.8 A DC |
| Power supply at $U_{ANA}$ | max. 0.5 A DC |
| **Digital inputs** | |
| Connection method | 2, 3-wire |
| Number of inputs | 8 |
| Typical response time | Approx. 500 µs |
| Protective circuit | Protection against polarity reversal |
| **Digital outputs** | |
| Connection method | 2, 3-wire |
| Number of outputs | 4 |
| Maximum output current per channel | 500 mA |
| Protective circuit | Short-circuit and overload protection |
| **INTERBUS data** | |
| Number of local bus devices that can be connected | 61 (on board I/Os are two devices) |
| **General data** | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.09 ... 1.5 mm² / 0.09 ... 1.5 mm² / 28 - 16 |
| Weight | 280 g |
| Width | 80 mm |
| Ambient temperature (operation) | -25°C ... 55°C (observe derating) |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **PROFINET bus coupler,** complete with accessories (connector and labeling field) | **IL PN BK DI8 DO4 2SCRJ-PAC** | **2878379** | 1 |

### Accessories

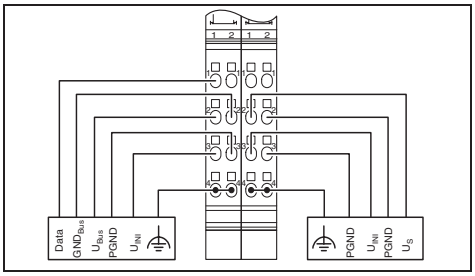
| | | | |
|---|---|---|---|
| **Connector set** for bus coupler | **IL BKDIO-PLSET** | **2878599** | 1 |
| **Labeling field,** width: 12.2 mm | **IB IL FIELD 2** | **2727501** | 10 |
| **Marking sheet** | **ESL 62X10** | **0809492** | 1 |
| **Zack marker strip, flat** (see CLIPLINE catalog) | ZBF 6... | | |

## Inline INTERFACE system bus master

The terminal is designed for use within an Inline station. It can be used to connect INTERFACE modules to the Inline station and thus the higher-level bus system via the INTERFACE system bus.

- Easy integration of INTERFACE EMM and EEM modules
- User-friendly configuration using a simple software tool
- Local configuration via the serial port
- Acquisition and output of up to 31 measured values and 16 manipulated variables

**Inline Modular communication terminal, for connecting the INTERFACE system bus**




### Technical data

| | |
|---|---|
| Local bus interface | |
| Type of connection | Inline data jumper |
| Communication interface | |
| Interface | INTERFACE system bus |
| Type of connection | Inline shield connector |
| Programming interface | |
| Interface | Programming interface (S port) |
| Type of connection | IFS-USB-PROG-ADAPTER |
| Power supply for module electronics | |
| Communications power $U_L$ | 7.5 V (via voltage jumper) |
| Current consumption from $U_L$ | Typ. 66 mA |
| Supply of the connected INTERFACE modules | |
| **9 V supply** | |
| Voltage range | 8.1 V ... 9.9 V |
| Type of protection | Short-circuit protection, electronic |
| Max. current carrying capacity | 300 mA |
| **24 V supply (EEM, EMM, ELR)** | |
| Voltage range | 20.4 V ... 28.8 V |
| Type of protection | Short-circuit protection, electronic and thermal |
| Max. current carrying capacity | 4 A |
| General data | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 130 g |
| Width | 24.4 mm |
| Ambient temperature (operation) | -25°C ... 55°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline Modular communication terminal**, for connecting the INTERFACE system bus, complete with accessories (connector and labeling field) | **IB IL IFS-MA-PAC** | **2692720** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Connector set** | **IB IL AO/CNT-PLSET** | **2732664** | 1 |
| **Programming adapter** with USB interface, for programming with the IFS-CONF software | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |
| **Multi-functional memory block** for the INTERFACE system | **IFS-CONFSTICK** | **2986122** | 1 |
| **Assembled connecting cable**, IL-IFS, 2 m in length | **IMC 1,5 / 5-ST-3,81SET IL IFS 2M** | **1784729** | 1 |
| **Labeling field,** width: 12.2 mm | **IB IL FIELD 2** | **2727501** | 10 |
| **Marking sheet** | **ESL 62X10** | **0809492** | 1 |
| **Zack marker strip, flat** (see CLIPLINE catalog) | ZBF 6... | | |

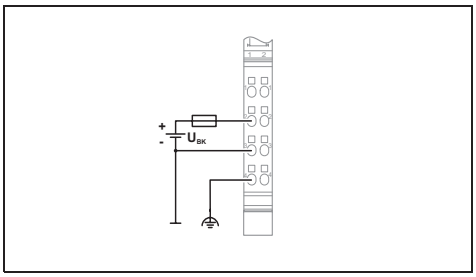
## Inline boost terminal

The Inline boost terminal for the communications power $U_L$ is required if the communications power of the bus coupler is no longer sufficient.

The IB IL 24 PWR IN/R/L-0.8A-PAC Inline boost terminal offers the following features:

– 24 V DC supply (U24V)
– Generates communications power $U_L$
– 0.8 A at $U_L$
– Design width of 12.2 mm

**Inline Modular boost terminal for $U_L$, 24 V DC**




### Technical data

| | |
|---|---|
| **Local bus interface** | |
| Type of connection | - |
| **Power supply for module electronics** | |
| Main circuit supply $U_M$ | - |
| Power supply at $U_M$ | - |
| Communications power $U_L$ | 7.5 V DC ±5% (via voltage jumper) |
| Power supply at $U_L$ | 0.8 A DC |
| Current consumption from $U_L$ | - |
| I/O supply voltage $U_{ANA}$ | - |
| Power supply at $U_{ANA}$ | - |
| Segment supply voltage $U_S$ | - |
| Power supply at $U_S$ | - |
| Fuse | (electrical/thermal overload protection, included in scope of delivery) |
| **General data** | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Protective circuit | Polarity reversal protection, surge protection, overload protection, (with fuse) |
| Weight | 65 g |
| Width | 12.2 mm |
| Ambient temperature (operation) | -25°C ... 55°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline boost terminal**, complete with accessories (connector and labeling field)<br>- For the communications power $U_L$ of 0.8 A | **IB IL 24 PWR IN/R/L-0.8A-PAC** | **2693020** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Connector** for power and segment terminals | **IB IL SCN-PWR IN-CP** | **2727637** | 10 |
| **Labeling field,** width: 12.2 mm | **IB IL FIELD 2** | **2727501** | 10 |
| **Zack marker strip, flat** (see CLIPLINE catalog) | ZBF 6... | | |

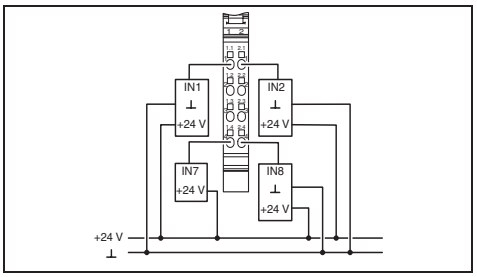
## Digital input and output terminals

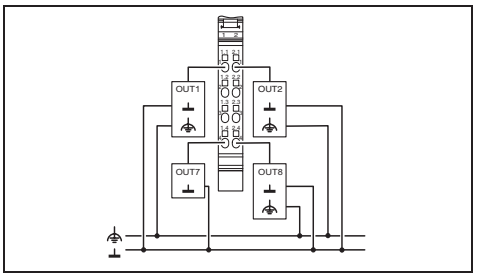
Inline digital input and output terminals are designed to connect digital signals and actuators and offer the following special features:

– Connections for 8 digital sensors or 8 digital actuators
– Connection of sensors or actuators in single-wire technology
– Diagnostic and status indicators
– Nominal current for the output terminals per output: 0.5 A
– Short-circuit and overload protected outputs

**Inline Modular digital input terminal, Inputs: 24 V DC, single-wire connection method**

**Inline Modular digital output terminal, Outputs: 24 V DC, 500 mA, single-wire connection method**




| | Technical data | Technical data |
|---|---|---|
| Local bus interface | | |
| Type of connection | Inline data jumper | Inline data jumper |
| Power supply for module electronics | | |
| Supply voltage | 24 V DC (via voltage jumper) | 24 V DC (via voltage jumper) |
| Supply voltage range | 19.2 V DC ... 30 V DC | 19.2 V DC ... 30 V DC |
| Current consumption from $U_L$ | max. 30 mA | max. 45 mA |
| Digital inputs | | |
| Connection method | 1-wire | - |
| Number of inputs | 8 | - |
| Description of the inputs | EN 61131-2 types 1 and 3 | - |
| Typical response time | 1 ms | - |
| Digital outputs | | |
| Connection method | - | 1-wire |
| Number of outputs | - | 8 |
| Maximum output current per channel | - | 500 mA |
| Protective circuit | - | Overload protection, short-circuit protection of outputs |
| General data | | |
| Type of connection | Spring-cage connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 60 g | 60 g |
| Width | 12.2 mm | 12.2 mm |
| Ambient temperature (operation) | -25°C ... 55°C | -25°C ... 55°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline digital input terminal**, complete with accessories (connector and labeling field) | | | |
| - 8 inputs | **IB IL 24 DI8/HD-PAC** | **2700173** | 1 |
| **Inline digital output terminal**, complete with accessories (connector and labeling field) | | | |
| - 8 outputs | **IB IL 24 DO8/HD-PAC** | **2700172** | 1 |

### Accessories

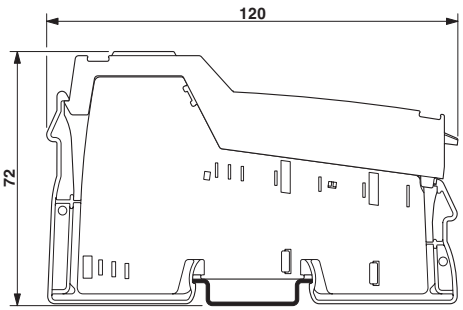
| | | | |
|---|---|---|---|
| **Connectors** | **IB IL SCN-8** | **2726337** | 10 |
| **Labeling field**, width: 12.2 mm | **IB IL FIELD 2** | **2727501** | 10 |
| **Zack marker strip, flat** (see CLIPLINE catalog) | ZBF 6... | | |

## Strain gauge measurement terminals that can be verified

The terminal is approved by the Physikalisch-Technischen Bundesanstalt (PTB) (German national metrology institute) based in Braunschweig, Germany and meets EC type approval as an electronic evaluation device to set up non-automatic weighing instruments (NAWI) according to standards EN 45501 and OIML R76.

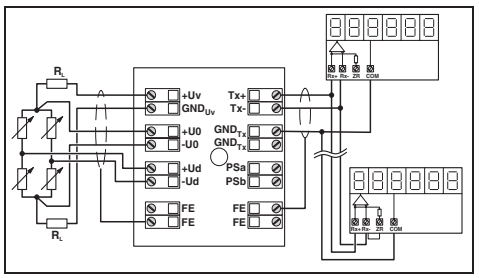
Additional features:

– Fieldbus-open parameterization via DTM
– Remote display via RS-485 interface
– Zero point, tare, and standstill display
– Alibi memory for up to 65,536 measurement protocols
– Up to 3000 division counts
– Protection against manipulation (parameter lock)



**Inline Modular analog strain gauge measurement terminal, 1 precise input, 4 and 6-wire connection method**

Ex: PTB




### Technical data

| | |
|---|---|
| **Local bus interface** | |
| Type of connection | Inline data jumper |
| **Power supply for module electronics** | |
| I/O supply voltage $U_{ANA}$ | 24 V DC |
| Current consumption from $U_{ANA}$ | max. 50 mA |
| Communications power $U_L$ | 7.5 V DC |
| Current consumption from $U_L$ | Typ. 80 mA |
| **Analog inputs** | |
| Connection method | 6 or 4-wire, twisted pair shielded cable |
| Number of inputs | 1 |
| Description of the inputs | Input channel for strain gauge |
| Bridge difference $U_d$ | Configurable |
| Bridge voltage $U_0$ | 5 V |
| **Analog outputs** | |
| Description of the outputs | Voltage output |
| Number of outputs | 1 |
| Impedance | > 55 Ω (Min.) |
| Maximum output current | max. 90 mA (with $U_V$ = 5 V) |
| **Characteristics** | |
| Bipolar | ±1 mV/V, ±2 mV/V, ±3 mV/V, ±3.33 mV/V, ±4 mV/V, ±5 mV/V |
| Measured value representation | 15 bit + sign bit |
| Process data update | Typ. 100 ms |
| **General data** | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 160 g |
| Width | 48.8 mm |
| Ambient temperature (operation) | -25°C ... 55°C (Type approval according to DIN EN 45501 and OIML R76: -10°C … 40°C) |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline analog strain gauge measurement terminal**, without accessories<br>- Can be verified, precise input | **IB IL SGI 1/CAL** | **2700064** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Calibration set**, approval-related | **IB IL SGI EU CALSET** | **2700165** | 1 |
| **Connectors** | **IB IL SCN-8** | **2726337** | 10 |
| **Shield connector** for analog Inline terminal blocks | **IB IL SCN-6 SHIELD** | **2726353** | 5 |

## Calibration set for the IB IL SGI 1/CAL terminal

The calibration set includes approval-related accessories for the IB IL SGI 1/CAL terminal, which the calibration authority will require for system acceptance.

It comprises:

– Cover for protection against manipulation
– Plug-in PCB with SMKDS terminals
– Shield fast connections
– Marking labels
– Marker pen

**Approval-related accessories for the IB IL SGI 1/CAL terminal**

| | Ordering data | | |
|---|---|---|---|
| **Calibration set**, approval-related<br>- For Europe | **IB IL SGI EU CALSET** | **2700165** | 1 |

## Power supply for intrinsically safe I/O terminals

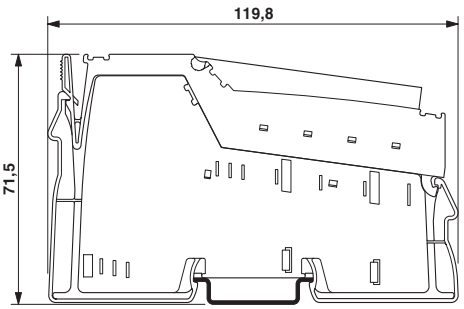
The Inline **IB IL EX-IS PWR IN-PAC** terminal allows the implementation of intrinsically safe I/O modules in the modular Inline I/O system. Intrinsically safe (blue) I/O terminals can only operate with the specific voltage levels provided by the IL EX-IS PWR IN-PAC terminal.

The power terminal provides electrical isolation between the standard Inline I/O station and the intrinsically safe IO terminals. Furthermore, the terminal supplies the connected intrinsically safe terminals with all the required power for processing and IO circuits.

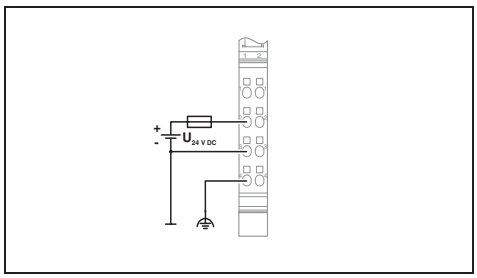
The terminal provides the required spacing (50 mm) between the intrinsically safe and non-intrinsically safe connections.

Diagnostics (standard load, heavy load, overload) provide immediate user feedback regarding the loading of the intrinsically safe I/O modules.

The EX PWR IN terminal is electronically protected against overload.



**Inline modular power terminal for intrinsically safe I/O modules**




### Technical data

| | |
|---|---|
| Local bus interface | |
| Type of connection | Inline data jumper |
| Power supply for module electronics | |
| Main circuit supply $U_{Ex}$ | 28 V DC ±5% |
| Power supply to $U_{Ex}$ | 1000 mA |
| Communications power $U_L$ | 5 V DC (via voltage jumper) |
| Power supply at $U_L$ | 500 mA ±5% |
| General data | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 292 g |
| Width | 48.8 mm |
| Ambient temperature (operation) | -25°C ... 60°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline power terminal for intrinsically safe terminals**, complete with accessories (connector and labeling field) | **IB IL EX-IS PWR IN-PAC** | **2869910** | 1 |

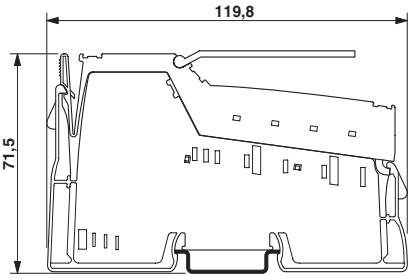
## Intrinsically safe digital I/O terminal (Ex-i)

The **IB IL EX-IS DIO 4/NAM-PAC** terminal allows connection of intrinsically safe sensors/actuators as well as NAMUR sensors located in zone 1 or zone 0 Ex areas. The terminal has 4 channels that can be configured as either an input or output.

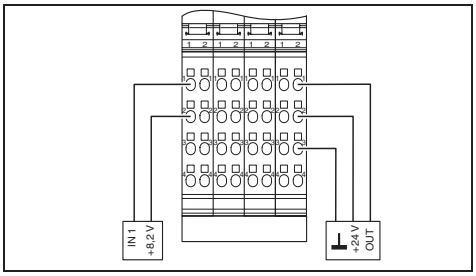
LEDs indicate the channel status, such as:
– Configuration (input or output)
– Activation (ON/OFF)
– Error (short circuit, etc.)
– Logic state (high or low)

NAMUR sensor parameters can be read and transmitted as process data through the fieldbus network to the master.

### Features
– 4 configurable I/O channels
– NAMUR sensor support (EN 60947-5-6)
– Individual channel diagnostics
– 24 V auxiliary power (current limitation)
– 8.2 V sensor power supply



**Inline EX-IS IO digital I/O terminal, NAMUR sensor input**




### Technical data

| | |
|---|---|
| Local bus interface | |
| Type of connection | Inline data jumper |
| Power supply for module electronics | |
| Main circuit supply $U_{Ex}$ | 28 V DC |
| Current consumption from $U_{Ex}$ | max. 190 mA |
| Communications power $U_L$ | 5 V DC (via voltage jumper) |
| Current consumption from $U_L$ | max. 50 mA |
| Digital inputs | |
| Connection method | 2-wire |
| Number of inputs | 4 |
| Description of the inputs | Can be configured as input or output |
| Input circuit | Floating contacts and 2-wire NAMUR proximity sensor (EN 60947-5-6) |
| Protective circuit | Protection against polarity reversal, surge protection |
| Digital outputs | |
| Connection method | 3-wire |
| Number of outputs | 4 |
| Description of the outputs | Digital passive output |
| General data | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 204 g |
| Width | 48.8 mm |
| Ambient temperature (operation) | -25°C ... 60°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline digital I/O terminal, Ex-i**, complete with accessories (connector and labeling field) | | | |
| 4-channel DIO | **IB IL EX-IS DIO 4/NAM-PAC** | **2869911** | 1 |

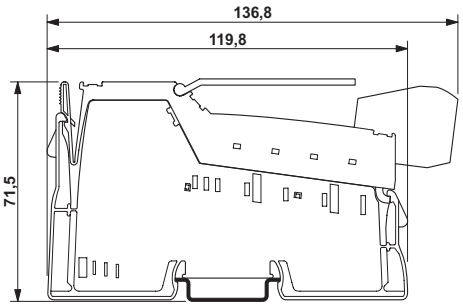
## Intrinsically safe analog I/O terminal (Ex-i)

The **IB IL EX-IS AIO 4/EF-PAC** terminal allows connection of intrinsically safe analog sensors and actuators located in zone 1 or zone 0 Ex areas.
The terminal has 4 channels that can be configured as either an input or output.

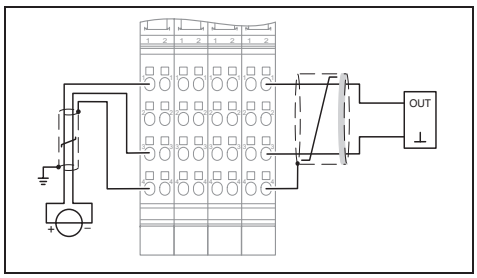
All parameters can be read and transmitted using FDT technology across the fieldbus network to the master.

LEDs indicate the channel status, such as:
– Configuration (input or output)
– Activation (ON/OFF)
– Error (short circuit, etc.)

**Features:**
– 4 configurable I/O channels
– Input: 0… 10 V; 0/4… 20 mA
– Output: 0/4… 20 mA
– Optional passive output
– Module-based electrical isolation
– Individual channel diagnostics
– Fieldbus-independent diagnostics using FDT/DTM technology



**Inline EX-IS IO analog I/O terminal, 0 - 20 mA, 4 - 20 mA, 0 - 10 V DC**




### Technical data

| | |
|---|---|
| Local bus interface | |
| Type of connection | Inline data jumper |
| Power supply for module electronics | |
| Main circuit supply $U_{Ex}$ | 28 V DC |
| Current consumption from $U_{Ex}$ | max. 187 mA |
| Communications power $U_L$ | 5 V DC (via voltage jumper) |
| Current consumption from $U_L$ | max. 50 mA |
| Analog inputs | |
| Type of connection | Inline shield connector |
| Connection method | 2, 3-wire |
| Number of inputs | 4 |
| Voltage input signal | 0 V DC ... 10 V DC |
| Current input signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Protective circuit | Protection against polarity reversal, surge protection |
| Analog outputs | |
| Type of connection | Inline shield connector |
| Connection method | 2-wire |
| Number of outputs | 4 (can be configured as input or output) |
| Current output signal | 0 mA ... 20 mA / 4 mA ... 20 mA |
| Protective circuit | Protection against polarity reversal, surge protection |
| General data | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 222 g |
| Width | 48.8 mm |
| Ambient temperature (operation) | -25°C ... 60°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline analog I/O terminal, Ex-i**, complete with accessories (connector and labeling field) | | | |
| 4-channel AIO | **IB IL EX-IS AIO 4/EF-PAC** | **2869912** | 1 |

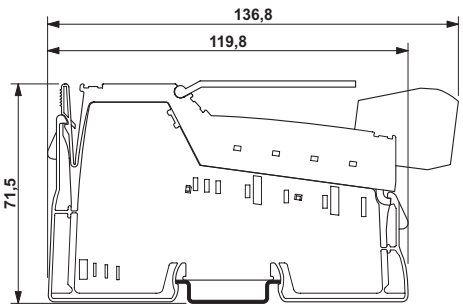
## Intrinsically safe temperature input terminal (Ex-i)

The **IB IL EX-IS TEMP 4 RTD/TC-PAC** terminal allows connection of resistance temperature detectors (RTD) and thermocouples (TC) located in zone 1 or zone 0 Ex areas. The terminal has 4 channels that can be configured for either an RTD or TC sensor.

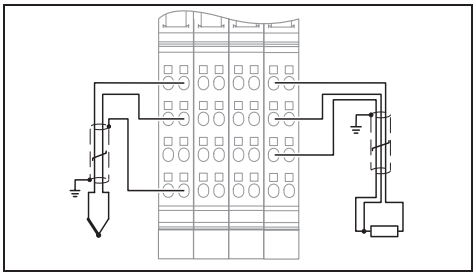
All parameters can be read and transmitted using FDT technology across the fieldbus network to the master.

LEDs indicate the channel status, such as:
– Configuration (RTD or TC)
– Activation (ON/OFF)
– Error (short circuit, etc.)

**Features:**
– 4 configurable I/O channels
– RTD inputs: PT100, etc.
– TC inputs: J, K, E, etc.
– 2 or 3-wire RTD sensors
– Module-based electrical isolation
– Individual channel diagnostics
– Fieldbus-independent diagnostics using FDT/DTM technology



**Inline EX-IS IO analog input terminal, RTD, thermocouple**



### Technical data

| | |
|---|---|
| Local bus interface | |
| Type of connection | Inline data jumper |
| Power supply for module electronics | |
| Main circuit supply $U_{Ex}$ | 28 V DC |
| Current consumption from $U_{Ex}$ | max. 80 mA |
| Communications power $U_L$ | 5 V DC (via voltage jumper) |
| Current consumption from $U_L$ | max. 50 mA |
| Analog inputs | |
| Type of connection | Inline shield connector |
| Connection method | 2, 3-wire |
| Number of inputs | 4 |
| Linear resistance measuring range | 0 Ω ... 800 Ω / 0 Ω ... 5000 Ω |
| Sensor types (RTD) that can be used | 2 and 3-wire, Pt, Ni (DIN 100, 200, 500, 1000) |
| Sensor types that can be used (TC) | J, K, E, R, S, T |
| Measured value resolution | 16 bits (15 bits + sign) |
| Data formats | IB IL, S7-compatible |
| Protective circuit | Protection against polarity reversal, surge protection |
| General data | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 222 g |
| Width | 48.8 mm |
| Ambient temperature (operation) | -25°C ... 60°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Inline analog input terminal, Ex-i**, complete with accessories (connector and labeling field) | | | |
| 4-channel temperature input | **IB IL EX-IS TEMP 4 RTD/TC-PAC** | **2869913** | 1 |

## Positioning controller for two axes

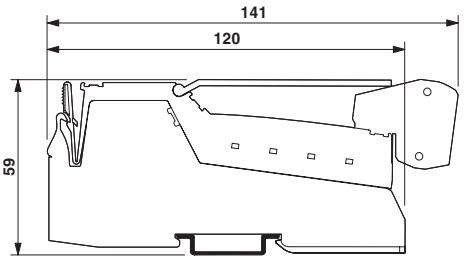
The SERCOS III module in Inline Block design provides motion control for two drive axes and offers the following functions:

– Point-to-point positioning controller
– Position controller
– Speed controller
– Cam controller
– Homing
– Probe function

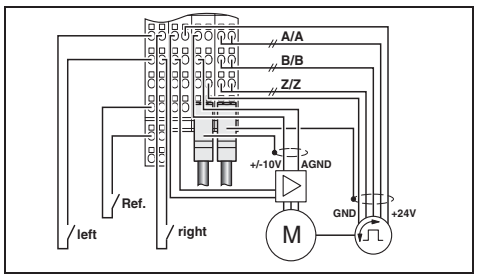
For each axis, one drive controller (using +/-10 V signal) and one position encoder (using incremental signal) can be connected to the digital I/Os for the limit and home position switches.

The module integrates motion functions in SERCOS systems that do not have control electronics with a SERCOS III interface, such as:

– Proportional valves for pneumatic or hydraulic cylinders
– Drive amplifier for electrical low-power motors
– Simple frequency inverter



**SERCOS III module for controlling two drives using incremental encoder and analog signals**




### Technical data

| | |
|---|---|
| **Interface** | |
| Fieldbus system | SERCOS III |
| Type of connection | RJ45 female connector |
| No. of channels | 2 |
| Transmission speed | 100 Mbps |
| **Power supply for module electronics** | |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC |
| Supply current | 70 mA |
| **Digital inputs** | |
| Connection method | 2, 3-wire |
| Number of inputs | 8 |
| Nominal input voltage $U_{IN}$ | 24 V DC |
| **Digital outputs** | |
| Connection method | 2-wire |
| Number of outputs | 4 |
| Output voltage | 24 V DC |
| Maximum output current per channel | 500 mA |
| **Analog outputs** | |
| Connection method | 2-wire |
| Number of outputs | 2 |
| Voltage output signal | -10 V ... 10 V |
| D/A resolution | 10 bits |
| **Encoder inputs** | |
| Input name | Encoder input, 2 square-wave signals with 90 degree offset |
| Description of the input | Position detection with incremental signal from rotary/linear encoder |
| Number of inputs | 2 |
| Input frequency (5 V) | 300 kHz (signal type: A,/A; B,/B; Z,/Z; symmetrical/asymmetrical) |
| **General data** | |
| Type of connection | Spring-cage connection |
| Connection data (solid / stranded / AWG) | 0.08 ... 1.5 mm² / 0.08 ... 1.5 mm² / 28 - 16 |
| Weight | 405 g |
| Width | 156 mm |
| Ambient temperature (operation) | -25°C ... 60°C |

### Ordering data

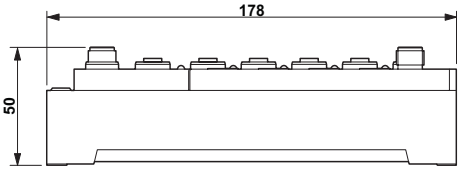
| | | |
|---|---|---|
| **Inline Block motion control** for SERCOS III<br><br>- 2 axes, drive control via speed setpoint, position detection with incremental signal from rotary/linear encoder | **ILB S3 24 DI8 DO4 AO2 INC-IN2** | **2700174** | 1 |

## PROFIBUS bus coupler with enhanced functions

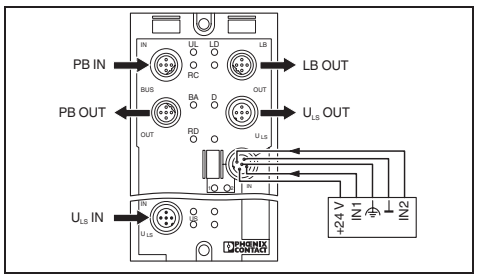
The Fieldline Modular bus coupler with 8 digital inputs couples a Fieldline Modular local bus station to a PROFIBUS DP network and is also used to acquire digital signals.

It offers the following features:

– Reduced response times
– Optimized process data mapping
– Automatic baud rate detection of the PROFIBUS DP network
– IO-Link calls supported
– Dynamic configuration supported



**PROFIBUS bus coupler with enhanced functions**




### Technical data

| | |
|---|---|
| **Interface** | |
| Fieldbus system | PROFIBUS DP |
| Type of connection | M12 connector, B-encoded |
| Number of positions | 5 |
| Transmission speed | 9.64 kbaud to 12 Mbaud automatic detection |
| Address area assignment | 1 ... 126, adjustable |
| **Power supply for module electronics** | |
| Supply voltage | 24 V DC |
| Type of connection | M12 connector |
| Supply voltage range | 18 V DC ... 30 V DC IEC 61131-2 (including ripple) |
| **Local bus gateway** | |
| Transmission speed | 500 kbaud/2 Mbaud, can be selected |
| Type of connection | M12 connector, B-encoded |
| Max. number of local bus devices | 16 |
| Max. length of local bus | 20 m |
| **Digital inputs** | |
| Type of connection | M12 connector |
| Connection method | 2, 3, 4-wire |
| Number of inputs | 8 |
| Filter time | 3 ms |
| Input characteristic curve | IEC 61131-2 type 1 |
| Protective circuit | Protection against polarity reversal |
| **General data** | |
| Weight | 280 g |
| Drill hole spacing | 168 mm |
| Width | 70 mm |
| Height | 178 mm |
| Depth | 50 mm |
| Degree of protection | IP65/67 |
| Ambient temperature (operation) | -25°C ... 60°C |
| Ambient temperature (storage/transport) | -25°C ... 85°C |

### Ordering data

| Description | Type | Order No. | Pcs./ Pkt. |
|---|---|---|---|
| **Fieldline Modular M12 bus coupler**<br>- PROFIBUS M12 | **FLM BK PB M12 DI 8 M12-EF** | **2773377** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **M12 screw plug** | **PROT-M12** | **1680539** | 5 |
| **Zack marker strip, flat, 5-section, without color print:**<br>For individual labeling with TML (101X4,2)R TR, X-PEN or CMS-P1-PLOTTER | **ZBF 12:UNBEDRUCKT** | **0809735** | 10 |

| Type | Order No. | Page |
|---|---|---|
| **A** | | |
| AI-WM 0,5-8 WH | 3240542 | 70 |
| AI-WM 0,75-8 GY | 3240543 | 70 |
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| AI-WM 1-8 RD | 3240544 | 70 |
| AP RSC | 3058017 | 38 |
| AP RSC-T | 3059139 | 39 |
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| ATP-QTC | 3206209 | 22 |
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| ATP-ST QUATTRO | 3030815 | 9 |
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**USA:**
PHOENIX CONTACT Inc.
P.O. Box 4100
Harrisburg
PA 17111-0100

Fax (717) 944-1625
Phone (717) 944-1300
www.phoenixcontact.com

**Canada:**
PHOENIX CONTACT Ltd.
235 Watline Avenue
Mississauga, Ontario
L4Z 1P3

Fax (905) 890-0180
Phone (905) 890-2820
Toll Free 1-800-890-2820
www.phoenixcontact.ca