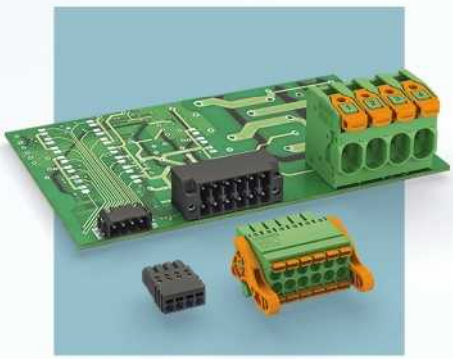
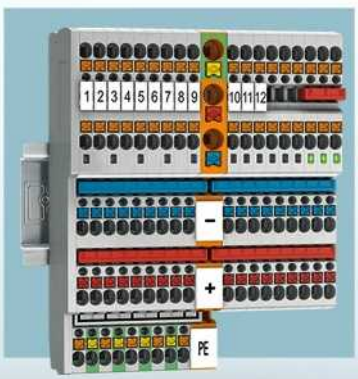
# SUPPLEMENT 2014

Catalog





PHOENIX CONTACT
INSPIRING INNOVATIONS

# The Phoenix Contact catalog system

**PCB connection technology and electronics housing**
- PCB terminal blocks and plug connectors
- Electronics housing

**Connection technology for field devices**
- Plug connectors
- Cables and connectors

**Modular terminal blocks**
- Modular terminal blocks

**Sensor/actuator cabling and industrial plug connectors**
- Sensor/actuator cabling
- Cables and connectors
- Plug connectors

**Marking systems, tools, and mounting material**
- Marking and labeling
- Tools
- Installation and mounting material

**Surge protection and power supply units**
- Lightning monitoring system
- Surge protection and interference filters
- Power supply units and UPS
- Protective devices

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

**Control technology, I/O systems and automation infrastructure**
- Ethernet networks • Functional safety • HMIs and industrial PCs • I/O systems
- Industrial lighting and signaling • Industrial communication technology
- Fieldbus components and systems • Wireless data communication
- Process infrastructure • Software • Controllers

2 | **PCB connection technology and electronics housing** Catalog 1

40 | **Connection technology for field devices** Catalog 2

86 | **Modular terminal blocks** Catalog 3

174 | **Sensor/actuator cabling and industrial connectors** Catalog 4

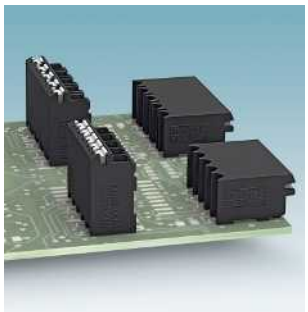
240 | **Marking systems, tools, and mounting material** Catalog 5

302 | **Surge protection and power supplies** Catalog 6

322 | **Interface technology and switching devices** Catalog 7

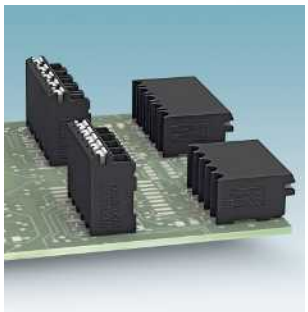
374 | **Control technology, I/O systems, and automation infrastructure** Catalog 8

434 | **Index**



SMD PCB terminal blocks with push-in spring connection up to 1.5 mm², 3.5 and 3.81 mm pitch

**SPT-SMD 1,5/ ....-H-... R32** Page 7
**SPT-SMD 1,5/ ...-V-... R32** Page 7

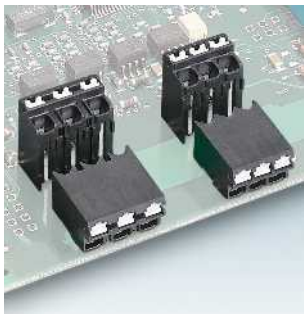


SMD PCB terminal blocks with push-in spring connection up to 1.5 mm², 5.0 and 5.08 mm pitch

**SPT-SMD 1,5/ ...-H-5,0 R32** Page 9
**SPT-SMD 1,5/ ...-V-5,0 R32** Page 9

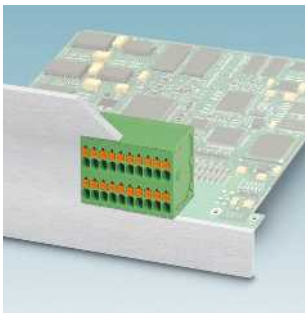
THR PCB terminal blocks with push-in spring connection up to 1.5 mm², 3.5 and 3.81 mm pitch

**SPT-THR 1,5/ ...-H-3,5 P26** Page 10
**SPT-THR 1,5/...-V-3,5 P26** Page 11



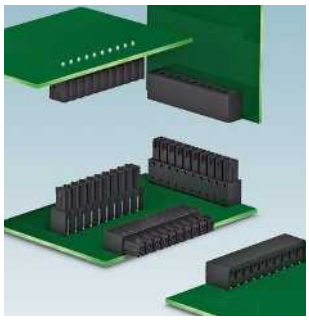
THR PCB terminal blocks with push-in spring connection up to 1.5 mm², 5.0 and 5.08 mm pitch

**SPT-THR 1,5/ ...-H-5,0 P26** Page 12
**SPT-THR 1,5/ ...-V-5,0 P26** Page 13



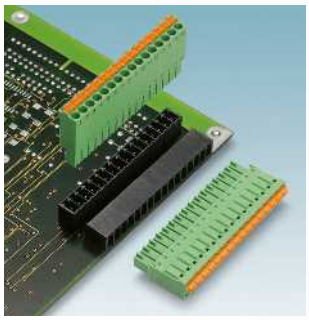
Double-row PCB terminal block with push-in spring connection up to 1.5 mm², 3.5 mm pitch

**SPTD 1,5/ ...-H-3,5** Page 15



Inverted headers for reflow processes, 3.5 mm pitch

**IMC 1,5/ ...-G-3,5 P20 THR** Page 16
**IMCV 1,5/ ...-G-3,5 P20 THR** Page 17

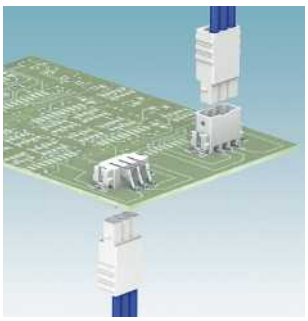


Single-level headers, 13 to 20-pos., for reflow processes, 3.81 mm pitch

**MC 1,5/...-G-3,81 P20 THR** Page 18
**MCV 1,5/...-G-3,81 P20 THR** Page 19

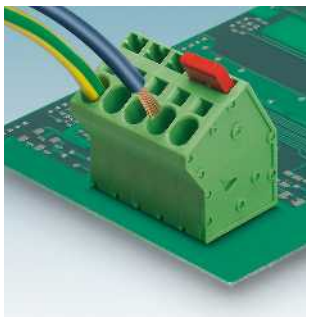
Taped single-level headers, 13 to 20-pos., for reflow processes, 3.81 mm pitch

**MC 1,5/...-G-3,81 P20 THRR...** Page 20
**MCV 1,5/...-G-3,81 P20 THRR...** Page 21



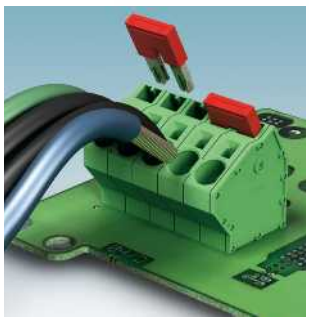
Plugs with push-in spring connection up to 0.75 mm², 2.5 mm pitch

**PTSM 0,5/ ...-HV-2,5-SMD WH R32** Page 23
**PTSM 0,5/ ...-HTB-2,5-SMD WH R32** Page 23



Angled PCB terminal blocks with push-in spring connection up to 6 mm², 7.5 mm pitch

**SPTA 5/ ...-7,5-ZB** Page 25

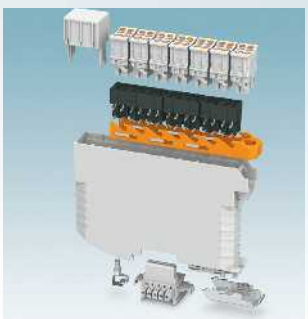


Angled PCB terminal blocks with push-in spring connection up to 6 mm², 10 mm pitch

**SPTA 16/ ...-10,0-ZB** Page 27

Feed-through terminal blocks with push-in spring connection up to 16 mm² for high-current applications

**PWO 16-UW** Page 29



ME-IO electronics housing with front connection

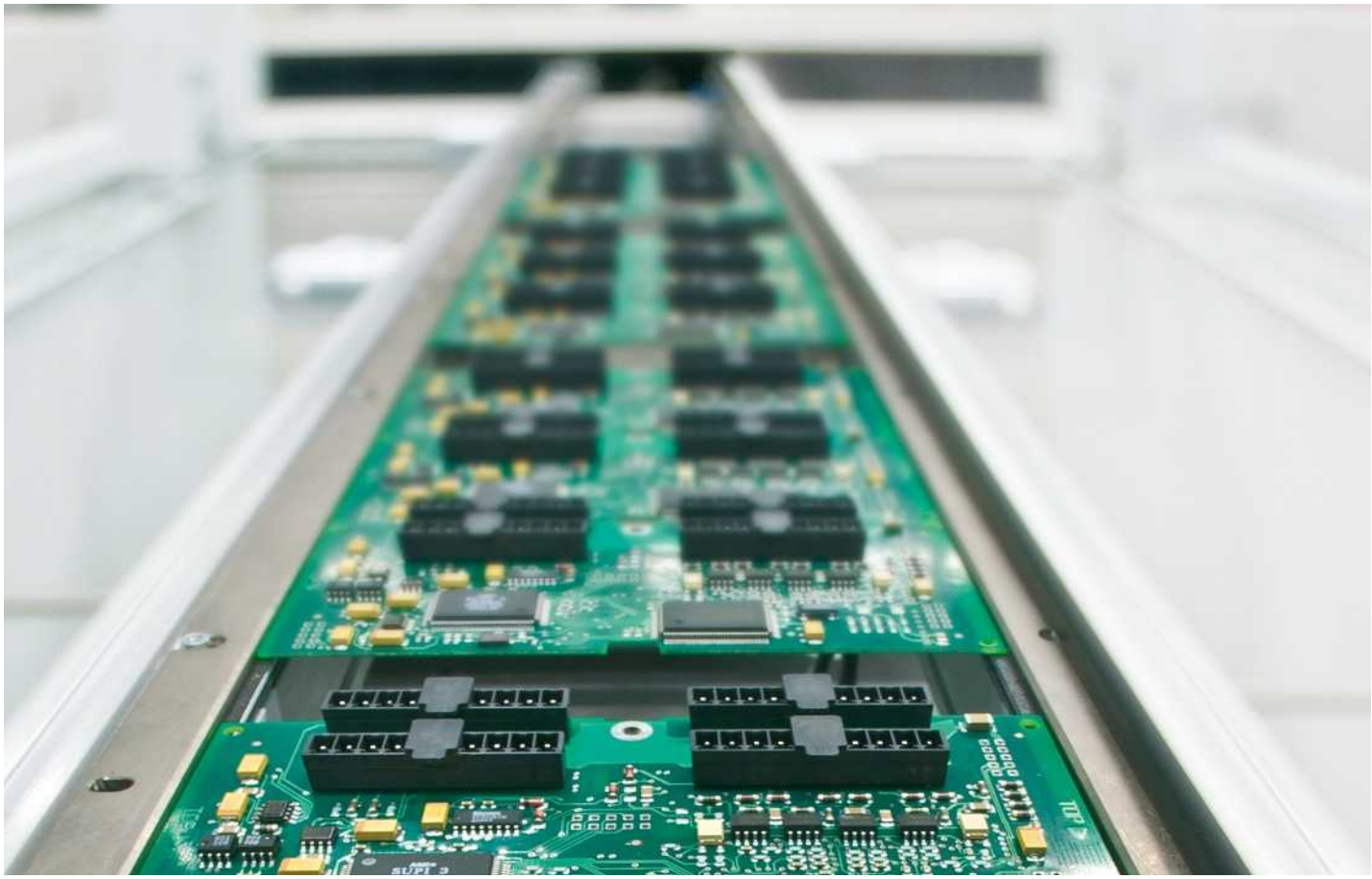
**ME-IO 18, 8....** Page 30
**HSC...** Page 30

PCO... power connector for ME MAX housing

**PCO ....-L KMGY** Page 38
**PBR 42A...** Page 38

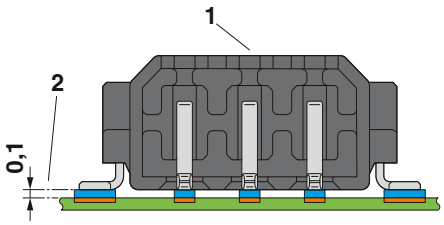
ME TBUS 4P1S and ME TBUS ADAPTER for ME and ME MAX housing

**ME ....TBUS 1,5/4P1S KMGY** Page 39
**ME ....TBUS ADAPTER KMGY** Page 39



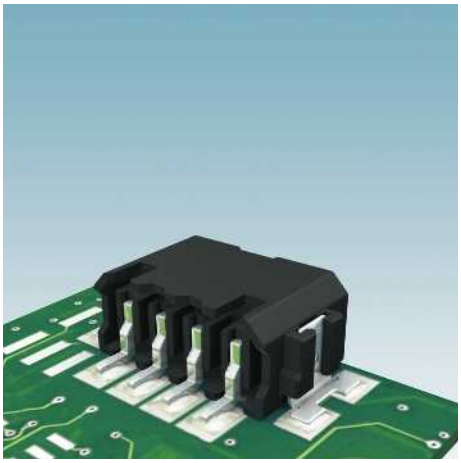
**SMD- Surface Mount Device**

Generally the term SMD or SMT (surface mount technology) refers to the dominant production method currently used for assemblies in electronics production. In this case solder paste is applied to the contact surfaces of the PCB. The surface contacts of the component are dipped in this paste and soldered by means of the reflow soldering process.



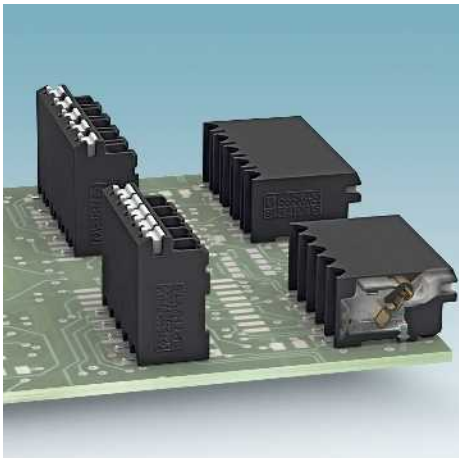

**Properties of SMD/THR components in the reflow process**

– Resistance to high temperatures
– Suction areas (1) for automatic PCB assembly by means of pick-and-place
– Stability in the case of mechanical loads
– Coplanarity (2) (evenness) of the SMD contacts



**PTSM 0,5...SMD**

In addition to the SMD contacts, the components have anchor metal on the side. This ensures that the insertion and withdrawal force of the plugs does not overload the contact points.

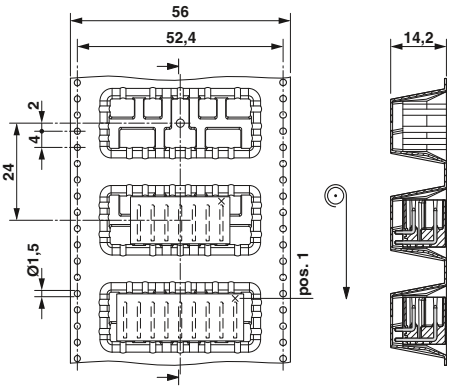


**SPT-SMD 1,5...**

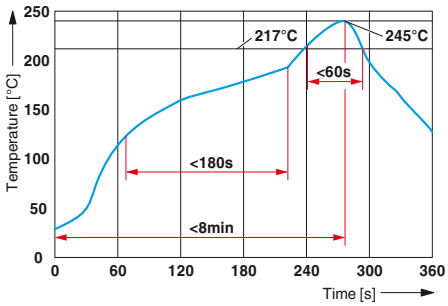
Additional solder pins on the side position the component on the PCB and prevent it moving during the process. Moreover, they absorb the force when the conductors are connected.

The qualification of the SMD connectors is based on IPC/JEDEC J-STD020 indicating the MSL (Moisture Sensitive Level) and the max. processing temperatures. The SMD/THR components meet MSL 1 or 2 which means that dry bag packaging is not required.

The standard tape width for tape-on-reel packaging supports automatic PCB assembly in pick-and-place applications.




Dimensional drawings of tape reels and suction areas and pads can be found online at phoenixcontact.net/products.




**Reflow soldering**

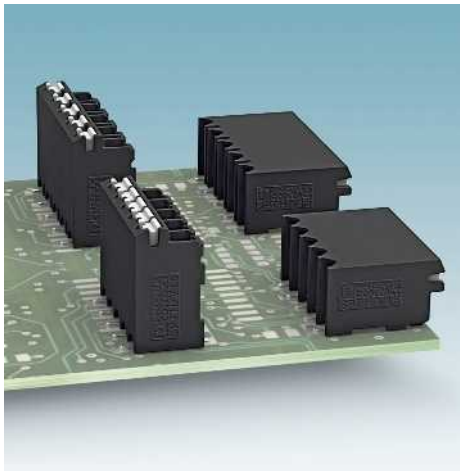
The reflow process and the required temperature profiles are described in SMD standards DIN EN 61760-1 or also IEC 60068-2-58. The profiles described are usually used for test purposes, but are also recommended for the application.

## SMD PCB terminal blocks with push-in spring connection up to 1.5 mm²

**Notes:**

Dimensional drawings of tape reels and place pads can be found online at phoenixcontact.net/products.

[1]) Current carrying capacity curve available on request.



- Push-in direct plug-in technology for solid and stranded conductors
- Suitable for use in SMD processes
- Horizontal and vertical design with a 3.5 mm and 3.81 mm pitch
- High stability due to anchor pins or two soldering pads per position
- Supplied in taped packaging according to IEC 60286-3 for automatic assembly
- Touch connection for voltage testing using a 1 mm Ø test pin

### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Screwdriver **SZS 0,4 x 2,5 Order No. 1205037** | |
| | Marker cards **SK 3,5/2,8 or SK 3,81/2,8** | 796 |
| | Ferrules with and without plastic sleeve | 834 |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |
| | Test plug **MPS-MT 1-S Order No. 1944372** | 831 |

### Technical data

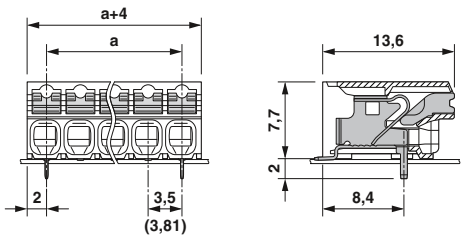
| | | SPT-SMD 1,5/...H..R... | | | SPT-SMD 1,5/...-V...R... | | |
|---|---|---|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | | | | |
| Rated current / conductor cross section | [A] / [mm²] | 13.5[1]) / 1.5 | | | 13.5[1]) / 1.5 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 160 | | | 160 | | |
| Pitch | [mm] | 3.5 / 3.81 | | | 3.5 / 3.81 | | |
| Connection capacity | | | | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 1.5 / 0.2 - 1.5 / 24 - 16 | | | 0.2 - 1.5 / 0.2 - 1.5 / 24 - 16 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.2 - 1.5 | | | 0.2 - 1.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.2 - 0.75 | | | 0.2 - 0.75 | | |
| Insulation coordination | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 160 | 160 | 320 | 160 | 160 | 320 |
| Rated surge voltage | [kV] | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Approval data (UL/CUL) | Use Group | B | C | D | B | C | D |
| Nominal voltage | [V] | - | - | - | - | - | - |
| Nominal current | [A] | - | - | - | - | - | - |
| 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] | 8 | | | 8 | | |
| Type of insulation material / insulation material group | | LCP / IIIa | | | LCP / IIIa | | |
| Inflammability class according to UL 94 | | V0 | | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.1 / 0.7 x 0.3 | | | 1.1 / 0.7 x 0.3 | | |

| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 3.50 |
| 3 | 7.00 |
| 4 | 10.50 |
| 5 | 14.00 |
| 6 | 17.50 |
| 7 | 21.00 |
| 8 | 24.50 |
| 9 | 28.00 |
| 10 | 31.50 |
| 11 | 35.00 |
| 12 | 38.50 |
| | |
| 2 | 3.81 |
| 3 | 7.62 |
| 4 | 11.43 |
| 5 | 15.24 |
| 6 | 19.05 |
| 7 | 22.86 |
| 8 | 26.67 |
| 9 | 30.48 |
| 10 | 34.29 |
| 11 | 38.10 |
| 12 | 41.91 |

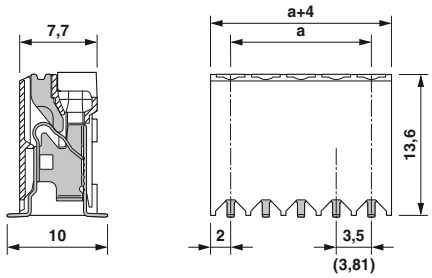
Taped PCB terminal block, connection direction horizontal to the PCB

Taped PCB terminal block, connection direction vertical to the PCB

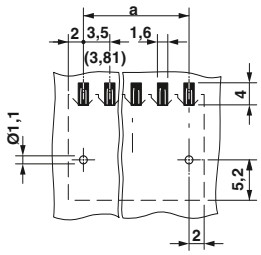
## Dimensional drawing



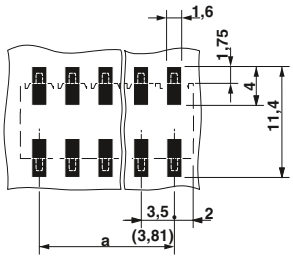

## Dimensional drawing




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| SPT-SMD 1,5/ 2-H-3,5 R24 | 1824527 | 300 |
| SPT-SMD 1,5/ 3-H-3,5 R24 | 1824530 | 300 |
| SPT-SMD 1,5/ 4-H-3,5 R44 | 1824543 | 300 |
| SPT-SMD 1,5/ 5-H-3,5 R44 | 1824556 | 300 |
| SPT-SMD 1,5/ 6-H-3,5 R44 | 1824569 | 300 |
| SPT-SMD 1,5/ 7-H-3,5 R44 | 1824572 | 300 |
| SPT-SMD 1,5/ 8-H-3,5 R72 | 1824585 | 300 |
| SPT-SMD 1,5/ 9-H-3,5 R72 | 1824598 | 300 |
| SPT-SMD 1,5/10-H-3,5 R72 | 1824608 | 300 |
| SPT-SMD 1,5/11-H-3,5 R72 | 1824611 | 300 |
| SPT-SMD 1,5/12-H-3,5 R72 | 1824624 | 300 |
| **3.81 mm pitch, color: black** | | |
| SPT-SMD 1,5/ 2-H-3,81 R24 | 1824637 | 300 |
| SPT-SMD 1,5/ 3-H-3,81 R24 | 1824640 | 300 |
| SPT-SMD 1,5/ 4-H-3,81 R44 | 1824653 | 300 |
| SPT-SMD 1,5/ 5-H-3,81 R44 | 1824666 | 300 |
| SPT-SMD 1,5/ 6-H-3,81 R44 | 1824679 | 300 |
| SPT-SMD 1,5/ 7-H-3,81 R44 | 1824682 | 300 |
| SPT-SMD 1,5/ 8-H-3,81 R72 | 1824695 | 300 |
| SPT-SMD 1,5/ 9-H-3,81 R72 | 1824705 | 300 |
| SPT-SMD 1,5/10-H-3,81 R72 | 1824718 | 300 |
| SPT-SMD 1,5/11-H-3,81 R72 | 1824721 | 300 |
| SPT-SMD 1,5/12-H-3,81 R72 | 1824734 | 300 |

## Ordering data

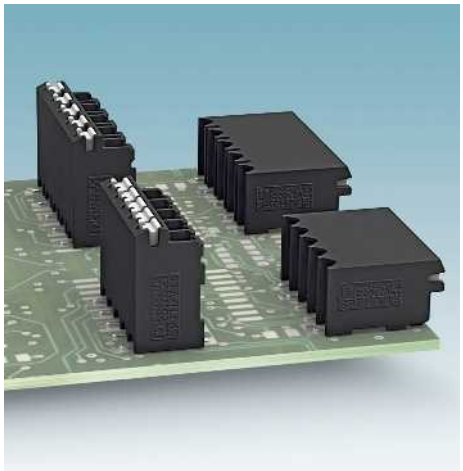
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| SPT-SMD 1,5/ 2-V-3,5 R24 | 1824080 | 200 |
| SPT-SMD 1,5/ 3-V-3,5 R32 | 1824093 | 200 |
| SPT-SMD 1,5/ 4-V-3,5 R44 | 1824103 | 200 |
| SPT-SMD 1,5/ 5-V-3,5 R44 | 1824116 | 200 |
| SPT-SMD 1,5/ 6-V-3,5 R44 | 1824129 | 200 |
| SPT-SMD 1,5/ 7-V-3,5 R44 | 1824132 | 200 |
| SPT-SMD 1,5/ 8-V-3,5 R72 | 1824145 | 200 |
| SPT-SMD 1,5/ 9-V-3,5 R72 | 1824158 | 200 |
| SPT-SMD 1,5/10-V-3,5 R72 | 1824161 | 200 |
| SPT-SMD 1,5/11-V-3,5 R72 | 1824174 | 200 |
| SPT-SMD 1,5/12-V-3,5 R72 | 1824187 | 200 |
| **3.81 mm pitch, color: black** | | |
| SPT-SMD 1,5/ 2-V-3,81 R24 | 1824190 | 200 |
| SPT-SMD 1,5/ 3-V-3,81 R32 | 1824200 | 200 |
| SPT-SMD 1,5/ 4-V-3,81 R44 | 1824213 | 200 |
| SPT-SMD 1,5/ 5-V-3,81 R44 | 1824226 | 200 |
| SPT-SMD 1,5/ 6-V-3,81 R44 | 1824239 | 200 |
| SPT-SMD 1,5/ 7-V-3,81 R44 | 1824242 | 200 |
| SPT-SMD 1,5/ 8-V-3,81 R72 | 1824255 | 200 |
| SPT-SMD 1,5/ 9-V-3,81 R72 | 1824268 | 200 |
| SPT-SMD 1,5/10-V-3,81 R72 | 1824271 | 200 |
| SPT-SMD 1,5/11-V-3,81 R72 | 1824284 | 200 |
| SPT-SMD 1,5/12-V-3,81 R72 | 1824297 | 200 |

## SMD PCB terminal blocks with push-in spring connection up to 1.5 mm²

**Notes:**

Dimensional drawings of tape reels and place pads can be found online at phoenixcontact.net/products.

[1]) Current carrying capacity curve available on request.



- Push-in direct plug-in technology for solid and stranded conductors
- Suitable for use in SMD processes
- Horizontal and vertical design with a 5.0 mm and 5.08 mm pitch
- High stability due to anchor pins or two soldering pads per position
- Supplied in taped packaging according to IEC 60286-3 for automatic assembly
- Touch connection for voltage testing using a 1 mm Ø test pin

### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Screwdriver<br>**SZS 0,4 x 2,5**<br>**Order No.**<br>**1205037** | |
| | Marker cards<br>**SK 5/3,8 orSK 5,08/3,8** | 798 |
| | Ferrules with and without plastic sleeve | 834 |
| | Crimping pliers for 0.25 to 6 mm²<br>**CRIMPFOX 6**<br>**Order No.**<br>**1212034** | |
| | Test plug<br>**MPS-MT 1-S**<br>**Order No.**<br>**1944372** | 831 |

### Technical data

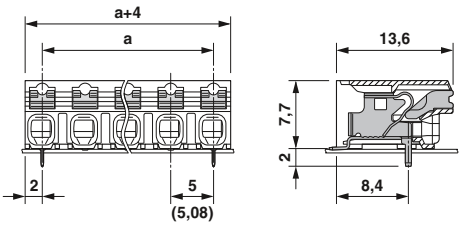
| | | SPT-SMD 1,5/...H..R | | | SPT-SMD 1,5/...V...R... | | |
|---|---|---|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | | | | |
| Rated current / conductor cross section | [A] / [mm²] | 13.5[1]) / 1.5 | | | 13.5[1]) / 1.5 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 320 | | | 320 | | |
| Pitch | [mm] | 5 / 5.08 | | | 5 / 5.08 | | |
| Connection capacity | | | | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 1.5 / 0.2 - 1.5 / 24 - 16 | | | 0.2 - 1.5 / 0.2 - 1.5 / 24 - 16 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.2 - 1.5 | | | 0.2 - 1.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.2 - 0.75 | | | 0.2 - 0.75 | | |
| Insulation coordination | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 250 | 320 | 500 | 250 | 320 | 500 |
| 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] | - | - | - | - | - | - |
| Nominal current | [A] | - | - | - | - | - | - |
| 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] | 8 | | | 8 | | |
| Type of insulation material / insulation material group | | LCP / IIIa | | | LCP / IIIa | | |
| Inflammability class according to UL 94 | | V0 | | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.1 / 0.7 x 0.3 mm | | | 1.1 / 0.7 x 0.3 mm | | |

| 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 |
| | |
| 2 | 5.08 |
| 3 | 10.16 |
| 4 | 15.24 |
| 5 | 20.32 |
| 6 | 25.40 |
| 7 | 30.48 |
| 8 | 35.56 |
| 9 | 40.64 |
| 10 | 45.72 |
| 11 | 50.80 |
| 12 | 55.88 |

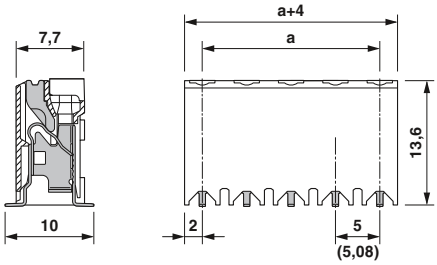
Taped PCB terminal block, connection direction horizontal to the PCB

Taped PCB terminal block, connection direction vertical to the PCB

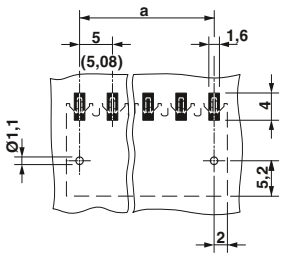
## Dimensional drawing



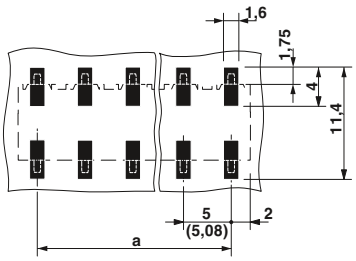

## Dimensional drawing




## Drilling diagram




## Drilling diagram



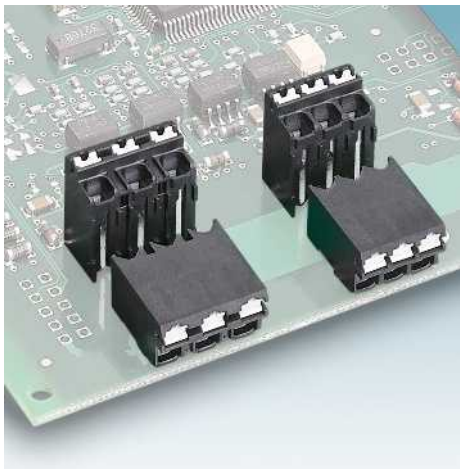

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 5.0 mm, color: black** | | |
| SPT-SMD 1,5/ 2-H-5,0 R24 | 1824747 | 300 |
| SPT-SMD 1,5/ 3-H-5,0 R32 | 1824750 | 300 |
| SPT-SMD 1,5/ 4-H-5,0 R44 | 1824763 | 300 |
| SPT-SMD 1,5/ 5-H-5,0 R44 | 1824776 | 300 |
| SPT-SMD 1,5/ 6-H-5,0 R44 | 1824789 | 300 |
| SPT-SMD 1,5/ 7-H-5,0 R88 | 1824792 | 300 |
| SPT-SMD 1,5/ 8-H-5,0 R88 | 1824802 | 300 |
| SPT-SMD 1,5/ 9-H-5,0 R88 | 1824815 | 300 |
| SPT-SMD 1,5/10-H-5,0 R88 | 1824828 | 300 |
| SPT-SMD 1,5/11-H-5,0 R88 | 1824831 | 300 |
| SPT-SMD 1,5/12-H-5,0 R88 | 1824844 | 300 |
| **Headers, 5.08 mm pitch, color: black** | | |
| SPT-SMD 1,5/ 2-H-5,08 R24 | 1824857 | 300 |
| SPT-SMD 1,5/ 3-H-5,08 R32 | 1824860 | 300 |
| SPT-SMD 1,5/ 4-H-5,08 R44 | 1824873 | 300 |
| SPT-SMD 1,5/ 5-H-5,08 R44 | 1824885 | 300 |
| SPT-SMD 1,5/ 6-H-5,08 R44 | 1824899 | 300 |
| SPT-SMD 1,5/ 7-H-5,08 R88 | 1824909 | 300 |
| SPT-SMD 1,5/ 8-H-5,08 R88 | 1824912 | 300 |
| SPT-SMD 1,5/ 9-H-5,08 R88 | 1824925 | 300 |
| SPT-SMD 1,5/10-H-5,08 R88 | 1824938 | 300 |
| SPT-SMD 1,5/11-H-5,08 R88 | 1824941 | 300 |
| SPT-SMD 1,5/12-H-5,08 R88 | 1824954 | 300 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 5.0 mm, color: black** | | |
| SPT-SMD 1,5/ 2-V-5,0 R24 | 1824307 | 200 |
| SPT-SMD 1,5/ 3-V-5,0 R32 | 1824310 | 200 |
| SPT-SMD 1,5/ 4-V-5,0 R44 | 1824323 | 200 |
| SPT-SMD 1,5/ 5-V-5,0 R44 | 1824336 | 200 |
| SPT-SMD 1,5/ 6-V-5,0 R44 | 1824349 | 200 |
| SPT-SMD 1,5/ 7-V-5,0 R88 | 1824352 | 200 |
| SPT-SMD 1,5/ 8-V-5,0 R88 | 1824365 | 200 |
| SPT-SMD 1,5/ 9-V-5,0 R88 | 1824378 | 200 |
| SPT-SMD 1,5/10-V-5,0 R88 | 1824381 | 200 |
| SPT-SMD 1,5/11-V-5,0 R88 | 1824394 | 200 |
| SPT-SMD 1,5/12-V-5,0 R88 | 1824404 | 200 |
| **Headers, 5.08 mm pitch, color: black** | | |
| SPT-SMD 1,5/ 2-V-5,08 R24 | 1824417 | 200 |
| SPT-SMD 1,5/ 3-V-5,08 R32 | 1824420 | 200 |
| SPT-SMD 1,5/ 4-V-5,08 R44 | 1824433 | 200 |
| SPT-SMD 1,5/ 5-V-5,08 R44 | 1824446 | 200 |
| SPT-SMD 1,5/ 6-V-5,08 R44 | 1824459 | 200 |
| SPT-SMD 1,5/ 7-V-5,08 R88 | 1824462 | 200 |
| SPT-SMD 1,5/ 8-V-5,08 R88 | 1824475 | 200 |
| SPT-SMD 1,5/ 9-V-5,08 R88 | 1824488 | 200 |
| SPT-SMD 1,5/10-V-5,08 R88 | 1824491 | 200 |
| SPT-SMD 1,5/11-V-5,08 R88 | 1824501 | 200 |
| SPT-SMD 1,5/12-V-5,08 R88 | 1824514 | 200 |

## THR PCB terminal blocks with push-in spring connection up to 1.5 mm²



- Push-in direct plug-in technology for solid or stranded conductors
- Suitable for use in SMT reflow processes
- Horizontal and vertical design with 3.5 mm and 3.81 mm pitch
- Two solder pins for a high level of stability on the PCB
- Standard pin length of 2.6 mm also suitable for wave soldering processes
- Supplied in tape-on-reel packing according to IEC 60286-3 for automated mounting in the reflow process with pin length of 2.0 mm
- Touch connection for voltage testing using a 1 mm Ø test pin

**Notes:**

Dimensional drawings of tape reels and place pads can be found online at phoenixcontact.net/products.

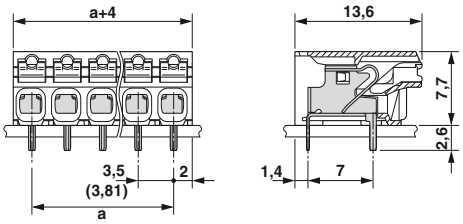
[1]) Current carrying capacity curve upon request.

**Pin length of 2.6 mm, box-packaged PCB terminal blocks, connection direction horizontal to the PCB**

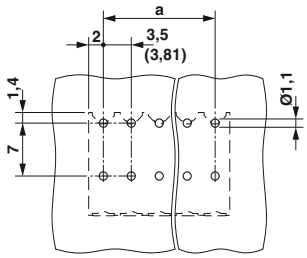
### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Screwdriver **SZS 0,4 x 2,5 Order No. 1205037** | |
| | Ferrules with and without plastic sleeve | 834 |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |
| | Test plug **MPS-MT 1-S Order No. 1944372** | 831 |

### Dimensional drawing




### Drilling diagram




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | |
| Rated current / conductor cross section | [A] / [mm²] | 13.5[1]) / 1.5 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 160 | | |
| Pitch | [mm] | 3.5 / 3.81 | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 1.5 / 0.2 - 1.5 / 24 - 16 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.2 - 1.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.2 - 0.75 | | |
| Multi-conductor connection capacity (two conductors with the 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 |
| Rated insulation voltage | [V] | 160 | 160 | 320 |
| Rated surge voltage | [kV] | 2.5 | 2.5 | 2.5 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 8 | | |
| Type of insulation material / insulation material group | | LCP / IIIa | | |
| Inflammability class according to UL 94 | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.1 / 0.7 x 0.3 | | |

### Ordering data

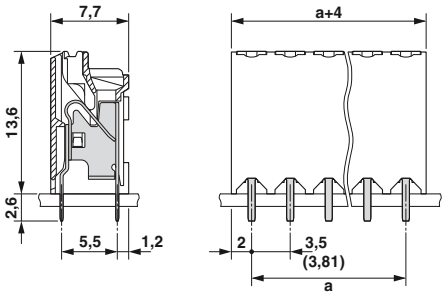
| No. of pos. | Dim. a [mm] | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| | | **Pitch 3.5 mm, color: black** | | |
| 2 | 3.50 | **SPT-THR 1,5/ 2-H-3,5 P26** | **1822752** | 370 |
| 3 | 7.00 | **SPT-THR 1,5/ 3-H-3,5 P26** | **1822765** | 240 |
| 4 | 10.50 | **SPT-THR 1,5/ 4-H-3,5 P26** | **1822778** | 170 |
| 5 | 14.00 | **SPT-THR 1,5/ 5-H-3,5 P26** | **1822781** | 150 |
| 6 | 17.50 | **SPT-THR 1,5/ 6-H-3,5 P26** | **1822794** | 130 |
| 7 | 21.00 | **SPT-THR 1,5/ 7-H-3,5 P26** | **1822804** | 110 |
| 8 | 24.50 | **SPT-THR 1,5/ 8-H-3,5 P26** | **1822817** | 80 |
| 9 | 28.00 | **SPT-THR 1,5/ 9-H-3,5 P26** | **1822820** | 80 |
| 10 | 31.50 | **SPT-THR 1,5/10-H-3,5 P26** | **1822833** | 60 |
| 11 | 35.00 | **SPT-THR 1,5/11-H-3,5 P26** | **1822846** | 60 |
| 12 | 38.50 | **SPT-THR 1,5/12-H-3,5 P26** | **1822859** | 60 |
| | | **3.81 mm pitch, color: black** | | |
| 2 | 3.81 | **SPT-THR 1,5/ 2-H-3,81 P26** | **1822862** | 350 |
| 3 | 7.62 | **SPT-THR 1,5/ 3-H-3,81 P26** | **1822875** | 240 |
| 4 | 11.43 | **SPT-THR 1,5/ 4-H-3,81 P26** | **1822888** | 170 |
| 5 | 15.24 | **SPT-THR 1,5/ 5-H-3,81 P26** | **1822891** | 130 |
| 6 | 19.05 | **SPT-THR 1,5/ 6-H-3,81 P26** | **1822901** | 110 |
| 7 | 22.86 | **SPT-THR 1,5/ 7-H-3,81 P26** | **1822914** | 80 |
| 8 | 26.67 | **SPT-THR 1,5/ 8-H-3,81 P26** | **1822927** | 80 |
| 9 | 30.48 | **SPT-THR 1,5/ 9-H-3,81 P26** | **1822930** | 60 |
| 10 | 34.29 | **SPT-THR 1,5/10-H-3,81 P26** | **1822943** | 60 |
| 11 | 38.10 | **SPT-THR 1,5/11-H-3,81 P26** | **1822956** | 60 |
| 12 | 41.91 | **SPT-THR 1,5/12-H-3,81 P26** | **1822969** | 60 |

**Pin length of 2.6 mm, box-packaged PCB terminal blocks, connection direction vertical to the PCB**

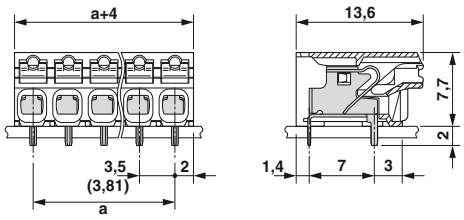
**Pin length of 2.0 mm, taped PCB terminal blocks, connection direction horizontal to the PCB**

**Pin length of 2.0 mm, taped PCB terminal blocks, connection direction vertical to the PCB**

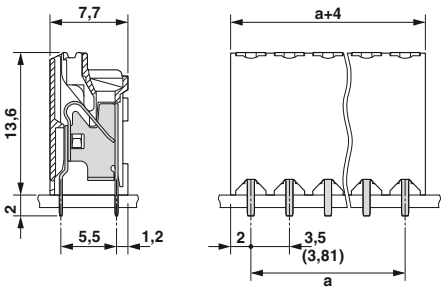
## Dimensional drawing



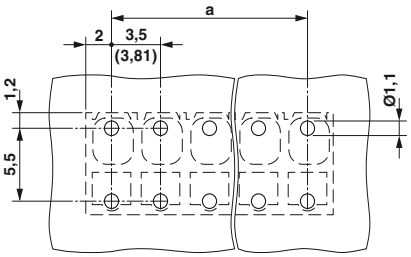

## Dimensional drawing



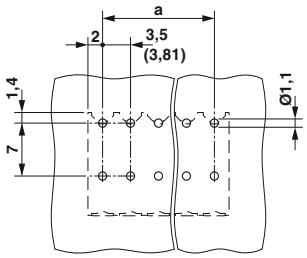

## Dimensional drawing



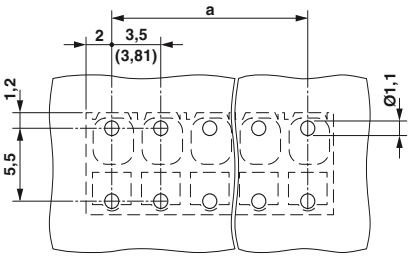

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| SPT-THR 1,5/ 2-V-3,5 P26 | 1822312 | 540 |
| SPT-THR 1,5/ 3-V-3,5 P26 | 1822325 | 350 |
| SPT-THR 1,5/ 4-V-3,5 P26 | 1822338 | 250 |
| SPT-THR 1,5/ 5-V-3,5 P26 | 1822341 | 220 |
| SPT-THR 1,5/ 6-V-3,5 P26 | 1822354 | 190 |
| SPT-THR 1,5/ 7-V-3,5 P26 | 1822367 | 160 |
| SPT-THR 1,5/ 8-V-3,5 P26 | 1822370 | 120 |
| SPT-THR 1,5/ 9-V-3,5 P26 | 1822383 | 120 |
| SPT-THR 1,5/10-V-3,5 P26 | 1822396 | 90 |
| SPT-THR 1,5/11-V-3,5 P26 | 1822406 | 90 |
| SPT-THR 1,5/12-V-3,5 P26 | 1822419 | 90 |
| **3.81 mm pitch, color: black** | | |
| SPT-THR 1,5/ 2-V-3,81 P26 | 1822422 | 510 |
| SPT-THR 1,5/ 3-V-3,81 P26 | 1822435 | 350 |
| SPT-THR 1,5/ 4-V-3,81 P26 | 1822448 | 250 |
| SPT-THR 1,5/ 5-V-3,81 P26 | 1822451 | 190 |
| SPT-THR 1,5/ 6-V-3,81 P26 | 1822464 | 160 |
| SPT-THR 1,5/ 7-V-3,81 P26 | 1822477 | 120 |
| SPT-THR 1,5/ 8-V-3,81 P26 | 1822480 | 120 |
| SPT-THR 1,5/ 9-V-3,81 P26 | 1822493 | 90 |
| SPT-THR 1,5/10-V-3,81 P26 | 1822503 | 90 |
| SPT-THR 1,5/11-V-3,81 P26 | 1822516 | 90 |
| SPT-THR 1,5/12-V-3,81 P26 | 1822529 | 60 |

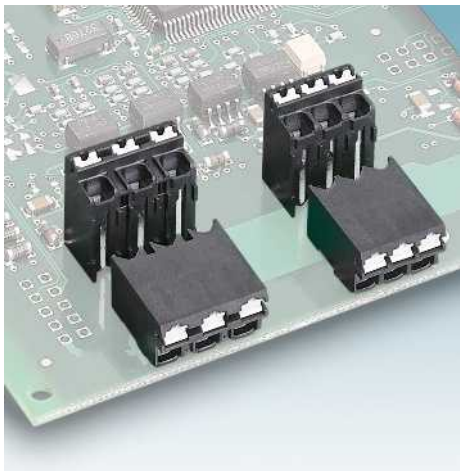
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| SPT-THR 1,5/ 2-H-3,5 P20 R24 | 1823638 | 250 |
| SPT-THR 1,5/ 3-H-3,5 P20 R32 | 1823641 | 250 |
| SPT-THR 1,5/ 4-H-3,5 P20 R32 | 1823654 | 250 |
| SPT-THR 1,5/ 5-H-3,5 P20 R32 | 1823667 | 250 |
| SPT-THR 1,5/ 6-H-3,5 P20 R44 | 1823670 | 250 |
| SPT-THR 1,5/ 7-H-3,5 P20 R44 | 1823683 | 250 |
| SPT-THR 1,5/ 8-H-3,5 P20 R44 | 1823696 | 250 |
| SPT-THR 1,5/ 9-H-3,5 P20 R72 | 1823706 | 250 |
| SPT-THR 1,5/10-H-3,5 P20 R72 | 1823719 | 250 |
| SPT-THR 1,5/11-H-3,5 P20 R72 | 1823722 | 250 |
| SPT-THR 1,5/12-H-3,5 P20 R72 | 1823735 | 250 |
| **3.81 mm pitch, color: black** | | |
| SPT-THR 1,5/ 2-H-3,81 P20 R24 | 1823748 | 250 |
| SPT-THR 1,5/ 3-H-3,81 P20 R32 | 1823751 | 250 |
| SPT-THR 1,5/ 4-H-3,81 P20 R32 | 1823764 | 250 |
| SPT-THR 1,5/ 5-H-3,81 P20 R32 | 1823777 | 250 |
| SPT-THR 1,5/ 6-H-3,81 P20 R44 | 1823780 | 250 |
| SPT-THR 1,5/ 7-H-3,81 P20 R44 | 1823793 | 250 |
| SPT-THR 1,5/ 8-H-3,81 P20 R44 | 1823803 | 250 |
| SPT-THR 1,5/ 9-H-3,81 P20 R72 | 1823816 | 250 |
| SPT-THR 1,5/10-H-3,81 P20 R72 | 1823829 | 250 |
| SPT-THR 1,5/11-H-3,81 P20 R72 | 1823832 | 250 |
| SPT-THR 1,5/12-H-3,81 P20 R72 | 1823845 | 250 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| SPT-THR 1,5/ 2-V-3,5 P20 R24 | 1823191 | 180 |
| SPT-THR 1,5/ 3-V-3,5 P20 R24 | 1823201 | 180 |
| SPT-THR 1,5/ 4-V-3,5 P20 R44 | 1823214 | 180 |
| SPT-THR 1,5/ 5-V-3,5 P20 R44 | 1823227 | 180 |
| SPT-THR 1,5/ 6-V-3,5 P20 R44 | 1823230 | 180 |
| SPT-THR 1,5/ 7-V-3,5 P20 R44 | 1823243 | 180 |
| SPT-THR 1,5/ 8-V-3,5 P20 R72 | 1823256 | 180 |
| SPT-THR 1,5/ 9-V-3,5 P20 R72 | 1823269 | 180 |
| SPT-THR 1,5/10-V-3,5 P20 R72 | 1823272 | 180 |
| SPT-THR 1,5/11-V-3,5 P20 R72 | 1823285 | 180 |
| SPT-THR 1,5/12-V-3,5 P20 R72 | 1823298 | 180 |
| **3.81 mm pitch, color: black** | | |
| SPT-THR 1,5/ 2-V-3,81 P20 R24 | 1823308 | 180 |
| SPT-THR 1,5/ 3-V-3,81 P20 R24 | 1823311 | 180 |
| SPT-THR 1,5/ 4-V-3,81 P20 R44 | 1823324 | 180 |
| SPT-THR 1,5/ 5-V-3,81 P20 R44 | 1823337 | 180 |
| SPT-THR 1,5/ 6-V-3,81 P20 R44 | 1823340 | 180 |
| SPT-THR 1,5/ 7-V-3,81 P20 R44 | 1823353 | 180 |
| SPT-THR 1,5/ 8-V-3,81 P20 R72 | 1823366 | 180 |
| SPT-THR 1,5/ 9-V-3,81 P20 R72 | 1823379 | 180 |
| SPT-THR 1,5/10-V-3,81 P20 R72 | 1823382 | 180 |
| SPT-THR 1,5/11-V-3,81 P20 R72 | 1823395 | 180 |
| SPT-THR 1,5/12-V-3,81 P20 R72 | 1823405 | 180 |

## THR PCB terminal blocks with push-in spring connection up to 1.5 mm²



- Push-in direct plug-in technology for solid or stranded conductors
- Suitable for use in SMT reflow processes
- Horizontal and vertical design with 5.0 mm and 5.08 mm pitch
- Two solder pins for a high level of stability on the PCB
- Standard pin length of 2.6 mm also suitable for wave soldering processes
- Supplied in tape-on-reel packing according to IEC 60286-3 for automated mounting in the reflow process with pin length of 2.0 mm
- Touch connection for voltage testing using a 1 mm Ø test pin

**Notes:**

Dimensional drawings of tape reels and place pads can be found online at phoenixcontact.net/products.

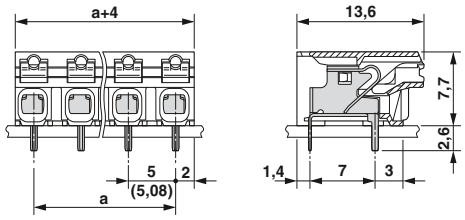
[1]) Current carrying capacity curve upon request.

**Pin length of 2.6 mm, box-packaged PCB terminal blocks, connection direction horizontal to the PCB**

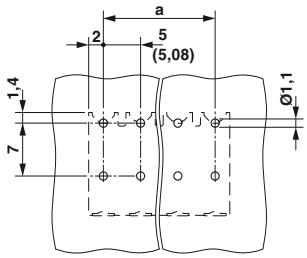
### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Screwdriver **SZS 0,4 x 2,5 Order No. 1205037** | |
| | Ferrules with and without plastic sleeve | 834 |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |
| | Test plug **MPS-MT 1-S Order No. 1944372** | 831 |

### Dimensional drawing




### Drilling diagram




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | |
| Rated current / conductor cross section | [A] / [mm²] | 13.5[1]) / 1.5 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 320 | | |
| Pitch | [mm] | 5 / 5.08 | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 1.5 / 0.2 - 1.5 / 24 - 16 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.2 - 1.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.2 - 0.75 | | |
| Multi-conductor connection capacity (two conductors with the 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 |
| Rated insulation voltage | [V] | 250 | 320 | 500 |
| Rated surge voltage | [kV] | 4 | 4 | 4 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 8 | | |
| Type of insulation material / insulation material group | | LCP / IIIa | | |
| Inflammability class according to UL 94 | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.1 / 0.7 x 0.3 mm | | |

### Ordering data

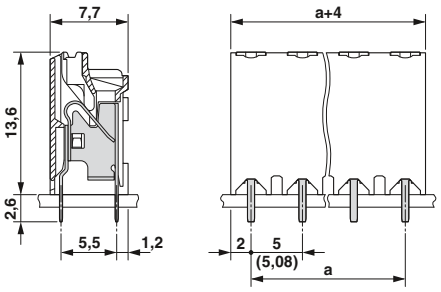
| No. of pos. | Dim. a [mm] | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| | | **Pitch 5.0 mm, color: black** | | |
| 2 | 5.00 | **SPT-THR 1,5/ 2-H-5,0 P26** | **1822972** | 300 |
| 3 | 10.00 | **SPT-THR 1,5/ 3-H-5,0 P26** | **1822985** | 190 |
| 4 | 15.00 | **SPT-THR 1,5/ 4-H-5,0 P26** | **1822998** | 130 |
| 5 | 20.00 | **SPT-THR 1,5/ 5-H-5,0 P26** | **1823007** | 110 |
| 6 | 25.00 | **SPT-THR 1,5/ 6-H-5,0 P26** | **1823010** | 80 |
| 7 | 30.00 | **SPT-THR 1,5/ 7-H-5,0 P26** | **1823023** | 60 |
| 8 | 35.00 | **SPT-THR 1,5/ 8-H-5,0 P26** | **1823036** | 60 |
| 9 | 40.00 | **SPT-THR 1,5/ 9-H-5,0 P26** | **1823049** | 40 |
| 10 | 45.00 | **SPT-THR 1,5/10-H-5,0 P26** | **1823052** | 40 |
| 11 | 50.00 | **SPT-THR 1,5/11-H-5,0 P26** | **1823065** | 40 |
| 12 | 55.00 | **SPT-THR 1,5/12-H-5,0 P26** | **1823078** | 40 |
| | | **Headers, 5.08 mm pitch, color: black** | | |
| 2 | 5.08 | **SPT-THR 1,5/ 2-H-5,08 P26** | **1823081** | 300 |
| 3 | 10.16 | **SPT-THR 1,5/ 3-H-5,08 P26** | **1823094** | 190 |
| 4 | 15.24 | **SPT-THR 1,5/ 4-H-5,08 P26** | **1823104** | 130 |
| 5 | 30.32 | **SPT-THR 1,5/ 5-H-5,08 P26** | **1823117** | 110 |
| 6 | 25.40 | **SPT-THR 1,5/ 6-H-5,08 P26** | **1823120** | 80 |
| 7 | 30.48 | **SPT-THR 1,5/ 7-H-5,08 P26** | **1823133** | 60 |
| 8 | 35.56 | **SPT-THR 1,5/ 8-H-5,08 P26** | **1823146** | 60 |
| 9 | 40.64 | **SPT-THR 1,5/ 9-H-5,08 P26** | **1823159** | 40 |
| 10 | 45.72 | **SPT-THR 1,5/10-H-5,08 P26** | **1823162** | 40 |
| 11 | 50.80 | **SPT-THR 1,5/11-H-5,08 P26** | **1823175** | 40 |
| 12 | 55.88 | **SPT-THR 1,5/12-H-5,08 P26** | **1823188** | 40 |

**Pin length of 2.6 mm, box-packaged PCB terminal blocks, connection direction vertical to the PCB**

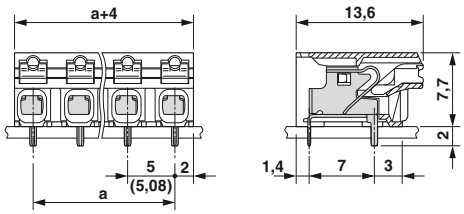
**Pin length of 2.0 mm, taped PCB terminal blocks, connection direction horizontal to the PCB**

**Pin length of 2.0 mm, taped PCB terminal blocks, connection direction vertical to the PCB**

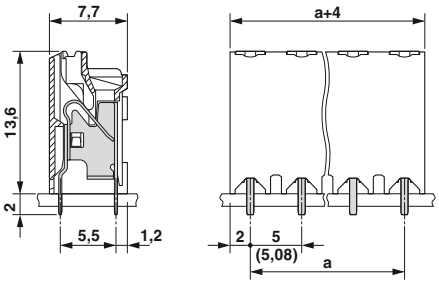
## Dimensional drawing



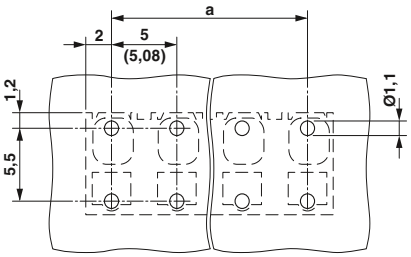

## Dimensional drawing



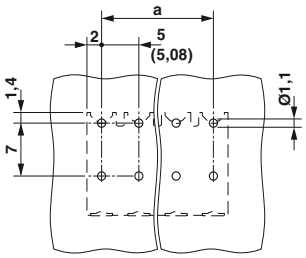

## Dimensional drawing



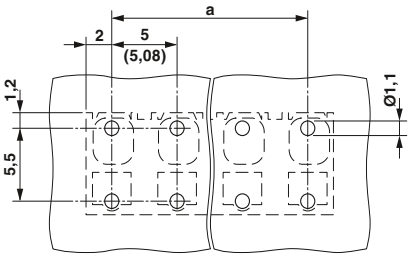

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 5.0 mm, color: black** | | |
| SPT-THR 1,5/ 2-V-5,0 P26 | 1822532 | 440 |
| SPT-THR 1,5/ 3-V-5,0 P26 | 1822545 | 280 |
| SPT-THR 1,5/ 4-V-5,0 P26 | 1822558 | 190 |
| SPT-THR 1,5/ 5-V-5,0 P26 | 1822561 | 160 |
| SPT-THR 1,5/ 6-V-5,0 P26 | 1822574 | 120 |
| SPT-THR 1,5/ 7-V-5,0 P26 | 1822587 | 90 |
| SPT-THR 1,5/ 8-V-5,0 P26 | 1822590 | 90 |
| SPT-THR 1,5/ 9-V-5,0 P26 | 1822600 | 60 |
| SPT-THR 1,5/10-V-5,0 P26 | 1822613 | 60 |
| SPT-THR 1,5/11-V-5,0 P26 | 1822626 | 60 |
| SPT-THR 1,5/12-V-5,0 P26 | 1822639 | 60 |
| **Headers, 5.08 mm pitch, color: black** | | |
| SPT-THR 1,5/ 2-V-5,08 P26 | 1822642 | 440 |
| SPT-THR 1,5/ 3-V-5,08 P26 | 1822655 | 280 |
| SPT-THR 1,5/ 4-V-5,08 P26 | 1822668 | 190 |
| SPT-THR 1,5/ 5-V-5,08 P26 | 1822671 | 160 |
| SPT-THR 1,5/ 6-V-5,08 P26 | 1822684 | 120 |
| SPT-THR 1,5/ 7-V-5,08 P26 | 1822697 | 90 |
| SPT-THR 1,5/ 8-V-5,08 P26 | 1822707 | 90 |
| SPT-THR 1,5/ 9-V-5,08 P26 | 1822710 | 60 |
| SPT-THR 1,5/10-V-5,08 P26 | 1822723 | 60 |
| SPT-THR 1,5/11-V-5,08 P26 | 1822736 | 60 |
| SPT-THR 1,5/12-V-5,08 P26 | 1822749 | 60 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 5.0 mm, color: black** | | |
| SPT-THR 1,5/ 2-H-5,0 P20 R24 | 1823858 | 250 |
| SPT-THR 1,5/ 3-H-5,0 P20 R32 | 1823861 | 250 |
| SPT-THR 1,5/ 4-H-5,0 P20 R32 | 1823874 | 250 |
| SPT-THR 1,5/ 5-H-5,0 P20 R56 | 1823887 | 250 |
| SPT-THR 1,5/ 6-H-5,0 P20 R56 | 1823890 | 250 |
| SPT-THR 1,5/ 7-H-5,0 P20 R56 | 1823900 | 250 |
| SPT-THR 1,5/ 8-H-5,0 P20 R56 | 1823913 | 250 |
| SPT-THR 1,5/ 9-H-5,0 P20 R88 | 1823926 | 250 |
| SPT-THR 1,5/10-H-5,0 P20 R88 | 1823939 | 250 |
| SPT-THR 1,5/11-H-5,0 P20 R88 | 1823942 | 250 |
| SPT-THR 1,5/12-H-5,0 P20 R88 | 1823955 | 250 |
| **Headers, 5.08 mm pitch, color: black** | | |
| SPT-THR 1,5/ 2-H-5,08 P20 R24 | 1823968 | 250 |
| SPT-THR 1,5/ 3-H-5,08 P20 R32 | 1823971 | 250 |
| SPT-THR 1,5/ 4-H-5,08 P20 R32 | 1823984 | 250 |
| SPT-THR 1,5/ 5-H-5,08 P20 R56 | 1823997 | 250 |
| SPT-THR 1,5/ 6-H-5,08 P20 R56 | 1824006 | 250 |
| SPT-THR 1,5/ 7-H-5,08 P20 R56 | 1824019 | 250 |
| SPT-THR 1,5/ 8-H-5,08 P20 R56 | 1824022 | 250 |
| SPT-THR 1,5/ 9-H-5,08 P20 R88 | 1824035 | 250 |
| SPT-THR 1,5/10-H-5,08 P20 R88 | 1824048 | 250 |
| SPT-THR 1,5/11-H-5,08 P20 R88 | 1824051 | 250 |
| SPT-THR 1,5/12-H-5,08 P20 R88 | 1824064 | 250 |

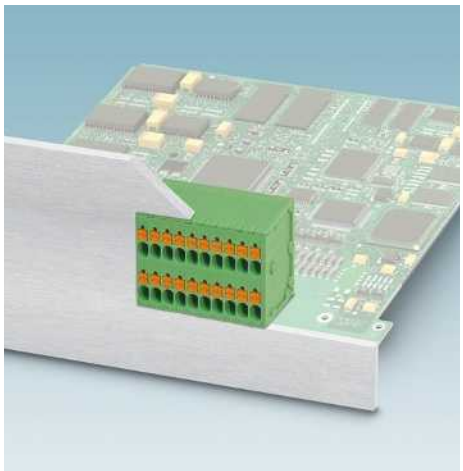
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 5.0 mm, color: black** | | |
| SPT-THR 1,5/ 2-V-5,0 P20 R24 | 1823418 | 180 |
| SPT-THR 1,5/ 3-V-5,0 P20 R32 | 1823421 | 180 |
| SPT-THR 1,5/ 4-V-5,0 P20 R56 | 1823434 | 180 |
| SPT-THR 1,5/ 5-V-5,0 P20 R56 | 1823447 | 180 |
| SPT-THR 1,5/ 6-V-5,0 P20 R56 | 1823450 | 180 |
| SPT-THR 1,5/ 7-V-5,0 P20 R56 | 1823463 | 180 |
| SPT-THR 1,5/ 8-V-5,0 P20 R88 | 1823476 | 180 |
| SPT-THR 1,5/ 9-V-5,0 P20 R88 | 1823489 | 180 |
| SPT-THR 1,5/10-V-5,0 P20 R88 | 1823492 | 180 |
| SPT-THR 1,5/11-V-5,0 P20 R88 | 1823502 | 180 |
| SPT-THR 1,5/12-V-5,0 P20 R88 | 1823515 | 180 |
| **Headers, 5.08 mm pitch, color: black** | | |
| SPT-THR 1,5/ 2-V-5,08 P20 R24 | 1823528 | 180 |
| SPT-THR 1,5/ 3-V-5,08 P20 R32 | 1823531 | 180 |
| SPT-THR 1,5/ 4-V-5,08 P20 R56 | 1823544 | 180 |
| SPT-THR 1,5/ 5-V-5,08 P20 R56 | 1823557 | 180 |
| SPT-THR 1,5/ 6-V-5,08 P20 R56 | 1823560 | 180 |
| SPT-THR 1,5/ 7-V-5,08 P20 R56 | 1823573 | 180 |
| SPT-THR 1,5/ 8-V-5,08 P20 R88 | 1823586 | 180 |
| SPT-THR 1,5/ 9-V-5,08 P20 R88 | 1823599 | 180 |
| SPT-THR 1,5/10-V-5,08 P20 R88 | 1823609 | 180 |
| SPT-THR 1,5/11-V-5,08 P20 R88 | 1823612 | 180 |
| SPT-THR 1,5/12-V-5,08 P20 R88 | 1823625 | 180 |

## Double-level PCB terminal blocks with push-in spring connection up to 1.5 mm²

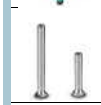
**Notes:**

[1]) Current carrying capacity curve upon request.



- Push-in connection with spring lever for tool-free conductor connection
- Unique integration into front panels in two rows
- Conductor cross sections up to 1.5 mm² with ferrule
- Printing area at the front
- Touch connection for voltage testing using a 1 mm test pin

### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Marker cards **SK 3,5/2,8** | 796 |
| | Screwdriver **SZS 0,4 x 2,5 Order No. 1205037** | |
|  | Ferrules with and without plastic sleeve | 834 |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |
| | Test plug **MPS-MT 1-S Order No. 1944372** | 831 |

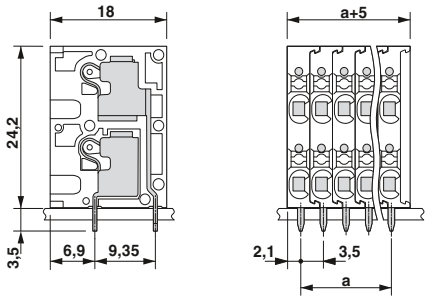
## Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | |
| Rated current / conductor cross section | [A] / [mm²] | 10[1]) / 1.5 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 200 | | |
| Pitch | [mm] | 3.5 | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.14 - 1.5 / 0.14 - 1.5 / 24 - 14 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.2 - 1.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.2 - 1.5 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 160 | 200 | 400 |
| Rated surge voltage | [kV] | 2.5 | 2.5 | 2.5 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 8 | | |
| Type of insulation material / insulation material group | | PA / I | | |
| Inflammability class according to UL 94 | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.3 / 0.6 x 1.0 mm | | |

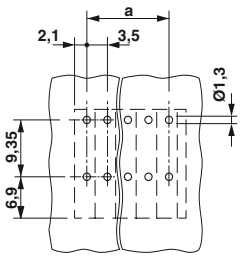
| No. of pos. | Dim. a [mm] |
|---|---|
| 2 | 3.50 |
| 3 | 7.00 |
| 4 | 10.50 |
| 5 | 14.00 |
| 6 | 17.50 |
| 7 | 21.00 |
| 8 | 24.50 |
| 9 | 28.00 |
| 10 | 31.50 |
| 11 | 35.00 |
| 12 | 38.50 |

Horizontal connection direction

## Dimensional drawing




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 3.5 mm pitch, color: green | | |
| SPTD 1,5/ 2-H-3,5 | 1841490 | 100 |
| SPTD 1,5/ 3-H-3,5 | 1841500 | 100 |
| SPTD 1,5/ 4-H-3,5 | 1841513 | 100 |
| SPTD 1,5/ 5-H-3,5 | 1841526 | 100 |
| SPTD 1,5/ 6-H-3,5 | 1841539 | 100 |
| SPTD 1,5/ 7-H-3,5 | 1841542 | 100 |
| SPTD 1,5/ 8-H-3,5 | 1841555 | 100 |
| SPTD 1,5/ 9-H-3,5 | 1841568 | 100 |
| SPTD 1,5/10-H-3,5 | 1841571 | 100 |
| SPTD 1,5/11-H-3,5 | 1841584 | 100 |
| SPTD 1,5/12-H-3,5 | 1841597 | 100 |

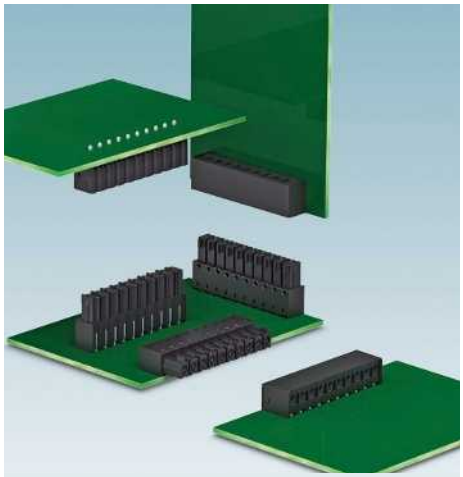
## Inverted headers for reflow processes

**Notes:**

In accordance with DIN EN 61984, COMBICON connectors have no switching power. During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

**COMBICON select**
Possible combinations for connectors can be found in COMBICON select at **phoenixcontact.net/products**.

[1]) Current carrying capacity curve upon request.



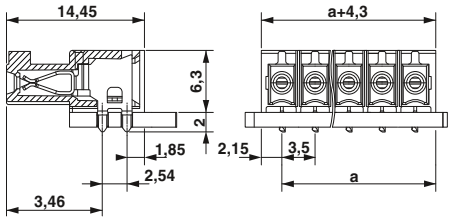
**2.0 mm pin length**
**Box-packaged headers,**
**Plug-in direction parallel to the PCB**

- Inverted headers with a 3.5 mm pitch
- Plug-in direction parallel or vertical to the PCB
- Versions with snap-in lug for locking inverted plugs with self-locking flanges
- You can find user notes and recommendations for the THR procedure in Catalog 1
- Combination with MC 1,5 pin strips for the PCB/PCB connection

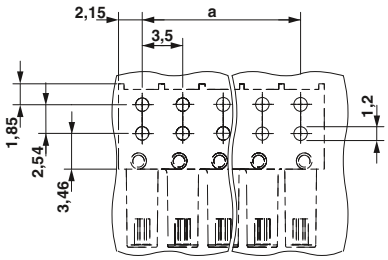
### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Marker cards<br>**SK 3,5/2,8** | 796 |

### Dimensional drawing




### Drilling diagram




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | |
| Rated current | [A] | 8[1]) | | |
| Rated insulation voltage for pollution degree 2 | [V] | 160 | | |
| Pitch | [mm] | 3.5 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 160 | 160 | 320 |
| Rated surge voltage | [kV] | 2.5 | 2.5 | 2.5 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Type of insulation material / insulation material group | | LCP / IIIa | | |
| Inflammability class according to UL 94 | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.2 / 0.8 x 0.8 mm | | |

### Ordering data

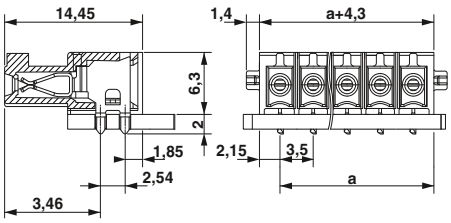
| No. of pos. | Dim. a [mm] | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| | | **Pitch 3.5 mm, color: black** | | |
| 2 | 3.50 | **IMC 1,5/ 2-G-3,5 P20 THR** | **1830414** | 50 |
| 3 | 7.00 | **IMC 1,5/ 3-G-3,5 P20 THR** | **1830427** | 50 |
| 4 | 10.50 | **IMC 1,5/ 4-G-3,5 P20 THR** | **1830430** | 50 |
| 5 | 14.00 | **IMC 1,5/ 5-G-3,5 P20 THR** | **1830443** | 50 |
| 6 | 17.50 | **IMC 1,5/ 6-G-3,5 P20 THR** | **1830456** | 50 |
| 7 | 21.00 | **IMC 1,5/ 7-G-3,5 P20 THR** | **1830469** | 50 |
| 8 | 24.50 | **IMC 1,5/ 8-G-3,5 P20 THR** | **1830472** | 50 |
| 9 | 28.00 | **IMC 1,5/ 9-G-3,5 P20 THR** | **1830485** | 50 |
| 10 | 31.50 | **IMC 1,5/10-G-3,5 P20 THR** | **1830498** | 50 |
| 11 | 35.00 | **IMC 1,5/11-G-3,5 P20 THR** | **1830508** | 50 |
| 12 | 38.50 | **IMC 1,5/12-G-3,5 P20 THR** | **1830511** | 50 |

Pin length of 2.0 mm, with snap-in lug,
box-packaged headers,
plug-in direction parallel to the PCB

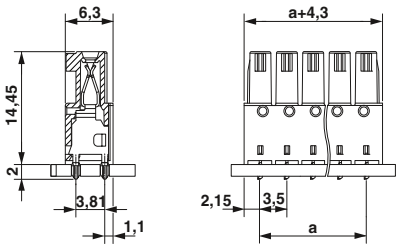
2.0 mm pin length
Box-packaged headers,
Plug-in direction vertical to the PCB

Pin length of 2.0 mm, with snap-in lug,
box-packaged headers,
plug-in direction vertical to the PCB

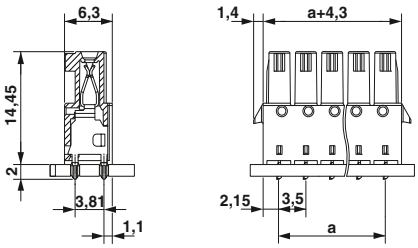
## Dimensional drawing



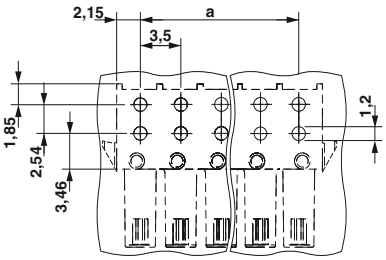

## Dimensional drawing



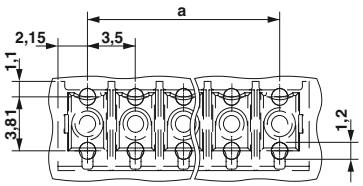

## Dimensional drawing



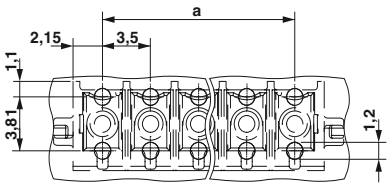

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| IMC 1,5/ 2-G-3,5 RN P20 THR | 1830566 | 50 |
| IMC 1,5/ 3-G-3,5 RN P20 THR | 1830579 | 50 |
| IMC 1,5/ 4-G-3,5 RN P20 THR | 1830582 | 50 |
| IMC 1,5/ 5-G-3,5 RN P20 THR | 1830595 | 50 |
| IMC 1,5/ 6-G-3,5 RN P20 THR | 1830605 | 50 |
| IMC 1,5/ 7-G-3,5 RN P20 THR | 1830618 | 50 |
| IMC 1,5/ 8-G-3,5 RN P20 THR | 1830621 | 50 |
| IMC 1,5/ 9-G-3,5 RN P20 THR | 1830634 | 50 |
| IMC 1,5/10-G-3,5 RN P20 THR | 1830647 | 50 |
| IMC 1,5/11-G-3,5 RN P20 THR | 1830650 | 50 |
| IMC 1,5/12-G-3,5 RN P20 THR | 1830663 | 50 |

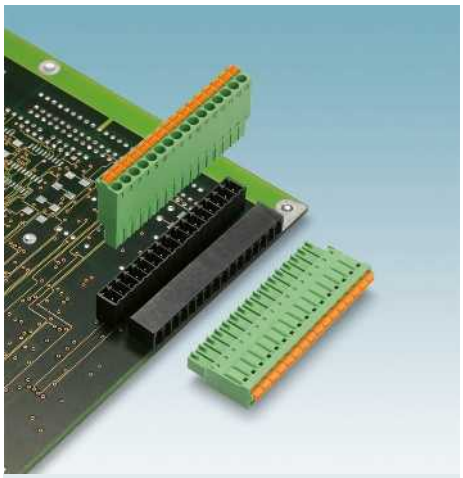
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| IMCV 1,5/ 2-G-3,5 P20 THR | 1830715 | 50 |
| IMCV 1,5/ 3-G-3,5 P20 THR | 1830728 | 50 |
| IMCV 1,5/ 4-G-3,5 P20 THR | 1830731 | 50 |
| IMCV 1,5/ 5-G-3,5 P20 THR | 1830744 | 50 |
| IMCV 1,5/ 6-G-3,5 P20 THR | 1830757 | 50 |
| IMCV 1,5/ 7-G-3,5 P20 THR | 1830760 | 50 |
| IMCV 1,5/ 8-G-3,5 P20 THR | 1830773 | 50 |
| IMCV 1,5/ 9-G-3,5 P20 THR | 1830786 | 50 |
| IMCV 1,5/10-G-3,5 P20 THR | 1830799 | 50 |
| IMCV 1,5/11-G-3,5 P20 THR | 1830809 | 50 |
| IMCV 1,5/12-G-3,5 P20 THR | 1830812 | 50 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **Pitch 3.5 mm, color: black** | | |
| IMCV 1,5/ 2-G-3,5 RN P20 THR | 1830867 | 50 |
| IMCV 1,5/ 3-G-3,5 RN P20 THR | 1830870 | 50 |
| IMCV 1,5/ 4-G-3,5 RN P20 THR | 1830883 | 50 |
| IMCV 1,5/ 5-G-3,5 RN P20 THR | 1830896 | 50 |
| IMCV 1,5/ 6-G-3,5 RN P20 THR | 1830906 | 50 |
| IMCV 1,5/ 7-G-3,5 RN P20 THR | 1830919 | 50 |
| IMCV 1,5/ 8-G-3,5 RN P20 THR | 1830922 | 50 |
| IMCV 1,5/ 9-G-3,5 RN P20 THR | 1830935 | 50 |
| IMCV 1,5/10-G-3,5 RN P20 THR | 1830948 | 50 |
| IMCV 1,5/11-G-3,5 RN P20 THR | 1830951 | 50 |
| IMCV 1,5/12-G-3,5 RN P20 THR | 1830964 | 50 |

## Single-level header for reflow processes



- 13 to 20 pos. headers with a 3.81 mm pitch
- High-precision pin strips for increased tolerance requirements
- Short 2.0 mm pin for reduced overhang in 1.6 mm PCBs
- You can find user notes and recommendations for the THR procedure in Catalog 1
- For further numbers of positions, visit **phoenixcontact.net/products**

**Notes:**

In accordance with DIN EN 61984, COMBICON connectors have no switching power. During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

**COMBICON select**
Possible combinations for connectors can be found in COMBICON select at **phoenixcontact.net/products**.

CP-MSTB and SK 3,... may only be used after reflow soldering.

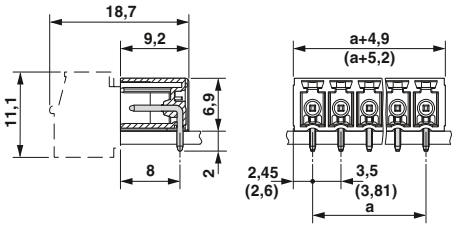
Dimensional drawings of the free space for solder paste, the tape, and pick-and-place pads can be found online at phoenixcontact.net/products.

**Pin length 2.0 mm,**
**Box-packaged headers,**
**Plug-in direction parallel to the PCB**

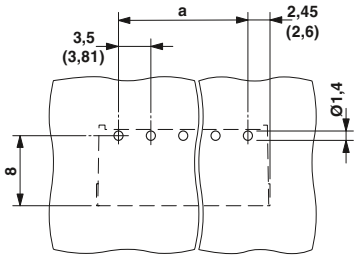
### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Coding profile **CP-MSTB Order No. 1734634** | |
| | Marker cards **SK 3,5/2,8 or SK 3,81/2,8** | 796 |

### Dimensional drawing




### Drilling diagram




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | |
| Rated current | [A] | 8 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 160 | | |
| Pitch | [mm] | 3.81 | | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 160 | 160 | 250 |
| Rated surge voltage | [kV] | 2.5 | 2.5 | 2.5 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Type of insulation material / insulation material group | | LCP / IIIa | | |
| Inflammability class according to UL 94 | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.4 / 0.8 x 0.8 mm | | |

### Ordering data

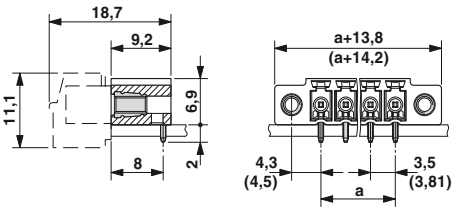
| No. of pos. | Dim. a [mm] | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| | | **3.81 mm pitch, color: black** | | |
| 13 | 45.72 | **MC 1,5/13-G-3,81 P20 THR** | **1829056** | 50 |
| 14 | 49.53 | **MC 1,5/14-G-3,81 P20 THR** | **1829069** | 50 |
| 15 | 53.34 | **MC 1,5/15-G-3,81 P20 THR** | **1829072** | 50 |
| 16 | 57.15 | **MC 1,5/16-G-3,81 P20 THR** | **1829085** | 50 |
| 17 | 60.96 | **MC 1,5/17-G-3,81 P20 THR** | **1829098** | 50 |
| 18 | 64.77 | **MC 1,5/18-G-3,81 P20 THR** | **1829108** | 50 |
| 19 | 68.58 | **MC 1,5/19-G-3,81 P20 THR** | **1829111** | 50 |
| 20 | 72.39 | **MC 1,5/20-G-3,81 P20 THR** | **1829124** | 50 |

**Pin length 2.0 mm, with threaded flange**
**Box-packaged headers,**
**Plug-in direction parallel to the PCB**

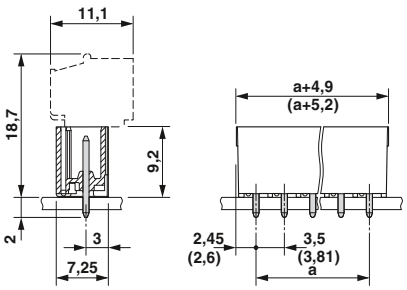
**Pin length 2.0 mm,**
**Box-packaged headers,**
**Plug-in direction vertical to the PCB**

**Pin length 2.0 mm, with threaded flange**
**Box-packaged headers,**
**Plug-in direction vertical to the PCB**

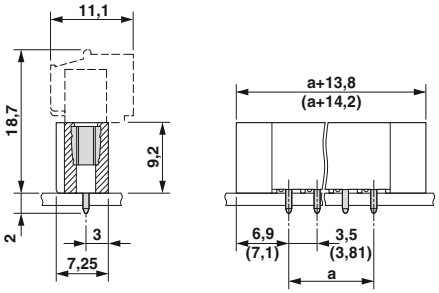
## Dimensional drawing



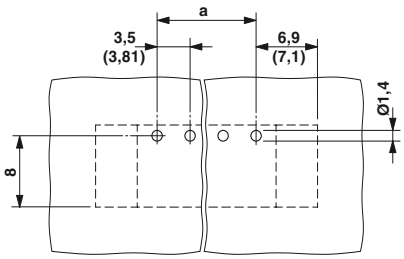

## Dimensional drawing



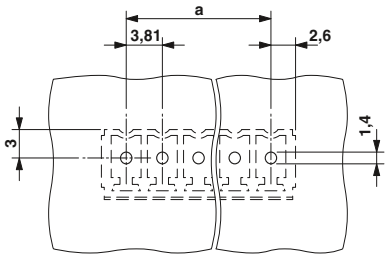

## Dimensional drawing



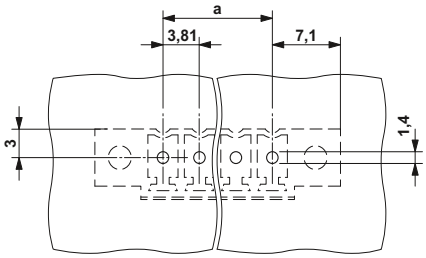

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **3.81 mm pitch, color: black** | | |
| MC 1,5/13-GF-3,81 P20 THR | 1829137 | 50 |
| MC 1,5/14-GF-3,81 P20 THR | 1829140 | 50 |
| MC 1,5/15-GF-3,81 P20 THR | 1829153 | 50 |
| MC 1,5/16-GF-3,81 P20 THR | 1829166 | 50 |
| MC 1,5/17-GF-3,81 P20 THR | 1829179 | 50 |
| MC 1,5/18-GF-3,81 P20 THR | 1829182 | 50 |
| MC 1,5/19-GF-3,81 P20 THR | 1829195 | 50 |
| MC 1,5/20-GF-3,81 P20 THR | 1829205 | 50 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **3.81 mm pitch, color: black** | | |
| MCV 1,5/13-G-3,81 P20 THR | 1828895 | 50 |
| MCV 1,5/14-G-3,81 P20 THR | 1828905 | 50 |
| MCV 1,5/15-G-3,81 P20 THR | 1828918 | 50 |
| MCV 1,5/16-G-3,81 P20 THR | 1828921 | 50 |
| MCV 1,5/17-G-3,81 P20 THR | 1828934 | 50 |
| MCV 1,5/18-G-3,81 P20 THR | 1828947 | 50 |
| MCV 1,5/19-G-3,81 P20 THR | 1828950 | 50 |
| MCV 1,5/20-G-3,81 P20 THR | 1828963 | 50 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **3.81 mm pitch, color: black** | | |
| MCV 1,5/13-GF-3,81 P20 THR | 1828976 | 50 |
| MCV 1,5/14-GF-3,81 P20 THR | 1828989 | 50 |
| MCV 1,5/15-GF-3,81 P20 THR | 1828992 | 50 |
| MCV 1,5/16-GF-3,81 P20 THR | 1829001 | 50 |
| MCV 1,5/17-GF-3,81 P20 THR | 1829014 | 50 |
| MCV 1,5/18-GF-3,81 P20 THR | 1829027 | 50 |
| MCV 1,5/19-GF-3,81 P20 THR | 1829030 | 50 |
| MCV 1,5/20-GF-3,81 P20 THR | 1829043 | 50 |

## Single-level header for reflow processes

- 13 to 20 pos. headers with a 3.81 mm pitch
- High-precision pin strips for increased tolerance requirements
- Short 2.0 mm pin for reduced overhang in 1.6 mm PCBs
- Tape-on-reel packing according to IEC 60286-3 for automated mounting
- Tape width corresponds to order designation, e.g., R32 = 32 mm tape width
- You can find user notes and recommendations for the THR procedure in Catalog 1
- For further numbers of positions, visit **phoenixcontact.net/products**

**Notes:**

In accordance with DIN EN 61984, COMBICON connectors have no switching power. During designated use, they must not be plugged in or disconnected when carrying voltage or under load.

**COMBICON select**
Possible combinations for connectors can be found in COMBICON select at **phoenixcontact.net/products**.

CP-MSTB and SK 3,... may only be used after reflow soldering.

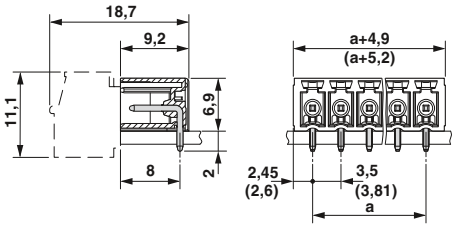
Pick and place pads for taped THR articles usually protrude beyond the components. The PCB layout must ensure that collisions are avoided when components are assembled. Dimensional drawings of the pick and place pads can be found online at phoenixcontact.net/products.

**Pin length 2.0 mm,**
**Taped headers,**
**Plug-in direction parallel to the PCB**

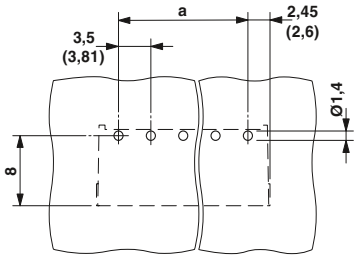
### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Coding profile **CP-MSTB Order No. 1734634** | |
| | Marker cards **SK 3,5/2,8 or SK 3,81/2,8** | 796 |

### Dimensional drawing




### Drilling diagram




### Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | |
| Rated current | [A] | | 8 | |
| Rated insulation voltage for pollution degree 2 | [V] | | - | |
| Pitch | [mm] | | - | |
| Insulation coordination | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 160 | | |
| Rated surge voltage | [kV] | | | |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Type of insulation material / insulation material group | | | - / - | |
| Inflammability class according to UL 94 | | | - | |

### Ordering data

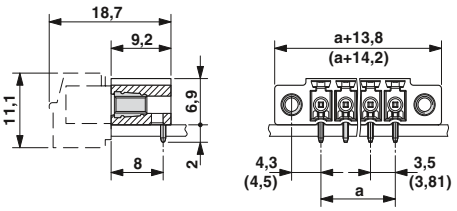
| No. of pos. | Dim. a [mm] | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| | | **3.81 mm pitch, color: black** | | |
| 13 | 45.72 | **MC 1,5/13-G-3,81 P20 THRR72** | **1828691** | 470 |
| 14 | 49.53 | **MC 1,5/14-G-3,81 P20 THRR88** | **1828701** | 470 |
| 15 | 53.34 | **MC 1,5/15-G-3,81 P20 THRR88** | **1828714** | 470 |
| 16 | 57.15 | **MC 1,5/16-G-3,81 P20 THRR88** | **1828727** | 470 |
| 17 | 60.96 | **MC 1,5/17-G-3,81 P20 THRR88** | **1828730** | 470 |
| 18 | 64.77 | **MC 1,5/18-G-3,81 P20 THRR88** | **1828743** | 470 |
| 19 | 68.58 | **MC 1,5/19-G-3,81 P20 THRR104** | **1828756** | 470 |
| 20 | 72.39 | **MC 1,5/20-G-3,81 P20 THRR104** | **1828769** | 470 |

**Pin length 2.0 mm, with threaded flange,**
**Taped headers,**
**Plug-in direction parallel to the PCB**

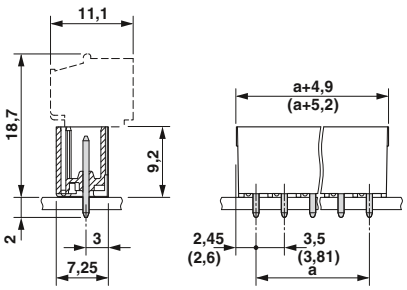
**Pin length 2.0 mm,**
**Taped headers,**
**Plug-in direction vertical to the PCB**

**Pin length 2.0 mm, with threaded flange,**
**Taped headers,**
**Plug-in direction vertical to the PCB**

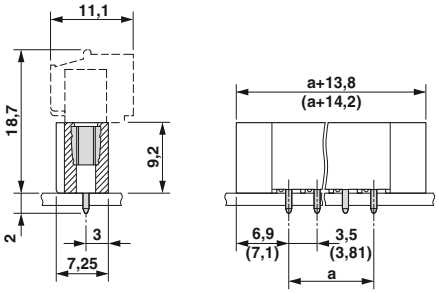
## Dimensional drawing



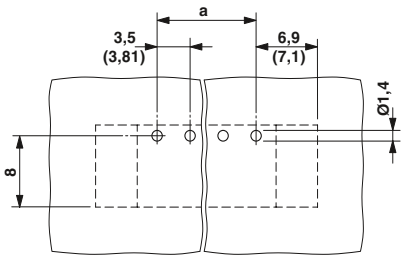

## Dimensional drawing



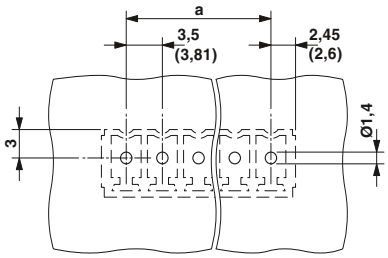

## Dimensional drawing



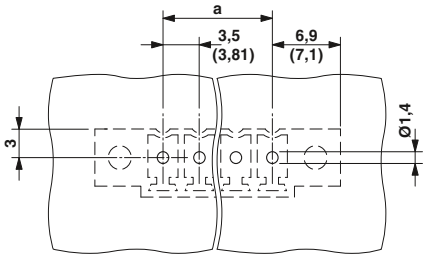

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **3.81 mm pitch, color: black** | | |
| MC 1,5/13-GF-3,81 P20 THRR72 | 1828772 | 470 |
| MC 1,5/14-GF-3,81 P20 THRR88 | 1828785 | 470 |
| MC 1,5/15-GF-3,81 P20 THRR88 | 1828798 | 470 |
| MC 1,5/16-GF-3,81 P20 THRR88 | 1828808 | 470 |
| MC 1,5/17-GF-3,81 P20 THRR88 | 1828811 | 470 |
| MC 1,5/18-GF-3,81 P20 THRR88 | 1828824 | 470 |
| MC 1,5/19-GF-3,81 P20 THRR104 | 1828837 | 470 |
| MC 1,5/20-GF-3,81 P20 THRR104 | 1828840 | 470 |

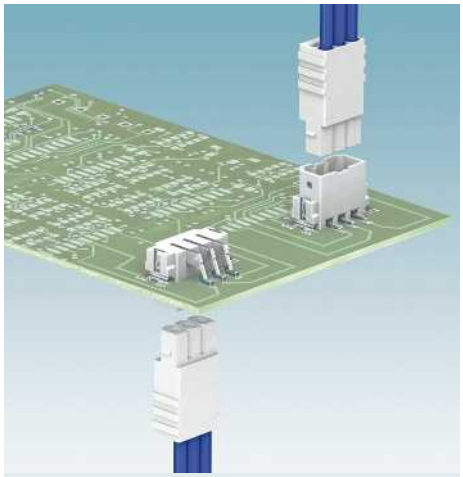
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **3.81 mm pitch, color: black** | | |
| MCV 1,5/13-G-3,81 P20 THRR72 | 1828536 | 200 |
| MCV 1,5/14-G-3,81 P20 THRR88 | 1828549 | 200 |
| MCV 1,5/15-G-3,81 P20 THRR88 | 1828522 | 200 |
| MCV 1,5/16-G-3,81 P20 THRR88 | 1828565 | 200 |
| MCV 1,5/17-G-3,81 P20 THRR88 | 1828578 | 200 |
| MCV 1,5/18-G-3,81 P20 THRR88 | 1828581 | 200 |
| MCV 1,5/19-G-3,81 P20 THRR104 | 1828594 | 200 |
| MCV 1,5/20-G-3,81 P20 THRR104 | 1828604 | 200 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **3.81 mm pitch, color: black** | | |
| MCV 1,5/13-GF-3,81 P20 THRR72 | 1828617 | 200 |
| MCV 1,5/14-GF-3,81 P20 THRR88 | 1828620 | 200 |
| MCV 1,5/15-GF-3,81 P20 THRR88 | 1828633 | 200 |
| MCV 1,5/16-GF-3,81 P20 THRR88 | 1828646 | 200 |
| MCV 1,5/17-GF-3,81 P20 THRR88 | 1828659 | 200 |
| MCV 1,5/18-GF-3,81 P20 THRR88 | 1828662 | 200 |
| MCV 1,5/19-GF-3,81 P20 THRR104 | 1828675 | 200 |
| MCV 1,5/20-GF-3,81 P20 THRR104 | 1828688 | 200 |

## Plug with spring-cage connection up to 0.75 mm²



- Specifically designed for use in reflow and SMT processes
- High current carrying capacity of 6 A
- Robust solder anchor for secure, mechanical fixing to the surface
- Supplied in taped packaging according to IEC 60286-3 for automatic assembly
- Compatible with PTSM...-/PTPM...plugs
- 2.5 mm pitch

**Notes:**

PTSM plugs and headers are also available in black.

**COMBICON select**
Possible combinations for connectors can be found in COMBICON select at **phoenixcontact.net/products**.

Pick and place pads for taped THR articles usually protrude beyond the components. The PCB layout must ensure that collisions are avoided when components are assembled. Dimensional drawings of the pick and place pads can be found online at phoenixcontact.net/products.

[1]) Current carrying dependent upon plug used

[2]) 0.75 mm²possible, terminates the conductor insulation before the terminal block.

### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Screwdriver **SZS 0,4 X 2,0 Order No. 1205202** | |
| | Ferrules with and without plastic sleeve | 834 |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |

## Technical data

| | | PTSM 0,5/...-HV-2,5-SMD R.. | | | PTSM 0,5/ ...-HTB-2,5-SMD WH R32 | | | PTSM 0,5/ 1-2,5-H SMD WH L R24 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | | | | | | | |
| Rated current | [A] | 6[1]) | | | 6[1]) | | | 6[1]) / 0.5 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 160 | | | 160 | | | 250 | | |
| Pitch | [mm] | 2.5 | | | 2.5 | | | - | | |
| Connection capacity | | | | | | | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | - / - / - | | | - / - / - | | | 0.14 - 0.5 / 0.2 - 0.5[2]) / 26 - 20 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | - | | | - | | | 0.25 - 0.5 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | - | | | - | | | - | | |
| 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] | 125 | 160 | 250 | 125 | 160 | 250 | 63 | 250 | 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] | - | - | - | - | - | - | 150 | - | - |
| Nominal current | [A] | - | - | - | - | - | - | 5 | - | - |
| Connection capacity AWG | AWG | - | - | - | - | - | - | 26-20 | - | - |
| 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 / insulation material group | | PA / I | | | PA / I | | | PA / I | | |
| Inflammability class according to UL 94 | | V0 | | | V0 | | | V0 | | |

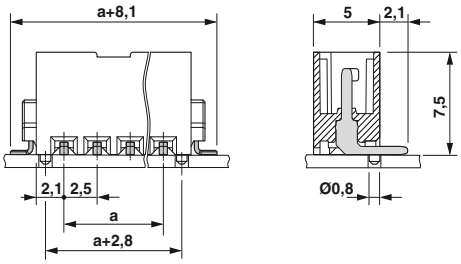
| No. of pos. | Dim. a [mm] |
|---|---|
| 1 | |
| 2 | 2.50 |
| 3 | 5.00 |
| 4 | 7.50 |
| 5 | 10.00 |
| 6 | 12.50 |
| 7 | 15.00 |
| 8 | 17.50 |

Vertical header
for SMD applications

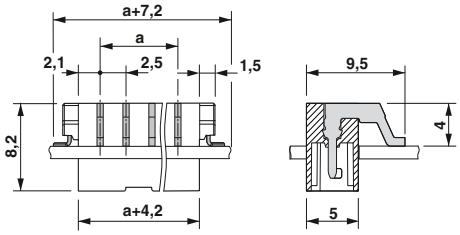
Through board header
for SMD applications

1-pos. horizontal PCB terminal block for SMD
applications

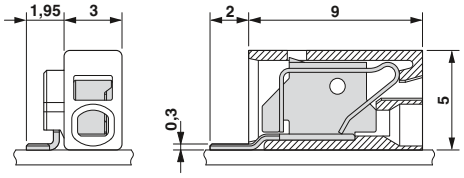
## Dimensional drawing



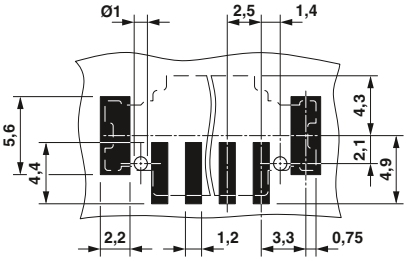

## Dimensional drawing



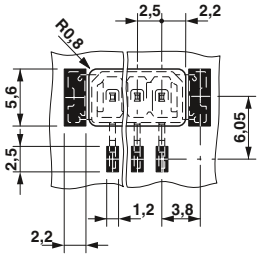

## Dimensional drawing



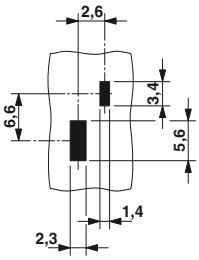

## Drilling diagram




## Drilling diagram




## Drilling diagram




## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 2.5 mm pitch, color: white | | |
| PTSM 0,5/ 2-HV-2,5-SMD WH R32 | 1778696 | 500 |
| PTSM 0,5/ 3-HV-2,5-SMD WH R32 | 1778706 | 500 |
| PTSM 0,5/ 4-HV-2,5-SMD WH R44 | 1778719 | 400 |
| PTSM 0,5/ 5-HV-2,5-SMD WH R44 | 1778722 | 400 |
| PTSM 0,5/ 6-HV-2,5-SMD WH R44 | 1778735 | 400 |
| PTSM 0,5/ 7-HV-2,5-SMD WH R44 | 1778748 | 400 |
| PTSM 0,5/ 8-HV-2,5-SMD WH R44 | 1778751 | 400 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 2.5 mm pitch, color: white | | |
| PTSM 0,5/ 2-HTB-2,5-SMD WH R32 | 1830126 | 330 |
| PTSM 0,5/ 3-HTB-2,5-SMD WH R32 | 1830139 | 330 |
| PTSM 0,5/ 4-HTB-2,5-SMD WH R44 | 1830142 | 330 |
| PTSM 0,5/ 5-HTB-2,5-SMD WH R44 | 1830155 | 330 |
| PTSM 0,5/ 6-HTB-2,5-SMD WH R44 | 1830168 | 330 |
| PTSM 0,5/ 7-HTB-2,5-SMD WH R44 | 1830171 | 330 |
| PTSM 0,5/ 8-HTB-2,5-SMD WH R44 | 1830184 | 330 |

## Ordering data

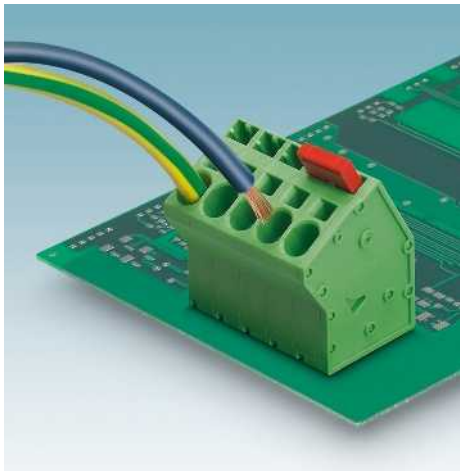
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 2.5 mm pitch, color: white | | |
| PTSM 0,5/ 1-2,5-H SMD WH L R24 | 1840035 | 1000 |

## PCB terminal blocks, 7.5 mm pitch

**Notes:**

When aligning versions with double pinning, other rated insulation voltages can occur.

[1]) Please observe the current carrying capacity curves and laboratory data sheets. Further current carrying capacity curves on request.



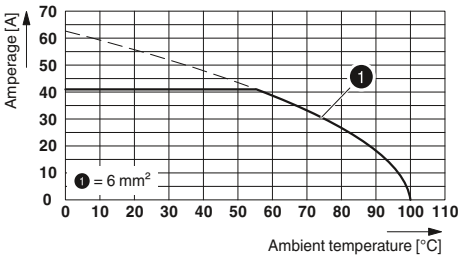
- SPTA 5 PCB terminal block with push-in spring connection for conductor cross sections up to 6 mm² and a current carrying capacity of 41 A
- Fully insulated bridges (FBSK) with different numbers of positions, e.g., for potential distribution
- Fast connection technology, thanks to tool-free direct plug-in principle
- Unrestricted 600-V-UL approval thanks to compact zig-zag pinning
- Conductor connection direction: 30° to the PCB
- Single-position terminal blocks with double pinning

### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Screwdriver **SZF 1-0,6 x 3,5 Order No. 1204517** | |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |
| | Ferrules with and without plastic sleeve | 834 |
| | Bridge **FBSK ...-7,5** | 830 |

### Current carrying capacity curve

**Type: SPTA 5/...-7,5**
Tested according to DIN EN 60512-5-2:2003-01
Reduction factor = 1
Number of positions: 4




### Technical data

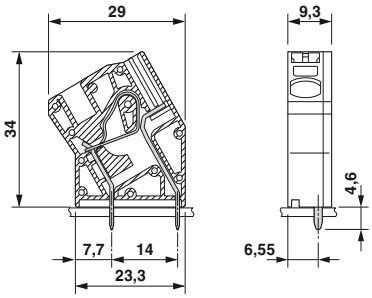
| | | SPTA 5/1-7,5 | | | SPTA 5/...-7,5-ZB | | |
|---|---|---|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | | | | |
| Rated current / conductor cross section | [A] / [mm²] | 41[1]) / 6 | | | 41[1]) / 6 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 1000 | | | 1000 | | |
| Pitch | [mm] | 7.5 | | | 7.5 | | |
| Connection capacity | | | | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 0.2 - 6 / 0.2 - 6 / 24 - 8 | | | 0.2 - 6 / 0.2 - 6 / 24 - 8 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.25 - 6 | | | 0.25 - 6 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.25 - 4 | | | 0.25 - 4 | | |
| Multi-conductor connection capacity (two conductors with the same cross section) | | | | | | | |
| Solid / stranded | [mm²] | - / - | | | - / - | | |
| Stranded with ferrules without plastic sleeve | [mm²] | - | | | - | | |
| 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] | 630 | 1000 | 1000 | 800 | 1000 | 1000 |
| Rated surge voltage | [kV] | 6 | 6 | 6 | 8 | 8 | 6 |
| Approval data (UL/CUL) | Use Group | B | C | D | B | C | D |
| Nominal voltage | [V] | - | - | - | - | - | - |
| Nominal current | [A] | - | - | - | - | - | - |
| 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] | 15 | | | 15 | | |
| Type of insulation material / insulation material group | | PA / I | | | PA / I | | |
| Inflammability class according to UL 94 | | V0 | | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 2.1 / 1.7 x 0.8 | | | 2.1 / 1.7 x 0.8 | | |

| No. of pos. | Dim. a [mm] |
|---|---|
| 1 | 0.00 |
| 2 | 7.50 |
| 3 | 15.00 |
| 4 | 22.50 |
| 5 | 30.00 |
| 6 | 37.50 |
| 7 | 45.00 |
| 8 | 52.50 |
| 9 | 60.00 |
| 10 | 67.50 |
| 11 | 75.00 |
| 12 | 82.50 |

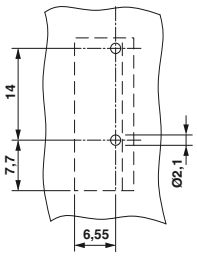
Single PCB terminal block, 30° angled connection direction, double pinning

30° angled connection direction, zigzag pinning, 600 V UL approval

## Dimensional drawing



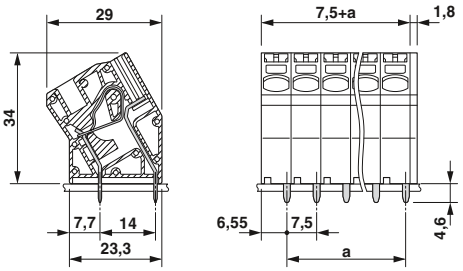

## Drilling diagram



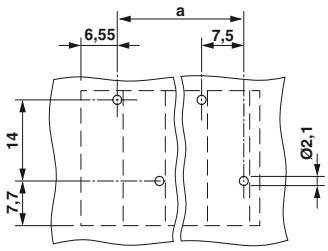

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 7.5 mm pitch, color: green | | |
| SPTA 5/ 1-7,5 | 1819079 | 50 |

## Dimensional drawing




## Drilling diagram




## Ordering data

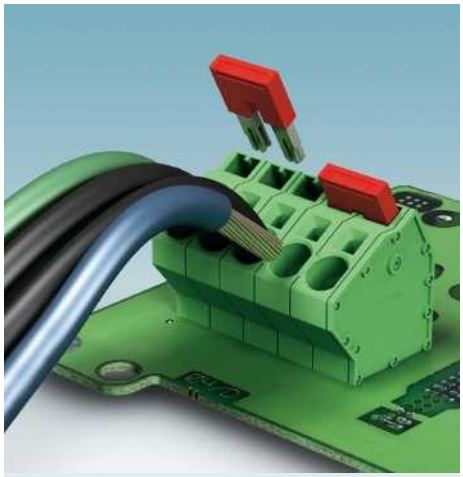
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 7.5 mm pitch, color: green | | |
| SPTA 5/ 2-7,5-ZB | 1819082 | 50 |
| SPTA 5/ 3-7,5-ZB | 1819095 | 50 |
| SPTA 5/ 4-7,5-ZB | 1819105 | 50 |
| SPTA 5/ 5-7,5-ZB | 1819118 | 50 |
| SPTA 5/ 6-7,5-ZB | 1819121 | 50 |
| SPTA 5/ 7-7,5-ZB | 1819134 | 50 |
| SPTA 5/ 8-7,5-ZB | 1819147 | 50 |
| SPTA 5/ 9-7,5-ZB | 1819150 | 50 |
| SPTA 5/10-7,5-ZB | 1819163 | 50 |
| SPTA 5/11-7,5-ZB | 1819176 | 50 |
| SPTA 5/12-7,5-ZB | 1819189 | 50 |

## PCB terminal blocks, angled, 10 mm pitch

**Notes:**

When aligning versions with double pinning, other rated insulation voltages can occur.

[1]) Please observe the current carrying capacity curves and laboratory data sheets. Further current carrying capacity curves on request.



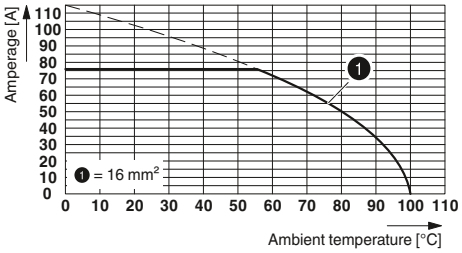
- SPTA 16 PCB terminal block with push-in spring connection for conductor cross sections up to 16 mm² and a current carrying capacity of 76 A
- Fully insulated bridges (FBSK) with different number of positions, e. g. for potential distribution
- Fast connection method thanks to principle of direct plug-in without tools
- Unrestricted 600-V-UL approval thanks to compact zig-zag pinning
- Conductor connection direction: 30° to the PCB
- Single-position terminal blocks with double pinning

### For accessories, see Catalog 1

| For all types | Type | Page |
|---|---|---|
| | Screwdriver **SZF 2-0,8 x4,0 Order No. 1204520** | |
| | Crimping pliers for 0.25 to 6 mm² **CRIMPFOX 6 Order No. 1212034** | |
| | Crimping pliers for 10 to 16 mm² **CRIMPFOX 16 S Order No. 1207983** | |
| | Fixed bridge **FBSK ...-10/ZFKDS 10** | 830 |

### Current carrying capacity curve

**Type: SPTA 16/...-10,0**
Tested according to DIN EN 60512-5-2:2003-01
Reduction factor = 1
Number of positions: 4




### Technical data

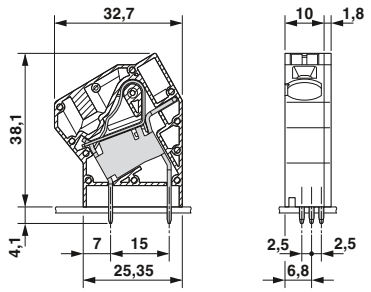
| | | SPTA 16/1-10,0 | | | SPTA 16/...-10,0-ZB | | |
|---|---|---|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | | | | |
| Rated current / conductor cross section | [A] / [mm²] | 76[1]) / 10 | | | 76[1]) / 10 | | |
| Rated insulation voltage for pollution degree 2 | [V] | 1000 | | | 1000 | | |
| Pitch | [mm] | 10 | | | 10 | | |
| Solid & multi-strand / stranded | [mm²] / [mm²] / AWG | 0.75 - 10 / 0.75 - 16 / 18 - 4 | | | 0.75 - 10 / 0.75 - 16 / 18 - 4 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 0.75 - 16 | | | 0.75 - 16 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 0.75 - 10 | | | 0.75 - 10 | | |
| Multi-conductor connection capacity (two conductors with the same cross section) | | | | | | | |
| Solid & multi-strand / stranded | [mm²] | - / - | | | - / - | | |
| Stranded with ferrules without plastic sleeve | [mm²] | - | | | - | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 0.75 - 4 | | | 0.75 - 4 | | |
| Insulation coordination | | | | | | | |
| Surge voltage category / pollution degree | | III / 3 | III / 2 | II / 2 | III / 3 | III / 2 | II / 2 |
| Rated insulation voltage | [V] | 1000 | 1000 | 1000 | 1000 | 1000 | 1000 |
| Rated surge voltage | [kV] | 8 | 8 | 6 | 8 | 8 | 6 |
| Approval data (UL/CUL) | Use Group | B | C | D | B | C | D |
| Nominal voltage | [V] | - | - | - | - | - | - |
| Nominal current | [A] | - | - | - | - | - | - |
| 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] | 18 | | | 18 | | |
| Type of insulation material / insulation material group | | PA / I | | | PA / I | | |
| Inflammability class according to UL 94 | | V0 | | | V0 | | |
| Drill hole diameter / pin dimensions | [mm] | 1.7 / 1.2 x 1 | | | 1.7 / 1.2 x 1 | | |

| No. of pos. | Dim. a [mm] |
|---|---|
| 1 | 0.00 |
| 2 | 10.00 |
| 3 | 20.00 |
| 4 | 30.00 |
| 5 | 40.00 |
| 6 | 50.00 |
| 7 | 60.00 |
| 8 | 70.00 |
| 9 | 80.00 |

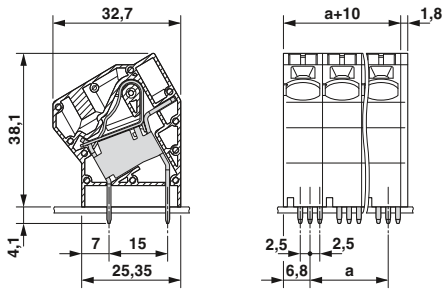
Single PCB terminal block,
30° angled connection direction,
double pinning

30° angled connection direction,
zigzag pinning, 600 V UL approval

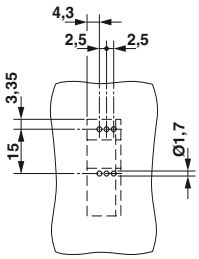
## Dimensional drawing



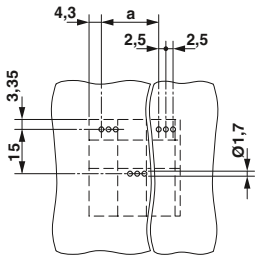

## Dimensional drawing




## Drilling diagram




## Drilling diagram

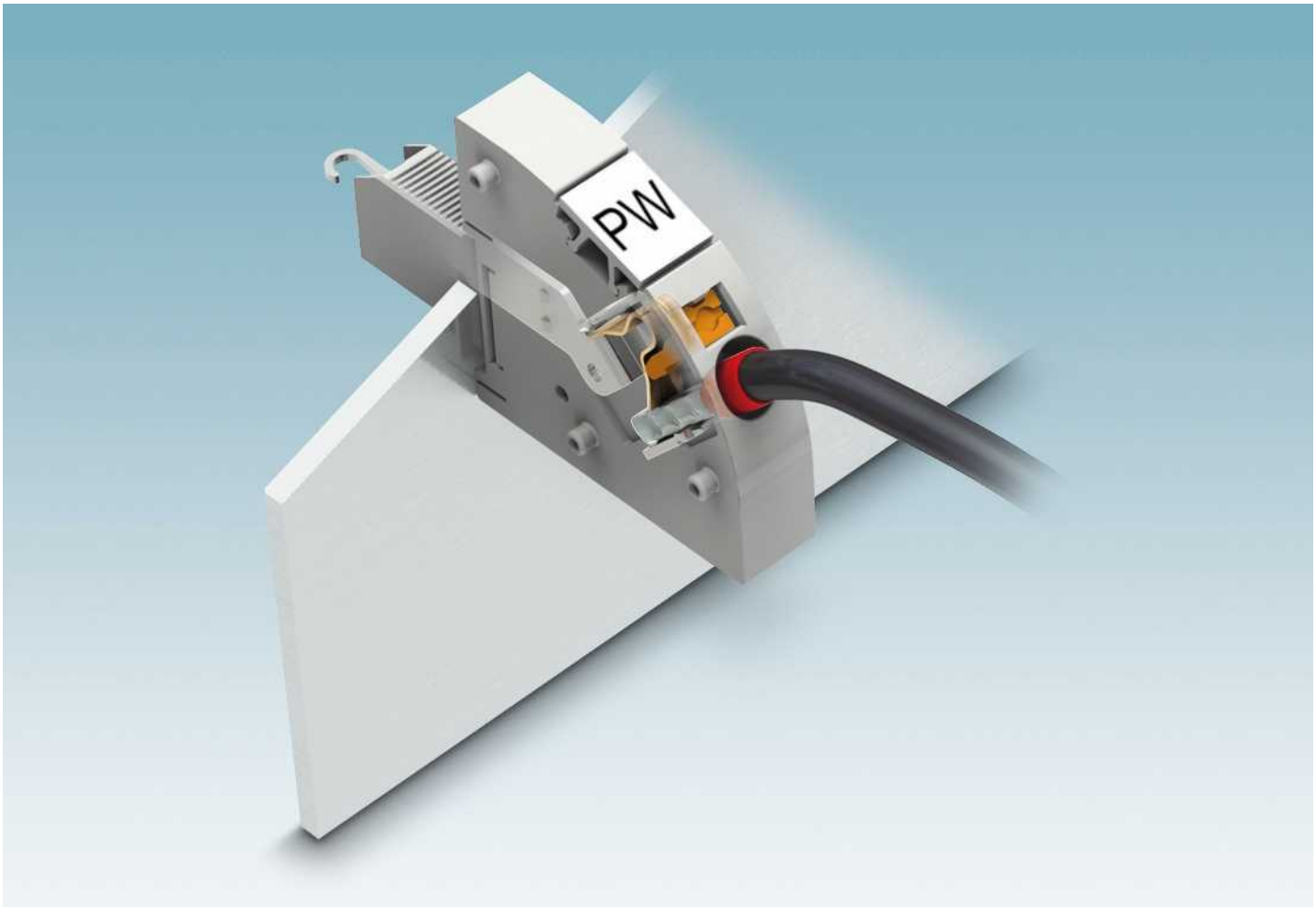



## Ordering data

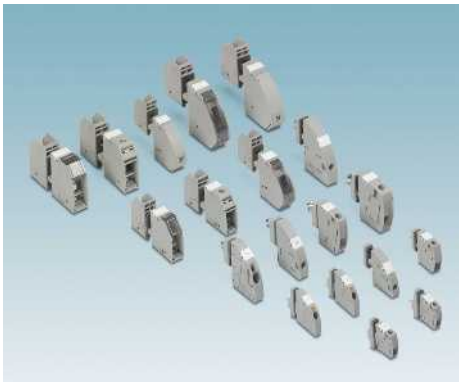
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 10 mm pitch, color: green | | |
| SPTA 16/ 1-10,0 | 1819192 | 50 |

## Ordering data

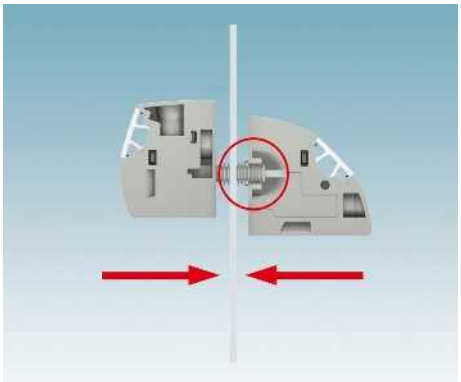
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| 10 mm pitch, color: green | | |
| SPTA 16/ 2-10,0-ZB | 1819202 | 50 |
| SPTA 16/ 3-10,0-ZB | 1819215 | 50 |
| SPTA 16/ 4-10,0-ZB | 1819228 | 50 |
| SPTA 16/ 5-10,0-ZB | 1819231 | 50 |
| SPTA 16/ 6-10,0-ZB | 1819244 | 50 |
| SPTA 16/ 7-10,0-ZB | 1819257 | 50 |
| SPTA 16/ 8-10,0-ZB | 1819260 | 50 |
| SPTA 16/ 9-10,0-ZB | 1819273 | 50 |



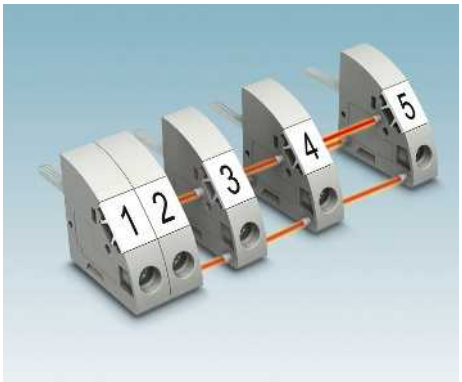

The 45° push-in spring connection enables quick, tool-free, and space-saving connection. The solid conductor or a conductor with ferrule is simply inserted into the terminal point and pressed against the current bar by the spring. It is only when fine-strand conductors without ferrules are connected and when this connection is released that it is necessary to use a standard bladed screwdriver. The perfect connection for rapid wiring in the field.



Optimally seal the potting compounds - molded feed-through terminal blocks from Phoenix Contact



The terminal blocks consist of an internal and external element. These pass through the housing panel and snap together without the need for tools. The engagement mechanism ensures a tight fit, however thick the panel.




The various engagement pin versions can be used to create pre-assembled blocks for fast mounting.

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

- Outside the device with convenient push-in connection
- Inside the device with classic screw connection
- The two halves of the terminal can be easily assembled by simply snapping them together
- Automatic panel thickness compensation
- Flange plates as alternative mounting options

**Notes:**

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

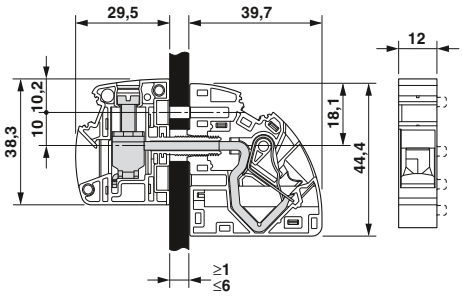
Corresponding screws for fixing the panel feed-through terminal blocks are supplied as standard.

**16 mm² panel feed-through terminal block, external part with push-in connection, internal part with screw connection**

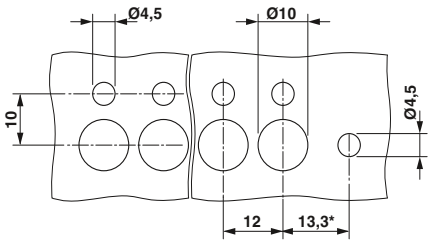
## Accessories

| For all types | Type |
|---|---|
| | Flange plate<br>**PWO 16-F**<br>**Order No.**<br>**1705659** |

## Dimensional drawing




## Drilling diagram




## Technical data

| | | | | |
|---|---|---|---|---|
| Technical data in accordance to IEC / DIN VDE | | | | |
| Current/conductor cross section | [A] / [mm²] | 76 / 16 // 76 / 16 | | |
| Rated voltage | [V] | 1000 | | |
| Connection capacity | | | | |
| Solid / stranded | [mm²] / [mm²] / AWG | 1.5 - 16 / 1.5 - 16 / 14 - 4 | | |
| Stranded with ferrules without plastic sleeve | [mm²] | 1.5 - 16 | | |
| Stranded with ferrules with plastic sleeve | [mm²] | 1.5 - 16 | | |
| Multi-conductor connection capacity (two conductors with the same cross section) | | | | |
| Solid / stranded | [mm²] | - / - | | |
| Stranded with ferrules without plastic sleeve | [mm²] | - | | |
| Stranded with TWIN ferrule with plastic sleeve | [mm²] | 1.5 - 4 | | |
| 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 | 1000 | 1000 |
| Rated surge voltage | [kV] | 6 | 6 | 6 |
| Approval data (UL/CUL) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| Approval data (CSA) | Use Group | B | C | D |
| Nominal voltage | [V] | - | - | - |
| Nominal current | [A] | - | - | - |
| Connection capacity AWG | AWG | - | - | - |
| General data | | | | |
| Stripping length | [mm] | 18 | | |
| Cable lug connection: thread / tightening torque | | | | |
| Insulation material | | PA | | |
| Inflammability class according to UL 94 | | V0 | | |
| Panel thickness | [mm] | 1 - 6 | | |

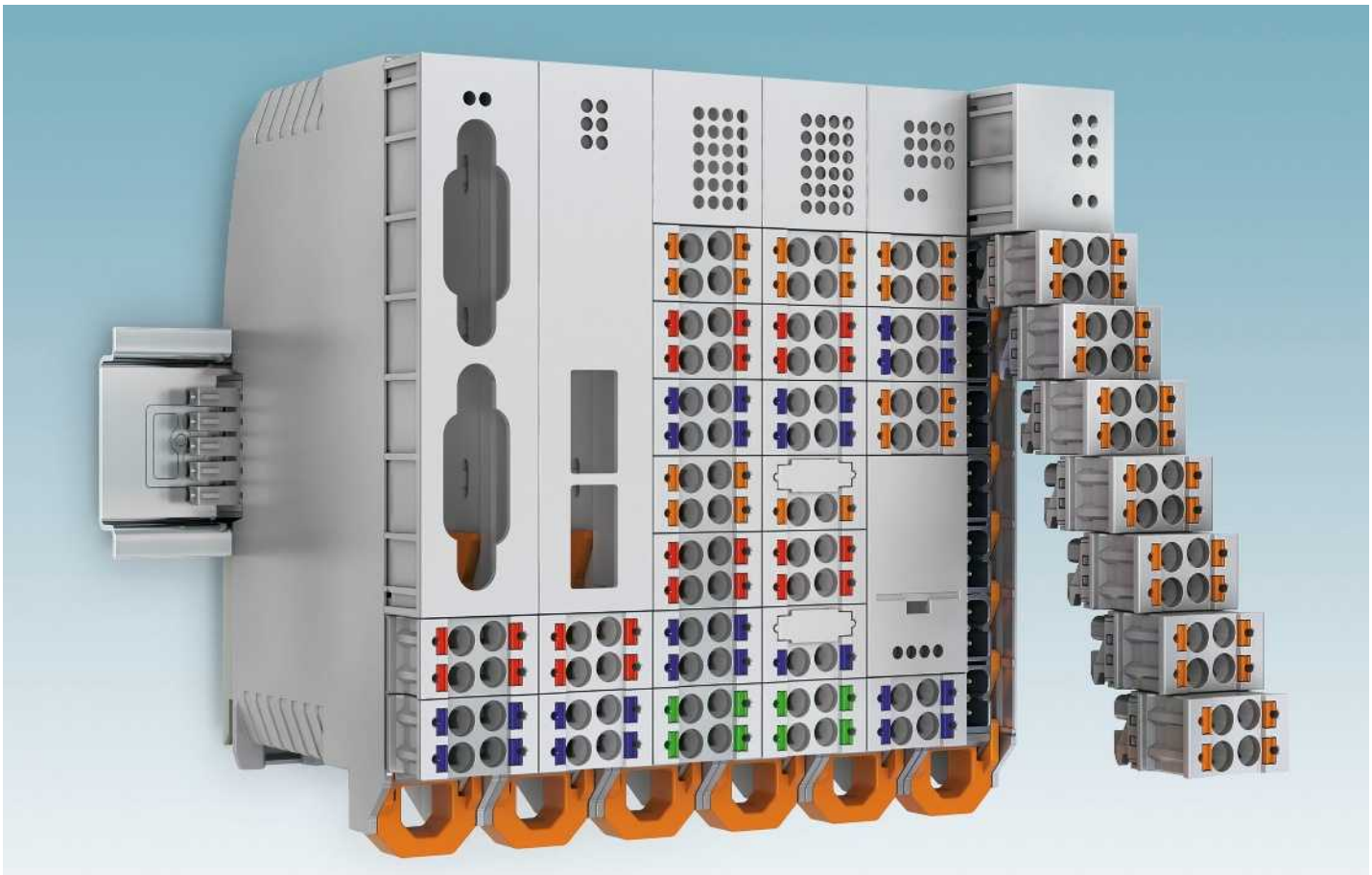
## Ordering data

| | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| Description | **Panel feed-through terminal block** | | |
| | **PWO 16-UW** | **1844387** | 50 |
| | **Panel feed-through terminal block, with engagement pin** | | |
| | **PWO 16-UW/S** | **1844390** | 50 |

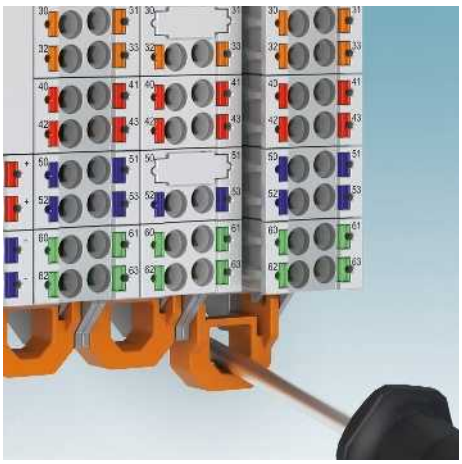
**ZB 12.../ZBF 12... marking material (see Catalog 5)**

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

## Electronics housing for industrial electronics and semi-industrial applications



The ME-IO housing is particularly suitable for applications with a small amount of installation space. The push-in front connection technology as well as the compact design enable devices with up to 36 positions to be implemented in a confined space.



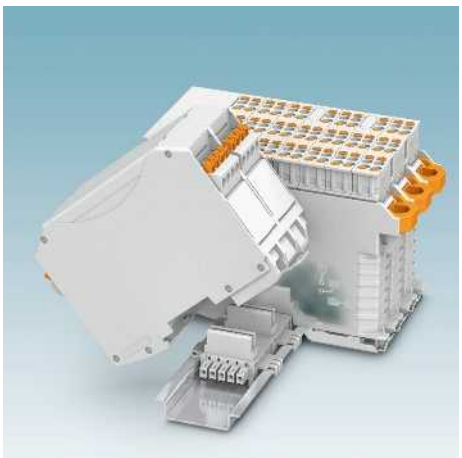
The Lock & Release system provides secure and defined locking and release for plugs and headers.

Releasing the lever automatically ejects the plug from the header. The contact system between the plug and header is interrupted, but the plugs do not fall out.

Coding with CP-DMC... coding profile prevents mismatching in the device.

The HSCP-... plugs and HSCH ... headers are mounted with corresponding CP-DMC ... coding profiles. If the coding profile is mounted between the same positions, the plug cannot be plugged in.

The coding can be implemented later on site or is provided in pre-assembled versions.



The ME 18,8 TBUS connector can be snapped onto the NS 35/7,5 DIN rail to connect individual modules together. This means that the signal and supply voltage can be implemented in the device system without any wiring.

The bus connector is compatible with the bus system of the ME TBUS and ME MAX housing ranges, thereby enabling the creation of complex devices with quick and convenient mounting.

**Flexible modular principle**

The flexible housing concept of ME-IO offers numerous solutions. Thanks to the variety of covering hoods, plugs, and headers, there is no doubt a solution for your special requirements.

An overview of predefined assembly versions is shown on the next page.

**Lock & Release**

The Lock & Release system is available in four lengths. It is available in 3, 5, 7, and 9 units. The length of Lock & Release defines the possible plug area.

**Various covering hoods**

Covering hoods are available in lengths from 2 to 7 units. This means that the appropriate hood can be used for display and operating elements as well as data connectors.

**Plug version with TWIN connection**

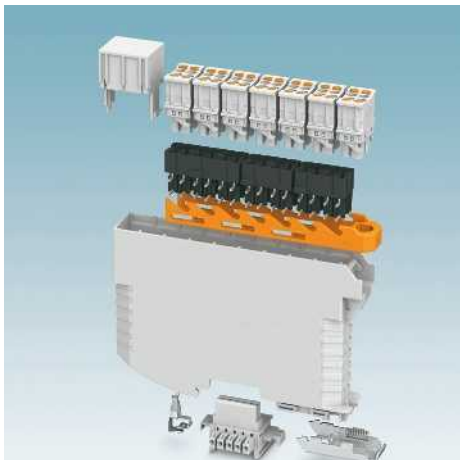
The TWIN connector is characterized by the connection of two conductors to one connection terminal. It is used to loop through signals or to distribute potential or power.

The 2 and 4-pos. plug versions can be flexibly combined for sophisticated device solutions.

**Color options for the plug**

The spring levers of plugs can also be produced in other standard colors. This enables easy conductor/terminal point assignment during installation.

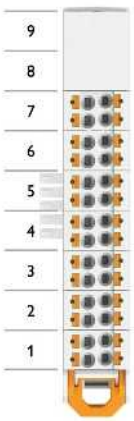
The plug and electronics housing can be produced in non-standard colors as well.

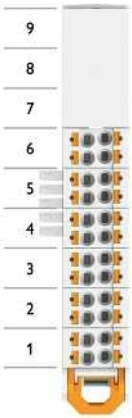


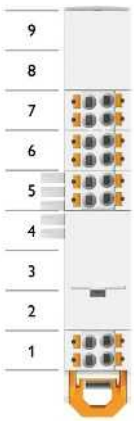
**Exploded view of the ME-IO housing system**

## Electronics housing for industrial electronics and semi-industrial applications

### Matrix for selection



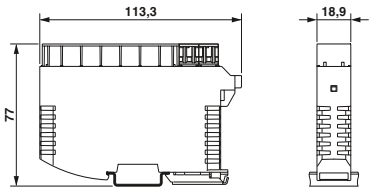



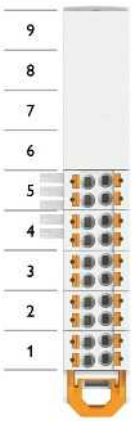
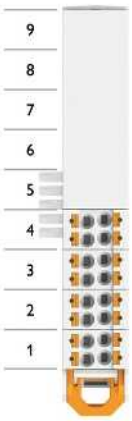
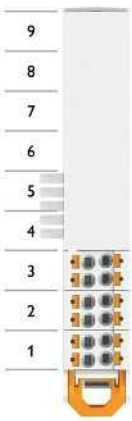
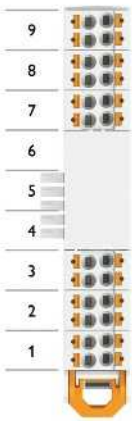
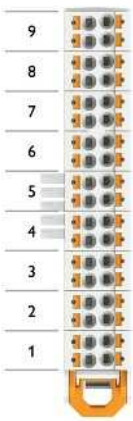




| | Order No. | Type | Example 1: 28-pos. | Example 1: 20-pos. + 4 TWIN connections | Example 1: 26-pos. | Example 2: 24-pos. | Example 2: 6-pos. + 4 TWIN connections | Example 2: 22-pos. | Example 3: 12-pos. + 2 TWIN connections |
|---|---|---|---|---|---|---|---|---|---|
| | | | Quantity (fitted position) | | | Quantity (fitted position) | | | Quantity (fitted position) |
| **Lower housing part with Lock & Release** | | | | | | | | | |
| | 2201960 | ME-IO 18,8 B/FE 9/9U TBUS 7035 | | | | | | | |
| | 2201961 | ME-IO 18,8 B/FE 7/9U TBUS 7035 | 1 x | 1 x | 1 x | 1 x | 1 x | 1 x | 1 x |
| | 2201962 | ME-IO 18,8 B/FE 5/9U TBUS 7035 | | | | | | | |
| | 2201963 | ME-IO 18,8 B/FE 3/9U TBUS 7035 | | | | | | | |
| **Covering hood** | | | | | | | | | |
| | 2201799 | ME-IO 18,8 C 2U 7035 | 1 x (8-9) | 1 x (8-9) | 1 x (8-9) | | | | 1 x (8-9) |
| | 2201800 | ME-IO 18,8 C 3U 7035 | | | | 1 x (7-9) | 1 x (7-9) | 1 x (7-9) | |
| | 2201801 | ME-IO 18,8 C 3U S1 7035 | | | | | | | 1 x (2-4) |
| | 2201802 | ME-IO 18,8 C 4U 7035 | | | | | | | |
| | 2201803 | ME-IO 18,8 C 5U 7035 | | | | | | | |
| | 2201804 | ME-IO 18,8 C 6U 7035 | | | | | | | |
| | 2201805 | ME-IO 18,8 C 7U 7035 | | | | | | | |
| **Header** | | | | | | | | | |
| | 2201788 | HSCH 2,5-3U/12 9005 | 1 x (5-7) | 1 x (5-7) | 1 x (5-7) | | | | 1 x (5-7) |
| | 2201789 | HSCH 2,5-2U/ 8 9005 | 2 x (1-4) | 1 x (3-4) | 1 x (1-2) | 3 x (1-6) | 2 x (3-6) | 2x(1-2 & 5-6) | |
| | 2201790 | HSCH 2,5-2U-TTTT 9005 | | 1 x (1-2) | | | 1 x (1-2) | | |
| | 2201791 | HSCH 2,5-2U-TT00 9005 | | | | | | | 1 x (1-2) |
| | 2201792 | HSCH 2,5-2U-2220 9005 | | | 1 x (3-4) | | | 1 x (3-4) | |
| **Plug with push-in spring connection** | | | | | | | | | |
| | 2201780 | HSCP-SP 2,5-1U/ 4 7035 | 7 x (1-7) | 5 x (3-7) | 6x(1-3 & 5-7) | 6 x (1-6) | 4 x (3-6) | 5x(1-3 & 5-6) | 3 x (5-7) |
| | 2201781 | HSCP-SP 2,5-1U-TT 7035 | | 2 x (1-2) | | | 2 x (1-2) | | 1 x (1) |
| | 2201782 | HSCP-SP 2,5-1U-20 7035 | | | 1 x (4) | | | 1 x (4) | |

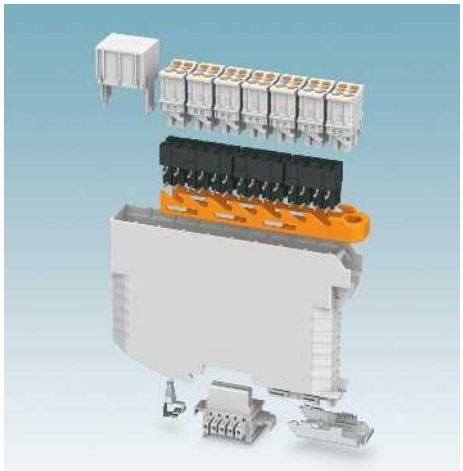
**Notes:**

For the functionality of the Lock & Release system, note the positioning of the header. A side-by-side arrangement of the HSCH 2,5-3U/12 9005 header is not possible.
In the examples, the quantities of covering hoods, headers, and plugs and their respective position for fitting are specified.
Data sheets for the housing system with connectors are available at phoenixcontact.net/products.
Numerous other configurations are possible.



| Example 4 | | | Example 5 | | | Example 6 | Example 7 | | Example 8 | Example 9 |
|---|---|---|---|---|---|---|---|---|---|---|
|  | | |  | | |  | | |  |  |
| 20-pos. | 12-pos. + 4 TWIN connections | 18-pos. | 16-pos. | 8-pos. + 4 TWIN connections | 14-pos. | 12-pos. | 8-pos. | 4 TWIN connections | 24-pos. | 36-pos. |
| Quantity (fitted position) | | | Quantity (fitted position) | | | Quantity (fitted position) | Quantity (fitted position) | | Quantity (fitted position) | Quantity (fitted position) |
| | | | | | | | | | 1 x | 1 x |
| | | | | | | | | | | |
| 1 x | 1 x | 1 x | 1 x | 1 x | 1 x | | | | | |
| | | | | | | 1 x | 1 x | 1 x | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | 1 x (4-6) | |
| | | | | | | | | | | |
| 1 x (6-9) | 1 x (6-9) | 1 x (6-9) | | | | | | | | |
| | | | 1 x (5-9) | 1 x (5-9) | 1 x (5-9) | | | | | |
| | | | | | | 1 x (4-9) | | | | |
| | | | | | | | 1 x (3-9) | 1 x (3-9) | | |
| | | | | | | | | | | |
| 1 x (3-5) | 1 x (3-5) | 1 x (3-5) | | | | 1 x (1-3) | | | 2 x (1-3 & 7-9) | 1 x (7-9) |
| 1 x (1-2) | | | 2 x (1-4) | 1 x (3-4) | 1 x (3-4) | | 1 x (1-2) | | | 3 x (1-6) |
| | 1 x (1-2) | | | 1 x (1-2) | | | | 1 x (1-2) | | |
| | | | | | | | | | | |
| | | 1 x (1-2) | | | 1 x (1-2) | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| 5 x (1-5) | 3 x (3-5) | 4 x (1 & 3-5) | 4 x (1-4) | 2 x (3-4) | 3 x (1 & 3-4) | 3 x (1-3) | 2 x (1-2) | | 6 x (1-3 & 7-9) | 9 x (1-9) |
| | 2 x (1-2) | | | 2 x (1-2) | | | | 2 x (1-2) | | |
| | | 1 x (2) | | | 1 x (2) | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

## ME-IO... electronics housing with front connection



**Notes:**

Additional housing dimensions and details of PCB layout, dimensions, and assembly areas can be found in the download center at: **phoenixcontact.net/products**

**Width: 18.8 mm**

### Mounting principle:

- Electronic components and HSC headers can be assembled and soldered in a single step.
- Lock & Release and headers are snapped in. The pressure springs are inserted in the rear grips provided.
- The PCB can be easily snapped into the housing thanks to the guide edges in the lower housing part.
- The covering hood is placed on the free area and snapped into the HSC headers.
- The HSC plugs are marked with an arrow to indicate the plug-in direction.

### HSC headers and plugs:

The headers are available in two and three-unit sizes and the plugs in one unit. Two plugs fit on the HSCH 2,5-2U... and three plugs fit on the HSCH 2,5-3U...

The HSC headers differ with regard to the number of terminal points and require the relevant plug versions:

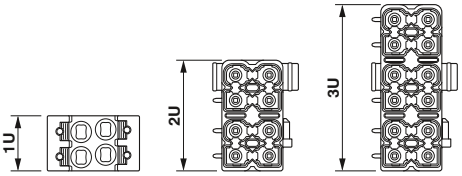
- 12 terminal points – 3 x 4-pos.
- 8 terminal points – 2 x 4-pos.
- 6 terminal points – 1 x 4-pos. and 1 x 2-pos.
- 4 terminal points – 2 x 2 TWIN connections
- 2 terminal points – 1 x 2 TWIN connections and ME-IO 18,8 C 3U S1 7035

### Ordering data

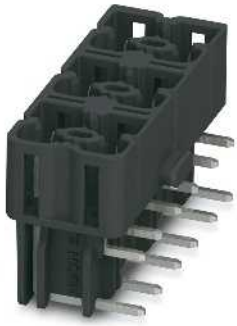
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Housing base,** pre-assembled, with metal foot catch, with integrated functional earth ground contact, without TBUS plug, color: light gray, including Lock & Release in | | | |
| 3 units | **ME-IO 18,8 B/FE 3/9U TBUS 7035** | **2201963** | 10 |
| 5 units | **ME-IO 18,8 B/FE 5/9U TBUS 7035** | **2201962** | 10 |
| 7 units | **ME-IO 18,8 B/FE 7/9U TBUS 7035** | **2201961** | 10 |
| 9 units | **ME-IO 18,8 B/FE 9/9U TBUS 7035** | **2201960** | 10 |
| **Covering hood,** in various units, color: light gray | | | |
| 2 units, dimension a = 22 mm | | | |
| 3 units, dimension a = 33 mm | | | |
| 3 units, for covering 1 unit header, dimension a = 33 mm | | | |
| 4 units, dimension a = 44 mm | | | |
| 5 units, dimension a = 55 mm | | | |
| 6 units, dimension a = 66 mm | | | |
| 7 units, dimension a = 77 mm | | | |
| **HSC header,** touch proof, in 2 units, color: black | | | |
| 8 connections | | | |
| 4 connections | | | |
| 2 connections | | | |
| 6 connections | | | |
| **HSC header,** touch proof, in 3 units, color: black, please note the positioning | | | |
| 12 connections | | | |
| **HSC push-in plug,** for touch-proof HSC headers, in 1 unit, with integrated test connection, color: light gray | | | |
| 4-pos. | | | |
| Partially assembled, 2-pos. | | | |
| 2 TWIN connections | | | |

### Accessories

| | | | |
|---|---|---|---|
| **DIN rail connector,** 5-pos. | | | |
| **Coding profile,** for header and push-in plug, color: natural | | | |



Width: 18.8 mm



Touch-proof headers

Connector plugs for touch-proof headers

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| ME-IO 18,8 C 2U 7035 | 2201799 | 10 |
| ME-IO 18,8 C 3U 7035 | 2201800 | 10 |
| ME-IO 18,8 C 3U S1 7035 | 2201801 | 10 |
| ME-IO 18,8 C 4U 7035 | 2201802 | 10 |
| ME-IO 18,8 C 5U 7035 | 2201803 | 10 |
| ME-IO 18,8 C 6U 7035 | 2201804 | 10 |
| ME-IO 18,8 C 7U 7035 | 2201805 | 10 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| HSCH 2,5-2U/ 8 9005 | 2201789 | 50 |
| HSCH 2,5-2U-TTTT 9005 | 2201790 | 50 |
| HSCH 2,5-2U-TT00 9005 | 2201791 | 50 |
| HSCH 2,5-2U-2220 9005 | 2201792 | 50 |
| HSCH 2,5-3U/12 9005 | 2201788 | 50 |

## Ordering data

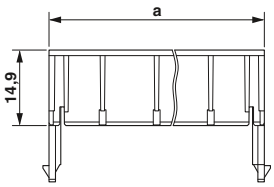
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| HSCP-SP 2,5-1U/ 4 7035 | 2201780 | 50 |
| HSCP-SP 2,5-1U-TT 7035 | 2201781 | 50 |
| HSCP-SP 2,5-1U-20 7035 | 2201782 | 50 |

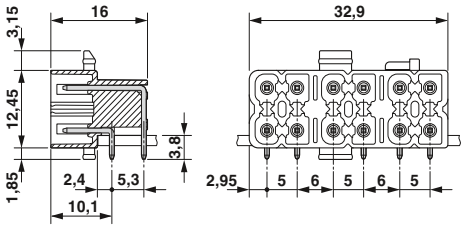
## Accessories

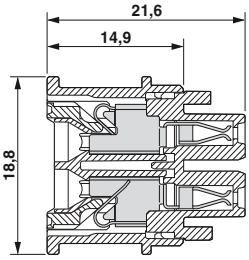
## Accessories

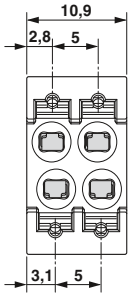
## Accessories

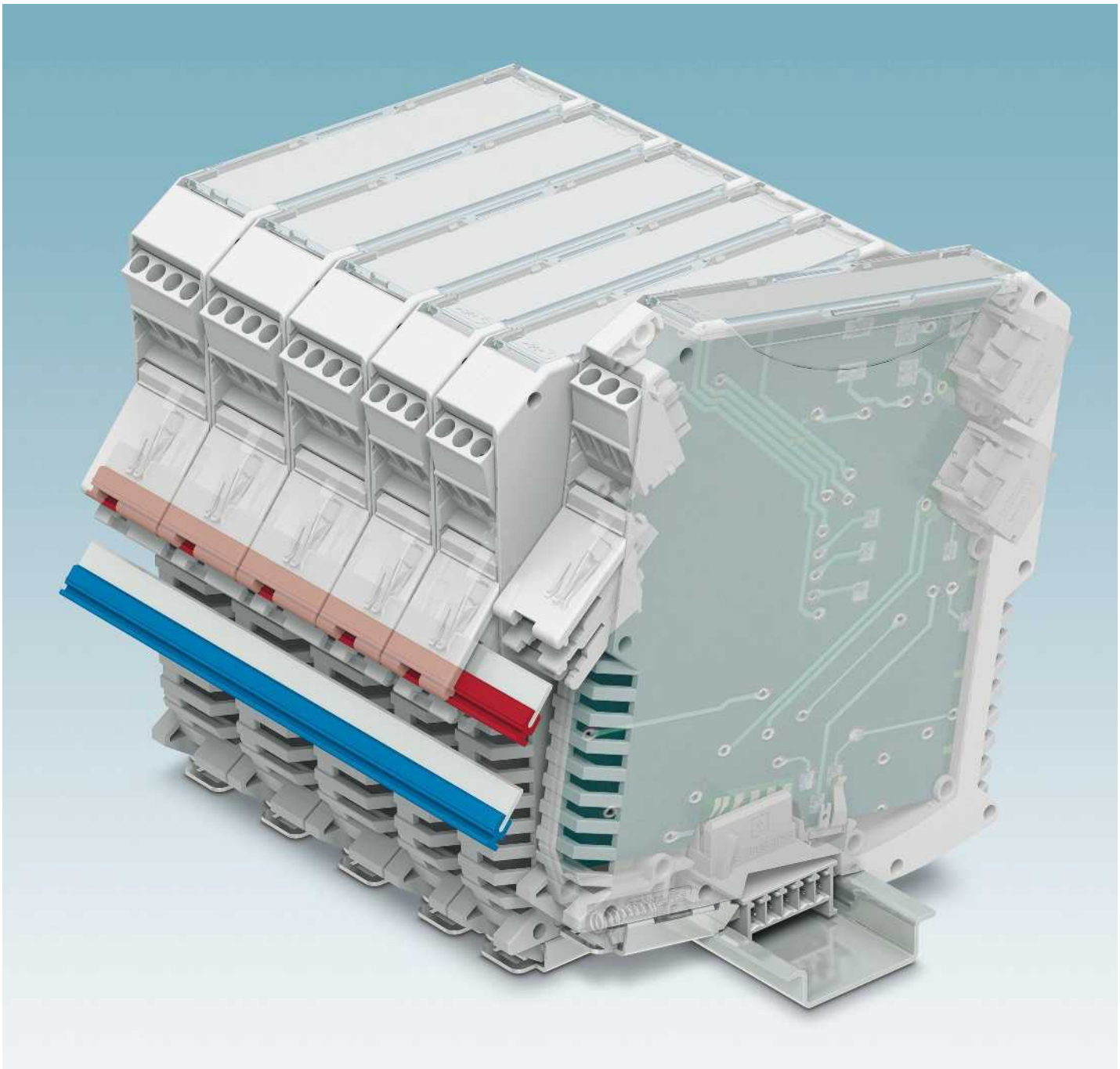
| | | |
|---|---|---|
| ME 18,8 TBUS 1,5/5-ST-3,81KMGY | 2201813 | 50 |
| CP-DMC 1,5-THR NAT | 1790647 | 60 |



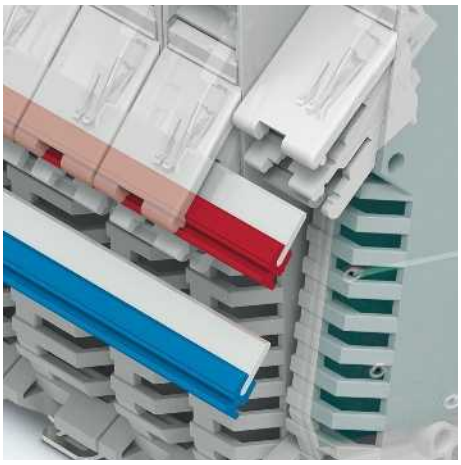





Together with the PBR jumper, the new PCO power connector enables the transmission of high levels of power between modules in ME MAX housings.

The new ME TBUS 4P1S enables the easy implementation of serial and parallel circuits for module-to-module connection in the DIN rail.

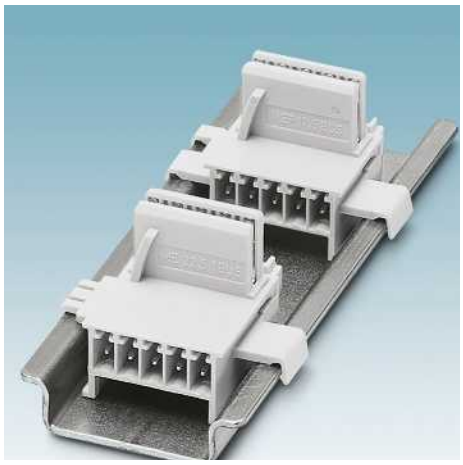
The ME TBUS ADAPTER allows even more effective use of ME TBUS technology for modules with a design width from 35 mm. ME TBUS 4P1S and the ME TBUS ADAPTER can be used in ME and ME MAX housings.



**PCO... power connector for ME MAX housing**

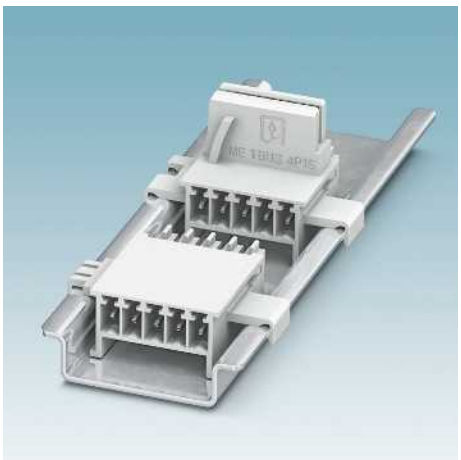
The PCO power connector is used to transmit power of up to 42 A (8 A per module) and 60 V DC between modules in ME MAX housings. There are no restrictions on the mounting and removal of modules from the group while in the off-load state.

The PCO connector can be soldered to other electronic components in the wave soldering process. For additional information, please refer to the data sheets at **phoenixcontact.net/products**. Cross connection is achieved by simply inserting the PBR jumper.



**ME... TBUS 4P1S: serial and parallel connection in the DIN rail**

The ME TBUS 4P1S enables the serial and parallel connection of modules via the DIN rail: 4 positions are intended for parallel circuits and 1 position for serial circuits.

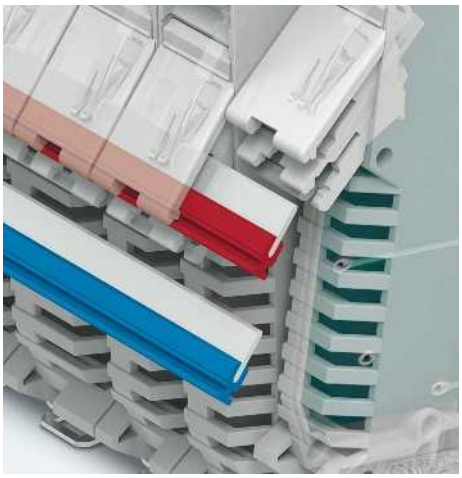


**ME TBUS ADAPTER: easy extension**

From a housing width of 35 mm, the ME TBUS ADAPTER is the ideal solution for the efficient use of the TBUS system.

In addition, by using the ME TBUS ADAPTER there is more PCB area available for mounting in the housing as there is no T-tap.

## PCO... power connector for ME MAX housing



The PCO... power connector can be used together with the PBR... jumper in ME MAX housing.

Technical data:
- Voltage up to 60 V DC
- Total current of 42 A
- 8 A per module
- 2-pos.
- With orthogonal pin outlet
- Designed for parallel connections
- ME MAX connection technology and accessories can also be used without restriction

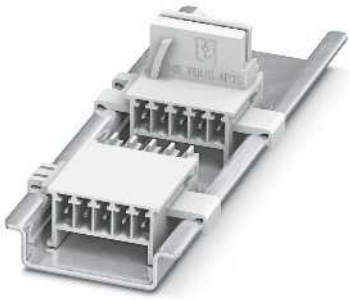
### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Power bus connector,** suitable for ME MAX 17,5, ME MAX 35, 2-pos., color: light gray | **PCO 17,5-L KMGY** | **2201684** | 50 |
| **Power bus connector,** suitable for ME MAX 22,5, ME MAX 45, ME MAX 67,5, and ME MAX 90; 2-pos.; color: light gray | **PCO 22,5-L KMGY** | **2201685** | 50 |

### Accessories

| | | | |
|---|---|---|---|
| **Jumper,** for connecting device modules when using power bus connectors; can be cut to length using diagonal cutter; supplied length: 500 mm; | | | |
| Color: light gray | **PBR 42A KMGY** | **2201917** | 10 |
| Color: blue | **PBR 42A BU** | **2201916** | 10 |
| Color: red | **PBR 42A RD** | **2201915** | 10 |

## ME TBUS 4P1S and ME TBUS ADAPTER for ME and ME MAX housing



The ME... TBUS 4P1S enables the implementation of parallel circuits together with serial circuits, which connect various modules on the DIN rail in ME and ME MAX housings.

Technical data:
– Voltage up to 50 V
– Currents up to 8 A per position
– 4 parallel positions
– 1 serial position

The ME... TBUS ADAPTER is particularly useful for using wider modules in the ME and ME MAX housing more efficiently together with the ME... TBUS.

Technical data:
– Voltage up to 125 V
– Currents up to 8 A per position
– 5 parallel positions
– No tap in the electronics housing

| Description | No. of pos. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **ME TBUS connector,** suitable for ME and ME MAX housing, 5 positions (4 parallel positions and 1 serial position); color: light gray | | | | |
| 17.5 mm design width | 5 | **ME 17,5 TBUS 1,5/4P1S KMGY** | **2201731** | 50 |
| 22.5 mm design width | 5 | **ME 22,5 TBUS 1,5/4P1S KMGY** | **2201732** | 50 |
| **Adapter for extending the ME TBUS connector,** suitable for ME and ME MAX housing, 5 parallel positions; color: light gray | | | | |
| 17.5 mm design width | 5 | **ME 17,5 TBUS ADAPTER KMGY** | **2201757** | 50 |
| 22.5 mm design width | 5 | **ME 22,5 TBUS ADAPTER KMGY** | **2201756** | 50 |

RJ45 industrial connectors, IP20
Page 44

Push-pull industrial connectors, version 14 with RJ45 insert
Page 46

Push-pull industrial connectors, version 14 with FO insert
Page 48

Modular distribution panel, panel mounting frame
Page 50

M12 device connectors XL
Page 54

M12 power device connectors
Page 56

M23 cable and coupler connectors, hybrid, SPEEDCON fast locking system
Page 63

M23 device connectors, hybrid
Page 64

SUNCLIX micon, AC-Y connectors
Page 70

SUNCLIX micon, mains connector plugs
Page 70

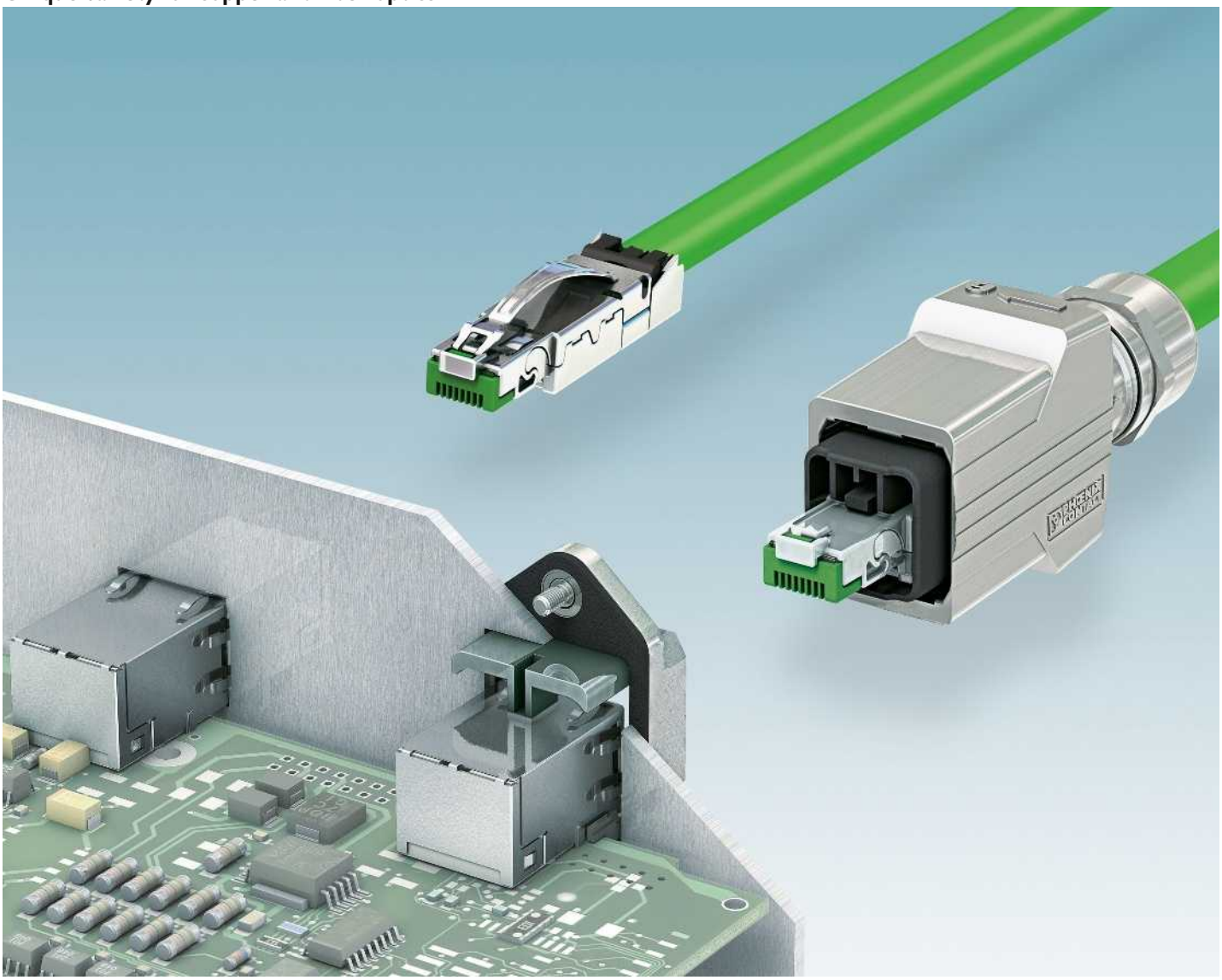
Photovoltaic AC connectors
Page 76

AC charging cables
Page 80

Mobile AC charging cables
Page 83

Combined charging system charging cables
Page 84

## Unique variety for copper and fiber optics



For compact device connection

For flexible cable connection

For easy cabling

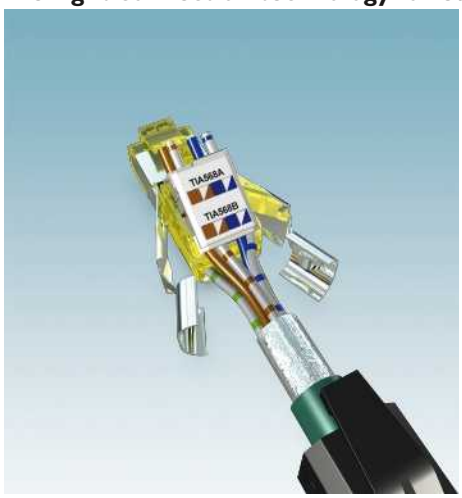
## The right connection for every application

Modern industrial automation requires connectors for large quantities of data in robust packaging. Benefit now from powerful connectors and cables for on-site assembly.

High requirements are placed on components used for outdoor data transmission, in fields such as telecommunications, renewable energies, and offshore applications. Whether you're concerned about UV, temperature or humidity, the connectors from Phoenix Contact offer ideal protection.

Phoenix Contact offers an extensive and forward-looking product range for modern building cabling which impresses with its easy installation.
Our patch cables and patch fields allow you to install flexible and fault-tolerant cabling.

## The right connection technology for every application




**Fast assembly without special tools**
– with IDC and Piercecon® fast connection

**Fast assembly in the field**
using professional tools

## RJ45 industrial connectors, IP20

- Optimized for industrial use with a high degree of resistance to vibration
- High resistance to ESD and EMI for reliable transmission
- Easy handling, thanks to one-piece design
- Metal locking

**RJ45 industrial, straight cable outlet**

**RJ45 industrial, cable outlet at the top**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **Ethernet printing** | **PROFINET printing** | **Ethernet printing** | **PROFINET printing** |
| Degree of protection | IP20 | IP20 | IP20 | IP20 |
| Connection cross section AWG | 26 ... 24 | 23 ... 22 | 26 ... 24 | 23 ... 22 |
| Transmission speed | 10 Gbps | 1 Gbps | 10 Gbps | 1 Gbps |
| Housing material | Zinc die-cast | Zinc die-cast | Zinc die-cast | Zinc die-cast |
| External cable diameter | 5 mm ... 9 mm | 5 mm ... 9 mm | 5 mm ... 9 mm | 5 mm ... 9 mm |
| Insertion/withdrawal cycles | ≥ 750 | ≥ 750 | ≥ 750 | ≥ 750 |
| Temperature data | | | | |
| Ambient temperature (operation) | -20°C ... 70°C | -20°C ... 70°C | -20°C ... 70°C | -20°C ... 70°C |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **Ethernet printing** | | **PROFINET printing** | | **Ethernet printing** | | **PROFINET printing** | |
| **RJ45 industrial connector,** 8-pos. | | | | | | | | |
| | **1406333** | 1 | **1406334** | 1 | **1406336** | 1 | **1406337** | 1 |
| Value pack | **1406351** | 30 | **1406352** | 30 | **1406354** | 30 | **1406355** | 30 |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **Stripping tool,** for multiple-stage repositioning of shielded conductors | **VS-CABLE-STRIP-VARIO** | **1657407** | 1 | **VS-CABLE-STRIP-VARIO** | **1657407** | 1 |
| **Electronic diagonal cutter,** tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version | **MICROFOX-SP-1** | **1212487** | 1 | **MICROFOX-SP-1** | **1212487** | 1 |
| **Markers for terminal blocks, roll**, unmarked, can be marked with: THERMOMARK ROLL, THERMOMARK X, THERMOMARK S1.1 | | | | | | |
| White | **TMT 5 R** | **0816430** | 1 | **TMT 5 R** | **0816430** | 1 |
| Red | **TMT 5 R RD** | **0816427** | 1 | **TMT 5 R RD** | **0816427** | 1 |
| Green | **TMT 5 R GN** | **0816401** | 1 | **TMT 5 R GN** | **0816401** | 1 |
| **Marker for terminal blocks,sheet**, white, unmarked, can be marked with: BLUEMARK CLED, BLUEMARK LED, plotter | **UC-TMF 5** | **0818153** | 10 | **UC-TMF 5** | **0818153** | 10 |

## RJ45 industrial connectors, IP20

**RJ45 industrial,**
**cable outlet at the bottom**

### Technical data

| | Ethernet printing | PROFINET printing |
|---|---|---|
| Degree of protection | IP20 | IP20 |
| Connection cross section AWG | 26 ... 24 | 23 ... 22 |
| Transmission speed | 10 Gbps | 1 Gbps |
| Housing material | Zinc die-cast | Zinc die-cast |
| External cable diameter | 5 mm ... 9 mm | 5 mm ... 9 mm |
| Insertion/withdrawal cycles | ≥ 750 | ≥ 750 |
| Temperature data | | |
| Ambient temperature (operation) | -20°C ... 70°C | -20°C ... 70°C |

### Ordering data

| Description | Order No. (Ethernet printing) | Pcs. / Pkt. | Order No. (PROFINET printing) | Pcs. / Pkt. |
|---|---|---|---|---|
| **RJ45 industrial connector,** 8-pos. | | | | |
| | **1406339** | 1 | **1406340** | 1 |
| Value pack | **1406357** | 30 | **1406358** | 30 |

### Accessories

| | | | |
|---|---|---|---|
| **Stripping tool,** for multiple-stage repositioning of shielded conductors | **VS-CABLE-STRIP-VARIO** | **1657407** | 1 |
| **Electronic diagonal cutter,** tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version | **MICROFOX-SP-1** | **1212487** | 1 |
| **Markers for terminal blocks, roll**, unmarked, can be marked with: THERMOMARK ROLL, THERMOMARK X, THERMOMARK S1.1 | | | |
| White | **TMT 5 R** | **0816430** | 1 |
| Red | **TMT 5 R RD** | **0816427** | 1 |
| Green | **TMT 5 R GN** | **0816401** | 1 |
| **Marker for terminal blocks,sheet**, white, unmarked, can be marked with: BLUEMARK CLED, BLUEMARK LED, plotter | **UC-TMF 5** | **0818153** | 10 |

## Push-pull industrial connectors, version 14

- High resistance to ESD and EMI for reliable transmission
- Easy handling, thanks to one-piece design
- Locking system to prevent unintentional removal
- Consistent 360° shielding concept

**Push-pull Advance, straight cable outlet**

**Push-pull Advance, cable outlet at the top**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **Ethernet printing** | **PROFINET printing** | **Ethernet printing** | **PROFINET printing** |
| Degree of protection | IP65/67 | IP65/67 | IP65/67 | IP65/67 |
| Connection cross section AWG | 26 ... 24 | 23 ... 22 | 26 ... 24 | 23 ... 22 |
| Transmission speed | 10 Gbps | 1 Gbps | 10 Gbps | 1 Gbps |
| Housing material | Zinc die-cast | Zinc die-cast | Zinc die-cast | Zinc die-cast |
| External cable diameter | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm |
| Insertion/withdrawal cycles | ≥ 750 | ≥ 750 | ≥ 750 | ≥ 750 |
| Temperature data | | | | |
| Ambient temperature (operation) | -40°C ... 70°C | -40°C ... 70°C | -40°C ... 70°C | -40°C ... 70°C |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **Ethernet printing** | | **PROFINET printing** | | **Ethernet printing** | | **PROFINET printing** | |
| **Push-pull Advance,** RJ45 industrial connector, IP67, 8-pos. | | | | | | | | |
| | **1407890** | 1 | **1407889** | 1 | **1468007** | 1 | **1408027** | 1 |
| Value pack | **1467901** | 10 | **1408039** | 10 | **1467807** | 10 | **1408092** | 10 |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **Stripping tool,** for multiple-stage repositioning of shielded conductors | **VS-CABLE-STRIP-VARIO** | **1657407** | 1 | **VS-CABLE-STRIP-VARIO** | **1657407** | 1 |
| **Electronic diagonal cutter,** tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version | **MICROFOX-SP-1** | **1212487** | 1 | **MICROFOX-SP-1** | **1212487** | 1 |

## Push-pull industrial connectors, version 14

**Push-pull Advance, cable outlet at the bottom**

| | Technical data | |
|---|---|---|
| | **Ethernet printing** | **PROFINET printing** |
| Degree of protection | IP65/67 | IP65/67 |
| Connection cross section AWG | 26 ... 24 | 23 ... 22 |
| Transmission speed | 10 Gbps | 1 Gbps |
| Housing material | Zinc die-cast | Zinc die-cast |
| External cable diameter | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm |
| Insertion/withdrawal cycles | ≥ 750 | ≥ 750 |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 70°C | -40°C ... 70°C |

| | Ordering data | | | |
|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **Ethernet printing** | | **PROFINET printing** | |
| **Push-pull Advance,** RJ45 industrial connector, IP67, 8-pos. | | | | |
| | **1408011** | 1 | **1407895** | 1 |
| Value pack | **1467804** | 10 | **1408046** | 10 |

| | Accessories | | |
|---|---|---|---|
| **Stripping tool,** for multiple-stage repositioning of shielded conductors | **VS-CABLE-STRIP-VARIO** | **1657407** | 1 |
| **Electronic diagonal cutter,** tapered head, without chamfer, with opening spring, non-reflective phosphate-treated surface, punched version | **MICROFOX-SP-1** | **1212487** | 1 |

## Push-pull industrial connectors, version 14

- Available for POF, PCF, and GOF
- Easy handling, thanks to one-piece design
- Locking system to prevent unintentional removal

**Push-pull Advance, straight cable outlet**

**Push-pull Advance, cable outlet at the top**

| | Technical data | | | Technical data | | |
|---|---|---|---|---|---|---|
| | **POF (Polymer Optical Fiber)** | **PCF (Polymer Cladded Fiber)** | **GOF (Glass Optical Fiber)** | **POF (Polymer Optical Fiber)** | **PCF (Polymer Cladded Fiber)** | **GOF (Glass Optical Fiber)** |
| Degree of protection | IP65/67 | IP65/67 | IP65/67 | IP65/67 | IP65/67 | IP65/67 |
| Housing material | Zinc die-cast | Zinc die-cast | Zinc die-cast | Zinc die-cast | Zinc die-cast | Zinc die-cast |
| External cable diameter | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm |
| Insertion/withdrawal cycles | ≥ 750 | ≥ 750 | ≥ 750 | ≥ 750 | ≥ 750 | ≥ 750 |
| Temperature data | | | | | | |
| Ambient temperature (operation) | -40°C ... 70°C | -40°C ... 70°C | -40°C ... 70°C | -40°C ... 70°C | -40°C ... 70°C | -40°C ... 70°C |

| | Ordering data | | | | | | Ordering data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **POF (Polymer Optical Fiber)** | | **PCF (Polymer Cladded Fiber)** | | **GOF (Glass Optical Fiber)** | | **POF (Polymer Optical Fiber)** | | **PCF (Polymer Cladded Fiber)** | | **GOF (Glass Optical Fiber)** | |
| **Push-pull Advance,** SC-RJ connector | | | | | | | | | | | | |
| | **1407896** | 1 | **1407897** | 1 | **1407898** | 1 | **1408028** | 1 | **1408029** | 1 | **1408030** | 1 |
| Value pack | **1408047** | 10 | **1408048** | 10 | **1408049** | 10 | **1408093** | 10 | **1408094** | 10 | **1408095** | 10 |

| | Accessories | | | | Accessories | | | |
|---|---|---|---|---|---|---|---|---|
| **SC-RJ cutting tool set,** for polymer fiber **(POF)**, for field assembly of connectors | **TF-SCRJ-POF KONF SET** | | **1405246** | 1 | **TF-SCRJ-POF KONF SET** | | **1405246** | 1 |
| **Tool set** for **PCF** | On request | | | | On request | | | |
| **Tool set** for **GOF** | On request | | | | On request | | | |

## Push-pull industrial connectors, version 14

**Push-pull Advance, cable outlet at the bottom**

| | Technical data | | |
|---|---|---|---|
| | **POF (Polymer Optical Fiber)** | **PCF (Polymer Cladded Fiber)** | **GOF (Glass Optical Fiber)** |
| Degree of protection | IP65/67 | IP65/67 | IP65/67 |
| Housing material | Zinc die-cast | Zinc die-cast | Zinc die-cast |
| External cable diameter | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm | 5.5 mm ... 10 mm |
| Insertion/withdrawal cycles | ≥ 750 | ≥ 750 | ≥ 750 |
| Temperature data | | | |
| Ambient temperature (operation) | -40°C ... 70°C | -40°C ... 70°C | -40°C ... 70°C |

| | Ordering data | | | | | |
|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **POF (Polymer Optical Fiber)** | | **PCF (Polymer Cladded Fiber)** | | **GOF (Glass Optical Fiber)** | |
| **Push-pull Advance,** SC-RJ connector | | | | | | |
| | **1407902** | 1 | **1407904** | 1 | **1407905** | 1 |
| Value pack | **1408053** | 10 | **1408055** | 10 | **1408056** | 10 |

| | Accessories | | |
|---|---|---|---|
| **SC-RJ cutting tool set,** for polymer fiber **(POF)**, for field assembly of connectors | **TF-SCRJ-POF KONF SET** | **1405246** | 1 |
| **Tool set** for **PCF** | On request | | |
| **Tool set** for **GOF** | On request | | |

## Modular distribution panel

- 19" distribution field with space for 8 modules, with a total of 48 x RJ45
- Front release without special tool
- Plug and Play – thanks to pre-assembled modules
- Up to 10 Gbps (Class $E_A$)
- Cable length according to customer requirements
- Optimized strain relief for every module
- GHMT certification

**Assembled modules for 19" mounting frames**

**19" mounting frame**

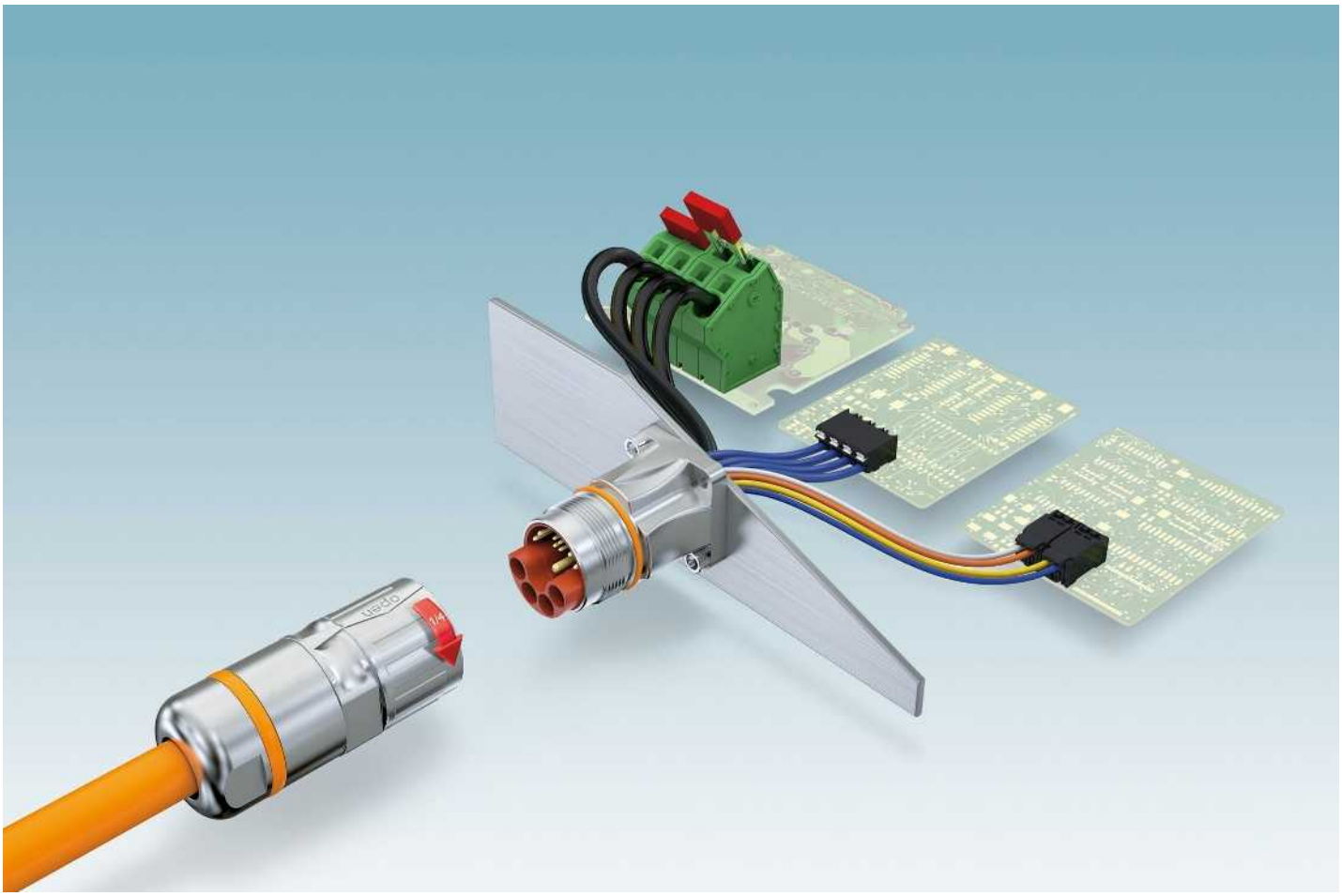
| | Technical data | Technical data |
|---|---|---|
| Electrical data | | |
| Transmission speed | 10 Gbps | - |
| Transmission characteristics (category) | Class $E_A$ | - |
| Material data | | |
| Housing material | High-grade steel | Steel, powder-coated |
| Inflammability class according to UL 94 | V0 | V0 |
| Connection data | | |
| External cable diameter | 18 mm | - |
| Insertion/withdrawal cycles | ≥ 750 | - |
| Temperature data | | |
| Ambient temperature (operation) | -20°C ... 60°C | -20°C ... 60°C |

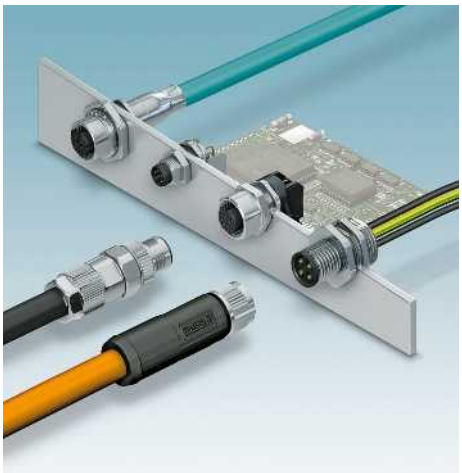
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **19" frame,** empty, for using 8 modules (RJ45) | | | | | | |
| Gray (similar to RAL 7035) | | | | **CUC-PP-FRAME-19** | **1407986** | 1 |
| Black (similar to RAL 9005) | | | | **CUC-PP-FRAME-19 BK** | **1409140** | 1 |
| **Module, RJ45 to RJ45,** consisting of two housings each with 6 x RJ45 10 Gbps (Class $E_A$) pre-assembled with multi-cable, variable length, GHMT-certified. | **CUC-PP-MODUL-RJ45:6-RJ45:6/...** | **1407995** | 1 | | | |
| **Patch bay,** 19", for orderly cabling in the control cabinet | | | | | | |
| Gray, with plastic hooks | | | | **CUC-PP-PATCHBAY** | **1407994** | 1 |
| Gray, with metal hooks | | | | **CUC-PP-PATCHBAY-MH** | **1409283** | 1 |
| Black, with metal hooks | | | | **CUC-PP-PATCHBAY-MH BK** | **1409284** | 1 |
| **Dummy frame,** size of one module, for use in the frame | **CUC-PP-MODUL-COVER** | **1407988** | 1 | | | |

## Ordering example for modules of variable length:

For an RJ45 module with a cable length of 25.0 m, the ordering data is as follows:

| Order No. | | Length [m] Max. 80 m |
|---|---|---|
| **1407995** | / | **25** |
| | | **Increment:** 1.5 m ... 80 m = **0.5 m** |





### M5 to M12 circular connectors

Circular connectors for signals, data, and power.

### M17 to M58 circular connectors

Circular connectors for signals, data, and power.

### M12 rear mounting XL

The new device connectors for rear mounting feature an optimized housing contour with additional tightening limitation. This simplifies the housing cutout on the device and protects the O-ring during mounting.

### M12 front mounting XL

The wrench flat on the new device connectors for front mounting has been enlarged and now features additional tightening limitation. This simplifies the device cutout and increases security and tightness when mounting.

### M12 power front/rear mounting XL

The M12 XL housing design has also been introduced for the M12 power device connectors with S- and T-coding. This addition means that there is now a consistent design available for the M12 device connectors for signal and power.

### M12 power for 230 V/16 A

The M12 power series has been extended with the 2+PE (S-coded) pin assignment. The M12 design means that a compact mains voltage plug is now available for 230 V and up to 16 A.

### M23 hybrid cable and coupler connector

Special hybrid lines allow signals, data, and power to be transmitted using just one connector.

### M23 hybrid device connectors

Angled, rotatable, and straight housing versions are available for front mounting on the device side.

## M12 device connectors XL, rear mounting

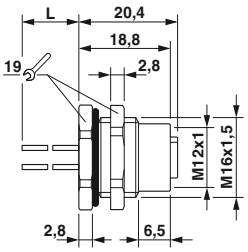
- M16 fastening thread
- With 0.5 m long litz wires
- Tightening limitation
- Wrench size 19

4-, 5-, 8-pos.

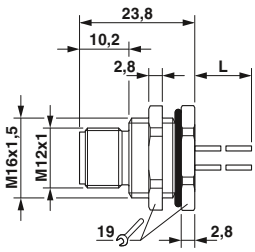
12-, 17-pos.

| | Technical data | | | Technical data | | |
|---|---|---|---|---|---|---|
| | 4-pos. | 5-pos. | 8-pos. | 12-pos. | 17-pos. | |
| General data | | | | | | |
| M12 circular connector according to: | IEC 61076-2-101 | IEC 61076-2-101 | IEC 61076-2-101 | IEC 61076-2-101 | IEC 61076-2-101 | - |
| Pollution degree | 3 | 3 | 3 | 3 | 3 | - |
| Degree of protection | IP67 | IP67 | IP67 | IP67 | IP67 | - |
| Connection method | Individual wires | Individual wires | Individual wires | Individual wires | Individual wires | - |
| Electrical data | | | | | | |
| Rated voltage | 250 V | 60 V | 30 V | 30 V | 30 V | - |
| Rated current | 4 A | 4 A | 2 A | 1.5 A | 1.5 A | - |
| Contact resistance | ≤ 3 mΩ | ≤ 3 mΩ | ≤ 3 mΩ | ≤ 3 mΩ | ≤ 3 mΩ | - |
| Material data | | | | | | |
| Material contact/contact surface | CuZn/Au | CuZn/Au | CuZn/Au | CuZn/Au | CuZn/Au | -/- |
| Contact carrier material | PA 66 | PA 66 | PA 66 | PA 66 | PA 66 | - |
| Inflammability class according to UL 94 | V0 | V0 | V0 | V0 | V0 | - |
| Cable type | TPE litz wire | TPE litz wire | TPE litz wire | TPE litz wire | TPE litz wire | - |
| Temperature data | | | | | | |
| Plug/socket [°C] | -25 ... 85 | -25 ... 85 | -25 ... 85 | -25 ... 85 | -25 ... 85 | - |

| | | Ordering data | | | | | | Ordering data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Description | Coding | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. |
| | | 4-pos. | | 5-pos. | | 8-pos. | | 12-pos. | | 17-pos. | | | |
| **Device connectors** | | | | | | | | | | | | | |
| Socket | A - standard | **1411584** | 1 | **1411586** | 1 | **1411588** | 1 | **1411589** | 1 | **1411590** | 1 | | |
| Plug | A - standard | **1411591** | 1 | **1411593** | 1 | **1411595** | 1 | **1411596** | 1 | **1411597** | 1 | | |
| Socket | D - data | **1411585** | 1 | | | | | | | | | | |
| Plug | D - data | **1411592** | 1 | | | | | | | | | | |
| Socket | B - inverse | | | **1411587** | 1 | | | | | | | | |
| Plug | B - inverse | | | **1411594** | 1 | | | | | | | | |




Dimensions: socket




Dimensions: plug

## M12 device connectors XL, front mounting

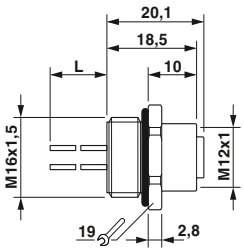
- M16 fastening thread
- With 0.5 m long litz wires
- Tightening limitation
- Wrench size 19

4-, 5-, 8-pos.

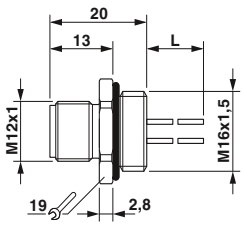
12-, 17-pos.

| | Technical data | | | Technical data | | |
|---|---|---|---|---|---|---|
| | 4-pos. | 5-pos. | 8-pos. | 12-pos. | 17-pos. | |
| General data | | | | | | |
| M12 circular connector according to: | IEC 61076-2-101 | IEC 61076-2-101 | IEC 61076-2-101 | IEC 61076-2-101 | IEC 61076-2-101 | - |
| Pollution degree | 3 | 3 | 3 | 3 | 3 | - |
| Degree of protection | IP67 | IP67 | IP67 | IP67 | IP67 | - |
| Connection method | Individual wires | Individual wires | Individual wires | Individual wires | Individual wires | - |
| Electrical data | | | | | | |
| Rated voltage | 250 V | 60 V | 30 V | 30 V | 30 V | - |
| Rated current | 4 A | 4 A | 2 A | 1.5 A | 1.5 A | - |
| Contact resistance | ≤ 3 mΩ | ≤ 3 mΩ | ≤ 3 mΩ | ≤ 3 mΩ | ≤ 3 mΩ | - |
| Material data | | | | | | |
| Material contact/contact surface | CuZn/Au | CuZn/Au | CuZn/Au | CuZn/Au | CuZn/Au | -/- |
| Contact carrier material | PA 66 | PA 66 | PA 66 | PA 66 | PA 66 | - |
| Inflammability class according to UL 94 | V0 | V0 | V0 | V0 | V0 | - |
| Cable type | TPE litz wire | TPE litz wire | TPE litz wire | TPE litz wire | TPE litz wire | - |
| Temperature data | | | | | | |
| Plug/socket [°C] | -25 ... 85 | -25 ... 85 | -25 ... 85 | -25 ... 85 | -25 ... 85 | - |

| | | Ordering data | | | | | | Ordering data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Description | Coding | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. | Order No. | Pcs. / Pkt. |
| | | 4-pos. | | 5-pos. | | 8-pos. | | 12-pos. | | 17-pos. | | | |
| **Device connectors** | | | | | | | | | | | | | |
| Socket | A - standard | **1411568** | 1 | **1411571** | 1 | **1411573** | 1 | **1411574** | 1 | **1411576** | 1 | | |
| Plug | A - standard | **1411577** | 1 | **1411579** | 1 | **1411581** | 1 | **1411582** | 1 | **1411583** | 1 | | |
| Socket | D - data | **1411569** | 1 | | | | | | | | | | |
| Plug | D - data | **1411578** | 1 | | | | | | | | | | |
| Socket | B - inverse | | | **1411572** | 1 | | | | | | | | |
| Plug | B - inverse | | | **1411580** | 1 | | | | | | | | |




Dimensions: socket




Dimensions: plug

## M12 power device connectors XL, rear mounting

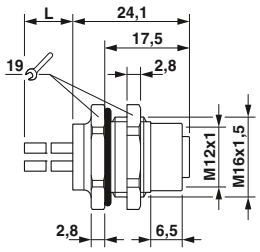
- M16 fastening thread
- With 0.5 m long litz wires
- Tightening limitation
- Wrench size 19

S-coded, 3-pos. + PE

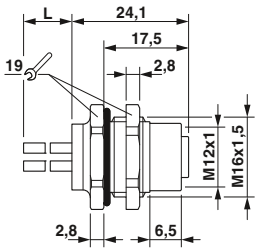
T-coded, 4-pos.

| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Pollution degree | 3 | 3 |
| Degree of protection | IP67 | IP67 |
| Connection method | Individual wires | Individual wires |
| Electrical data | | |
| Rated voltage | 630 V | 60 V |
| Rated current | 12 A | 12 A |
| Contact resistance | ≤ 3 mΩ | ≤ 3 mΩ |
| Material data | | |
| Material contact/contact surface | CuZn/Au | CuZn/Au |
| Contact carrier material | PA | PA |
| Inflammability class according to UL 94 | V0 | V0 |
| Cable type | PP litz wire | PP litz wire |
| Temperature data | | |
| Plug/socket [°C] | -25 ... 85 | -25 ... 85 |

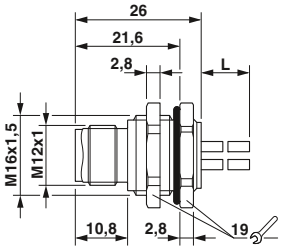
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Power device connectors** | | | | | | |
| Socket | SACC-DSI-M12FSS-4P-M16XL/0,5PE | 1411598 | 1 | SACC-DSI-M12FST-4P-M16XL/0,5 | 1411599 | 1 |
| Plug | SACC-DSI-M12MSS-4P-M16XL/0,5PE | 1411603 | 1 | SACC-DSI-M12MST-4P-M16XL/0,5 | 1411604 | 1 |



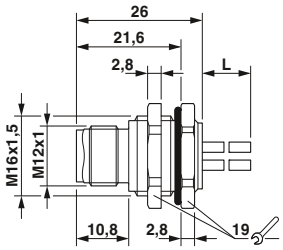

Dimensions: socket




Dimensions: socket




Dimensions: plug




Dimensions: plug

## M12 power device connectors XL, front mounting

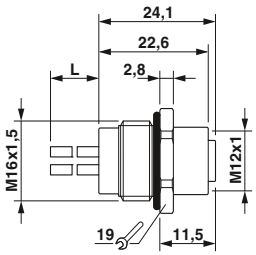
- M16 fastening thread
- With 0.5 m long litz wires
- Tightening limitation
- Wrench size 19

S-coded, 3-pos. + PE

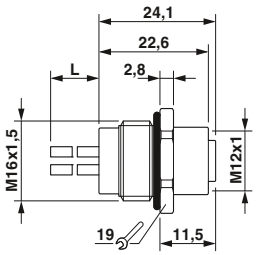
T-coded, 4-pos.

| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Pollution degree | 3 | 3 |
| Degree of protection | IP67 | IP67 |
| Connection method | Individual wires | Individual wires |
| Electrical data | | |
| Rated voltage | 630 V | 60 V |
| Rated current | 12 A | 12 A |
| Contact resistance | ≤ 3 mΩ | ≤ 3 mΩ |
| Material data | | |
| Material contact/contact surface | CuZn/Au | CuZn/Au |
| Contact carrier material | PA | PA |
| Inflammability class according to UL 94 | V0 | V0 |
| Cable type | PP litz wire | PP litz wire |
| Temperature data | | |
| Plug/socket [°C] | -25 ... 85 | -25 ... 85 |

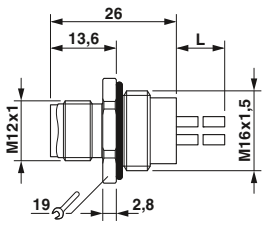
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Power device connectors** | | | | | | |
| Socket | **SACC-E-M12FSS-4P-M16XL/0,5 PE** | **1411605** | 1 | **SACC-E-M12FST-4P-M16XL/0,5** | **1411606** | 1 |
| Plug | **SACC-E-M12MSS-4P-M16XL/0,5 PE** | **1411607** | 1 | **SACC-E-M12MST-4P-M16XL/0,5** | **1411608** | 1 |



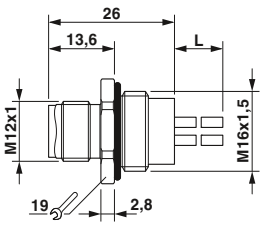

Dimensions: socket




Dimensions: socket




Dimensions: plug




Dimensions: plug

## M12 power device connectors, 2-pos. + PE

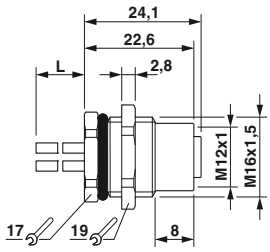
– M16 fastening thread
– With 0.5 m long litz wires
– S-coded

Rear mounting

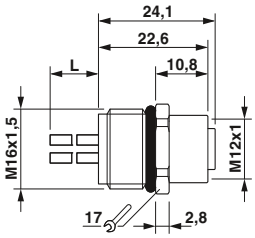
Front mounting

| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Pollution degree | 3 | 3 |
| Degree of protection | IP67 | IP67 |
| Connection method | Individual wires | Individual wires |
| Electrical data | | |
| Rated voltage | 630 V | 630 V |
| Rated current | 16 A | 16 A |
| Contact resistance | ≤ 3 mΩ | ≤ 3 mΩ |
| Material data | | |
| Material contact/contact surface | CuZn/Au | CuZn/Au |
| Contact carrier material | PA | PA |
| Inflammability class according to UL 94 | V0 | V0 |
| Cable type | PP litz wire | PP litz wire |
| Temperature data | | |
| Plug/socket [°C] | -25 ... 105 | -25 ... 105 |

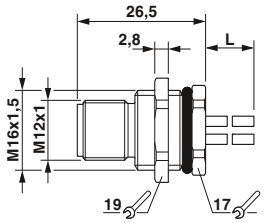
| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Coding | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Power device connectors** | | | | | | | |
| Socket | S power | **SACC-DSI-M12FSS-3P-M16/0,5 PE** | **1411652** | 1 | **SACC-E-M12FSS-3P-M16/0,5 PE** | **1411654** | 1 |
| Plug | S power | **SACC-DSI-M12MSS-3P-M16/0,5 PE** | **1411653** | 1 | **SACC-E-M12MSS-3P-M16/0,5 PE** | **1411655** | 1 |



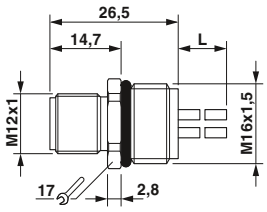

Dimensions: socket




Dimensions: socket




Dimensions: plug




Dimensions: plug

## Mechanical and electrical data

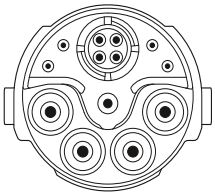
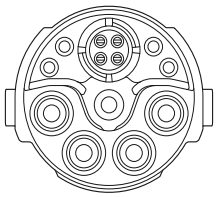
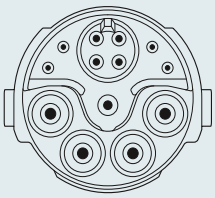
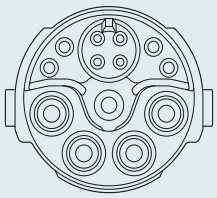
| Mechanical data | |
|---|---|
| Housing material: | Copper zinc alloy (CuZn), die-cast zinc (GD-Zn) |
| Housing surface: | Nickel-plated/thick layer passivated (can be coated) |
| Insulating body: | Polyamide (PA 66) |
| Contact material: | Copper zinc alloy (CuZn) |
| Contact surface: | Nickel-plated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

**Electrical data**

| **No. of positions** | | **13 (4+4+4+PE), CAT5** | | | | **13 (8+4+PE)** | | |
|---|---|---|---|---|---|---|---|---|
| Contacts | | 4 + | 4 + | 4 + | PE | 8 + | 4 + | PE |
| Contact Ø | [mm] | 0.8 | 1.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 |
| **Litz wire cross sections** | | | | | | | | |
| Cable and coupler connectors: | | | | | | | | |
| Max. cable Ø of 18 mm | [mm²] | 0.08 ... 0.5 | 0.06 … 1.0 | 0.25 … 4.0 | 0.25 … 4.0 | 0.06 … 1.0 | 0.25 … 4.0 | 0.25 … 4.0 |
| Device connector: | | | | | | | | |
| | [mm²] | 0.08 ... 0.5 | 0.06 … 1.0 | 0.25 … 4.0 | 0.25 … 4.0 | 0.06 … 1.0 | 0.25 … 4.0 | 0.25 … 4.0 |
| Nominal current per contact at 25°C [1] | | 3.6 | 8 | 30 | - | 8 | 30 | – |
| **Specifications according to DIN EN 61984:2009** | | | | | | | | – |
| Rated voltage | [V AC/DC] | 50 | 50 | 630/850 | - | 50 | 630/850 | – |
| Test/surge voltage | [kV AC] | 1.5 | 1.5 | 6 | - | 1.5 | 6 | – |
| Surge voltage category | | III | | | | III | | |
| Pollution degree [2] | | 3 | | | | 3 | | |
| Installation height | [m] | Up to 3000 | | | | Up to 3000 | | |
| Cable clamping area [3] | Max. Ø [mm] | 18 | | | | 18 | | |

[1] The effective current carrying capacity must be determined using a derating curve, if necessary, according to the application.
[2] The values specified assume that the connector pair is correctly locked and is only disconnected for testing and maintenance purposes. If the connector is unlocked and exposed to ambient conditions, and if there is a danger of contamination, the connector must be sealed using a protective cap ≥ IP54.
[3] The cable clamping areas specified on the following pages may vary depending on the cable material/structure. Selection and testing is the responsibility of the user.

## Pin assignments and coding

| | Contact chamber numbering (view of plug-in side) | | | |
|---|---|---|---|---|
| **No. of positions** | **Pin** | | **Socket** | |
| **13-pos., CAT5 (4 + 4 + 4 + PE)** Crimp |  | |  | |
| **13-pos. (8 + 4 + PE)** Crimp |  | |  | |

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

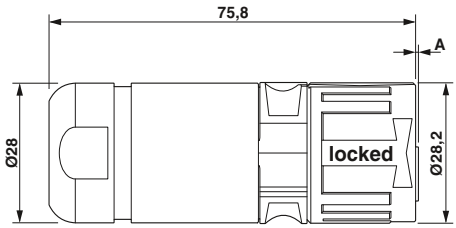
– 4 x power + PE, 4 x signal, 4 x data
– 4 x power + PE, 8 x signal

Cable connector, socket assembly

Cable connector, pin assembly

| Description | Cable clamping area | Ordering data: Order No. (4 x signal + CAT5) | Pcs. / Pkt. | Ordering data: Order No. (8 x signal) | Pcs. / Pkt. | Ordering data: Order No. (4 x signal + CAT5) | Pcs. / Pkt. | Ordering data: Order No. (8 x signal) | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|
| **Cable connector,** with contact carrier, **without** contacts, crimp connection | | | | | | | | | |
| Universal gasket | 7.5 mm ... 18 mm | **1621517** | 1 | **1621524** | 1 | **1621529** | 1 | **1621534** | 1 |
| | 7.5 mm ... 9 mm | **1621520** | 1 | **1621525** | 1 | **1621530** | 1 | **1621535** | 1 |
| | 9 mm ... 12 mm | **1621521** | 1 | **1621526** | 1 | **1621531** | 1 | **1621536** | 1 |
| | 12 mm ... 15 mm | **1621522** | 1 | **1621527** | 1 | **1621532** | 1 | **1621537** | 1 |
| | 15 mm ... 18 mm | **1621523** | 1 | **1621528** | 1 | **1621533** | 1 | **1621538** | 1 |

| | Accessories | Accessories |
|---|---|---|
| **Crimp contacts**<br>**Color rings,** 50 pcs. in set (to be ordered separately) | See page 66<br>See Catalog 2, page 367 | See page 66<br>See Catalog 2, page 367 |




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

## M23 coupler connector, hybrid

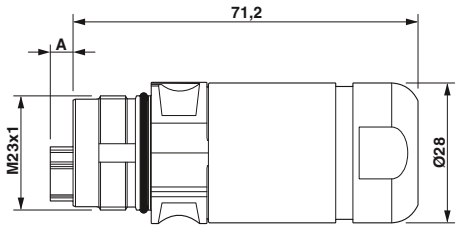
– 4 x power + PE, 4 x signal, 4 x data
– 4 x power + PE, 8 x signal

Coupler connector, socket assembly

Coupler connector, pin assembly

| Description | Cable clamping area | Ordering data: Order No. (4 x signal + CAT5) | Pcs. / Pkt. | Ordering data: Order No. (8 x signal) | Pcs. / Pkt. | Ordering data: Order No. (4 x signal + CAT5) | Pcs. / Pkt. | Ordering data: Order No. (8 x signal) | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|
| **Coupler connector,** with contact carrier, **without** contacts, crimp connection | | | | | | | | | |
| Universal gasket | 7.5 mm ... 18 mm | **1621539** | 1 | **1621544** | 1 | **1621549** | 1 | **1621554** | 1 |
| | 7.5 mm ... 9 mm | **1621540** | 1 | **1621545** | 1 | **1621550** | 1 | **1621555** | 1 |
| | 9 mm ... 12 mm | **1621541** | 1 | **1621546** | 1 | **1621551** | 1 | **1621556** | 1 |
| | 12 mm ... 15 mm | **1621542** | 1 | **1621547** | 1 | **1621552** | 1 | **1621557** | 1 |
| | 15 mm ... 18 mm | **1621543** | 1 | **1621548** | 1 | **1621553** | 1 | **1621558** | 1 |

| | Accessories | Accessories |
|---|---|---|
| **Crimp contacts**<br>**Color rings,** 50 pcs. in set (to be ordered separately) | See page 66<br>See Catalog 2, page 367 | See page 66<br>See Catalog 2, page 367 |




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

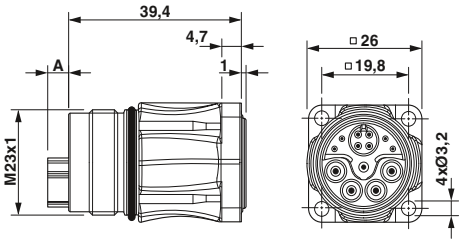
## M23 device connectors, hybrid, straight

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

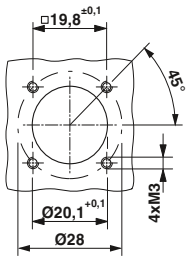
**Device connector, straight, socket assembly**

**Device connector, straight, pin assembly**

| Description | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **4 x signal + CAT5** | | **8 x signal** | | **4 x signal + CAT5** | | **8 x signal** | |
| **Device connector,** with contact carrier, **without** contacts | | | | | | | | |
| Flange dimensions: 26 mm x 26 mm | **1621567** | 1 | **1621568** | 1 | **1621569** | 1 | **1621570** | 1 |
| | **Accessories** | | | | **Accessories** | | | |
| **Crimp contacts**<br>**Color rings,** 50 pcs. in set (to be ordered separately) | See page 66<br>See Catalog 2, page 367 | | | | See page 66<br>See Catalog 2, page 367 | | | |




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




**Installation dimensions**

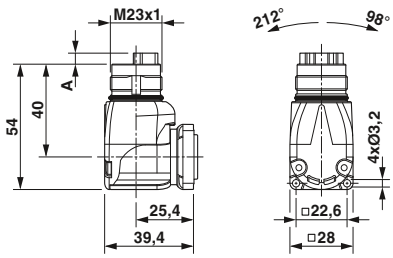
## M23 device connector, hybrid, angled, rotatable

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

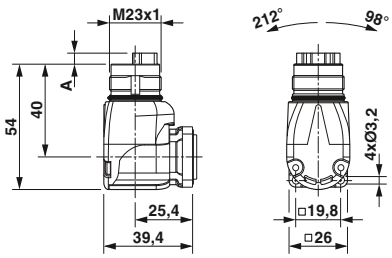
**Device connector, angled, rotatable, socket assembly**

**Device connector, angled, rotatable, pin assembly**

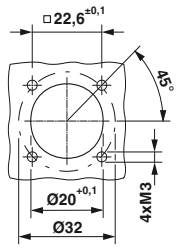
| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **4 x signal + CAT5** | | **8 x signal** | | **4 x signal + CAT5** | | **8 x signal** | |
| **Device connector,** with contact carrier, **without** contacts<br>Flange dimensions: 26 mm x 26 mm | **1621563** | 1 | **1621564** | 1 | **1621565** | 1 | **1621566** | 1 |
| **Device connector,** with contact carrier, **without** contacts<br>Flange dimensions: 28 mm x 28 mm | **1621559** | 1 | **1621560** | 1 | **1621561** | 1 | **1621562** | 1 |
| | **Accessories** | | | | **Accessories** | | | |
| **Crimp contacts**<br>**Color rings,** 50 pcs. in set (to be ordered separately) | See page 66<br>See Catalog 2, page 367 | | | | See page 66<br>See Catalog 2, page 367 | | | |



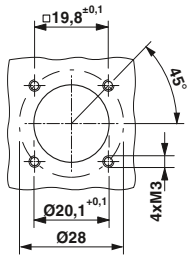

**Pin version: dimension A = 4.7 mm, socket version: dimension A = 0 mm**




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




**Installation dimensions**




**Installation dimensions**

## Crimp contacts

Crimp contacts, socket

Crimp contacts, pin

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Connection cross section [mm²] | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Contacts, Ø 0.8 mm** | | | | | | | |
| | 0.08 mm² ... 0.25 mm² | **SF-08KS010** | **1621571** | 100 | **SF-08KP010** | **1621574** | 100 |
| | 0.34 mm² ... 0.5 mm² | **SF-08KS020** | **1621573** | 100 | **SF-08KP020** | **1621575** | 100 |
| **Contacts, Ø 1.0 mm** | | | | | | | |
| | 0.06 mm² ... 0.25 mm² | **ST-10KS010** | **1618239** | 100 | **ST-10KP010** | **1618255** | 100 |
| | 0.34 mm² ... 0.5 mm² | **ST-10KS020** | **1618251** | 100 | **ST-10KP020** | **1618256** | 100 |
| | 0.5 mm² ... 1.0 mm² | **ST-10KS030** | **1618254** | 100 | **ST-10KP030** | **1618261** | 100 |
| **Contacts, Ø 2.0 mm** | | | | | | | |
| | 0.25 mm²... 1.0 mm² | **SF-20KS021** | **1621576** | 50 | **SF-20KP021** | **1621579** | 50 |
| | 1.0 mm² ... 2.5 mm² | **SF-20KS022** | **1621577** | 50 | **SF-20KP022** | **1621580** | 50 |
| | 2.5 mm² ... 4.0 mm² | **SF-20KS023** | **1621578** | 50 | **SF-20KP023** | **1621581** | 50 |

Flexibility is required when it comes to the structure of a sustainable power supply system. A combination of various sources of renewable energy – even in conjunction with storage technologies – is already proving cost-effective. What is striking here is that miniaturization is more than just a trend; it is a recognized method of increasing system efficiency.

In photovoltaics, the micro inverter, the little brother of the string inverter, is particularly gaining in popularity. It can even be used cost-effectively in locations that are clearly less than ideal. Double-figure percentage increases in yield in comparison to string inverters mean that even areas that are not ideal can be used cost-effectively.

SUNCLIX micon, the connection system for the AC-side of micro inverters, simplifies installation using components which have proven themselves a million times over.

**AC-Y connectors**

The AC-Y connectors consist of two 3-pos. connections, which are connected to each other via the trunk line without the risk of polarity reversal. In addition to accommodating the trunk line, the coupling side also accommodates the drop line, which serves as a connection to the inverter.

**Mains connector plugs**

The mains connector plugs provide the connecting link between the PV system and mains. Depending on the system structure, the mains can be connected via the plug or coupling side of the AC Y-connector. The free cable end is either connected in a distributor box or fed into an incoming mains feeder box via a cable sleeve.

**Protective caps**

Dust protection caps (brown) made from biodegradable plastic protect the pin connector pattern from contamination during transport. When it comes to installation, they can be easily removed from the plug without any special tools. During installation, the IP protective caps (black) are inserted as an end cap on the last connector in order to protect it from atmospheric influences.

**Contact removal tool**

The locking mechanism on the connector is extremely robust and prevents unintentional release. The contact removal tool enables the lock to be opened easily and quickly. Thanks to an additional latch, it does not fall out of the plug housing once it has been released.

**DC connectors**

With the SUNCLIX DC connector as a device plug or for field assembly, you can also impress with performance and quality on the module side.

## SUNCLIX micon

- Pre-assembled sets for minimum effort at the installation site
- Customer-specific versions on request
- Networked cables
- Proven SUNCLIX contact technology for optimum system performance

AC Y-distributor

Mains connector plug for the coupling side

| | | Technical data | | Technical data | |
|---|---|---|---|---|---|
| | | North American version | European version | North American version | European version |
| General data | | | | | |
| Degree of protection | | IP67 | IP67 | IP67 | IP67 |
| Electrical data | | | | | |
| Rated voltage | | 600 V | 400 V | 600 V | 400 V |
| Rated current | | | | | |
| | Trunk line | 20 A | 20 A | 20 A | 20 A |
| | Drop line | 5 A | 5 A | - | - |
| Conductor cross section | | | | | |
| | Trunk line | 12 AWG | 2.5 mm² | 12 AWG | 2.5 mm² |
| | Drop line | 14 AWG | 0.75 mm² | - | - |
| No. of pos. | | | | | |
| | Trunk line | 3 | 3 | 3 | 3 |
| | Drop line | 3 | 3 | - | - |
| Cable length | | | | | |
| | Trunk line | 1150 mm | 1150 mm | 1000 mm | 1000 mm |
| | Drop line | 500 mm | 500 mm | - | - |
| Temperature data | | | | | |
| Ambient temperature (operation) | | -40°C ... 90°C | -40°C ... 85°C | -40°C ... 90°C | -40°C ... 85°C |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **AC Y-distributor** for PV microinverters incl. dust protection caps | | | | | | |
| North American version | **PV-MI-YC-1,15-3-12-NA-0,50-OE** | **1706518** | 1 | | | |
| European version | **PV-MI-YC-1,15-3-25-EU-0,50-OE** | **1621351** | 1 | | | |
| **Mains connector plug** of the AC Y-distributor incl. IP protective cap and contact removal tool | | | | | | |
| North American version | | | | **PV-MI-YC-GC-P-1,00-3-12-NA SET** | **1707091** | 1 |
| European version | | | | **PV-MI-YC-GC-P-1,00-3-25-EU SET** | **1621349** | 1 |
| **Patch cable** for extending the trunk line incl. dust protection caps | | | | | | |
| North American version | | | | | | |
| European version | | | | | | |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **Dust protection cap, IP40,** for SUNCLIX micon | | | | | | |
| Coupling side | **PV-MI-YC-CARRIER-CAP-TS** | **1706599** | 5 | **PV-MI-YC-CARRIER-CAP-TS** | **1706599** | 5 |
| Plug side | **PV-MI-YC-CARRIER-CAP-TP** | **1706608** | 5 | **PV-MI-YC-CARRIER-CAP-TP** | **1706608** | 5 |
| **Protective cap, IP67,** for SUNCLIX micon | | | | | | |
| Coupling side | **PV-MI-YC-PROTECTION-CAP-TS** | **1706515** | 1 | **PV-MI-YC-PROTECTION-CAP-TS** | **1706515** | 1 |
| Plug side | **PV-MI-YC-PROTECTION-CAP-TP** | **1706610** | 1 | **PV-MI-YC-PROTECTION-CAP-TP** | **1706610** | 1 |
| **Contact removal tool,** for SUNCLIX micon, trunk line | **PV-MI-YC-UNLOCKTOOL** | **1706514** | 5 | **PV-MI-YC-UNLOCKTOOL** | **1706514** | 5 |

Mains connector plug
for the plug side

Patch cable

| Technical data | |
|---|---|
| North American version | European version |
| IP67 | IP67 |
| 600 V | 400 V |
| 20 A<br>- | 20 A<br>- |
| 12 AWG<br>- | 2.5 mm²<br>- |
| 3<br>- | 3<br>- |
| 1000 mm<br>- | 1000 mm<br>- |
| -40°C ... 90°C | -40°C ... 85°C |

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs. / Pkt. |
| PV-MI-YC-GC-S-1,00-3-12-NA SET | 1707092 | 1 |
| PV-MI-YC-GC-S-1,00-3-25-EU SET | 1621350 | 1 |

| Accessories | | |
|---|---|---|
| PV-MI-YC-CARRIER-CAP-TS | 1706599 | 5 |
| PV-MI-YC-CARRIER-CAP-TP | 1706608 | 5 |
| PV-MI-YC-PROTECTION-CAP-TS | 1706515 | 1 |
| PV-MI-YC-PROTECTION-CAP-TP | 1706610 | 1 |
| PV-MI-YC-UNLOCKTOOL | 1706514 | 5 |

| Technical data | |
|---|---|
| North American version | European version |
| IP67 | IP67 |
| 600 V | 400 V |
| 20 A<br>- | 20 A<br>- |
| 12 AWG<br>- | 2.5 mm²<br>- |
| 3<br>- | 3<br>- |
| 1000 mm<br>- | 1000 mm<br>- |
| -40°C ... 90°C | -40°C ... 85°C |

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs. / Pkt. |
| PV-MI-YC-PATCH-1,00-3-12-NA | 1707090 | 10 |
| PV-MI-YC-PATCH-1,00-3-25-EU | 1621352 | 10 |

| Accessories | | |
|---|---|---|
| PV-MI-YC-CARRIER-CAP-TS | 1706599 | 5 |
| PV-MI-YC-CARRIER-CAP-TP | 1706608 | 5 |
| PV-MI-YC-PROTECTION-CAP-TS | 1706515 | 1 |
| PV-MI-YC-PROTECTION-CAP-TP | 1706610 | 1 |
| PV-MI-YC-UNLOCKTOOL | 1706514 | 5 |

## Cable installation

### Cable splice kit
– Cable-to-cable connection
– IP67 for outdoor applications
– Accepts three conductors, 1.5 mm² to 25 mm² (16 to 4 AWG)

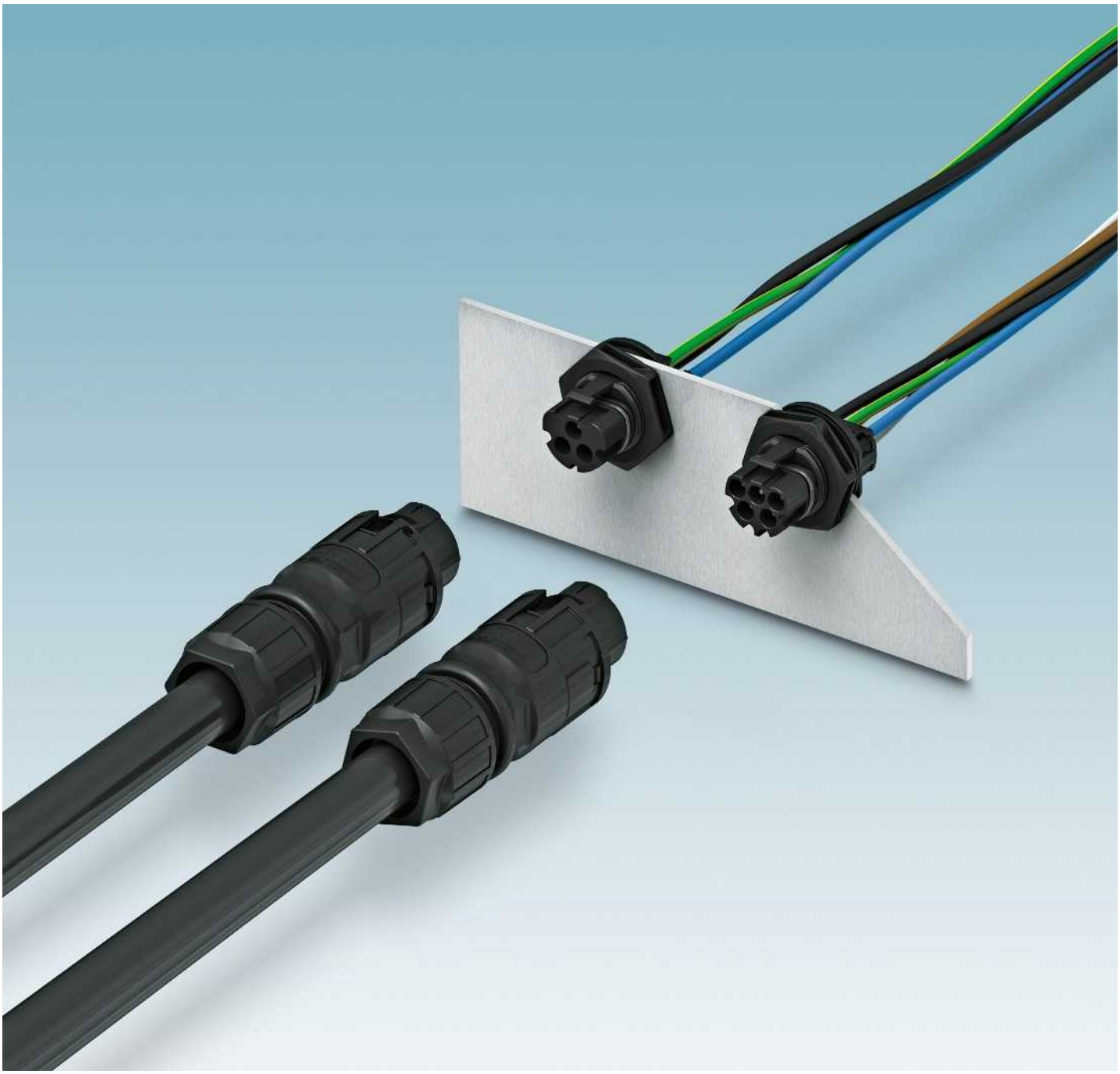
### Cable terminator
– End-of-run cable terminator
– IP67 for outdoor applications
– Accepts three conductors, 1.5 mm² to 25 mm² (16 to 4 AWG)

Cable splice kit

Cable terminator

| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Degree of protection | IP67 | IP67 |
| Connection method | Screw connection within housing | - |
| Electrical data | | |
| Rated voltage | 600 V AC/DC | 600 V AC/DC |
| Rated current | 30 A | - |
| Conductor cross section [mm² // AWG] | 1.5 mm² ... 25 mm² // 16 ... 4 | 1.5 mm² ... 25 mm² // 16 ... 4 |
| Cable diameter | 9.5 mm ... 13 mm (0.37 ... 0.51 in.) | 9.5 mm ... 13 mm (0.37 ... 0.51 in.) |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 90°C | -40°C ... 90°C |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Cable splice kit** | | | | | | |
| - 3 conductors | **PV-MI-CABLE SPLICE 3P** | **1812403** | 1 | | | |
| **Cable terminator** | | | | | | |
| - 3 conductors | | | | **PV-MI-CABLE TERMINATOR 3P** | **1812416** | 1 |



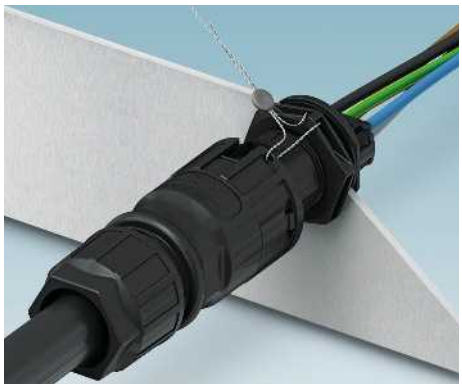
**IP-protected circular connectors for power electronics**

The new power connectors in the PRC series enable you to reliably and conveniently connect 3 and 5-wire cables to your device (e.g., a solar inverter). The device connectors with crimp connection are supplied pre-assembled with punched-on litz wires or alternatively they can be self-assembled.

Remove the cable sheath, strip the wires, and conveniently connect with screw connection

Snap the contact carrier into the plug housing

Tighten the cable gland



– Sealable for protection against tampering

– UV-resistant plastic for safe outdoor use

– Secure latching to be disconnected using tool

– Fully flexible for the device manufacturer: Pre-assembled panel feed-through or flexible and rapid self-assembly.

– The mechanical coding ensures that 3- and 5-pos. connectors are not accidentally connected to each other.

– Everything from a single source: Phoenix Contact supplies connectors for all the interfaces on a solar inverter.

## Cable connectors

- Snaps in automatically when inserted, released using a screwdriver
- Screw connection of 1.5 mm² to 6 mm²
- With lagging PE contact

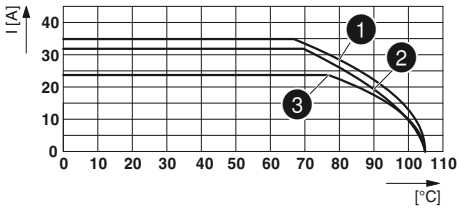
**3-pos., socket contacts**

**5-pos., socket contacts**

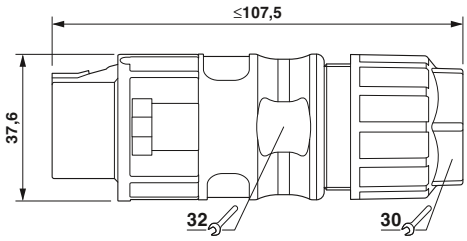
| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Degree of protection | IP65/IP68 | IP65/IP68 |
| Conductor cross section | 1.5 mm² ... 6 mm² | 1.5 mm² ... 6 mm² |
| Electrical data | | |
| Rated voltage | 690 V | 690 V |
| Rated current | 35 A | 30 A |
| Material data | | |
| Contact surface material | Silver-plated | Silver-plated |
| Material of grip body | PPE | PPE |
| Inflammability class according to UL 94 | V0 | V0 |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 100°C (dependent on the derating curve) | -40°C ... 100°C (dependent on the derating curve) |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Cable connector,** with screw connection for cable diameter: | | | | | | |
| 8 mm ... 21 mm | **PRC 3-FC-FS6 8-21** | **1410661** | 1 | **PRC 5-FC-FS6 8-21** | **1410656** | 1 |
| 8 mm ... 12 mm | **PRC 3-FC-FS6 8-12** | **1410658** | 1 | **PRC 5-FC-FS6 8-12** | **1410629** | 1 |
| 12 mm ... 16 mm | **PRC 3-FC-FS6 12-16** | **1409217** | 1 | **PRC 5-FC-FS6 12-16** | **1409205** | 1 |
| 16 mm ... 25 mm | **PRC 3-FC-FS6 16-21** | **1410659** | 1 | **PRC 5-FC-FS6 16-21** | **1410655** | 1 |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **Protective cap** | **PRC COVER F** | **1409236** | 50 | **PRC COVER F** | **1409236** | 50 |
| **Test plug,** black, 1.5 mm² ... 6 mm² with screw connection, for cables with diameter 8 mm ... 21 mm | **PRC 3-TC-FS6 8-21** | **1621326** | 50 | **PRC 5-TC-FS6 8-21** | **1621325** | 50 |




**Derating diagram**



## Device connectors

- Snaps in automatically when inserted, released using a screwdriver
- Pre-assembled with litz wires or for self-assembly
- IP65 when not plugged in
- With capacitive PE contact

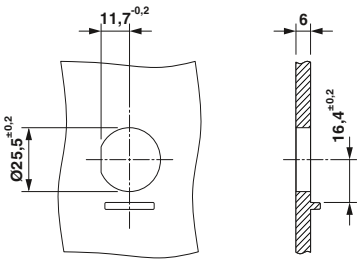
**Pin contacts with litz wires**

**Pin contact carrier without contacts**

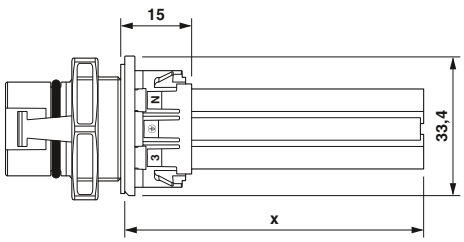
| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **3-pos.** | **5-pos.** | **3-pos.** | **5-pos.** |
| General data | | | | |
| Degree of protection (when plugged in) | IP65/IP68 (2m/24h) | | IP65/IP68 (2m/24h) | |
| Electrical data | | | | |
| Rated voltage | 690 V | | 690 V | |
| Rated current | 35 A | 30 A | 35 A | 30 A |
| Material data | | | | |
| Contact surface material | Silver-plated | | Silver-plated | |
| Material of grip body | PPE | | PPE | |
| Inflammability class according to UL 94 | V0 | | V0 | |
| Temperature data | | | | |
| Ambient temperature (operation) | -40°C ... 100°C (dependent on the derating curve) | | -40°C ... 100°C (dependent on the derating curve) | |

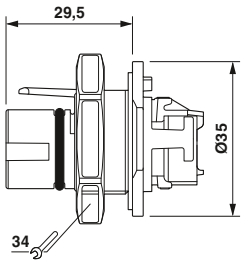
| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **3-pos.** | | **5-pos.** | | **3-pos.** | | **5-pos.** | |
| **M25 device connector incl. locking nut,** cable length 150 mm, with conductor cross section: | | | | | | | | |
| 2.5 mm² | **1409219** | 10 | **1409211** | 10 | | | | |
| 4 mm² | **1409220** | 10 | **1409212** | 10 | | | | |
| 6 mm² | **1409221** | 10 | **1409213** | 10 | | | | |
| **Contact carrier incl. locking nut,** without contacts, for crimp contacts, conductor cross section of 2.5 mm² ... 6 mm² | | | | | **1409218** | 50 | **1409206** | 50 |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **Protective cap** | **PRC COVER M** | **1409237** | 50 | **PRC COVER M** | **1409237** | 50 |
| **Replacement locking nut** | **FT NUT M25 BK** | **1457937** | 100 | **FT NUT M25 BK** | **1457937** | 100 |
| **Crimp contacts CK 2,5,** silver-plated contact surface for conductor cross section: | | | | | | |
| 2.5 mm² | | | | **CK2,5-M-2,5 AG** | **1409207** | 100 |
| 4 mm² | | | | **CK2,5-M-4 AG** | **1409208** | 100 |
| 6 mm² | | | | **CK2,5-M-6 AG** | **1409209** | 100 |




**Panel cutout**



The development of a widespread charging infrastructure in conjunction with renewable energy is an important step toward a mobile future. Internationally standardized charging systems are used to establish an electrical connection between the electric vehicle and the infrastructure (e.g., a charging station). In terms of the charging interfaces required, a distinction is made between:

– Vehicle inlets
– Socket outlets on the charging station
– Charging cables with connectors (charging plug on the vehicle), plugs (charging plug in the infrastructure), and integrated IC-CPD control units.

International standards ensure uniform connection for charging stations and vehicles:

– Type 1 according to SAE J1772 (USA, Japan)
– Type 2 according to IEC-62196 (Europe)
– GB standard (China).

The charging plugs from Phoenix Contact offer reliable, standard-compliant solutions for a consistent charging interface for all applications.

This is implemented, for example, with the Combined Charging System (CCS), which was developed by major German automobile manufacturers in cooperation with Phoenix Contact. The electric vehicle can be charged conventionally with AC at home, for example. In addition, the vehicle-side inlet is also designed for rapid DC charging. Only short stops are required for the charging process - e.g., on the go at rest stops.

**AC type 1**
The type 1 AC charging system is based on standard SAE J1772. It is primarily used in the USA and Japan. The lock is implemented using a lever system.

**AC type 2**
The type 2 AC charging system, developed for Europe, is designed according to the IEC 62196-2 standard. It supports single- and three-phase charging. An electromechanical actuator lock safeguards the charging process.

**AC GB**
The AC charging system standardized according to the Chinese GB standard enables both single- and three-phase charging. Charging takes place securely thanks to a special lever system.

**DC CCS type 1**
In the USA, the type 1 DC CCS charging system is used for fast DC charging, according to SAE J1772 and IEC 62196-3. The lever locking mechanism is also supported by an additional actuator lock.

**DC CCS type 2**
In Europe, the type 2 DC CCS charging system is the vanguard for rapid DC charging according to IEC-62196-3. The electromechanical actuator lock prevents premature removal during the charging process.

**DC GB**
The DC GB charging system is based on the GB standard. It offers rapid DC charging for Chinese charging stations. The lever lock is also supported by an additional actuator lock.

## Type 1 AC charging cables with open cable end

Type 1 AC charging cables with open cable end are primarily installed in charging stations and wall boxes in the USA and Japan. They are used to charge electric vehicles with alternating current.

| Notes: |
|---|
| Further cable types and lengths are available on request. |
| Color variants for housing and cables are available on request. |
| Additional charging cables with higher rated currents are available on request. |
| All connectors are supplied with a protective cap. |

**Type 1 AC connector, with AWG cable**

**Type 1 AC connector, with metric cable**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **16 A** | **30 A** | **20 A** | **32 A** |
| Rated current | 16 A | 30 A | 20 A | 32 A |
| Number of phases | 1 | 1 | 1 | 1 |
| Rated voltage | 240 V AC | 240 V AC | 250 V AC | 250 V AC |
| Standards | SAE J1772 | SAE J1772 | SAE J1772 | SAE J1772 |
| Charging mode | AC level 2 | AC level 2 | Mode 3 | Mode 3 |
| Resistor coding | 150 Ω (Lever actuated)<br>480 Ω (Lever not actuated) | 150 Ω (Lever actuated)<br>480 Ω (Lever not actuated) | 150 Ω (Lever actuated)<br>480 Ω (Lever not actuated) | 150 Ω (Lever actuated)<br>480 Ω (Lever not actuated) |
| Ambient temperature (Operation) | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C |
| Number of power contacts | 3 (L1, N, PE) | 3 (L1, N, PE) | 3 (L1, N, PE) | 3 (L1, N, PE) |
| Insertion/withdrawal cycles | > 10000 | > 10000 | > 10000 | > 10000 |
| Insertion/withdrawal force | < 100 N | < 100 N | < 100 N | < 100 N |
| Type of protection (when plugged in) | IP44 | IP44 | IP44 | IP44 |
| Degree of protection (with protective cap) | IP24 | IP24 | IP24 | IP24 |
| Degree of protection (when not plugged in) | IP20 | IP20 | IP20 | IP20 |
| Cable data | | | | |
| Cable type | Straight | Straight | Spiraled | Spiraled |
| Cable length | 4 m | 4 m | 4 m | 4 m |
| Cable diameter | 9.4 mm ± 0.2 | 16.4 mm ± 0.2 | 10.5 mm ±0.5 | 13.9 mm ±0.5 |
| Cable structure | 3 x 14 AWG + 1 x 18 AWG | 3 x 10 AWG + 1 x 18 AWG | 3 x 2.5 $mm^2$ + 1 x 0.5 $mm^2$ | 3 x 6.0 $mm^2$ + 1 x 0.5 $mm^2$ |
| Sheath color | Black | Black | Black | Black |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **16 A** | | **30 A** | | **20 A** | | **32 A** | |
| **AC charging cable with open cable end,** mode 3, type 1 | | | | | | | | |
| | **1621484** | 1 | **1409949** | 1 | **1621670** | 1 | **1621794** | 1 |

## Type 2 AC charging cables with open cable end

Type 2 AC charging cables with open cable end are installed in charging stations and wall boxes in European infrastructure. They are used to charge electric vehicles with alternating current.

| Notes: |
|---|
| Further cable types and lengths are available on request. |
| Color variants for housing and cables are available on request. |
| Additional charging cables with higher rated currents are available on request. |
| All connectors are supplied with a protective cap. |

**Type 2 AC connector, 20 A**

**Type 2 AC connector, 32 A**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **20 A** | **20 A** | **32 A** | **32 A** |
| Rated current | 20 A | 20 A | 32 A | 32 A |
| Number of phases | 1 | 3 | 1 | 3 |
| Rated voltage | 250 V AC | 480 V AC | 250 V AC | 480 V AC |
| Standards | IEC 62196-2 | IEC 62196-2 | IEC 62196-2 | IEC 62196-2 |
| Charging mode | Mode 3 | Mode 3 | Mode 3 | Mode 3 |
| Resistor coding | 680 Ω (between PE and PP) | 680 Ω (between PE and PP) | 220 Ω (between PE and PP) | 220 Ω (between PE and PP) |
| Ambient temperature (Operation) | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C |
| Number of power contacts | 3 (L1, N, PE) | 5 (L1, L2, L3, N, PE) | 3 (L1, N, PE) | 5 (L1, L2, L3, N, PE) |
| Insertion/withdrawal cycles | > 10000 | > 10000 | > 10000 | > 10000 |
| Insertion/withdrawal force | < 100 N | < 100 N | < 100 N | < 100 N |
| Type of protection (when plugged in) | IP44 | IP44 | IP44 | IP44 |
| Degree of protection (with protective cap) | IP24 | IP24 | IP24 | IP24 |
| Degree of protection (when not plugged in) | IP20 | IP20 | IP20 | IP20 |
| Cable data | | | | |
| Cable type | Straight | Straight | Straight | Straight |
| Cable length | 4 m | 4 m | 4 m | 4 m |
| Cable diameter | 10.5 mm ±0.5 | 13 mm ±0.5 | 13.9 mm ±0.5 | 17 mm ±0.5 |
| Cable structure | 3 x 2.5 $mm^2$ + 1 x 0.5 $mm^2$ | 5 x 2.5 $mm^2$ + 1 x 0.5 $mm^2$ | 3 x 6 $mm^2$ + 1 x 0.5 $mm^2$ | 5 x 6 $mm^2$ + 1 x 0.5 $mm^2$ |
| Sheath color | Black | Black | Black | Black |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **20 A** | | **20 A** | | **32 A** | | **32 A** | |
| **AC charging cable with open cable end,** mode 3, type 2 | | | | | | | | |
| | **1409319** | 1 | **1409320** | 1 | **1405198** | 1 | **1405199** | 1 |

## Type 1 and type 1 mobile AC charging cables (mode 3)

The mobile AC charging cables enable electric vehicles to be charged with alternating current at European charging stations or wall boxes at home and while on the move. They can easily be stored inside the vehicle.

| Notes: |
|---|
| Further cable types and lengths are available on request. |
| Color variants for housing and cables are available on request. |
| All connectors and plugs are supplied with a protective cap. |

**Type 1 AC connector with type 2 plug**

**Type 2 AC connector with type 2 plug**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **20 A** | **32 A** | **20 A** | **32 A** |
| Rated current | 20 A | 32 A | 20 A | 32 A |
| Number of phases | 1 | 1 | 1 | 3 |
| Rated voltage | 250 V AC | 250 V AC | 250 V AC | 480 V AC |
| Standards | IEC 62196-2 | IEC 62196-2 | IEC 62196-2 | IEC 62196-2 |
| Charging mode | Mode 3 | Mode 3 | Mode 3 | Mode 3 |
| Ambient temperature (Operation) | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C |
| Number of power contacts | 3 (L1, N, PE) | 3 (L1, N, PE) | 3 (L1, N, PE) | 5 (L1, L2, L3, N, PE) |
| Insertion/withdrawal cycles | > 10000 | > 10000 | > 10000 | > 10000 |
| Insertion/withdrawal force | < 100 N | < 100 N | < 100 N | < 100 N |
| Type of protection (when plugged in) | IP44 | IP44 | IP44 | IP44 |
| Degree of protection (with protective cap) | IP24 | IP24 | IP24 | IP24 |
| Degree of protection (when not plugged in) | IP20 | IP20 | IP20 | IP20 |
| Cable data | | | | |
| Cable type | Straight | Straight | Straight | Straight |
| Cable length | 4 m | 4 m | 4 m | 4 m |
| Cable diameter | 10.5 mm ±0.5 | 13.9 mm ±0.5 | 10.5 mm ±0.5 | 17 mm ±0.5 |
| Cable structure | 3 x 2.5 mm² + 1 x 0.5 mm² | 3 x 6 mm² + 1 x 0.5 mm² | 3 x 2.5 mm² + 1 x 0.5 mm² | 5 x 6 mm² + 1 x 0.5 mm² |
| Sheath color | Black | Black | Black | Black |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **20 A** | | **32 A** | | **20 A** | | **32 A** | |
| **AC charging cable with plug,** mode 3 | | | | | | | | |
| | **1621481** | 1 | **1410090** | 1 | **1405193** | 1 | **1404569** | 1 |

## Type 1 and type 2 mobile AC charging cables (mode 2)

The mobile AC charging cables with In Cable Control and Protection Device (IC-CPD) enable electric vehicles to be charged with alternating current at a normal, European socket at home and while on the move. Standardized communication with the vehicle as well as the safety equipment are integrated in the IC-CPD.

**Notes:**
All connectors are supplied with a protective cap.

**Type 1 AC connector with IC-CPD and SCHUKO plug**

**Type 2 AC connector with IC-CPD and SCHUKO plug**

| | Technical data | Technical data |
|---|---|---|
| Rated current | 6 A ... 13 A | 6 A ... 13 A |
| Number of phases | 1 | 1 |
| Rated voltage | 200 V AC ... 250 V AC | 200 V AC ... 250 V AC |
| Frequency | 50 Hz | 50 Hz |
| Charging power | 1.4 kW ... 3 kW | 1.4 kW ... 3 kW |
| Standards | IEC 61851-1 | IEC 61851-1 |
| Charging mode | Mode 2 | Mode 2 |
| Ambient temperature (Operation) | -30°C ... 40°C | -30°C ... 40°C |
| Tripping characteristics / residual current | Type A/30 mA | Type A/30 mA |
| Infrastructure plug | SCHUKO (type AF) | SCHUKO (type AF) |
| Temperature sensor (infrastructure plug) | Available | Available |
| Degree of protection (IC-CPD) | IP67 | IP67 |
| Type of protection (when plugged in) | IP44 | IP44 |
| Degree of protection (with protective cap) | IP24 | IP24 |
| Degree of protection (when not plugged in) | IP20 | IP20 |
| Cable data | | |
| Cable type | Straight | Straight |
| Cable length | 4 m | 4 m |
| Cable diameter | 10.5 mm ±0.5 | 10.5 mm ±0.5 |
| Cable structure | 3 x 2.5 $mm^2$ + 2 x 0.5 $mm^2$ | 3 x 2.5 $mm^2$ + 2 x 0.5 $mm^2$ |
| Sheath color | Red | Red |

| Description | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **AC charging cable with IC-CPD,** mode 2 | **EV-ICCPD-T1C-EU-S-13A1-A-GEN2** | **1621797** | 1 | **EV-ICCPD-T2C-EU-S-13A1-A** | **1621516** | 1 |

## Combined charging system (CCS) DC charging cables type 1 and type 2

The CCS DC charging cables with open cable end are connected directly to a DC charging station. They are suitable for fast DC charging of electric vehicles.

The CCS connector is compatible with the CCS inlet, which also accommodates an AC connector.

| Notes: |
|---|
| Further cable types and lengths are available on request. |
| Color variants for housing and cables are available on request. |

**Type 1 combined DC connector, with AWG cable**

**Type 2 combined DC connector, with metric cable**

| | Technical data | | | Technical data | | |
|---|---|---|---|---|---|---|
| | **60 A** | **125 A** | **200 A** | **60 A** | **125 A** | **200 A** |
| Rated current | 60 A | 125 A | 200 A | 60 A | 125 A | 200 A |
| Rated voltage | 600 V DC | 600 V DC | 600 V DC | 850 V DC | 850 V DC | 850 V DC |
| Standards | SAE J1772 | SAE J1772 | SAE J1772 | IEC 62196-3 | IEC 62196-3 | IEC 62196-3 |
| Charging mode | DC level 2 | DC level 2 | DC level 2 | Mode 4 | Mode 4 | Mode 4 |
| Resistor coding | 150 Ω (Lever actuated) 480 Ω (Lever not actuated) | 150 Ω (Lever actuated) 480 Ω (Lever not actuated) | 150 Ω (Lever actuated) 480 Ω (Lever not actuated) | 1500 Ω (between PE and PP) | 1500 Ω (between PE and PP) | 1500 Ω (between PE and PP) |
| Ambient temperature (Operation) | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C | -30°C ... 50°C |
| Number of power contacts | 3 (PE, DC+, DC-) | 3 (PE, DC+, DC-) | 3 (PE, DC+, DC-) | 3 (PE, DC+, DC-) | 3 (PE, DC+, DC-) | 3 (PE, DC+, DC-) |
| Insertion/withdrawal cycles | > 10000 | > 10000 | > 10000 | > 10000 | > 10000 | > 10000 |
| Insertion/withdrawal force | < 100 N | < 100 N | < 100 N | < 100 N | < 100 N | < 100 N |
| Temperature sensor | Pt1000 | Pt1000 | Pt1000 | Pt1000 | Pt1000 | Pt1000 |
| Type of protection (when plugged in) | IP44 | IP44 | IP44 | IP44 | IP44 | IP44 |
| Degree of protection (when not plugged in) | IP20 | IP20 | IP20 | IP24 | IP24 | IP24 |
| Cable data | | | | | | |
| Cable type | Straight | Straight | Straight | Straight | Straight | Straight |
| Cable length | 5 m | 5 m | 5 m | 4.5 m | 5 m | 5 m |
| Cable diameter | 20.6 mm ± 0.2 | 32.2 mm ± 0.2 | 37.4 mm ± 0.2 | 19 mm ± 0.2 | 28.2 mm ± 0.2 | 32 mm ± 0.2 |
| Cable structure | 3 x 6 AWG + 3 x 2 x 18 AWG | 2 x 1 AWG + 1 x 3 AWG + 3 x 2 x 18 AWG | 2 x 00 AWG + 1 x 1 AWG + 3 x 2 x 18 AWG | 3 x 16 $mm^2$ + 3 x 2 x 0.75 $mm^2$ | 2 x 50 $mm^2$ + 1 x 25 $mm^2$ + 3 x 2 x 0.75 $mm^2$ | 2 x 70 $mm^2$ + 1 x 35 $mm^2$ + 3 x 2 x 0.75 $mm^2$ |
| Sheath color | Black | Black | Black | Black | Black | Black |

| | Ordering data | | | | | | Ordering data | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **60 A** | | **125 A** | | **200 A** | | **60 A** | | **125 A** | | **200 A** | |
| **DC charging cable with open cable end,** combined charging system (CCS) | **1621488** | 1 | **1409950** | 1 | **1621489** | 1 | **1618306** | 1 | **1409060** | 1 | **1621653** | 1 |

## DC charging cables GB standard (China)

DC GB charging cables with open cable end are installed in Chinese charging stations with a stationary AC/DC converter. They are suitable for fast DC charging of electric vehicles.

| Notes: |
|---|
| Further cable types and lengths are available on request. |
| Color variants for housing and cables are available on request. |

**DC GB connector, with metric cable**

### Technical data

| | |
|---|---|
| Rated current | 60 A |
| Rated voltage | 750 V DC |
| Standards | GB/T Part 3 |
| Charging mode | Mode 4 |
| Resistor coding | 1000 Ω |
| Ambient temperature (Operation) | -30°C ... 50°C |
| Number of power contacts | 3 |
| Insertion/withdrawal cycles | > 10000 |
| Insertion/withdrawal force | < 100 N |
| Type of protection (when plugged in) | IP55 |
| Cable data | |
| Cable type | Straight |
| Cable length | 5 m |
| Cable diameter | 20.2 mm ± 0.2 |
| Cable structure | 3 x 16 $mm^2$ + 2 x 2.5 $mm^2$ + 9 x 0.5 $mm^2$ |
| Sheath color | Black |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **DC charging cable with open cable end,** GB/T | | | |
| | **EV-GBM4C-DC60A-5,0M16ESBK00** | **1621468** | 1 |

FAME plug-in test system with push-in connection, for wall and DIN rail mounting

**PT ...** Page 92

FAME plug-in test system with screw connection, for wall and DIN rail mounting

**UT ...** Page 94

FAME test plug, multi-position, freely configurable contact tabs

**FTPR ..., FTP ...** Page 96

Ordering example for configurable test plugs with twist grip or standard grip

Page 97

Blind plugs, coding profile, and colored test sockets

Page 98

Accessories
Bridges and cover profiles

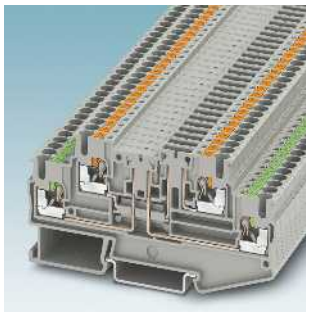
Page 100

FAME plug-in test system with push-in connection, VDE types, for wall and DIN rail mounting
**PT ...** Page 102

FAME plug-in test system with screw connection, VDE types, for wall and DIN rail mounting
**UT ...** Page 128

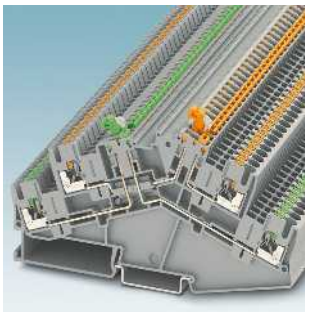
Push-in knife disconnect terminal blocks

**PT 1,5..., PTT 1,5...** Page 156



Push-in double-level disconnect and knife disconnect terminal blocks

**PTT 2,5...** Page 158

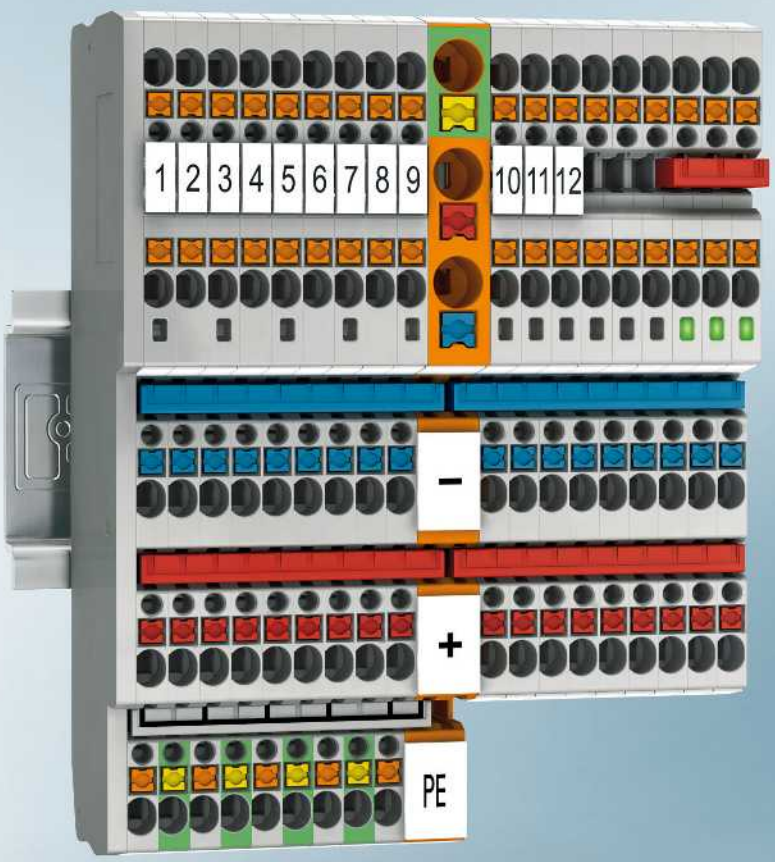


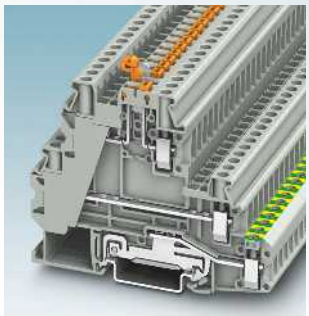
Push-in double-level disconnect and knife disconnect terminal blocks in desk design

**PTTBS ...** Page 160

Screw connection disconnect and knife disconnect terminal blocks with fuse plug

**UT ...-TG** Page 162
**UTT ...-TG** Page 164



Screw connection multi-level function and lever-type fuse terminal blocks with PE foot

**UT 4...-TG/MT** Page 166
**UT 4...-HESI** Page 168

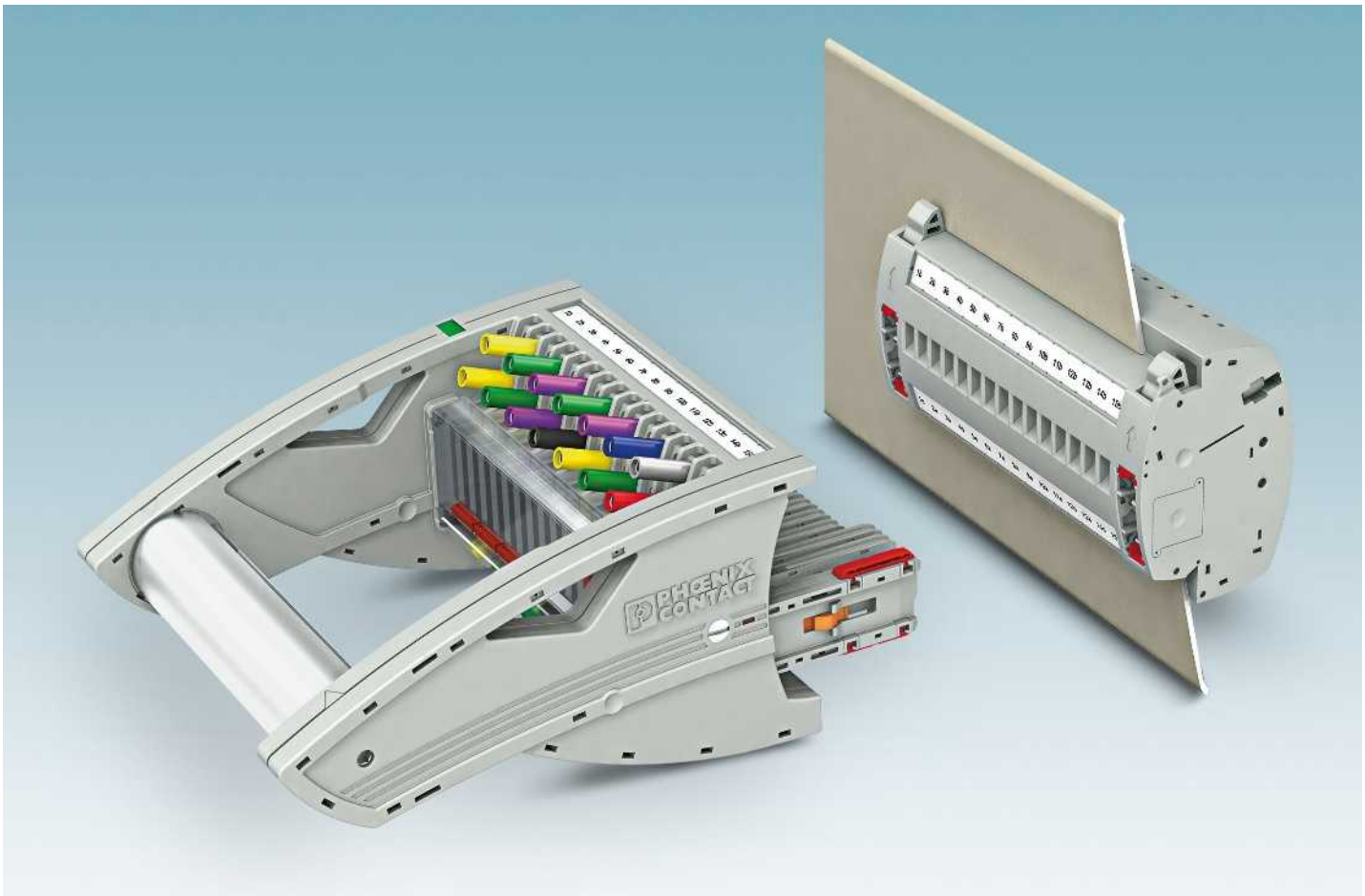
Fast connection hybrid knife disconnect terminal block with single-sided screw connection

**QTCU 2,5-TWIN-MT** Page 172

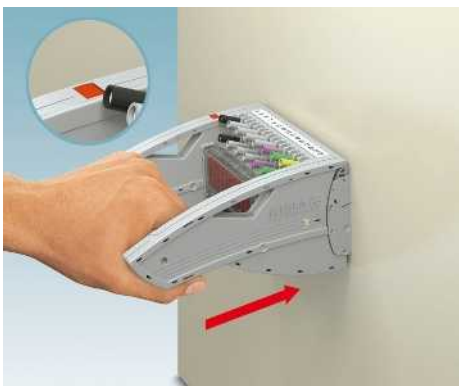
Fast connection feed-through and ground terminal blocks

**QTC 2,5-QUATTRO** Page 173

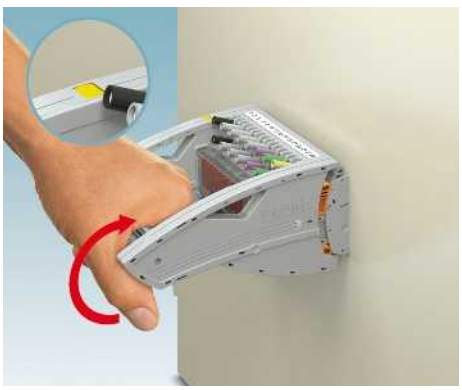
## FAME plug-in test system



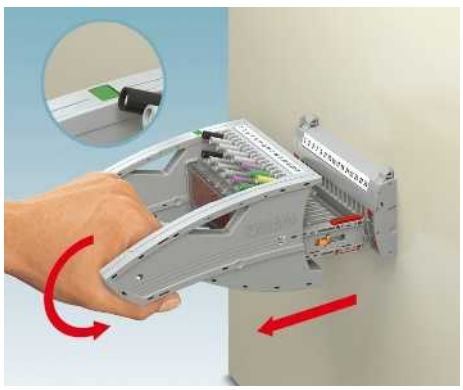
FAME is the innovative test system for all measuring and testing tasks in network protection technology for medium and high-voltage switchgear. With the modular system, you can now perform manual testing automatically, safely, and more quickly. Suitable for every application, the modular system can be directly integrated into the control cabinet panel or used as a DIN rail version.



The test plug is completely inserted and engaged, the display window turns red. All test contacts are contacted according to the test setup.

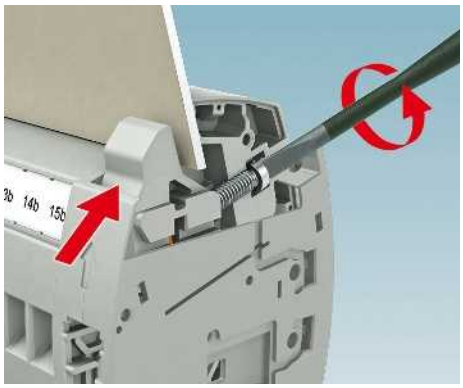


The twist grip is turned upward as far as it will go, the display window turns yellow. Test contacts with short contact tab lengths (e.g., current transformers) are once again connected to the protective device.

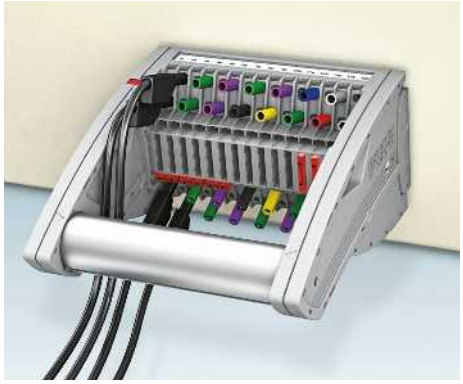


The twist grip must be turned back to its starting position. Now the mechanism releases the plug so it can be fully removed. The display window turns green.

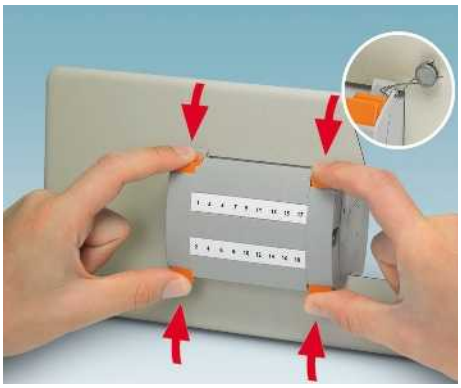
Preprogrammed short-circuit and switching operations depend on consistent insertion and removal of the test plug. Undefined contact states are effectively avoided thanks to the twist grip mechanism.



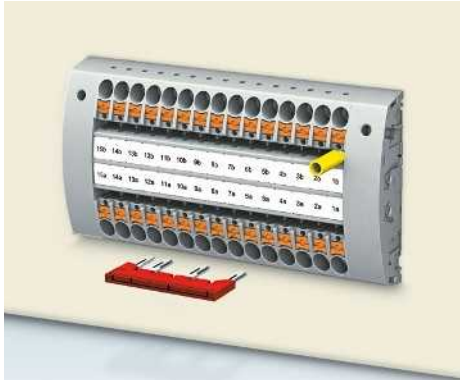
The patented wall fastening is easy to use and has a robust design. Even tolerances in the panel cutout of up to 4 mm are compensated.



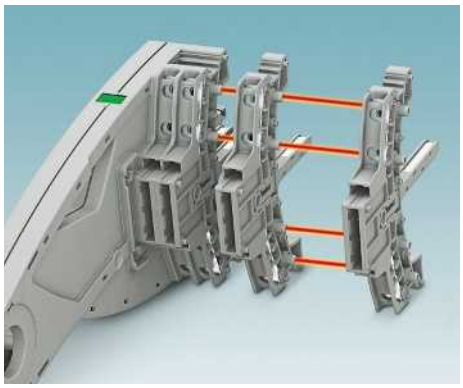
The offset test socket arrangement enables the use of CAT III and CAT IV/1000 V safety test leads according to EN 61010-031 in a confined space.



FAME test terminal strips have an IP20 design. Blind plugs without switching function can be inserted and secured with seals. These can only be released with two-hand operation.

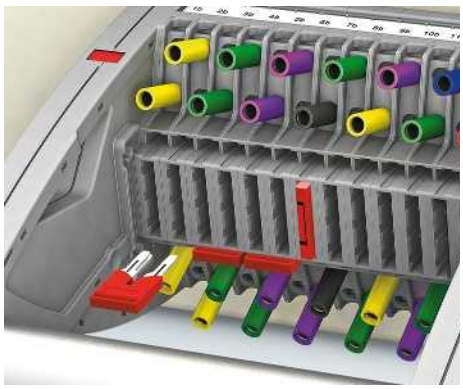


In addition to the two marking grooves, the test terminal strips for wall mounting also offer two function shafts, or six function shafts in the case of the DIN rail version, inside the control cabinet for forming and grounding the star point.

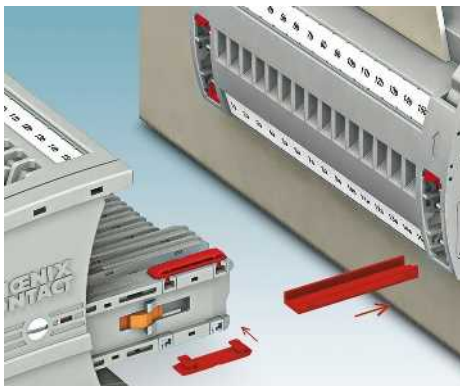


The compact and modular design of the system, as well as the plugs and test terminal strips, provides an extensive range of options for every application with positions from 4 to 25.

All applications which do not involve testing through the closed door and the open rack mounting can be implemented with the DIN rail version. Terminal points and plug-in zone can be operated from one direction.



The test plug provides three function shafts between the 4 mm test contacts. Horizontally aligned, as leading short-circuit jumper - vertically aligned as through connection in the plug.



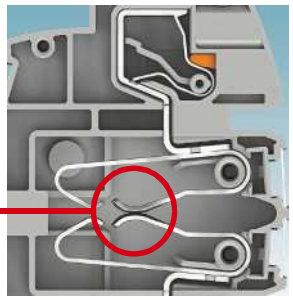
The coding profiles can be applied by the user according to their application. VDE-compliant versions are pre-coded on delivery. This ensures maximum safety.

# FAME 2 – safe in every operating state

The new, modular FAME measuring transducer test system enables all transformer testing tasks to be carried out quickly and safely.
The automatically generated transformer short circuit, the twist grip mechanism, and the shock-proof design provide maximum safety during measurement.

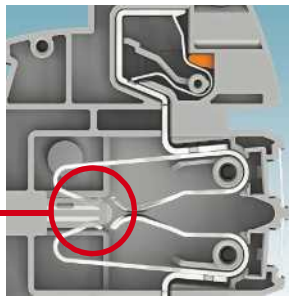
## Normal operation

Closed N/O contact



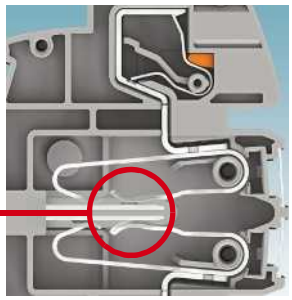
## Transformer short circuit

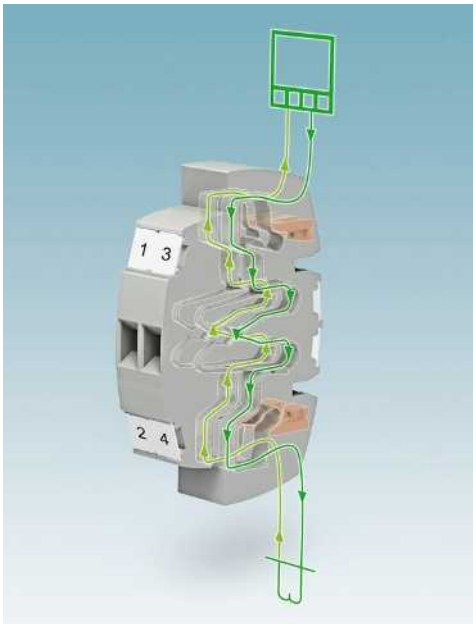
Leading short circuit by means of auxiliary contact



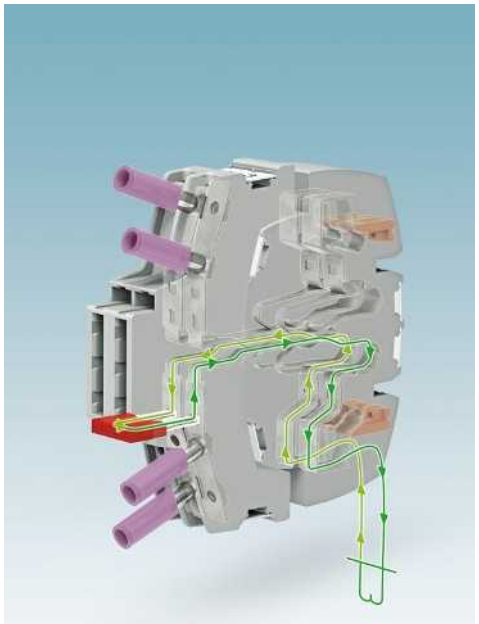
## Test operation

N/O contact connected via test socket

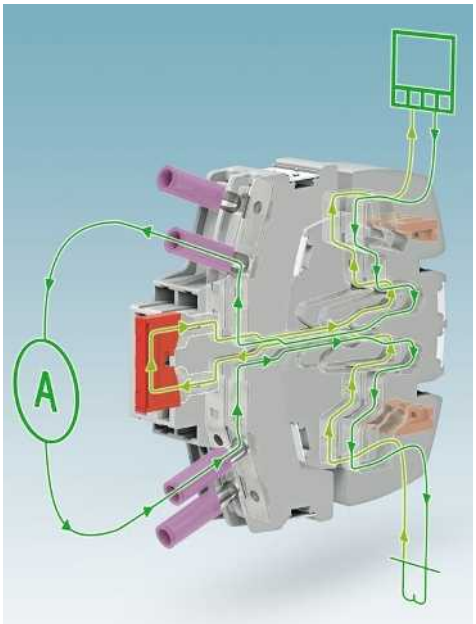





Due to the N/C contact function of the FAME 2 system, additional power plugs are not required for normal operation. If desired, the plug-in zone can be covered with a blind plug to prevent unauthorized access.

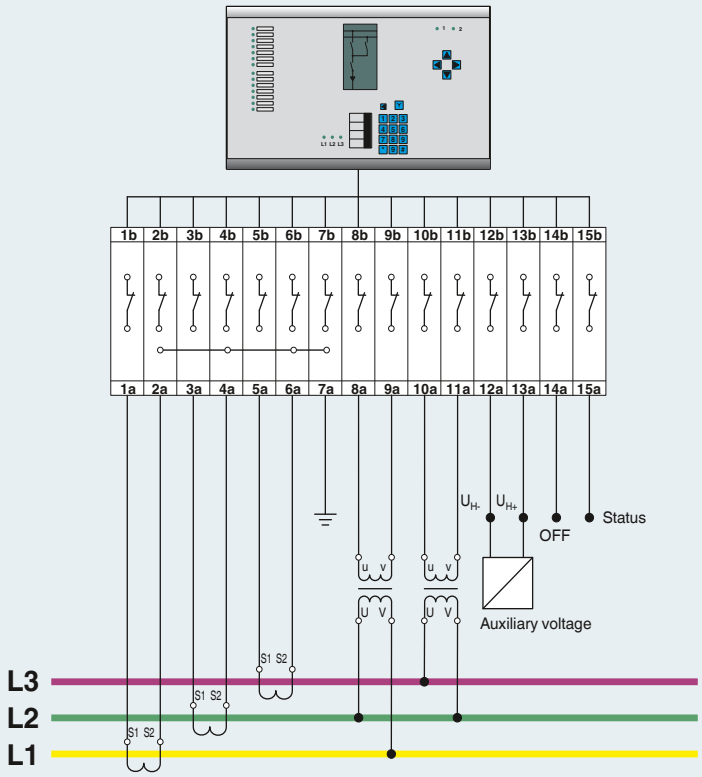


When replacing the protective device or even in the case of a relay test, a leading short circuit of the current transformer (for the purpose of signal splitting) can be easily carried out by means of a jumper inserted crossways.

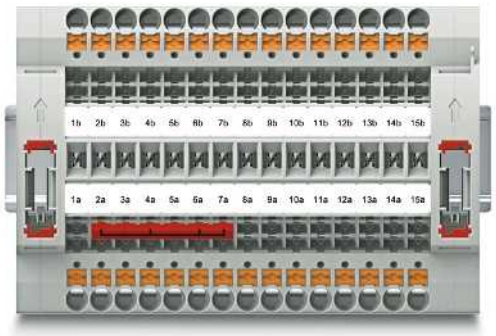



With the jumper simply inserted lengthways in the test plug, test equipment can be easily looped into the current path via the 4 mm test sockets.

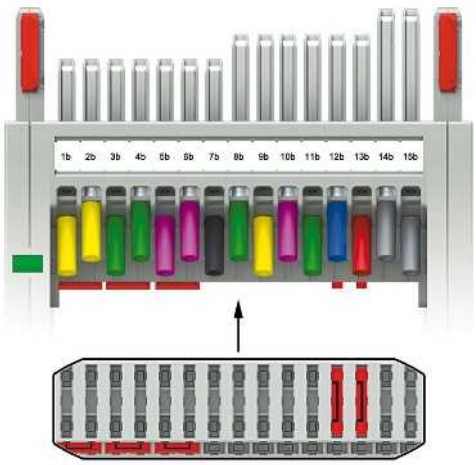
## Medium-voltage circuit example with star point grounding in the test terminal strip




## Test terminal strip with current transformer, voltage transducer, and signals



## Test plug with current transformer, voltage transducer, and signals



### Test terminal strip, blind plug

| Order No. | Type | Required quantity |
|---|---|---|
| 3069864 | PTRE 6-2/15 | 1 |
| 3069886 | FBP 2/15 | 1 |

### Jumper

| | | |
|---|---|---|
| 3032470 | FBS 6-8 | 1 |

### Test plug

| Order No. | Type | Required quantity |
|---|---|---|
| 3001693 | FTPR 2/15 | 1 |

### Jumper

| | | |
|---|---|---|
| 3030284 | FBS 2-8 | 3 |
| 3030297 | FBS 3-8 | 2 |

## Test terminal strip, multi-position with PT ... push-in connection, for PTWE ... wall mounting

The modular FAME measuring transducer test system, with the innovative push-in connection technology, enables all transformer testing tasks to be carried out quickly and safely. The transformer is short-circuited and the testing device is looped in automatically through the insertion process.

- The test terminal strips can be used universally for current and voltage transducers
- The test terminal strip can be mounted on the control cabinet door or on the DIN rail
- Signal and status messages can be wired in combination in a test terminal strip
- The correct switching sequence when removing the test plug is ensured by a locking device and a mechanical drive in the twist grip
- All test signals can be connected with touch-proof safety test leads (CAT III and CAT IV/1000 V according to EN 61010-031)
- All versions listed can be equipped with coding for the matching test plug
- Star points of the current transformer can easily be created in the test terminal strip on the rear by means of FBS jumpers.
- You can find corresponding accessories from page 99

**Notes:**

To create panel cutouts, see phoenixcontact.net/products.

[1]) Derating curve available on request.

[2]) Rated surge voltage of 5 kV.

**6 (10) mm², 30 A, 4 ... 25-pos. test terminal strip, for wall mounting**

### Technical data

| | | | | |
|---|---|---|---|---|
| **Max. electrical data** | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage [V] | 400[2]) | - | - | - |
| Nominal current / cross section [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section [mm²] | 6 | - | - | - |
| Cross section range AWG | 20 - 8 | - | - | - |
| **Connection capacity** | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | |
| Stripping length [mm] | 12 | | | |
| Tightening torque for wall fastening [Nm] | 0.8 - 1 | | | |
| Panel thickness [mm] | 1 - 4 | | | |
| Insulating material | PA | | | |
| Inflammability class according to UL 94 | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Test terminal strip,** for wall mounting, | | | | | | |
| 4-pos. | | gray | **PTWE 6-2/4** | | **3069827** | 1 |
| 5-pos. | | gray | **PTWE 6-2/5** | | **3069828** | 1 |
| 9-pos. | | gray | **PTWE 6-2/9** | | **3069832** | 1 |
| 10-pos. | | gray | **PTWE 6-2/10** | | **3069833** | 1 |
| 12-pos. | | gray | **PTWE 6-2/12** | | **3069835** | 1 |
| 14 pos. | | gray | **PTWE 6-2/14** | | **3069837** | 1 |
| 15-pos. | | gray | **PTWE 6-2/15** | | **3069838** | 1 |
| 17-pos. | | gray | **PTWE 6-2/17** | | **3069840** | 1 |
| 19 pos. | | gray | **PTWE 6-2/19** | | **3069842** | 1 |
| 20 pos. | | gray | **PTWE 6-2/20** | | **3069843** | 1 |
| 21 pos. | | gray | **PTWE 6-2/21** | | **3069844** | 1 |
| 22 pos. | | gray | **PTWE 6-2/22** | | **3069845** | 1 |
| 25 pos. | | gray | **PTWE 6-2/25** | | **3069848** | 1 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-8** | 24 A | **3030284** | 10 |
| | 3 | red | **FBS 3-8** | 24 A | **3030297** | 10 |
| | 4 | red | **FBS 4-8** | 24 A | **3030307** | 10 |
| | 5 | red | **FBS 5-8** | 24 A | **3030310** | 10 |
| | 6 | red | **FBS 6-8** | 24 A | **3032470** | 10 |
| | 10 | red | **FBS 10-8** | 24 A | **3030323** | 10 |
| **Jumper** | | | | | | |
| | 16 | red | **FBSR 16-8** | 24 A | **3033816** | 10 |
| **Pre-assembled bridge**, labeled | | | | | | |
| 3-pos., positions 1, 3 | 3 | red | **FBS 1/3-8** | 24 A | **3032363** | 10 |
| 4-pos., positions 1, 4 | 4 | red | **FBS 1/4-8** | 24 A | **3032376** | 10 |
| 5-pos., positions 1, 3, 5 | 5 | red | **FBS 1/3/5-8** | 24 A | **3032389** | 10 |
| 10-pos., positions 1, 4, 7, 10 | 10 | red | **FBS 1/4/7/10-8** | 24 A | **3032402** | 10 |
| **Cover profile,** supply length 1 m | | transparent | **AP RSC-T** | | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | | gray | **APH-UTWE 6-2** | | **3069057** | 10 |
| **Screwdriver** | | | **SF-SL 0,8X4,0-100** | | **1212551** | 10 |
| **Lateral groove labeling** | | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | | |

## Test terminal strip, multi-position with PT ... push-in connection, for PTRE ... DIN rail mounting

**6 (10) mm², 30 A, 4 ... 25-pos. test terminal strip, for DIN rail mounting**

**Notes:**

1) Derating curve available on request.

2) Rated surge voltage of 5 kV.

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Test terminal strip,** for DIN rail mounting, 4-pos. | | gray | **PTRE 6-2/4** | | **3069849** | 1 |
| 5-pos. | | gray | **PTRE 6-2/5** | | **3069850** | 1 |
| 9-pos. | | gray | **PTRE 6-2/9** | | **3069854** | 1 |
| 10-pos. | | gray | **PTRE 6-2/10** | | **3069855** | 1 |
| 12-pos. | | gray | **PTRE 6-2/12** | | **3069861** | 1 |
| 14 pos. | | gray | **PTRE 6-2/14** | | **3069863** | 1 |
| 15-pos. | | gray | **PTRE 6-2/15** | | **3069864** | 1 |
| 17-pos. | | gray | **PTRE 6-2/17** | | **3069866** | 1 |
| 19 pos. | | gray | **PTRE 6-2/19** | | **3069868** | 1 |
| 20 pos. | | gray | **PTRE 6-2/20** | | **3069869** | 1 |
| 21 pos. | | gray | **PTRE 6-2/21** | | **3069870** | 1 |
| 22 pos. | | gray | **PTRE 6-2/22** | | **3069871** | 1 |
| 25 pos. | | gray | **PTRE 6-2/25** | | **3069874** | 1 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-8** | 24 A | **3030284** | 10 |
| | 3 | red | **FBS 3-8** | 24 A | **3030297** | 10 |
| | 4 | red | **FBS 4-8** | 24 A | **3030307** | 10 |
| | 5 | red | **FBS 5-8** | 24 A | **3030310** | 10 |
| | 6 | red | **FBS 6-8** | 24 A | **3032470** | 10 |
| | 10 | red | **FBS 10-8** | 24 A | **3030323** | 10 |
| **Jumper** | | | | | | |
| | 16 | red | **FBSR 16-8** | 24 A | **3033816** | 10 |
| **Pre-assembled bridge**, labeled | | | | | | |
| 3-pos., positions 1, 3 | 3 | red | **FBS 1/3-8** | 24 A | **3032363** | 10 |
| 4-pos., positions 1, 4 | 4 | red | **FBS 1/4-8** | 24 A | **3032376** | 10 |
| 5-pos., positions 1, 3, 5 | 5 | red | **FBS 1/3/5-8** | 24 A | **3032389** | 10 |
| 10-pos., positions 1, 4, 7, 10 | 10 | red | **FBS 1/4/7/10-8** | 24 A | **3032402** | 10 |
| **Cover profile,** supply length 1 m | | transparent | **AP-ME** | **METER** | **3034361** | 10 |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | | gray | **APH-ME** | | **3034374** | 10 |
| **Holder**, for AP-ME cover profile | | gray | **APT-ME** | | **3034358** | 10 |
| **Screwdriver** | | | **SF-SL 0,8X4,0-100** | | **1212551** | 10 |
| **Lateral groove labeling** | | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | | |

## Test terminal strip, multi-position with UT ... screw connection, for UTWE ... wall mounting

The modular FAME measuring transducer test system, with universal screw connection technology, enables all transformer testing tasks to be carried out quickly and safely. The transformer is short-circuited and the testing device is looped in automatically through the insertion process.

- The test terminal strips can be used universally for current and voltage transducers
- The test terminal strip can be mounted on the control cabinet door or on the DIN rail
- Signal and status messages can be wired in combination in a test terminal strip
- The correct switching sequence when removing the test plug is ensured by a locking device and a mechanical drive in the twist grip
- All test signals can be connected with touch-proof safety test leads (CAT III and CAT IV/1000 V according to EN 61010-031)
- All versions listed can be equipped with coding for the matching test plug
- Star points of the current transformer can easily be created in the test terminal strip on the rear by means of FBS jumpers
- You can find corresponding accessories from page 99

**Notes:**

To create panel cutouts, see phoenixcontact.net/products.

[1]) Derating curve available on request.

[2]) Rated surge voltage of 5 kV.

**6 (10) mm², 30 A, 4 ... 25-pos. test terminal strip, for wall mounting**

### Technical data

| | | | | |
|---|---|---|---|---|
| **Max. electrical data** | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage [V] | 400[2]) | - | - | - |
| Nominal current / cross section [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section [mm²] | 6 | - | - | - |
| Cross section range AWG | 24 - 8 | - | - | - |
| **Connection capacity** | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | |
| Stripping length [mm] | 10 | | | |
| Screw thread | M4 | | | |
| Tightening torque [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening [Nm] | 0.8 - 1 | | | |
| Panel thickness [mm] | 1 - 4 | | | |
| Insulating material | PA | | | |
| Inflammability class according to UL 94 | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Test terminal strip,** for wall mounting, | | | | | | |
| 4-pos. | | gray | **UTWE 6-2/4** | | **3069650** | 1 |
| 5-pos. | | gray | **UTWE 6-2/5** | | **3069651** | 1 |
| 9-pos. | | gray | **UTWE 6-2/9** | | **3069656** | 1 |
| 10-pos. | | gray | **UTWE 6-2/10** | | **3069658** | 1 |
| 12-pos. | | gray | **UTWE 6-2/12** | | **3069660** | 1 |
| 14 pos. | | gray | **UTWE 6-2/14** | | **3069663** | 1 |
| 15-pos. | | gray | **UTWE 6-2/15** | | **3069664** | 1 |
| 17-pos. | | gray | **UTWE 6-2/17** | | **3069667** | 1 |
| 19 pos. | | gray | **UTWE 6-2/19** | | **3069672** | 1 |
| 20 pos. | | gray | **UTWE 6-2/20** | | **3069673** | 1 |
| 21 pos. | | gray | **UTWE 6-2/21** | | **3069800** | 1 |
| 22 pos. | | gray | **UTWE 6-2/22** | | **3069801** | 1 |
| 25 pos. | | gray | **UTWE 6-2/25** | | **3069804** | 1 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-8** | 24 A | **3030284** | 10 |
| | 3 | red | **FBS 3-8** | 24 A | **3030297** | 10 |
| | 4 | red | **FBS 4-8** | 24 A | **3030307** | 10 |
| | 5 | red | **FBS 5-8** | 24 A | **3030310** | 10 |
| | 6 | red | **FBS 6-8** | 24 A | **3032470** | 10 |
| | 10 | red | **FBS 10-8** | 24 A | **3030323** | 10 |
| **Jumper** | | | | | | |
| | 16 | red | **FBSR 16-8** | 24 A | **3033816** | 10 |
| **Pre-assembled bridge**, labeled | | | | | | |
| 3-pos., positions 1, 3 | 3 | red | **FBS 1/3-8** | 24 A | **3032363** | 10 |
| 4-pos., positions 1, 4 | 4 | red | **FBS 1/4-8** | 24 A | **3032376** | 10 |
| 5-pos., positions 1, 3, 5 | 5 | red | **FBS 1/3/5-8** | 24 A | **3032389** | 10 |
| 10-pos., positions 1, 4, 7, 10 | 10 | red | **FBS 1/4/7/10-8** | 24 A | **3032402** | 10 |
| **Cover profile,** supply length 1 m | | transparent | **AP RSC-T** | | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | | gray | **APH-UTWE 6-2** | | **3069057** | 10 |
| **Screwdriver** | | | **SF-SL 0,8X4,0-100** | | **1212551** | 10 |
| **Lateral groove labeling** | | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | | |

## Test terminal strip, multi-position with UT ... screw connection, for UTRE ... DIN rail mounting

**6 (10) mm², 30 A, 4 ... 25-pos. test terminal strip, for DIN rail mounting**

**Notes:**

1) Derating curve available on request.

2) Rated surge voltage of 5 kV.

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Test terminal strip,** for DIN rail mounting, | | | | | | |
| 4-pos. | | gray | **UTRE 6-2/4** | | **3069805** | 1 |
| 5-pos. | | gray | **UTRE 6-2/5** | | **3069806** | 1 |
| 9-pos. | | gray | **UTRE 6-2/9** | | **3069810** | 1 |
| 10-pos. | | gray | **UTRE 6-2/10** | | **3069811** | 1 |
| 12-pos. | | gray | **UTRE 6-2/12** | | **3069813** | 1 |
| 14 pos. | | gray | **UTRE 6-2/14** | | **3069815** | 1 |
| 15-pos. | | gray | **UTRE 6-2/15** | | **3069816** | 1 |
| 17-pos. | | gray | **UTRE 6-2/17** | | **3069818** | 1 |
| 19 pos. | | gray | **UTRE 6-2/19** | | **3069820** | 1 |
| 20 pos. | | gray | **UTRE 6-2/20** | | **3069821** | 1 |
| 21 pos. | | gray | **UTRE 6-2/21** | | **3069822** | 1 |
| 22 pos. | | gray | **UTRE 6-2/22** | | **3069823** | 1 |
| 25 pos. | | gray | **UTRE 6-2/25** | | **3069826** | 1 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-8** | 24 A | **3030284** | 10 |
| | 3 | red | **FBS 3-8** | 24 A | **3030297** | 10 |
| | 4 | red | **FBS 4-8** | 24 A | **3030307** | 10 |
| | 5 | red | **FBS 5-8** | 24 A | **3030310** | 10 |
| | 6 | red | **FBS 6-8** | 24 A | **3032470** | 10 |
| | 10 | red | **FBS 10-8** | 24 A | **3030323** | 10 |
| **Jumper** | | | | | | |
| | 16 | red | **FBSR 16-8** | 24 A | **3033816** | 10 |
| **Pre-assembled bridge**, labeled | | | | | | |
| 3-pos., positions 1, 3 | 3 | red | **FBS 1/3-8** | 24 A | **3032363** | 10 |
| 4-pos., positions 1, 4 | 4 | red | **FBS 1/4-8** | 24 A | **3032376** | 10 |
| 5-pos., positions 1, 3, 5 | 5 | red | **FBS 1/3/5-8** | 24 A | **3032389** | 10 |
| 10-pos., positions 1, 4, 7, 10 | 10 | red | **FBS 1/4/7/10-8** | 24 A | **3032402** | 10 |
| **Cover profile,** supply length 1 m | | transparent | **AP-ME** | **METER** | **3034361** | 10 |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | | gray | **APH-ME** | | **3034374** | 10 |
| **Holder**, for AP-ME cover profile | | gray | **APT-ME** | | **3034358** | 10 |
| **Screwdriver** | | | **SF-SL 0,8X4,0-100** | | **1212551** | 10 |
| **Lateral groove labeling** | | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | | |

## Test plug, multi-position, freely-configurable contact tabs FTPR ... and FTP ...

The test plugs allow the switching sequence of the individual functions to be carried out with safe chronological disconnection with a switching operation via three different contact tab lengths. Configure the lengths of the contact tabs of the test plug to suit your application. We can provide you with a test plug according to your requirements in next to no time.

- **The test plugs can be easily configured and ordered with just a click of the mouse in the product area on our website at phoenixcontact.net/products**
- **To order via fax or e-mail, please use the ordering data as shown in the ordering example on the following page**

The test plugs are characterized by:

- User-friendly twist grip function with latching
- Robust and warp resistant design
- Mechanically secure, molded contact tabs
- High-quality contact surfaces for reliable transmission of signals
- Strain relief for the connected test leads on the plug
- Flexibility in the number of positions thanks to the modular design (additional options on request)
- Large-surface marking options for each contact
- Use of CLIPLINE complete accessories for testing, bridging, and marking
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- All test signals can be connected with touch-proof safety test leads (CAT III and CAT IV/1000 V according to EN 61010-031)
- You can find corresponding accessories from page 99

**Notes:**

[1]) Rated surge voltage of 5 kV.

**24 A, 4 ... 25-pos. test plug with twist grip or standard grip, 4 mm test sockets**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **24** | **400[1])** | **0.5 - 2.5** | **20 - 14** |
| **Rated data** | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[1]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24/2.5 | - | - | - |
| Cross section range | AWG | 20 - 14 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | - | 0.5 - 2.5 | - | - |
| **General data** | | | | | |
| Tightening torque: test socket screw | [Nm] | 0.5 - 0.6 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test plug,** with twist grip, 4-pos. | gray | **FTPR-2/4** | **3001681** | 1 |
| 5-pos. | gray | **FTPR-2/5** | **3001683** | 1 |
| 9-pos. | gray | **FTPR-2/9** | **3001687** | 1 |
| 10-pos. | gray | **FTPR-2/10** | **3001688** | 1 |
| 12-pos. | gray | **FTPR-2/12** | **3001690** | 1 |
| 14 pos. | gray | **FTPR-2/14** | **3001692** | 1 |
| 15-pos. | gray | **FTPR-2/15** | **3001693** | 1 |
| 17-pos. | gray | **FTPR-2/17** | **3001696** | 1 |
| 19 pos. | gray | **FTPR-2/19** | **3001698** | 1 |
| 20 pos. | gray | **FTPR-2/20** | **3001699** | 1 |
| 21 pos. | gray | **FTPR-2/21** | **3001700** | 1 |
| 22 pos. | gray | **FTPR-2/22** | **3001701** | 1 |
| 25 pos. | gray | **FTPR-2/25** | **3001704** | 1 |
| **Test plug,** with standard grip, 4-pos. | gray | **FTP-2/4** | **3001706** | 1 |
| 5-pos. | gray | **FTP-2/5** | **3001707** | 1 |
| 9-pos. | gray | **FTP-2/9** | **3001711** | 1 |
| 10-pos. | gray | **FTP-2/10** | **3001712** | 1 |
| 12-pos. | gray | **FTP-2/12** | **3001714** | 1 |
| 14 pos. | gray | **FTP-2/14** | **3001716** | 1 |
| 15-pos. | gray | **FTP-2/15** | **3001717** | 1 |
| 17-pos. | gray | **FTP-2/17** | **3001720** | 1 |
| 19 pos. | gray | **FTP-2/19** | **3001723** | 1 |
| 20 pos. | gray | **FTP-2/20** | **3001724** | 1 |
| 21 pos. | gray | **FTP-2/21** | **3001725** | 1 |
| 22 pos. | gray | **FTP-2/22** | **3001726** | 1 |
| 25 pos. | gray | **FTP-2/25** | **3001729** | 1 |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Fork-type cable lug,** insulated according to UL | red | **C-FCI 1,5/M3** | **3240032** | 100 |
| | blue | **C-FCI 2,5/M3** | **3240037** | 100 |
| **Ring cable lug,** insulated according to UL | red | **C-RCI 1,5/M3** | **3240016** | 100 |
| | blue | **C-RCI 2,5/M3** | **3240021** | 100 |
| **Marking** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

## Ordering example: configurable test plug with twist grip function

To ensure that your order is correct, you need a defined view of how everything is counted.
This is achieved when the status window in the top view is on the left-hand side.
Position 1 is then on the left.
Each position of a test plug is described by a contact tab feature that is selected.
The following features are possible:

| | |
|---|---|
| **S** | Short contact tab, gray |
| **M** | Medium contact tab, gray |
| **L** | Long contact tab, gray |
| **LGN** | Long contact tab, green |
| **N** | No contact tab, gray |

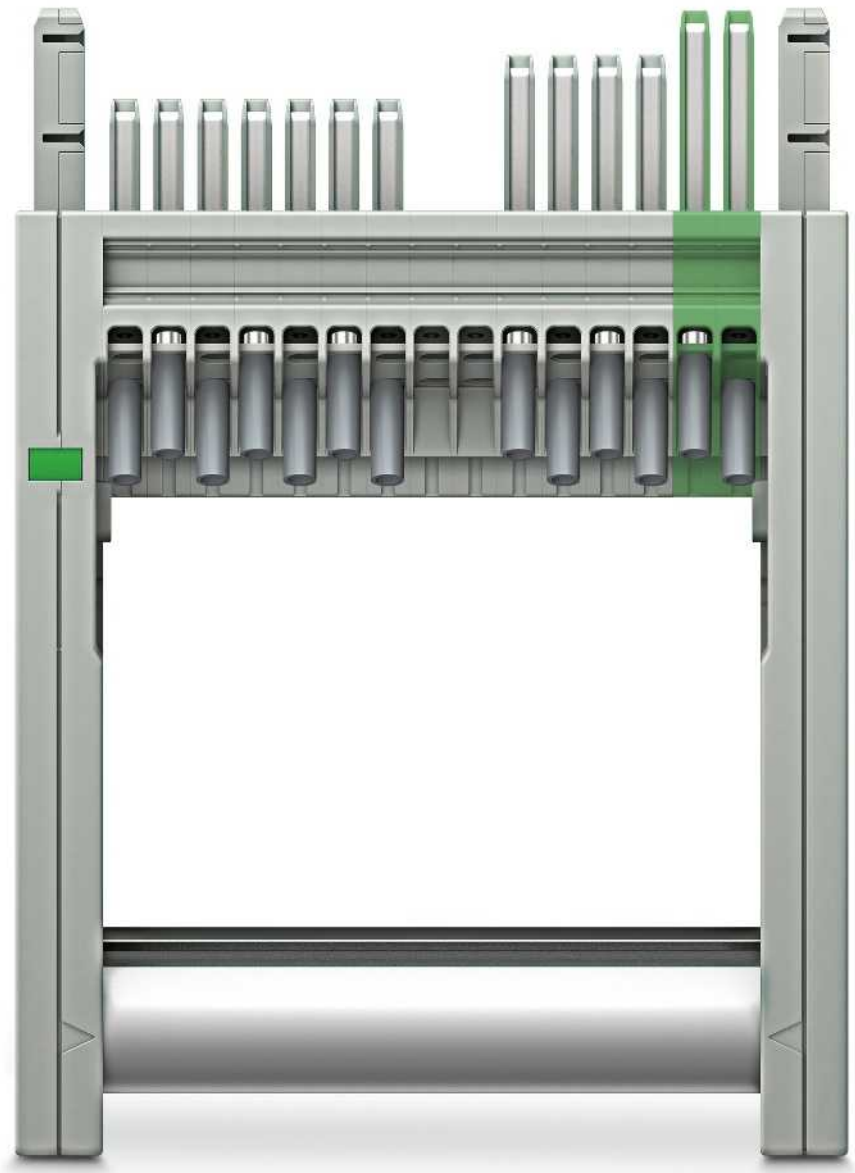
Each position with a contact tab is supplied fitted with two gray test sockets.

**Ordering example:**
A 15-pos. test plug with twist grip needs to be configured as follows:

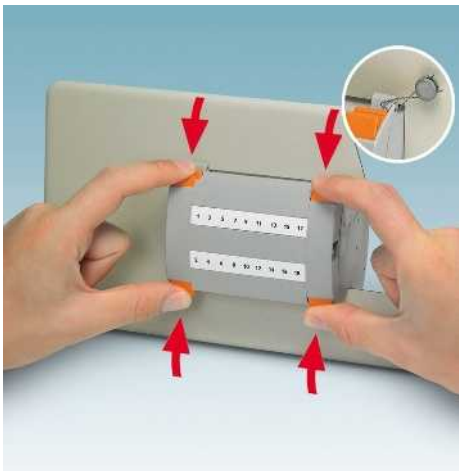
| | |
|---|---|
| Pos. 1 | Short contact tab, gray |
| Pos. 2 | Short contact tab, gray |
| Pos. 3 | Short contact tab, gray |
| Pos. 4 | Short contact tab, gray |
| Pos. 5 | Short contact tab, gray |
| Pos. 6 | Short contact tab, gray |
| Pos. 7 | Short contact tab, gray |
| Pos. 8 | No contact tab, gray |
| Pos. 9 | No contact tab, gray |
| Pos. 10 | Medium contact tab, gray |
| Pos. 11 | Medium contact tab, gray |
| Pos. 12 | Medium contact tab, gray |
| Pos. 13 | Medium contact tab, gray |
| Pos. 14 | Long contact tab, green |
| Pos. 15 | Long contact tab, green |

## The order data for this ordering example is therefore:

| Order No. | Pos. 1 | Pos. 2 | Pos. 3 | Pos. 4 | Pos. 5 | Pos. 6 | Pos. 7 | Pos. 8 | Pos. 9 | Pos. 10 | Pos. 11 | Pos. 12 | Pos. 13 | Pos. 14 | Pos. 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3001693 | S | S | S | S | S | S | S | N | N | M | M | M | M | LGN | LGN |



## Blind plug, multi-position, sealable FBP-2/...



Blind plug 4 ... 25-pos.

During normal operation, the blind plug acts as a protective cover for the test terminal strip and is characterized by:

- Secure latching on the test terminal strip
- The robust latching can only be released with two-hand operation
- The optional seal protects against unauthorized actuation
- Large-surface marking options
- The coding profile set can be used to assign test terminal strips and blind plugs according to the specific application, see right-hand page

### Technical data

| General data | |
|---|---|
| Insulating material | PA |
| Inflammability class according to UL 94 | V0 |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Blind plug,** 4-pos. | gray | **FBP-2/4** | **3069875** | 1 |
| 5-pos. | gray | **FBP-2/5** | **3069876** | 1 |
| 9-pos. | gray | **FBP-2/9** | **3069880** | 1 |
| 10-pos. | gray | **FBP-2/10** | **3069881** | 1 |
| 12-pos. | gray | **FBP-2/12** | **3069883** | 1 |
| 14 pos. | gray | **FBP-2/14** | **3069885** | 1 |
| 15-pos. | gray | **FBP-2/15** | **3069886** | 1 |
| 17-pos. | gray | **FBP-2/17** | **3069888** | 1 |
| 19 pos. | gray | **FBP-2/19** | **3069890** | 1 |
| 20 pos. | gray | **FBP-2/20** | **3069891** | 1 |
| 21 pos. | gray | **FBP-2/21** | **3069892** | 1 |
| 22 pos. | gray | **FBP-2/22** | **3069893** | 1 |
| 25 pos. | gray | **FBP-2/25** | **3069896** | 1 |

### Accessories

| | |
|---|---|
| **Lateral groove labeling** | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** |

## PC-...-TRI coding profile set

– The coding profile set can be used to assign test terminal strips and test plugs according to the specific application
– Maximum safety is therefore ensured for all testing tasks

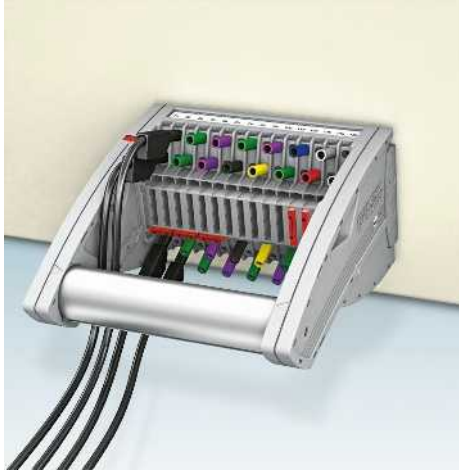
### Technical data

| General data | |
|---|---|
| Material | PA |
| Inflammability class according to UL 94 | V0 |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Coding profile set,** for the test terminal strip | red | **PC-UTWE-TRI** | **3069897** | 50 |
| **Coding profile set,** for FTP-2 and FTPR-2 test plugs and FBP-2 blind plugs | red | **PC-FTP-TRI** | **3069898** | 50 |

## Colored PSBJ ... test sockets

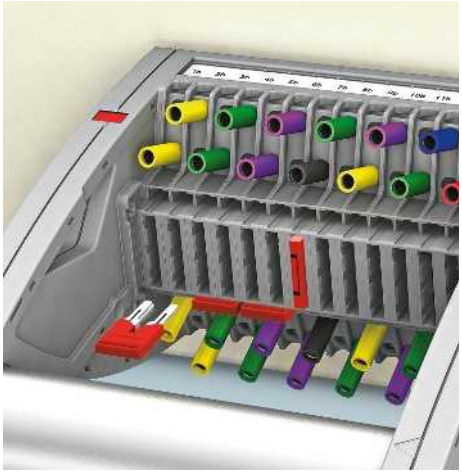


– 4 mm safety test leads with fixed insulation according to EN 61010−031 CAT III and CAT IV up to 1000 V can be coded in true color
– Additional test leads, assembled with ring and fork-type cable lugs (see accessories, e.g., page 96) can be attached with test sockets

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| | red | **PSBJ-URTK 6 RD** | **3026719** | 10 |
| | blue | **PSBJ-URTK 6 BU** | **3026434** | 10 |
| | yellow | **PSBJ-URTK 6 YE** | **3026405** | 10 |
| | green | **PSBJ-URTK 6 GN** | **3026418** | 10 |
| | violet | **PSBJ-URTK 6 VT** | **3026421** | 10 |
| | black | **PSBJ-URTK 6 BK** | **3026447** | 10 |
| | gray | **PSBJ-URTK 6 GY** | **3026612** | 10 |
| | brown | **PSBJ-URTK 6 BN** | **3026971** | 10 |

## Jumper, red, 8.2 mm pitch, FBS ...



– The FBS ...-8 plug-in bridges are used for short-circuiting, as star-point jumpers, and also to establish grounding in connection with a PE modular terminal block on the terminal strip

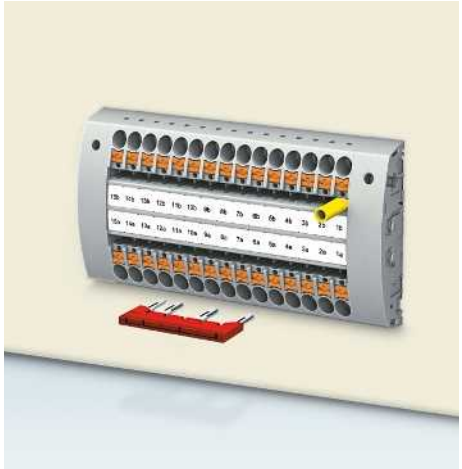
| Description | No. of pos. | Ordering data: Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Jumper** | | | | | |
| | 2 | **FBS 2-8** | 41 A | **3030284** | 10 |
| | 3 | **FBS 3-8** | | **3030297** | 10 |
| | 4 | **FBS 4-8** | | **3030307** | 10 |
| | 5 | **FBS 5-8** | | **3030310** | 10 |
| | 6 | **FBS 6-8** | | **3032470** | 10 |
| | 10 | **FBS 10-8** | | **3030323** | 10 |
| **Jumper** | | | | | |
| | 16 | **FBSR 16-8** | 32 A | **3033816** | 10 |

## Jumper with extraction tool, red, 8.2 mm pitch, FBSRH ...

– The FBSRH ...-8 bridges have a molded extraction tool which means that they can be used conveniently and without tools for individual bridging tasks. This enables a transformer short circuit to be created in test disconnect terminal blocks, for example.

| Description | No. of pos. | Ordering data: Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Jumper**, with extraction tool | | | | | |
| | 2 | **FBSRH 2-8** | 32 A | **3033802** | 10 |
| | 3 | **FBSRH 3-8** | | **3033803** | 10 |
| | 4 | **FBSRH 4-8** | | **3033804** | 10 |

## Pre-assembled bridge, red, 8.2 mm pitch



– Plug-in star-point jumpers or jumpers for bridging several positions can be supplied pre-configured without additional expense
– The bridges are printed and provide unique identification for bridging between non-adjacent terminal blocks

### Ordering data

| Description | No. of pos. | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Pre-assembled bridge**, labeled | | | | | |
| 3-pos., positions 1, 3 | 3 | **FBS 1/3-8** | 41 A | **3032363** | 10 |
| 4-pos., positions 1, 4 | 4 | **FBS 1/4-8** | | **3032376** | 10 |
| 5-pos., positions 1, 3, 5 | 5 | **FBS 1/3/5-8** | | **3032389** | 10 |
| 10-pos., positions 1, 4, 7, 10 | 10 | **FBS 1/4/7/10-8** | | **3032402** | 10 |

## Cover profiles for test plug or test terminal strip mounted on DIN rail

– The AP−FTP cover profile prevents undesired changes to the star point, feed-through, and short-circuit jumpers on the completely assembled test plug
– To mount, gently release the side screw connection of the plug and snap the profile into place
– The APH−ME end bracket is used in conjunction with the AP−ME cover for the DIN rail mounted test terminal strip

### Technical data

| | |
|---|---|
| **General data** | |
| Material | PVC |

### Ordering data

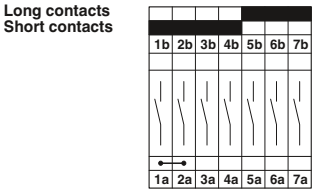
| Description | Color | Type | | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Cover profile,** supply length 1 m | transparent | **AP-FTP** | **METER** | **3069899** | 1 |
| **Cover profile,** supply length 1 m | transparent | **AP-ME** | **METER** | **3034361** | 10 |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | | **3059139** | 10 |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | **APH-ME** | | **3034374** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | | **3069057** | 10 |

## Test terminal strip with PT ... push-in connection, VDE type A7, for wall and DIN rail mounting

The **VDE A7** version described here is suitable as a plug-in test system in single-system current, voltage, and power relays, wattmetric and ground fault wiper relays, detuning level controllers or reverse power protection for generators.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| 1) Derating curve available on request. |
| 2) Rated surge voltage of 5 kV. |




A7

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type A7**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/A7** | **3069436** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type A7**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type A7**

**Blind plug, VDE coded type A7**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/A7** | **3069449** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/A7** | **3069484** | 1 |
| **FTP-2/A7** | **3069470** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/A7** | **3069497** | 1 |

## Accessories

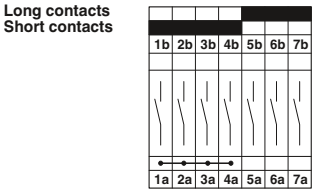
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type B7, for wall and DIN rail mounting

The **VDE B7** version described here is suitable as a plug-in test system in digital differential protection as an addition to the F19 plug-in test system, see page 120.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| 1) Derating curve available on request. |
| 2) Rated surge voltage of 5 kV. |




B7

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type B7**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/B7** | **3069437** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type B7**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type B7**

**Blind plug, VDE coded type B7**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/B7** | **3069450** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/B7** | **3069485** | 1 |
| **FTP-2/B7** | **3069471** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | max. Ø [mm²] | AWG |
|---|---|---|---|
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/B7** | **3069498** | 1 |

## Accessories

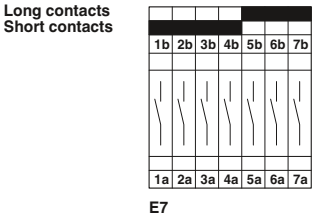
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type E7, for wall and DIN rail mounting

The **VDE E7** version described here is suitable as a plug-in test system for single-stage automatic frequency load shedding (AFLS) and as rotor ground fault protection.

- The test plugs are assembled according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |



**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type E7**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/E7** | **3069438** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type E7**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type E7**

**Blind plug, VDE coded type E7**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/E7** | **3069451** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/E7** | **3069486** | 1 |
| **FTP-2/E7** | **3069472** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | max. Ø [mm²] | AWG |
|---|---|---|---|
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/E7** | **3069499** | 1 |

## Accessories

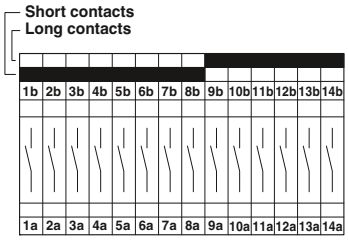
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type A14, for wall and DIN rail mounting

The **VDE A14** version described here is suitable as a plug-in test system for three-stage automatic frequency load shedding (AFLS), as zero-power comparison protection, and as stator and rotor ground fault protection.

- The test plugs are assembled according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




A14

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type A14**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/A14** | **3069439** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type A14**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type A14**

**Blind plug, VDE coded type A14**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/A14** | **3069452** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/A14** | **3069487** | 1 |
| **FTP-2/A14** | **3069474** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/A14** | **3069500** | 1 |

## Accessories

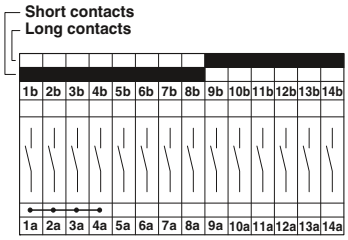
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type B14, for wall and DIN rail mounting

The **VDE B14** version described here is suitable as a plug-in test system in overcurrent directional protection, distance protection for high and medium voltage, as well as voltage regulation.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




B14

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type B14**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/B14** | **3069440** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type B14**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type B14**

**Blind plug, VDE coded type B14**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/B14** | **3069453** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/B14** | **3069488** | 1 |
| **FTP-2/B14** | **3069475** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/B14** | **3069501** | 1 |

## Accessories

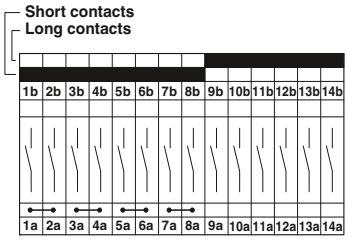
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type C14, for wall and DIN rail mounting

The **VDE C14** version described here is suitable as a plug-in test system in overcurrent time protection, unbalanced load protection, and stator ground fault protection for busbar operation.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| 1) Derating curve available on request. |
| 2) Rated surge voltage of 5 kV. |




C14

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type C14**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/C14** | **3069441** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type C14**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type C14**

**Blind plug, VDE coded type C14**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| | | | |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/C14** | **3069454** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/C14** | **3069489** | 1 |
| **FTP-2/C14** | **3069476** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/C14** | **3069502** | 1 |

## Accessories

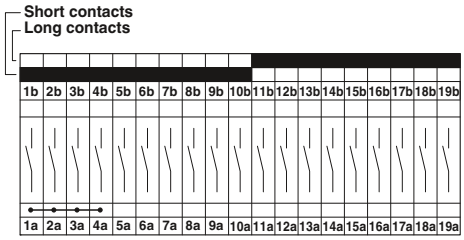
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type B19, for wall and DIN rail mounting

The **VDE B19** version described here is suitable as a plug-in test system in distance protection for high voltage.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |



B19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type B19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/B19** | **3069442** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type B19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type B19**

**Blind plug, VDE coded type B19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/B19** | **3069455** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/B19** | **3069490** | 1 |
| **FTP-2/B19** | **3069477** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/B19** | **3069503** | 1 |

## Accessories

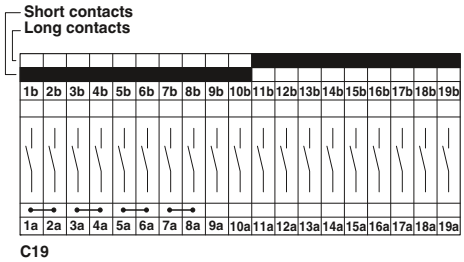
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type C19, for wall and DIN rail mounting

The **VDE C19** version described here is suitable as a plug-in test system in distance protection as system busbar protection, overcurrent directional protection, and current comparison protection for cables.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




C19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type C19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/C19** | **3069443** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type C19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type C19**

**Blind plug, VDE coded type C19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/C19** | **3069456** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/C19** | **3069491** | 1 |
| **FTP-2/C19** | **3069478** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/C19** | **3069504** | 1 |

## Accessories

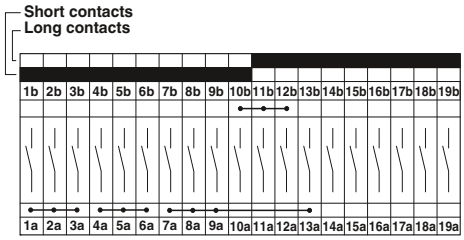
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type D19, for wall and DIN rail mounting

The **VDE D19** version described here is suitable as a plug-in test system for electromechanical differential protection for transformers.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| 1) Derating curve available on request. |
| 2) Rated surge voltage of 5 kV. |



D19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type D19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/D19** | **3069444** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type D19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type D19**

**Blind plug, VDE coded type D19**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/D19** | **3069457** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/D19** | **3069492** | 1 |
| **FTP-2/D19** | **3069479** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | max. Ø [mm²] | AWG |
|---|---|---|---|
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/D19** | **3069671** | 1 |

## Accessories

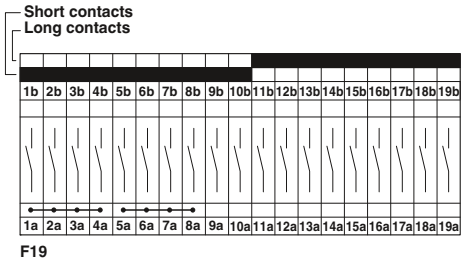
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type F19, for wall and DIN rail mounting

The **VDE F19** version described here is suitable as a plug-in test system in electromechanical differential protection for transformers, generators, motors, and cables.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




F19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type F19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/F19** | **3069445** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type F19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type F19**

**Blind plug, VDE coded type F19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/F19** | **3069458** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/F19** | **3069493** | 1 |
| **FTP-2/F19** | **3069480** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/F19** | **3069675** | 1 |

## Accessories

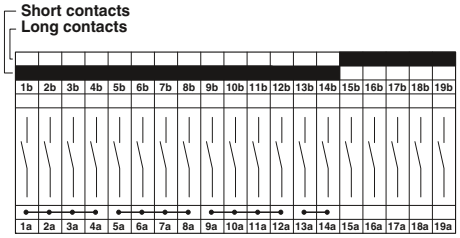
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type G19, for wall and DIN rail mounting

The **VDE G19** version described here is suitable as a plug-in test system in digital differential protection for transformers.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




G19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type G19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/G19** | **3069446** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type G19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type G19**

**Blind plug, VDE coded type G19**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/G19** | **3069459** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/G19** | **3069494** | 1 |
| **FTP-2/G19** | **3069481** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | max. Ø [mm²] | AWG |
|---|---|---|---|
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/G19** | **3069676** | 1 |

## Accessories

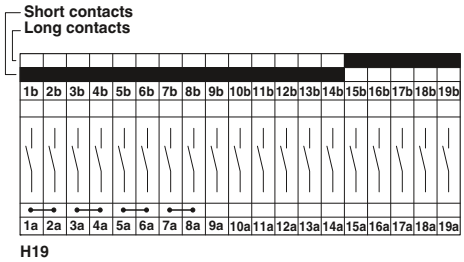
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type H19, for wall and DIN rail mounting

The **VDE H19** version described here is suitable as a plug-in test system in overcurrent directional protection and distance protection as system protection.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| 1) Derating curve available on request. |
| 2) Rated surge voltage of 5 kV. |



**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type H19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/H19** | **3069447** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type H19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type H19**

**Blind plug, VDE coded type H19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/H19** | **3069460** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/H19** | **3069495** | 1 |
| **FTP-2/H19** | **3069482** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/H19** | **3069677** | 1 |

## Accessories

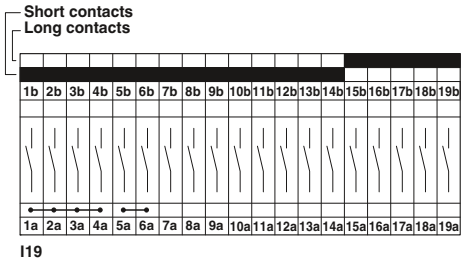
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with PT ... push-in connection, VDE type I19, for wall and DIN rail mounting

The **VDE I19** version described here is suitable as a plug-in test system in medium voltage, outlet, and coupling protection, including selective ground fault detection.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| 1) Derating curve available on request. |
| 2) Rated surge voltage of 5 kV. |




I19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type I19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 20 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6 |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 1.5 |
| Plug-in connection cross sections | [mm²] | 1 - 10 | - | 1 - 6 | 1 - 6 |
| **General data** | | | | | |
| Stripping length | [mm] | 12 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **PTWE 6-2/I19** | **3069448** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type I19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type I19**

**Blind plug, VDE coded type I19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.5 - 10** | **20 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 20 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.5 - 10 | 0.5 - 6 | 0.5 - 6 | 0.5 - 6<br>0.5 - 1.5 |
| 1 - 10 | - | 1 - 6 | 1 - 6 |
| 12 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTRE 6-2/I19** | **3069461** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/I19** | **3069496** | 1 |
| **FTP-2/I19** | **3069483** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/I19** | **3069678** | 1 |

## Accessories

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type A7, for wall and DIN rail mounting

The **VDE A7** version described here is suitable as a plug-in test system in single-system current, voltage, and power relays, wattmetric and ground fault wiper relays, detuning level controllers or reverse power protection for generators.

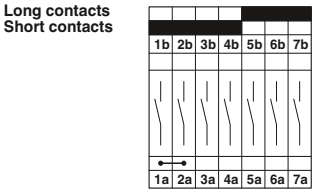
- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

**Notes:**

To create panel cutouts, see phoenixcontact.net/products.

[1]) Derating curve available on request.

[2]) Rated surge voltage of 5 kV.




A7

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type A7**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/A7** | **3069410** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type A7**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type A7**

**Blind plug, VDE coded type A7**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/A7** | **3069423** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/A7** | **3069484** | 1 |
| **FTP-2/A7** | **3069470** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/A7** | **3069497** | 1 |

## Accessories

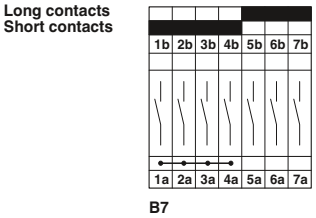
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type B7, for wall and DIN rail mounting

The **VDE B7** version described here is suitable as a plug-in test system in digital differential protection as an addition to the F19 plug-in test system, see page 120.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |



**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type B7**

### Technical data

| Max. electrical data | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
|---|---|---|---|---|
| | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage [V] | 400[2]) | - | - | - |
| Nominal current / cross section [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section [mm²] | 6 | - | - | - |
| Cross section range AWG | 24 - 8 | - | - | - |
| **Connection capacity** | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | |
| Stripping length [mm] | 10 | | | |
| Screw thread | M4 | | | |
| Tightening torque [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening [Nm] | 0.8 - 1 | | | |
| Panel thickness [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw [Nm] | - | | | |
| Insulating material | PA | | | |
| Inflammability class according to UL 94 | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/B7** | **3069411** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type B7**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type B7**

**Blind plug, VDE coded type B7**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/B7** | **3069424** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/B7** | **3069485** | 1 |
| **FTP-2/B7** | **3069471** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/B7** | **3069498** | 1 |

## Accessories

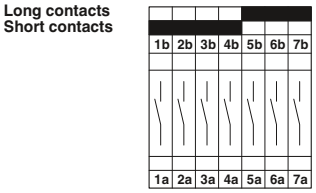
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type E7, for wall and DIN rail mounting

The **VDE E7** version described here is suitable as a plug-in test system for single-stage automatic frequency load shedding (AFLS) and as rotor ground fault protection.

- The test plugs are assembled according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




E7

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type E7**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/E7** | **3069412** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type E7**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type E7**

**Blind plug, VDE coded type E7**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/E7** | **3069425** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/E7** | **3069486** | 1 |
| **FTP-2/E7** | **3069472** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/E7** | **3069499** | 1 |

## Accessories

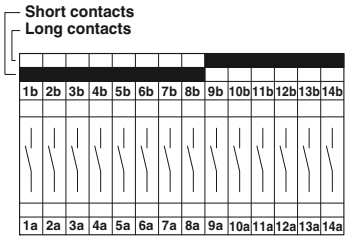
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type A14, for wall and DIN rail mounting

The **VDE A14** version described here is suitable as a plug-in test system for three-stage automatic frequency load shedding (AFLS), as zero-power comparison protection, and as stator and rotor ground fault protection.

- The test plugs are assembled according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




A14

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type A14**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/A14** | **3069413** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type A14**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type A14**

**Blind plug, VDE coded type A14**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/A14** | **3069426** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/A14** | **3069487** | 1 |
| **FTP-2/A14** | **3069474** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/A14** | **3069500** | 1 |

## Accessories

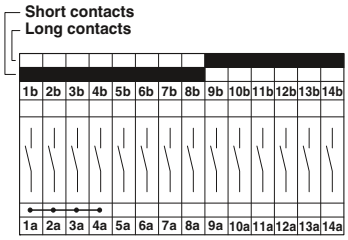
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type B14, for wall and DIN rail mounting

The **VDE B14** version described here is suitable as a plug-in test system in overcurrent directional protection, distance protection for high and medium voltage, as well as voltage regulation.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




B14

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type B14**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/B14** | **3069414** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type B14**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type B14**

**Blind plug, VDE coded type B14**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/B14** | **3069427** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/B14** | **3069488** | 1 |
| **FTP-2/B14** | **3069475** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/B14** | **3069501** | 1 |

## Accessories

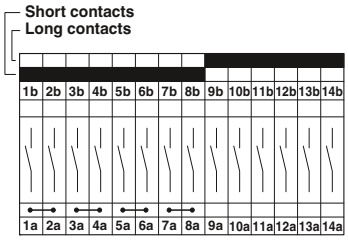
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type C14, for wall and DIN rail mounting

The **VDE C14** version described here is suitable as a plug-in test system in overcurrent time protection, unbalanced load protection, and stator ground fault protection for busbar operation.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




C14

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type C14**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/C14** | **3069415** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type C14**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type C14**

**Blind plug, VDE coded type C14**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/C14** | **3069428** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/C14** | **3069489** | 1 |
| **FTP-2/C14** | **3069476** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/C14** | **3069502** | 1 |

## Accessories

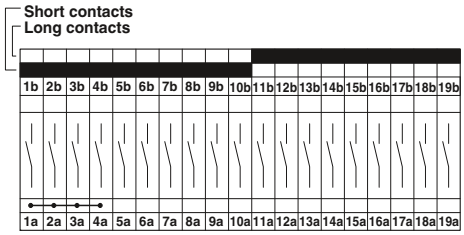
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type B19, for wall and DIN rail mounting

The **VDE B19** version described here is suitable as a plug-in test system in distance protection for high voltage.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




B19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type B19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/B19** | **3069416** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type B19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type B19**

**Blind plug, VDE coded type B19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/B19** | **3069429** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/B19** | **3069490** | 1 |
| **FTP-2/B19** | **3069477** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/B19** | **3069503** | 1 |

## Accessories

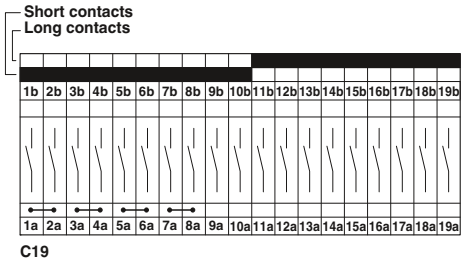
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type C19, for wall and DIN rail mounting

The **VDE C19** version described here is suitable as a plug-in test system in distance protection as system busbar protection, overcurrent directional protection, and current comparison protection for cables.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




C19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type C19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/C19** | **3069417** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type C19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type C19**

**Blind plug, VDE coded type C19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/C19** | **3069430** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/C19** | **3069491** | 1 |
| **FTP-2/C19** | **3069478** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/C19** | **3069504** | 1 |

## Accessories

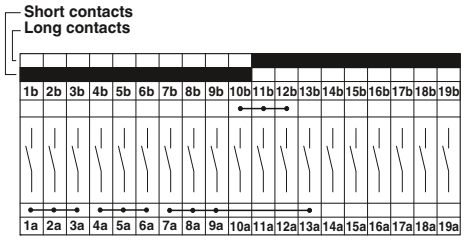
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type D19, for wall and DIN rail mounting

The **VDE D19** version described here is suitable as a plug-in test system for electromechanical differential protection for transformers.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| 1) Derating curve available on request. |
| 2) Rated surge voltage of 5 kV. |



D19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type D19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400²) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24¹)/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/D19** | **3069418** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type D19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type D19**

**Blind plug, VDE coded type D19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/D19** | **3069431** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/D19** | **3069492** | 1 |
| **FTP-2/D19** | **3069479** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/D19** | **3069671** | 1 |

## Accessories

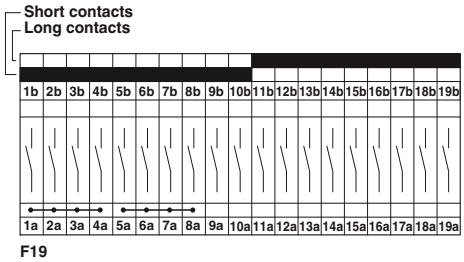
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type F19, for wall and DIN rail mounting

The **VDE F19** version described here is suitable as a plug-in test system in electromechanical differential protection for transformers, generators, motors, and cables.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




F19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type F19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/F19** | **3069419** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type F19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type F19**

**Blind plug, VDE coded type F19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/F19** | **3069432** | 1 |

## Accessories

| | | | |
|---|---|---|---|
| **AP-ME** | **METER** | **3034361** | 10 |
| **APH-ME** | | **3034374** | 10 |
| **APT-ME** | | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/F19** | **3069493** | 1 |
| **FTP-2/F19** | **3069480** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/F19** | **3069675** | 1 |

## Accessories

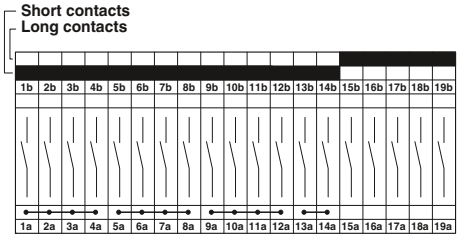
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type G19, for wall and DIN rail mounting

The **VDE G19** version described here is suitable as a plug-in test system in digital differential protection for transformers.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |




G19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type G19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/G19** | **3069420** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | | | | |
| | transparent | | | |
| | red | | | |
| | blue | | | |
| | yellow | | | |
| | green | | | |
| | violet | | | |
| | black | | | |
| | gray | | | |
| | brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Ring cable lug,** insulated according to UL | red | | | |
| | blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type G19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type G19**

**Blind plug, VDE coded type G19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/G19** | **3069433** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/G19** | **3069494** | 1 |
| **FTP-2/G19** | **3069481** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/G19** | **3069676** | 1 |

## Accessories

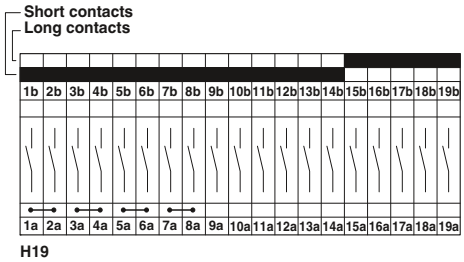
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type H19, for wall and DIN rail mounting

The **VDE H19** version described here is suitable as a plug-in test system in overcurrent directional protection and distance protection as system protection.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |



H19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type H19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/H19** | **3069421** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type H19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type H19**

**Blind plug, VDE coded type H19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/H19** | **3069434** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/H19** | **3069495** | 1 |
| **FTP-2/H19** | **3069482** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/H19** | **3069677** | 1 |

## Accessories

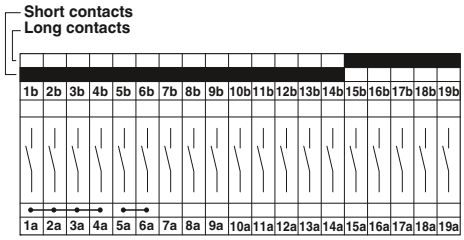
**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Test terminal strip with UT ... screw connection, VDE type I19, for wall and DIN rail mounting

The **VDE I19** version described here is suitable as a plug-in test system in medium voltage, outlet, and coupling protection, including selective ground fault detection.

- The test plugs are assembled with jumpers and contact tab lengths according to the circuit diagram
- A transparent covering hood protects the jumpers. The covering hood can only be removed by dismantling the test plug
- All VDE-specified 7, 14, and 19-pos. versions are supplied with exclusive coding for the matching test plug and blind plug
- The components are supplied pre-marked according to the VDE Directive
- Test signals can be connected with touch-proof safety test leads (CAT III and IV/1000 V according to EN 61010-031)
- The test plugs are equipped with two gray test sockets per position, for further color versions, see the range of accessories
- Additional test leads, assembled with ring and fork-type cable lugs, can be attached with test sockets
- Other VDE versions available on request

| Notes: |
|---|
| To create panel cutouts, see phoenixcontact.net/products. |
| [1]) Derating curve available on request. |
| [2]) Rated surge voltage of 5 kV. |



I19

**6 (10) mm², 30 A, test terminal strip, for wall mounting, VDE coded type I19**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **30** | **400[2])** | **0.2 - 10** | **24 - 8** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400[2]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 24[1])/6 | - | - | - |
| Rated cross section | [mm²] | 6 | - | - | - |
| Cross section range | AWG | 24 - 8 | - | - | - |
| **Connection capacity** | | solid | stranded | ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 2 conductors (of the same type) | [mm²] | 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| 2 stranded conductors with a TWIN ferrule | [mm²] | | | | 0.5 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Screw thread | | M4 | | | |
| Tightening torque | [Nm] | 1.5 - 1.8 | | | |
| Tightening torque for wall fastening | [Nm] | 0.8 - 1 | | | |
| Panel thickness | [mm] | 1 - 4 | | | |
| Tightening torque: test socket screw | [Nm] | - | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Test terminal strip,** for wall mounting | gray | **UTWE 6-2/I19** | **3069422** | 1 |
| **Test terminal strip,** for mounting on NS 35... | gray | | | |
| **Test plug,** with twist grip | gray | | | |
| With standard handle | gray | | | |
| **Test plug,** 1-pos., with cover | gray | | | |
| **Blind plug,** sealable | gray | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Test socket,** insulated | transparent<br>red<br>blue<br>yellow<br>green<br>violet<br>black<br>gray<br>brown | | | |
| **Cover profile,** supply length 1 m | transparent | **AP RSC-T** | **3059139** | 10 |
| **Cover profile holder,** can be snapped on and sealed | gray | **APH-UTWE 6-2** | **3069057** | 10 |
| **Cover profile,** supply length 1 m | transparent | | | |
| **End brackets,** for AP-ME cover profile, sealable, with storage option for jumpers | gray | | | |
| **Holder**, for AP-ME cover profile | gray | | | |
| **Fork-type cable lug,** insulated according to UL | red<br>blue | | | |
| **Ring cable lug,** insulated according to UL | red<br>blue | | | |
| **Screwdriver** | | **SF-SL 0,8X4,0-100** | **1212551** | 10 |
| **Lateral groove labeling** | | **UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)** | | |

**6 (10) mm², 30 A, test terminal strip, for DIN rail mounting, VDE coded type I19**

**24 A, test plug, bridge assignment according to circuit diagram, VDE coded type I19**

**Blind plug, VDE coded type I19**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **30** | **400²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24¹)/6 | - | - | - |
| 6 | - | - | - |
| 24 - 8 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 2.5 |
| 10 | | | |
| M4 | | | |
| 1.5 - 1.8 | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTRE 6-2/I19** | **3069435** | 1 |

## Accessories

| | | |
|---|---|---|
| **AP-ME METER** | **3034361** | 10 |
| **APH-ME** | **3034374** | 10 |
| **APT-ME** | **3034358** | 10 |
| **SF-SL 0,8X4,0-100** | **1212551** | 10 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **24** | **400²)** | **0.5 - 2.5** | **20 - 14** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400²) | - | - | - |
| 24/2.5 | - | - | - |
| 6 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | 0.5 - 2.5 | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FTPR-2/I19** | **3069496** | 1 |
| **FTP-2/I19** | **3069483** | 1 |
| **FTP-2/1** | **3069469** | 1 |

## Accessories

| | | |
|---|---|---|
| **PSBJ-URTK 6 FARBLOS** | **3026450** | 10 |
| **PSBJ-URTK 6 RD** | **3026719** | 10 |
| **PSBJ-URTK 6 BU** | **3026434** | 10 |
| **PSBJ-URTK 6 YE** | **3026405** | 10 |
| **PSBJ-URTK 6 GN** | **3026418** | 10 |
| **PSBJ-URTK 6 VT** | **3026421** | 10 |
| **PSBJ-URTK 6 BK** | **3026447** | 10 |
| **PSBJ-URTK 6 GY** | **3026612** | 10 |
| **PSBJ-URTK 6 BN** | **3026971** | 10 |
| **C-FCI 1,5/M3** | **3240032** | 100 |
| **C-FCI 2,5/M3** | **3240037** | 100 |
| **C-RCI 1,5/M3** | **3240016** | 100 |
| **C-RCI 2,5/M3** | **3240021** | 100 |

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

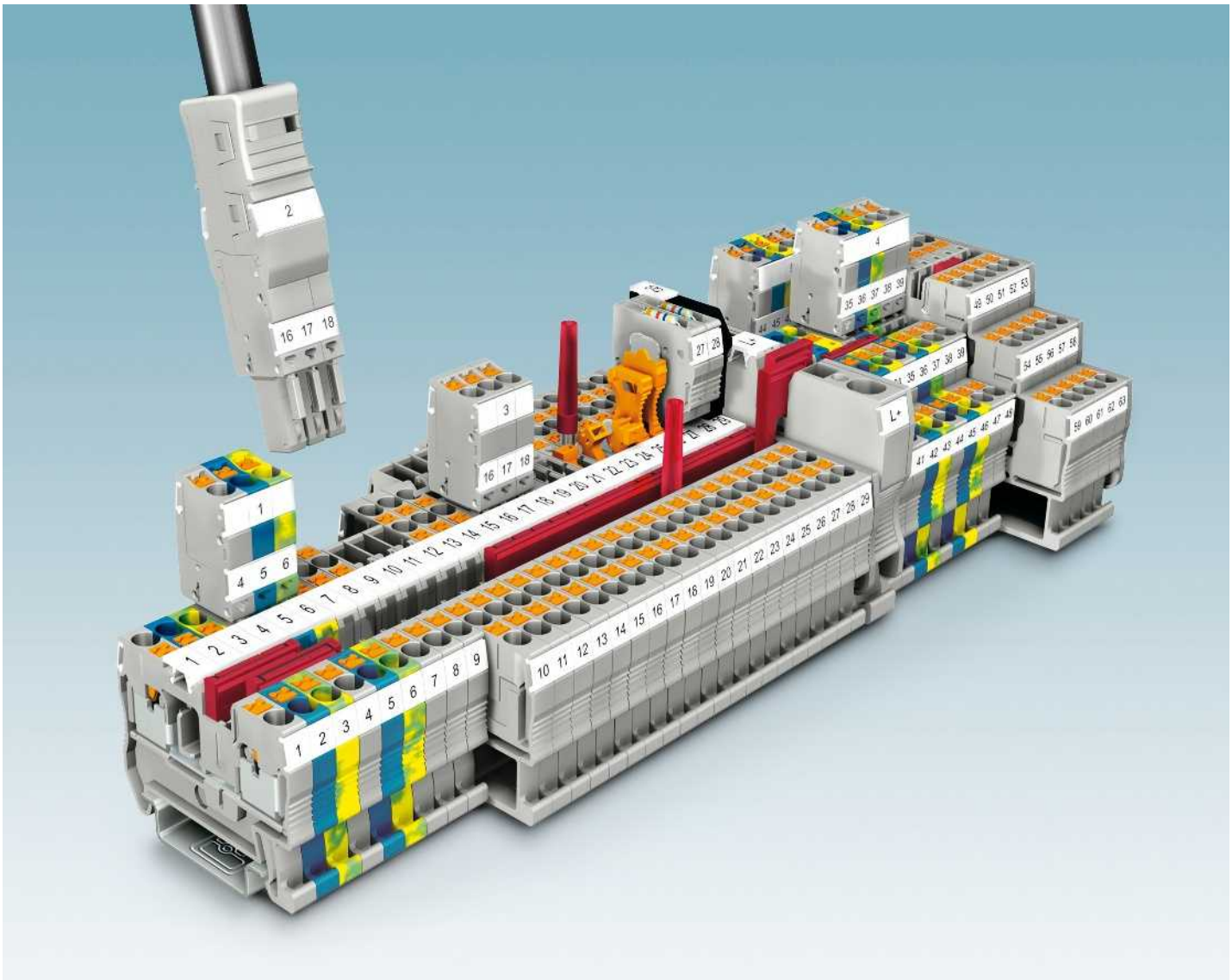
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FBP-2/I19** | **3069678** | 1 |

## Accessories

**UC-TM 8, UCT-TM 8, ZB 8 or TMT (EX9,5)R (see Catalog 5)**

## Modular terminal blocks - CLIPLINE complete

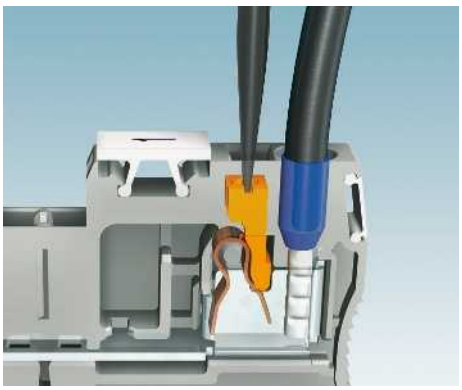


**Push-in connection technology**

The PT series is characterized by the easy, direct conductor connection and makes consistent use of the benefits of the CLIPLINE complete system.

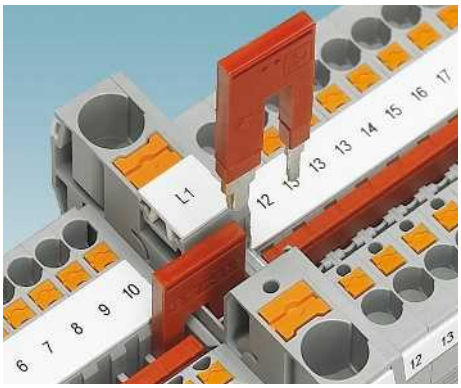
**Easy insertion**

The up to 50 percent reduction in insertion force offered by push-in technology supports simple and direct insertion of solid and stranded conductors featuring ferrules with a cross section of 0.34 mm² or higher.

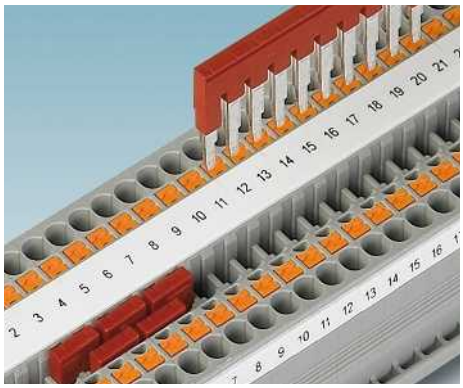


**Latch function**

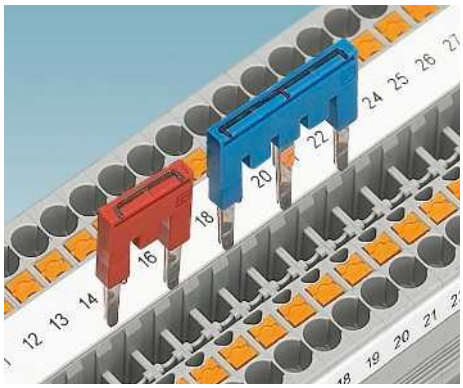
The integrated latch allows you to release connections with any type of tool – easily and without direct contact with live parts.



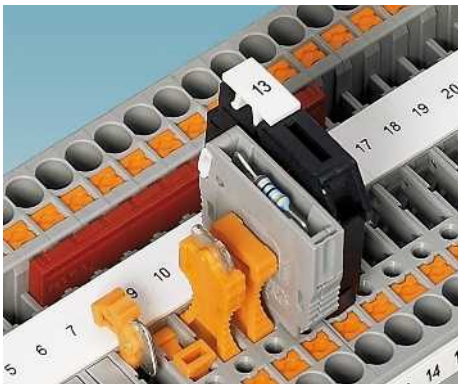
The reducing bridge allows terminal blocks with different nominal cross sections to be connected with ease, e.g., a PT 10 push-in terminal block to a PT 2,5. Power blocks can be created quickly using the reducing bridge.



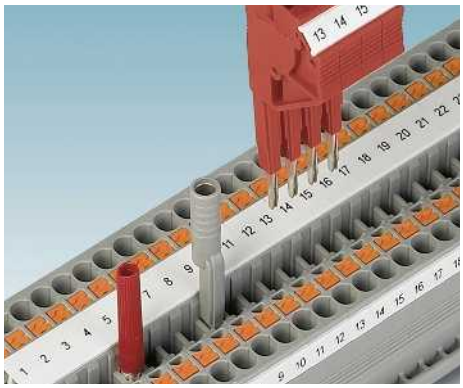
The double function shaft can be used to connect any number of terminal blocks with two-position bridges. The 2 to 50-pos. bridges allow up to 50 terminal blocks to be bridged in one step.



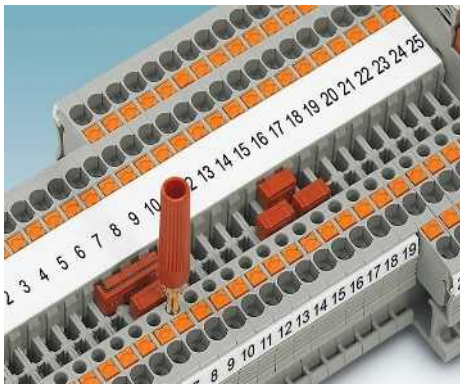
Bridging between non-adjacent terminal blocks is created by removing individual contact tabs from the standard bridge. Two potentials can then be routed in parallel through a terminal strip. The contact points can also be marked.



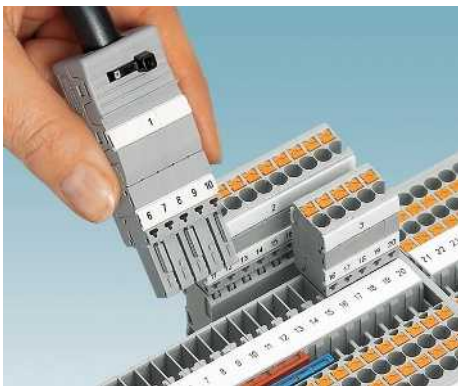
The isolated feed-through connector P-FIX, isolating plug P-DI, component plug P-CO, and the cartridge fuse plug P-FU can be used in the universal plug-in zone of the disconnect terminal block.



A test plug with a 2.3 mm diameter is available for measuring lines. All measurement and test work can be completed at speed using test adapters for 4 mm diameter test plugs and the modular test plugs.



As well as offering a testing facility in the double function shaft, all push-in technology terminal blocks offer an additional test contact for test plugs with a 2.3 mm diameter.

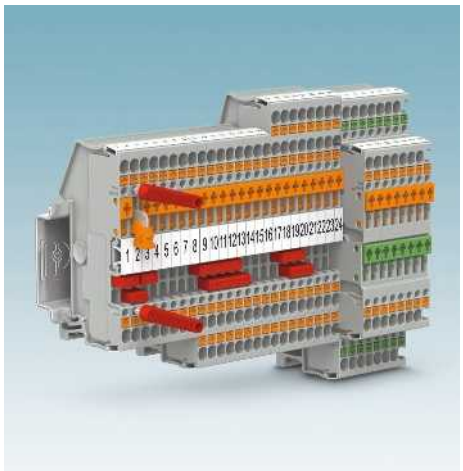


Push-in COMBI terminal blocks are available for the plug-in configuration of signal wiring. The system is touch-proof and offers plugs for self-assembly with extensive accessories.

Automatic flat-type fuse terminal blocks with a 4 mm² conductor connection are available in the same shape as the feed-through terminal blocks. All terminal blocks can be continuously bridged with one another with the double function shaft.

The compact lever-type fuse terminal blocks are of the same shape as the feed-through terminal blocks and can be labeled and bridged continuously. A time-saving potential distribution is easily created using bridging between non-adjacent terminal blocks.

## PT 1,5/S... and PTT 1,5/S... push-in knife disconnect terminal blocks



- Now available for the first time with a design width of just 3.5 mm
- Testing facility on both sides of the disconnect point
- Actuation cross on the disconnect knife enables the use of different sized screwdrivers, see image below
- Same shape feed-through versions
- Clear grouping of the terminal strips through orange cover with a design width of just 0.8 mm

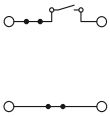
### Single-level PT 1,5/S...

- Three and four-conductor terminal blocks can be used for multi-conductor connections
- Seamless and can be double bridged for all tasks in time-saving potential supply and distribution

### Double-level PTT 1,5/S-2MT

- Space-saving design for maximum wiring density
- Disconnection option on each level
- The assignment from the disconnect knife to the contact points is indicated by the colored levers and the height offset

| Notes: |
|---|
| The nominal current for PT ...MTD... terminal blocks is 17.5 A. |
| 1) The max. load current must not be exceeded by the total current of all connected conductors. |
| 2) Refer to the reducing bridge table; see Catalog 3. |



**1.5 (1.5) mm², 10 A, knife disconnect terminal block, two connections, bridgeable**

## Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **3.5** | **58.9** | **32** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **10** | **400** | **0.14 - 1.5** | **26 - 14** |
| **Rated data** | | IEC 60947-7-1 IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Rated voltage | [V] | 400 | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 10/1.5 | - | - | - |
| Rated cross section | [mm²] | 1.5 | - | - | - |
| Cross section range | AWG | 26 - 14 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1 |
| Two stranded conductors with a TWIN ferrule | [mm²] | | | | |
| Connection cross sections directly plug-in | [mm²] | 0.25 - 1.5 | - | 0.34 - 1.5 | 0.34 - 1 |
| **General data** | | | | | |
| Stripping length | [mm] | 8 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

## Ordering data

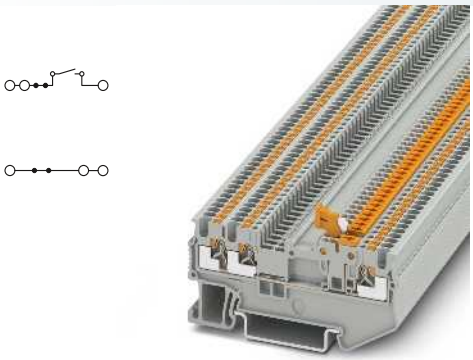
| Description | No. of pos. | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Double-level knife disconnect terminal block,** disconnection on both levels, for mounting on NS 35... | | gray | | | |
| | | blue | | | |
| **Double-level knife disconnect terminal block,** disconnection on the upper level, for mounting on NS 35... | | gray | | | |
| | | blue | | | |
| **Knife disconnect terminal block**, for mounting on NS 35... | | gray | **PT 1,5/S-MT** | **3210301** | 50 |
| | | blue | **PT 1,5/S-MT BU** | **3210302** | 50 |
| **Feed-through terminal block,** same shape, for mounting on NS 35... | | gray | **PT 1,5/S-MTD** | **3210308** | 50 |
| | | blue | **PT 1,5/S-MTD BU** | **3210309** | 50 |

## Accessories

| | | | | | |
|---|---|---|---|---|---|
| **Cover**, 0.8 mm width | | gray | **D-PT 1,5/S-MT-0,8** | **3210303** | 50 |
| | | orange | **D-PT 1,5/S-MT-0,8 OG** | **3210304** | 50 |
| **Jumper** | | | | | |
| | 2 | red | **FBS 2-3,5** | **3213014** | 50 |
| | 3 | red | **FBS 3-3,5** | **3213027** | 50 |
| | 4 | red | **FBS 4-3,5** | **3213030** | 50 |
| | 5 | red | **FBS 5-3,5** | **3213043** | 50 |
| | 10 | red | **FBS 10-3,5** | **3213056** | 50 |
| | 20 | red | **FBS 20-3,5** | **3213069** | 50 |
| **Reducing bridge**2) | | | | | |
| | 2 | red | **RB ST (2,5/4)-1,5/S** | **3214356** | 10 |
| | 2 | red | **RB ST 6-1,5/S** | **3213250** | 10 |
| **Partition plate**, 2 mm width | | gray | **ATP-ST-TWIN** | **3030789** | 50 |
| **Test plug metal part,** 2.3 mm Ø | | silver | **MPS-MT** | **0201744** | 10 |
| **Insulating sleeve,** for MPS metal part | | red | **MPS-IH RD** | **0201676** | 10 |
| **Screwdriver** | | | **SZF 0-0,4X2,5** | **1204504** | 10 |

| | |
|---|---|
| **Center groove labeling** | **UCT-TM 3,5 or ZB 3,5 (see Catalog 5)** |
| **Center and side groove labeling** | **UCT-TMF 3,5 or ZBF 3,5 (see Catalog 5)** |

## Modular terminal blocks - CLIPLINE complete



### 1.5 (1.5) mm², 10 A, knife disconnect terminal block, three connections, bridgeable

#### Technical data

| Width | Length | Height NS 35/7,5 | |
|---|---|---|---|
| **3.5** | **67.8** | **32** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **10¹)** | **400** | **0.14 - 1.5** | **26 - 14** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 10¹)/1.5 | - | - | - |
| 1.5 | - | - | - |
| 26 - 14 | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1 |
| 0.25 - 1.5 | - | 0.34 - 1.5 | 0.34 - 1 |
| 8 | | | |
| PA | | | |
| V0 | | | |

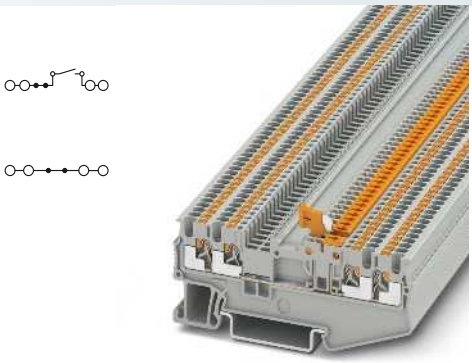
#### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PT 1,5/S-TWIN-MT** | **3210311** | 50 |
| **PT 1,5/S-TWIN-MT BU** | **3210312** | 50 |
| **PT 1,5/S-TWIN-MTD** | **3210317** | 50 |
| **PT 1,5/S-TWIN-MTD BU** | **3210319** | 50 |

#### Accessories

| | | |
|---|---|---|
| **D-PT 1,5/S-TWIN-MT-0,8** | **3210313** | 50 |
| **D-PT 1,5/S-TWIN-MT-0,8 OG** | **3210314** | 50 |
| **FBS 2-3,5** | **3213014** | 50 |
| **FBS 3-3,5** | **3213027** | 50 |
| **FBS 4-3,5** | **3213030** | 50 |
| **FBS 5-3,5** | **3213043** | 50 |
| **FBS 10-3,5** | **3213056** | 50 |
| **FBS 20-3,5** | **3213069** | 50 |
| **RB ST (2,5/4)-1,5/S** | **3214356** | 10 |
| **RB ST 6-1,5/S** | **3213250** | 10 |
| **ATP-ST-TWIN** | **3030789** | 50 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **SZF 0-0,4X2,5** | **1204504** | 10 |

**UCT-TM 3,5 or ZB 3,5 (see Catalog 5)**
**UCT-TMF 3,5 or ZBF 3,5 (see Catalog 5)**



### 1.5 (1.5) mm², 10 A, knife disconnect terminal block, four connections, bridgeable

#### Technical data

| Width | Length | Height NS 35/7,5 | |
|---|---|---|---|
| **3.5** | **76.9** | **32** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **10¹)** | **400** | **0.14 - 1.5** | **26 - 16** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 10¹)/1.5 | - | - | - |
| 1.5 | - | - | - |
| 26 - 16 | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1 |
| 0.25 - 1.5 | - | 0.34 - 1.5 | 0.34 - 1 |
| 8 | | | |
| PA | | | |
| V0 | | | |

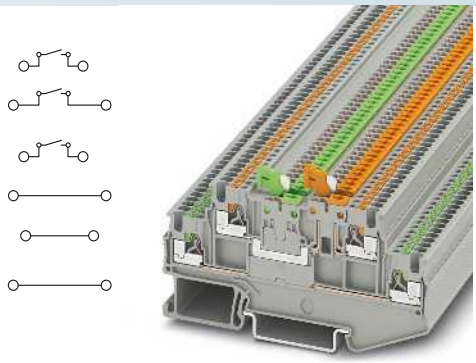
#### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PT 1,5/S-QUATTRO-MT** | **3210321** | 50 |
| **PT 1,5/S-QUATTRO-MT BU** | **3210322** | 50 |
| **PT 1,5/S-QUATTRO-MTD** | **3210328** | 50 |
| **PT 1,5/S-QUATTRO-MTD BU** | **3210329** | 50 |

#### Accessories

| | | |
|---|---|---|
| **D-PT 1,5/S-QUATTRO-MT-0,8** | **3210333** | 50 |
| **D-PT 1,5/S-QUATTRO-MT-0,8 OG** | **3210334** | 50 |
| **FBS 2-3,5** | **3213014** | 50 |
| **FBS 3-3,5** | **3213027** | 50 |
| **FBS 4-3,5** | **3213030** | 50 |
| **FBS 5-3,5** | **3213043** | 50 |
| **FBS 10-3,5** | **3213056** | 50 |
| **FBS 20-3,5** | **3213069** | 50 |
| **RB ST (2,5/4)-1,5/S** | **3214356** | 10 |
| **RB ST 6-1,5/S** | **3213250** | 10 |
| **ATP-ST QUATTRO** | **3030815** | 50 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **SZF 0-0,4X2,5** | **1204504** | 10 |

**UCT-TM 3,5 or ZB 3,5 (see Catalog 5)**
**UCT-TMF 3,5 or ZBF 3,5 (see Catalog 5)**



### 1.5 (1.5) mm², 8 A, double-level knife disconnect terminal block, four connections, not bridgeable

#### Technical data

| Width | Length | Height NS 35/7,5 | |
|---|---|---|---|
| **3.5** | **86** | **42.6** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **8** | **400** | **0.14 - 1.5** | **26 - 14** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 8/1.5 | - | - | - |
| 1.5 | - | - | - |
| 26 - 14 | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1 |
| 0.25 - 1.5 | - | 0.34 - 1.5 | 0.34 - 1 |
| 8 | | | |
| PA | | | |
| V0 | | | |

#### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PTT 1,5/S-2MT** | **3210351** | 50 |
| **PTT 1,5/S-2MT BU** | **3210352** | 50 |
| **PTT 1,5/S-L/MT** | **3210341** | 50 |
| **PTT 1,5/S-L/MT BU** | **3210342** | 50 |
| **PTT 1,5/S-2L** | **3210356** | 50 |
| **PTT 1,5/S-2L BU** | **3210357** | 50 |

#### Accessories

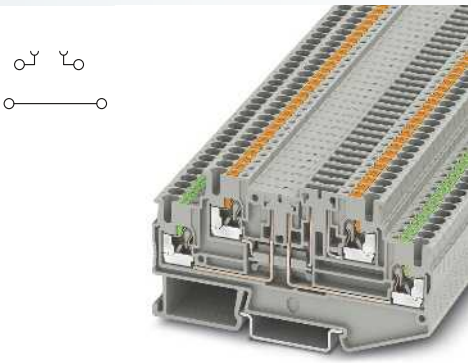
| | | |
|---|---|---|
| **D-PTT 1,5/S-2MT-0,8** | **3210353** | 50 |
| **D-PTT 1,5/S-2MT-0,8 OG** | **3210354** | 50 |
| **ATP-STTB 4** | **3030747** | 50 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **SZF 0-0,4X2,5** | **1204504** | 10 |

**UCT-TMF 3,5 or ZBF 3,5 (see Catalog 5)**

## PTT 2,5... push-in double-level disconnect and knife disconnect terminal blocks

- Design width of just 5.2 mm
- Testing facility on both sides of the disconnect point
- Space-saving design for maximum wiring density
- Clear grouping of the terminal strips through orange cover with a design width of just 0.8 mm
- Disconnection option on each level
- The assignment from the disconnect knife to the contact points is indicated by the colored levers and the height offset

| Notes: |
|---|
| 1) If the fuse is faulty, the downstream circuit is not disconnected. |
| 2) Observe max. load current. |
| 3) Observe max. load current, depending on the power dissipation of the components. Max. 0.5 W with single arrangement. |
| 4) see Catalog 3. |



**2.5 (4) mm², 16 A, double-level terminal block, with one disconnect zone**

### Technical data

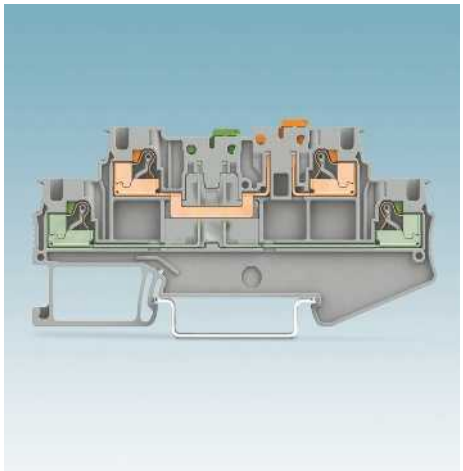
| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **5.2** | **92.4** | **47.4** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **16** | **400** | **0.14 - 4** | **26 - 12** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400 | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 16/2.5 | - | - | - |
| Rated cross section | [mm²] | 2.5 | - | - | - |
| Cross section range | AWG | 26 - 12 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule<br>with/without plastic sleeve | |
| 1 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 plug-in | [mm²] | 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

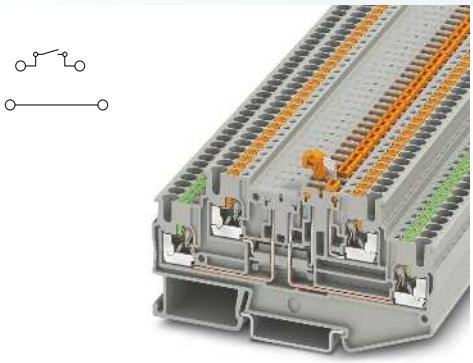
### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Disconnect terminal block,** for mounting on NS 35... | gray | **PTT 2,5-L/TG** | **3210230** | 50 |
| | blue | **PTT 2,5-L/TG BU** | **3210270** | 50 |
| **Knife disconnect terminal block**, for mounting on NS 35... | gray | | | |
| | blue | | | |
| **Double-level knife disconnect terminal block,** disconnection on both levels, for mounting on NS 35... | gray | | | |
| | blue | | | |
| **Feed-through terminal block,** same shape, for mounting on NS 35... | gray | | | |
| | blue | | | |

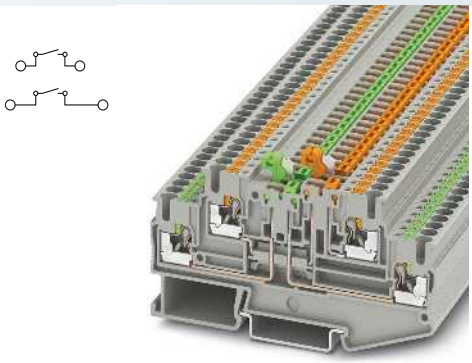
### Accessories

| | | | | |
|---|---|---|---|---|
| **Cover**, 0.8 mm width | gray | **D-PTT 2,5-2MT-0,8** | **3210300** | 50 |
| | orange | **D-PTT 2,5-2MT-0,8 OG** | **3210299** | 50 |
| **Partition plate**, 2 mm width | gray | **ATP-STTB 4** | **3030747** | 50 |
| **Switching lock,** plug-in4) | white | | | |
| **Isolating plug**2) | orange | **P-DI** | **3036783** | 50 |
| **Feed-through connector**2) | gray | **P-FIX** | **3038956** | 50 |
| **Component plug,** labeled with ZBF 5 or UC–TMF 5³) | gray | **P-CO** | **3036796** | 10 |
| **Fuse plug,** width 5.2 mm1) | black | **P-FU 5X20-5** | **3209235** | 10 |
| with LED for 12-30 V DC, 0.35-0.95 mA | black | **P-FU 5X20 LED 24-5** | **3209248** | 10 |
| for 30–60 V AC/DC, 0.36–0.95 mA | black | **P-FU 5X20 LED 60-5** | **3209251** | 10 |
| for 110–250 V AC/DC, 0.4–0.95 mA | black | **P-FU 5X20 LED 250-5** | **3209264** | 10 |
| **Test plug metal part,** 2.3 mm Ø | silver | **MPS-MT** | **0201744** | 10 |
| **Insulating sleeve,** for MPS metal part | red | **MPS-IH RD** | **0201676** | 10 |
| **Modular test plug housing,** for MPS metal part, can be marked with ZB 5 | red | **PS-5/2,3MM RD** | **3038723** | 10 |
| **Screwdriver** | | **SZF 1-0,6X3,5** | **1204517** | 10 |
| **Lateral groove labeling** | | **UC-TMF 5, UCT-TMF 5 or ZBF 5 (see Catalog 5)** | | |

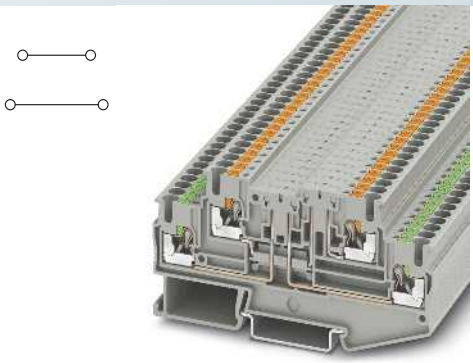




**2.5 (4) mm², 16 A, double-level terminal block with one knife disconnect zone**



**2.5 (4) mm², 16 A, double-level terminal block with two knife disconnect zones**



**2.5 (4) mm², 20 A, double-level terminal block, same shape**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **5.2** | **92.4** | **47.4** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **16** | **400** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 16/2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule with/without 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. |
|---|---|---|
| **PTT 2,5-L/MT** | **3210251** | 50 |
| **PTT 2,5-L/MT BU** | **3210257** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-PTT 2,5-2MT-0,8** | **3210300** | 50 |
| **D-PTT 2,5-2MT-0,8 OG** | **3210299** | 50 |
| **ATP-STTB 4** | **3030747** | 50 |
| **S-MT** | **3247954** | 50 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-5/2,3MM RD** | **3038723** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TMF 5, UCT-TMF 5 or ZBF 5 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **5.2** | **92.4** | **47.4** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **16** | **400** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 16/2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule with/without 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. |
|---|---|---|
| **PTT 2,5-2MT** | **3210258** | 50 |
| **PTT 2,5-2MT BU** | **3210265** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-PTT 2,5-2MT-0,8** | **3210300** | 50 |
| **D-PTT 2,5-2MT-0,8 OG** | **3210299** | 50 |
| **ATP-STTB 4** | **3030747** | 50 |
| **S-MT** | **3247954** | 50 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-5/2,3MM RD** | **3038723** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TMF 5, UCT-TMF 5 or ZBF 5 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **5.2** | **92.4** | **47.4** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **20** | **400** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 20/2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule with/without 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. |
|---|---|---|
| **PTT 2,5-2L** | **3210267** | 50 |
| **PTT 2,5-2L BU** | **3210268** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-PTT 2,5-2MT-0,8** | **3210300** | 50 |
| **D-PTT 2,5-2MT-0,8 OG** | **3210299** | 50 |
| **ATP-STTB 4** | **3030747** | 50 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-5/2,3MM RD** | **3038723** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TMF 5, UCT-TMF 5 or ZBF 5 (see Catalog 5)**

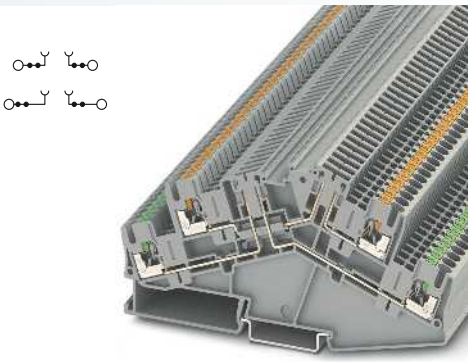
## PTTBS 2,5... push-in double-level disconnect and knife disconnect terminal blocks in desk design

The angled push-in terminal blocks in desk-design were developed for wiring systems where space is saved by means of underfloor wiring. They offer numerous advantages:

- Design width of just 5.2 mm
- Angled conductor entry for use in flat terminal boxes
- Disconnection option on each level
- The assignment from the disconnect knife to the contact points is indicated by the colored levers and the height offset
- Two function shafts before and after the disconnect point for flexible potential distribution
- Additional 2.3 mm test connections on the contact chamber lever
- Two large-surface, central marking options, marking assigned through a height offset
- Convenient potential bridging of the levels with the vertical FBS-PV potential bridge
- PTTBS 2,5−2TGB with universal disconnect zone, for accommodating isolating plugs, feed-through connectors, component and fuse plugs

CLIP PROJECT Planning enables the quick and convenient planning and configuration of fault-free terminal strips.

| Notes: |
|---|
| 1) If the fuse is faulty, the downstream circuit is not disconnected. |
| 2) Observe max. load current. |
| 3) Observe max. load current, depending on the power dissipation of the components. Max. 0.5 W with single arrangement. |
| 4) see Catalog 3. |



**2.5 (4) mm², 16 A, double-level terminal block with two disconnect zones**

### Technical data

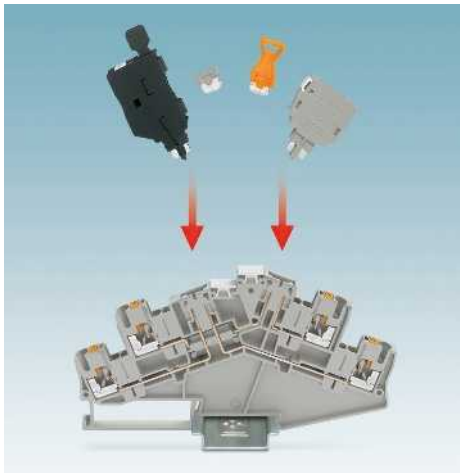
| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **5.2** | **124.8** | **64.3** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **16** | **400** | **0.14 - 4** | **26 - 12** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400 | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 16/2.5 | - | - | - |
| Rated cross section | [mm²] | 2.5 | - | - | - |
| Cross section range | AWG | 26 - 12 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule<br>with/without plastic sleeve | |
| 1 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, plug-in | [mm²] | 0.34 - 4 | - | 0.34 - 2.5 | 0.34 - 2.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 10 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

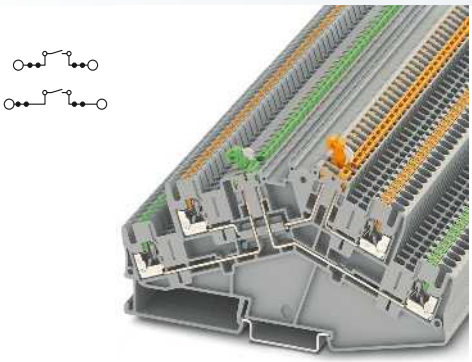
### Ordering data

| Description | No. of pos. | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Disconnect terminal block,** for mounting on NS 35... | | gray | **PTTBS 2,5-2TGB** | **3210402** | 50 |
| **Knife disconnect terminal block**, for mounting on NS 35... | | gray<br>blue | | | |

### Accessories

| | | | | | |
|---|---|---|---|---|---|
| **Cover**, 0.8 mm width | | gray | **D-PTTBS 2,5-2MTB** | **3210404** | 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 |
| **Jumper** | | | | | |
| | 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 |
| **Vertical potential bridge**, to connect the upper and lower level | | black | **FBS-PV** | **3032185** | 50 |
| **Switching lock,** plug-in4) | | white | | | |
| **Modular test plug,** for the individual assembly of test pin strips | | red | **PS-5** | **3030983** | 10 |
| **Isolating plug**2) | | orange | **P-DI** | **3036783** | 50 |
| **Feed-through connector**2) | | gray | **P-FIX** | **3038956** | 50 |
| **Component plug,** labeled with ZBF 5 or UC–TMF 5³) | | gray | **P-CO** | **3036796** | 10 |
| **Fuse plug,** width 5.2 mm1) | | black | **P-FU 5X20-5** | **3209235** | 10 |
| With LED for 12-30 V DC, 0.35-0.95 mA | | black | **P-FU 5X20 LED 24-5** | **3209248** | 10 |
| for 30–60 V AC/DC, 0.36–0.95 mA | | black | **P-FU 5X20 LED 60-5** | **3209251** | 10 |
| for 110–250 V AC/DC, 0.4–0.95 mA | | black | **P-FU 5X20 LED 250-5** | **3209264** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | **1204517** | 10 |
| **Center groove labeling** | | | **UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)** | | |





**2.5 (4) mm², 16 A, double-level terminal block with two knife disconnect zones**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **5.2** | **124.8** | **64.3** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **16** | **400** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 16/2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| solid | stranded | Ferrule with/without 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. |
|---|---|---|
| **PTTBS 2,5-2MTB** | **3210400** | 50 |
| **PTTBS 2,5-2MTB BU** | **3210401** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-PTTBS 2,5-2MTB** | **3210404** | 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 |
| **FBS-PV** | **3032185** | 50 |
| **S-MT** | **3247954** | 50 |
| **PS-5** | **3030983** | 10 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |

**UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)**

## UT ...-TG screw connection, disconnect and knife disconnect terminal blocks with fuse plug

– Compact design and high current carrying capacity of up to 20 A
– Double bridge shaft enables individual potential distribution and supply
– The function terminals are suitable for use in potentially explosive areas (zone 2) according to standards established worldwide.
  They meet the requirements of the following ignition protection concepts:

### Marking

IECEx:
– Ex nA IIC Gc
ATEX:
– Ⓔx II 3 G Ex nA IIC Gc
– Ex i
c UL us
– AEx nA IIC Gc
– Class I zone 2
– Class I Division 2 Groups A B

### S-MT switching lock

– The optional switching lock snaps in and effectively prevents accidental switching, see figure below

**Notes:**

Detailed information and data sheets regarding modular terminal blocks in the Ex area are available in the product area on our website at phoenixcontact.net/products and in IECEx Certificate of Conformity IECEx UL 13.0007U and in UL file E192998.

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

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

[3]) see Catalog 3.

**4 (6) mm², 20 A, disconnect terminal block, with test socket screws**

Ex: c UL us, IECEx, Ⓔx
IECEx UL 13.0007U

### Technical data

| | | | | |
|---|---|---|---|---|
| **Dimensions** | | | | |
| | [mm] | Width | Length | Height NS 35/7,5 |
| | | **6.2** | **57.8** | **47.5** |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] / AWG |
| | | **20[2])** | **500[2])** | **0.14 - 6** / **26 - 10** |
| **Rated data** | | IEC 60947-7-1 | | Ⓔx |
| | | IEC | UL/CUL | CSA / IEC/ EN 60079-7 |
| Rated voltage | [V] | 500[2]) | - | - / 250 |
| Nominal current / cross section | [A] / [mm²] | 20[2])/2.5 | - | - / 6.3 |
| Rated cross section | [mm²] | 4 | - | - / 0.14-4 |
| Cross section range | AWG | 26 - 10 | - | - / 26 - 10 |
| **Connection capacity** | | solid | stranded | Ferrule with/without plastic sleeve |
| 1 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 | | |
| Insulating material | | PA | | |
| Inflammability class according to UL 94 | | V0 | | |

### Ordering data

| Description | No. of pos. | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Disconnect terminal block,** for mounting on NS 35... | | gray | **UT 4-TG-EX** | **3046143** | 50 |
| with test socket screws | | gray | **UT 4-TG-P/P-EX** | **3046169** | 50 |
| **Knife disconnect terminal block**, for mounting on NS 35... | | gray | | | |
| | | gray | | | |
| **Fuse plug,** width 6.2 mm[1]) | | black | | | |
| with LED for 12-30 V DC, 0.35-0.95 mA | | black | | | |
| for 30–60 V AC/DC, 0.36–0.95 mA | | black | | | |
| for 110–250 V AC/DC, 0.4–0.95 mA | | black | | | |
| **Fuse plug,** width 8.2 mm[1]) | | black | | | |
| with LED for 12-30 V DC, 0.35-0.95 mA | | black | | | |
| for 30–60 V AC/DC, 0.36–0.95 mA | | black | | | |
| for 110–250 V AC/DC, 0.4–0.95 mA | | black | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Switching lock,** plug-in[3]) | | white | | | |
| **Partition plate,** 2.2 mm wide | | gray | **ATP-UT-TWIN** | **3047183** | 50 |
| **Test adapter,** 4 mm test socket hole | | gray | **PAI-4-N GY** | **3032871** | 10 |
| **Test plug metal part,** 2.3 mm Ø | | silver | **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 pin strips | | red | **PS-6** | **3030996** | 10 |
| **Fuse plug,** width 6.2 mm[1]) | | black | **P-FU 5X20-EX** | **3036807** | 10 |
| Width 8.2 mm | | black | | | |
| **Screwdriver** | | | **SZS 0,6X3,5** | **1205053** | 10 |
| **Center groove labeling** | | | | | |
| **Lateral groove labeling** | | | **UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)** | | |

### 4 (6) mm², 20 A, knife disconnect terminal block, with test socket screws

Ex:
IECEx UL 13.0007U

#### Technical data

| Width | Length | Height NS 35/7,5 | |
|---|---|---|---|
| **6.2** | **57.8** | **49.1** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **20** | **500** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | 500 |
| 20/2.5 | - | - | 16 |
| 4 | - | - | 0.14-4 |
| 26 - 10 | - | - | 26 - 10 |
| solid | stranded | Ferrule with/without 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 | | | |
| PA | | | |
| V0 | | | |

#### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UT 4-MT-EX** | **3046141** | 50 |
| **UT 4-MT-P/P-EX** | **3046173** | 50 |

#### Accessories

| | | |
|---|---|---|
| **S-MT** | **3247954** | 50 |
| **ATP-UT-TWIN** | **3047183** | 50 |
| **PAI-4-N GY** | **3032871** | 10 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-6** | **3030996** | 10 |
| **SZS 0,6X3,5** | **1205053** | 10 |

**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

### 6 (10) mm², 20 A, disconnect terminal block, with test socket screws

Ex:
IECEx UL 13.0007U

#### Technical data

| Width | Length | Height NS 35/7,5 | |
|---|---|---|---|
| **8.2** | **57.8** | **47.5** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **20²)** | **500²)** | **0.2 - 10** | **24 - 8** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500²) | - | - | 250 |
| 20²)/2.5 | - | - | 6.3 |
| 6 | - | - | 0.2-6 |
| 24 - 8 | - | - | 24 - 8 |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.2 - 10 | 0.2 - 10 | 0.25 - 6 | 0.25 - 6 |
| 0.2 - 2.5 | 0.2 - 2.5 | 0.25 - 1.5 | - |
| | | | 0.5 - 4 |
| 10 | | | |
| PA | | | |
| V0 | | | |

#### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UT 6-TG-EX** | **3046486** | 50 |
| **UT 6-TG P/P-EX** | **3073870** | 50 |

#### Accessories

| | | |
|---|---|---|
| **ATP-UT-TWIN** | **3047183** | 50 |
| **PAI-4-N GY** | **3032871** | 10 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-6** | **3030996** | 10 |
| **P-FU 6,3X32-EX** | **3046499** | 10 |
| **SZS 1,0X4,0 VDE** | **1205066** | 10 |

**UC-TM 8, UCT-TM 8 or ZB 8 (see Catalog 5)**

### 6.2 mm and 8.2 mm fuse plug, for 5 x 20 mm and 6.3 x 32 mm cartridge fuses

Ex:
IECEx UL 13.0007U

#### Technical data

| Width | Length | Height NS 35/7,5 | |
|---|---|---|---|
| **-** | **-** | **-** | |
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| PA | | | |
| V0 | | | |

#### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **P-FU 5X20-EX** | **3036807** | 10 |
| **P-FU 5X20 LED 24-EX** | **3036821** | 10 |
| **P-FU 5X20 LED 60-EX** | **3036823** | 10 |
| **P-FU 5X20 LA 250-EX** | **3036836** | 10 |
| **P-FU 6,3X32-EX** | **3046499** | 10 |
| **P-FU 6,3X32 LED 24-EX** | **3046509** | 10 |
| **P-FU 6,3X32 LED 60-EX** | **3046512** | 10 |
| **P-FU 6,3X32 LA 250-EX** | **3046525** | 10 |

#### Accessories

**UC-TMF 5, UCT-TMF 5 or ZBF 5 (see Catalog 5)**

## UTTB ...-TG, UTT ...-2(MT) screw connection, double-level disconnect and knife disconnect terminal blocks

Optimized for process technology through:

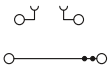
- Design width of just 5.2 mm
- Space-saving design for maximum wiring density
- Disconnection option on each level
- Testing facility on both sides of the disconnect point
- Clear assignment of the disconnect levels thanks to height offset and color disconnect knife, green at the bottom, orange at the top

### Offset levels

Offset levels provide:

- Unobstructed access to the lower connection level if fully wired
- Better view of the lower marking labels and conductor entry funnel

| Notes: |
|---|
| 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) see Catalog 3. |
| 5) For maximum power dissipation, see Catalog 3. |



**2.5 (4) mm², 20 A, double-level terminal block with disconnect zone, test socket screw**

### Technical data

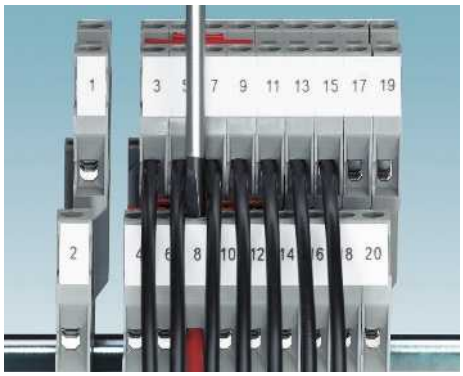
| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **5.2** | **69.9** | **64.8** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **20** | **400** | **0.14 - 4** | **26 - 12** |
| | | IEC 60947-7-1 | | | |
| **Rated data lower level** | | 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] | 2.5 | - | - | - |
| Cross section range | AWG | 26 - 12 | - | - | - |
| **Rated data, upper level** | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Nominal current / cross section | [A] / [mm²] | 16[3])/2.5 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.14 - 4 | 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 |
| 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] | 0.5 - 0.6 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

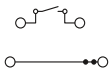
### Ordering data

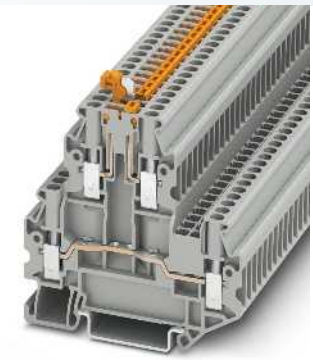
| Description | No. of pos. | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Disconnect terminal block,** for mounting on NS 35... | | gray | **UTTB 2,5-TG-P/P** | **3044644** | 50 |
| **Knife disconnect terminal block**, for mounting on NS 35... | | gray | | | |
| | | blue | | | |
| **Double-level knife disconnect terminal block,** disconnection on both levels, for mounting on NS 35... | | gray | | | |
| | | blue | | | |

### Accessories

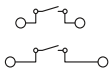
| | | | | | |
|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-UTT 2,5/4** | **3044676** | 50 |
| **Spacer plate,** compensates for level offsets, width 2.5 mm | | gray | **DP-UTT 2,5/4** | **3044677** | 50 |
| **Jumper** | | | | | |
| | 2 | red | **FBS 2-5** | **3030161** | 50 |
| | 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 |
| **Switching lock,** plug-in[4]) | | white | | | |
| **Isolating plug**[1]) | | orange | **P-DI** | **3036783** | 50 |
| **Feed-through connector**[1]) | | gray | **P-FIX** | **3038956** | 50 |
| **Component plug,** labeled with ZBF 5 or UC–TMF 5[2]) | | gray | **P-CO** | **3036796** | 10 |
| **Fuse plug,** width 6.2 mm[5]) | | black | **P-FU 5X20** | **3036806** | 10 |
| **Screwdriver** | | | **SZG 0,6X3,5 VDE** | **1205121** | 10 |
| **Lateral groove labeling** | | | **UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)** | | |

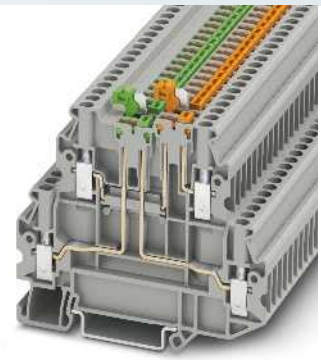






**2.5 (4) mm², 20 A, double-level terminal block with disconnect knife, test socket screw**





**2.5 (4) mm², 16 A, double-level terminal block with a disconnect knife per level, test socket screw**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **5.2** | **69.9** | **64.8** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **20** | **400** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 20/2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 16/2.5 | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.14 - 4 | 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 |
| 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - 0.5 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTTB 2,5-MT-P/P** | **3044640** | 50 |
| **UTTB 2,5-MT-P/P BU** | **3044641** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-UTT 2,5/4** | **3044676** | 50 |
| **DP-UTT 2,5/4** | **3044677** | 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 |
| **S-MT** | **3247954** | 50 |
| **SZG 0,6X3,5 VDE** | **1205121** | 10 |

**UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **5.2** | **80.1** | **58.1** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **16** | **400** | **0.14 - 4** | **26 - 12** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 400 | - | - | - |
| 16/2.5 | - | - | - |
| 2.5 | - | - | - |
| 26 - 12 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 16/2.5 | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.14 - 4 | 0.14 - 4 | 0.14 - 2.5 | 0.14 - 2.5 |
| 0.14 - 1.5 | 0.14 - 1.5 | 0.14 - 1.5 | - 0.5 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.5 - 0.6 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UTT 2,5-2MT-P/P** | **3044670** | 50 |
| **UTT 2,5-2MT-P/P BU** | **3044671** | 50 |

## Accessories

| | | |
|---|---|---|
| **D-UTT 2,5/4** | **3044676** | 50 |
| **DP-UTT 2,5/4** | **3044677** | 50 |
| **S-MT** | **3247954** | 50 |
| **SZG 0,6X3,5 VDE** | **1205121** | 10 |

**UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)**

## Modular terminal blocks - CLIPLINE complete

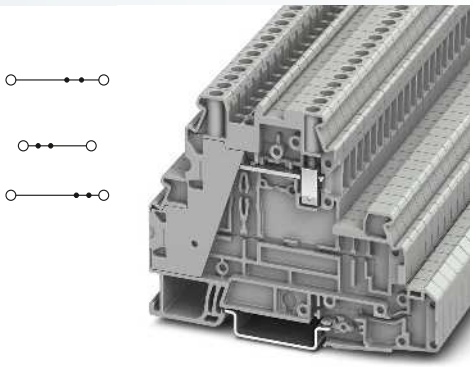
### Screw connection, multi-level function and lever-type fuse terminal blocks with UT 4... PE foot

- Suitable for process technology thanks to applied for Ex nA approval
- For power and signal transmission in potentially explosive areas
- Same shape as UT 4-PE/L/HESI multi-level lever-type fuse terminal blocks on the following page

### Terminal strip service

We produce fully pre-assembled terminal strips for fitting straight into the control cabinet or switch system. This simplifies installation, saves time, and cuts costs.

| Notes: |
|---|
| 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) see Catalog 3. |
| 5) For maximum power dissipation, see Catalog 3. |



**4 (6) mm², 36 A, feed-through terminal block**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **6.2** | **92.7** | **61.7** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **36** | **500** | **0.14 - 6** | **26 - 10** |
| | | IEC 60947-7-1 | | | |
| **Rated data lower level** | | 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 | 26 - 10 | - | - | - |
| **Rated data, upper level** | | IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| Nominal current / cross section | [A] / [mm²] | 32/4 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule with/without plastic sleeve | |
| 1 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 - 1.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 9 | | | |
| Screw thread | | M3 | | | |
| Tightening torque | [Nm] | 0.6 - 0.8 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

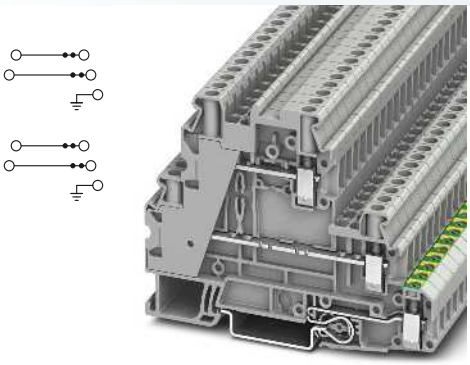
### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Feed-through terminal block,** only in the upper level, for mounting on NS 35... | | gray | **UT 4-L** | | **3214363** | 50 |
| **Multi-level terminal block,** upper and middle level, for mounting on NS 35... | | gray | **UT 4-L/L** | | **3214362** | 50 |
| **Multi-level terminal block,** 2 x feed-through, 1 x PE, for mounting on NS 35... | | gray | | | | |
| **Multi-level terminal block,** 1 x feed-through, 1 x blue printed feed-through, 1 x PE, for mounting on NS 35... | | gray | | | | |
| **Disconnect terminal block,** for mounting on NS 35... | | gray | | | | |
| **Knife disconnect terminal block**, for mounting on NS 35... | | gray | | | | |

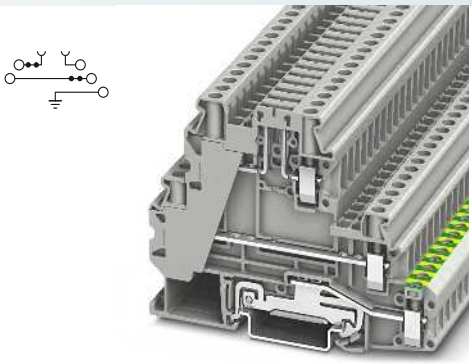
### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-6** | 28 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 28 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 28 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 28 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 28 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 28 A | **3030365** | 10 |
| **Switching lock,** plug-in4) | | white | | | | |
| **Isolating plug**1) | | orange | | | | |
| **Feed-through connector**1) | | gray | | | | |
| **Component plug,** labeled with ZBF 5 or UC–TMF 52) | | gray | | | | |
| **Fuse plug,** width 6.2 mm5) | | black | | | | |
| **Screwdriver** | | | **SZS 0,6X3,5** | | **1205053** | 10 |

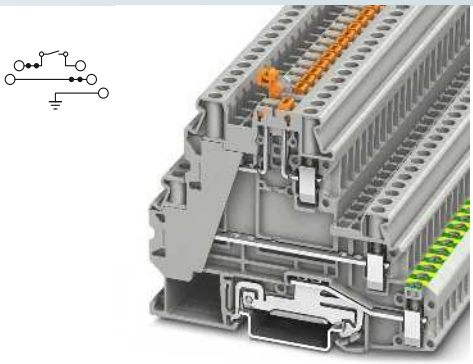
| | |
|---|---|
| **Center and side groove labeling**<br><br>**Lateral groove labeling** | **UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)** |



**4 (6) mm², 36 A, multi-level terminal block, PE foot**



**4 (6) mm², 36 A, multi-level terminal block, disconnect zone, PE foot**



**4 (6) mm², 36 A, multi-level terminal block, disconnect knife, PE foot**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **92.7** | **61.7** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **36** | **500** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-1/IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | - |
| 30/4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 32/4 | - | - | - |
| solid | stranded | Ferrule with/without 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 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **UT 4-PE/L/L** | | **3214360** | 50 |
| **UT 4-PE/L/N** | | **3214361** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **FBS 2-6** | 28 A | **3030336** | 50 |
| **FBS 3-6** | 28 A | **3030242** | 50 |
| **FBS 4-6** | 28 A | **3030255** | 50 |
| **FBS 5-6** | 28 A | **3030349** | 50 |
| **FBS 10-6** | 28 A | **3030271** | 10 |
| **FBS 20-6** | 28 A | **3030365** | 10 |
| **SZS 0,6X3,5** | | **1205053** | 10 |

**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **92.7** | **61.7** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **36** | **500** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-1/IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | - |
| 30/4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 20³)/2.5 | - | - | - |
| solid | stranded | Ferrule with/without 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 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **UT 4-PE/L/TG** | | **3214365** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **FBS 2-6** | 28 A | **3030336** | 50 |
| **FBS 3-6** | 28 A | **3030242** | 50 |
| **FBS 4-6** | 28 A | **3030255** | 50 |
| **FBS 5-6** | 28 A | **3030349** | 50 |
| **FBS 10-6** | 28 A | **3030271** | 10 |
| **FBS 20-6** | 28 A | **3030365** | 10 |
| **P-DI** | | **3036783** | 50 |
| **P-FIX** | | **3038956** | 50 |
| **P-CO** | | **3036796** | 10 |
| **P-FU 5X20** | | **3036806** | 10 |
| **SZS 0,6X3,5** | | **1205053** | 10 |

**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **92.7** | **61.7** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **36** | **500** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-1/IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500 | - | - | - |
| 30/4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 20³)/2.5 | - | - | - |
| solid | stranded | Ferrule with/without 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 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **UT 4-PE/L/MT** | | **3214364** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **FBS 2-6** | 28 A | **3030336** | 50 |
| **FBS 3-6** | 28 A | **3030242** | 50 |
| **FBS 4-6** | 28 A | **3030255** | 50 |
| **FBS 5-6** | 28 A | **3030349** | 50 |
| **FBS 10-6** | 28 A | **3030271** | 10 |
| **FBS 20-6** | 28 A | **3030365** | 10 |
| **S-MT** | | **3247954** | 50 |
| **SZS 0,6X3,5** | | **1205053** | 10 |

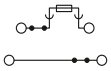
**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

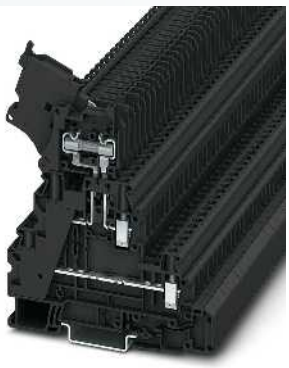
## Screw connection, multi-level lever-type fuse terminal blocks with UT 4... PE foot

- Suitable for process technology thanks to applied for Ex nA approval
- For power and signal transmission in potentially explosive areas
- Compact design for maximum space saving
- Two function shafts mean that all potential distribution tasks can be undertaken at speed
- Test connection on both sides in safety lever
- Same shape as the UT 4-PE/L... feed-through and disconnect terminal blocks

CLIP PROJECT Planning enables the quick and convenient planning and configuration of fault-free terminal strips.

| Notes: |
|---|
| 1) If the fuse is faulty, the downstream circuit is not disconnected. |
| 2) The current is determined by the fuse used. |
| 3) The current is determined by the fuse used, the voltage by the light indicator. |
| 4) For maximum power dissipation, see Catalog 3. |





**4 (6) mm², 36 A, multi-level terminal block, safety lever**

### Technical data

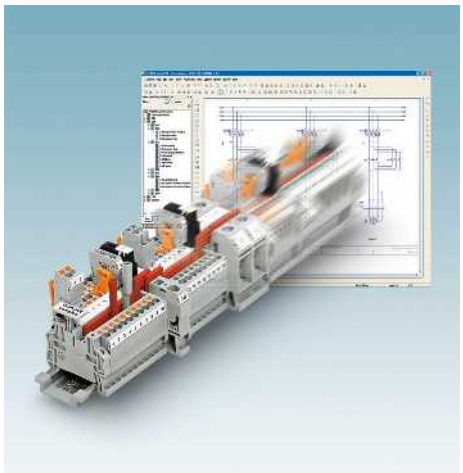
| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **6.2** | **92.7** | **88.9** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **36[4])** | **500[4])** | **0.14 - 6** | **26 - 10** |
| **Rated data lower level** | | IEC 60947-7-3<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 500[4]) | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 30/4 | - | - | - |
| Rated cross section | [mm²] | 4 | - | - | - |
| Cross section range | AWG | 26 - 10 | - | - | - |
| **Rated data, upper level** | | IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Nominal current / cross section | [A] / [mm²] | 6.3[2])/1 | -/- | - | - |
| **Connection capacity** | | solid | stranded | Ferrule<br>with/without plastic sleeve | |
| 1 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 - 1.5 |
| **General data** | | | | | |
| Stripping length | [mm] | 9 | | | |
| Screw thread | | M3 | | | |
| Tightening torque | [Nm] | 0.6 - 0.8 | | | |
| Insulating material | | PA | | | |
| Inflammability class according to UL 94 | | V0 | | | |

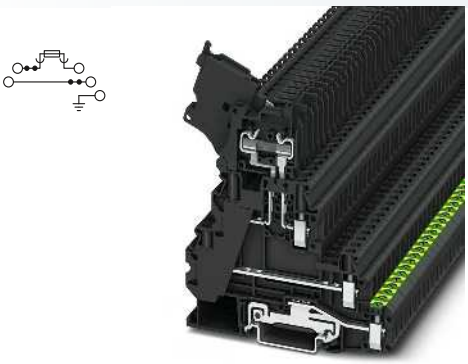
### Ordering data

| 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 | | black | **UT 4-L/HESI (5X20)** | | **3214325** | 50 |
| **Fuse terminal block**, for mounting on NS 35..., for 5 x 20 cartridge fuse inserts | | black | | | | |
| with LED for 12-30 V DC, 0.31-0.95 mA[1]) | | black | | | | |
| for 30–60 V AC/DC, 0.40–0.86 mA[1]) | | black | | | | |
| for 110–250 V AC/DC, 0.41–0.96 mA[1]) | | black | | | | |
| **Disconnect terminal block,** for mounting on NS 35... | | black | | | | |

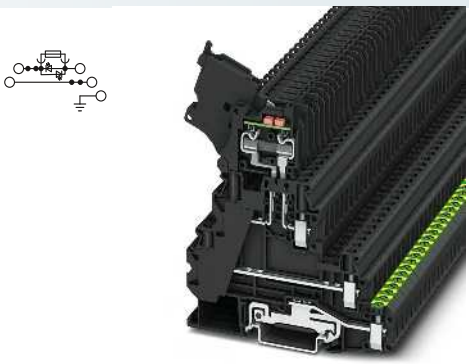
### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Feed-through metal,** in the shape of a 5 x 20 mm glass tube fuse insert | | | **DMET 5X20** | | **3032075** | 50 |
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-6** | 28 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 28 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 28 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 28 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 28 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 28 A | **3030365** | 10 |
| **Screwdriver** | | | **SZS 0,6X3,5** | | **1205053** | 10 |
| **Lever labeling** | | | **UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)** | | | |
| **Lateral groove labeling** | | | **UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)** | | | |

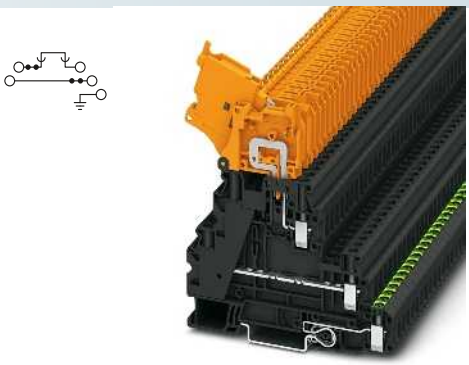




**4 (6) mm², 36 A, multi-level terminal block, safety lever, PE foot**



**4 (6) mm², 36 A, multi-level terminal block, safety lever with LED, PE foot**



**4 (6) mm², 36 A, multi-level terminal block, disconnect lever, PE foot**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **92.7** | **88.9** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **36[4])** | **500[4])** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-2/IEC 60947-7-3 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500[4]) | - | - | - |
| 30/4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 6.3[2])/1 | -/- | - | - |
| solid | stranded | Ferrule with/without 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 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **UT 4-PE/L/HESI (5X20)** | | **3214320** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **DMET 5X20** | | **3032075** | 50 |
| **FBS 2-6** | 28 A | **3030336** | 50 |
| **FBS 3-6** | 28 A | **3030242** | 50 |
| **FBS 4-6** | 28 A | **3030255** | 50 |
| **FBS 5-6** | 28 A | **3030349** | 50 |
| **FBS 10-6** | 28 A | **3030271** | 10 |
| **FBS 20-6** | 28 A | **3030365** | 10 |
| **SZS 0,6X3,5** | | **1205053** | 10 |

**UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)**
**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **92.7** | **88.9** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **36[4])** | **500[4])** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-2/IEC 60947-7-3 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500[4]) | - | - | - |
| 30/4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 6.3[3])/1 | -/- | - | - |
| solid | stranded | Ferrule with/without 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 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **UT 4-PE/L/HESILED 24 (5X20)** | | **3214321** | 50 |
| **UT 4-PE/L/HESILED 60 (5X20)** | | **3214322** | 50 |
| **UT 4-PE/L/HESILED 250 (5X20)** | | **3214323** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **DMET 5X20** | | **3032075** | 50 |
| **FBS 2-6** | 28 A | **3030336** | 50 |
| **FBS 3-6** | 28 A | **3030242** | 50 |
| **FBS 4-6** | 28 A | **3030255** | 50 |
| **FBS 5-6** | 28 A | **3030349** | 50 |
| **FBS 10-6** | 28 A | **3030271** | 10 |
| **FBS 20-6** | 28 A | **3030365** | 10 |
| **SZS 0,6X3,5** | | **1205053** | 10 |

**UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)**
**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **92.7** | **88.9** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **36[4])** | **500[4])** | **0.14 - 6** | **26 - 10** |
| IEC 60947-7-1/IEC 60947-7-2 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 500[4]) | - | - | - |
| 30/4 | - | - | - |
| 4 | - | - | - |
| 26 - 10 | - | - | - |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 20/1 | -/- | - | - |
| solid | stranded | Ferrule with/without 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 - 1.5 |
| 9 | | | |
| M3 | | | |
| 0.6 - 0.8 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **UT 4-PE/L/HEDI** | | **3214324** | 50 |

## Accessories

| | | | |
|---|---|---|---|
| **FBS 2-6** | 28 A | **3030336** | 50 |
| **FBS 3-6** | 28 A | **3030242** | 50 |
| **FBS 4-6** | 28 A | **3030255** | 50 |
| **FBS 5-6** | 28 A | **3030349** | 50 |
| **FBS 10-6** | 28 A | **3030271** | 10 |
| **FBS 20-6** | 28 A | **3030365** | 10 |
| **SZS 0,6X3,5** | | **1205053** | 10 |

**UC-TM 5, UCT-TM 5 or ZB 5 (see Catalog 5)**
**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Modular terminal blocks - CLIPLINE complete

### Screw connection test disconnect terminal block with UK 4-SD test isolating plug

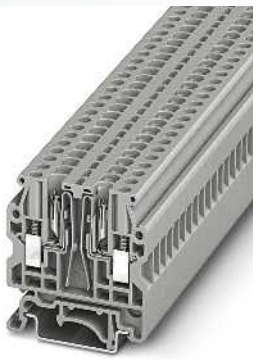
This disconnect terminal block offers numerous advantages especially for testing in measuring and signal circuits:

- Simultaneous interruption of individual or multiple neighboring disconnect terminal blocks by using the PS 6-DI-SD isolating plug
- Safe, uninterruptible looping in of measuring devices in the circuit with the aid of the PS 6−CT−SD test isolating plug
- Safe contacting of the potentials after opening the disconnect point through use of the PS 6−VT−SD test isolating plug
- Terminal points in the test isolating plugs allow individual test applications to be wired.
- Easy potential distribution in the terminal strip with insertion bridges

CLIP PROJECT Planning enables the quick and convenient planning and configuration of fault-free terminal strips.

### Circuit examples

a) Normal operation: no plug inserted
b) Measurement checking: looping in a measuring device with the PS 6-CT-SD test isolating plug
c) Current transformer short circuit: measurement split between two positions



**4 (6) mm², test disconnect terminal block**

### Technical data

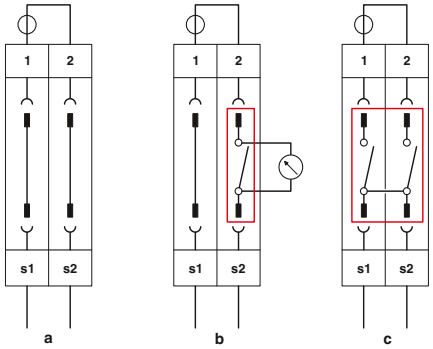
| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **6.2** | **45.5** | **47.3** | |
| **Dimensions** | | Width | Length | Height NS 32 | |
| | [mm] | **6.2** | **45.5** | **52.2** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **10** | **500** | **0.2 - 6** | **20 - 10** |
| **Rated data** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 500 | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 10/4 | - | - | - |
| Rated cross section | [mm²] | 4 | - | - | - |
| Cross section range | AWG | 20 - 10 | - | - | - |
| **Connection capacity** | | solid | stranded | Ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.5 - 6 | 0.2 - 4 | 0.5 - 4 | 0.5 - 4 |
| Two conductors (of the same type) | [mm²] | 0.5 - 1.5 | 0.5 - 1.5 | 0.5 - 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] | 0.5 - 0.6 | | | |
| Insulating material | | PA | | | |
| Inflammability class according 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 | **UK 4-SD** | | **3246861** | 50 |
| **Isolating plug** | | gray | | | | |
| **Test isolating plug** | | green | | | | |
| **Test isolating plug** | | red | | | | |

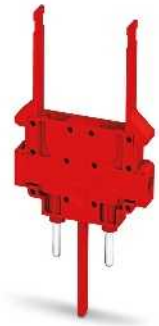
### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-UK 4-SD** | | **3246862** | 50 |
| **Insertion bridge,** insulated | | | | | | |
| | 2 | gray | **EB 2- 6** | 11 A | **0201155** | 100 |
| | 3 | gray | **EB 3- 6** | 11 A | **0201142** | 100 |
| | 10 | gray | **EB 10- 6** | 11 A | **0201139** | 10 |
| **Partition plate,** 1.5 mm wide | | gray | **ATP-UK** | | **3003224** | 50 |
| **Screwdriver** | | | **SF-SL 0,6X3,5-100 S-VDE** | | **1212587** | 10 |
| **Lateral groove labeling** | | | **UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)** | | | |



**Isolating plug, disconnect function only**

**1.5 (2.5) mm² test isolating plug, contacts before the signal isolation**



**1.5 (2.5) mm² test isolating plug, contacts after the signal isolation**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **39.3** | **-** | |
| Width | Length | Height NS 32 | |
| **6.2** | **39.3** | **-** | |
| | | max. Ø [mm²] | AWG |
| | | **-** | **-** |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| - | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| - | - | - | - |
| - | - | - | - |
| - | | | |
| - | | | |
| - | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PS 6-DI-SD** | **3246856** | 50 |

## Accessories

**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **39.3** | **-** | |
| Width | Length | Height NS 32 | |
| **6.2** | **39.3** | **-** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **8** | **250** | **0.5 - 2.5** | **20 - 14** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 250 | - | - | - |
| 6 | - | - | - |
| 2.5 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.5 - 2.5 | 0.5 - 2.5 | 0.5 - 1.5 | 0.5 - 1.5 |
| - | - | - | - |
| 7 | | | |
| M3 | | | |
| 0.3 - 0.5 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PS 6-CT-SD** | **3246857** | 50 |

## Accessories

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

**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Technical data

| | | | |
|---|---|---|---|
| Width | Length | Height NS 35/7,5 | |
| **6.2** | **39.3** | **-** | |
| Width | Length | Height NS 32 | |
| **6.2** | **39.3** | **-** | |
| $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| **8** | **250** | **0.5 - 2.5** | **20 - 14** |
| IEC 60947-7-1 | | | |
| IEC | UL/CUL | CSA | IEC/ EN 60079-7 |
| 250 | - | - | - |
| 6 | - | - | - |
| 2.5 | - | - | - |
| 20 - 14 | - | - | - |
| solid | stranded | Ferrule with/without plastic sleeve | |
| 0.5 - 2.5 | 0.5 - 2.5 | 0.5 - 1.5 | 0.5 - 1.5 |
| - | - | - | - |
| 7 | | | |
| M3 | | | |
| 0.3 - 0.5 | | | |
| PA | | | |
| V0 | | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PS 6-VT-SD** | **3246858** | 50 |

## Accessories

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

**UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)**

## Modular terminal blocks - CLIPLINE complete

### Fast connection
### QTCU 2,5−TWIN−MT hybrid knife disconnect terminal block

The advantages of the different connection methods are as follows:
- The TWIN fast connection is used inside the control cabinet and the universal screw connection is used on the end customer side
- Compact design and high current carrying capacity of 20 A
- Testing facility on both sides of the disconnect point

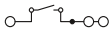
### S-MT switching lock
- The optional switching lock snaps in and effectively prevents accidental switching

A test plug with a 2.3 mm diameter is available for measuring lines. All measurement and test work can be completed at speed using test adapters for 4 mm diameter test plugs and the modular test plugs.

**Notes:**

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

[2]) see Catalog 3.



**2.5 (2.5) mm², 20 A, knife disconnect terminal block, three connections**

### Technical data

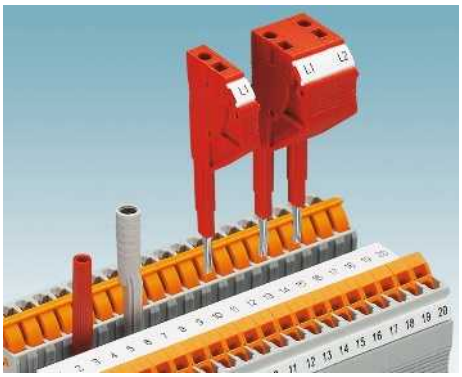
| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height NS 35/7,5 | |
| | [mm] | **6.2** | **79.3** | **42.8** | |
| **Max. electrical data** | | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG |
| | | **20[1])** | **400** | **0.14 - 6** | **26 - 10** |
| **Rated data, fast connection** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400 | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 20/2.5 | - | - | - |
| Rated cross section | [mm²] | 2.5 | - | - | - |
| Cross section range | AWG | 20 - 14 | - | - | - |
| **Connection cross section in acc. with DIN VDE 0295** | | | | | |
| H05V(Z) / H07V(Z) | [mm²] | 0.5 - 2.5 | | | |
| [Litz wires Ø ≥ 0.19 mm] | AWG | 20 - 14 | | | |
| Frequency of connections with the same cross section | | 100 | | | |
| **Rated data, screw connection** | | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 |
| Rated voltage | [V] | 400 | - | - | - |
| Nominal current / cross section | [A] / [mm²] | 20/2.5 | - | - | - |
| Rated cross section | [mm²] | 2.5 | - | - | - |
| Cross section range | AWG | 26 - 10 | - | - | - |
| **Connection capacity screw connection** | | solid | stranded | Ferrule<br>with/without plastic sleeve | |
| 1 conductor | [mm²] | 0.14 - 6 | 0.14 - 4 | 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 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 according 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 | **QTCU 2,5-TWIN-MT** | | **3050304** | 50 |
| | | blue | **QTCU 2,5-TWIN-MT BU** | | **3050317** | 50 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-QTCU 2,5-TWIN-MT** | | **3050511** | 50 |
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-6** | 20 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 20 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 20 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 20 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 20 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 20 A | **3030365** | 10 |
| **Partition plate**, 2 mm width | | gray | **ATP-QTC TWIN** | | **3206212** | 50 |
| **Switching lock,** plug-in[2]) | | white | **S-MT** | | **3247954** | 50 |
| **Test adapter,** 4–mm test socket hole | | gray | **PAI-4-N GY** | | **3032871** | 10 |
| **Test plug metal part,** 2.3 mm Ø | | silver | **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 pin strips | | red | **PS-6** | | **3030996** | 10 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |
| **Lateral groove labeling** | | | **UC-TMF 6, UCT-TMF 6 or ZBF 6 (see Catalog 5)** | | | |

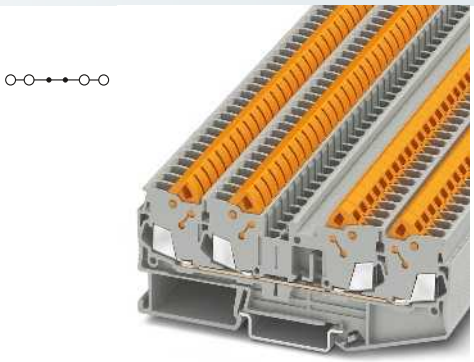


## QTC 2,5-QUATTRO... fast connection feed-through and ground terminal blocks

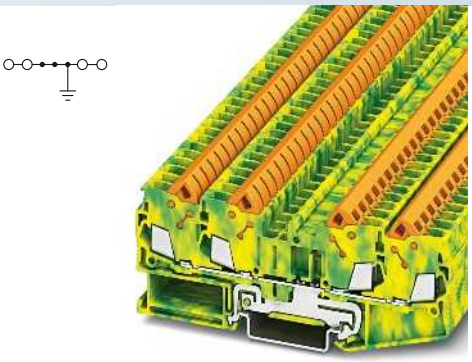
- The fastest conductor connection for signal and low-spectrum power wiring
- Large packing density with a maximum conductor cross section of 2.5 mm²
- Compact design

**Notes:**

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



**2.5 (2.5) mm², 24 A, feed-through terminal block, four connections**



**2.5 (2.5) mm², ground terminal block, four connections**

### Technical data

| | | | | | |
|---|---|---|---|---|---|
| **Dimensions** | Width | Length | Height NS 35/7,5 | | |
| [mm] | **6.2** | **102.4** | **39.3** | | |
| **Max. electrical data** | $I_{max.}$ [A] | $U_{max.}$ [V] | max. Ø [mm²] | AWG | |
| | **24[1])** | **800** | **0.5 - 2.5** | **20 - 14** | |
| **Rated data** | IEC 60947-7-1<br>IEC | UL/CUL | CSA | IEC/<br>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 | 20 - 14 | - | - | - | |
| **Connection cross section in acc. with DIN VDE 0295** | | | | | |
| H05V(Z) / H07V(Z) [mm²] | 0.5 - 2.5 | | | | |
| [Litz wires Ø ≥ 0.19 mm] AWG | 20 - 14 | | | | |
| Frequency of connections with the same cross section | 100 | | | | |
| **General data** | | | | | |
| Insulating material | PA | | | | |
| Inflammability class according to UL 94 | V0 | | | | |

### Technical data

| | | | | |
|---|---|---|---|---|
| Width | Length | Height NS 35/7,5 | | |
| **6.2** | **102.4** | **39.3** | | |
| | | max. Ø [mm²] | AWG | |
| | | **0.5 - 2.5** | **20 - 14** | |
| IEC 60947-7-2<br>IEC | UL/CUL | CSA | IEC/<br>EN 60079-7 | |
| - | - | - | - | |
| - | - | - | - | |
| 2.5 | - | - | - | |
| 20 - 14 | - | - | - | |
| 0.5 - 2.5 | | | | |
| 20 - 14 | | | | |
| 100 | | | | |
| PA | | | | |
| V0 | | | | |

### Ordering data

| Description | No. of pos. | Color | Type | $I_{max}$ | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Terminal block**, for mounting on NS 35... | | gray | **QTC 2,5-QUATTRO** | | **3206446** | 50 |
| | | gray | **QTC 2,5-QUATTRO BU** | | **3206447** | 50 |
| **Ground terminal block**, for mounting on NS 35... | | green-yellow | | | | |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| | | |
| | | |
| **QTC 2,5-QUATTRO-PE** | **3206448** | 50 |

### Accessories

| | | | | | | |
|---|---|---|---|---|---|---|
| **Cover**, width 2.2 mm | | gray | **D-QTC 2,5-QUATTRO** | | **3206449** | 50 |
| **End cover segment,** for covering multi-conductor terminal blocks when two-conductor terminal blocks are aligned | | gray | **DS-QTC 2,5** | | **3206607** | 50 |
| **Jumper** | | | | | | |
| | 2 | red | **FBS 2-6** | 24 A | **3030336** | 50 |
| | 3 | red | **FBS 3-6** | 24 A | **3030242** | 50 |
| | 4 | red | **FBS 4-6** | 24 A | **3030255** | 50 |
| | 5 | red | **FBS 5-6** | 24 A | **3030349** | 50 |
| | 10 | red | **FBS 10-6** | 24 A | **3030271** | 10 |
| | 20 | red | **FBS 20-6** | 24 A | **3030365** | 10 |
| **Partition plate**, 2 mm width | | gray | **ATP-QTC QUATTRO** | | **3206225** | 50 |
| **Test adapter,** 4–mm test socket hole | | gray | **PAI-4-N GY** | | **3032871** | 10 |
| **Test plug metal part,** 2.3 mm Ø | | silver | **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 pin strips | | red | **PS-6** | | **3030996** | 10 |
| **Double marker carrier,** can be snapped into all terminal blocks with a width of 5.2 mm or above and a zack marker strip center groove, can be marked with ZB 5 or ZBF 5 | | gray | **STP 5-2-ZB** | | **3037643** | 100 |
| **Screwdriver** | | | **SZF 1-0,6X3,5** | | **1204517** | 10 |
| **Center groove labeling** | | | **UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)** | | | |
| **Center and side groove labeling** | | | **UC-TMF 6, UCT-TMF 6 or ZBF 6 (see Catalog 5)** | | | |

### Accessories

| | | |
|---|---|---|
| **D-QTC 2,5-QUATTRO** | **3206449** | 50 |
| **DS-QTC 2,5** | **3206607** | 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-QTC QUATTRO** | **3206225** | 50 |
| **PAI-4-N GY** | **3032871** | 10 |
| **MPS-MT** | **0201744** | 10 |
| **MPS-IH RD** | **0201676** | 10 |
| **PS-6** | **3030996** | 10 |
| **STP 5-2-ZB** | **3037643** | 100 |
| **SZF 1-0,6X3,5** | **1204517** | 10 |
| **UC-TM 6, UCT-TM 6 or ZB 6 (see Catalog 5)** | | |
| **UC-TMF 6, UCT-TMF 6 or ZBF 6 (see Catalog 5)** | | |

Valve connector
with energy-reducing function
Page 177

Valve connector
for outdoor applications
Page 180

Valve connector
superseal connector
Page 181

Valve connector
Deutsch connector
Page 182

M12 power cable
Page 184

M12 connector
with crimp connection
Page 185

M12 Y-distributor
for power connectors
Page 186

M12 assembled cables,
for outdoor applications
Page 187

H and T-distributors, 6.0 mm²
Cable connectors, 6.0 mm²
Page 188

Panel feed-throughs, 2.5 mm² and 6.0 mm²
Assembled cables, 2.5 mm²
Page 191

HEAVYCON EVO housing
Type D15 and D25
Page 196

HEAVYCON contact inserts
Type B, BB series and HS series
Page 198

HEAVYCON EVO housing
Type B, for EMC applications

Page 202

HEAVYCON HPR housing
Type B, for railway applications

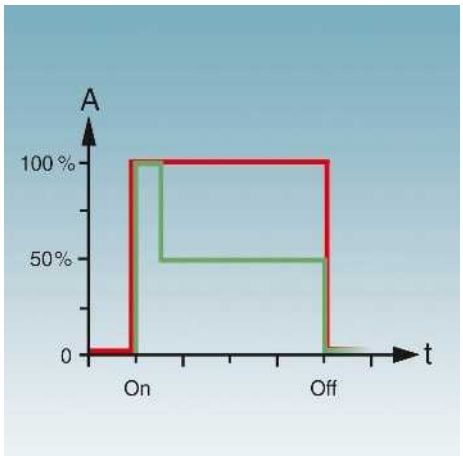
Page 214

CES cable entry system
Sealing frames with cone-shaped cable sleeves

Page 222

Plastic, brass, EMC, and
Ex cable glands

Page 224



**Save energy**

The new valve connectors with energy-reducing function are characterized by up to 50% reduced current consumption compared to conventional versions.

**Save costs**

After controlling the valve, the holding current is reduced to 50% by the energy-reducing function. This means that power supply units with smaller dimensions can be used.

**Compatible with the standard**

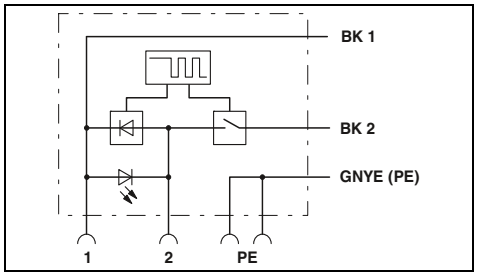
The functionality and compatibility of valve connectors corresponds to the familiar standard. Integration in existing systems can be easily accomplished.

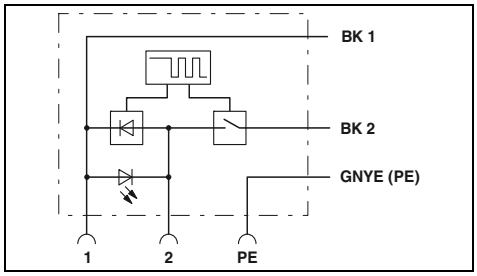
## Valve connector with energy-reducing function

– Energy-reducing function by means of holding current limiting device

Valve connector with freewheeling diode, type A, 3-pos.

Valve connector with freewheeling diode, type B, 3-pos.




| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Valve connector according to: | EN 175301-803 | EN 175301-803 |
| Degree of protection | IP67 | IP67 |
| Electrical data | | |
| Rated voltage | 24 V DC | 24 V DC |
| Rated current | 4 A | 1 A |
| Contact resistance | ≤ 5 mΩ | ≤ 5 mΩ |
| Material data | | |
| Material contact valve connector | CuSn | CuSn |
| Material contact surface valve connector | Ag | Ag |
| Material housing valve connector | TPU | TPU |
| Mechanical data | | |
| No. of pos. | 3 | 3 |
| Temperature data | | |
| Valve connectors [°C] | -25 ... 80 | -25 ... 80 |

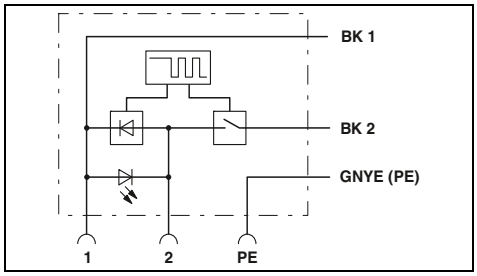
| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Cable length | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Assembled cable,** with **valve connector**, and **free conductor end** | | | | | | | |
| | 1.5 m | **SAC-3P- 1,5-PUR/A-1L-R-ES 4A** | **1400827** | 1 | **SAC-3P- 1,5-PUR/B-1L-R-ES** | **1401294** | 1 |
| | 3 m | **SAC-3P- 3,0-PUR/A-1L-R-ES 4A** | **1401131** | 1 | **SAC-3P- 3,0-PUR/B-1L-R-ES** | **1401295** | 1 |
| | 5 m | **SAC-3P- 5,0-PUR/A-1L-R-ES 4A** | **1401136** | 1 | **SAC-3P- 5,0-PUR/B-1L-R-ES** | **1401338** | 1 |
| | 10 m | **SAC-3P-10,0-PUR/A-1L-R-ES 4A** | **1401168** | 1 | **SAC-3P-10,0-PUR/B-1L-R-ES** | **1401339** | 1 |

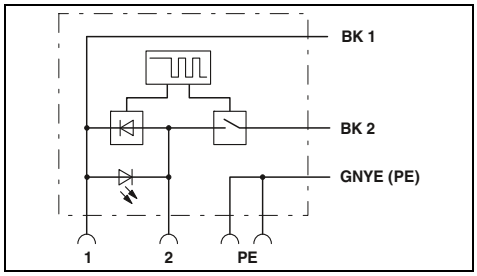
## Valve connector with energy-reducing function

– Energy-reducing function by means of holding current limiting device

Valve connector with freewheeling diode, type BI, 3-pos.

Valve connector with freewheeling diode, type C, 3-pos.

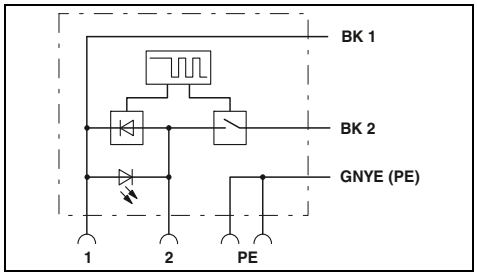



| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Valve connector according to: | - | EN 175301-803 |
| Degree of protection | IP67 | IP67 |
| Electrical data | | |
| Rated voltage | 24 V DC | 24 V DC |
| Rated current | 1 A | 1 A |
| Contact resistance | ≤ 5 mΩ | ≤ 5 mΩ |
| Material data | | |
| Material contact valve connector | CuSn | CuSn |
| Material contact surface valve connector | Ag | Ag |
| Material housing valve connector | TPU | TPU |
| Mechanical data | | |
| No. of pos. | 3 | 3 |
| Temperature data | | |
| Valve connectors [°C] | -25 ... 80 | -25 ... 80 |

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Cable length | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Assembled cable,** with **valve connector**, and **free conductor end** | | | | | | | |
| | 1.5 m | **SAC-3P- 1,5-PUR/BI-1L-R-ES** | **1401340** | 1 | **SAC-3P- 1,5-PUR/C-1L-R-ES** | **1401434** | 1 |
| | 3 m | **SAC-3P- 3,0-PUR/BI-1L-R-ES** | **1401350** | 1 | **SAC-3P- 3,0-PUR/C-1L-R-ES** | **1401435** | 1 |
| | 5 m | **SAC-3P- 5,0-PUR/BI-1L-R-ES** | **1401358** | 1 | **SAC-3P- 5,0-PUR/C-1L-R-ES** | **1401448** | 1 |
| | 10 m | **SAC-3P-10,0-PUR/BI-1L-R-ES** | **1401359** | 1 | **SAC-3P-10,0-PUR/C-1L-R-ES** | **1401465** | 1 |

**Valve connector with freewheeling diode, type CI, 3-pos.**




## Technical data

| |
|---|
| |
| - |
| IP67 |
| |
| 24 V DC |
| 1 A |
| ≤ 5 mΩ |
| |
| CuSn |
| Ag |
| TPU |
| |
| 3 |
| |
| -25 ... 80 |

## Ordering data

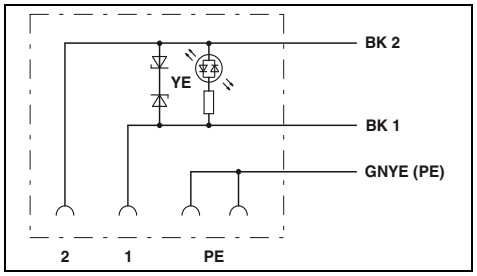
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **SAC-3P- 1,5-PUR/CI-1L-R-ES** | **1401466** | 1 |
| **SAC-3P- 3,0-PUR/CI-1L-R-ES** | **1401542** | 1 |
| **SAC-3P- 5,0-PUR/CI-1L-R-ES** | **1401544** | 1 |
| **SAC-3P-10,0-PUR/CI-1L-R-ES** | **1401617** | 1 |

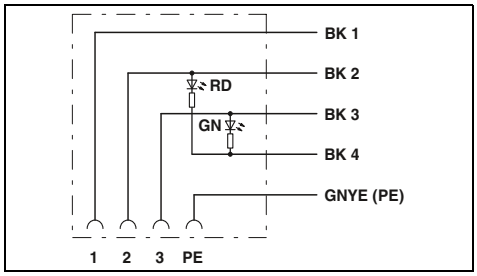
## Valve connector for outdoor applications

- Stainless steel central screw
- Additional silicone seal ensures IP66K protection

**Valve connector with Zener diode, type A, 3-pos.**

**Valve connector with 2 LEDs, type AD pressure switch, 5-pos.**




| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Valve connector according to: | EN 175301-803 | EN 175301-803 |
| Degree of protection | IP65/IP66K/IP67/IP68 | IP65/IP66K/IP67/IP68 |
| Electrical data | | |
| Rated voltage | 24 V | 24 V |
| Rated current | 4 A | 4 A |
| Contact resistance | ≤ 5 mΩ | ≤ 5 mΩ |
| Material data | | |
| Material contact valve connector | CuSn | CuSn |
| Material contact surface valve connector | Sn | Sn |
| Material housing valve connector | TPU | TPU |
| Mechanical data | | |
| No. of pos. | 3 | 5 |
| Temperature data | | |
| Valve connectors [°C] | -40 ... 85 | -40 ... 85 |

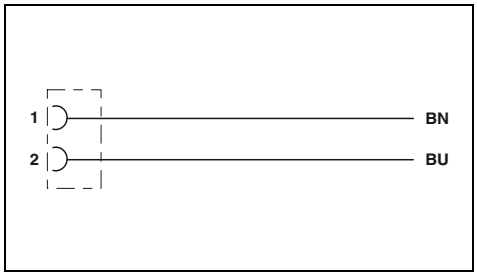
| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Cable length | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Assembled cable,** with **valve connector**, and **free conductor end** | | | | | | | |
| | 1.5 m | **SAC-3P- 1,5-PUO/A-1L-Z OD** | **1407287** | 1 | **SAC-5P- 1,5-PUO/AD-2L OD** | **1407291** | 1 |
| | 3 m | **SAC-3P- 3,0-PUO/A-1L-Z OD** | **1407288** | 1 | **SAC-5P- 3,0-PUO/AD-2L OD** | **1407292** | 1 |
| | 5 m | **SAC-3P- 5,0-PUO/A-1L-Z OD** | **1407289** | 1 | **SAC-5P- 5,0-PUO/AD-2L OD** | **1407293** | 1 |
| | 10 m | **SAC-3P-10,0-PUO/A-1L-Z OD** | **1407290** | 1 | **SAC-5P-10,0-PUO/AD-2L OD** | **1407294** | 1 |

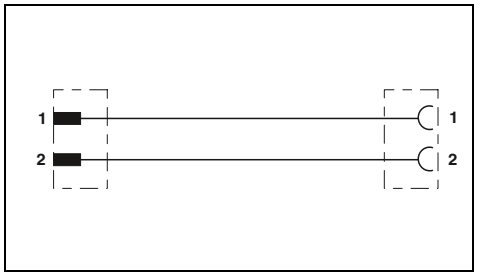
## Valve connector, superseal connector

– For mobile hydraulic applications

Superseal, 2-pos.

Superseal, 2-pos.




| | | Technical data | Technical data |
|---|---|---|---|
| General data | | | |
| Degree of protection | | IP67 | IP67 |
| Electrical data | | | |
| Rated voltage | | 24 V | 24 V |
| Rated current | | 8 A | 8 A |
| Contact resistance | | ≤ 5 mΩ | ≤ 5 mΩ |
| Material data | | | |
| Contact material | | PhCuSn | CuZn (pin)/PhCuSn (socket) |
| Material of grip body | | PA | PA |
| Mechanical data | | | |
| No. of pos. | | 2 | 2 |
| Temperature data | | | |
| Plug/socket | [°C] | -20 ... 85 | -20 ... 85 |

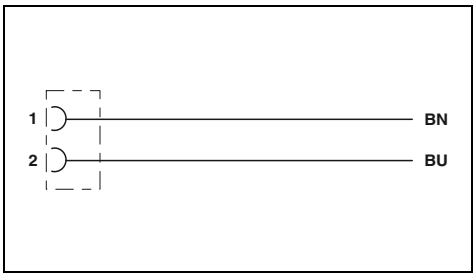
| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Cable length | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Assembled cable,** with **straight socket** and **free cable end** | | | | | | | |
| | 1.5 m | **SAC-2P- 1,5-PUR/SUSFS** | **1410748** | 1 | | | |
| | 3 m | **SAC-2P- 3,0-PUR/SUSFS** | **1410749** | 1 | | | |
| | 5 m | **SAC-2P- 5,0-PUR/SUSFS** | **1410750** | 1 | | | |
| | 10 m | **SAC-2P-10,0-PUR/SUSFS** | **1410751** | 1 | | | |
| **Assembled cable,** with **straight plug** and **free cable end** | | | | | | | |
| | 1.5 m | **SAC-2P-SUSMS/ 1,5-PUR** | **1410752** | 1 | | | |
| | 3 m | **SAC-2P-SUSMS/ 3,0-PUR** | **1410753** | 1 | | | |
| | 5 m | **SAC-2P-SUSMS/ 5,0-PUR** | **1410755** | 1 | | | |
| | 10 m | **SAC-2P-SUSMS/10,0-PUR** | **1410756** | 1 | | | |
| **Assembled cable,** with **straight plug** and **straight socket** | | | | | | | |
| | 0.3 m | | | | **SAC-2P-SUSMS/ 0,3-PUR/SUSFS** | **1410757** | 1 |
| | 0.6 m | | | | **SAC-2P-SUSMS/ 0,6-PUR/SUSFS** | **1410759** | 1 |
| | 1.5 m | | | | **SAC-2P-SUSMS/ 1,5-PUR/SUSFS** | **1410760** | 1 |
| | 3 m | | | | **SAC-2P-SUSMS/ 3,0-PUR/SUSFS** | **1410761** | 1 |

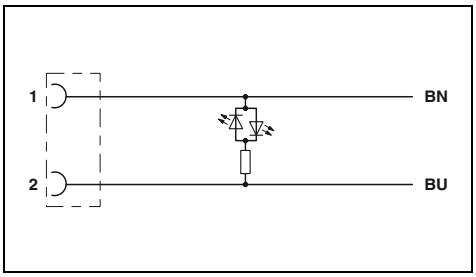
## Valve connector, Deutsch DT06-2S connector

– For mobile hydraulic applications

Valve connector, Deutsch DT06-2S, 2-pos.

Valve connector, Deutsch DT06-2S, with 1 LED, 2-pos.

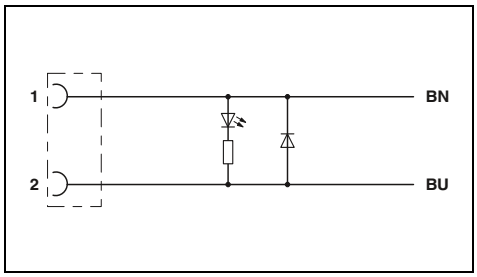



| | | Technical data | Technical data |
|---|---|---|---|
| General data | | | |
| Degree of protection | | IP67 | IP67 |
| Electrical data | | | |
| Rated voltage | | 48 V | 24 V |
| Rated current | | 8 A | 8 A |
| Contact resistance | | ≤ 8 mΩ | ≤ 8 mΩ |
| Material data | | | |
| Contact material | | Cu alloy | Cu alloy |
| Contact surface material | | Nickel-plated | Nickel-plated |
| Material of grip body | | PA | PA |
| Mechanical data | | | |
| No. of pos. | | 2 | 2 |
| Temperature data | | | |
| Plug/socket | [°C] | -20 ... 85 | -20 ... 85 |

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Cable length | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Assembled cable,** with **straight socket** and **free cable end** | | | | | | | |
| | 1.5 m | **SAC-2P- 1,5-PUR/DTFS** | **1410723** | 1 | **SAC-2P- 1,5-PUR/DTFS-1L** | **1410728** | 1 |
| | 3 m | **SAC-2P- 3,0-PUR/DTFS** | **1410724** | 1 | **SAC-2P- 3,0-PUR/DTFS-1L** | **1410729** | 1 |
| | 5 m | **SAC-2P- 5,0-PUR/DTFS** | **1410726** | 1 | **SAC-2P- 5,0-PUR/DTFS-1L** | **1410730** | 1 |
| | 10 m | **SAC-2P-10,0-PUR/DTFS** | **1410727** | 1 | **SAC-2P-10,0-PUR/DTFS-1L** | **1410731** | 1 |

**Valve connector, Deutsch DT06-2S, with suppressor diode, 2-pos.**




## Technical data

| |
|---|
| |
| IP67 |
| |
| 24 V<br>3 A<br>≤ 8 mΩ |
| |
| Cu alloy<br>Nickel-plated<br>PA |
| |
| 2 |
| |
| -20 ... 85 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **SAC-2P- 1,5-PUR/DTFS-1L-S** | **1410732** | 1 |
| **SAC-2P- 3,0-PUR/DTFS-1L-S** | **1410733** | 1 |
| **SAC-2P- 5,0-PUR/DTFS-1L-S** | **1410734** | 1 |
| **SAC-2P-10,0-PUR/DTFS-1L-S** | **1410735** | 1 |

## M12-SPEEDCON power cable, 2-pos.+PE, unshielded

| Free end | M12 plug, SPEEDCON | |
|---|---|---|
| | | |
| | | |

| | Ordering data | | Ordering data | | Ordering data | |
|---|---|---|---|---|---|---|
| **Free end** | | **Order No.** | | **Order No.** | | **Order No.** |
| | | | 1 m | **1411636** | 1 m | **1411640** |
| | | | 2 m | **1411637** | 2 m | **1411641** |
| | | | 5 m | **1411638** | 5 m | **1411642** |
| | | | 10 m | **1411639** | 10 m | **1411643** |
| **M12 socket, SPEEDCON, straight** | | | | | | |
| | 1 m | **1411644** | | | | |
| | 2 m | **1411645** | | | | |
| | 5 m | **1411646** | | | | |
| | 10 m | **1411647** | | | | |
| **M12 socket, SPEEDCON, angled** | | | | | | |
| | 1 m | **1411648** | | | | |
| | 2 m | **1411649** | | | | |
| | 5 m | **1411650** | | | | |
| | 10 m | **1411651** | | | | |

| Cable description | Cable type | Color coding | | Pin assignment |
|---|---|---|---|---|
| PVC - black | **PVC** | BK1 | 1 | 1 |
| | | BK2 | 2 | 3 |
| | | GNYE | | PE |

| | | Technical data |
|---|---|---|
| | | **M12** |
| Rated voltage | [V] | 230 |
| Rated current | [A] | 16 |
| Contact resistance | | ≤ 3 mΩ |
| Inflammability class in acc. with UL 94 | | V0 |
| Material contact M12 | | CuZn |
| Material contact surface M12 | | Au |
| Material handle M12 | | TPU, hardly inflammable, self-extinguishing |
| Material, knurls | | Zinc die-cast, nickel-plated |
| Degree of protection | | IP67 |
| Temperature data | | |
| Plug/socket | [°C] | -25 ... 105 |

## M12 connector with crimp connection

| Notes: |
|---|
| Order crimp contacts separately |

### Ethernet

M12 Plug, straight, 4-pos.

### Ethernet

M12 Plug, angled, 4-pos.

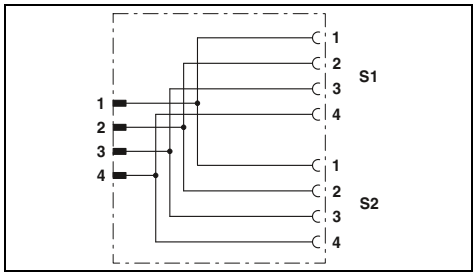
| | Technical data | Technical data |
|---|---|---|
| General data | | |
| M12 circular connector according to: | IEC 61076-2-101 | IEC 61076-2-101 |
| Pollution degree | 3 | 3 |
| Degree of protection | IP67 | IP67 |
| Connection method | Crimp connection | Crimp connection |
| Cable Diameter | 5 mm ... 8 mm | 5 mm ... 8 mm |
| Electrical data | | |
| Rated voltage | 60 V | 60 V |
| Rated current | 4 A | 4 A |
| Insulation resistance | ≥ 10 GΩ | ≥ 10 GΩ |
| Material data | | |
| Contact carrier material | PA | PA |
| Inflammability class according to UL 94 | HB | HB |
| Temperature data | | |
| Plug/socket [°C] | -25 ... 85 | -25 ... 85 |

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Coding | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Bus system plug,** PROFINET, 4-pos., shielded with **Pg9** screw connection | D - data | SACC-M12MSD-4CT SH PN | 1411046 | 1 | SACC-M12MRD-4CT SH PN | 1411047 | 1 |

| | Accessories | | | Accessories | | |
|---|---|---|---|---|---|---|
| **Crimp contacts**, for conductor cross section: 0.34 mm² ... 0.5 mm² | SACC-CC1,0-T-0,50-M AU PU100 | 1412351 | 100 | SACC-CC1,0-T-0,50-M AU PU100 | 1412351 | 100 |
| **Crimping pliers** - For turned contacts; 0.14 ... 4 mm² | CRIMPFOX-1,6/2,5-ED-4,0 | 1687419 | 1 | CRIMPFOX-1,6/2,5-ED-4,0 | 1687419 | 1 |

## M12 Y-distributor for power connectors

**Y-distributor, T-coded, 4-pos.**




### Technical data

| | |
|---|---|
| General data | |
| Pollution degree | 3 |
| Degree of protection | IP65/IP67 |
| Electrical data | |
| Rated voltage | 60 V |
| Rated current | 12 A (at 40°C) |
| Material data | |
| Contact material | CuZn |
| Contact surface material | Ni/Au |
| Inflammability class according to UL 94 | HB |
| Temperature data | |
| Plug/socket [°C] | -25 ... 80 |

### Ordering data

| Description | Center distance | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Y-distributor, M12-SPEEDCON,** unshielded, M12 plug (T-coded) to 2 x M12 socket (T-coded) | 21 mm | **SAC-4PY-MT/2XFT VP** | **1410632** | 5 |

## M12 assembled cables for outdoor applications

– For DeviceNet™
– For CANopen®

Bus system cable, 5-pos.

Bus system cable, 5-pos.

| | | Technical data | Technical data |
|---|---|---|---|
| Electrical data | | | |
| Rated voltage | | 60 V | 60 V |
| Rated current | | 4 A | 4 A |
| Contact resistance | | ≤ 5 mΩ | ≤ 5 mΩ |
| Material data | | | |
| Contact material | | CuSn | CuSn |
| Contact surface material | | Ni/Au | Ni/Au |
| Contact carrier material | | PP | PP |
| Inflammability class according to UL 94 | | V0 | V0 |
| Mechanical data | | | |
| No. of pos. | | 5 | 5 |
| Pollution degree | | 3 | 3 |
| Degree of protection | | IP65/IP67/IP68/IP69K | IP65/IP67/IP68/IP69K |
| Temperature data | | | |
| Plug/socket | [°C] | -40 ... 105 | -40 ... 105 |
| Cable, fixed installation | [°C] | -40 ... 105 | -40 ... 105 |

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Cable length | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Bus system cable,** 5-pos., A-coded, FRNC, halogen-free, black, shielded, straight M12 socket to free cable ends | | | | | | | |
| | 2 m | **SAC-5P- 2,0-92X/M12FS SH OD** | **1410474** | 1 | | | |
| | 5 m | **SAC-5P- 5,0-92X/M12FS SH OD** | **1410494** | 1 | | | |
| | 10 m | **SAC-5P-10,0-92X/M12FS SH OD** | **1410496** | 1 | | | |
| **Bus system cable,** 5-pos., A-coded, FRNC, halogen-free, black, shielded, straight M12 plug to free cable ends | | | | | | | |
| | 2 m | **SAC-5P-M12MS/ 2,0-92X SH OD** | **1410471** | 1 | | | |
| | 5 m | **SAC-5P-M12MS/ 5,0-92X SH OD** | **1410472** | 1 | | | |
| | 10 m | **SAC-5P-M12MS/10,0-92X SH OD** | **1410473** | 1 | | | |
| **Bus system cable,** 5-pos., A-coded, FRNC, halogen-free, black, shielded, straight M12 plug to straight M12 socket | | | | | | | |
| | 2 m | | | | **SAC-5P-M12MS/2,0-92X/M12FSSHOD** | **1410467** | 1 |
| | 5 m | | | | **SAC-5P-M12MS/5,0-92X/M12FSSHOD** | **1410470** | 1 |

## H-distributor, 6.0 mm²

- Can be used as a H-distributor with continuous master cable
- Can be used a star distributor
- Can be used as a Y-distributor with a test connection
- Touch-proof in accordance with DIN EN 50274

**With four QUICKON nuts, 4+PE-pos.**

**Without QUICKON nut, 4+PE-pos.**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **Black** | **Gray** | **Black** | **Gray** |
| General data | | | | |
| Degree of protection | IP68/IP69K | IP68/IP69K | IP68/IP69K | IP68/IP69K |
| Electrical data | | | | |
| Rated voltage (III/3) | 690 V | 690 V | 690 V | 690 V |
| Rated surge voltage | 6 kV | 6 kV | 6 kV | 6 kV |
| Rated current | 40 A | 40 A | 40 A | 40 A |
| Surge voltage category/pollution degree | III/3 | III/3 | III/3 | III/3 |
| Material data | | | | |
| Housing material | PA | PA | PA | PA |
| Contact material | Cu | Cu | Cu | Cu |
| Inflammability class according to UL 94 | V0 | V0 | V0 | V0 |
| Mechanical data | | | | |
| Impact category | IK07 | IK07 | IK07 | IK07 |
| Color | Black | Gray | Black | Gray |
| Connector data QUICKON connection | | | | |
| Core insulation | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber |
| Structure of individual litz wire/ smallest wire diameter | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm |
| Connection frequency | max. 10 | max. 10 | max. 10 | max. 10 |
| Conductor cross section [mm²] solid/stranded | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² |
| Conductor cross section [AWG] | 14 ... 10 | 14 ... 10 | 14 ... 10 | 14 ... 10 |
| Temperature data | | | | |
| Ambient temperature (operation) | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C |
| Temperature when conductor connected | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **Black** | | **Gray** | | **Black** | | **Gray** | |
| **H-distributor,** with **four** QUICKON nuts and one sealing bolt, for cable diameters: | | | | | | | | |
| 9 mm ... 14 mm | **1411422** | 1 | **1411428** | 1 | | | | |
| 12 mm ... 20 mm | **1411425** | 1 | **1411429** | 1 | | | | |
| **H-distributor, without** QUICKON nuts | | | | | **1411426** | 1 | **1411427** | 1 |
| **QUICKON nut,** for connections up to 6.0 mm², for cable diameter: | | | | | | | | |
| 9 mm ... 14 mm | | | | | **1410409** | 1 | **1410407** | 1 |
| 12 mm ... 20 mm | | | | | **1410406** | 1 | **1410405** | 1 |

## T-distributor, 6.0 mm²

- Can be used as a T-distributor with continuous master cable
- Touch-proof in accordance with DIN EN 50274

**With three QUICKON nuts, 4+PE-pos.**

**With two QUICKON nuts, 4+PE-pos.**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **Black** | **Gray** | **Black** | **Gray** |
| General data | | | | |
| Degree of protection | IP68/IP69K | IP68/IP69K | IP68/IP69K | IP68/IP69K |
| Electrical data | | | | |
| Rated voltage (III/3) | 690 V | 690 V | 690 V | 690 V |
| Rated surge voltage | 6 kV | 6 kV | 6 kV | 6 kV |
| Rated current | 40 A | 40 A | 40 A | 40 A |
| Surge voltage category/pollution degree | III/3 | III/3 | III/3 | III/3 |
| Material data | | | | |
| Housing material | PA | PA | PA | PA |
| Contact material | Cu | Cu | Cu | Cu |
| Inflammability class according to UL 94 | V0 | V0 | V0 | V0 |
| Mechanical data | | | | |
| Impact category | IK07 | IK07 | IK07 | IK07 |
| Color | Black | Gray | Black | Gray |
| Connector data QUICKON connection | | | | |
| Core insulation | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber |
| Structure of individual litz wire/ smallest wire diameter | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm |
| Connection frequency | max. 10 | max. 10 | max. 10 | max. 10 |
| Conductor cross section [mm²] solid/stranded | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² |
| Conductor cross section [AWG] | 14 ... 10 | 14 ... 10 | 14 ... 10 | 14 ... 10 |
| Temperature data | | | | |
| Ambient temperature (operation) | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C |
| Temperature when conductor connected | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **Black** | | **Gray** | | **Black** | | **Gray** | |
| **T-distributor,** with **three** QUICKON nuts, for cable diameter: | | | | | | | | |
| 9 mm ... 14 mm | **1411414** | 1 | **1411418** | 1 | | | | |
| 12 mm ... 20 mm | **1411415** | 1 | **1411419** | 1 | | | | |
| **T-distributor,** with **two** QUICKON nuts, for cable diameter: | | | | | | | | |
| 9 mm ... 14 mm | | | | | **1411416** | 1 | **1411420** | 1 |
| 12 mm ... 20 mm | | | | | **1411417** | 1 | **1411421** | 1 |
| **QUICKON nut,** for connections up to 6.0 mm², for cable diameter: | | | | | | | | |
| 9 mm ... 14 mm | | | | | **1410409** | 1 | **1410407** | 1 |
| 12 mm ... 20 mm | | | | | **1410406** | 1 | **1410405** | 1 |

## Cable connectors, 6.0 mm²

- The QUICKON connections at opposite ends feature different position markings and mechanical coding
- Touch-proof in accordance with DIN EN 50274

**With two QUICKON nuts, 4+PE-pos.**

**With one QUICKON nut, 4+PE-pos.**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **Black** | **Gray** | **Black** | **Gray** |
| General data | | | | |
| Degree of protection | IP68/IP69K | IP68/IP69K | IP68/IP69K | IP68/IP69K |
| Electrical data | | | | |
| Rated voltage (III/3) | 690 V | 690 V | 690 V | 690 V |
| Rated surge voltage | 6 kV | 6 kV | 6 kV | 6 kV |
| Rated current | 40 A | 40 A | 40 A | 40 A |
| Surge voltage category/pollution degree | III/3 | III/3 | III/3 | III/3 |
| Material data | | | | |
| Housing material | PA | PA | PA | PA |
| Contact material | Cu | Cu | Cu | Cu |
| Inflammability class according to UL 94 | V0 | V0 | V0 | V0 |
| Mechanical data | | | | |
| Impact category | IK07 | IK07 | IK07 | IK07 |
| Color | Black | Gray | Black | Gray |
| Connector data QUICKON connection | | | | |
| Core insulation | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber |
| Structure of individual litz wire/ smallest wire diameter | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6 / min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm |
| Connection frequency | max. 10 | max. 10 | max. 10 | max. 10 |
| Conductor cross section [mm²] solid/stranded | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² |
| Conductor cross section [AWG] | 10 ... 14 | 10 ... 14 | 10 ... 14 | 10 ... 14 |
| Temperature data | | | | |
| Ambient temperature (operation) | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C |
| Temperature when conductor connected | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C |

| | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **Black** | | **Gray** | | **Black** | | **Gray** | |
| **Cable connector**, with **two** QUICKON nuts, for cable diameters: | | | | | | | | |
| 9 mm ... 14 mm | **1410410** | 1 | **1410413** | 1 | | | | |
| 12 mm ... 20 mm | **1410412** | 1 | **1410414** | 1 | | | | |
| **Cable connector**, with **one** QUICKON nut, for cable diameters: | | | | | | | | |
| 9 mm ... 14 mm | | | | | **1410415** | 1 | **1410417** | 1 |
| 12 mm ... 20 mm | | | | | **1410416** | 1 | **1410418** | 1 |
| **QUICKON nut,** for connections up to 6.0 mm², for cable diameter: | | | | | | | | |
| 9 mm ... 14 mm | | | | | **1410409** | 1 | **1410407** | 1 |
| 12 mm ... 20 mm | | | | | **1410406** | 1 | **1410405** | 1 |

## Panel feed-throughs, 2.5 mm²
## with push-in connection

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- For internal push-in connection, solid conductors are simply stripped and inserted in the connection
- Touch-proof in accordance with DIN EN 50274

**With one QUICKON nut, 4+PE-pos.**

| | Technical data | |
|---|---|---|
| | **Black** | **Gray** |
| General data | | |
| Degree of protection | IP68/IP69K | IP68/IP69K |
| Electrical data | | |
| Rated voltage (III/3) | 690 V | 690 V |
| Rated surge voltage | 6 kV | 6 kV |
| Rated current | 20 A | 20 A |
| Surge voltage category/pollution degree | III/3 | III/3 |
| Material data | | |
| Housing material | PA | PA |
| Contact material | Cu | Cu |
| Inflammability class according to UL 94 | V0 | V0 |
| Mechanical data | | |
| Impact category | IK07 | IK07 |
| Color | Black | Black |
| Connector data QUICKON connection | | |
| Core insulation | PVC/PE/Rubber/TPE | PVC/PE/Rubber/TPE |
| Structure of individual litz wire/ smallest wire diameter | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm |
| Connection frequency | max. 10 | max. 10 |
| Conductor cross section [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 | | | |
|---|---|---|---|---|
| Description | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | **Black** | | **Gray** | |
| **Panel feed-through,** with M25 x 1.5 mounting flange, **with** QUICKON nut, for cable diameters: | | | | |
| 6 mm ... 11 mm | **1411432** | 1 | **1411434** | 1 |
| 9 mm ... 16 mm | **1411433** | 1 | **1411435** | 1 |

## Panel feed-throughs, 2.5 mm²
## for intrinsically safe circuits

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274

**Notes:**

**Intended for applications in intrinsically safe circuits according to EN 60079-11 and EN 60079-14.**

**With litz wires, 4+PE-pos.**

**With manual solder/spade connection, 4+PE-pos.**

| | Technical data | Technical data |
|---|---|---|
| General data | | |
| Degree of protection | IP68/IP69K | IP68/IP69K |
| Electrical data | | |
| Rated voltage | 60 V | 60 V |
| Rated surge voltage | 6 kV | 6 kV |
| Surge voltage category/pollution degree | III/3 | III/3 |
| Material data | | |
| Housing material | PA | PA |
| Contact material | Cu | Cu |
| Inflammability class according to UL 94 | V0 | V0 |
| Mechanical data | | |
| Impact category | IK07 | IK07 |
| Color | Black | Black |
| Connector data QUICKON connection | | |
| Core insulation | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber |
| Structure of individual litz wire/ smallest wire diameter | VDE 0295 class 1 to 6/min. 0.15 mm | VDE 0295 class 1 to 6/min. 0.15 mm |
| Connection frequency | max. 10 | max. 10 |
| Conductor cross section [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 |

| Description | Cable length | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|
| **Panel feed-through,** with M20 x 1.5 mounting flange, **with** QUICKON nut, for cable diameter: | | | | | | | |
| 6 mm ... 11 mm | 0.5 m | **QPD W 4PE2,5 6-11 M20 0,5 EX** | **1411393** | 1 | | | |
| 6 mm ... 11 mm | 1 m | **QPD W 4PE2,5 6-11 M20 1,0 EX** | **1411394** | 1 | | | |
| 6 mm ... 11 mm | | | | | **QPD W 4PE2,5 6-11 M20 FC EX** | **1411395** | 1 |
| 9 mm ... 16 mm | 0.5 m | **QPD W 4PE2,5 9-16 M20 0,5 EX** | **1411397** | 1 | | | |
| 9 mm ... 16 mm | 1 m | **QPD W 4PE2,5 9-16 M20 1,0 EX** | **1411398** | 1 | | | |
| 9 mm ... 16 mm | | | | | **QPD W 4PE2,5 9-16 M20 FC EX** | **1411399** | 1 |
| **Panel feed-through,** with M25 x 1.5 mounting flange, **with** QUICKON nut, for cable diameters: | | | | | | | |
| 6 mm ... 11 mm | 0.5 m | **QPD W 4PE2,5 6-11 M25 0,5 EX** | **1411387** | 1 | | | |
| 6 mm ... 11 mm | 1 m | **QPD W 4PE2,5 6-11 M25 1,0 EX** | **1411388** | 1 | | | |
| 6 mm ... 11 mm | | | | | **QPD W 4PE2,5 6-11 M25 FC EX** | **1411389** | 1 |
| 9 mm ... 16 mm | 0.5 m | **QPD W 4PE2,5 9-16 M25 0,5 EX** | **1411390** | 1 | | | |
| 9 mm ... 16 mm | 1 m | **QPD W 4PE2,5 9-16 M25 1,0 EX** | **1411391** | 1 | | | |
| 9 mm ... 16 mm | | | | | **QPD W 4PE2,5 9-16 M25 FC EX** | **1411392** | 1 |

## Panel feed-throughs, 6.0 mm²

- Devices no longer need to be opened in order to connect the cables
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274

**With one QUICKON nut, 4+PE-pos.**

**Without QUICKON nut, 4+PE-pos.**

| | Technical data | | Technical data | |
|---|---|---|---|---|
| | **Black** | **Gray** | **Black** | **Gray** |
| General data | | | | |
| Degree of protection | IP68/IP69K | IP68/IP69K | IP68/IP69K | IP68/IP69K |
| Electrical data | | | | |
| Rated voltage (III/3) | 690 V | 690 V | 690 V | 690 V |
| Rated surge voltage | 6 kV | 6 kV | 6 kV | 6 kV |
| Rated current | 40 A | 40 A | 40 A | 40 A |
| Surge voltage category/pollution degree | III/3 | III/3 | III/3 | III/3 |
| Material data | | | | |
| Housing material | PA | PA | PA | PA |
| Contact material | Cu | Cu | Cu | Cu |
| Inflammability class according to UL 94 | V0 | V0 | V0 | V0 |
| Mechanical data | | | | |
| Impact category | IK07 | IK07 | IK07 | IK07 |
| Color | Black | Gray | Black | Gray |
| Connector data QUICKON connection | | | | |
| Core insulation | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber | PVC/PE/TPE/rubber |
| Structure of individual litz wire/ smallest wire diameter | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm | VDE 0295 class 1 to 6/ min. 0.15 mm |
| Connection frequency | max. 10 | max. 10 | max. 10 | max. 10 |
| Conductor cross section [mm²] solid/stranded | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² | 2.5 mm² ... 6 mm²/ 2.5 mm² ... 6 mm² |
| Conductor cross section [AWG] | 14 ... 10 | 14 ... 10 | 14 ... 10 | 14 ... 10 |
| Temperature data | | | | |
| Ambient temperature (operation) | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C | -40°C ... 80°C |
| Temperature when conductor connected | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C | -5°C ... 50°C |

| | | Ordering data | | | | Ordering data | | | |
|---|---|---|---|---|---|---|---|---|---|
| Description | Cable length | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. | **Order No.** | Pcs. / Pkt. |
| | | **Black** | | **Gray** | | **Black** | | **Gray** | |
| **Panel feed-through,** with M25 x 1.5 mounting flange, with **one** QUICKON nut, for cable diameter: | | | | | | | | | |
| 9 mm ... 14 mm | 0.5 m | **1410392** | 1 | **1410399** | 1 | | | | |
| 9 mm ... 14 mm | 1 m | **1410393** | 1 | **1410400** | 1 | | | | |
| 12 mm ... 20 mm | 0.5 m | **1410394** | 1 | **1410401** | 1 | | | | |
| 12 mm ... 20 mm | 1 m | **1410395** | 1 | **1410402** | 1 | | | | |
| **Panel feed-through,** with M25 x 1.5 mounting flange, **without** QUICKON nut | | | | | | | | | |
| | 0.5 m | | | | | **1410396** | 1 | **1410403** | 1 |
| | 1 m | | | | | **1410397** | 1 | **1410404** | 1 |
| **QUICKON nut,** for connections up to 6.0 mm², for cable diameter: | | | | | | | | | |
| 9 mm ... 14 mm | | | | | | **1410409** | 1 | **1410407** | 1 |
| 12 mm ... 20 mm | | | | | | **1410406** | 1 | **1410405** | 1 |

## Assembled cables, 2.5 mm²

- Connecting cable between two QUICKON connections
- User-friendly connection, even on devices that are difficult to access
- Touch-proof in accordance with DIN EN 50274
- Other versions available on request

4+PE-pos.

| | Technical data |
|---|---|
| General data | |
| Degree of protection | IP68/IP69K |
| Electrical data | |
| Rated voltage (III/3) | 690 V |
| Rated surge voltage | 6 kV |
| Rated current | 20 A |
| Surge voltage category/pollution degree | III/3 |
| Material data | |
| Housing material | PA |
| Contact material | Cu |
| Inflammability class according to UL 94 | V0 |
| Mechanical data | |
| Impact category | IK07 |
| Color | Black |
| Connector data QUICKON connection | |
| Core insulation | PVC/PE/TPE/rubber |
| Structure of individual litz wire/ smallest wire diameter | VDE 0295 class 1 to 6/min. 0.15 mm |
| Connection frequency | max. 10 |
| Conductor cross section [mm²] solid/stranded | 1 mm² ... 2.5 mm²/1 mm² ... 2.5 mm² |
| Conductor cross section [AWG] | 16 ... 14 |
| Temperature data | |
| Ambient temperature (operation) | -40°C ... 80°C |
| Temperature when conductor connected | -5°C ... 50°C |

### Ordering data

| Description | Cable length | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Assembled cable** | | | | |
| | 1 m | **QPD 5P/ 1,0-PVC/5P 5X2,5 BK** | **1408720** | 1 |
| | 3 m | **QPD 5P/ 3,0-PVC/5P 5X2,5 BK** | **1408721** | 1 |
| | 5 m | **QPD 5P/ 5,0-PVC/5P 5X2,5 BK** | **1408722** | 1 |
| | 10 m | **QPD 5P/10,0-PVC/5P 5X2,5 BK** | **1408723** | 1 |

## Accessories

- Mounting clip ① for easily fixing the H-distributor in place without the need for tools
- DIN rail mounting can be achieved using two DIN-rail adapters ②
- Plastic labels ③ can be stuck to the middle of the H-distributor
- Red sealing plugs ④ can be easily stuck into the QUICKON nuts and create a seal when screwed tight
- Protective caps with retaining cords ⑤ for closing open QUICKON domes which are going to have a connector (for example) fitted at a later date
- Locking nuts ⑥ for fixing the panel feed-throughs to thin panels that are unable to accommodate a proprietary thread
- Insulating sleeve ⑦ for 4.8 mm slip-on connections
- Transparent protective caps ⑧ for attaching to the open QUICKON dome
- Transparent protective caps ⑨ at front for attaching to the connector
- Slotted socket wrenches ⑩ enable you to tighten the QUICKON nuts easily and securely
- Red coding profiles ⑪ for preventing QPD connector mix-ups. Simply insert them into the QUICKON dome and connector on the front side. They are marked with an arrow and their symmetrical form enables them to be mounted in four different positions
- AS-Interface seals ⑫ for connecting 1 or 2 AS-Interface cables
- Aluminum shielding tape ⑬ prevents the splicing of the braided shield and enables a clean shield connection

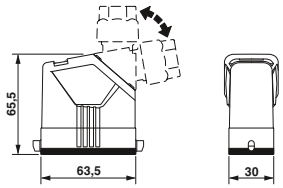
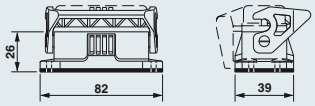
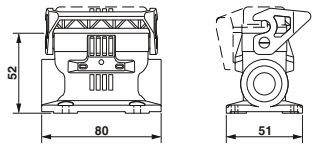
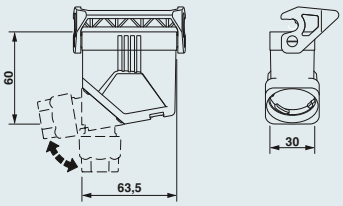
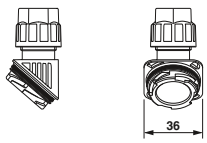
| Description | | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Mounting clip,** for the 4-pos. H-distributor, color: black | ① | | | |
| | | **QPD CLIP 2,5 BK** | **1582235** | 10 |
| **DIN rail adapter** | ② | | | |
| For M5 screws | | **USA 10/4,6** | **1202713** | 10 |
| **Plastic label** | ③ | | | |
| For plotting and engraving | | **GPE 13X 9 WH** | **0806932** | 10 |
| Can be printed using thermal transfer printer | | **EMLP (13X9)R** | **0819453** | 1 |
| **Closing cap,** for closing unused bore holes in multiple seals and cable glands | ④ | | | |
| Ø 10 mm | | **SEALING PLUG 10X16 RD** | **1400284** | 10 |
| Ø 14 mm | | **SEALING PLUG 14X22 RD** | **1400270** | 10 |
| **Protective cap**, captive, IP68 | ⑤ | | | |
| Color: green | | **QPD QSK 2,5 FS** | **1582488** | 1 |
| Color: black | | **QPD QSK BK 2,5 FS** | **1582645** | 1 |
| Color: gray | | **QPD QSK GY 5X2,5 FS** | **1404526** | 1 |
| Color: black | | **QPD QSK BK 5X2,5 FS** | **1404525** | 1 |
| **Counter nut,** (plastic), to lock the contact carrier from the inside of the device | ⑥ | | | |
| M16 / SW22 / color: green | | **Q-MU M16** | **1640692** | 25 |
| M20 / SW26 / color: green | | **Q-MU M20** | **1640702** | 25 |
| M25 / SW32 / color: black | | **Q-MU M25** | **1640715** | 25 |
| Pg21 / SW36 / color: black | | **Q-MU PG 21 BK** | **1582655** | 50 |
| **Insulating sleeve,** as shock protection for 4.8 mm slip-on sleeves; first slide over the conductor | ⑦ | | | |
| For 4.8 mm slip-on sleeves | | **PT/FS 4,8** | **1670497** | 25 |
| **Protective cap**, transparent plastic, for QUICKON connection, IP54 | ⑧ | | | |
| | | **QPD QSK 2,5** | **1582150** | 10 |
| | | **QPD QSK 5X2,5** | **1404528** | 10 |
| | | **QPD QSK 5X6,0** | **1411403** | 10 |
| **Protective cap**, transparent plastic, for QUICKON connection, IP50 | ⑨ | | | |
| | | **QPD PSK 2,5** | **1582151** | 10 |
| | | **QPD PSK 5X2,5** | **1404529** | 10 |
| | | **QPD PSK 5X6,0** | **1411404** | 10 |
| **Slotted socket wrench** for QUICKON nuts and panel feed-throughs, for wrench size: | ⑩ | | | |
| 15 mm | | **QSS 15** | **1641992** | 1 |
| 19 mm | | **QSS 19** | **1670895** | 1 |
| 22 mm | | **QSS 22** | **1670206** | 1 |
| 24 mm | | **QSS 24** | **1670219** | 1 |
| 27 mm | | **QSS 27** | **1670646** | 1 |
| **Coding profile,** for insertion into the connector and QUICKON dome | ⑪ | | | |
| | | **CP-QPD** | **1582459** | 10 |
| | | **CP-QPD 5X2,5** | **1404530** | 10 |
| **Seal for 4-pos. versions,** NBR, black, for IP65/IP67 protection | ⑫ | | | |
| One AS-i cable | | **KV-DI-PG16-1XASI** | **1582462** | 10 |
| Two AS-i cables | | **KV-DI-PG16-2XASI** | **1582464** | 10 |
| **Shielding tape,** aluminum, for the shielded QPD versions | ⑬ | | | |
| | | **ALU-SB** | **1404531** | 100 |

## EVO housing, type D15, plastic, single locking latch

### Technical data

| | |
|---|---|
| General data | |
| Housing material | Polyamide |
| Locking latch material | Polyamide |
| Sealing material | NBR |
| Ambient temperature (operation) | -40°C ... 100°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 65.5 mm**<br> | | **HC-EVO-D15-HHFS-PL-BK** | **1411340** | 1 |  |
| **Panel mounting base**<br>**Height: 26 mm**<br> | | Without cover<br>**HC-EVO-D15-BWS-PLR-BK**<br>With cover<br>**HC-EVO-D15-BWSC-PLR-BK** | <br>**1411336**<br><br>**1411337** | <br>1<br><br>1 |  |
| **Box mounting base**<br>**Height: 52 mm**<br> | <br>2x M25<br><br>2x M25 | Without cover<br>**HC-EVO-D15-SLWS-2SSM25-PLR-BK**<br>With cover<br>**HC-EVO-D15-SLWSC-2SSM25-PLR-BK** | <br>**1411341**<br><br>**1411343** | <br>1<br><br>1 |  |
| **Coupling housing**<br>**Height: 60 mm**<br> | | **HC-EVO-D15-CHWS-PL-BK** | **1411338** | 1 |  |
| **Cable gland**<br> | <br>1x M20<br>1x M25 | <br>**HC-D-G-M20-PLRBK**<br>**HC-D-G-M25-PLRBK** | <br>**1411350**<br>**1411351** | <br>1<br>1 |  |
| **Connector set**<br> | | Without cover, screw connection<br>**HC-EVO-A10UT-BWS-HH-M20-PLRBK**<br>With cover, screw connection<br>**HC-EVO-A10UT-BWSC-HH-M20-PLRBK** | <br>**1411356**<br><br>**1411357** | <br>1<br><br>1 | |

### Accessories

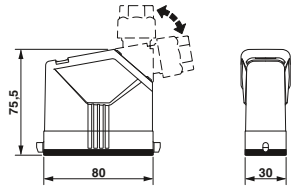
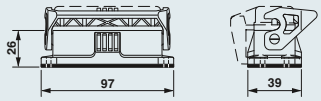
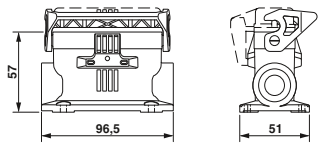
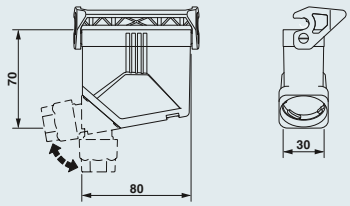
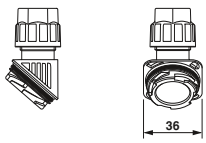
**Thread adapter**
**From page 219**

## EVO housing, type D25, plastic, single locking latch

### Technical data

| | |
|---|---|
| General data | |
| Housing material | Polyamide |
| Locking latch material | Polyamide |
| Sealing material | NBR |
| Ambient temperature (operation) | -40°C ... 100°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 75.5 mm**<br> | | **HC-EVO-D25-HHFS-PL-BK** | **1411347** | 1 |  |
| **Panel mounting base**<br>**Height: 26 mm**<br> | | Without cover<br>**HC-EVO-D25-BWS-PLR-BK**<br>With cover<br>**HC-EVO-D25-BWSC-PLR-BK** | <br>**1411344**<br><br>**1411345** | <br>1<br><br>1 |  |
| **Box mounting base**<br>**Height: 57 mm**<br> | <br>2x M25<br><br>2x M25 | Without cover<br>**HC-EVO-D25-SLWS-2SSM25-PLR-BK**<br>With cover<br>**HC-EVO-D25-SLWSC-2SSM25-PLR-BK** | <br>**1411348**<br><br>**1411349** | <br>1<br><br>1 |  |
| **Coupling housing**<br>**Height: 70 mm**<br> | | **HC-EVO-D25-CHWS-PLR-BK** | **1411346** | 1 |  |
| **Cable gland**<br> | <br>1x M20<br>1x M25 | <br>**HC-D-G-M20-PLRBK**<br>**HC-D-G-M25-PLRBK** | <br>**1411350**<br>**1411351** | <br>1<br>1 |  |
| **Connector set**<br> | | Without cover, screw connection<br>**HC-EVO-A16UT-BWS-HH-M25-PLRBK**<br>With cover, screw connection<br>**HC-EVO-A16UT-BWSC-HH-M25-PLRBK** | <br>**1411358**<br><br>**1411359** | <br>1<br><br>1 | |

### Accessories

**Thread adapter**
**From page 219**

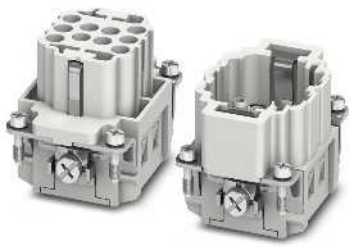
## Contact inserts
## BB series

500 V, 16 A

Connection technology:
– Crimp connection

With groove for accommodating coding profiles for easy and inexpensive coding of identical plug-in connections
– Can be coded in seconds, thanks to the coding profile

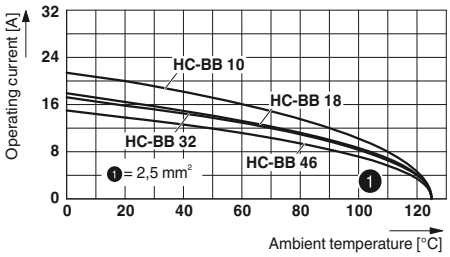
| Notes: |
|---|
| For accessories, see Catalog 4 from page 552 |
| Order crimp contacts separately |
| Connectors may only be operated when under no load |
| Observe notes on the connection technology |



### Technical data

| Type | | HC-BB 10-I-CT-... | HC-BB 18-I-CT-... | HC-BB 32-I-CT-... | HC-BB 46-I-CT-... |
|---|---|---|---|---|---|
| Approvals | | - | - | - | - |
| IEC data | | | | | |
| Rated current, contacts (at 40°C) | A | 16 | 16 | 16 | 16 |
| Surge voltage category | | III | III | III | III |
| Pollution degree | | 3 | 3 | 3 | 3 |
| Rated voltage (III/3) contacts | V | 500 | 500 | 500 | 500 |
| Rated surge voltage, contacts | kV | 6 | 6 | 6 | 6 |
| Connection cross section | $mm^2$ | 0.5 ... 4 | 0.5 ... 4 | 0.5 ... 4 | 0.5 ... 4 |
| UL data | | | | | |
| Rated voltage | V | - | - | - | - |
| Rated current | A | - | - | - | - |
| AWG | | - | - | - | - |
| CSA data | | | | | |
| Rated voltage | V | - | - | - | - |
| Rated current | A | - | - | - | - |
| AWG | | - | - | - | - |
| Material data | | | | | |
| Contact carrier material | | PC | PC | PC | PC |
| Inflammability class in acc. with UL 94 | | V0 | V0 | V0 | V0 |
| Contact material | | Copper alloy | Copper alloy | Copper alloy | Copper alloy |
| Contact surface material | | Ag (alternatively Au) | Ag (alternatively Au) | Ag (alternatively Au) | Ag (alternatively Au) |
| Temperature data | | | | | |
| Ambient temperature range | °C | -40 ... 125 | -40 ... 125 | -40 ... 125 | -40 ... 125 |
| General data | | | | | |
| Connection method | | Crimp connection | Crimp connection | Crimp connection | Crimp connection |
| No. of pos. | | 10 | 18 | 32 | 46 |
| Contact numbering | | 1 - 10 | 1 - 18 | 1 - 32 | 1 - 46 |
| Insertion/withdrawal cycles | | ≥ 500 | ≥ 500 | ≥ 500 | ≥ 500 |

### Derating curves

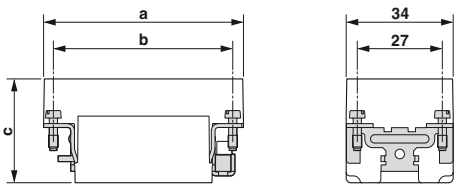



HC-BB ...

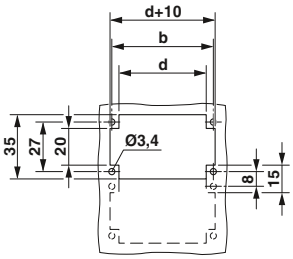
## Ordering data

| Description | Pos. | Number | Housing | Type | Order No. Socket | Order No. Plug | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|
| **Crimp connection** | | | | | | | |
| | 10 | 1 - 10 | B6 | ① HC-BB 10-I-CT-... | 1584703 | 1584774 | 1 |
| **Crimp connection** | | | | | | | |
| | 18 | 1 - 18 | B10 | ② HC-BB 18-I-CT-... | 1584729 | 1584716 | 1 |
| **Crimp connection** | | | | | | | |
| | 32 | 1 - 32 | B16 / B32 | ③ HC-BB 32-I-CT-... | 1584745 | 1584732 | 1 |
| | 32 | 33 - 64 | B16 / B32 | ④ HC-BB 32-I-CT-... 33-64 | 1406543 | 1406544 | 1 |
| **Crimp connection** | | | | | | | |
| | 46 | 1 - 46 | B24 / B48 | ⑤ HC-BB 46-I-CT-... | 1584758 | 1584761 | 1 |
| | 46 | 47 - 92 | B24 / B48 | ⑥ HC-BB 46-I-CT-... 47-92 | 1406545 | 1406546 | 1 |
| **Turned crimp contacts CK 2,5 Silver-plated** | | | **Cross section mm² / AWG** | | | | |
| | | | 0.5 / 20 | CK2,5-ED-0,50... AG | 1663640 | 1663572 | 100 |
| | | | 0.75 / 18 | CK2,5-ED-0,75... AG | 1663653 | 1663585 | 100 |
| | | | 0.75 - 1 / 18 | CK2,5-ED-1,00... AG | 1663666 | 1663598 | 100 |
| | | | 1.5 / 16 | CK2,5-ED-1,50... AG | 1663679 | 1663608 | 100 |
| | | | 2.5 / 14 | CK2,5-ED-2,50... AG | 1663682 | 1663611 | 100 |
| | | | 4 / 12 | CK2,5-ED-4,00... AG | 1663705 | 1663637 | 100 |
| **Turned crimp contacts CK 2,5 Gold-plated** | | | **Cross section mm² / AWG** | | | | |
| | | | 0.5 / 20 | CK2,5-ED-0,50... AU | 1674859 | 1674804 | 100 |
| | | | 0.75 - 1 / 18 | CK2,5-ED-1,00... AU | 1674833 | 1674781 | 100 |
| | | | 1.5 / 16 | CK2,5-ED-1,50... AU | 1674820 | 1674778 | 100 |
| | | | 2.5 / 14 | CK2,5-ED-2,50... AU | 1674862 | 1674817 | 100 |
| | | | 4 / 12 | CK2,5-ED-4,00... AU | 1674846 | 1674794 | 100 |

### Dimensions (in mm)




Dimensional drawing




Panel cutout

| | | a | b | c | d |
|---|---|---|---|---|---|
| ① | Socket | 51 | 44 | 32.5 | 35 |
| | Plug | | | 33.2 | |
| ② | Socket | 64 | 57 | 32.5 | 48 |
| | Plug | | | 33.2 | |
| ③ | Socket | 84.5 | 77.5 | 32.5 | 68.5 |
| | Plug | | | 33.2 | |
| ④ | Socket | 84.5 | 77.5 | 32.5 | 68.5 |
| | Plug | | | 33.2 | |
| ⑤ | Socket | 111 | 104 | 32.5 | 95 |
| | Plug | | | 33.2 | |
| ⑥ | Socket | 111 | 104 | 32.5 | 95 |
| | Plug | | | 33.2 | |

## Accessories

**Coding profiles**
**From page 221**

**PE screws**
**Catalog 4 from page 580**

**Crimping tools**
**Catalog 4 from page 562**

## Contact inserts
## HS series, high-current applications

500 V, 35 A

Connection technology:
– Screw connection

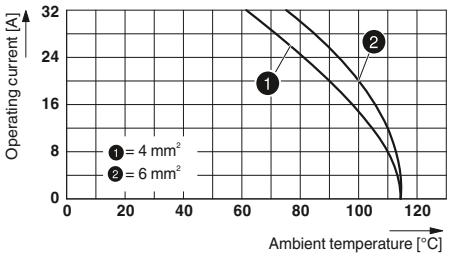
With groove for accommodating coding profiles for easy and inexpensive coding of identical plug-in connections
– Can be coded in seconds, thanks to the coding profile

| Notes: |
|---|
| For accessories, see Catalog 4 from page 552 |
| Connectors may only be operated when under no load |
| Observe notes on the connection technology |

### Technical data

| Type | | HC-HS06-I-UT-... | HC-HS06-I-UT-... 7-12 | | |
|---|---|---|---|---|---|
| Approvals | | - | - | | |
| IEC data | | | | | |
| Rated current, contacts (at 40°C) | A | 35 | 35 | | |
| Surge voltage category | | III | III | | |
| Pollution degree | | 3 | 3 | | |
| Rated voltage (III/3) contacts | V | 400/690 | 400/690 | | |
| Rated surge voltage, contacts | kV | 6 | 6 | | |
| Connection cross section | $mm^2$ | 0.5 ... 6 | 0.5 ... 6 | | |
| UL data | | | | | |
| Rated voltage | V | - | - | | |
| Rated current | A | - | - | | |
| AWG | | - | - | | |
| CSA data | | | | | |
| Rated voltage | V | - | - | | |
| Rated current | A | - | - | | |
| AWG | | - | - | | |
| Material data | | | | | |
| Contact carrier material | | PC | PC | | |
| Inflammability class in acc. with UL 94 | | V0 | V0 | | |
| Contact material | | Copper alloy | Copper alloy | | |
| Contact surface material | | Ag | Ag | | |
| Temperature data | | | | | |
| Ambient temperature range | °C | -40 ... 125 | -40 ... 125 | | |
| General data | | | | | |
| Connection method | | Screw connection | Screw connection | | |
| No. of pos. | | 6 | 6 | | |
| Contact numbering | | 1 - 6 | 7 - 12 | | |
| Insertion/withdrawal cycles | | ≥ 500 | ≥ 500 | | |

### Derating curves

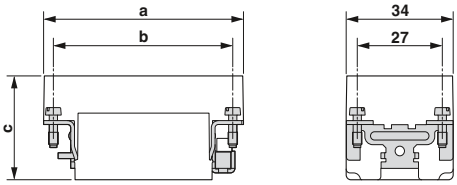



HC-HS06-I-UT-...

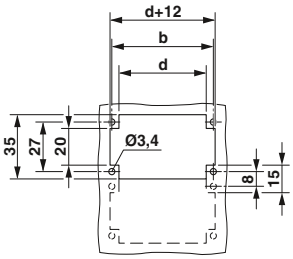
## Ordering data

| Description | Pos. | Number | Housing | Type | Order No. Socket | Order No. Plug | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|
| **Screw connection** | 6 | 1 - 6 | B16 / B32 | ① **HC-HS06-I-UT-...** | **1406530** | **1406531** | 1 |
| **Screw connection** | 6 | 7 - 12 | B16 / B32 | ② **HC-HS06-I-UT-... 7-12** | **1406533** | **1406534** | 1 |

**Dimensions (in mm)**




**Dimensional drawing**




**Panel cutout**

| | | a | b | c | d |
|---|---|---|---|---|---|
| ① | Socket<br>Plug | 84.5 | 77.5 | 34 | 72 |
| ② | Socket<br>Plug | 84.5 | 77.5 | 34 | 72 |

## Accessories

**Coding profiles**
**Catalog 4 from page 581**

**PE screws**
**Catalog 4 from page 580**

**EMC protection**

The new EMC series of HEAVYCON EVO heavy-duty connectors has been specifically developed for applications with increased requirements. Furthermore, the housing surfaces and all seals are constructed so as to be electrically conductive.

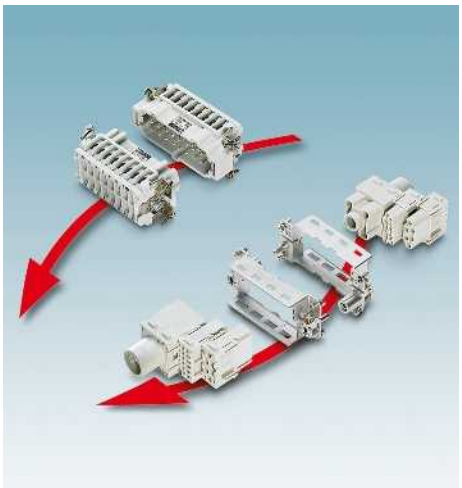
**Flexible, thanks to reduced number of versions**

Thanks to the unique HEAVYCON EVO bayonet locking, only the swivel cable glands have to be replaced in order to cover the M20, M25, M32, and M40 clamping areas with straight and lateral outlet.

**Fully compatible**

The HEAVYCON EVO housing is plug-compatible with standard aluminum housing. It fits the standard panel cutouts of heavy-duty connectors.

**Easy closing operation**
The bayonet locking designed specially for EVO applications ensures easy on-site assembly without tools.
For removal, a standard screwdriver is used to push down on the locking spring.



**Suitable for all inserts**
All fixed and modular contact inserts in B series format fit in HEAVYCON EVO housing.

**Electrical connection**
A solid electrical connection is required between the housing and the cable gland for EMC and safety reasons.
The locking spring ensures a safe mechanical and electrical connection.

**Complete panel feed-through**
The new EMC housings combine the advantages of EVO plastic housing with those of standard metal housing. A complete panel feed-through system is therefore available for EMC applications.

**Easy cable assembly**
On the HEAVYCON EVO housing, the angled cable inlet is particularly large. This simplifies cable assembly if the cable gland is only mounted at the end of the process.

**For harsh conditions**
The metal housings are made from salt-water-resistant aluminum. They meet the requirements of IP66 protection and NEMA 4/4x/12.

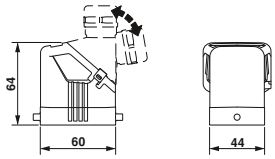
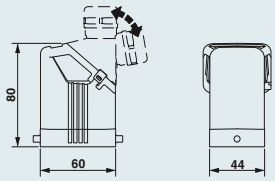
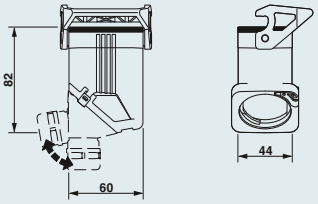
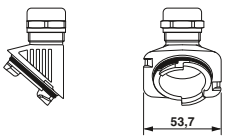
## EVO housing, type B6, metal, for EMC applications, single locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 64 mm**<br> | | **HC-EVO-B06-HLFS-EL-AL** | **1411448** | 1 |  |
| **Sleeve housing**<br>**Height: 80 mm**<br> | | **HC-EVO-B06-HHFS-EL-AL** | **1411447** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | Without cover<br>**HC-STA-B06-BWS-ELC-AL**<br>With cover<br>**HC-STA-B06-BWSC-ELC-AL** | <br>**1411318**<br><br>**1411319** | <br>1<br><br>1 | |
| **Coupling housing**<br>**Height: 82 mm**<br> | | **HC-EVO-B06-CHWS-ELC-AL** | **1411450** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |
| **Connector set**<br> | | Push-in connection<br>**HC-EVO-B06PT-BWSC-HL-M20ELC-AL** | <br>**1411487** | <br>1 | |

### Accessories

**Replacement seals**
**From page 220**

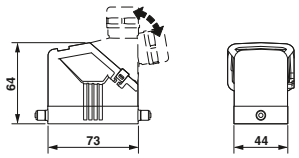
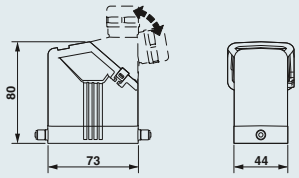
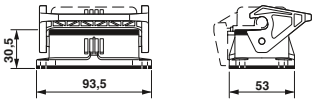
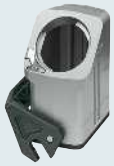
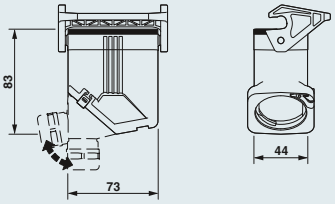
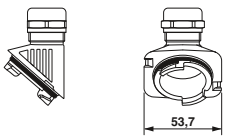
## EVO housing, type B10, metal, for EMC applications, single locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 64 mm**<br> | | **HC-EVO-B10-HLFS-EL-AL** | **1411456** | 1 |  |
| **Sleeve housing**<br>**Height: 80 mm**<br> | | **HC-EVO-B10-HHFS-EL-AL** | **1411453** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | Without cover<br>**HC-STA-B10-BWS-ELC-AL**<br>With cover<br>**HC-STA-B10-BWSC-ELC-AL** | <br>**1411320**<br><br>**1411321** | <br>1<br><br>1 |  |
| **Coupling housing**<br>**Height: 83 mm**<br>  | | **HC-EVO-B10-CHWS-ELC-AL** | **1411459** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |
| **Connector set**<br> | | Push-in connection<br>**HC-EVO-B10PT-BWSC-HL-M25ELC-AL** | **1411491** | 1 | |

### Accessories

**Replacement seals**
**From page 220**

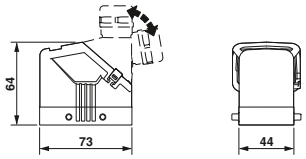
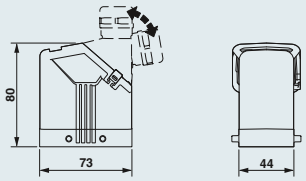
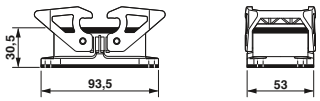
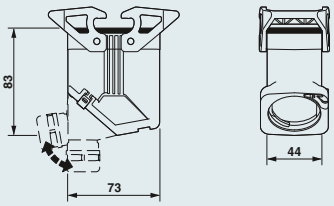
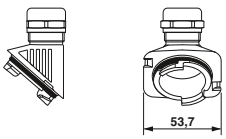
## EVO housing, type B10, metal, for EMC applications, double locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 64 mm**<br> | | **HC-EVO-B10-HLFD-EL-AL** | **1411455** | 1 |  |
| **Sleeve housing**<br>**Height: 80 mm**<br> | | **HC-EVO-B10-HHFD-EL-AL** | **1411451** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | Without cover<br>**HC-STA-B10-BWD-ELC-AL** | **1411322** | 1 |  |
| **Coupling housing**<br>**Height: 83 mm**<br> | | **HC-EVO-B10-CHWD-ELC-AL** | **1411458** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |
| **Connector set**<br> | | Push-in connection<br>**HC-EVO-B10PT-BWD-HL-M25ELC-AL** | **1411488** | 1 | |

### Accessories

**Replacement seals**
**From page 220**

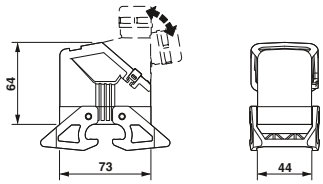
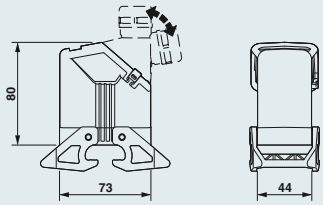
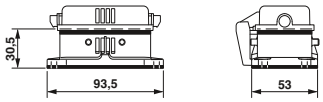
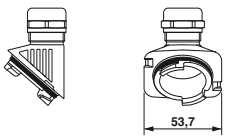
## EVO housing, type B10, metal, for EMC applications, double locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 64 mm**<br> | | **HC-EVO-B10-HLWD-EL-AL** | **1411457** | 1 |  |
| **Sleeve housing**<br>**Height: 80 mm**<br> | | **HC-EVO-B10-HHWD-EL-AL** | **1411454** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | With cover<br>**HC-STA-B10-BFDC-ELC-AL** | **1411323** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |

### Accessories

**Replacement seals**
**From page 220**

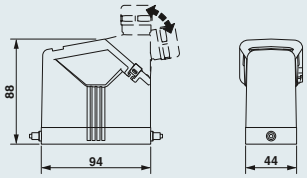
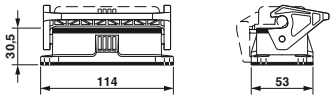
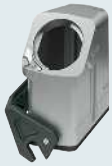
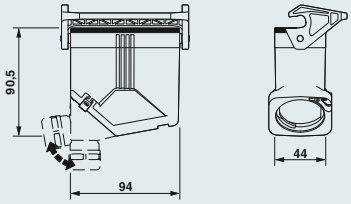
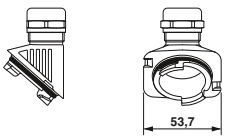
## EVO housing, type B16, metal, for EMC applications, single locking latch

EMC

### Technical data

| | |
|---|---|
| General data | |
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 88 mm**<br> | | **HC-EVO-B16-HHFS-EL-AL** | **1411461** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | Without cover<br>**HC-STA-B16-BWS-ELC-AL**<br>With cover<br>**HC-STA-B16-BWSC-ELC-AL** | <br>**1411324**<br><br>**1411325** | <br>1<br><br>1 |  |
| **Coupling housing**<br>**Height: 90.5 mm**<br>  | | **HC-EVO-B16-CHWS-ELC-AL** | **1411464** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |
| **Connector set**<br> | | Push-in connection<br>**HC-EVO-B16PT-BWSC-HH-M25ELC-AL** | <br>**1411492** | <br>1 | |

### Accessories

**Replacement seals**
**From page 220**

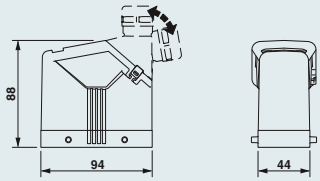
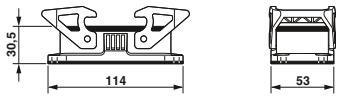
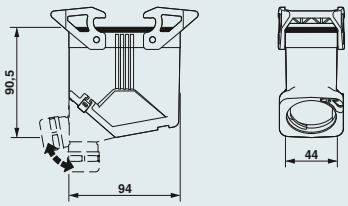
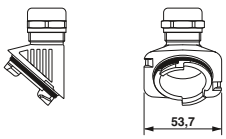
## EVO housing, type B16, metal, for EMC applications, double locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 88 mm**<br> | | **HC-EVO-B16-HHFD-EL-AL** | **1411460** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | Without cover<br>**HC-STA-B16-BWD-ELC-AL** | **1411327** | 1 |  |
| **Coupling housing**<br>**Height: 90.5 mm**<br> | | **HC-EVO-B16-CHWD-ELC-AL** | **1411463** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |
| **Connector set**<br> | | Push-in connection<br>**HC-EVO-B16PT-BWD-HH-M25ELC-AL** | **1411489** | 1 | |

### Accessories

**Replacement seals**
**From page 220**

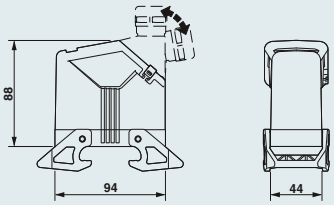
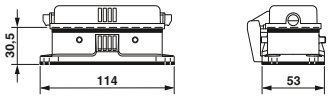
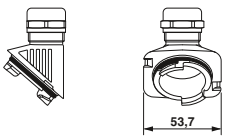
## EVO housing, type B16, metal, for EMC applications, double locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 88 mm**<br> | | **HC-EVO-B16-HHWD-EL-AL** | **1411462** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | With cover<br>**HC-STA-B16-BFDC-ELC-AL** | **1411328** | 1 |  |
| **Cable gland**<br> | 1x M20 | **HC-B-G-M20-EC-AL** | **1411439** | 1 |  |
| | 1x M25 | **HC-B-G-M25-EC-AL** | **1411446** | 1 | |
| | 1x M32 | **HC-B-G-M32-EC-AL** | **1411440** | 1 | |
| | 1x M40 | **HC-B-G-M40-EC-AL** | **1411441** | 1 | |

### Accessories

**Replacement seals**
**From page 220**

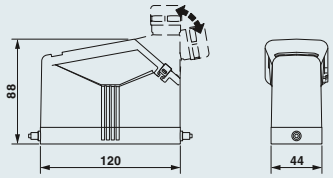
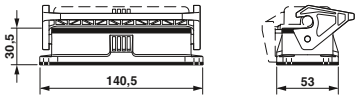
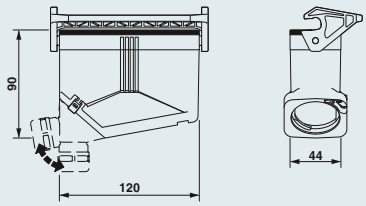
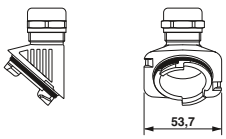
## EVO housing, type B24, metal, for EMC applications, single locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 88 mm**<br> | | **HC-EVO-B24-HHFS-EL-AL** | **1411473** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | Without cover<br>**HC-STA-B24-BWS-ELC-AL**<br>With cover<br>**HC-STA-B24-BWSC-ELC-AL** | <br>**1411329**<br><br>**1411330** | <br>1<br><br>1 |  |
| **Coupling housing**<br>**Height: 90 mm**<br> | | **HC-EVO-B24-CHWS-ELC-AL** | **1411476** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |
| **Connector set**<br> | | Push-in connection<br>**HC-EVO-B24PT-BWSC-HH-M32ELC-AL** | **1411493** | 1 | |

### Accessories

**Replacement seals**
**From page 220**

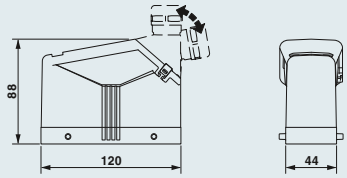
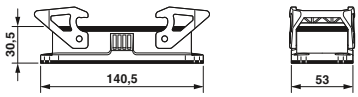
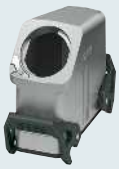
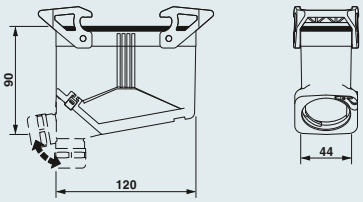
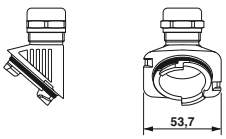
## EVO housing, type B24, metal, for EMC applications, double locking latch

EMC

### Technical data

| | |
|---|---|
| General data | |
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 88 mm**<br> | | **HC-EVO-B24-HHFD-EL-AL** | **1411472** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | Without cover<br>**HC-STA-B24-BWD-ELC-AL** | **1411331** | 1 |  |
| **Coupling housing**<br>**Height: 90 mm**<br>  | | **HC-EVO-B24-CHWD-ELC-AL** | **1411475** | 1 |  |
| **Cable gland**<br> | 1x M20<br>1x M25<br>1x M32<br>1x M40 | **HC-B-G-M20-EC-AL**<br>**HC-B-G-M25-EC-AL**<br>**HC-B-G-M32-EC-AL**<br>**HC-B-G-M40-EC-AL** | **1411439**<br>**1411446**<br>**1411440**<br>**1411441** | 1<br>1<br>1<br>1 |  |
| **Connector set**<br> | | Push-in connection<br>**HC-EVO-B24PT-BWD-HH-M32ELC-AL** | **1411490** | 1 | |

### Accessories

**Replacement seals**
**From page 220**

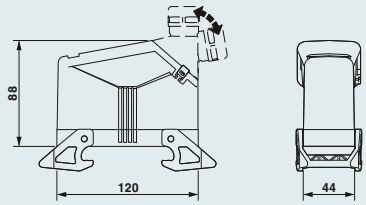
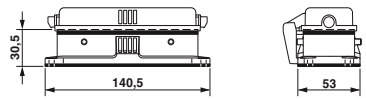
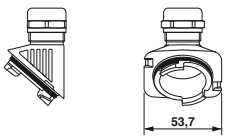
## EVO housing, type B24, metal, for EMC applications, double locking latch

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Die-cast aluminum, salt water resistant |
| Surface material | Uncoated |
| Locking latch material | Polyamide |
| Sealing material | NBR, conductive |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP66 |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 88 mm**<br> | | **HC-EVO-B24-HHWD-EL-AL** | **1411474** | 1 |  |
| **Panel mounting base**<br>**Height: 30.5 mm**<br> | | With cover<br>**HC-STA-B24-BFDC-ELC-AL** | **1411332** | 1 |  |
| **Cable gland**<br> | 1x M20 | **HC-B-G-M20-EC-AL** | **1411439** | 1 |  |
| | 1x M25 | **HC-B-G-M25-EC-AL** | **1411446** | 1 | |
| | 1x M32 | **HC-B-G-M32-EC-AL** | **1411440** | 1 | |
| | 1x M40 | **HC-B-G-M40-EC-AL** | **1411441** | 1 | |

### Accessories

**Replacement seals**
**From page 220**

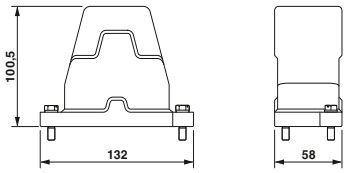
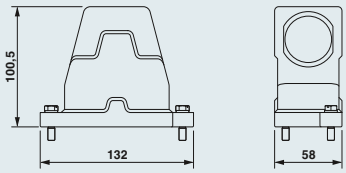
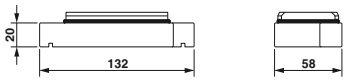
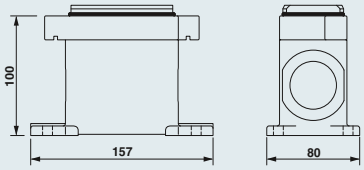
## HPR housing, type B6, metal, for railway applications, screw locking

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Aluminum die-cast |
| Surface material | Powder-coated, black |
| Lock material | High-grade steel |
| Sealing material | Silicon |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP68/IP69K |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 100.5 mm**<br> | 1x M20<br>1x M25 | Cable entry: top<br>**HC-HPR-B06-HHWH-1TTM20-EM-BK**<br>**HC-HPR-B06-HHWH-1TTM25-EM-BK** | **1411879**<br>**1411106** | 1<br>1 |   |
| **Sleeve housing**<br>**Height: 100.5 mm**<br> | 1x M20<br>1x M25 | Cable entry: lateral<br>**HC-HPR-B06-HHWH-1STM20-EM-BK**<br>**HC-HPR-B06-HHWH-1STM25-EM-BK** | **1411878**<br>**1411119** | 1<br>1 |   |
| **Panel mounting base**<br>**Height: 20 mm**<br> | | Without cover<br>**HC-HPR-B06-BFH-EMR-BK** | **1411122** | 1 |   |
| **Box mounting base**<br>**Height: 100 mm**<br> | 2x M20<br>2x M25 | Without cover<br>**HC-HPR-B06-SHFH-2SSM20-EMR-BK**<br>**HC-HPR-B06-SHFH-2SSM25-EMR-BK** | **1411880**<br>**1411135** | 1<br>1 |   |

### Accessories

**Cable gland**
**From page 229**

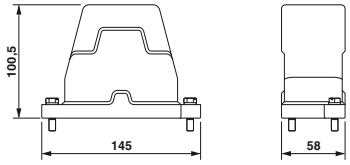
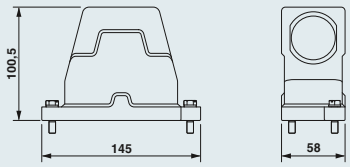
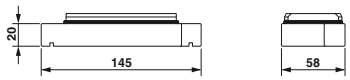
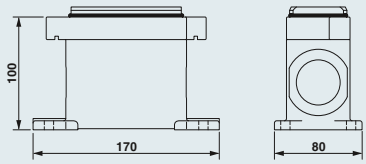
## HPR housing, type B10, metal, for railway applications, screw locking

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Aluminum die-cast |
| Surface material | Powder-coated, black |
| Lock material | High-grade steel |
| Sealing material | Silicon |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP68/IP69K |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 100.5 mm**<br> | 1x M25<br>1x M32 | Cable entry: top<br>**HC-HPR-B10-HHWH-1TTM25-EM-BK**<br>**HC-HPR-B10-HHWH-1TTM32-EM-BK** | **1411882**<br>**1411067** | 1<br>1 |   |
| **Sleeve housing**<br>**Height: 100.5 mm**<br> | 1x M25<br>1x M32 | Cable entry: lateral<br>**HC-HPR-B10-HHWH-1STM25EM-BK**<br>**HC-HPR-B10-HHWH-1STM32-EM-BK** | **1411881**<br>**1411070** | 1<br>1 |   |
| **Panel mounting base**<br>**Height: 20 mm**<br> | | Without cover<br>**HC-HPR-B10-BFH-EMR-BK** | **1411083** | 1 |   |
| **Box mounting base**<br>**Height: 100 mm**<br> | 2x M25<br>2x M32 | Without cover<br>**HC-HPR-B10-SHFH-2SSM25-EMR-BK**<br>**HC-HPR-B10-SHFH-2SSM32-EMR-BK** | **1411883**<br>**1411096** | 1<br>1 |   |

### Accessories

**Cable gland**
**From page 229**

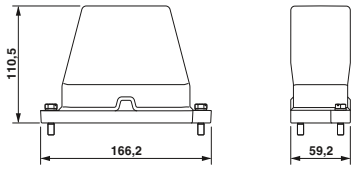
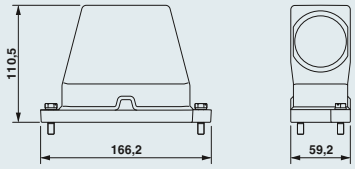
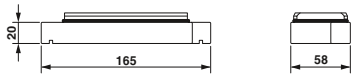
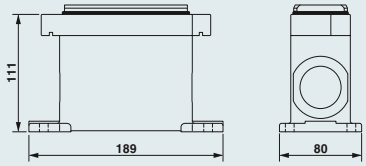
## HPR housing, type B16, metal, for railway applications, screw locking

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Aluminum die-cast |
| Surface material | Powder-coated, black |
| Lock material | High-grade steel |
| Sealing material | Silicon |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP68/IP69K |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 110.5 mm**<br> | 1x M32<br>1x M40 | Cable entry: top<br>**HC-HPR-B16-HHWH-1TTM32-EM-BK**<br>**HC-HPR-B16-HHWH-1TTM40-EM-BK** | **1411059**<br>**1411885** | 1<br>1 |   |
| **Sleeve housing**<br>**Height: 110.5 mm**<br> | 1x M32<br>1x M40 | Cable entry: lateral<br>**HC-HPR-B16-HHWH-1STM32-EM-BK**<br>**HC-HPR-B16-HHWH-1STM40-EM-BK** | **1411058**<br>**1411884** | 1<br>1 |   |
| **Panel mounting base**<br>**Height: 20 mm**<br> | | Without cover<br>**HC-HPR-B16-BFH-EMR-BK** | **1411060** | 1 |   |
| **Box mounting base**<br>**Height: 111 mm**<br> | 2x M32<br>2x M40 | Without cover<br>**HC-HPR-B16-SHFH-2SSM32-EMR-BK**<br>**HC-HPR-B16-SHFH-2SSM40-EMR-BK** | **1411054**<br>**1411886** | 1<br>1 |   |

### Accessories

**Cable gland**
**From page 229**

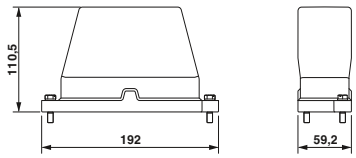
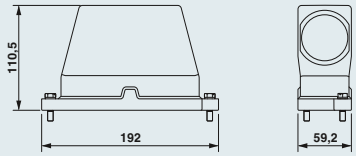
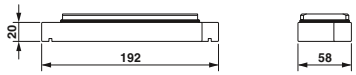
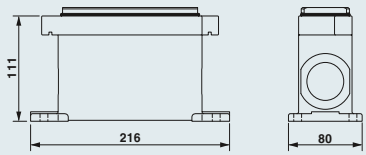
## HPR housing, type B24, metal, for railway applications, screw locking

EMC

### Technical data

| General data | |
|---|---|
| Housing material | Aluminum die-cast |
| Surface material | Powder-coated, black |
| Lock material | High-grade steel |
| Sealing material | Silicon |
| Ambient temperature (operation) | -40°C ... 125°C |
| Type of protection (when plugged in) | IP68/IP69K |

### Ordering data

| Description | Thread | Type | Order No. | Pcs. / Pkt. | Dimensions |
|---|---|---|---|---|---|
| **Sleeve housing**<br>**Height: 110.5 mm**<br> | 1x M32<br>1x M40 | Cable entry: top<br>**HC-HPR-B24-HHWH-1TTM32-EM-BK**<br>**HC-HPR-B24-HHWH-1TTM40-EM-BK** | **1411888**<br>**1411062** | 1<br>1 |  |
| **Sleeve housing**<br>**Height: 110.5 mm**<br> | 1x M32<br>1x M40 | Cable entry: lateral<br>**HC-HPR-B24-HHWH-1STM32-EM-BK**<br>**HC-HPR-B24-HHWH-1STM40-EM-BK** | **1411887**<br>**1411061** | 1<br>1 |  |
| **Panel mounting base**<br>**Height: 20 mm**<br> | | Without cover<br>**HC-HPR-B24-BFH-EMR-BK** | **1411055** | 1 |  |
| **Box mounting base**<br>**Height: 111 mm**<br> | 2x M32<br>2x M40 | Without cover<br>**HC-HPR-B24-SHFH-2SSM32-EMR-BK**<br>**HC-HPR-B24-SHFH-2SSM40-EMR-BK** | **1411889**<br>**1411063** | 1<br>1 |  |

### Accessories

**Cable gland**
**From page 229**

## Cable glands

Metal HEAVYCON EVO standard cable gland for higher strain relief with bayonet locking.

Black plastic cable glands with extended clamping area.

| Notes: |
|---|
| Not for EMC applications |

**EVO standard cable gland, metal, with NBR seal**

**Cable gland, plastic**

| | Technical data | Technical data |
|---|---|---|
| Material data | | |
| Material | Aluminum, die-cast | - |
| Material, pressure screw | Nickel-plated brass | Polyamide |
| Cable seal material | CR/NBR | - |
| Degree of protection | IP66 | IP68, to 5 bar |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 125°C | -20°C ... 100°C |

| Description | Thread type | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|
| **Metal standard cable gland,** for HEAVYCON EVO metal housing, for cable diameter [mm]: | | | | | | | |
| 7 mm ... 13 mm | M20 | **HC-B-G-M20-ER-AL** | **1411442** | 1 | | | |
| 11 mm ... 16 mm | M25 | **HC-B-G-M25-ER-AL** | **1411443** | 1 | | | |
| 14 mm ... 21 mm | M32 | **HC-B-G-M32-ER-AL** | **1411444** | 1 | | | |
| 19 mm ... 27 mm | M40 | **HC-B-G-M40-ER-AL** | **1411445** | 1 | | | |
| **Plastic cable gland,** with extended clamping area, for cable diameter [mm]: | | | | | | | |
| 5 mm ... 13 mm | M20 | | | | **HC-K-KV-M20(5-13)BK** | **1411261** | 10 |
| 8 mm ... 17 mm | M25 | | | | **HC-K-KV-M25(8-17)BK** | **1411258** | 10 |
| 12 mm ... 21 mm | M32 | | | | **HC-K-KV-M32(12-21)BK** | **1407673** | 10 |
| 16 mm ... 28 mm | M40 | | | | **HC-K-KV-M40(16-28)BK** | **1407674** | 10 |

## Thread adapters, filler plugs

These thread adapters enable the use of special cable glands and corrugated pipe connections with HEAVYCON EVO type D housings.

Filler plugs for sealing unused thread openings on box mounting bases.

EVO D thread adapter, plastic

Filler plug, plastic

| | Technical data | Technical data |
|---|---|---|
| Material data | | |
| Material | Polyamide fiberglass reinforced | Polyamide fiberglass reinforced |
| Material, pressure screw | - | - |
| Cable seal material | - | - |
| Degree of protection | IP66 | IP65 |
| Temperature data | | |
| Ambient temperature (operation) | -40°C ... 125°C | -20°C ... 80°C |

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Thread type | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Plastic thread adapter,** for HEAVYCON EVO type D plastic housing | | | | | | | |
| | M25 | **HC-D-TA-M25-PLRBK** | **1411352** | 1 | | | |
| | Pg16 | **HC-D-TA-PG16-PLR-BK** | **1411353** | 1 | | | |
| | NPT3/4" | **HC-D-TA-NPT-3/4-PLR-BK** | **1411354** | 1 | | | |
| **Plastic filler plug,** for HEAVYCON base profiles | | | | | | | |
| | M25 | | | | **HC-K-BS-M25 BK** | **1411245** | 10 |
| | M32 | | | | **HC-K-BS-M32-BK** | **1410754** | 10 |
| | M40 | | | | **HC-K-BS-M40-BK** | **1410767** | 10 |

## Replacement flat gaskets, profile gaskets for type B

– For EMC housing

| Notes: |
|---|
| Bond the replacement profile gaskets to the housing. |

**Replacement EMC flat gasket, for EVO B panel mounting base**

**Replacement EMC profile gasket, for EVO B supporting base element**

| | Technical data | Technical data |
|---|---|---|
| Material data | | |
| Material | NBR, conductive | NBR, conductive |
| 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. |
| **Replacement flat seal,** for HEAVYCON panel mounting base type: | | | | | | |
| B6 | **HC-B06-SG-CBK** | **1411483** | 10 | | | |
| B10 | **HC-B10-SG-CBK** | **1411484** | 10 | | | |
| B16 | **HC-B16-SG-CBK** | **1411485** | 10 | | | |
| B24 | **HC-B24-SG-CBK** | **1411486** | 10 | | | |
| **Replacement profile gasket,** for HEAVYCON EVO supporting base element type: | | | | | | |
| B6 | | | | **HC-B06-SP-CBK** | **1411477** | 10 |
| B10 | | | | **HC-B10-SP-CBK** | **1411479** | 10 |
| B16 | | | | **HC-B16-SP-CBK** | **1411480** | 10 |
| B24 | | | | **HC-B24-SP-CBK** | **1411482** | 10 |

## Special flat gaskets, coding profiles

Special flat gaskets for type B panel mounting bases for uneven mounting surfaces.

Coding profile for new BB series contact inserts.

– For easy and inexpensive coding of identical plug-in connections
– Can be coded in seconds, thanks to the coding profile

**Special flat gasket, for standard B panel mounting base**

**Coding profile**

| | Technical data | Technical data |
|---|---|---|
| Material data | | |
| Material | EPDM/CR | PA |
| 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. |
| **Special flat gasket,** made from foam rubber for HEAVYCON panel mounting base type: | | | | | | |
| B6 | **HC-B 6-FL-MDI** | **1410929** | 10 | | | |
| B10 | **HC-B 10-FL-MDI** | **1410932** | 10 | | | |
| B16 | **HC-B 16-FL-MDI** | **1410945** | 10 | | | |
| B24 | **HC-B 24-FL-MDI** | **1410958** | 10 | | | |
| **Coding profile,** for new BB series contact inserts | | | | **CP-HC-S** | **1410916** | 10 |

## Sealing frames with cone-shaped cable sleeves

Pre-assembled sealing frames with 8 (B16) or 10 (B24) cone-shaped cable sleeves. Particularly suitable for cables that are assembled or wired in the control cabinet. Cables up to 11 mm in diameter can be fed through by cutting off the sleeves.

– IP65 when using cable binders and vertical mounting
– Resistant to oil, fuels, and grease
– Halogen-free

**Sealing frames with cone-shaped cable sleeves and screw locking**

### Technical data

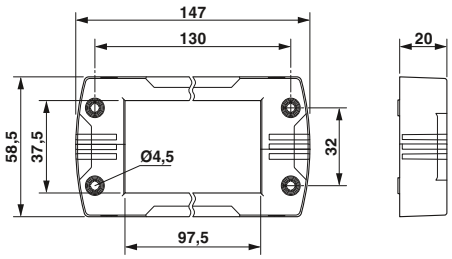
| | | |
|---|---|---|
| **General data** | | |
| Material of frames | | Polyamide |
| Material of cable sleeves | | NBR |
| Degree of protection | | IP54 (DIN IEC 60529)/IP65 (when directly mounted on the housing panel (perpendicular mounting or underwall mounting) and using a 3.6 mm wide cable binder (e.g., Order No. 3240744)) |
| Temperature range | [°C] | -40 ... 120 |

### Ordering data

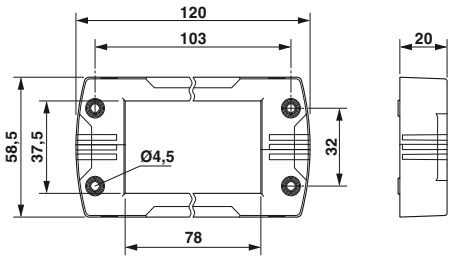
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Pre-assembled sealing frames** with **cone-shaped cable sleeves,** for cables with a diameter of: | | | |
| 2 - 11 mm | **CES-B16-8XSRC-BK** | **1411073** | 1 |
| 2 - 11 mm | **CES-B24-10XSRC-BK** | **1411074** | 1 |

### Accessories

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Electrician's scissors,** high cutting performance, thanks to micro-serrated cutting area, suitable for copper, aluminum, Kevlar fibers, and plastic, two-component non-slip soft-grip handles, ergonomic design, adjustable screw joint | **CUTFOX-ES** | **1212621** | 1 |
| **M4 replacement locking screw**, with 3 mm Allen screw head, for sealing frame with screw locking | **CES-SFFS-H** | **0801728** | 10 |
| **Bit screwdriver,** with 1/4" quick-action chuck, suitable for bits according to DIN 3126-C 6.3 and E 6.3/ISO 1173, magnetic | **SF-M BH** | **1212070** | 1 |
| **Screw bit,** hexagonal, E6.3-1/4" drive, hardened, suitable for holder according to DIN 3126-F 6.3/ISO 1173, size: hex 3 x 50 mm | | | |
| Size: hex 3 x 50 mm | **SF-BIT-HEX 3-50** | **1212647** | 5 |



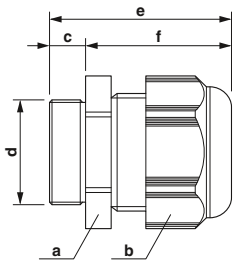

**CES-B16-8XSRC-BK**




**CES-B24-10XSRC-BK**

## Plastic cable gland, metric, EN 60423

- Material: polyamide 6
- Color: silver-gray (RAL 7001)
- Seal: neoprene
- Ambient temperature: -30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar
- Strain relief: integrated according to EN 50262



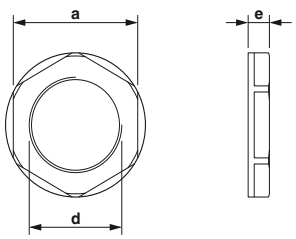
Plastic cable gland

243143 / QCRV2.E320158 / 40024418

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | 3.00 - 6.50 | 15.00 | 15.00 | 8.00 | 12.00 | 32.10 | 24.10 | - | G-INS-M12-S68N-PNES-GY | 1411123 | 10 |
| M16 | 5.00 - 10.00 | 22.00 | 22.00 | 10.00 | 16.00 | 39.70 | 29.70 | - | G-INS-M16-S68N-PNES-GY | 1411124 | 10 |
| M20 | 6.00 - 12.00 | 24.00 | 24.00 | 10.00 | 20.00 | 42.30 | 32.30 | - | G-INS-M20-S68N-PNES-GY | 1411125 | 5 |
| M25 | 11.00 - 17.00 | 29.00 | 29.00 | 8.00 | 25.00 | 42.50 | 34.50 | - | G-INS-M25-M68N-PNES-GY | 1411126 | 5 |
| M32 | 15.00 - 21.00 | 36.00 | 36.00 | 10.00 | 32.00 | 50.80 | 40.80 | - | G-INS-M32-M68N-PNES-GY | 1411127 | 5 |
| M40 | 19.00 - 28.00 | 46.00 | 46.00 | 10.00 | 40.00 | 55.10 | 45.10 | - | G-INS-M40-M68N-PNES-GY | 1411128 | 5 |
| M50 | 30.00 - 38.00 | 60.00 | 60.00 | 18.00 | 50.00 | 71.70 | 53.70 | - | G-INS-M50-L68L-PNES-GY | 1411129 | 1 |
| M63 | 34.00 - 44.00 | 65.00 | 65.00 | 18.00 | 63.00 | 75.40 | 57.40 | - | G-INS-M63-L68L-PNES-GY | 1411130 | 1 |

## Plastic counter nut, metric, EN 60423

- Material: polyamide 6
- Color: silver-gray (RAL 7001)
- Ambient temperature: -20°C ... +80°C

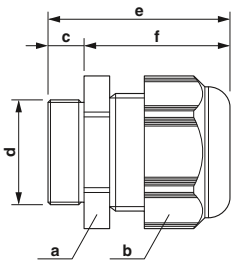


Plastic counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | - | 18.00 | - | - | 12.00 | 5.00 | - | - | A-INL-M12-P-GY | 1411205 | 10 |
| M16 | - | 22.00 | - | - | 16.00 | 5.00 | - | - | A-INL-M16-P-GY | 1411206 | 10 |
| M20 | - | 26.00 | - | - | 20.00 | 6.00 | - | - | A-INL-M20-P-GY | 1411207 | 5 |
| M25 | - | 32.00 | - | - | 25.00 | 6.00 | - | - | A-INL-M25-P-GY | 1411208 | 5 |
| M32 | - | 41.00 | - | - | 32.00 | 7.00 | - | - | A-INL-M32-P-GY | 1411209 | 5 |
| M40 | - | 50.00 | - | - | 40.00 | 7.00 | - | - | A-INL-M40-P-GY | 1411210 | 5 |
| M50 | - | 60.00 | - | - | 50.00 | 8.00 | - | - | A-INL-M50-P-GY | 1411211 | 5 |
| M63 | - | 75.00 | - | - | 63.00 | 8.00 | - | - | A-INL-M63-P-GY | 1411212 | 5 |

## Plastic cable gland, metric, EN 60423

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Seal: neoprene
- Ambient temperature: -30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar
- Strain relief: integrated according to EN 50262



Plastic cable gland

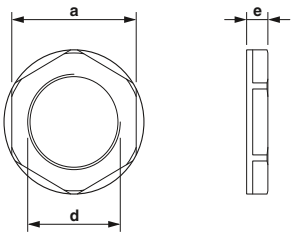
243143 / QCRV.E320158 / 40024418

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | 3.00 - 6.50 | 15.00 | 15.00 | 8.00 | 12.00 | 32.10 | 24.10 | - | G-INS-M12-S68N-PNES-BK | 1411131 | 10 |
| M16 | 5.00 - 10.00 | 22.00 | 22.00 | 10.00 | 16.00 | 39.70 | 29.70 | - | G-INS-M16-S68N-PNES-BK | 1411132 | 10 |
| M20 | 6.00 - 12.00 | 24.00 | 24.00 | 10.00 | 20.00 | 42.30 | 32.30 | - | G-INS-M20-S68N-PNES-BK | 1411133 | 5 |
| M25 | 11.00 - 17.00 | 29.00 | 29.00 | 8.00 | 25.00 | 42.50 | 34.50 | - | G-INS-M25-M68N-PNES-BK | 1411134 | 5 |
| M32 | 15.00 - 21.00 | 36.00 | 36.00 | 10.00 | 32.00 | 50.80 | 40.80 | - | G-INS-M32-M68N-PNES-BK | 1411136 | 5 |
| M40 | 19.00 - 28.00 | 46.00 | 46.00 | 10.00 | 40.00 | 55.10 | 45.10 | - | G-INS-M40-M68N-PNES-BK | 1411137 | 5 |
| M50 | 30.00 - 38.00 | 60.00 | 60.00 | 18.00 | 50.00 | 71.70 | 53.70 | - | G-INS-M50-L68L-PNES-BK | 1411138 | 1 |
| M63 | 34.00 - 44.00 | 65.00 | 65.00 | 18.00 | 63.00 | 75.40 | 57.40 | - | G-INS-M63-L68L-PNES-BK | 1411139 | 1 |

Ordering data

## Plastic counter nut, metric, EN 60423

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Ambient temperature: -20°C ... +80°C



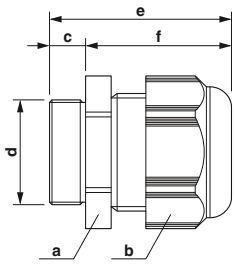
Plastic counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | - | 18.00 | - | - | 12.00 | 5.00 | - | - | A-INL-M12-P-BK | 1411213 | 10 |
| M16 | - | 22.00 | - | - | 16.00 | 5.00 | - | - | A-INL-M16-P-BK | 1411214 | 10 |
| M20 | - | 26.00 | - | - | 20.00 | 6.00 | - | - | A-INL-M20-P-BK | 1411215 | 5 |
| M25 | - | 32.00 | - | - | 25.00 | 6.00 | - | - | A-INL-M25-P-BK | 1411216 | 5 |
| M32 | - | 41.00 | - | - | 32.00 | 7.00 | - | - | A-INL-M32-P-BK | 1411217 | 5 |
| M40 | - | 50.00 | - | - | 40.00 | 7.00 | - | - | A-INL-M40-P-BK | 1411218 | 5 |
| M50 | - | 60.00 | - | - | 50.00 | 8.00 | - | - | A-INL-M50-P-BK | 1411219 | 5 |
| M63 | - | 75.00 | - | - | 63.00 | 8.00 | - | - | A-INL-M63-P-BK | 1411220 | 5 |

Ordering data

## Plastic cable gland, Pg, EN 40430

- Material: polyamide 6
- Color: silver-gray (RAL 7001)
- Seal: neoprene
- Ambient temperature: -30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar
- Strain relief: integrated according to EN 50262



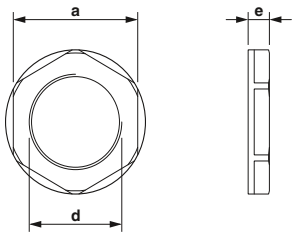
Plastic cable gland

243143 / QCRV2.E320158

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pg7 | 3.00 - 6.50 | 15.00 | 15.00 | 8.00 | 12.50 | 32.70 | 24.70 | - | G-INS-PG7-S68N-PNES-GY | 1411140 | 10 |
| Pg9 | 4.00 - 8.00 | 19.00 | 19.00 | 8.00 | 15.20 | 36.20 | 28.20 | - | G-INS-PG9-S68N-PNES-GY | 1411141 | 10 |
| Pg11 | 5.00 - 10.00 | 22.00 | 22.00 | 8.00 | 18.60 | 38.10 | 30.10 | - | G-INS-PG11-S68N-PNES-GY | 1411142 | 5 |
| Pg13.5 | 6.00 - 12.00 | 24.00 | 24.00 | 9.00 | 20.40 | 40.00 | 31.00 | - | G-INS-PG13,5-S68N-PNES-GY | 1411143 | 5 |
| Pg16 | 10.00 - 14.00 | 27.00 | 27.00 | 10.00 | 22.50 | 44.20 | 34.20 | - | G-INS-PG16-S68N-PNES-GY | 1411144 | 5 |
| Pg21 | 13.00 - 18.00 | 33.00 | 33.00 | 11.00 | 28.30 | 49.30 | 38.30 | - | G-INS-PG21-M68N-PNES-GY | 1411145 | 5 |
| Pg29 | 18.00 - 25.00 | 42.00 | 42.00 | 11.00 | 37.00 | 53.90 | 42.90 | - | G-INS-PG29-M68N-PNES-GY | 1411146 | 5 |
| Pg36 | 22.00 - 32.00 | 53.00 | 53.00 | 13.00 | 47.00 | 65.40 | 52.40 | - | G-INS-PG36-L68N-PNES-GY | 1411147 | 5 |
| Pg42 | 30.00 - 38.00 | 60.00 | 60.00 | 13.00 | 54.00 | 65.90 | 52.90 | - | G-INS-PG42-L68N-PNES-GY | 1411149 | 1 |
| Pg48 | 34.00 - 44.00 | 65.00 | 65.00 | 14.00 | 59.30 | 68.80 | 54.80 | - | G-INS-PG48-L68N-PNES-GY | 1411150 | 1 |

## Plastic counter nut, Pg, EN 40430

- Material: polyamide 6
- Color: silver-gray (RAL 7001)
- Ambient temperature: -20°C ... +80°C

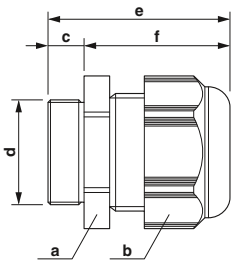


Plastic counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pg7 | - | 19.00 | - | - | 12.50 | 5.00 | - | - | A-INL-PG7-P-GY | 1411221 | 10 |
| Pg9 | - | 22.00 | - | - | 15.20 | 5.00 | - | - | A-INL-PG9-P-GY | 1411222 | 10 |
| Pg11 | - | 24.00 | - | - | 18.60 | 5.00 | - | - | A-INL-PG11-P-GY | 1411223 | 5 |
| Pg13.5 | - | 27.00 | - | - | 20.40 | 6.00 | - | - | A-INL-PG13,5-P-GY | 1411224 | 5 |
| Pg16 | - | 30.00 | - | - | 22.50 | 6.00 | - | - | A-INL-PG16-P-GY | 1411225 | 5 |
| Pg21 | - | 36.00 | - | - | 28.30 | 7.00 | - | - | A-INL-PG21-P-GY | 1411226 | 5 |
| Pg29 | - | 46.00 | - | - | 37.00 | 7.00 | - | - | A-INL-PG29-P-GY | 1411227 | 5 |
| Pg36 | - | 60.00 | - | - | 47.00 | 8.00 | - | - | A-INL-PG36-P-GY | 1411228 | 5 |
| Pg42 | - | 65.00 | - | - | 54.00 | 8.00 | - | - | A-INL-PG42-P-GY | 1411229 | 5 |
| Pg48 | - | 70.00 | - | - | 59.30 | 8.00 | - | - | A-INL-PG48-P-GY | 1411230 | 5 |

## Plastic cable gland, NPT, ANSI B1.20.1

- Material: polyamide 6
- Color: silver-gray (RAL 7001)
- Seal: neoprene
- Ambient temperature: -30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar
- Strain relief: integrated according to EN 50262



Plastic cable gland

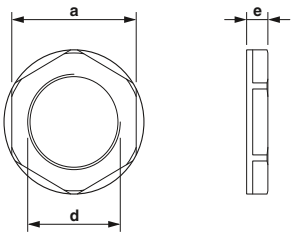
243143 / QCRV.E320158

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NPT3/8" | 5.00 - 10.00 | 22.00 | 22.00 | 15.00 | 16.60 | 44.50 | 29.50 | - | G-INS-N3/8-S68L-PNES-GY | 1411152 | 10 |
| NPT1/2" | 10.00 - 14.00 | 27.00 | 27.00 | 15.00 | 20.60 | 47.10 | 32.10 | - | G-INS-N1/2-S68L-PNES-GY | 1411153 | 10 |
| NPT3/4" | 13.00 - 18.00 | 33.00 | 33.00 | 15.00 | 25.90 | 47.50 | 35.50 | - | G-INS-N3/4-M68L-PNES-GY | 1411154 | 5 |
| NPT1" | 18.00 - 25.00 | 42.00 | 42.00 | 18.00 | 32.40 | 58.50 | 40.50 | - | G-INS-N1-M68L-PNES-GY | 1411155 | 5 |

Ordering data

## Plastic counter nut, NPT, ANSI B1.20.1

- Material: polyamide 6
- Color: silver-gray (RAL 7001)
- Ambient temperature: -20°C ... +80°C



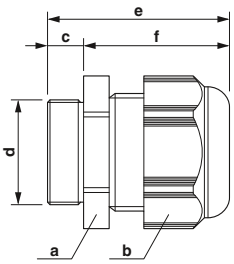
Plastic counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NPT3/8" | - | 22.00 | - | - | 16.60 | 5.00 | - | - | A-INL-NPT3/8-P-GY | 1411231 | 10 |
| NPT1/2" | - | 27.00 | - | - | 20.60 | 5.00 | - | - | A-INL-NPT1/2-P-GY | 1411233 | 10 |
| NPT3/4" | - | 33.00 | - | - | 25.90 | 5.00 | - | - | A-INL-NPT3/4-P-GY | 1411234 | 5 |
| NPT1" | - | 47.00 | - | - | 32.40 | 6.00 | - | - | A-INL-NPT1-P-GY | 1411235 | 5 |

Ordering data

## Plastic cable gland, NPT, ANSI B1.20.1

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Seal: neoprene
- Ambient temperature: -30°C ... +80°C (+150°C briefly)
- Degree of protection: IP68, 5 bar
- Strain relief: integrated according to EN 50262



Plastic cable gland

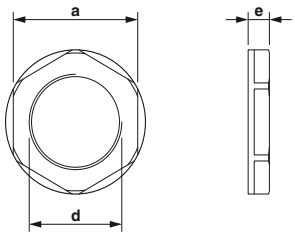
243143 / QCRV.E320158

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NPT3/8" | 5.00 - 10.00 | 22.00 | 22.00 | 15.00 | 16.60 | 44.50 | 29.50 | - | G-INS-N3/8-S68L-PNES-BK | 1411156 | 10 |
| NPT1/2" | 10.00 - 14.00 | 27.00 | 27.00 | 15.00 | 20.60 | 47.10 | 32.10 | - | G-INS-N1/2-S68L-PNES-BK | 1411157 | 10 |
| NPT3/4" | 13.00 - 18.00 | 33.00 | 33.00 | 12.00 | 25.90 | 47.50 | 35.50 | - | G-INS-N3/4-M68L-PNES-BK | 1411158 | 5 |
| NPT1" | 18.00 - 25.00 | 42.00 | 42.00 | 18.00 | 32.40 | 58.50 | 40.50 | - | G-INS-N1-M68L-PNES-BK | 1411159 | 5 |

Ordering data

## Plastic counter nut, NPT, ANSI B1.20.1

- Material: polyamide 6
- Color: deep black (RAL 9005)
- Ambient temperature: -20°C ... +80°C



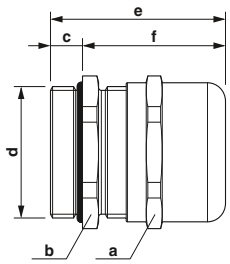
Plastic counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NPT3/8" | - | 22.00 | - | - | 16.60 | 5.00 | - | - | A-INL-NPT3/8-P-BK | 1411236 | 10 |
| NPT1/2" | - | 27.00 | - | - | 20.60 | 5.00 | - | - | A-INL-NPT1/2-P-BK | 1411237 | 10 |
| NPT3/4" | - | 33.00 | - | - | 25.90 | 5.00 | - | - | A-INL-NPT3/4-P-BK | 1411238 | 5 |
| NPT1" | - | 47.00 | - | - | 32.40 | 6.00 | - | - | A-INL-NPT1-P-BK | 1411239 | 5 |

Ordering data

## Brass cable gland, metric, EN 60423

- Material: brass, nickel-plated
- Seal: neoprene
- Clamping insert: polyamide 6
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP69K
- Strain relief: integrated according to EN 50262



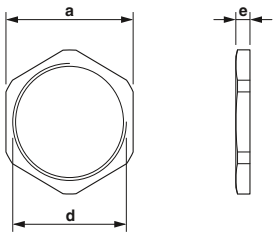
Brass cable gland

QCRV.E320158

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | 3.00 - 6.50 | 14.00 | 14.00 | 6.00 | 12.00 | 27.80 | 21.80 | - | G-INS-M12-S68N-NNES-S | 1411160 | 10 |
| M16 | 5.00 - 10.00 | 20.00 | 20.00 | 7.00 | 16.00 | 34.50 | 27.50 | - | G-INS-M16-S68N-NNES-S | 1411162 | 10 |
| M20 | 6.00 - 12.00 | 22.00 | 22.00 | 8.00 | 20.00 | 37.50 | 29.50 | - | G-INS-M20-S68N-NNES-S | 1411163 | 5 |
| M25 | 11.00 - 17.00 | 27.00 | 27.00 | 8.00 | 25.00 | 40.00 | 32.00 | - | G-INS-M25-M68N-NNES-S | 1411165 | 5 |
| M32 | 15.00 - 21.00 | 34.00 | 34.00 | 8.00 | 32.00 | 43.00 | 35.00 | - | G-INS-M32-M68N-NNES-S | 1411166 | 5 |
| M40 | 19.00 - 28.00 | 43.00 | 43.00 | 9.00 | 40.00 | 53.70 | 44.70 | - | G-INS-M40-M68N-NNES-S | 1411167 | 5 |
| M50 | 27.00 - 38.00 | 58.00 | 58.00 | 9.00 | 50.00 | 61.00 | 52.00 | - | G-INS-M50-L68N-NNES-S | 1411168 | 1 |
| M63 | 34.00 - 44.00 | 64.00 | 68.00 | 14.00 | 63.00 | 65.20 | 51.20 | - | G-INS-M63-L68N-NNES-S | 1411169 | 1 |

## Brass counter nut, metric, EN 60423

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C

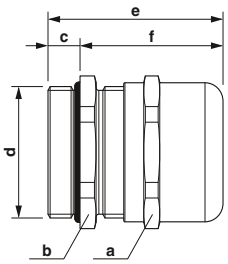


Brass counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | - | 15.00 | - | - | 12.00 | 2.80 | - | - | A-INL-M12-N-S | 1411240 | 100 |
| M16 | - | 19.00 | - | - | 16.00 | 2.80 | - | - | A-INL-M16-N-S | 1411241 | 100 |
| M20 | - | 24.00 | - | - | 20.00 | 3.00 | - | - | A-INL-M20-N-S | 1411242 | 100 |
| M25 | - | 30.00 | - | - | 25.00 | 3.50 | - | - | A-INL-M25-N-S | 1411243 | 100 |
| M32 | - | 36.00 | - | - | 32.00 | 4.00 | - | - | A-INL-M32-N-S | 1411244 | 100 |
| M40 | - | 46.00 | - | - | 40.00 | 5.00 | - | - | A-INL-M40-N-S | 1411246 | 50 |
| M50 | - | 57.00 | - | - | 50.00 | 5.00 | - | - | A-INL-M50-N-S | 1411247 | 25 |
| M63 | - | 70.00 | - | - | 63.00 | 6.00 | - | - | A-INL-M63-N-S | 1411248 | 25 |

## Brass cable gland, Pg, EN 40430

- Material: brass, nickel-plated
- Seal: neoprene
- Clamping insert: polyamide 6
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68/IP69K
- Strain relief: integrated according to EN 50262



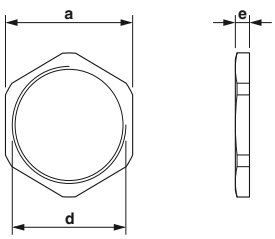
Brass cable gland

QCRV.E320158

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pg7 | 3.00 - 6.50 | 14.00 | 14.00 | 6.00 | 12.50 | 27.80 | 21.80 | - | G-INS-PG7-S68N-NNES-S | 1411170 | 10 |
| Pg9 | 4.00 - 8.00 | 17.00 | 17.00 | 6.00 | 15.20 | 28.20 | 22.20 | - | G-INS-PG9-S68N-NNES-S | 1411171 | 10 |
| Pg11 | 5.00 - 10.00 | 20.00 | 20.00 | 6.00 | 18.60 | 21.00 | 15.00 | - | G-INS-PG11-S68N-NNES-S | 1411172 | 5 |
| Pg13.5 | 6.00 - 12.00 | 22.00 | 22.00 | 6.50 | 20.40 | 30.50 | 24.00 | - | G-INS-PG13,5-S68N-NNES-S | 1411173 | 5 |
| Pg16 | 10.00 - 14.00 | 24.00 | 24.00 | 6.50 | 22.50 | 33.90 | 27.40 | - | G-INS-PG16-S68N-NNES-S | 1411174 | 5 |
| Pg21 | 13.00 - 18.00 | 30.00 | 30.00 | 7.20 | 28.30 | 38.50 | 31.30 | - | G-INS-PG21-M68N-NNES-S | 1411175 | 5 |
| Pg29 | 18.00 - 25.00 | 40.00 | 40.00 | 8.00 | 37.00 | 46.90 | 38.90 | - | G-INS-PG29-M68N-NNES-S | 1411176 | 5 |
| Pg36 | 22.00 - 32.00 | 50.00 | 50.00 | 9.00 | 47.00 | 57.20 | 48.20 | - | G-INS-PG36-L68N-NNES-S | 1411178 | 5 |
| Pg42 | 30.00 - 38.00 | 58.00 | 58.00 | 12.00 | 54.00 | 60.00 | 48.00 | - | G-INS-PG42-L68N-NNES-S | 1411179 | 1 |
| Pg48 | 34.00 - 44.00 | 64.00 | 64.00 | 14.00 | 59.30 | 63.40 | 49.40 | - | G-INS-PG48-L68N-NNES-S | 1411181 | 1 |

## Brass counter nut, Pg, EN 40430

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C

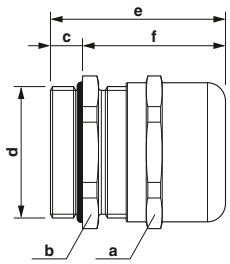


Brass counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pg7 | - | 15.00 | - | - | 12.50 | 2.80 | - | - | A-INL-PG7-N-S | 1411255 | 100 |
| Pg9 | - | 18.00 | - | - | 15.20 | 2.80 | - | - | A-INL-PG9-N-S | 1411256 | 100 |
| Pg11 | - | 21.00 | - | - | 18.60 | 3.00 | - | - | A-INL-PG11-N-S | 1411257 | 100 |
| Pg13.5 | - | 23.00 | - | - | 20.40 | 3.00 | - | - | A-INL-PG13,5-N-S | 1411259 | 100 |
| Pg16 | - | 26.00 | - | - | 22.50 | 3.00 | - | - | A-INL-PG16-N-S | 1411260 | 100 |
| Pg21 | - | 32.00 | - | - | 28.30 | 3.50 | - | - | A-INL-PG21-N-S | 1411262 | 100 |
| Pg29 | - | 41.00 | - | - | 37.00 | 4.00 | - | - | A-INL-PG29-N-S | 1411263 | 50 |
| Pg36 | - | 51.00 | - | - | 47.00 | 5.00 | - | - | A-INL-PG36-N-S | 1411264 | 50 |
| Pg42 | - | 60.00 | - | - | 54.00 | 5.00 | - | - | A-INL-PG42-N-S | 1411265 | 25 |
| Pg48 | - | 64.00 | - | - | 59.30 | 5.50 | - | - | A-INL-PG48-N-S | 1411266 | 25 |

## Brass cable gland, NPT, ANSI B1.20.1

- Material: brass, nickel-plated
- Seal: neoprene
- Clamping insert: polyamide 6
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68, 5 bar
- Strain relief: integrated according to EN 50262



Brass cable gland

QCRV2.E320158

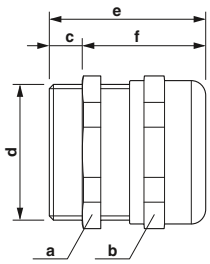
| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|---|
| NPT3/8" | 5.00 - 10.00 | 17.00 | 19.00 | 11.50 | 16.00 | 34.50 | 23.00 | - |
| NPT1/2" | 10.00 - 14.00 | 22.00 | 22.00 | 13.00 | 21.00 | 39.00 | 26.00 | - |
| NPT3/4" | 13.00 - 18.00 | 30.00 | 30.00 | 13.00 | 29.00 | 48.50 | 35.50 | - |
| NPT1" | 18.00 - 25.00 | 40.00 | 43.00 | 13.00 | 32.00 | 56.00 | 43.00 | - |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **G-INS-NPT3/8-S68L-NNES-S** | **1411182** | 10 |
| **G-INS-NPT1/2-S68L-NNES-S** | **1411183** | 10 |
| **G-INS-NPT3/4-M68L-NNES-S** | **1411184** | 5 |
| **G-INS-NPT1-M68L-NNES-S** | **1411185** | 5 |

## Brass EMC cable gland, metric, EN 60423

- Material: brass, nickel-plated
- Seal: CR/NBR
- Clamping insert: polyamide 6
- Contact spring: stainless steel
- O-ring: NBR
- Ambient temperature (operation): -20°C ... +100°C
- Degree of protection: IP68
- Strain relief: integrated according to EN 50262



Brass cable gland

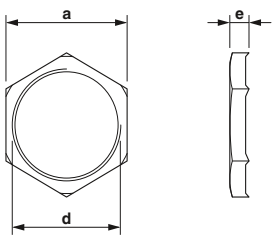
QCRV.E140310 / QCRV2.E140310

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | 3.00 - 6.50 | 14.00 | 14.00 | 6.00 | 12.00 | 28.00 | 22.00 | - | G-INSEC-M12-S68N-NCRS-S | 1411187 | 10 |
| M16 | 5.00 - 9.00 | 17.00 | 17.00 | 5.00 | 16.00 | 30.00 | 25.00 | - | G-INSEC-M16-S68N-NCRS-S | 1411188 | 10 |
| M20 | 9.00 - 13.00 | 22.00 | 22.00 | 6.00 | 20.00 | 33.50 | 27.50 | - | G-INSEC-M20-S68N-NCRS-S | 1411189 | 5 |
| M25 | 11.00 - 16.00 | 27.00 | 27.00 | 7.00 | 25.00 | 36.50 | 29.50 | - | G-INSEC-M25-S68N-NCRS-S | 1411190 | 5 |
| M32 | 14.00 - 21.00 | 34.00 | 34.00 | 8.00 | 32.00 | 38.00 | 30.00 | - | G-INSEC-M32-M68N-NCRS-S | 1411191 | 5 |
| M40 | 19.00 - 27.00 | 43.00 | 43.00 | 8.00 | 40.00 | 41.00 | 33.00 | - | G-INSEC-M40-M68N-NCRS-S | 1411192 | 5 |
| M50 | 24.00 - 35.00 | 55.00 | 55.00 | 9.00 | 50.00 | 49.50 | 40.50 | - | G-INSEC-M50-L68N-NCRS-S | 1411193 | 1 |
| M63 | 32.00 - 42.00 | 65.00 | 65.00 | 10.00 | 63.00 | 52.50 | 42.50 | - | G-INSEC-M63-L68N-NCRS-S | 1411194 | 1 |

Ordering data

## Brass counter nut, metric, EN 60423, ribbed

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C
- Version: ribbed



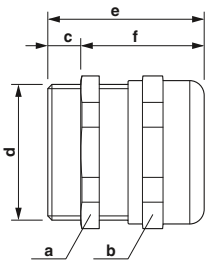
Brass counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M12 | - | 15.00 | - | - | 12.00 | 4.70 | - | - | A-INLE-M12-N-S | 1411267 | 100 |
| M16 | - | 19.00 | - | - | 16.00 | 4.70 | - | - | A-INLE-M16-N-S | 1411268 | 100 |
| M20 | - | 24.00 | - | - | 20.00 | 4.70 | - | - | A-INLE-M20-N-S | 1411269 | 100 |
| M25 | - | 30.00 | - | - | 25.00 | 5.20 | - | - | A-INLE-M25-N-S | 1411270 | 50 |
| M32 | - | 36.00 | - | - | 32.00 | 5.70 | - | - | A-INLE-M32-N-S | 1411271 | 50 |
| M40 | - | 46.00 | - | - | 40.00 | 6.50 | - | - | A-INLE-M40-N-S | 1411272 | 50 |
| M50 | - | 57.00 | - | - | 50.00 | 6.50 | - | - | A-INLE-M50-N-S | 1411273 | 10 |
| M63 | - | 70.00 | - | - | 63.00 | 7.00 | - | - | A-INLE-M63-N-S | 1411274 | 10 |

Ordering data

## Brass EMC cable gland, Pg, EN 40430

- Material: brass, nickel-plated
- Seal: neoprene
- Clamping insert: polyamide 6
- Contact spring: copper beryllium
- O-ring: NBR
- Ambient temperature: -40°C ... +100°C
- Degree of protection: IP68
- Strain relief: integrated according to EN 50262



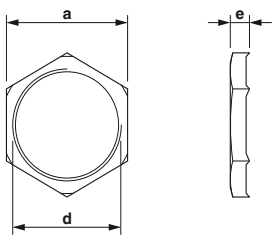
Brass cable gland

QCRV2.E320158

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pg7 | 3.00 - 6.50 | 14.00 | 14.00 | 6.00 | 12.50 | 27.00 | 21.00 | - | G-INSEC-PG7-S68N-NNES-S | 1411195 | 10 |
| Pg9 | 4.00 - 8.00 | 17.00 | 17.00 | 6.00 | 15.20 | 29.00 | 23.00 | - | G-INSEC-PG9-S68N-NNES-S | 1411196 | 10 |
| Pg11 | 5.00 - 10.00 | 20.00 | 20.00 | 6.00 | 18.60 | 30.00 | 24.00 | - | G-INSEC-PG11-S68N-NNES-S | 1411197 | 5 |
| Pg13.5 | 6.00 - 12.00 | 22.00 | 22.00 | 6.50 | 20.40 | 30.00 | 23.50 | - | G-INSEC-PG13,5-S68N-NNES-S | 1411198 | 5 |
| Pg16 | 10.00 - 14.00 | 24.00 | 24.00 | 6.50 | 22.50 | 33.90 | 27.40 | - | G-INSEC-PG16-S68N-NNES-S | 1411199 | 5 |
| Pg21 | 13.00 - 18.00 | 30.00 | 30.00 | 7.20 | 28.30 | 38.50 | 31.30 | - | G-INSEC-PG21-M68N-NNES-S | 1411200 | 5 |
| Pg29 | 18.00 - 25.00 | 40.00 | 40.00 | 8.00 | 37.00 | 47.00 | 39.00 | - | G-INSEC-PG29-M68N-NNES-S | 1411201 | 5 |
| Pg36 | 22.00 - 32.00 | 50.00 | 50.00 | 9.00 | 47.00 | 57.00 | 48.00 | - | G-INSEC-PG36-L68N-NNES-S | 1411202 | 5 |
| Pg42 | 30.00 - 38.00 | 58.00 | 58.00 | 12.00 | 54.00 | 60.00 | 48.00 | - | G-INSEC-PG42-L68N-NNES-S | 1411203 | 1 |
| Pg48 | 34.00 - 44.00 | 64.00 | 64.00 | 14.00 | 59.30 | 65.00 | 51.00 | - | G-INSEC-PG48-L68N-NNES-S | 1411204 | 1 |

## Brass counter nut, Pg, EN 40430, ribbed

- Material: brass, nickel-plated
- Ambient temperature: -70°C ... +220°C
- Version: ribbed

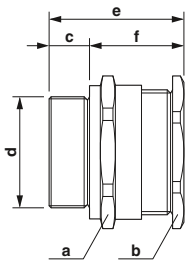


Brass counter nut

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Pg7 | - | 15.00 | - | - | 12.50 | 4.70 | - | - | A-INLE-PG7-N-S | 1411275 | 100 |
| Pg9 | - | 18.00 | - | - | 15.20 | 4.70 | - | - | A-INLE-PG9-N-S | 1411276 | 100 |
| Pg11 | - | 21.00 | - | - | 18.60 | 4.70 | - | - | A-INLE-PG11-N-S | 1411277 | 100 |
| Pg13.5 | - | 23.00 | - | - | 20.40 | 4.70 | - | - | A-INLE-PG13,5-N-S | 1411278 | 100 |
| Pg16 | - | 26.00 | - | - | 22.50 | 4.70 | - | - | A-INLE-PG16-N-S | 1411279 | 100 |
| Pg21 | - | 32.00 | - | - | 28.30 | 5.20 | - | - | A-INLE-PG21-N-S | 1411280 | 50 |
| Pg29 | - | 41.00 | - | - | 37.00 | 5.70 | - | - | A-INLE-PG29-N-S | 1411281 | 50 |
| Pg36 | - | 51.00 | - | - | 47.00 | 6.50 | - | - | A-INLE-PG36-N-S | 1411282 | 50 |

## Brass cable gland, metric, Ex protection

Cable glands for unarmored and braided cables provide flameproof (type “d”), increased safety (type “e”), and restricted breathing (type “nR”) hazardous area protection to IP66, IP67, and IP68.



Brass cable gland

Ex: SIRA13ATEX1068X / IECEx SIR13.0023X

### Technical data

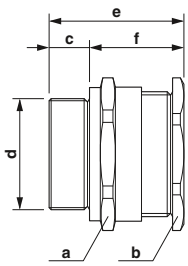
| General data | |
|---|---|
| Cable gland material | Nickel-plated brass |
| Seal material | Thermoplastic elastomers |
| O-ring material | Viton |
| Ambient temperature (operation) | -60°C ... 130°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | 6.50 - 14.00 | 27.00 | 27.00 | 15.00 | 20.00 | 39.00 | 24.00 | - | **G-ESS-M20-S66L-NTES-S** | **1411075** | 20 |
| M25 | 11.10 - 20.00 | 36.00 | 36.00 | 15.00 | 25.00 | 41.00 | 26.00 | - | **G-ESS-M25-M66L-NTES-S** | **1411077** | 20 |
| M32 | 17.00 - 26.30 | 41.00 | 41.00 | 15.00 | 32.00 | 42.00 | 27.00 | - | **G-ESS-M32-M66L-NTES-S** | **1411079** | 10 |
| M40 | 23.50 - 32.20 | 50.00 | 50.00 | 15.00 | 40.00 | 43.00 | 28.00 | - | **G-ESS-M40-L66L-NTES-S** | **1411081** | 2 |
| M50 | 35.60 - 44.10 | 60.00 | 60.00 | 15.00 | 50.00 | 45.00 | 30.00 | - | **G-ESS-M50-L66L-NTES-S** | **1411084** | 2 |
| M63 | 47.20 - 56.00 | 75.00 | 75.00 | 15.00 | 63.00 | 45.00 | 30.00 | - | **G-ESS-M63-L66L-NTES-S** | **1411086** | 2 |

## Stainless steel cable gland, metric, Ex protection

Cable glands for unarmored and braided cables provide flameproof (type “d”), increased safety (type “e”), and restricted breathing (type “nR”) hazardous area protection to IP66, IP67, and IP68.



Stainless steel cable gland

Ex: SIRA13ATEX1068X / IECEx SIR13.0023X

### Technical data

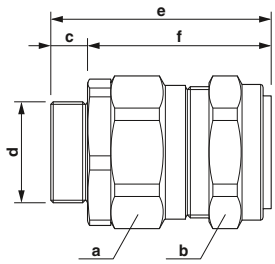
| General data | |
|---|---|
| Cable gland material | High-grade steel |
| Seal material | Thermoplastic elastomers |
| O-ring material | Viton |
| Ambient temperature (operation) | -60°C ... 130°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | 6.50 - 14.00 | 27.00 | 27.00 | 15.00 | 20.00 | 39.00 | 24.00 | - | **G-ESS-M20-S66L-STES-S** | **1411076** | 20 |
| M25 | 11.10 - 20.00 | 36.00 | 36.00 | 15.00 | 25.00 | 41.00 | 26.00 | - | **G-ESS-M25-M66L-STES-S** | **1411078** | 20 |
| M32 | 17.00 - 26.30 | 41.00 | 41.00 | 15.00 | 32.00 | 42.00 | 27.00 | - | **G-ESS-M32-M66L-STES-S** | **1411080** | 10 |
| M40 | 23.50 - 32.20 | 50.00 | 50.00 | 15.00 | 40.00 | 43.00 | 28.00 | - | **G-ESS-M40-L66L-STES-S** | **1411082** | 2 |
| M50 | 35.60 - 44.10 | 60.00 | 60.00 | 15.00 | 50.00 | 45.00 | 30.00 | - | **G-ESS-M50-L66L-STES-S** | **1411085** | 2 |
| M63 | 47.20 - 56.00 | 75.00 | 75.00 | 15.00 | 63.00 | 45.00 | 30.00 | - | **G-ESS-M63-L66L-STES-S** | **1411087** | 2 |

## Brass cable gland, metric, Ex protection

Cable glands for armored cables provide increased safety (type “e”) hazardous area protection to IP66, IP67, and IP68.



Brass cable gland

Ex: SIRA13ATEX1070X / IECEx SIR13.0025X

### Technical data

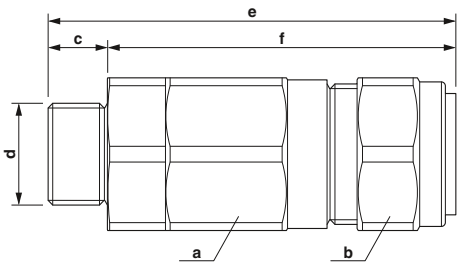
| General data | |
|---|---|
| Cable gland material | Nickel-plated brass |
| Seal material | Thermoplastic elastomers |
| O-ring material | Viton |
| Ambient temperature (operation) | -60°C ... 130°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | 9.50 - 15.90 | 24.00 | 24.00 | 15.00 | 20.00 | 73.50 | 58.50 | - | **G-ESSWU-M20S-S66L-NTES-S** | **1411088** | 10 |
| M20 | 12.50 - 20.90 | 30.50 | 30.50 | 15.00 | 20.00 | 75.50 | 60.50 | - | **G-ESSWU-M20-M66L-NTES-S** | **1411090** | 10 |
| M25 | 18.20 - 26.20 | 37.50 | 37.50 | 15.00 | 25.00 | 82.50 | 67.50 | - | **G-ESSWU-M25-M66L-NTES-S** | **1411092** | 10 |
| M32 | 23.70 - 33.90 | 46.00 | 46.00 | 15.00 | 32.00 | 84.50 | 69.50 | - | **G-ESSWU-M32-L66L-NTES-S** | **1411094** | 5 |
| M40 | 27.90 - 40.40 | 55.00 | 55.00 | 15.00 | 40.00 | 93.00 | 78.00 | - | **G-ESSWU-M40-L66L-NTES-S** | **1411097** | 1 |
| M50 | 40.40 - 53.10 | 70.00 | 70.00 | 15.00 | 50.00 | 95.50 | 80.50 | - | **G-ESSWU-M50-L66L-NTES-S** | **1411100** | 1 |
| M63 | 54.60 - 65.90 | 80.00 | 80.00 | 15.00 | 63.00 | 107.00 | 92.00 | - | **G-ESSWU-M63-L66L-NTES-S** | **1411102** | 1 |

## Stainless steel cable gland, metric, Ex protection

Cable glands for armored cables provide flameproof (type “d”), increased safety (type “e”), and restricted breathing (type “nR”) hazardous area protection to IP66, IP67, and IP68.



Stainless steel cable gland

Ex: SIRA13ATEX1073X / IECEx SIR13.0028X

### Technical data

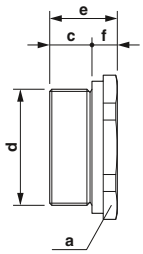
| General data | |
|---|---|
| Cable gland material | High-grade steel |
| Seal material | Thermoplastic elastomers |
| O-ring material | Viton |
| Ambient temperature (operation) | -60°C ... 130°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | 9.50 - 15.90 | 24.00 | 24.00 | 15.00 | 20.00 | 73.50 | 58.50 | - | **G-EDSWU-M20S-S66L-STES-S** | **1411089** | 10 |
| M20 | 12.50 - 20.90 | 30.50 | 30.50 | 15.00 | 20.00 | 75.50 | 60.50 | - | **G-EDSWU-M20-M66L-STES-S** | **1411091** | 10 |
| M25 | 18.20 - 26.20 | 37.50 | 37.50 | 15.00 | 25.00 | 82.50 | 67.50 | - | **G-EDSWU-M25-M66L-STES-S** | **1411093** | 10 |
| M32 | 23.70 - 33.90 | 46.00 | 46.00 | 15.00 | 32.00 | 84.50 | 69.50 | - | **G-EDSWU-M32-L66L-STES-S** | **1411095** | 5 |
| M40 | 27.90 - 40.40 | 55.00 | 55.00 | 15.00 | 40.00 | 93.00 | 78.00 | - | **G-EDSWU-M40-L66L-STES-S** | **1411099** | 1 |
| M50 | 40.40 - 53.10 | 70.00 | 70.00 | 15.00 | 50.00 | 95.50 | 80.50 | - | **G-EDSWU-M50-L66L-STES-S** | **1411101** | 1 |
| M63 | 54.60 - 65.90 | 80.00 | 80.00 | 15.00 | 63.00 | 107.00 | 92.00 | - | **G-EDSWU-M63-L66L-STES-S** | **1411103** | 1 |

## Brass screw plug, metric, Ex protection

Screw plugs provide IP66 and IP68 protection when installed with an entry thread ring, sealing unused cable entries in flameproof (type “d”) and increased safety (type “e”) installations.



Brass screw plug

Ex: SIRA01ATEX1284U / IECEx SIR07.0083X

### Technical data

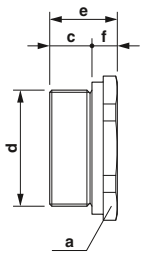
| General data | |
|---|---|
| Material | Nickel-plated brass |
| Ambient temperature (operation) | -60°C ... 200°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | - | 24.00 | - | 15.00 | 20.00 | 24.00 | 9.00 | - | **A-EXSH-M20-68L-N-S** | **1411104** | 20 |
| M25 | - | 30.00 | - | 15.00 | 25.00 | 24.00 | 9.00 | - | **A-EXSH-M25-68L-N-S** | **1411107** | 20 |
| M32 | - | 36.00 | - | 15.00 | 32.00 | 24.00 | 9.00 | - | **A-EXSH-M32-68L-N-S** | **1411109** | 10 |
| M40 | - | 46.00 | - | 15.00 | 40.00 | 24.00 | 9.00 | - | **A-EXSH-M40-68L-N-S** | **1411111** | 5 |
| M50 | - | 55.00 | - | 15.00 | 50.00 | 24.00 | 9.00 | - | **A-EXSH-M50-68L-N-S** | **1411113** | 2 |
| M63 | - | 65.00 | - | 15.00 | 63.00 | 24.00 | 9.00 | - | **A-EXSH-M63-68L-N-S** | **1411115** | 1 |

## Stainless steel screw plug, metric, Ex protection

Screw plugs provide IP66 and IP68 protection when installed with an entry thread ring, sealing unused cable entries in flameproof (type “d”) and increased safety (type “e”) installations.



Stainless steel screw plug

Ex: SIRA01ATEX1284U / IECEx SIR07.0083X

### Technical data

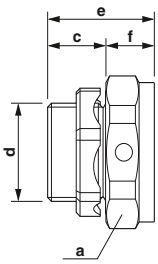
| General data | |
|---|---|
| Material | High-grade steel |
| Ambient temperature (operation) | -60°C ... 200°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | - | 24.00 | - | 15.00 | 20.00 | 24.00 | 9.00 | - | **A-EXSH-M20-68L-S-S** | **1411105** | 20 |
| M25 | - | 30.00 | - | 15.00 | 25.00 | 24.00 | 9.00 | - | **A-EXSH-M25-68L-S-S** | **1411108** | 20 |
| M32 | - | 36.00 | - | 15.00 | 32.00 | 24.00 | 9.00 | - | **A-EXSH-M32-68L-S-S** | **1411110** | 10 |
| M40 | - | 46.00 | - | 15.00 | 40.00 | 24.00 | 9.00 | - | **A-EXSH-M40-68L-S-S** | **1411112** | 5 |
| M50 | - | 55.00 | - | 15.00 | 50.00 | 24.00 | 9.00 | - | **A-EXSH-M50-68L-S-S** | **1411114** | 2 |
| M63 | - | 65.00 | - | 15.00 | 63.00 | 24.00 | 9.00 | - | **A-EXSH-M63-68L-S-S** | **1411116** | 1 |

## Brass pressure compensation, metric, Ex protection

Breather/drain plugs for increased safety (type “e”) provide superior ventilation for devices. They are designed to act as a pressure compensation element preventing moisture build-up to IP66.



**Brass pressure compensation**

Ex: SIRA10ATEX1307U / IECEx SIR10.0149U

### Technical data

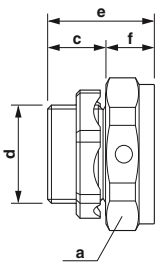
| General data | |
|---|---|
| Material | Nickel-plated brass |
| Ambient temperature (operation) | -20°C ... 130°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | - | 30.00 | - | 15.00 | 20.00 | 28.00 | 13.00 | - | **A-EXB-20-66L-N-S** | **1411117** | 5 |
| M25 | - | 36.00 | - | 15.00 | 25.00 | 28.00 | 13.00 | - | **A-EXB-25-66L-N-S** | **1411120** | 5 |

## Stainless steel pressure compensation, metric, Ex protection

Breather/drain plugs for increased safety (type “e”) provide superior ventilation for devices. They are designed to act as a pressure compensation element preventing moisture build-up to IP66.



**Stainless steel pressure compensation**

Ex: SIRA10ATEX1307U / IECEx SIR10.0149U

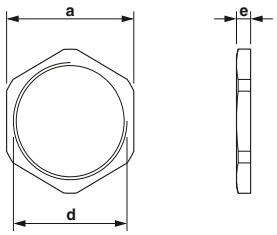
### Technical data

| General data | |
|---|---|
| Material | High-grade steel |
| Ambient temperature (operation) | -20°C ... 130°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | - | 30.00 | - | 15.00 | 20.00 | 28.00 | 13.00 | - | **A-EXB-20-66L-S-S** | **1411118** | 5 |
| M25 | - | 36.00 | - | 15.00 | 25.00 | 28.00 | 13.00 | - | **A-EXB-25-66L-S-S** | **1411121** | 5 |

## Stainless steel counter nut, metric



Stainless steel counter nut

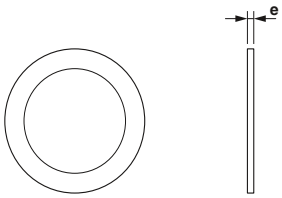
### Technical data

| General data | |
|---|---|
| Material | High-grade steel |
| Ambient temperature (operation) | -70°C ... 220°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | - | 24.00 | - | - | 20.00 | 3.00 | - | - | **A-INL-M20-S-S** | **1411249** | 10 |
| M25 | - | 30.00 | - | - | 25.00 | 3.50 | - | - | **A-INL-M25-S-S** | **1411250** | 10 |
| M32 | - | 36.00 | - | - | 32.00 | 4.00 | - | - | **A-INL-M32-S-S** | **1411251** | 5 |
| M40 | - | 46.00 | - | - | 40.00 | 5.00 | - | - | **A-INL-M40-S-S** | **1411252** | 5 |
| M50 | - | 55.00 | - | - | 50.00 | 5.00 | - | - | **A-INL-M50-S-S** | **1411253** | 2 |
| M63 | - | 70.00 | - | - | 63.00 | 6.00 | - | - | **A-INL-M63-S-S** | **1411254** | 1 |

## Sealing washer, metric



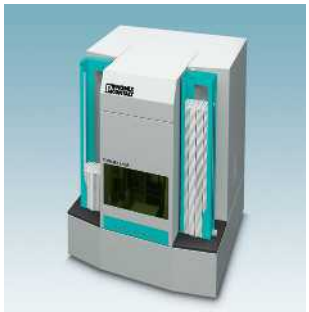
Sealing washer

### Technical data

| General data | |
|---|---|
| Material | Nylon |
| Ambient temperature (operation) | -70°C ... 100°C |

### Ordering data

| Thread type | Clamping area [mm] | Dimensions [mm] a | b | c | d | e | f | g | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| M20 | - | - | - | - | - | 2.00 | - | - | **A-SEW-20-P-W** | **1411283** | 20 |
| M25 | - | - | - | - | - | 2.00 | - | - | **A-SEW-25-P-W** | **1411284** | 20 |
| M32 | - | - | - | - | - | 2.00 | - | - | **A-SEW-32-P-W** | **1411285** | 20 |
| M40 | - | - | - | - | - | 2.00 | - | - | **A-SEW-40-P-W** | **1411286** | 20 |
| M50 | - | - | - | - | - | 2.00 | - | - | **A-SEW-50-P-W** | **1411287** | 10 |
| M63 | - | - | - | - | - | 2.00 | - | - | **A-SEW-63-P-W** | **1411288** | 10 |



Desktop laser marker

**TOPMARK LASER** Page 244

Stainless steel or aluminum
laser cable marking

**LS-WMTB ...** Page 246

Stainless steel or aluminum
laser device marking

**LS-EMSP ...** Page 250
**LS-EMLP ...** Page 252
**LS-EMP ...** Page 254

Plastic laser device marking

**LS-EMLP ...** Page 256

Laser device marking, laser foil

**LS-EML ...** Page 262

Terminal marking for terminal blocks
from other manufacturers

**UM1-TM ..., UM1U-TM ...,**
**UM1-TMF ...** Page 264

Terminal marking,
marker strips

**TMT ...** Page 266

UniCard conductor and cable marking

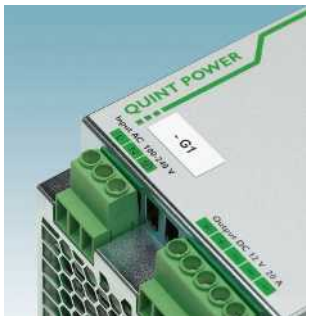
**UCT-WMCO ...** Page 268
**UCT-WMTBA ...** Page 270

Plastic cable markers

**KMK HP ...** Page 272
**KMK UV ...** Page 274

UniCard device marking, for applications
in process technology and process engineering

**UC-EMLP ... EX** Page 276
**EML ... EX** Page 277




UniSheet device marking,
with very high adhesive strength

**US-EMLP-HA ...** Page 278

System marking, RFID system

Handheld
**RFMARK HF / UHF** Page 280
Marking
**UCT-PMLP ...** Page 282
**UCT-PMP ...** Page 284

Wireless exchange of printing data

**MARKING system app and MINI FD BLUETOOTH** Page 288

Marking solutions with planning and marking software

Customer-specific printing service
**CLIP PROJECT ...** Page 290

Crimping tool, portable hand-held device

**CRIMPHANDY 1.0 mm** Page 292

Customized tool sets and personalized tools

**TOOL ... CUS** Page 296
**CRIMPFOX ... CUS** Page 298
**WIREFOX ... CUS** Page 301

# Marking systems, tools, and mounting material

Optimize all of the processes involved in the setup, installation, and maintenance of your control cabinets and switchgear. We offer optimally coordinated products from our marking, tool, and mounting material ranges.

## MARKING system

MARKING system provides the perfect solutions for terminal, conductor, cable, device, and system marking.
It places at your disposal the CLIP PROJECT planning and marking software, various printing systems, and a wide variety of marking materials.

## TOOL fox

TOOL fox is the complete range of professional processing and measuring tools. Designed for use in all processes in electrical engineering, the tools and automatic devices impress with their optimum handling and quality.

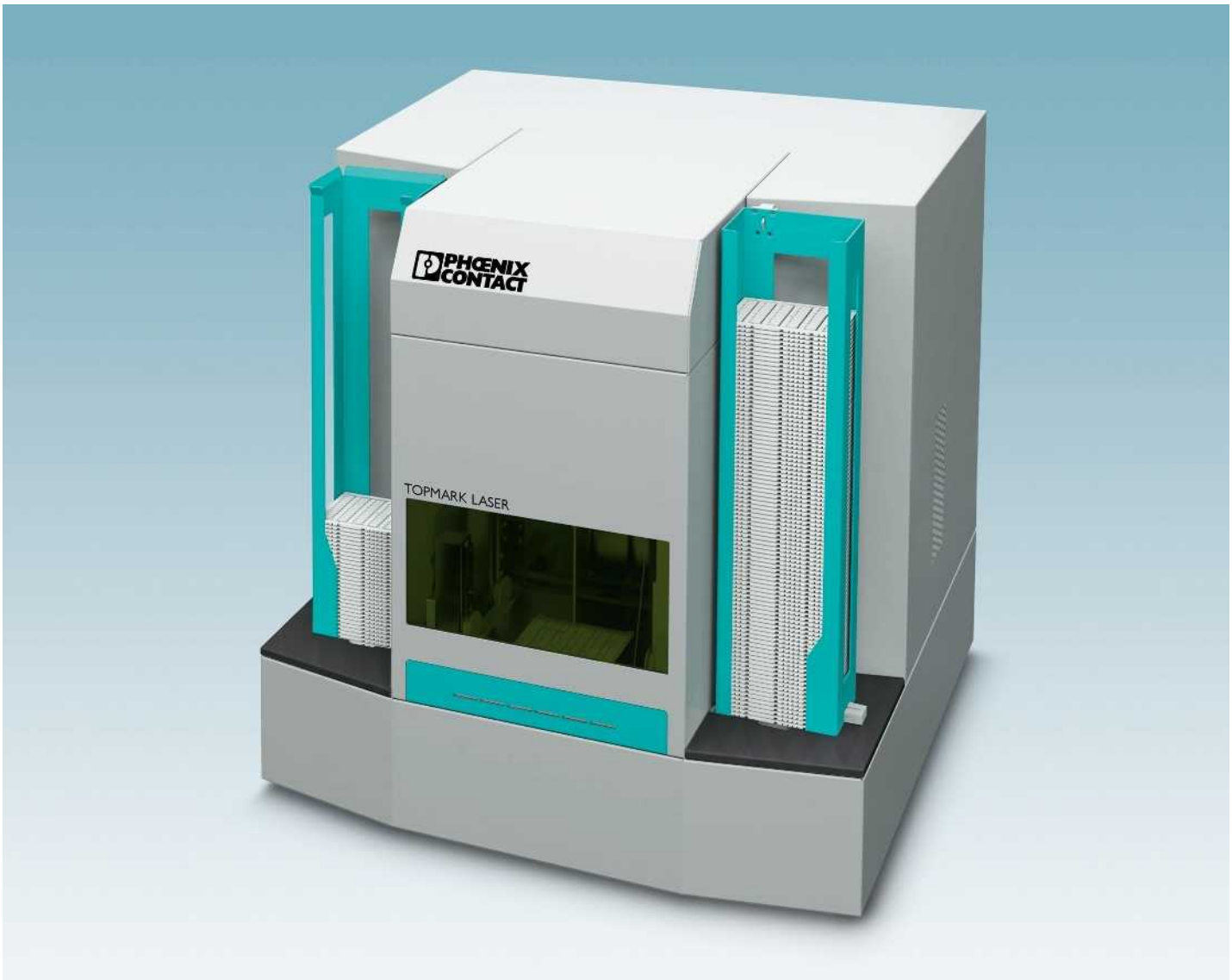
## CABINET add-on

CABINET add-on stands for modern control cabinet technology. DIN rails and end brackets ensure the secure attachment of terminal blocks and modules, while shield connection clamps guarantee EMC-compliant wiring and cable ducts bring order to the control cabinet.

## Service

Choose the complete range. Working to your specifications, we will manufacture and label terminal strips and complete terminal boxes or modules for direct installation in your application.

## TOPMARK LASER - MARKING system



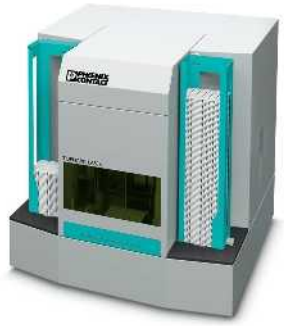
The TOPMARK LASER marking system provides you with the flexibility to implement the requirements of challenging industrial identification. With a comprehensive product range of over 400 markers for your terminal, conductor, cable, and device marking, you will find the ideal solution for your application.

The stainless steel material can be marked in two ways: through material removal (engraving) or annealing marking. The latter involves changing the color of the material while the material surface remains level.

You can easily mark all materials in the UCT product range with the automated material handling of the TOPMARK LASER. The laser marker automatically detects the material sheets fed in. This means that you can carry out marking quickly and effectively - without time-consuming parameter settings.

## TOPMARK LASER, desktop laser marker for card material and material sheets

Direct laser marking



Integration in the CLIP PROJECT planning and marking software makes the TOPMARK LASER the fastest desktop laser marker in its class - and the easiest to use. You can now mark all materials without special knowledge of laser technology.

- Wide range of materials comprising stainless steel, aluminum, ABS, polyacrylics, and polycarbonate
- Preset optimized laser parameters are available for all material types
- Automatic material detection enables fast and effective marking
- The material sheet can be easily reused by creating a project code

### Technical data

| | | | | |
|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height |
| | [mm] | **664** | **630** | **682** |
| **General data** | | | | |
| Temperature range | [°C] | 5 ... 40 | | |
| Marking method | | Direct laser marking | | |
| Laser system | | Ytterbium fiber laser, pulsed, 1064 nm | | |
| Laser class | | Laser class 1 according to EN 60825-1 classification | | |
| Interfaces | | 10/100 Mbps Ethernet | | |
| Power supply | [V] | 100 ... 240 | | |
| Weight | [kg] | 98 | | |
| Operating systems | | MS Windows XP SP3, MS Windows Vista, MS Windows 7 (32/64-bit), MS Windows 8 (32/64-bit) | | |
| Power consumption | [W] | 450 | | |
| CW laser power (continuous wave) | [W] | 20 | | |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Laser marker and MARKING NOTEBOOK,** incl. CLIP PROJECT professional software and installed drivers, user manual, sheet hopper, card hopper and 230 V extraction unit<br>With German operating system and German keyboard | | **TOPMARK LASER** | **0831831** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Carriage,** for accommodating TOPMARK LASER, extraction unit, and MARKING NOTEBOOK | **TOPMARK LASER STATION** | **0831835** | 1 |
| **Sheet hopper,** for TOPMARK LASER | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |
| **Card hopper,** for TOPMARK LASER | **TOPMARK LASER-MAG CARD** | **0831837** | 1 |

## Marking material for TOPMARK LASER - MARKING system

### Stainless steel and aluminum cable marking for assembly with cable binders

– The LS-WMTB ... product range is available in stainless steel (V4A) or aluminum and includes markers that can be quickly and easily fitted with cable binders
– The LS-WMTB-V4A ... group is particularly characterized by its high resistance to salt water, chloride, and solvents and it is therefore also suitable for the most demanding industrial requirements

– Automatic material detection enables fast and effective marking without time-consuming parameter settings
– The material sheet can be easily reused by creating a project code
– **Designation example: LS-WMTB-V4A (29x8)**
Lettering field size: 29 x 8 mm

– The use of modern laser technology creates highly resistant and permanent marking, which can only be removed by destroying the material
– The LS-WMTB-V4A ... product group can be marked in two ways: by engraving or annealing
– Labeling service: Phoenix Contact can custom-label all markers according to your requirements

Can be marked using:

**Direct laser marking**

| General data |
|---|
| Can be marked with |
| Material |
| Wipe resistance |
| Components |

| Description |
|---|
| **Stainless steel label,** for assembly with cable binders, conductor diameter |
| 36-section, > 2.9 mm Ø |
| 16-section, > 4.6 mm Ø |
| 16-section, > 4.6 mm Ø |
| 8-section, > 4.6 mm Ø |
| **Aluminum label,** for assembly with cable binders, conductor diameter |
| 36-section, > 2.9 mm Ø |
| 16-section, > 4.6 mm Ø |
| 16-section, > 4.6 mm Ø |
| 8-section, > 4.6 mm Ø |
| **Stainless steel label,** for assembly with cable binders, conductor diameter, **marked according to customer specifications**[1]) |
| 36-section, > 2.9 mm Ø |
| 16-section, > 4.6 mm Ø |
| 16-section, > 4.6 mm Ø |
| 8-section, > 4.6 mm Ø |
| **Aluminum label,** for assembly with cable binders, conductor diameter, **marked according to customer specifications**[1]) |
| 36-section, > 2.9 mm Ø |
| 16-section, > 4.6 mm Ø |
| 16-section, > 4.6 mm Ø |
| 8-section, > 4.6 mm Ø |

| |
|---|
| **Sheet hopper,** for TOPMARK LASER |

**Notes:**

For matching stainless steel cable binders, see page 580 in main catalog 5 or the product area on our website at phoenixcontact.net/products.

[1]) For an ordering example, see page 358 in main catalog 5.

PRINTED FOR YOU

**Stainless steel, material thickness: 0.5 mm**

### Technical data

TOPMARK LASER
V4A
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-WMTB-V4A (29X8) | 0831516 | 5 |
| LS-WMTB-V4A (40X15) | 0831517 | 5 |
| LS-WMTB-V4A (60X15) | 0831518 | 5 |
| LS-WMTB-V4A (100X15) | 0831519 | 5 |
| LS-WMTB-V4A (29X8) CUS | 0831802 | 1 |
| LS-WMTB-V4A (40X15) CUS | 0831803 | 1 |
| LS-WMTB-V4A (60X15) CUS | 0831804 | 1 |
| LS-WMTB-V4A (100X15) CUS | 0831805 | 1 |

### Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

PRINTED FOR YOU

**Aluminum, material thickness: 0.8 mm**

### Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-WMTB-AL (29X8) | 0831500 | 5 |
| LS-WMTB-AL (40X15) | 0831501 | 5 |
| LS-WMTB-AL (60X15) | 0831502 | 5 |
| LS-WMTB-AL (100X15) | 0831503 | 5 |
| LS-WMTB-AL (29X8) CUS | 0831786 | 1 |
| LS-WMTB-AL (40X15) CUS | 0831787 | 1 |
| LS-WMTB-AL (60X15) CUS | 0831788 | 1 |
| LS-WMTB-AL (100X15) CUS | 0831789 | 1 |

### Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

PRINTED FOR YOU

**Aluminum, black, material thickness: 0.8 mm**

### Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-WMTB-AL (29X8) BK | 0831508 | 5 |
| LS-WMTB-AL (40X15) BK | 0831509 | 5 |
| LS-WMTB-AL (60X15) BK | 0831510 | 5 |
| LS-WMTB-AL (100X15) BK | 0831511 | 5 |
| LS-WMTB-AL (29X8) BK CUS | 0831794 | 1 |
| LS-WMTB-AL (40X15) BK CUS | 0831795 | 1 |
| LS-WMTB-AL (60X15) BK CUS | 0831796 | 1 |
| LS-WMTB-AL (100X15) BK CUS | 0831797 | 1 |

### Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Marking material for TOPMARK LASER - MARKING system

### Stainless steel and aluminum cable marking for assembly with cable binders

– The LS-WMTB ... product range in circular format is available in stainless steel (V4A) or aluminum and includes markers that can be quickly and easily fitted with cable binders
– The LS-WMTB-V4A ... group is particularly characterized by its high resistance to saltwater, chloride, and solvents and it is therefore also suitable for the most demanding industrial requirements

– Automatic material detection enables fast and effective marking without time-consuming parameter settings
– The material sheet can be easily reused by creating a project code
– **Designation example: LS-WMTB-V4A (D25)**
Diameter: 25 mm

– The use of modern laser technology creates highly resistant and permanent marking, which can only be removed by destroying the material
– The LS-WMTB-V4A ... product group can be marked in two ways: by engraving or annealing
– Labeling service: Phoenix Contact can custom-label all markers according to your requirements

Can be marked using:

**Direct laser marking**

| General data |
|---|
| Can be marked with |
| Material |
| Wipe resistance |
| Components |

| Description |
|---|
| **Stainless steel label,** round, for assembly with cable binders |
| 30-section, diameter: 25 mm<br>20-section, diameter: 30 mm |
| **Aluminum label,** round, for assembly with cable binders |
| 30-section, diameter: 25 mm<br>20-section, diameter: 30 mm |
| **Stainless steel label,** round, for assembly with cable binders, **labeled according to customer specifications**[1]) |
| 30-section, diameter: 25 mm<br>20-section, diameter: 30 mm |
| **Aluminum label,** round, for assembly with cable binders, **labeled according to customer specifications**[1]) |
| 30-section, diameter: 25 mm<br>20-section, diameter: 30 mm |

| |
|---|
| **Sheet hopper,** for TOPMARK LASER |

**Notes:**

For matching stainless steel cable binders, see page 580 in main catalog 5 or the product area on our website at phoenixcontact.net/products.

[1]) For an ordering example, see page 358 in main catalog 5.

PRINTED FOR YOU

**Stainless steel, material thickness: 0.5 mm**

### Technical data

TOPMARK LASER
V4A
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **LS-WMTB-V4A (D25)** | **0831520** | 5 |
| **LS-WMTB-V4A (D30)** | **0831521** | 5 |
| **LS-WMTB-V4A (D25) CUS** | **0831806** | 1 |
| **LS-WMTB-V4A (D30) CUS** | **0831807** | 1 |

### Accessories

| | | |
|---|---|---|
| **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

PRINTED FOR YOU

**Aluminum, material thickness: 0.8 mm**

### Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **LS-WMTB-AL (D25)** | **0831504** | 5 |
| **LS-WMTB-AL (D30)** | **0831505** | 5 |
| **LS-WMTB-AL (D25) CUS** | **0831790** | 1 |
| **LS-WMTB-AL (D30) CUS** | **0831791** | 1 |

### Accessories

| | | |
|---|---|---|
| **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

PRINTED FOR YOU

**Aluminum, black, material thickness: 0.8 mm**

### Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **LS-WMTB-AL (D25) BK** | **0831512** | 5 |
| **LS-WMTB-AL (D30) BK** | **0831513** | 5 |
| **LS-WMTB-AL (D25) BK CUS** | **0831798** | 1 |
| **LS-WMTB-AL (D30) BK CUS** | **0831799** | 1 |

### Accessories

| | | |
|---|---|---|
| **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

## Marking material for TOPMARK LASER - MARKING system

### Stainless steel and aluminum device marking for screwing or riveting

- The LS-EMSP ... product range is available in stainless steel (V4A) or aluminum and includes markers that can be quickly and easily fitted with screws or rivets
- The LS-EMSP-V4A ... group is particularly characterized by its high resistance to saltwater, chloride, and solvents and is therefore also suitable for the most demanding industrial requirements
- The LS-EMSP-V4A ... product group can be permanently marked in two ways: by engraving or annealing
- **Designation example: LS-EMSP-V4A (39x15)**
  Lettering field size: 39 x 15 mm
- Labeling service: Phoenix Contact can custom-label all markers according to your requirements

| Notes: |
|---|
| For matching rivets for securing the LS-EMSP-V4A ... and LS-EMSP-AL ..., see page 370 in main catalog 5 or the product area on our website at phoenixcontact.net/products. |
| For drilling diagrams, visit phoenixcontact.net/products. |
| [1]) For an ordering example, see page 358 in main catalog 5. |
| [2]) From lettering field size 110 x 80 to 170 x 180 mm, the material thickness is 1.5 mm. |

Can be marked using:

**Direct laser marking**

PRINTED FOR YOU

**Stainless steel, material thickness: 0.5 mm**

### Technical data

| General data | |
|---|---|
| Can be marked with | TOPMARK LASER |
| Material | V4A |
| Wipe resistance | DIN EN 61010-1 (VDE 0411-1) |
| Components | Free from silicone, halogen, and cadmium |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Marking label,** with mounting holes 3.2 mm in diameter | | | |
| 24-section | **LS-EMSP-V4A (39X15)** | **0831653** | 5 |
| 16-section | **LS-EMSP-V4A (50X15)** | **0831654** | 5 |
| 10-section | **LS-EMSP-V4A (50X30)** | **0831655** | 5 |
| 6-section | **LS-EMSP-V4A (75,6X54)** | **0831656** | 5 |
| 2-section | **LS-EMSP-V4A (90X60)** | **0831657** | 5 |
| 2-section | | | |
| 2-section | | | |
| 1-section | | | |
| 1-section | | | |
| **Marking label,** with mounting holes 3.2 mm in diameter | | | |
| 10-section, red | | | |
| 10-section, orange | | | |
| 10-section, blue | | | |
| 10-section, green | | | |
| 6-section, red | | | |
| 6-section, orange | | | |
| 6-section, blue | | | |
| 6-section, green | | | |
| **Marking label,** with mounting holes 3.2 mm in diameter, **marked according to customer specifications**[1]) | | | |
| 24-section | **LS-EMSP-V4A (39X15) CUS** | **0831939** | 1 |
| 16-section | **LS-EMSP-V4A (50X15) CUS** | **0831940** | 1 |
| 10-section | **LS-EMSP-V4A (50X30) CUS** | **0831941** | 1 |
| 6-section | **LS-EMSP-V4A (75,6X54) CUS** | **0831942** | 1 |
| 2-section | **LS-EMSP-V4A (90X60) CUS** | **0831943** | 1 |
| 2-section | | | |
| 2-section | | | |
| 1-section | | | |
| 1-section | | | |
| **Marking label,** with mounting holes 3.2 mm in diameter, **marked according to customer specifications**[1]) | | | |
| 10-section, red | | | |
| 10-section, orange | | | |
| 10-section, blue | | | |
| 10-section, green | | | |
| 6-section, red | | | |
| 6-section, orange | | | |
| 6-section, blue | | | |
| 6-section, green | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Sheet hopper,** for TOPMARK LASER | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

PRINTED FOR YOU

**Aluminum,**
**material thickness: 0.8 mm²)**

### Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMSP-AL (39X15) | 0831615 | 5 |
| LS-EMSP-AL (50X15) | 0831616 | 5 |
| LS-EMSP-AL (50X30) | 0831617 | 5 |
| LS-EMSP-AL (75,6X54) | 0831618 | 5 |
| LS-EMSP-AL (90X60) | 0831619 | 5 |
| LS-EMSP-AL (110X80) | 0831620 | 5 |
| LS-EMSP-AL (150X80) | 0831621 | 5 |
| LS-EMSP-AL (150X120) | 0831622 | 5 |
| LS-EMSP-AL (170X180) | 0831623 | 5 |
| LS-EMSP-AL (39X15) CUS | 0831901 | 1 |
| LS-EMSP-AL (50X15) CUS | 0831902 | 1 |
| LS-EMSP-AL (50X30) CUS | 0831903 | 1 |
| LS-EMSP-AL (75,6X54) CUS | 0831904 | 1 |
| LS-EMSP-AL (90X60) CUS | 0831905 | 1 |
| LS-EMSP-AL (110X80) CUS | 0831906 | 1 |
| LS-EMSP-AL (150X80) CUS | 0831907 | 1 |
| LS-EMSP-AL (150X120) CUS | 0831908 | 1 |
| LS-EMSP-AL (170X180) CUS | 0831909 | 1 |

### Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

PRINTED FOR YOU

**Aluminum, black,**
**material thickness: 0.8 mm²)**

### Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMSP-AL (39X15) BK | 0831626 | 5 |
| LS-EMSP-AL (50X15) BK | 0831627 | 5 |
| LS-EMSP-AL (50X30) BK | 0831628 | 5 |
| LS-EMSP-AL (75,6X54) BK | 0831629 | 5 |
| LS-EMSP-AL (90X60) BK | 0831630 | 5 |
| LS-EMSP-AL (110X80) BK | 0831631 | 5 |
| LS-EMSP-AL (150X80) BK | 0831632 | 5 |
| LS-EMSP-AL (150X120) BK | 0831633 | 5 |
| LS-EMSP-AL (170X180) BK | 0831634 | 5 |
| LS-EMSP-AL (39X15) BK CUS | 0831912 | 1 |
| LS-EMSP-AL (50X15) BK CUS | 0831913 | 1 |
| LS-EMSP-AL (50X30) BK CUS | 0831914 | 1 |
| LS-EMSP-AL (75,6X54) BK CUS | 0831915 | 1 |
| LS-EMSP-AL (90X60) BK CUS | 0831916 | 1 |
| LS-EMSP-AL (110X80) BK CUS | 0831917 | 1 |
| LS-EMSP-AL (150X80) BK CUS | 0831918 | 1 |
| LS-EMSP-AL (150X120) BK CUS | 0831919 | 1 |
| LS-EMSP-AL (170X180) BK CUS | 0831920 | 1 |

### Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

PRINTED FOR YOU

**Aluminum, colored,**
**material thickness: 0.8 mm**

### Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMSP-AL (50X30) RD | 0831637 | 5 |
| LS-EMSP-AL (50X30) OG | 0831641 | 5 |
| LS-EMSP-AL (50X30) BU | 0831645 | 5 |
| LS-EMSP-AL (50X30) GN | 0831649 | 5 |
| LS-EMSP-AL (75,6X54) RD | 0831638 | 5 |
| LS-EMSP-AL (75,6X54) OG | 0831642 | 5 |
| LS-EMSP-AL (75,6X54) BU | 0831646 | 5 |
| LS-EMSP-AL (75,6X54) GN | 0831650 | 5 |
| LS-EMSP-AL (50X30) RD CUS | 0831923 | 1 |
| LS-EMSP-AL (50X30) OG CUS | 0831927 | 1 |
| LS-EMSP-AL (50X30) BU CUS | 0831931 | 1 |
| LS-EMSP-AL (50X30) GN CUS | 0831935 | 1 |
| LS-EMSP-AL (75,6X54) RD CUS | 0831924 | 1 |
| LS-EMSP-AL (75,6X54) OG CUS | 0831928 | 1 |
| LS-EMSP-AL (75,6X54) BU CUS | 0831932 | 1 |
| LS-EMSP-AL (75,6X54) GN CUS | 0831936 | 1 |

### Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Marking material for TOPMARK LASER - MARKING system

### Adhesive aluminum device marking

– The aluminum LS-EMLP-AL ... product range includes self-adhesive device markers with a high adhesive strength
– The use of modern laser technology creates highly resistant and permanent marking, which can only be removed by destroying the material
– Automatic material detection enables fast and effective marking without time-consuming parameter settings
– The material sheet can be easily reused by creating a project code
– **Designation example: LS-EMLP-AL (27x15)**
Lettering field size: 27 x 15 mm
– Labeling service: Phoenix Contact can custom-label all markers according to your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

Can be marked using:

**Direct laser marking**

PRINTED FOR YOU

**Aluminum, material thickness: 0.8 mm**

### Technical data

| | |
|---|---|
| **General data** | |
| Can be marked with | TOPMARK LASER |
| Material | Aluminum |
| Wipe resistance | DIN EN 61010-1 (VDE 0411-1) |
| Components | Free from silicone, halogen, and cadmium |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Marking label,** aluminum, self-adhesive | | | |
| 40-section | **LS-EMLP-AL (27X15)** | **0831580** | 5 |
| 35-section | **LS-EMLP-AL (27X18)** | **0831581** | 5 |
| 24-section | **LS-EMLP-AL (49X15)** | **0831582** | 5 |
| 16-section | **LS-EMLP-AL (60X15)** | **0831583** | 5 |
| 10-section | **LS-EMLP-AL (60X30)** | **0831584** | 5 |
| 6-section | **LS-EMLP-AL (85,6X54)** | **0831585** | 5 |
| 2-section | **LS-EMLP-AL (100X60)** | **0831586** | 5 |
| **Marking label,** aluminum, self-adhesive | | | |
| 10-section, red | | | |
| 10-section, orange | | | |
| 10-section, blue | | | |
| 10-section, green | | | |
| 6-section, red | | | |
| 6-section, orange | | | |
| 6-section, blue | | | |
| 6-section, green | | | |
| **Marking label,** aluminum, self-adhesive, **marked according to customer specifications**[1]) | | | |
| 40-section | **LS-EMLP-AL (27X15) CUS** | **0831866** | 1 |
| 35-section | **LS-EMLP-AL (27X18) CUS** | **0831867** | 1 |
| 24-section | **LS-EMLP-AL (49X15) CUS** | **0831868** | 1 |
| 16-section | **LS-EMLP-AL (60X15) CUS** | **0831869** | 1 |
| 10-section | **LS-EMLP-AL (60X30) CUS** | **0831870** | 1 |
| 6-section | **LS-EMLP-AL (85,6X54) CUS** | **0831871** | 1 |
| 2-section | **LS-EMLP-AL (100X60) CUS** | **0831872** | 1 |
| **Marking label,** aluminum, self-adhesive, **marked according to customer specifications**[1]) | | | |
| 10-section, red | | | |
| 10-section, orange | | | |
| 10-section, blue | | | |
| 10-section, green | | | |
| 6-section, red | | | |
| 6-section, orange | | | |
| 6-section, blue | | | |
| 6-section, green | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Sheet hopper,** for TOPMARK LASER | | | |
| | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

PRINTED FOR YOU

**Aluminum, black,**
**material thickness: 0.8 mm**

PRINTED FOR YOU

**Aluminum, colored,**
**material thickness: 0.8 mm**

## Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMLP-AL (27X15) BK | 0831589 | 5 |
| LS-EMLP-AL (27X18) BK | 0831590 | 5 |
| LS-EMLP-AL (49X15) BK | 0831591 | 5 |
| LS-EMLP-AL (60X15) BK | 0831592 | 5 |
| LS-EMLP-AL (60X30) BK | 0831593 | 5 |
| LS-EMLP-AL (85,6X54) BK | 0831594 | 5 |
| LS-EMLP-AL (100X60) BK | 0831595 | 5 |
| LS-EMLP-AL (27X15) BK CUS | 0831875 | 1 |
| LS-EMLP-AL (27X18) BK CUS | 0831876 | 1 |
| LS-EMLP-AL (49X15) BK CUS | 0831877 | 1 |
| LS-EMLP-AL (60X15) BK CUS | 0831878 | 1 |
| LS-EMLP-AL (60X30) BK CUS | 0831879 | 1 |
| LS-EMLP-AL (85,6X54) BK CUS | 0831880 | 1 |
| LS-EMLP-AL (100X60) BK CUS | 0831881 | 1 |

## Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMLP-AL (60X30) RD | 0831598 | 5 |
| LS-EMLP-AL (60X30) OG | 0831602 | 5 |
| LS-EMLP-AL (60X30) BU | 0831606 | 5 |
| LS-EMLP-AL (60X30) GN | 0831610 | 5 |
| LS-EMLP-AL (85,6X54) RD | 0831599 | 5 |
| LS-EMLP-AL (85,6X54) OG | 0831603 | 5 |
| LS-EMLP-AL (85,6X54) BU | 0831607 | 5 |
| LS-EMLP-AL (85,6X54) GN | 0831611 | 5 |
| LS-EMLP-AL (60X30) RD CUS | 0831884 | 1 |
| LS-EMLP-AL (60X30) OG CUS | 0831888 | 1 |
| LS-EMLP-AL (60X30) BU CUS | 0831892 | 1 |
| LS-EMLP-AL (60X30) GN CUS | 0831896 | 1 |
| LS-EMLP-AL (85,6X54) RD CUS | 0831885 | 1 |
| LS-EMLP-AL (85,6X54) OG CUS | 0831889 | 1 |
| LS-EMLP-AL (85,6X54) BU CUS | 0831893 | 1 |
| LS-EMLP-AL (85,6X54) GN CUS | 0831897 | 1 |

## Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Marking material for TOPMARK LASER - MARKING system

### Aluminum device marking for snapping into marker carriers

- The aluminum LS-EMP-AL ... product range includes markers that can be quickly and easily fitted into existing CARRIER-EMP ... label frames
- The use of modern laser technology creates highly resistant and permanent marking, which can only be removed by destroying the material
- Automatic material detection enables fast and effective marking without time-consuming parameter settings
- The material sheet can be easily reused by creating a project code
- **Designation example: LS-EMP-AL (27x15)**
  Lettering field size: 27 x 15 mm
- Labeling service: Phoenix Contact can custom-label all markers according to your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

Can be marked using:

**Direct laser marking**

PRINTED FOR YOU

**Aluminum, material thickness: 0.8 mm**

### Technical data

| | |
|---|---|
| **General data** | |
| Can be marked with | TOPMARK LASER |
| Material | Aluminum |
| Wipe resistance | DIN EN 61010-1 (VDE 0411-1) |
| Components | Free from silicone, halogen, and cadmium |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Marking label,** aluminum, can be snapped into marker carriers | | | |
| 40-section | **LS-EMP-AL (27X15)** | **0831661** | 5 |
| 35-section | **LS-EMP-AL (27X18)** | **0831662** | 5 |
| 24-section | **LS-EMP-AL (49X15)** | **0831663** | 5 |
| 16-section | **LS-EMP-AL (60X15)** | **0831664** | 5 |
| 10-section | **LS-EMP-AL (60X30)** | **0831665** | 5 |
| 6-section | **LS-EMP-AL (85,6X54)** | **0831666** | 5 |
| 2-section | **LS-EMP-AL (100X60)** | **0831667** | 5 |
| **Marking label,** aluminum, can be snapped into marker carriers, **marked according to customer specifications**[1]) | | | |
| 40-section | **LS-EMP-AL (27X15) CUS** | **0831947** | 1 |
| 35-section | **LS-EMP-AL (27X18) CUS** | **0831948** | 1 |
| 24-section | **LS-EMP-AL (49X15) CUS** | **0831949** | 1 |
| 16-section | **LS-EMP-AL (60X15) CUS** | **0831950** | 1 |
| 10-section | **LS-EMP-AL (60X30) CUS** | **0831951** | 1 |
| 6-section | **LS-EMP-AL (85,6X54) CUS** | **0831952** | 1 |
| 2-section | **LS-EMP-AL (100X60) CUS** | **0831953** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Sheet hopper,** for TOPMARK LASER | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |
| **Marker carriers**, for snap-in labels | | | |
| Marker size: 27 x 15 mm | **CARRIER-EMP (27X15)** | **0827451** | 80 |
| Marker size: 49 x 15 mm | **CARRIER-EMP (49X15)** | **0827452** | 40 |
| Marker size: 60 x 15 mm | **CARRIER-EMP (60X15)** | **0827453** | 40 |
| Marker size: 60 x 30 mm | **CARRIER-EMP (60X30)** | **0827454** | 30 |
| Marker size: 85 x 54 mm | **CARRIER-EMP (85,6X54)** | **0829365** | 10 |
| **Marker carriers,** for snap-in labels, for buttons and switches 22 mm in diameter | | | |
| Marker size: 27 x 15 mm | **CARRIER-EMP 22 (27X15)** | **0827447** | 50 |
| Marker size: 27 x 18 mm | **CARRIER-EMP 22 (27X18)** | **0827448** | 50 |

PRINTED FOR YOU

**Aluminum, black, material thickness: 0.8 mm**

## Technical data

TOPMARK LASER
Aluminum
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMP-AL (27X15) BK | 0831669 | 5 |
| LS-EMP-AL (27X18) BK | 0831670 | 5 |
| LS-EMP-AL (49X15) BK | 0831671 | 5 |
| LS-EMP-AL (60X15) BK | 0831672 | 5 |
| LS-EMP-AL (60X30) BK | 0831673 | 5 |
| LS-EMP-AL (85,6X54) BK | 0831674 | 5 |
| LS-EMP-AL (100X60) BK | 0831675 | 5 |
| LS-EMP-AL (27X15) BK CUS | 0831955 | 1 |
| LS-EMP-AL (27X18) BK CUS | 0831956 | 1 |
| LS-EMP-AL (49X15) BK CUS | 0831957 | 1 |
| LS-EMP-AL (60X15) BK CUS | 0831958 | 1 |
| LS-EMP-AL (60X30) BK CUS | 0831959 | 1 |
| LS-EMP-AL (85,6X54) BK CUS | 0831960 | 1 |
| LS-EMP-AL (100X60) BK CUS | 0831961 | 1 |

## Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |
| CARRIER-EMP (27X15) | 0827451 | 80 |
| CARRIER-EMP (49X15) | 0827452 | 40 |
| CARRIER-EMP (60X15) | 0827453 | 40 |
| CARRIER-EMP (60X30) | 0827454 | 30 |
| CARRIER-EMP (85,6X54) | 0829365 | 10 |
| CARRIER-EMP 22 (27X15) | 0827447 | 50 |
| CARRIER-EMP 22 (27X18) | 0827448 | 50 |

## Marking material for TOPMARK LASER - MARKING system

### Plastic adhesive device marking

- The LS-EMLP ... product range includes self-adhesive double-layer plastic device markers
- A wide range of different marker sizes is available for custom designs
- Automatic material detection enables fast and effective marking without time-consuming parameter settings
- The material sheet can be easily reused by creating a project code
- **Designation example:**
  **LS-EMLP (11x9) SR**
  Lettering field size: 11 x 9 mm,
  silver material with black marking

Can be marked using:

**Direct laser marking**

**White, material thickness: 0.8 mm**

### Technical data

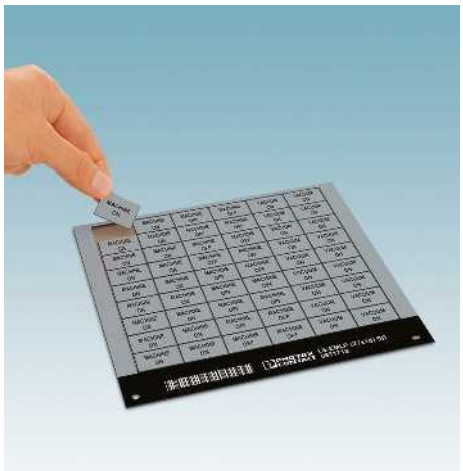
| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | TOPMARK LASER |
| Material | | TRANSPLY-ABS |
| Temperature range | [°C] | -20 ... 85 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and halogen |

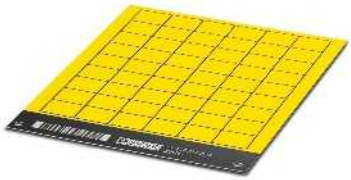
### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Plastic label sheet,** self-adhesive, double-layer plastic labels | | | |
| 1 sheet = 255 labels | **LS-EMLP (11X9) WH** | **0831678** | 10 |
| 1 sheet = 221 labels | **LS-EMLP (13X9) WH** | **0831679** | 10 |
| 1 sheet = 220 labels | **LS-EMLP (17X7) WH** | **0831680** | 10 |
| 1 sheet = 170 labels | **LS-EMLP (17X9) WH** | **0831681** | 10 |
| 1 sheet = 130 labels | **LS-EMLP (17,5X12) WH** | **0831682** | 10 |
| 1 sheet = 100 labels | **LS-EMLP (17,5X15) WH** | **0831683** | 10 |
| 1 sheet = 176 labels | **LS-EMLP (20X7) WH** | **0831684** | 10 |
| 1 sheet = 160 labels | **LS-EMLP (20X8) WH** | **0831685** | 10 |
| 1 sheet = 104 labels | **LS-EMLP (22X12) WH** | **0831686** | 10 |
| 1 sheet = 56 labels | **LS-EMLP (22X22) WH** | **0831687** | 10 |
| 1 sheet = 120 labels | **LS-EMLP (27X8) WH** | **0831688** | 10 |
| 1 sheet = 78 labels | **LS-EMLP (27X12,5) WH** | **0831689** | 10 |
| 1 sheet = 60 labels | **LS-EMLP (27X15) WH** | **0831690** | 10 |
| 1 sheet = 54 labels | **LS-EMLP (27X18) WH** | **0831691** | 10 |
| 1 sheet = 36 labels | **LS-EMLP (27X27) WH** | **0831692** | 10 |
| 1 sheet = 33 labels | **LS-EMLP (45X14) WH** | **0831693** | 10 |
| 1 sheet = 30 labels | **LS-EMLP (45X15) WH** | **0831694** | 10 |
| 1 sheet = 30 labels | **LS-EMLP (49X15) WH** | **0831695** | 10 |
| 1 sheet = 20 labels | **LS-EMLP (60X15) WH** | **0831696** | 10 |
| 1 sheet = 10 labels | **LS-EMLP (60X30) WH** | **0831697** | 10 |
| 1 sheet = 6 labels | **LS-EMLP (85,6X54) WH** | **0831698** | 10 |
| 1 sheet = 2 labels | **LS-EMLP (100X60) WH** | **0831699** | 10 |

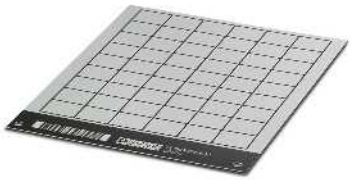
### Accessories

| | | | |
|---|---|---|---|
| **Sheet hopper,** for TOPMARK LASER | | | |
| | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |





Yellow, material thickness: 0.8 mm



Silver, material thickness: 0.8 mm

## Technical data

TOPMARK LASER
TRANSPLY-ABS
-20 ... 85
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and halogen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMLP (11X9) YE | 0831732 | 10 |
| LS-EMLP (13X9) YE | 0831733 | 10 |
| LS-EMLP (17X7) YE | 0831734 | 10 |
| LS-EMLP (17X9) YE | 0831735 | 10 |
| LS-EMLP (17,5X12) YE | 0831736 | 10 |
| LS-EMLP (17,5X15) YE | 0831737 | 10 |
| LS-EMLP (20X7) YE | 0831738 | 10 |
| LS-EMLP (20X8) YE | 0831739 | 10 |
| LS-EMLP (22X12) YE | 0831740 | 10 |
| LS-EMLP (22X22) YE | 0831741 | 10 |
| LS-EMLP (27X8) YE | 0831742 | 10 |
| LS-EMLP (27X12,5) YE | 0831743 | 10 |
| LS-EMLP (27X15) YE | 0831744 | 10 |
| LS-EMLP (27X18) YE | 0831745 | 10 |
| LS-EMLP (27X27) YE | 0831746 | 10 |
| LS-EMLP (45X14) YE | 0831747 | 10 |
| LS-EMLP (45X15) YE | 0831748 | 10 |
| LS-EMLP (49X15) YE | 0831749 | 10 |
| LS-EMLP (60X15) YE | 0831750 | 10 |
| LS-EMLP (60X30) YE | 0831751 | 10 |
| LS-EMLP (85,6X54) YE | 0831752 | 10 |
| LS-EMLP (100X60) YE | 0831753 | 10 |

## Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Technical data

TOPMARK LASER
TRANSPLY-ABS
-20 ... 85
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and halogen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMLP (11X9) SR | 0831705 | 10 |
| LS-EMLP (13X9) SR | 0831706 | 10 |
| LS-EMLP (17X7) SR | 0831707 | 10 |
| LS-EMLP (17X9) SR | 0831708 | 10 |
| LS-EMLP (17,5X12) SR | 0831709 | 10 |
| LS-EMLP (17,5X15) SR | 0831710 | 10 |
| LS-EMLP (20X7) SR | 0831711 | 10 |
| LS-EMLP (20X8) SR | 0831712 | 10 |
| LS-EMLP (22X12) SR | 0831713 | 10 |
| LS-EMLP (22X22) SR | 0831714 | 10 |
| LS-EMLP (27X8) SR | 0831715 | 10 |
| LS-EMLP (27X12,5) SR | 0831716 | 10 |
| LS-EMLP (27X15) SR | 0831717 | 10 |
| LS-EMLP (27X18) SR | 0831718 | 10 |
| LS-EMLP (27X27) SR | 0831719 | 10 |
| LS-EMLP (45X14) SR | 0831720 | 10 |
| LS-EMLP (45X15) SR | 0831721 | 10 |
| LS-EMLP (49X15) SR | 0831722 | 10 |
| LS-EMLP (60X15) SR | 0831723 | 10 |
| LS-EMLP (60X30) SR | 0831724 | 10 |
| LS-EMLP (85,6X54) SR | 0831725 | 10 |
| LS-EMLP (100X60) SR | 0831726 | 10 |

## Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Plastic adhesive device marking, marked according to customer specifications

PRINTED FOR YOU

**White, material thickness: 0.8 mm**

- The LS-EMLP ... product range includes self-adhesive double-layer plastic device markers
- A wide range of different marker sizes is available for custom designs
- Automatic material detection enables fast and effective marking without time-consuming parameter settings
- The material sheet can be easily reused by creating a project code
- **Designation example: LS-EMLP (11x9) SR CUS**
  Lettering field size: 11 x 9 mm, silver material with black marking
- Labeling service: Phoenix Contact can custom-label all markers according to your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

### Technical data

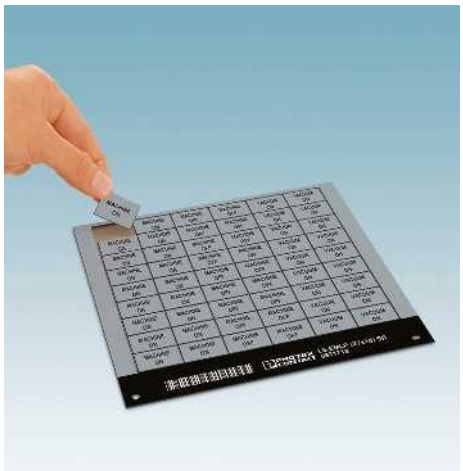
| | | |
|---|---|---|
| **General data** | | |
| Material | | TRANSPLY-ABS |
| Temperature range | [°C] | -20 ... 85 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and halogen |

### Ordering data

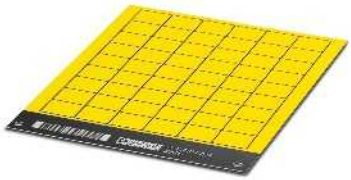
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Plastic label sheet,** self-adhesive double-layer plastic labels, **marked according to customer specifications**[1]) | | | |
| 1 sheet = 255 labels | **LS-EMLP (11X9) WH CUS** | **0831964** | 1 |
| 1 sheet = 221 labels | **LS-EMLP (13X9) WH CUS** | **0831965** | 1 |
| 1 sheet = 220 labels | **LS-EMLP (17X7) WH CUS** | **0831966** | 1 |
| 1 sheet = 170 labels | **LS-EMLP (17X9) WH CUS** | **0831967** | 1 |
| 1 sheet = 130 labels | **LS-EMLP (17,5X12) WH CUS** | **0831968** | 1 |
| 1 sheet = 100 labels | **LS-EMLP (17,5X15) WH CUS** | **0831969** | 1 |
| 1 sheet = 176 labels | **LS-EMLP (20X7) WH CUS** | **0831970** | 1 |
| 1 sheet = 160 labels | **LS-EMLP (20X8) WH CUS** | **0831971** | 1 |
| 1 sheet = 104 labels | **LS-EMLP (22X12) WH CUS** | **0831972** | 1 |
| 1 sheet = 56 labels | **LS-EMLP (22X22) WH CUS** | **0831973** | 1 |
| 1 sheet = 120 labels | **LS-EMLP (27X8) WH CUS** | **0831974** | 1 |
| 1 sheet = 78 labels | **LS-EMLP (27X12,5) WH CUS** | **0831975** | 1 |
| 1 sheet = 60 labels | **LS-EMLP (27X15) WH CUS** | **0831976** | 1 |
| 1 sheet = 54 labels | **LS-EMLP (27X18) WH CUS** | **0831977** | 1 |
| 1 sheet = 36 labels | **LS-EMLP (27X27) WH CUS** | **0831978** | 1 |
| 1 sheet = 33 labels | **LS-EMLP (45X14) WH CUS** | **0831979** | 1 |
| 1 sheet = 30 labels | **LS-EMLP (45X15) WH CUS** | **0831980** | 1 |
| 1 sheet = 30 labels | **LS-EMLP (49X15) WH CUS** | **0831981** | 1 |
| 1 sheet = 20 labels | **LS-EMLP (60X15) WH CUS** | **0831982** | 1 |
| 1 sheet = 10 labels | **LS-EMLP (60X30) WH CUS** | **0831983** | 1 |
| 1 sheet = 6 labels | **LS-EMLP (85,6X54) WH CUS** | **0831984** | 1 |
| 1 sheet = 2 labels | **LS-EMLP (100X60) WH CUS** | **0831985** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Sheet hopper,** for TOPMARK LASER | | | |
| | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

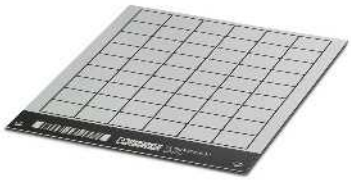


PRINTED FOR YOU



**Yellow, material thickness: 0.8 mm**

PRINTED FOR YOU



**Silver, material thickness: 0.8 mm**

## Technical data

TRANSPLY-ABS
-20 ... 85
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and halogen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMLP (11X9) YE CUS | 0832018 | 1 |
| LS-EMLP (13X9) YE CUS | 0832019 | 1 |
| LS-EMLP (17X7) YE CUS | 0832020 | 1 |
| LS-EMLP (17X9) YE CUS | 0832021 | 1 |
| LS-EMLP (17,5X12) YE CUS | 0832022 | 1 |
| LS-EMLP (17,5X15) YE CUS | 0832023 | 1 |
| LS-EMLP (20X7) YE CUS | 0832024 | 1 |
| LS-EMLP (20X8) YE CUS | 0832025 | 1 |
| LS-EMLP (22X12) YE CUS | 0832026 | 1 |
| LS-EMLP (22X22) YE CUS | 0832027 | 1 |
| LS-EMLP (27X8) YE CUS | 0832028 | 1 |
| LS-EMLP (27X12,5) YE CUS | 0832029 | 1 |
| LS-EMLP (27X15) YE CUS | 0832030 | 1 |
| LS-EMLP (27X18) YE CUS | 0832031 | 1 |
| LS-EMLP (27X27) YE CUS | 0832032 | 1 |
| LS-EMLP (45X14) YE CUS | 0832033 | 1 |
| LS-EMLP (45X15) YE CUS | 0832034 | 1 |
| LS-EMLP (49X15) YE CUS | 0832035 | 1 |
| LS-EMLP (60X15) YE CUS | 0832036 | 1 |
| LS-EMLP (60X30) YE CUS | 0832037 | 1 |
| LS-EMLP (85,6X54) YE CUS | 0832038 | 1 |
| LS-EMLP (100X60) YE CUS | 0832039 | 1 |

## Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Technical data

TRANSPLY-ABS
-20 ... 85
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and halogen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| LS-EMLP (11X9) SR CUS | 0831991 | 1 |
| LS-EMLP (13X9) SR CUS | 0831992 | 1 |
| LS-EMLP (17X7) SR CUS | 0831993 | 1 |
| LS-EMLP (17X9) SR CUS | 0831994 | 1 |
| LS-EMLP (17,5X12) SR CUS | 0831995 | 1 |
| LS-EMLP (17,5X15) SR CUS | 0831996 | 1 |
| LS-EMLP (20X7) SR CUS | 0831997 | 1 |
| LS-EMLP (20X8) SR CUS | 0831998 | 1 |
| LS-EMLP (22X12) SR CUS | 0831999 | 1 |
| LS-EMLP (22X22) SR CUS | 0832000 | 1 |
| LS-EMLP (27X8) SR CUS | 0832001 | 1 |
| LS-EMLP (27X12,5) SR CUS | 0832002 | 1 |
| LS-EMLP (27X15) SR CUS | 0832003 | 1 |
| LS-EMLP (27X18) SR CUS | 0832004 | 1 |
| LS-EMLP (27X27) SR CUS | 0832005 | 1 |
| LS-EMLP (45X14) SR CUS | 0832006 | 1 |
| LS-EMLP (45X15) SR CUS | 0832007 | 1 |
| LS-EMLP (49X15) SR CUS | 0832008 | 1 |
| LS-EMLP (60X15) SR CUS | 0832009 | 1 |
| LS-EMLP (60X30) SR CUS | 0832010 | 1 |
| LS-EMLP (85,6X54) SR CUS | 0832011 | 1 |
| LS-EMLP (100X60) SR CUS | 0832012 | 1 |

## Accessories

| | | |
|---|---|---|
| TOPMARK LASER-MAG SHEET | 0831836 | 1 |

## Marking material for TOPMARK LASER - MARKING system

### Plastic adhesive device marking, with hole for switch

- The LS-EMLP 24/ 30/ 32 ... product range includes self-adhesive double-layer plastic device markers with a hole for the switch
- A wide range of different marker sizes is available for custom designs
- Automatic material detection enables fast and effective marking without time-consuming parameter settings
- The material sheet can be easily reused by creating a project code
- **Designation example:**
  **LS-EMLP 24 (30x12) WH**
  Lettering field size: 30 x 12 mm
  Hole diameter for switch: 24 mm,
  white material with black marking
- Labeling service: Phoenix Contact can custom-label all markers according to your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

Can be marked using:

**Direct laser marking**

PRINTED FOR YOU

**Diameter: 24 mm,**
**material thickness: 0.8 mm**

### Technical data

| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | TOPMARK LASER |
| Material | | TRANSPLY-ABS |
| Temperature range | [°C] | -20 ... 85 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and halogen |

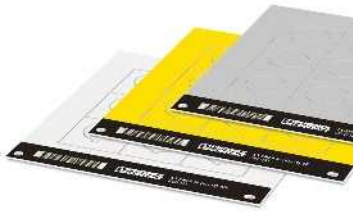
### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Plastic label sheet,** with hole for switch, diameter 24 mm, self-adhesive double-layer plastic labels | | | | |
| 1 sheet = 20 labels | white | **LS-EMLP 24 (30X12) WH** | **0831700** | 10 |
| 1 sheet = 20 labels | yellow | **LS-EMLP 24 (30X12) YE** | **0831754** | 10 |
| 1 sheet = 20 labels | silver | **LS-EMLP 24 (30X12) SR** | **0831727** | 10 |
| **Plastic label sheet,** with hole for switch, diameter 30 mm, self-adhesive double-layer plastic labels | | | | |
| 1 sheet = 9 labels | white | | | |
| 1 sheet = 9 labels | yellow | | | |
| 1 sheet = 9 labels | silver | | | |
| **Plastic label sheet,** with hole for switch, diameter 32 mm, self-adhesive double-layer plastic labels | | | | |
| 1 sheet = 12 labels | white | | | |
| 1 sheet = 12 labels | yellow | | | |
| 1 sheet = 12 labels | silver | | | |
| **Plastic label sheet,** with hole for switch, diameter 24 mm, self-adhesive double-layer plastic labels, **marked according to customer specifications**[1]) | | | | |
| 1 sheet = 20 labels | white | **LS-EMLP 24 (30X12) WH CUS** | **0831986** | 1 |
| 1 sheet = 20 labels | yellow | **LS-EMLP 24 (30X12) YE CUS** | **0832040** | 1 |
| 1 sheet = 20 labels | silver | **LS-EMLP 24 (30X12) SR CUS** | **0832013** | 1 |
| **Plastic label sheet,** with hole for switch, diameter 30 mm, self-adhesive double-layer plastic labels, **marked according to customer specifications**[1]) | | | | |
| 1 sheet = 9 labels | white | | | |
| 1 sheet = 9 labels | yellow | | | |
| 1 sheet = 9 labels | silver | | | |
| **Plastic label sheet,** with hole for switch, diameter 32 mm, self-adhesive double-layer plastic labels, **marked according to customer specifications**[1]) | | | | |
| 1 sheet = 12 labels | white | | | |
| 1 sheet = 12 labels | yellow | | | |
| 1 sheet = 12 labels | silver | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Sheet hopper,** for TOPMARK LASER | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

PRINTED FOR YOU



**Diameter: 30 mm,**
**material thickness: 0.8 mm**

PRINTED FOR YOU

**Diameter: 32 mm,**
**material thickness: 0.8 mm**

## Technical data

TOPMARK LASER
TRANSPLY-ABS
-20 ... 85
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and halogen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **LS-EMLP 30 (45X10) WH** | **0831701** | 10 |
| **LS-EMLP 30 (45X10) YE** | **0831755** | 10 |
| **LS-EMLP 30 (45X10) SR** | **0831728** | 10 |
| **LS-EMLP 30 (45X10) WH CUS** | **0831987** | 1 |
| **LS-EMLP 30 (45X10) YE CUS** | **0832041** | 1 |
| **LS-EMLP 30 (45X10) SR CUS** | **0832014** | 1 |

## Accessories

| | | |
|---|---|---|
| **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

## Technical data

TOPMARK LASER
TRANSPLY-ABS
-20 ... 85
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and halogen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **LS-EMLP 32 (38X14) WH** | **0831702** | 10 |
| **LS-EMLP 32 (38X14) YE** | **0831756** | 10 |
| **LS-EMLP 32 (38X14) SR** | **0831729** | 10 |
| **LS-EMLP 32 (38X14) WH CUS** | **0831988** | 1 |
| **LS-EMLP 32 (38X14) YE CUS** | **0832042** | 1 |
| **LS-EMLP 32 (38X14) SR CUS** | **0832015** | 1 |

## Accessories

| | | |
|---|---|---|
| **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

## Marking material for TOPMARK LASER - MARKING system

### Laser foil adhesive device marking

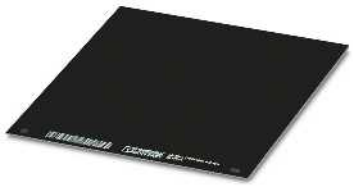
– The LS-EML ... product range includes self-adhesive, double-layer plastic foil labels that can be custom designed
– The laser foil is characterized by its high heat resistance and particularly strong adhesive properties
– Automatic material detection enables fast and effective marking without time-consuming parameter settings
– The material sheet can be easily reused by creating a project code
– **Designation example:**
**LS-EML (180x180) BK-WH**
Lettering field size: 180 x 180 mm,
can be custom designed,
black material with white marking
– Labeling service: Phoenix Contact can custom-label all markers according to your requirements

**Notes:**
[1]) For an ordering example, see page 358 in main catalog 5.

Can be marked using:

**Direct laser marking**

PRINTED FOR YOU



**Black-white**

### Technical data

| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | TOPMARK LASER |
| Material | | Polyacrylate |
| Temperature range | [°C] | -40 ... 300 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and halogen |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Laser foil,** double-layer plastic foil, for custom label design<br>Lettering field size: 180 x 180 mm | **LS-EML (180X180) BK-WH** | **0831784** | 10 |
| **Laser foil,** double-layer plastic foil, for custom label design, **marked according to customer specifications**[1])<br>Lettering field size: 180 x 180 mm | **LS-EML (180X180) BK-WH CUS** | **0832070** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Sheet hopper,** for TOPMARK LASER | **TOPMARK LASER-MAG SHEET** | **0831836** | 1 |

## UM marking for terminals from other manufacturers, strips

Can be marked using:

Thermal transfer for sheets and cards

UV LED technology

Plotter

For a tall marker groove

- The universal UM1-TM ... material marking range includes markers for Weidmüller, Conta-Clip, Klemsan, Wago, and ABB (Entrelec) terminal blocks
- The markers, which are supplied in double strips, can be quickly and easily marked with BLUEMARK ..., THERMOMARK CARD ..., and the CMS-P1-PLOTTER
- The markers support multiline labeling
- The marking strips are easy to fit and can be easily separated if required
- The marking strips are snapped into the magazine in a twist-proof manner by means of a coding pin and fed to the output devices
- The format automatically ensures printing with a high level of positional accuracy

### Technical data

| General data | | |
|---|---|---|
| Can be marked with | | THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • CMS-P1-PLOTTER |
| Material | | PC |
| Inflammability class according to UL 94 | | V2 |
| Temperature range | [°C] | -40 ... 120 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone, halogen, and cadmium |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **UM1-TM ...,** for marking terminal blocks from other manufacturers, Weidmüller, Conta-Clip, Klemsan | | | | |
| 34-section, lettering field size: 3.5 x 12 mm, pitch: 3.5 mm | white | **UM1-TM (3,5X12)** | **0830925** | 10 |
| 24-section, lettering field size: 5 x 10 mm, pitch: 5 mm | white | **UM1-TM (5X10)** | **0830905** | 10 |
| 24-section, lettering field size: 5 x 12 mm, pitch: 5 mm | white | **UM1-TM (5X12)** | **0830912** | 10 |
| 20-section, lettering field size: 6 x 10 mm, pitch: 6 mm | white | **UM1-TM (6X10)** | **0830903** | 10 |
| 20-section, lettering field size: 6 x 12 mm, pitch: 6 mm | white | **UM1-TM (6X12)** | **0830909** | 10 |
| 14-section, lettering field size: 8 x 10 mm, pitch: 8 mm | white | **UM1-TM (8X10)** | **0830906** | 10 |
| 14-section, lettering field size: 8 x 12 mm, pitch: 8 mm | white | **UM1-TM (8X12)** | **0830920** | 10 |
| 10-section, lettering field size: 12 x 10 mm, pitch: 12 mm | white | **UM1-TM (12X10)** | **0830916** | 10 |
| **UM1U-TM ...,** for marking terminal blocks from other manufacturers, Weidmüller, Conta-Clip, Klemsan, with an offset foot | | | | |
| 24-section, lettering field size: 5 x 10 mm, pitch: 5 mm | white | | | |
| 20-section, lettering field size: 6 x 10 mm, pitch: 6 mm | white | | | |
| **UM1-TMF ...,** for marking terminal blocks from other manufacturers, Weidmüller, Conta-Clip, Klemsan, Wago, ABB (Entrelec) | | | | |
| 34-section, lettering field size: 3.5 x 5 mm, pitch: 3.5 mm | white | | | |
| 24-section, lettering field size: 5 x 5 mm, pitch: 5 mm | white | | | |
| 20-section, lettering field size: 6 x 5 mm, pitch: 6 mm | white | | | |
| 14-section, lettering field size: 8 x 5 mm, pitch: 8 mm | white | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Magazine,** for THERMOMARK CARD ... for accommodating UM1-TM ... for accommodating UM1U-TM ... for accommodating UM1-TMF ... | **THERMOMARK CARD-UM-MAG1** | **0831200** | 1 |

For a tall marker groove, with an offset foot

For a flat marker groove

## Technical data

THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • CMS-P1-PLOTTER
PC
V2
-40 ... 120
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| UM1U-TM (5X10) | 0830910 | 10 |
| UM1U-TM (6X10) | 0830907 | 10 |

## Accessories

| | | |
|---|---|---|
| THERMOMARK CARD-UM-MAG4 | 0831203 | 1 |

## Technical data

THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • CMS-P1-PLOTTER
PC
V2
-40 ... 120
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| UM1-TMF (3,5X5) | 0830935 | 10 |
| UM1-TMF (5X5) | 0830902 | 10 |
| UM1-TMF (6X5) | 0830904 | 10 |
| UM1-TMF (8X5) | 0830924 | 10 |

## Accessories

| | | |
|---|---|---|
| THERMOMARK CARD-UM-MAG3 | 0831202 | 1 |

## Terminal marking, marker strips for tall and flat marker grooves

– The TMT labeling range includes markers for all products with tall and flat marker grooves
– Labeling service: Phoenix Contact can custom-label all TMT markers in accordance with your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

[2]) The TMT TOOL snap-in tool can only be used for terminal blocks from Phoenix Contact.

Can be marked using:

**Thermal transfer for rolls**

PRINTED FOR YOU

**Unlabeled or labeled according to customer specifications**

### Technical data

| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | THERMOMARK ROLL • THERMOMARK ROLL X1 • THERMOMARK X1.1 • THERMOMARK X1.2 • THERMOMARK S1.1 |
| Material | | PVC |
| Material strength | | 0.50 mm |
| Inflammability class according to UL 94 | | V0 |
| Temperature range | [°C] | -30 ... 80 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and cadmium |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Insert strips,** unprinted, 1 roll = 50 m, continuous | | | | |
| Strip height: 5.5 mm | white | **TMT (EX5,5)R** | **0803062** | 1 |
| Strip height: 6.2 mm | white | **TMT (EX6,2)R** | **0803063** | 1 |
| Strip height: 6.5 mm | white | **TMT (EX6,5)R** | **0803064** | 1 |
| Strip height: 7.5 mm | white | **TMT (EX7,5)R** | **0803065** | 1 |
| Strip height: 8 mm | white | **TMT (EX8)R** | **0803066** | 1 |
| Strip height: 8.5 mm | white | **TMT (EX8,5)R** | **0803067** | 1 |
| Strip height: 9.5 mm | white | **TMT (EX9,5)R** | **0828295** | 1 |
| Strip height: 10 mm | white | **TMT (EX10)R** | **0803068** | 1 |
| Strip height: 10.5 mm | white | **TMT (EX10,5)R** | **0803070** | 1 |
| Strip height: 11 mm | white | **TMT2 (EX11)R** | **0802683** | 1 |
| Strip height: 12 mm | white | **TMT (EX12)R** | **0803071** | 1 |
| **Insert strips, marked according to customer specifications**[1]) | | | | |
| Strip height: 5.5 mm | white | **TMT (EX5,5)R CUS** | **0803072** | 1 |
| Strip height: 6.2 mm | white | **TMT (EX6,2)R CUS** | **0803073** | 1 |
| Strip height: 6.5 mm | white | **TMT (EX6,5)R CUS** | **0803075** | 1 |
| Strip height: 7.5 mm | white | **TMT (EX7,5)R CUS** | **0803076** | 1 |
| Strip height: 8 mm | white | **TMT (EX8)R CUS** | **0803077** | 1 |
| Strip height: 8.5 mm | white | **TMT (EX8,5)R CUS** | **0803078** | 1 |
| Strip height: 9.5 mm | white | **TMT (EX9,5)R CUS** | **0803079** | 1 |
| Strip height: 10 mm | white | **TMT (EX10)R CUS** | **0803080** | 1 |
| Strip height: 10.5 mm | white | **TMT (EX10,5)R CUS** | **0803081** | 1 |
| Strip height: 11 mm | white | **TMT2 (EX11)R CUS** | **0830811** | 1 |
| Strip height: 12 mm | white | **TMT (EX12)R CUS** | **0803082** | 1 |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Locking tool** to snap into the TMT... materials[2]) | orange | **TMT TOOL** | **0816650** | 1 |

## TMT ... terminal marking for terminal blocks from Phoenix Contact and other manufacturers

| | TMT (EX5,5)R | TMT (EX6,2)R | TMT (EX6,5)R | TMT (EX7,5)R | TMT (EX8)R | TMT (EX8,5)R | TMT (EX9,5)R | TMT (EX10)R | TMT (EX10,5)R | TMT2 (EX11)R | TMT (EX12)R |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TMT- markers, roll** | 0803062 | 0803063 | 0803064 | 0803065 | 0803066 | 0803067 | 0828295 | 0803068 | 0803070 | 0802683 | 0803071 |
| Strip height | 5.5 | 6.2 | 6.5 | 7.5 | 8 | 8.5 | 9.5 | 10 | 10.5 | 10.8 | 12 |
| **Terminal manufacturer** | | | | | | | | | | | |
| Phoenix Contact | | ■ | | | | | ■ | | | | |
| Fuji Electronics Industry | | | | | ■ | | | ■ | | | |
| IDEC | ■ | | | ■ | | | ■ | ■ | | | |
| KASUGA | ■ | | ■ | | | | ■ | | | | |
| TOGI | | | | | | ■ | | ■ | | | ■ |
| WAGO (2001 ...- 2016 ...) | | | | | | | | | | ■ | |
| Yoshida Electronics | ■ | | ■ | ■ | | ■ | | ■ | ■ | | ■ |

## Clip-on UniCard conductor marking

Can be marked using:

Thermal transfer for sheets and cards

UV LED technology

Direct laser marking

PRINTED FOR YOU

**32 markers**
**for conductor diameters of 2 to 2.9 mm**

- The UCT-WMCO ... UniCard marking range includes markers for the subsequent marking of conductors by clipping on
- Secure tight fit even in the event of vibrations
- The markers, which are supplied in uniform sheets, can be marked quickly and easily with the TOPMARK LASER, THERMOMARK CARD, THERMOMARK CARD PLUS, and the BLUEMARK... printers
- The format automatically ensures printing with a high level of positional accuracy
- Large-surface labeling in a space-saving design
- The sheets provide space for including function texts
- Labeling service: Phoenix Contact can custom-label all UniCard markers in accordance with your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

### Technical data

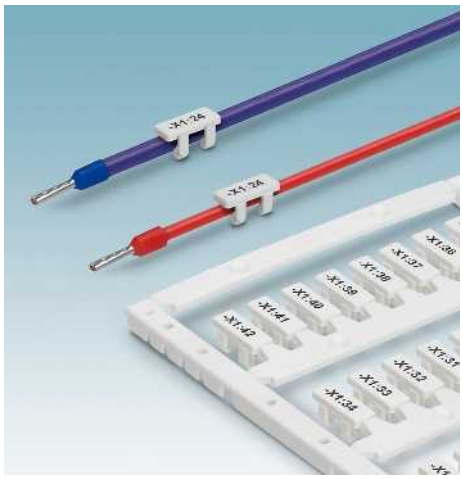
| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • BLUEMARK LED • TOPMARK LASER |
| Number of individual labels | | 32 |
| Number of individual labels per strip | | 8 |
| Material | | PC |
| Inflammability class according to UL 94 | | V0 |
| Temperature range | [°C] | -40 ... 120 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone, halogen, and cadmium |
| Conductor diameter range | [mm] | 2 ... 2.9 |
| Conductor cross section range | [mm²] | 0.5 ... 1.5 |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **UniCard,** for subsequent labeling of conductors | | | | |
| Lettering field size: 12 x 4 mm | white | **UCT-WMCO 2,9 (12X4)** | **0830780** | 9 |
| Lettering field size: 18 x 4 mm | white | **UCT-WMCO 2,9 (18X4)** | **0830781** | 9 |
| **UniCard,** for subsequent labeling of conductors, **labeled acc. to customer specifications**[1]) | | | | |
| Lettering field size: 12 x 4 mm | white | **UCT-WMCO 2,9 (12X4) CUS** | **0830788** | 1 |
| Lettering field size: 18 x 4 mm | white | **UCT-WMCO 2,9 (18X4) CUS** | **0830789** | 1 |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Magazine,** for THERMOMARK CARD ..., for accommodating: UCT–WMCO ... | | **THERMOMARK CARD-UCT-MAG25** | **0802935** | 1 |



PRINTED FOR YOU

**32 markers**
**for conductor diameters of 2.9 to 3.5 mm**

### Technical data

THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • BLUEMARK LED • TOPMARK LASER
32
8
PC
V0
-40 ... 120
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium
2.9 ... 3.5
1.5 ... 2.5

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-WMCO 3,5 (12X4)** | **0830782** | 7 |
| **UCT-WMCO 3,5 (18X4)** | **0830783** | 7 |
| **UCT-WMCO 3,5 (12X4) CUS** | **0830790** | 1 |
| **UCT-WMCO 3,5 (18X4) CUS** | **0830791** | 1 |

### Accessories

| | | |
|---|---|---|
| **THERMOMARK CARD-UCT-MAG25** | **0802935** | 1 |

PRINTED FOR YOU

**32 markers**
**for conductor diameters of 3.5 to 4.1 mm**

### Technical data

THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • BLUEMARK LED • TOPMARK LASER
32
8
PC
V0
-40 ... 120
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium
3.5 ... 4.1
2.5 ... 4

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-WMCO 4,1 (12X4)** | **0830784** | 7 |
| **UCT-WMCO 4,1 (18X4)** | **0830785** | 7 |
| **UCT-WMCO 4,1 (12X4) CUS** | **0830792** | 1 |
| **UCT-WMCO 4,1 (18X4) CUS** | **0830793** | 1 |

### Accessories

| | | |
|---|---|---|
| **THERMOMARK CARD-UCT-MAG25** | **0802935** | 1 |

PRINTED FOR YOU

**32 markers**
**for conductor diameters of 4.1 to 4.7 mm**

### Technical data

THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • BLUEMARK LED • TOPMARK LASER
32
8
PC
V0
-40 ... 120
DIN EN 61010-1 (VDE 0411-1)
Free from silicone, halogen, and cadmium
4.1 ... 4.7
2.5 ... 6

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-WMCO 4,7 (12X4)** | **0830786** | 6 |
| **UCT-WMCO 4,7 (18X4)** | **0830787** | 6 |
| **UCT-WMCO 4,7 (12X4) CUS** | **0830794** | 1 |
| **UCT-WMCO 4,7 (18X4) CUS** | **0830795** | 1 |

### Accessories

| | | |
|---|---|---|
| **THERMOMARK CARD-UCT-MAG25** | **0802935** | 1 |

## UniCard cable marking for assembly with cable binders

- The UCT-WMTBA ... UniCard marking range includes markers that can be secured using standard cable binders
- The markers, which are supplied in uniform sheets, can be marked quickly, easily, and accurately with the TOPMARK LASER, THERMOMARK CARD, THERMOMARK CARD PLUS, and BLUEMARK CLED
- The format automatically ensures printing with a high level of positional accuracy
- For large-surface marking of conductors and cables > 5 mm in diameter
- The sheets provide space for including function texts
- Thanks to their angular shape the markers fit perfectly onto cables
- Labeling service: Phoenix Contact can custom-label all UniCard markers in accordance with your requirements

| Notes: |
|---|
| For cable binders up to 5 mm wide. |
| For matching cable binders, see page 574 onwards in main catalog 5 or the product area on our website at phoenixcontact.net/products. |
| [1]) For an ordering example, see page 358 in main catalog 5. |

Can be marked using:

**Thermal transfer for sheets and cards**

**UV LED technology**

**Direct laser marking**

PRINTED FOR YOU

**15 markers for conductor diameter > 5 mm**

### Technical data

| General data | | |
|---|---|---|
| Can be marked with | | THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • BLUEMARK LED • TOPMARK LASER |
| Number of individual labels | | 15 |
| Number of individual labels per strip | | 5 |
| Material | | PC |
| Inflammability class according to UL 94 | | V0 |
| Temperature range | [°C] | -40 ... 120 |
| Components | | Free from silicone, halogen, and cadmium |
| Cable diameter range | [mm] | > 5 |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **UniCard,** for assembly with cable binders | | | | |
| Lettering field size: 24 x 4 mm | white | **UCT-WMTBA (24X4)** | **1014082** | 10 |
| | yellow | **UCT-WMTBA (24X4) YE** | **1014083** | 10 |
| Lettering field size: 29 x 6 mm | white | | | |
| | yellow | | | |
| Lettering field size: 40 x 17 mm | white | | | |
| | yellow | | | |
| **UniCard,** for assembly with cable binders, **labeled acc. to customer specifications**[1]) | | | | |
| Lettering field size: 24 x 4 mm | white | **UCT-WMTBA (24X4) CUS** | **1014088** | 1 |
| | yellow | **UCT-WMTBA (24X4) YE CUS** | **1014089** | 1 |
| Lettering field size: 29 x 6 mm | white | | | |
| | yellow | | | |
| Lettering field size: 40 x 17 mm | white | | | |
| | yellow | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Magazine,** for THERMOMARK CARD ..., for accommodating: UCT–WMTBA ... | | **THERMOMARK CARD-UCT-MAG27** | **0802989** | 1 |

PRINTED FOR YOU

**12 markers**
**for conductor diameter > 6 mm**

## Technical data

| |
|---|
| THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • BLUEMARK LED • TOPMARK LASER |
| 12 |
| 4 |
| PC |
| V0 |
| -40 ... 120 |
| Free from silicone, halogen, and cadmium |
| > 6 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-WMTBA (29X6)** | **1014084** | 10 |
| **UCT-WMTBA (29X6) YE** | **1014085** | 10 |
| **UCT-WMTBA (29X6) CUS** | **1014090** | 1 |
| **UCT-WMTBA (29X6) YE CUS** | **1014091** | 1 |

## Accessories

| | | |
|---|---|---|
| **THERMOMARK CARD-UCT-MAG27** | **0802989** | 1 |

PRINTED FOR YOU

**3 markers**
**for conductor diameter > 6 mm**

## Technical data

| |
|---|
| THERMOMARK CARD PLUS • THERMOMARK CARD • BLUEMARK CLED • BLUEMARK LED • TOPMARK LASER |
| 3 |
| 1 |
| PC |
| V0 |
| -40 ... 120 |
| Free from silicone, halogen, and cadmium |
| > 6 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-WMTBA (40X17)** | **1014086** | 10 |
| **UCT-WMTBA (40X17) YE** | **1014087** | 10 |
| **UCT-WMTBA (40X17) CUS** | **1014092** | 1 |
| **UCT-WMTBA (40X17) YE CUS** | **1014093** | 1 |

## Accessories

| | | |
|---|---|---|
| **THERMOMARK CARD-UCT-MAG27** | **0802989** | 1 |

## Plastic cable markers for insert labels, for assembly with cable binders

**Notes:**

For matching cable binders, see page 574 onwards in main catalog 5 or the product area on our website at phoenixcontact.net/products.

**Lettering field size: 25 x 6 mm, for cable diameter > 6 mm**

- KMK HP ... plastic cable markers for marking and bundling conductors and cables indoors
- Inflammability class V0 acc. to UL 94
- The KMK HP... cable markers are particularly suitable for use in the railway industry, traffic technology, and building technology thanks to their outstanding material properties
- The KMK... versions have eyelets and are attached with cable binders
- The printed insert label is protected from dirt by the sealing cap
- Labeling service: Phoenix Contact can custom-label all insert labels for plastic cable markers in accordance with your requirements

### Technical data

| General data | | |
|---|---|---|
| Material | | PC |
| Inflammability class according to UL 94 | | V0 |
| Temperature range | [°C] | -40 ... 125 |
| Components | | Halogen-free |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Cable marker carrier** for cable binder assembly | transparent | **KMK HP (25X6)** | **0830720** | 100 |

### Accessories

| | | | |
|---|---|---|---|
| **UniCard,** insert strip for KMK... cable marker carriers, can be marked with THERMOMARK CARD... and BLUEMARK CLED<br>Lettering field size: 25 x 6 mm, 15-section<br>Lettering field size: 29 x 8 mm, 15-section<br>Lettering field size: 60 x 15 mm, 3-section<br>Lettering field size: 40 x 17 mm, 3-section | **UCT-EMP (25X6)** | **1014117** | 10 |
| **UniCard,** insert strips for KMK... cable marker carriers, **marked according to customer specifications**<br>Lettering field size: 25 x 6 mm, 15-section<br>Lettering field size: 29 x 8 mm, 15-section<br>Lettering field size: 40 x 17 mm, 3-section<br>Lettering field size: 60 x 15 mm, 3-section | **UCT-EMP (25X6) CUS** | **1014121** | 1 |
| **UniSheet,** 0.5 mm thick, inflammability class V0 according to UL 94<br>84-section, lettering field size: 25 x 6 mm<br>48-section, lettering field size: 29 x 8 mm<br>9-section, lettering field size: 60 x 15 mm<br>16-section, lettering field size: 40 x 17 mm | **US-EMP (25X6)-1** | **0802754** | 10 |
| **Insert labels for thermal transfer printer,** halogen-free<br>Lettering field size: 25 x 6 mm, 5000 labels per roll<br>Lettering field size: 29 x 8 mm, 5400 labels per roll<br>Lettering field size: 60 x 15 mm, 2500 labels per roll<br>Lettering field size: 40 x 17 mm, 2300 labels per roll | **EMT (25X6)R** | **0817264** | 1 |
| **Cable binder,** inflammability class according to UL 94: V0, halogen-free, temperature range: -40°C ... 85 °C, maximum bundle Ø [mm]/minimum tensile strength [N] | | | |
| **35 / 130** | **WT-HP HF 3,6X140** | **0830982** | 100 |
| **50 / 220** | **WT-HP HF 4,8X200** | **0830983** | 100 |
| **79 / 220** | **WT-HP HF 4,5X290** | **0830984** | 100 |
| **Magazine,** for THERMOMARK CARD ..., for accommodating UCT–EMP ... | **THERMOMARK CARD-UCT-MAG26** | **0802988** | 1 |

**Lettering field size: 29 x 8 mm, for cable diameter > 6 mm**

**Lettering field size: 60 x 15 mm, for cable diameter > 9 mm**

**Lettering field size: 40 x 17 mm, for cable diameter > 9 mm**

## Technical data

PC
V0
-40 ... 125
Halogen-free

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| KMK HP (29X8) | 0830721 | 100 |

## Accessories

| | | |
|---|---|---|
| UCT-EMP (29X8) | 1014118 | 10 |
| UCT-EMP (29X8) CUS | 1014122 | 1 |
| US-EMP (29X8) | 0829436 | 10 |
| EMT (29X8)R | 0817277 | 1 |
| WT-HP HF 3,6X140 | 0830982 | 100 |
| WT-HP HF 4,8X200 | 0830983 | 100 |
| WT-HP HF 4,5X290 | 0830984 | 100 |
| THERMOMARK CARD-UCT-MAG26 | 0802988 | 1 |

## Technical data

PC
V0
-40 ... 125
Halogen-free

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| KMK HP (60X15) | 0830722 | 50 |

## Accessories

| | | |
|---|---|---|
| UCT-EMP (60X15) | 1014119 | 10 |
| UCT-EMP (40X17) CUS | 1014124 | 1 |
| US-EMP (60X15) | 0828781 | 10 |
| EMT (60X15)R | 0801846 | 10 |
| WT-HP HF 3,6X140 | 0830982 | 100 |
| WT-HP HF 4,8X200 | 0830983 | 100 |
| WT-HP HF 4,5X290 | 0830984 | 100 |
| THERMOMARK CARD-UCT-MAG26 | 0802988 | 1 |

## Technical data

PC
V0
-40 ... 125
Halogen-free

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| KMK HP (40X17) | 0830723 | 50 |

## Accessories

| | | |
|---|---|---|
| UCT-EMP (40X17) | 1014120 | 10 |
| UCT-EMP (60X15) CUS | 1014123 | 1 |
| US-EMP (40X17) | 0829437 | 10 |
| EMT (40X17)R | 0817293 | 1 |
| WT-HP HF 3,6X140 | 0830982 | 100 |
| WT-HP HF 4,8X200 | 0830983 | 100 |
| WT-HP HF 4,5X290 | 0830984 | 100 |
| THERMOMARK CARD-UCT-MAG26 | 0802988 | 1 |

## Plastic cable markers for insert labels, for assembly with cable binders

- KMK UV ... plastic cable markers for marking and bundling conductors and cables outdoors
- The KMK UV... cable markers are ultra-transparent, impact resistant, and have excellent weathering resistance. At the same time, they also possess outstanding chemical resistance
- The KMK... versions have eyelets and are attached with cable binders
- The printed insert label is protected from dirt by the sealing cap
- Labeling service: Phoenix Contact can custom-label all insert labels for plastic cable markers in accordance with your requirements

**Notes:**

For matching cable binders, see page 574 onwards in main catalog 5 or the product area on our website at phoenixcontact.net/products.

[1]) WT-UV HF...BK cable binders are weatherproof and UV resistant according to ISO 4892 (after QUV-B 600 hours) for up to 10 years.

**Lettering field size: 25 x 6 mm, for cable diameter > 6 mm**

### Technical data

| General data | | |
|---|---|---|
| Material | | PA |
| Inflammability class according to UL 94 | | HB |
| Temperature range | [°C] | -40 ... 100 |
| Components | | Halogen-free |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Cable marker carrier** for cable binder assembly | transparent | **KMK UV (25X6)** | **1014106** | 100 |

### Accessories

| | | | |
|---|---|---|---|
| **UniCard,** insert strip for KMK... cable marker carriers, can be marked with THERMOMARK CARD... and BLUEMARK CLED<br>Lettering field size: 25 x 6 mm, 15-section<br>Lettering field size: 29 x 8 mm, 15-section<br>Lettering field size: 60 x 15 mm, 3-section<br>Lettering field size: 40 x 17 mm, 3-section | **UCT-EMP (25X6)** | **1014117** | 10 |
| **UniCard,** insert strips for KMK... cable marker carriers, **marked according to customer specifications**<br>Lettering field size: 25 x 6 mm, 15-section<br>Lettering field size: 29 x 8 mm, 15-section<br>Lettering field size: 40 x 17 mm, 3-section<br>Lettering field size: 60 x 15 mm, 3-section | **UCT-EMP (25X6) CUS** | **1014121** | 1 |
| **UniSheet,** 0.5 mm thick, inflammability class V0 according to UL 94<br>84-section, lettering field size: 25 x 6 mm<br>48-section, lettering field size: 29 x 8 mm<br>9-section, lettering field size: 60 x 15 mm<br>16-section, lettering field size: 40 x 17 mm | **US-EMP (25X6)-1** | **0802754** | 10 |
| **Insert labels for thermal transfer printer,** halogen-free<br>Lettering field size: 25 x 6 mm, 5000 labels per roll<br>Lettering field size: 29 x 8 mm, 5400 labels per roll<br>Lettering field size: 60 x 15 mm, 2500 labels per roll<br>Lettering field size: 40 x 17 mm, 2300 labels per roll | **EMT (25X6)R** | **0817264** | 1 |
| **Cable binder,** halogen-free, inflammability class according to UL 94: V2, maximum bundle Ø [mm] / min. tensile strength [N][1])<br>**35 / 130**<br>**50 / 220**<br>**79 / 220** | <br>**WT-UV HF 3,6X140 BK**<br>**WT-UV HF 4,5X200 BK**<br>**WT-UV HF 4,5X290 BK** | <br>**3240832**<br>**3240834**<br>**3240835** | <br>100<br>100<br>100 |
| **Magazine,** for THERMOMARK CARD ..., for accommodating UCT–EMP ... | **THERMOMARK CARD-UCT-MAG26** | **0802988** | 1 |

**Lettering field size: 29 x 8 mm, for cable diameter > 6 mm**

**Lettering field size: 60 x 15 mm, for cable diameter > 9 mm**

**Lettering field size: 40 x 17 mm, for cable diameter > 9 mm**

## Technical data

PA
HB
-40 ... 100
Halogen-free

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| KMK UV (29X8) | 1014107 | 100 |

## Accessories

| | | |
|---|---|---|
| UCT-EMP (29X8) | 1014118 | 10 |
| UCT-EMP (29X8) CUS | 1014122 | 1 |
| US-EMP (29X8) | 0829436 | 10 |
| EMT (29X8)R | 0817277 | 1 |
| WT-UV HF 3,6X140 BK | 3240832 | 100 |
| WT-UV HF 4,5X200 BK | 3240834 | 100 |
| WT-UV HF 4,5X290 BK | 3240835 | 100 |
| THERMOMARK CARD-UCT-MAG26 | 0802988 | 1 |

## Technical data

PA
HB
-40 ... 100
Halogen-free

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| KMK UV (60X15) | 1014108 | 50 |

## Accessories

| | | |
|---|---|---|
| UCT-EMP (60X15) | 1014119 | 10 |
| UCT-EMP (40X17) CUS | 1014124 | 1 |
| US-EMP (60X15) | 0828781 | 10 |
| EMT (60X15)R | 0801846 | 10 |
| WT-UV HF 3,6X140 BK | 3240832 | 100 |
| WT-UV HF 4,5X200 BK | 3240834 | 100 |
| WT-UV HF 4,5X290 BK | 3240835 | 100 |
| THERMOMARK CARD-UCT-MAG26 | 0802988 | 1 |

## Technical data

PA
HB
-40 ... 100
Halogen-free

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| KMK UV (40X17) | 1014109 | 50 |

## Accessories

| | | |
|---|---|---|
| UCT-EMP (40X17) | 1014120 | 10 |
| UCT-EMP (60X15) CUS | 1014123 | 1 |
| US-EMP (40X17) | 0829437 | 10 |
| EMT (40X17)R | 0817293 | 1 |
| WT-UV HF 3,6X140 BK | 3240832 | 100 |
| WT-UV HF 4,5X200 BK | 3240834 | 100 |
| WT-UV HF 4,5X290 BK | 3240835 | 100 |
| THERMOMARK CARD-UCT-MAG26 | 0802988 | 1 |

## Adhesive UniCard device marking for applications in process engineering

Can be marked using:

UV

UV LED technology

PRINTED FOR YOU

**Unlabeled or labeled according to customer specifications**

- The UC-EMLP...-EX UniCard labeling range includes self-adhesive device markers with good adhesive properties
- The marking requirements in terms of legibility, adhesion, and wipe resistance in potentially explosive areas (ATEX), according to IEC/EN 60079-0, can also be ensured following storage in typical gas atmospheres. Phoenix Contact developed these sheets especially for process engineering which is where these requirements typically arise. These sheets meet the requirements for wipe esistance according to DIN EN 61010-1 against aggressive media such as acetone, ethanol, and MEK
- Thanks to the special adhesive, the marker meets the demanding requirements of process engineering
- The markers can be marked quickly, easily, and inexpensively with the BLUEMARK CLED and LED
- By using modern UV LED printing technology, a highly resistant and optimum printing quality can be achieved, which is resistant to solvents and suitable for use even under harsh industrial conditions
- Labeling service: Phoenix Contact can custom-label all markers according to your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

### Technical data

| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | BLUEMARK CLED • BLUEMARK LED |
| Material | | PA |
| Inflammability class according 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,** with self-adhesive plastic labels | | | | |
| 6-section, lettering field size: 22 x 22 mm | white | **UC-EMLP (22X22)-EX** | **0803224** | 10 |
| 8-section, lettering field size: 27 x 18 mm | white | **UC-EMLP (27X18)-EX** | **0803225** | 10 |
| 6-section, lettering field size: 27 x 27 mm | white | **UC-EMLP (27X27)-EX** | **0803226** | 10 |
| 4-section, lettering field size: 49 x 15 mm | white | **UC-EMLP (49X15)-EX** | **0803227** | 10 |
| 3-section, lettering field size: 60 x 30 mm | white | **UC-EMLP (60X30)-EX** | **0803228** | 10 |
| **UniCard,** with self-adhesive plastic labels, **labeled according to customer specifications**[1]) | | | | |
| 6-section, lettering field size: 22 x 22 mm | white | **UC-EMLP (22X22)-EX CUS** | **0803229** | 1 |
| 8-section, lettering field size: 27 x 18 mm | white | **UC-EMLP (27X18)-EX CUS** | **0803230** | 1 |
| 6-section, lettering field size: 27 x 27 mm | white | **UC-EMLP (27X27)-EX CUS** | **0803231** | 1 |
| 4-section, lettering field size: 49 x 15 mm | white | **UC-EMLP (49X15)-EX CUS** | **0803232** | 1 |
| 3-section, lettering field size: 60 x 30 mm | white | **UC-EMLP (60X30)-EX CUS** | **0803233** | 1 |

## Adhesive device marking for applications in process engineering

- The EML...-EX self-adhesive device markers have been specifically developed for marking various types of equipment in the Ex area
- The marking requirements in terms of legibility, adhesion, and wipe resistance in potentially explosive areas (ATEX), according to IEC/EN 60079-0, can also be ensured following storage in typical gas atmospheres. Phoenix Contact developed these labels especially for process engineering, which is where these requirements typically arise. These labels meet the requirements for wipe resistance
  according to DIN EN 61010-1 against aggressive media such as acetone, ethanol, and MEK
- They are only suitable in conjunction with the TM- RIBBON110-EX
- Thanks to the special surface and adhesive, the marker meets the demanding requirements of process engineering
- If high-quality ink ribbons are used, the labeling is resistant to solvents, making it suitable for use even under harsh industrial conditions
- A wide range of marker sizes and colors are available for custom designs
- The special packaging protects rolls that have already been started from the dirt found in industrial environments
- **Designation example:**
  **EML (10x4)R-EX**
  Lettering field size: 10 x 4 mm
  Type of packaging: roll
- Marking service: Phoenix Contact can custom-mark all EML markers according to your requirements

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

Can be marked using:

**Thermal transfer for rolls**

**Unlabeled or labeled according to customer specifications**

### Technical data

| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | THERMOMARK ROLL • THERMOMARK ROLL X1 • THERMOMARK X1.1 • THERMOMARK X1.2 • THERMOMARK S1.1 |
| Material | | Polyester |
| Temperature range | [°C] | -40 ... 150 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and halogen |

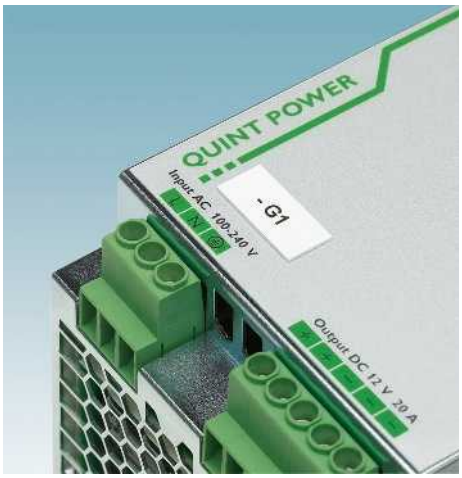
### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Labels** | | | | |
| 10,000 labels per roll | white | **EML (10X4)R-EX** | **0803251** | 1 |
| 2500 labels per roll | white | **EML (15X9)R-EX** | **0803253** | 1 |
| 2500 labels per roll | white | **EML (20X8)R-EX** | **0803254** | 1 |
| 2500 labels per roll | white | **EML (30X20)R-EX** | **0803255** | 1 |
| 1000 labels per roll | white | **EML (40X25)R-EX** | **0803256** | 1 |
| 400 labels per roll | white | **EML (70X50)R-EX** | **0803257** | 1 |
| 300 labels per roll | white | **EML (100X40)R-EX** | **0803258** | 1 |
| 300 labels per roll | white | **EML (100X73)R-EX** | **0803259** | 1 |
| 250 labels per roll | white | **EML (100X90)R-EX** | **0803260** | 1 |
| **Labels, labeled according to customer requirements**[1]) | | | | |
| 8 labels per strip | white | **EML (10X4)R-EX CUS** | **0803261** | 1 |
| 5 labels per strip | white | **EML (15X9)R-EX CUS** | **0803262** | 1 |
| 4 labels per strip | white | **EML (20X8)R-EX CUS** | **0803263** | 1 |
| 3 labels per strip | white | **EML (30X20)R-EX CUS** | **0803264** | 1 |
| 2 labels per strip | white | **EML (40X25)R-EX CUS** | **0803266** | 1 |
| 1 label per strip | white | **EML (70X50)R-EX CUS** | **0803267** | 1 |
| 1 label per strip | white | **EML (100X40)R-EX CUS** | **0803268** | 1 |
| 1 label per strip | white | **EML (100X73)R-EX CUS** | **0803269** | 1 |
| 1 label per strip | white | **EML (100X90)R-EX CUS** | **0803270** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Ink ribbon,** length: 300 m, width: 110 mm, color: black | **TM-RIBBON 110-EX** | **0803211** | 1 |

## UniSheet device marking for sticking onto rough or textured surfaces




- The US-EMLP-HA ... UniSheet marking range has excellent adhesive properties on rough, textured, and low-energy surfaces, thanks to the special adhesive
- The markers, which are supplied in uniform sheets, can be marked quickly, easily, and cost-effectively using THERMOMARK CARD and THERMOMARK CARD PLUS
- The perforated markers are easy to separate and can be easily fitted
- The sheets provide space for including function texts
- Marking service: Phoenix Contact can custom-mark all US-EMLP-HA ... markers according to your requirements

Can be marked using:

**Thermal transfer for sheets and cards**

PRINTED FOR YOU

**Unlabeled or labeled according to customer specifications**

### Technical data

| General data | | |
|---|---|---|
| Can be marked with | | THERMOMARK CARD PLUS • THERMOMARK CARD |
| Material | | PVC |
| Inflammability class according to UL 94 | | V0 |
| Temperature range | [°C] | -30 ... 80 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Silicone-free |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **UniSheet,** with self-adhesive plastic labels, 0.5 mm thick | | | | |
| 108-section, lettering field size: 17 x 7 mm | white | **US-EMLP-HA (17X7)** | **0830988** | 10 |
| 70-section, lettering field size: 20 x 9 mm | white | **US-EMLP-HA (20X9)** | **0830989** | 10 |
| 4-section, lettering field size: 60 x 30 mm | white | **US-EMLP-HA (60X30)** | **0830990** | 10 |
| 4-section, lettering field size: 60 x 30 mm | silver | **US-EMLP-HA (60X30) SR** | **0830991** | 10 |
| 2-section, lettering field size: 85.6 x 54 mm | white | **US-EMLP-HA (85,6X54)** | **0830992** | 10 |
| 2-section, lettering field size: 85.6 x 54 mm | silver | **US-EMLP-HA (85,6X54) SR** | **0830993** | 10 |
| **UniSheet,** with self-adhesive plastic labels, 0.5 mm thick, **labeled acc. to customer specifications** | | | | |
| 108-section, lettering field size: 17 x 7 mm | white | **US-EMLP-HA (17X7) CUS** | **0830994** | 1 |
| 70-section, lettering field size: 20 x 9 mm | white | **US-EMLP-HA (20X9) CUS** | **0830995** | 1 |
| 4-section, lettering field size: 60 x 30 mm | white | **US-EMLP-HA (60X30) CUS** | **0830996** | 1 |
| 4-section, lettering field size: 60 x 30 mm | silver | **US-EMLP-HA (60X30) SR CUS** | **0830997** | 1 |
| 2-section, lettering field size: 85.6 x 54 mm | white | **US-EMLP-HA (85,6X54) CUS** | **0830998** | 1 |
| 2-section, lettering field size: 85.6 x 54 mm | silver | **US-EMLP-HA (85,6X54) SR CUS** | **0830999** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Magazine,** for THERMOMARK CARD..., for accommodating all US materials | **THERMOMARK CARD-US-MAG1** | **5146451** | 1 |

## RFMARK RFID system

### RFMARK high-frequency handheld

RFMARK HF is a powerful handheld device for contact-free reading and writing of HF transponders. The RFMARK HF can identify and locate HF transponders. Data can be received, transmitted, and scanned on a contact-free basis and without visual contact.

### RFMARK ultra-high frequency handheld

The RFMARK UHF is a powerful handheld device which is equipped with a crossed dipole antenna. This allows UHF transponders to be written and read regardless of their position. Bulk detection of 150 transponders per second is also possible.

| Dimensions | |
|---|---|
| | [mm] |
| **General data** | |
| Degree of protection | |
| Temperature range | [°C] |
| Weight | [kg] |
| Frequency | [MHz] |
| Read/write format | [m] |
| Memory | |
| Display | |

| Description |
|---|
| **Handheld, high-frequency range**<br>Range up to 0.1 m, depending on the environment |
| **Handheld, ultra-high frequency range**<br>Range up to 2.0 m, depending on the environment |

### Advantages and accessories

Advantages of the RFMARK readers:
- Easy operation via touch screen
- Low power consumption and long battery life
- 1D laser scanner and 2D imager

### Matching accessories

You can make optimum use of the RFMARK readers and ensure they are as user-friendly as possible with our reader accessories.

### Radio-frequency identification, RFID

Used for contact-free identification, data exchange, and localization of transponders/tags without visual contact. With the aid of an RFID handheld device, which acts as a transmitter and receiver, data is transmitted to and received from a transponder/tag by electromagnetic waves (UHF) or a magnetic field (HF).

| |
|---|
| **Charging and data exchange station,** with replacement battery, connection for USB 2.0 and Ethernet, charger |
| for RFMARK HF, with power supply unit and power cable (EU/UK) |
| for RFMARK UHF, with power supply unit and power cable (EU/UK/US/CN) |
| **Replacement battery** |
| for RFMARK HF, Li-ion 7.4 V, 2.6 Ah |
| for RFMARK UHF, Li-ion 3.7 V, 2.26 Ah |
| **Protective bag,** with strap, protection against splash water, touch screen operation not possible |
| for RFMARK HF |
| for RFMARK UHF |
| **Belt pouch,** touch screen can be operated |
| for RFMARK HF |
| for RFMARK UHF |
| **Read and write USB stick,** |
| Crossed dipole antenna, range: 1 m |

Handheld, high-frequency (HF)

Handheld, ultra-high frequency (UHF)

## Technical data

| Width | Length | Height |
|---|---|---|
| **90** | **250** | **45** |

IP54
-20 ... 55
0.55
13.56
Max. 0.1
256 MB DDR RAM
3.5" color touch screen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **RFMARK HF** | **5148010** | 1 |

## Accessories

| | | |
|---|---|---|
| **RFMARK HF POWER LINK STATION** | **5148013** | 1 |
| **RFMARK HF/ACCU** | **5148015** | 1 |
| **RFMARK HF PROTECTION CASE** | **5148017** | 1 |
| **RFMARK HF/BELTPOUCH** | **5148018** | 1 |

## Technical data

| Width | Length | Height |
|---|---|---|
| **60** | **147** | **39** |

IP54
-20 ... 55
0.235
868
Max. 2
256 MB DDR RAM
2.2" color touch screen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **RFMARK UHF** | **5148011** | 1 |

## Accessories

| | | |
|---|---|---|
| **RFMARK UHF POWER LINK STATION** | **5148014** | 1 |
| **RFMARK UHF/ACCU** | **5148016** | 1 |
| **RFMARK UHF PROTECTION CASE** | **5148020** | 1 |
| **RFMARK UHF/BELTPOUCH** | **5148021** | 1 |
| **RFMARK UHF FD** | **5148012** | 1 |

## Adhesive system marking with RFID transponder

Can be marked using:

UV LED technology

Unlabeled

### Markers

- The UCT-PMLP-RFID ... UniCard labeling range includes self-adhesive markers for system marking, with good adhesive properties
- The markers are integrated in a uniform matrix and can be printed quickly and easily with the BLUEMARK CLED
- The format automatically ensures printing with a high level of positional accuracy
- The wide temperature range means that the labels can be used both indoors and outdoors

### Inlays

- The HF transponder inlays comply with ISO 15693 and ISO 18000-3 mode 1
- The UHF transponder inlays comply with EPC Class 1 Gen 2 and ISO 18000-6C

### Technical data

| General data | | |
|---|---|---|
| Can be marked with | | BLUEMARK CLED |
| Material | | PVC/PC |
| Temperature range | [°C] | -25 ... 80 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and cadmium |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **UniCard,** self-adhesive plastic label, with integrated HF transponder 1-section, lettering field size: 90 x 38 mm, reading performance: max. 0.1 m, depending on the environment | white | **UCT-PMLP-RFID/HF (90X38)** | **0830956** | 10 |
| **UniCard,** self-adhesive plastic label, with integrated UHF transponder 1-section, lettering field size: 90 x 38 mm, reading performance: max. 2.0 m, depending on the environment | white | | | |

Unlabeled

## Technical data

BLUEMARK CLED
PVC/PC
-25 ... 80
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and cadmium

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-PMLP-RFID/UHF (90X38)** | **0830957** | 10 |

## System marking for inserting into marker carriers, with RFID transponder

Can be marked using:

UV LED technology

Unlabeled

### Markers

- The UniCard UCT-PMP-RFID ... marking range includes markers for system marking, specially designed to fit into existing CARRIER-PMP (108x38) marker carriers
- The markers are integrated in a uniform matrix and can be printed quickly and easily with the BLUEMARK CLED
- The format automatically ensures printing with a high level of positional accuracy
- The wide temperature range means that the labels can be used both indoors and outdoors
- The CARRIER-PMP ... marker carriers can be equipped with colored PMST markers according to DIN 2403

### Inlays

- The HF transponder inlays comply with ISO 15693 and ISO 18000-3 mode 1
- The UHF transponder inlays comply with EPC Class 1 Gen 2 and ISO 18000-6C

**Notes:**

[1]) RVT-PA...BK rivet for fixing PMST ... marker strips to the CARRIER-PMP ...

### Technical data

| | | |
|---|---|---|
| **General data** | | |
| Can be marked with | | BLUEMARK CLED |
| Material | | PVC/PC |
| Inflammability class according to UL 94 | | V0 |
| Temperature range | [°C] | -25 ... 80 |
| Wipe resistance | | DIN EN 61010-1 (VDE 0411-1) |
| Components | | Free from silicone and cadmium |

### Ordering data

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **UniCard,** plastic label with integrated HF transponder | | | | |
| 1-section, lettering field size: 90 x 38 mm | white | **UCT-PMP-RFID/HF (90X38)** | **0830954** | 10 |
| **UniCard,** plastic label with integrated UHF transponder | | | | |
| 1-section, lettering field size: 90 x 38 mm | white | | | |
| 1-section, lettering field size: 90 x 38 mm | orange | | | |
| **Marking label for conveyed fluids,** for equipping CARRIER-PMP ... according to DIN 2403 | | | | |
| | white | | | |
| | yellow | | | |
| | orange | | | |
| | red | | | |
| | violet | | | |
| | green | | | |
| | gray | | | |
| | brown | | | |
| | blue | | | |
| | black | | | |
| **Marker carriers**, for UCT-PMP ... labels that can be inserted | | | | |
| Carrier size: 108 x 38 mm | black | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Mounting strip,** can be screwed, for CARRIER-PMP ... | | | | |
| **Plastic body-bound rivet,** 3.5 mm diameter[1]) | | | | |

**Unlabeled**

**For securing with rivets on CARRIER-PMP ...**

**For mounting with screws, screw clamps, or cable binders**

## Technical data

BLUEMARK CLED
PVC/PC
V2
-25 ... 80
DIN EN 61010-1 (VDE 0411-1)
Free from silicone and cadmium

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-PMP-RFID/UHF (90X38)** | **0830955** | 10 |
| **UCT-PMP-RFID/UHF (90X38) OG** | **0803048** | 10 |

## Accessories

## Technical data

-
PVC
V0
-30 ... 80
DIN EN 61010-1 (VDE 0411-1)
Silicone-free

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PMST (9X38)** | **0830960** | 100 |
| **PMST (9X38) YE** | **0830964** | 100 |
| **PMST (9X38) OG** | **0830966** | 100 |
| **PMST (9X38) RD** | **0830962** | 100 |
| **PMST (9X38) VT** | **0830967** | 100 |
| **PMST (9X38) GN** | **0830961** | 100 |
| **PMST (9X38) GY** | **0830963** | 100 |
| **PMST (9X38) BN** | **0830968** | 100 |
| **PMST (9X38) BU** | **0830969** | 100 |
| **PMST (9X38) BK** | **0830965** | 100 |

## Accessories

## Technical data

-
PA
V2
-40 ... 105
-
Free from silicone and halogen

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **CARRIER-PMP (108X38)** | **0830958** | 10 |

## Accessories

| | | |
|---|---|---|
| **SCRT 9X16-27** | **0830970** | 50 |
| **SCRT 9X25-40** | **0830971** | 50 |
| **SCRT 9X40-60** | **0830972** | 25 |
| **SCRT 9X60-80** | **0830973** | 25 |
| **SCRT 9X80-100** | **0830974** | 25 |
| **SCRT 9X100-120** | **0830975** | 25 |
| **SCRT 9X140-160** | **0830976** | 25 |
| **SCRT 9X160-180** | **0830977** | 25 |
| **SCRT 9X180-200** | **0830978** | 25 |
| **RVT-PA 3,5 BK** | **0830959** | 100 |

## System marking for sticking on or inserting into marker carriers

- The UCT-PMLP ... UniCard marking range includes self-adhesive markers for system marking, with good adhesive properties
- The UniCard UCT-PMP ... marking range includes markers for system marking, specially designed to fit into existing CARRIER-PMP (108x38) marker carriers
- The format automatically ensures printing with a high level of positional accuracy
- The wide temperature range means that the labels can be used both indoors and outdoors
- Labeling service: Phoenix Contact can custom-label all UniCard markers in accordance with your requirements
- The CARRIER-PMP ... marker carriers can be equipped with colored PMST markers according to DIN 2403

**Notes:**

[1]) For an ordering example, see page 358 in main catalog 5.

[2]) RVT-PA...BK rivet for fixing PMST ... marker strips to the CARRIER-PMP ...

Can be marked using:

UV

**UV LED technology**

PRINTED FOR YOU

**For self-adhesion**

### Technical data

| | | | | |
|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height |
| **General data** | | | | |
| Can be marked with | | BLUEMARK CLED | | |
| Material | | PC | | |
| Inflammability class according to UL 94 | | V0 | | |
| 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,** plastic label, for gluing | | | | |
| 1-section, lettering field size: 90 x 38 mm | white | **UCT-PMLP (90X38)** | **0803041** | 10 |
| **UniCard,** plastic label, for gluing, **marked according to customer specifications**[1]) | | | | |
| 1-section, lettering field size: 90 x 38 mm | white | **UCT-PMLP (90X38) CUS** | **0803042** | 1 |
| **UniCard,** plastic label | | | | |
| 1-section, lettering field size: 90 x 38 mm | white | | | |
| 1-section, lettering field size: 90 x 38 mm | blue | | | |
| 1-section, lettering field size: 90 x 38 mm | violet | | | |
| 1-section, lettering field size: 90 x 38 mm | yellow | | | |
| **UniCard,** plastic label, **marked according to customer specifications**[1]) | | | | |
| 1-section, lettering field size: 90 x 38 mm | white | | | |
| 1-section, lettering field size: 90 x 38 mm | blue | | | |
| 1-section, lettering field size: 90 x 38 mm | violet | | | |
| 1-section, lettering field size: 90 x 38 mm | yellow | | | |
| **Marking label for conveyed fluids,** for equipping CARRIER-PMP ... according to DIN 2403 | | | | |
| | white | | | |
| | yellow | | | |
| | orange | | | |
| | red | | | |
| | violet | | | |
| | green | | | |
| | gray | | | |
| | brown | | | |
| | blue | | | |
| | black | | | |
| **Marker carriers,** for UCT-PMP ... labels that can be inserted | | | | |
| Carrier size: 108 x 38 mm | black | | | |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Mounting strip,** can be screwed, for CARRIER-PMP ... | | | | |
| **Plastic body-bound rivet,** 3.5 mm diameter[2]) | | | | |

PRINTED FOR YOU

For inserting into a marker carrier

For securing with rivets on CARRIER-PMP ...

For mounting with screws, screw clamps, or cable binders

## Technical data

| Width | Length | Height |
|---|---|---|
| BLUEMARK CLED | | |
| PC | | |
| V0 | | |
| -40 ... 120 | | |
| DIN EN 61010-1 (VDE 0411-1) | | |
| Free from silicone and halogen | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UCT-PMP (90X38)** | **0803039** | 10 |
| **UCT-PMP (90X38) BU** | **0803047** | 10 |
| **UCT-PMP (90X38) VT** | **0803132** | 10 |
| **UCT-PMP (90X38) YE** | **0803133** | 10 |
| **UCT-PMP (90X38) CUS** | **0803040** | 1 |
| **UCT-PMP (90X38) BU CUS** | **8190566** | 1 |
| **UCT-PMP (90X38) VT CUS** | **8190707** | 1 |
| **UCT-PMP (90X38) YE CUS** | **8190708** | 1 |

## Accessories

## Technical data

| Width | Length | Height |
|---|---|---|
| - | | |
| PVC | | |
| V0 | | |
| -30 ... 80 | | |
| DIN EN 61010-1 (VDE 0411-1) | | |
| Silicone-free | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PMST (9X38)** | **0830960** | 100 |
| **PMST (9X38) YE** | **0830964** | 100 |
| **PMST (9X38) OG** | **0830966** | 100 |
| **PMST (9X38) RD** | **0830962** | 100 |
| **PMST (9X38) VT** | **0830967** | 100 |
| **PMST (9X38) GN** | **0830961** | 100 |
| **PMST (9X38) GY** | **0830963** | 100 |
| **PMST (9X38) BN** | **0830968** | 100 |
| **PMST (9X38) BU** | **0830969** | 100 |
| **PMST (9X38) BK** | **0830965** | 100 |

## Accessories

## Technical data

| Width | Length | Height |
|---|---|---|
| - | | |
| PA | | |
| V2 | | |
| -40 ... 105 | | |
| - | | |
| Free from silicone and halogen | | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **CARRIER-PMP (108X38)** | **0830958** | 10 |

## Accessories

| | | |
|---|---|---|
| **SCRT 9X16-27** | **0830970** | 50 |
| **SCRT 9X25-40** | **0830971** | 50 |
| **SCRT 9X40-60** | **0830972** | 25 |
| **SCRT 9X60-80** | **0830973** | 25 |
| **SCRT 9X80-100** | **0830974** | 25 |
| **SCRT 9X100-120** | **0830975** | 25 |
| **SCRT 9X140-160** | **0830976** | 25 |
| **SCRT 9X160-180** | **0830977** | 25 |
| **SCRT 9X180-200** | **0830978** | 25 |
| **RVT-PA 3,5 BK** | **0830959** | 100 |

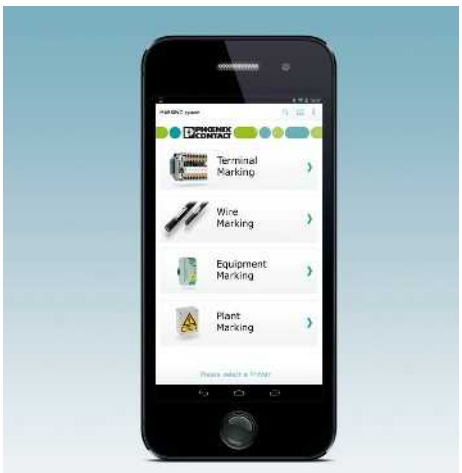
## MARKING system app - MARKING system

### Material editor

The material editor allows you to create the required markings directly in the application environment via tablet PC or smartphone.

### Product scanner

The product scanner allows you to quickly and easily call up technical data for the marking material or directly mark it via the material editor.




### Search assistant

With the search assistant, you can carry out a structured, targeted search for suitable marking materials, even without knowledge of this field.

## MARKING system app

You can retrofit your THERMOMARK LINE printer with MINI FD BLUETOOTH. MINI FD BLUETOOTH enables reliable, wireless data exchange between THERMOMARK LINE printers and mobile, Bluetooth-capable devices, such as smartphones and tablet PCs. This means that print orders can be conveniently sent to the printer using the MARKING system app.

**Notes:**

For additional information on the THERMOMARK LINE printers, please refer to the product area on our website at phoenixcontact.net/products or main catalog 5.

### Technical data

| | |
|---|---|
| **General data** | |
| Application | USB/Bluetooth |
| Transmission speed [Mbps] | 3 |

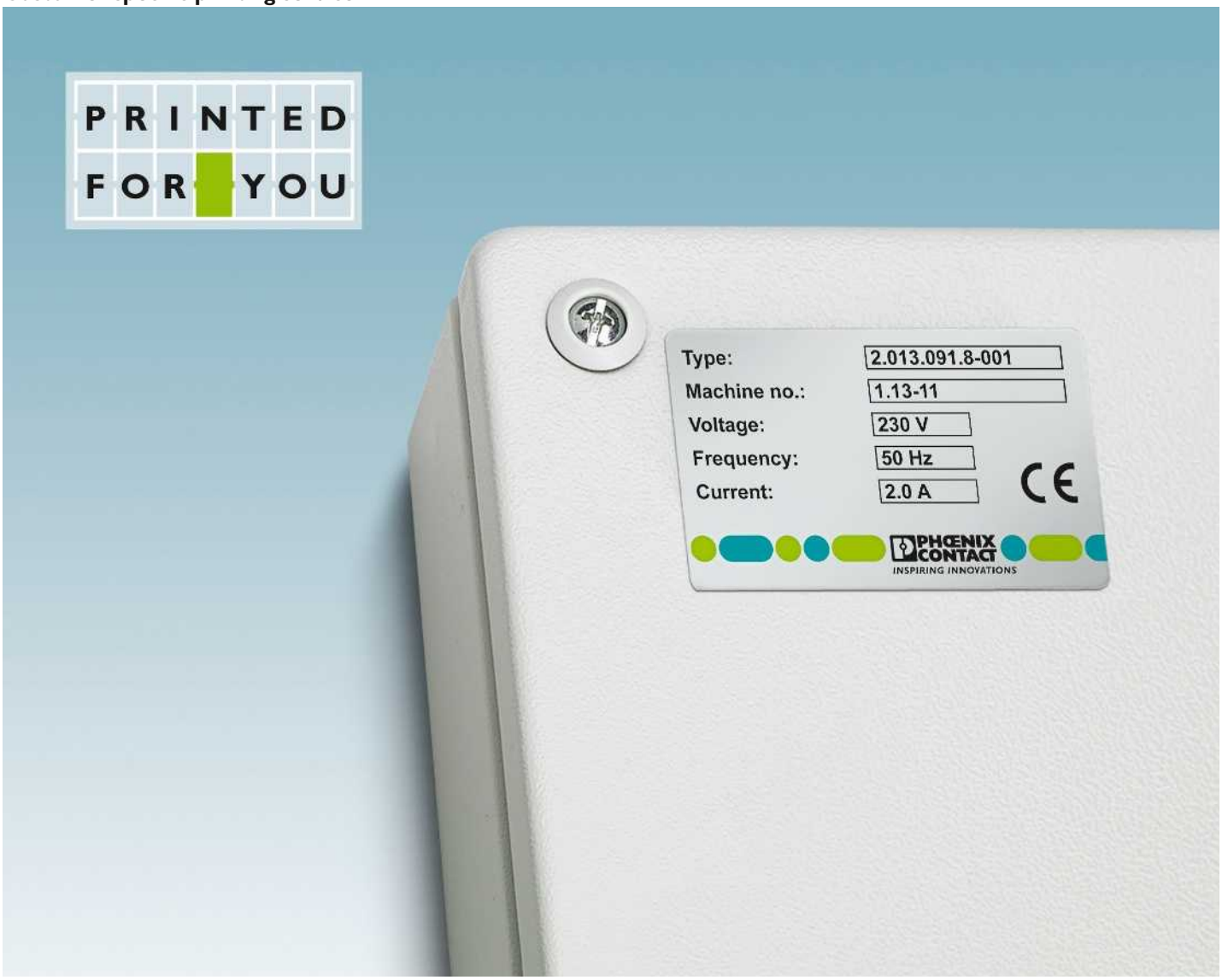
### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Bluetooth USB adapter** | | | |
| | **MINI FD BLUETOOTH** | **0830986** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Thermal transfer printer for cards,** incl. European power cable, US power cable, USB cable, DVD with CLIP PROJECT ADVANCED, CD with multilingual user manual/driver/firmware, DIN A5 printed English/German user manual, magazine for UCT–TM materials, magazine for US materials, one unit pack UCT–TM 6, one unit pack US–EMLP (85.6 x 54), one ink ribbon (50-meter sample roll) | **THERMOMARK CARD** | **5146464** | 1 |
| | **THERMOMARK CARD PLUS** | **5146481** | 1 |
| **Thermal transfer printer for material off the roll,** including European power cable, US power cable, USB cable, DVD with CLIP PROJECT ADVANCED, CD with multilingual user manual/driver/firmware, A5 printed English/German user manual, one roll of EML (20x8) labels containing 1000 labels, one ink ribbon (50 meters) | **THERMOMARK ROLL** | **5146477** | 1 |
| | **THERMOMARK ROLL X1** | **5146723** | 1 |
| **Thermal transfer printer**, incl. connecting cable, Windows® printer driver and operating instructions, software | **THERMOMARK X1.2** | **5146231** | 1 |

## Customer-specific printing service



**Easy ordering process via CLIP PROJECT and e-mail**

You can create customer-specific marking quickly and easily via CLIP PROJECT and order via e-mail.

**New: color-printed marking solutions**

You can use marking materials in UniCard and UniSheet format as well as metal labels for color printing.

**We mark marking materials according to your requirements**

All materials which can be marked according to customer requirements are indicated with this symbol.

## CLIP PROJECT
## advanced and professional

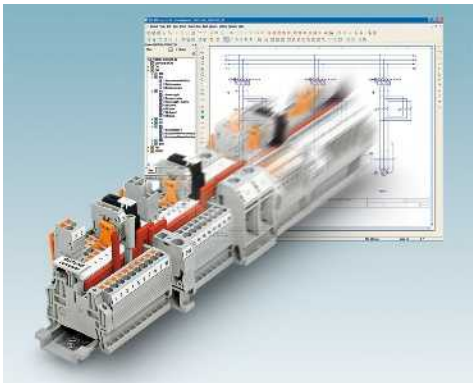
### CLIP PROJECT advanced

The CLIP PROJECT advanced program enables the quick planning and configuration of terminal strips for the control cabinet and field as well as custom-marking of terminal blocks, cables, and lines, plus devices and systems:

- The automatic correction function performs a logical test of the terminal strips and automatically adds the necessary accessories such as covers and end brackets
- The terminal strip configurator enables the distributed arrangement of individual terminal strips on different DIN rails
- 3D preview and complete documentation of the assembled DIN rails, such as order and mounting lists
- Numerous sorting and filter functions for efficient management of your print jobs
- One software for all output devices: CLIP PROJECT controls all marking technologies from Phoenix Contact, from the BLUEMARK CLED high-speed printer, the THERMOMARK LINE thermal transfer printer, and the plotter to the TOPMARK LASER desktop laser marker
- Continual extension of the output devices and marking materials via updates
- Automatic Internet update
- Intuitive Windows® user interface
- CLIP PROJECT supports all marking materials from Phoenix Contact, from V4A stainless steel and aluminum to plastics such as polyamide or polycarbonate or foils made of PVC or polyester. These are stored with preset parameters

### CLIP PROJECT professional

- The professional version also includes an efficient template designer, which can be used to design signs of your choice and to adapt existing material descriptions
- Graphics, various barcode types, and geometric elements such as squares, circles, and lines can be accessed for design work
- Data can also be imported into the templates from various data sources



### Technical data

| | |
|---|---|
| **General data** | |
| Software interface | EPLAN 5.7<br>EPLAN Electric P8<br>AUCOTEC ELCAD<br>AUCOTEC Engineering Base<br>AUCOTEC RUPLAN<br>ZUKEN E$^3$<br>Bentley Promis-e<br>WSCAD<br>IGE XAO<br>PC-Schematic AUTOMATION<br>SDProget SPAC |
| System requirements | |
| Operating systems | MS Windows XP SP3, MS Windows Vista,<br>MS Windows 7 (32/64-bit), MS Windows 8 (32/64-bit) |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **CLIP PROJECT advanced, planning and marking software,** German/English/French/Dutch/Italian/Spanish/Russian/Polish/Hungarian/Czech/Turkish/Portuguese/Chinese and Japanese | **CLIP-PROJECT ADVANCED** | **5146040** | 1 |
| **CLIP PROJECT professional, planning and marking software, with template designer,** German/English/French/Dutch/Italian/Spanish/Russian/Polish/Hungarian/Czech/Turkish/Portuguese/Chinese and Japanese | **CLIP-PROJECT PROFESSIONAL** | **5146053** | 1 |

**CRIMPHANDY - portable hand-held machine. Stripping and crimping in just one step.**

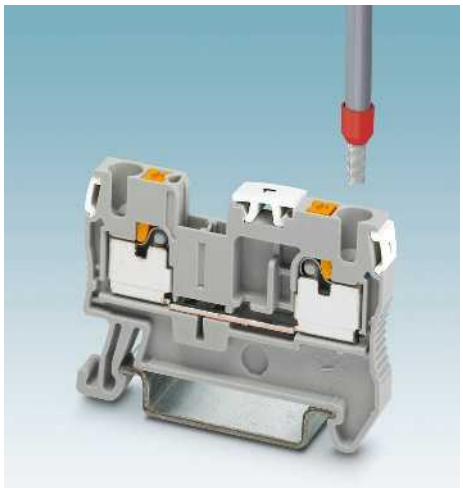
Simply insert the conductor, ...

... stripping and crimping is carried out automatically, ...

... and you're done.

Easy operation thanks to the automatic stripping and crimping function. One tool for both work steps, resulting in time savings of approx. 75%. The device signals the operating states clearly by means of colored LEDs.

Automatic cross-section monitoring prevents faulty crimping as a result of incorrect cross sections. The device displays a corresponding message.



The efficiency is particularly evident when used in combination with the push-in connection terminal block PT: conductors are processed and contacted in no time at all.

Integrated magazine for ferrules in strip form. The automatic feed enables conductors to be crimped one after another.

Easy to remove collecting chamber for discarded insulation. This guarantees a clean working environment. At around just 430 grams, the device can also easily be used inside the control cabinet.

Integrated lithium-ion polymer rechargeable battery for up to 2000 crimps. The fast charger provided charges the battery, which is easy to replace, in just 60 minutes.

## CRIMPHANDY, portable hand-held machine, for a 1.0 to 1.5 mm² conductor cross section

The product innovation for switchgear manufacturing – the CRIMPHANDY. With this portable hand-held machine, you can strip and crimp your conductors in under two seconds – 75% less time than before.

- The matching reel ferrules are suitable for use on all modular terminal blocks, particularly those from the CLIPLINE complete system:
- UT screw connection terminal blocks
- ST spring-cage connection terminal blocks
- PT push-in connection terminal blocks
- COMBI plug-in connection solutions

**Notes:**

An application video can be found in the download area for the relevant product on our website at phoenixcontact.net/products.

**1.0 mm² conductor cross section**

### Technical data

| | | | | |
|---|---|---|---|---|
| **Dimensions** | | Width | Length | Height |
| | [mm] | **43** | **205** | **70** |
| **General data** | | | | |
| Weight | [kg] | 0.43 | | |
| Conductor | [mm²] | - 1 | | |
| Working cycle | [s] | < 2 | | |
| Compression | | Square crimp | | |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Portable hand-held machine, battery-powered,** for ferrules, 1.0 mm², incl. battery and charger, 100 -240 V, in a robust case | | | |
| for standard PVC conductors | **CF CRIMPHANDY 1,0** | **1212465** | 1 |
| **Portable hand-held machine, battery-powered,** for ferrules, 1.5 mm², incl. battery and charger, 100 - 240 V, in a robust case | | | |
| for standard PVC conductors | | | |

### Accessories

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Reel ferrules,** 1.0 mm², 8 mm, with plastic sleeve, according to DIN 46228-4, 50 pieces per strip, 20 strips per unit pack | | | |
| Red, according to DIN 46228-4 | **AI 1,0-8 RD-S** | **1212523** | 1000 |
| Yellow, special color | **AI 1,0-8 YE-S** | **1212782** | 1000 |
| **Reel ferrules,** 1.5 mm², 8 mm, with plastic sleeve, according to DIN 46228-4, 50 pieces per strip, 20 strips per unit pack | | | |
| Black, according to DIN 46228-4 | | | |
| Red, special color | | | |
| **Replacement battery,** for CF CRIMPHANDY..., Li-ion 7.4 V, 0.76 Ah | **CF CRIMPHANDY/ACCU** | **1212518** | 1 |
| **Replacement charger,** for CF CRIMPHANDY..., 100 - 240 V AC | **CF CRIMPHANDY/CHARGER** | **1212519** | 1 |

**1.5 mm² conductor cross section**

| Technical data | | |
|---|---|---|
| Width | Length | Height |
| **43** | **205** | **70** |
| | | |
| 0.43<br>- 1.5<br>< 2<br>Square crimp | | |

| Ordering data | | |
|---|---|---|
| **Type** | **Order No.** | Pcs. / Pkt. |
| | | |
| **CF CRIMPHANDY 1,5** | **1212466** | 1 |

| Accessories | | |
|---|---|---|
| | | |
| **AI 1,5-8 BK-S** | **1212524** | 1000 |
| **AI 1,5-8 RD-S** | **1212781** | 1000 |
| **CF CRIMPHANDY/ACCU** | **1212518** | 1 |
| **CF CRIMPHANDY/CHARGER** | **1212519** | 1 |

## CUS tool sets, equipped with tools according to customer requirements

You can put together your own CUS tool set according to your individual requirements
- Six different bags are available, designed for typical applications
- Easily select your tools at phoenixcontact.net/products

**Notes:**

The CUS tool sets can be put together according to your requirements in the product area on our website at phoenixcontact.net/products.

TOOLS FOR YOU

**Tool case, lockable, with straps**

| Description | Ordering data | | |
|---|---|---|---|
| | Type | Order No. | Pcs. / Pkt. |
| **Toolbox,** lockable, with adjustable strap, equipped with: cable cutter, diagonal cutter, micro cutter, stripping and sheath stripping tools, crimping tool set, combination, needle-nose, and water pump pliers, VDE bladed and Phillips screwdrivers, control cabinet key, voltage tester, ferrule box, blades, tape measure, continuity tester, marking tool, ring, open-end, and adjustable wrench set, T-handle hexagonal wrench, safety glasses, hammer, 41-piece ratchet socket wrench set, 1/4" | TOOL-CASE | 1212629 | 1 |
| **Toolbox,** lockable, with adjustable strap, **equipped with tools according to customer requirements** | TOOL-CASE CUS | 1200072 | 1 |

## CUS tool sets, equipped with tools according to customer requirements

**Notes:**

The CUS tool sets can be put together according to your requirements in the product area on our website at phoenixcontact.net/products.

TOOLS FOR YOU

**Tool bag,**
**with document and laptop compartments**

TOOLS FOR YOU

**Tool bag, with strap**

| Description | Ordering data | | |
|---|---|---|---|
| | Type | Order No. | Pcs. / Pkt. |
| **Tool bag,** with adjustable straps, with document and laptop compartments, **equipped with tools according to customer requirements** | TOOL-BAG CUS | 1200081 | 1 |
| **Tool bag,** with strap, very comfortable to carry thanks to ergonomic shape, **equipped with tools according to customer requirements** | TOOL-CARRIER CUS | 1200082 | 1 |

## CUS tool sets, equipped with tools according to customer requirements

- Individual tool sets, with cutting, stripping, crimping, installation, and testing tools from the TOOL fox tool range
- Rugged and heavy-duty tool bags
- Select from six types of bag and equip these with the required tools at phoenixcontact.net/products

**Notes:**

The CUS tool sets can be put together according to your requirements in the product area on our website at phoenixcontact.net/products.

TOOLS FOR YOU

**Tool belt pouch**

| Description | Ordering data | | |
|---|---|---|---|
| | Type | Order No. | Pcs. / Pkt. |
| **Tool belt pouch,** with two robust internal pockets, **equipped with tools according to customer requirements** | TOOL-BELTPOUCH CUS | 1200084 | 1 |

## CUS tool sets, equipped with tools according to customer requirements

**Notes:**

The CUS tool sets can be put together according to your requirements in the product area on our website at phoenixcontact.net/products.

TOOLS FOR YOU

**Tool case**

TOOLS FOR YOU

**Wrap-up tool bag**

| Description | Ordering data | | |
|---|---|---|---|
| | Type | Order No. | Pcs. / Pkt. |
| **Tool case,** with elastic straps to hold the tools in place, **equipped with tools according to customer requirements** | TOOL-KIT CUS | 1200085 | 1 |
| **Wrap-up tool bag,** with slide-in compartments and robust elastic straps to hold the tools in place, **equipped with tools according to customer requirements** | TOOL-WRAP CUS | 1200083 | 1 |

## CRIMPFOX pliers, laser marked according to customer specifications

– Customize your crimping tool!
– You can now use robust laser engraving to mark CRIMPFOX pliers
– Individual laser marking prevents your tools from being mixed up

| Notes: |
| --- |
| Matching accessories can be found in main catalog 5 or the product area on our website at phoenixcontact.net/products. |
| [1]) Tools with customer-specific laser marking can be ordered quickly and easily in the product area on our website at phoenixcontact.net/products. |

The advantages of our CRIMPFOX tools:
– Consistently high crimping quality
– Unlockable pressure lock
– Marked die stations for precise processing of the relevant cross sections
– Easy work thanks to improved force transfer
– Ergonomically designed, non-slip handles
– CRIMPFOX 6S-F CUS: the self-adjusting die automatically adapts to the connector size

| Description |
| --- |
| **Crimping pliers,** for ferrules, according to DIN 46228-1 and -4, five marked die stations, **laser marked according to customer specifications**[1]) |
| Lateral insertion, 0.25 - 6.0 mm², unlockable pressure lock, trapezoidal crimp |
| Front insertion, 0.5 - 6 mm², square crimp |
| **Crimping pliers,** unlockable pressure lock, lateral insertion, oval crimp, **laser marked according to customer specifications**[1]) |
| For insulated cable lugs (light green, red), 0.14 - 1 mm², three marked die stations |
| For insulated cable lugs (red, blue), 0.75 - 2.5 mm², two marked die stations |
| **Crimping pliers,** for uninsulated cable lugs, three marked die stations, 0.34 - 2.5 mm², unlockable pressure lock, lateral insertion, indent crimp, **laser marked according to customer specifications**[1]) |
| **Crimping pliers,** for uninsulated slip-on sleeves 2.8/4.8/6.3 mm, three marked die stations, B-crimp, 0.1 - 1.5 mm², unlockable pressure lock, lateral insertion, **laser marked according to customer specifications**[1]) |
| **Crimping pliers,** for ferrules according to DIN 46228-1 and -4, self-adjusting die, trapezoidal crimp, 0.5 - 6 mm², unlockable pressure lock, **laser marked according to customer specifications**[1]) |
| Front insertion |
| Lateral insertion |
| **Crimping pliers,** three marked die stations, 0.75 - 6 mm², oval crimp, unlockable pressure lock, lateral insertion, **laser marked according to customer specifications**[1]) |
| For insulated cable lugs, symmetrical (red, blue, yellow) |
| For insulated cable lugs, asymmetrical (red, blue, yellow) |
| **Crimping pliers,** for ferrules according to DIN 46228-1 and -4, WM crimp, unlockable pressure lock, lateral insertion, **laser marked according to customer specifications**[1]) |
| Three marked die stations, 10 - 25 mm² |
| Two marked die stations, 35 - 50 mm² |

TOOLS FOR YOU

TOOLS FOR YOU

TOOLS FOR YOU

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs. / Pkt. |
| CRIMPFOX 6 CUS | 1212767 | 1 |
| CRIMPFOX 6S-F CUS | 1212769 | 1 |
| CRIMPFOX-RCI 1 CUS | 1212772 | 1 |
| CRIMPFOX-RCI 2,5 CUS | 1212773 | 1 |
| CRIMPFOX-RC 2,5 CUS | 1212777 | 1 |
| CRIMPFOX-SC 1,5 CUS | 1212779 | 1 |

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs. / Pkt. |
| CRIMPFOX 6T-F CUS | 1212771 | 1 |
| CRIMPFOX 6T CUS | 1212770 | 1 |

| Ordering data | | |
|---|---|---|
| Type | Order No. | Pcs. / Pkt. |
| CRIMPFOX-RCI 6 CUS | 1212774 | 1 |
| CRIMPFOX-RCI 6-1 CUS | 1212775 | 1 |
| CRIMPFOX 25R CUS | 1212765 | 1 |
| CRIMPFOX 50R CUS | 1212766 | 1 |

## CRIMPFOX and WIREFOX pliers, laser marked according to customer specifications

– Customize your crimping and stripping tool!
– You can now use robust laser engraving to mark CRIMPFOX and WIREFOX pliers
– Individual laser marking prevents your tools from being mixed up

| Notes: |
|---|
| Matching accessories can be found in main catalog 5 or the product area on our website at phoenixcontact.net/products. |
| [1]) Tools with customer-specific laser marking can be ordered quickly and easily in the product area on our website at phoenixcontact.net/products. |

The advantages of our WIREFOX tools:
– The special spring mechanism helps you to work precisely and safely
– Ergonomically designed, non-slip handles
– The WIREFOX pliers automatically adjust to different insulations and conductor diameters
– Highly adjustable limit stop for the stripping length
– Practical integrated wire cutter
– Easily replaceable blade cassettes for different cross sections and insulation

| Description |
|---|
| **Crimping pliers,** for uninsulated cable lugs, three marked die stations, indent crimp, unlockable pressure lock, lateral insertion, **laser marked according to customer specifications**[1]) |
| 4 - 10 $mm^2$ |
| 10 - 25 $mm^2$ |
| **Crimping pliers,** for uninsulated slip-on sleeves 2.8/4.8/6.3 mm, three marked die stations, 0.5 -6 $mm^2$, B-crimp, unlockable pressure lock, lateral insertion, **laser marked according to customer specifications**[1]) |
| **Crimping pliers,** for ferrules according to DIN 46228, unlockable pressure lock, lateral insertion, **laser marked according to customer specifications**[1]) |
| Square crimp, 0.14 – 10 $mm^2$ |
| HEX crimp, 0.14 – 6 $mm^2$ |
| **Stripping tool,** self-adjusting, easily replaceable blade cassettes, stripping length of up to 18 mm, cutting capacity: up to 1.5 $mm^2$ solid, up to 10 $mm^2$ stranded, **laser marked according to customer specifications**[1]) |
| For cables and conductors from 0.1 – 4 $mm^2$, specifically also intended for rubber and other kinds of special insulation |
| For cables and conductors from 1.5 - 6 $mm^2$, specifically for short-circuit-proof cables and rubber insulation |
| For standard cables and conductors from 0.02 - 10 $mm^2$ |
| For standard cables and conductors from 4 - 16 $mm^2$ |

TOOLS FOR YOU

TOOLS FOR YOU

TOOLS FOR YOU

**Ordering data**

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| CRIMPFOX-RC 10 CUS | 1212776 | 1 |
| CRIMPFOX-RC 25 CUS | 1212778 | 1 |
| CRIMPFOX-SC 6 CUS | 1212780 | 1 |

**Ordering data**

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| CRIMPFOX 10S CUS | 1212764 | 1 |
| CRIMPFOX 6H CUS | 1212768 | 1 |

**Ordering data**

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| WIREFOX 4 CUS | 1212762 | 1 |
| WIREFOX 6SC CUS | 1212763 | 1 |
| WIREFOX 10 CUS | 1212760 | 1 |
| WIREFOX 16 CUS | 1212761 | 1 |

Surge protection for special applications
**VAL-MS-AR...** Page 306

Surge protection for special applications
**VAL-MS-T1/T2...** Page 307

Surge protection for NEMA
**VAL-SQ NP...** Page 309

Surge protection for measurement and control technology
**PT-IQ-2X2...** Page 310

Surge protection for measurement and control technology
**PT-IQ-4X1...** Page 310

Surge protection for intrinsically safe circuits
**PT-IQ...EX** Page 312

Surge protection for information technology
**PT-IQ...** Page 313

Surge protection for telecommunications interfaces
**DT-TELE-SHDSL** Page 314

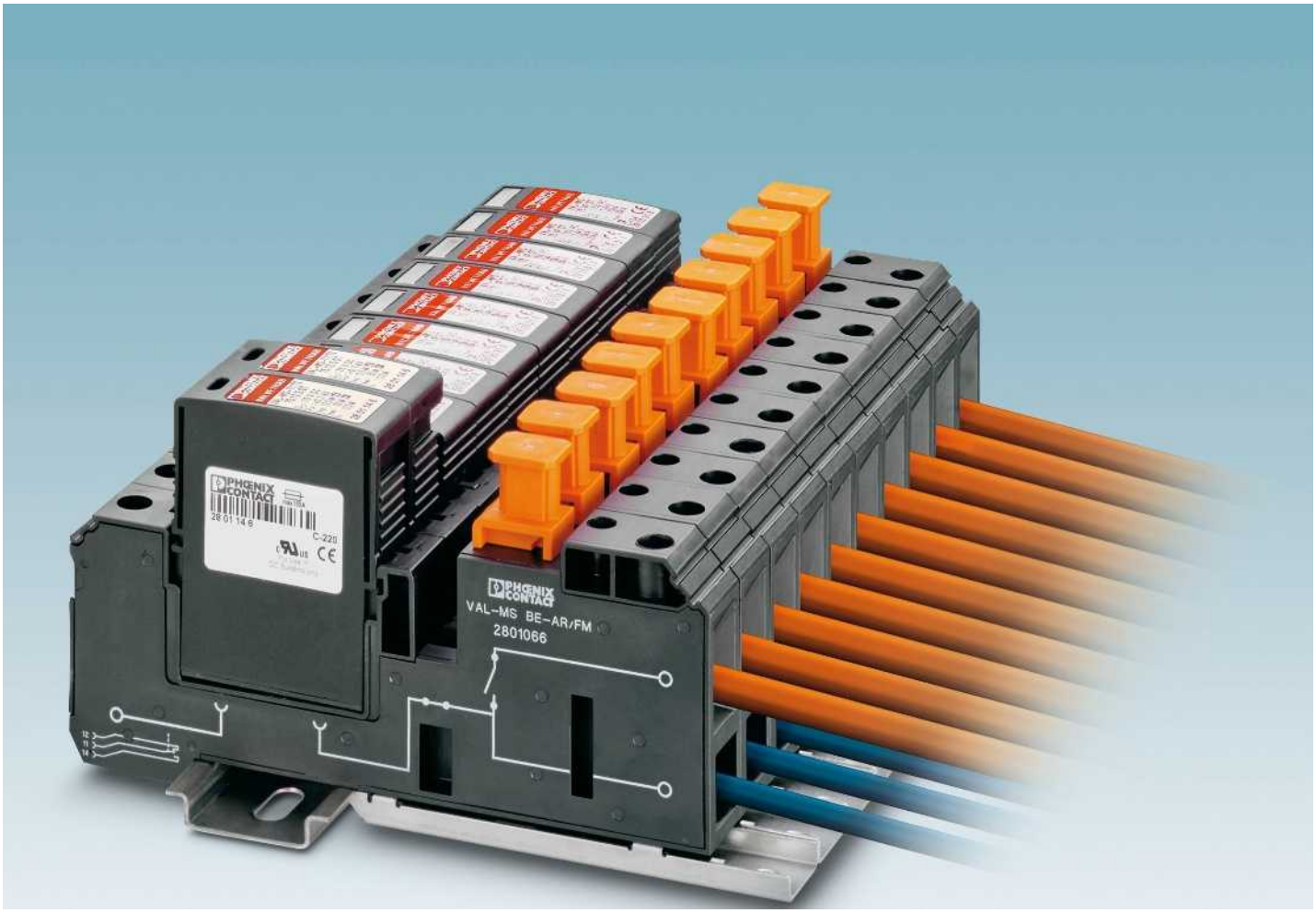
Power supplies
**QUINT POWER** Page 315

Power supplies
**UNO POWER** Page 316

Mounting set
**BATTERY MOUNTING CASE** Page 320

Soldering base element
**CB S-BE** Page 321

Bridge plug
**CB RC BRIDGE** Page 321




**VAL-MS-AR – surge protection for the American railway industry**

The VAL-MS-AR surge protective devices offer reliable, touch-proof protection while also providing a connection block for railway and signaling systems.

The VAL-MS BE-AR... base element has been designed so that the field input and house output connections are on the same side. The ground connection is on the opposite side. The integrated isolator allows you to easily carry out field diagnostics and insulation measurements.

VAL-MS-AR... complies with the practices recommended by AREMA C&S. In contrast to conventional installation with bolts and nuts, the alternative connection technology with base elements and plugs considerably reduces the effort required for installation, tests, and repair measures.

In addition to the standard products, VAL-MS-AR... /FM feature a remote monitoring function. This means that immediate failure or the removal of a protective plug can be signaled via floating contacts.

**Features:**

- Easy to replace, plug-in surge protection
- Protects systems against direct lightning strikes and coupled surge voltages
- Mechanical status indicator on each protective plug
- Optional remote signaling via floating PDTs
- Integrated isolator for insulation measurements and field diagnostics
- Screw terminal blocks for copper wire up to 4 AWG (25 mm²), solid, stranded, stripped or with sleeves
- Convenient marking options

**Field and house connection**

Independent terminal points for field and house connection enable wiring from the field side and signal lines with one conductor each. The terminal points are designed for typical wire gauges for railway applications:
House: 20 - 6 AWG (0.5 – 15 mm²),
Field: 18 - 4 AWG (1.5 - 25 mm²).

**Disconnect and test point**

Integrated isolator for carrying out diagnostics and insulation measurements without tampering with the installation. The disconnect knife remains connected to the field side for testing.

**Function monitoring**

Each plug has an optical, mechanical status indicator. In the event of a fault, the status is changed via the thermal disconnect device. In the VAL-MS-AR.../FM versions, a floating PDT is thereby switched, so that the status can be remotely indicated.

**Protective plug, free of leakage current**

VAL-MS...VF... plugs have a series connection consisting of a varistor and a spark gap. The advantage of this component combination is that no leakage currents flow in the passive state and therefore signals are not impaired.

**Lightning current plugs with latching**

The "T1/T2" plugs are robust enough to cope with direct lightning current. They are heavier than standard plugs and are equipped with latching to keep them in place in the event of vibrations, shocks, and magnetic influences.

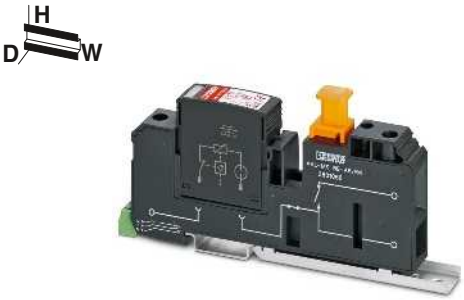
**Ground and bridging options**

The base elements can be easily bridged together with low impedance using pre-assembled MPB bridges. The terminal points for the ground connection accommodate conductors up to 2 AWG (35 mm²).

## VAL-MS-AR surge protection with multifunctional base element

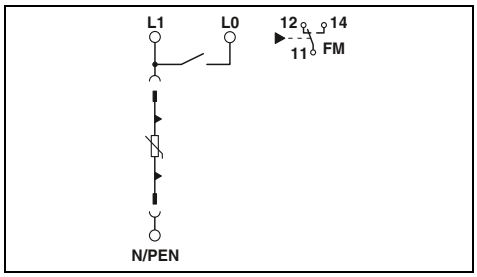
- Base element with isolator for easy field diagnostics and carrying out insulation measurements
- Independent inputs and outputs on one side of the base element, ground connection on the opposite side
- Optical, mechanical status indication for the individual arresters
- Disconnect device on each individual plug
- With or without floating remote indication contact
- Terminal block cases capable of bearing high-current, for solid or stranded conductors that are stripped or with sleeves

Type 1/2 lightning arrester SPD

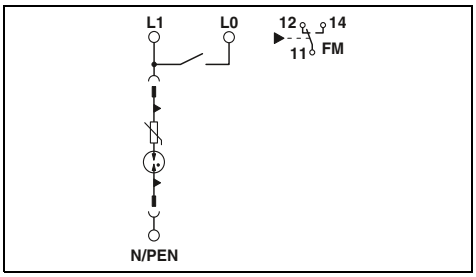



Type 2 hybrid SPD

Total width 17.7 mm




Total width 17.7 mm




### Technical data

| | | |
|---|---|---|
| Electrical data | ... 75 | ... 75 / ... 350 |
| IEC test classification/EN type | I/II/T1/T2 | II/T2 / II/T2 |
| Nominal voltage $U_N$ | 60 V DC | 60 V DC (5 V...48 V AC) / 230 V AC |
| Maximum continuous operating voltage $U_C$ | -/75 V DC | 75 V AC/100 V DC / 350 V AC/- |
| Impulse discharge curr. $I_{imp}$ (10/350)µs | | |
| Peak value | 12.5 kA | 3 kA / 3 kA |
| Charge | 6.25 As | - / - |
| Specific energy | 39.00 kJ/Ω | - / - |
| Nominal discharge current $I_n$ (8/20) µs | 12.5 kA | 10 kA / 10 kA |
| Max. discharge current $I_{max.}$ (8/20) µs | 50 kA | 20 kA / 20 kA |
| Residual voltage Without reference direction | ≤ 0.6 kV (at 5 kA) | ≤ 350 V (at 5 kA) / ≤ 1 kV (at 5 kA) |
| Voltage protection level $U_P$ Without reference direction | ≤ 0.7 kV | ≤ 1.4 kV / ≤ 1.2 kV |
| General data | | |
| Dimensions W/H/D | 17.7 mm/160 mm/77.5 mm | 17.7 mm/160 mm/75 mm |
| Connection data, Ground solid / stranded / AWG | 1.5 ... 35 mm²/1.5 ... 35 mm²/15 - 2 | 1.5 ... 35 mm²/1.5 ... 35 mm²/15 - 2 |
| Connection data, Field solid/stranded/AWG | 1.5 ... 25 mm²/1.5 ... 25 mm²/12 - 4 | 1.5 ... 25 mm²/1.5 ... 25 mm²/12 - 4 |
| Connection data, House solid/stranded/AWG | 0.5 ... 15 mm²/0.5 ... 15 mm²/20 - 6 | 0.5 ... 15 mm²/0.5 ... 15 mm²/20 - 6 |
| Temperature range | -40°C ... 80°C | -40°C ... 80°C |
| Inflammability class in acc. with UL 94 | V0 | V0 |
| 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

| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **VAL-MS-AR,** high-capacity lightning arrester | | | | | | |
| without remote indication contact | **VAL-MS-AR-T1/T2 75** | **2801491** | 10 | | | |
| with remote indication contact | **VAL-MS-AR-T1/T2 75/FM** | **2801492** | 10 | | | |
| **VAL-MS-AR,** hybrid SPD | | | | | | |
| without remote indication contact | | | | **VAL-MS-AR 75 VF** | **2801487** | 10 |
| with remote indication contact | | | | **VAL-MS-AR 75 VF/FM** | **2801488** | 10 |
| without remote indication contact | | | | **VAL-MS-AR 350 VF** | **2801489** | 10 |
| with remote indication contact | | | | **VAL-MS-AR 350 VF/FM** | **2801490** | 10 |

### Accessories

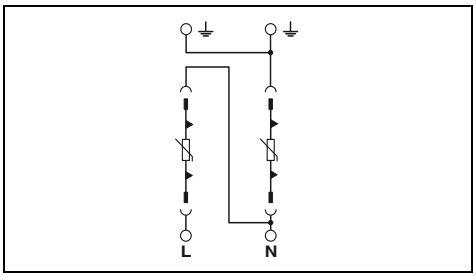
| | | | | | | |
|---|---|---|---|---|---|---|
| **Protective plug,** for inserting in base element | | | | | | |
| L-N / L-PEN | **VAL-MS-T1/T2 75/12.5 ST** | **2801146** | 10 | **VAL-MS 75 VF ST** | **2805318** | 10 |
| 1L-N/PE | | | | **VAL-MS 350 VF ST** | **2856595** | 10 |
| **Base element,** for individual assembly with protective connectors | | | | | | |
| with remote indication contact | **VAL-MS BE-AR/FM** | **2801066** | 10 | **VAL-MS BE-AR/FM** | **2801066** | 10 |
| without remote indication contact | **VAL-MS BE-AR** | **2801065** | 10 | **VAL-MS BE-AR** | **2801065** | 10 |
| **Plug-in bridge** 2-pos. | **FBS 2-18** | **2801068** | 10 | **FBS 2-18** | **2801068** | 10 |
| **MPB wiring bridge,** 57-pos. | **MPB 18/1-57** | **2809238** | 1 | **MPB 18/1-57** | **2809238** | 1 |

## Lightning and surge arresters for 48 V DC applications

- Suitable for the protection of remote radio heads in telecommunications systems
- Extremely low voltage protection level $U_p$ of < 400 V
- Consistent plug-in arresters, type 1/2
- Secure hold of plugs in the event of high lightning current loads and strong vibrations thanks to latching
- Thermal disconnect device for each individual plug
- Optical, mechanical status indication for the individual arresters
- Mechanical coding of all slots
- With or without floating remote indication contact
- Plugs can be checked with CHECKMASTER

**Type 1/2 arrester for 48 V DC applications**

Total width 35.6 mm




### Technical data

| | |
|---|---|
| Electrical data | ... 48 |
| IEC test classification/EN type | I/II/T1/T2 |
| Nominal voltage $U_N$ | 60 V AC |
| Maximum continuous operating voltage $U_C$ | 75 V AC |
| Impulse discharge curr. $I_{imp}$ (10/350)µs | |
| Peak value | 12.5 kA |
| Charge | 6.25 As |
| Specific energy | 39.00 kJ/Ω |
| Nominal discharge current $I_n$ (8/20) µs | 12.5 kA |
| Max. discharge current $I_{max.}$ (8/20) µs | 30 kA |
| Voltage protection level $U_P$ | ≤ 0.4 kV |
| Backup fuse max. in acc. with IEC | 160 A (gL/gG) |
| General data | |
| Dimensions W/H/D | 35.6 mm/97 mm/77.5 mm |
| 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 61643-11/EN 61643-11/UL 1449 ed. 3 |
| 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 AC (250 V AC)/1.5 A DC (30 V DC) |

### Ordering data

| Description | $U_C$ | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **VALVETRAB-MS,** varistor-based lightning arrester | | | | |
| | 75 V AC | **VAL-MS-T1/T2 48/12.5/1+1V** | **2801532** | 1 |
| | 75 V AC | **VAL-MS-T1/T2 48/12.5/1+1V-FM** | **2801533** | 1 |

### Accessories

| | | | | |
|---|---|---|---|---|
| **Replacement plug** | | | | |
| | L-N / L-PEN | **VAL-MS-T1/T2 48/12.5 ST** | **2801242** | 10 |
| **Marking material** | | ZBN 18..., see Catalog 6, page 63 | | |

VAL-SQ NP... provides modular surge protection for an entire house or a small company. The surge protective device consists of a base element and plug. It has the same base area as two standard 1 inch wide circuit breakers to enable installation in the corresponding distributor boxes. Initial installation must be performed by an electrically skilled person. If necessary, the surge protection plug can be replaced by the house owner.

The status indicator on the plug indicates the state of the surge protection. If the protection fails, the VAL-SQ NP... ST protective plug can be replaced quickly and easily. Up to now, components in all other products of this type had to be replaced by an electrically skilled person in the event of a fault.

The high-performance protective circuit features a discharge capacity of 32 kA per phase. The individual protective paths are protected thermally as well as against overcurrent.

The VAL-SQ NP... is suitable for single-phase 120/240 V applications with common neutral conductor and ground.

**Distributor box compatibility**

VAL-SQ NP can be used in all distribution boxes for single-phase 120/240 AC SN systems with 1 inch pitch.

VAL-SQ NP... devices are compatible with the following distributor boxes:

**Eaton**

– BR series (prefix 1BR or B) distributor boxes

**Siemens Industry, Inc.**

– PL series (prefix P, PW or G)
– ES series (prefix S, SW or G)
– EQ series (prefix E or W)

**General Electric Co.**

– Powermark Gold series (prefix TL, TM or TP)

**Schneider Electric USA Inc./ Square D Co.**

– Homeline series (prefix HOM)

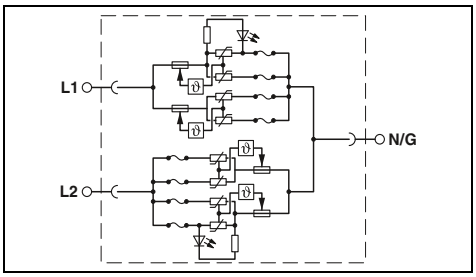
## Surge protection for distributor boxes in houses and small businesses

- Installs in NEMA-style distributor boxes with 1-inch pitch
- Uses the same footprint as two standard 1-inch pitch circuit breakers
- Suitable for single-phase 120/240 V AC systems
- 32 kA surge current capacity per phase
- 10 kA (UL) nominal surge discharge current ($I_N$)
- LEDs provide continuous feedback on the status of each phase
- UL 1449 3rd edition

**Notes:**

The products are offered exclusively for export outside the European Economic Area (EEA).

**SPD for distributor boxes with 1-inch pitch**




### Technical data

| | | |
|---|---|---|
| Electrical data | | |
| MCOV | L-L / L-N | 350 V/175 V |
| Nominal voltage $U_N$ | | 120 V AC |
| Maximum continuous operating voltage $U_C$ | | 120 V AC |
| Voltage Protection Rating (VPR) | | |
| | L-N / L-PE | 800 V/- |
| | N-PE / L-L | -/1200 V |
| Short-circuit current rating (SCCR) | | 10 kA |
| Nominal discharge current $I_n$ | | 10 kA |
| General data | | |
| UL Type | | type 1 |
| Degree of protection | | IP20/NEMA 1 |
| Error/status indicator | | LEDs |
| Temperature range | | -55°C ... 70°C |
| Test standards | | UL 1449 3rd edition |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Plug and base assembly,** 120/240 V AC single phase for distributor boxes with 1-inch pitch | **VAL-SQ NP 120-2-A 32** | **2800371** | 1 |

### Accessories

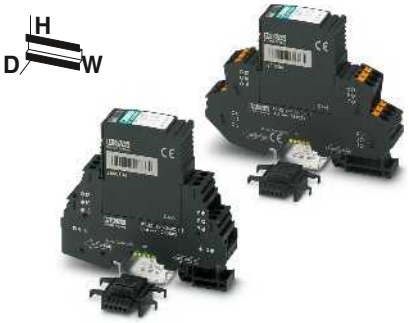
| | | | |
|---|---|---|---|
| **Replacement plug** | **VAL-SQ NP 120-2-A 32 ST** | **2800369** | 1 |
| **Base element** | **VAL-SQ NP 120-2-A BE** | **2800749** | 1 |

## PLUGTRAB PT-IQ

- Surge protection system
- Multi-level state monitoring
- Collective message about supply and remote module
- Multi-level, floating remote signaling
- System supplied via DIN rail bus
- Up to 28 protection modules per supply module
- Maximum ease of maintenance, thanks to the two-piece design
- Plugs are coded
- Impedance-neutral disconnection of plug for maintenance purposes
- Base element remains an integral part of the installation

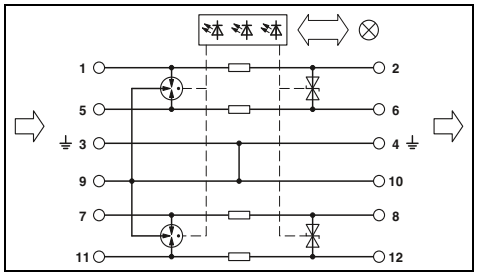
**Notes:**

For approvals and dimensional drawing, visit phoenixcontact.net/products




**2 double conductors (loops), floating, 9/10 connection grounded directly**

Total width 17.7 mm




### Technical data

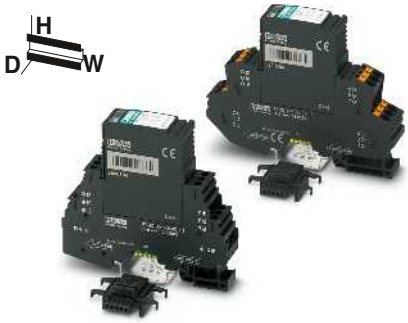
| | | | |
|---|---|---|---|
| Electrical data | | ... 5DC | ... 48DC |
| IEC test classification/EN type | | C1/C2/C3/D1 | C1/C2/C3/D1 |
| Maximum continuous operating voltage $U_C$ | | 6 V DC/4 V AC | 53 V DC/37 V AC |
| Impulse discharge curr. $I_{imp}$ (10/350)µs | Per path | 2.5 kA | 2.5 kA |
| Nominal current $I_N$ | | 700 mA (up to 50°C) | 300 mA |
| Nominal discharge current $I_n$ (8/20) µs | | | |
| | Core-core/core-ground | 10 kA/10 kA | 10 kA/10 kA |
| Total surge current (8/20)µs | | 20 kA | 20 kA |
| Voltage protection level $U_P$ | | | |
| | Core-core | ≤ 25 V (C3 - 25 A) | ≤ 90 V (C3 - 25 A) |
| | Core-ground | ≤ 600 V (C1 - 1 kV/500 A) | ≤ 600 V (C1 - 1 kV/500 A) |
| Resistance per path | | 1.2 Ω | 1.2 Ω |
| General data | | | |
| PT-IQ...PT dimensions W/H/D | | 17.7 mm/109.3 mm/77.5 mm | |
| PT-IQ...UT dimensions W/H/D | | 17.7 mm/91.1 mm/77.5 mm | |
| Connection data, push-in solid/stranded with ferrule/AWG | | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| Connection data solid/stranded with ferrule/AWG | | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| Temperature range | | -40°C ... 70°C | |
| Degree of protection in acc. with IEC 60529/EN 60529 | | IP20 | |
| Inflammability class in acc. with UL 94 | | V0 | |
| Connection method | | Screw connection/push-in connection | |
| Test standards | | EN 61643-21/A1/IEC 61643-21/A1/EN 61000-6-2/ EN 61000-6-2/A1/EN 61000-6-3 | |
| Remote indication contact | | Via TBUS | |

### Ordering data

| Description | Voltage $U_N$ | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **MCR-PLUGTRAB,** consisting of a plug, base element, and DIN rail bus, with screw connection technology | | | | |
| | 5 V DC | **PT-IQ-2X2-5DC-UT** | **2800807** | 1 |
| | 48 V DC | **PT-IQ-2X2-48DC-UT** | **2800986** | 1 |
| **MCR-PLUGTRAB,** consisting of a plug, base element, and DIN rail bus, with push-in connection technology | | | | |
| | 5 V DC | **PT-IQ-2X2-5DC-PT** | **2801259** | 1 |
| | 48 V DC | **PT-IQ-2X2-48DC-PT** | **2801265** | 1 |

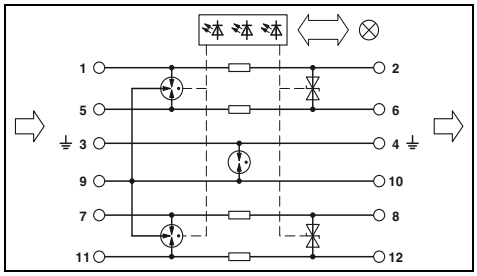
### Accessories

| | | | |
|---|---|---|---|
| **Replacement plug** | | | |
| 5 V DC | **PT-IQ-2X2-5DC-P** | **2800802** | 1 |
| 48 V DC | **PT-IQ-2X2-48DC-P** | **2800810** | 1 |
| **Marking material** | ZB 6, see Catalog 6, page 111 | | |




**2 double conductors (loops), floating, 9/10 connection grounded via gas-filled surge**

Total width 17.7 mm




## Technical data

| | |
|---|---|
| ... 5DC | ... 48DC |
| C1/C2/C3/D1 | C1/C2/C3/D1 |
| 6 V DC/4 V AC | 53 V DC/37 V AC |
| 2.5 kA | 2.5 kA |
| 700 mA (up to 50°C) | 300 mA |
| 10 kA/10 kA | 10 kA/10 kA |
| 20 kA | 20 kA |
| ≤ 25 V (C3 - 25 A) | ≤ 90 V (C3 - 25 A) |
| ≤ 900 V (C1 - 1 kV/500 A) | ≤ 900 V (C1 - 1 kV/500 A) |
| 1.2 Ω | 1.2 Ω |
| 17.7 mm/109.3 mm/77.5 mm | |
| 17.7 mm/91.1 mm/77.5 mm | |
| 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| -40°C ... 70°C | |
| IP20 | |
| V0 | |
| Screw connection/push-in connection | |
| EN 61643-21/A1/IEC 61643-21/A1/EN 61000-6-2/ EN 61000-6-2/A1/EN 61000-6-3 | |
| Via TBUS | |

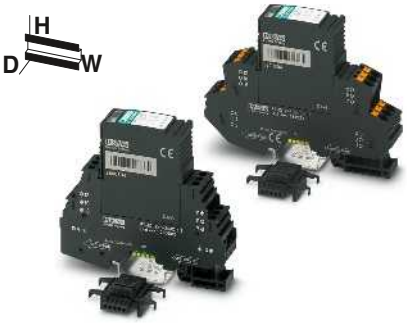
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PT-IQ-2X2+F-5DC-UT** | **2800809** | 1 |
| **PT-IQ-2X2+F-48DC-UT** | **2800987** | 1 |
| **PT-IQ-2X2+F-5DC-PT** | **2801260** | 1 |
| **PT-IQ-2X2+F-48DC-PT** | **2801266** | 1 |

## Accessories

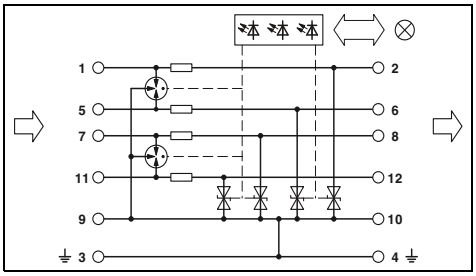
| | | |
|---|---|---|
| **PT-IQ-2X2-5DC-P** | **2800802** | 1 |
| **PT-IQ-2X2-48DC-P** | **2800810** | 1 |

ZB 6, see Catalog 6, page 111




**4-wire with common reference potential, 9/10 connection grounded directly**

Total width 17.7 mm




## Technical data

| |
|---|
| ... 5DC |
| C1/C2/C3/D1 |
| 6 V DC/4 V AC |
| 2.5 kA |
| 700 mA (up to 50°C) |
| -/10 kA |
| 20 kA |
| - |
| ≤ 25 V (C3 - 25 A) |
| 1.2 Ω |
| 17.7 mm/109.3 mm/77.5 mm |
| 17.7 mm/91.1 mm/77.5 mm |
| 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 |
| 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 |
| -40°C ... 70°C |
| IP20 |
| V0 |
| Screw connection/push-in connection |
| EN 61643-21/A1/IEC 61643-21/A1/EN 61000-6-2 / EN 61000-6-2/A1/EN 61000-6-3 |
| Via TBUS |

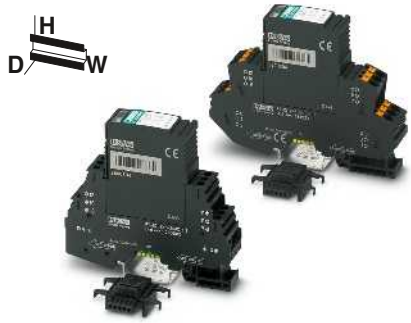
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PT-IQ-4X1-5DC-UT** | **2801215** | 1 |
| **PT-IQ-4X1-5DC-PT** | **2801267** | 1 |

## Accessories

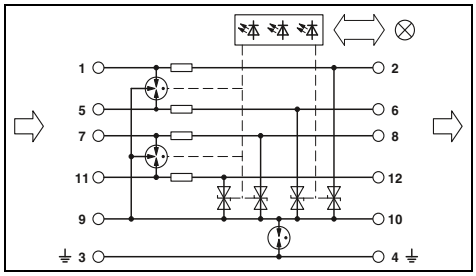
| | | |
|---|---|---|
| **PT-IQ-4X1-5DC-P** | **2800811** | 1 |

ZB 6, see Catalog 6, page 111




**4-wire with common reference potential, 9/10 connection grounded via gas-filled surge**

Total width 17.7 mm




## Technical data

| |
|---|
| ... 5DC |
| C1/C2/C3/D1 |
| 6 V DC/4 V AC |
| 2.5 kA |
| 700 mA (up to 50°C) |
| -/10 kA |
| 20 kA |
| - |
| ≤ 720 V (C1 - 1 kV/500 A) |
| 1.2 Ω |
| 17.7 mm/109.3 mm/77.5 mm |
| 17.7 mm/91.1 mm/77.5 mm |
| 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 |
| 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 |
| -40°C ... 70°C |
| IP20 |
| V0 |
| Screw connection/push-in connection |
| EN 61643-21/A1/IEC 61643-21/A1/EN 61000-6-2/ EN 61000-6-2/A1/EN 61000-6-3 |
| Via TBUS |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PT-IQ-4X1+F-5DC-UT** | **2801216** | 1 |
| **PT-IQ-4X1+F-5DC-PT** | **2801268** | 1 |

## Accessories

| | | |
|---|---|---|
| **PT-IQ-4X1-5DC-P** | **2800811** | 1 |

ZB 6, see Catalog 6, page 111

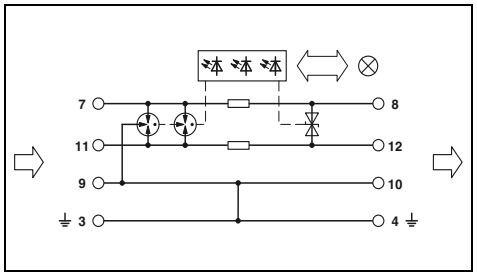
## PLUGTRAB PT-IQ EX
### With screw connection

- Tailored to the special requirements of intrinsically safe circuits
- Surge protection system
- Multi-level state monitoring
- Collective message about supply and remote module
- Multi-level, floating remote signaling
- System supplied via DIN rail bus
- Up to 10 protection modules per supply module
- Maximum ease of maintenance, thanks to the two-piece design
- Plugs are coded
- Impedance-neutral disconnection of plug for maintenance purposes
- Base element remains an integral part of the installation

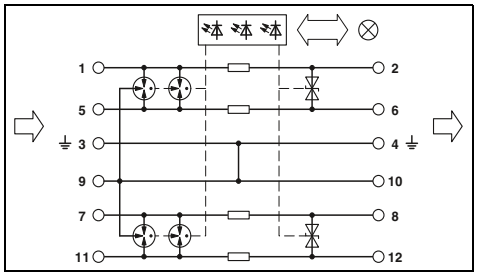
**Double conductor (loop), floating, 9/10 connection grounded directly**

**2 double conductors (loops), floating, 9/10 connection grounded directly**

Total width 17.7 mm




Total width 17.7 mm

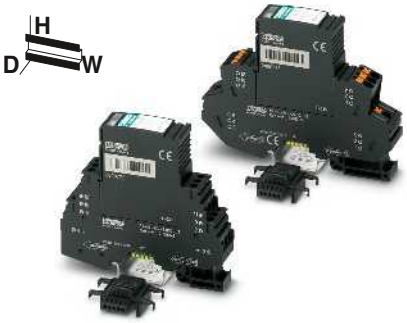



| | | Technical data | Technical data |
|---|---|---|---|
| Electrical data | | ... 24DC | ... 24DC |
| IEC test classification/EN type | | C1/C2/C3/D1 | C1/C2/C3/D1 |
| Maximum continuous operating voltage $U_C$ | | 30 V DC/21 V AC | 30 V DC/21 V AC |
| Impulse discharge curr. $I_{imp}$ (10/350)µs | Per path | 2 kA | 2 kA |
| Nominal current $I_N$ | | 350 mA | 350 mA |
| Nominal discharge current $I_n$ (8/20) µs | Core-core/core-ground | 10 kA/10 kA | 10 kA/10 kA |
| Total surge current (8/20)µs | | 20 kA | 20 kA |
| Voltage protection level $U_P$ | Core-core | ≤ 50 V (C3 - 25 A) | ≤ 50 V (C3 - 25 A) |
| | Core-ground | ≤ 1.3 kV (C3 - 100 A) | ≤ 1.3 kV (C3 - 100 A) |
| Cut-off frequency fg (3 dB) | Symmetrical in the 150 Ω system | typ. 1.1 MHz | typ. 1.1 MHz |
| Resistance per path | | 1.2 Ω | 1.2 Ω |
| General data | | | |
| Dimensions W/H/D | | 17.7 mm/91.1 mm/77.5 mm | 17.7 mm/91.1 mm/77.5 mm |
| Connection data solid/stranded with ferrule/AWG | | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 |
| Temperature range | | -40°C ... 70°C | -40°C ... 70°C |
| Degree of protection in acc. with IEC 60529/EN 60529 | | IP20 | IP20 |
| Inflammability class in acc. with UL 94 | | V0 | V0 |
| Test standards | | EN 61643-21/A1/IEC 61643-21/A1/EN 61000-6-2/ EN 61000-6-2/A1/EN 61000-6-3 | EN 61643-21/A1/IEC 61643-21/A1/EN 61000-6-2/ EN 61000-6-2/A1/EN 61000-6-3 |
| Remote indication contact | | Via TBUS | Via TBUS |

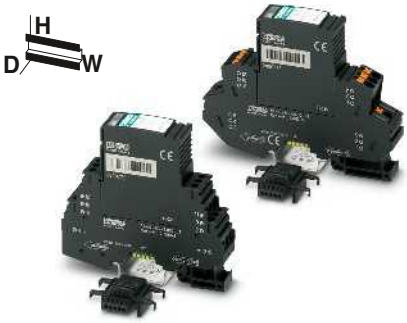
| Description | Voltage $U_N$ | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|
| **MCR-PLUGTRAB,** consisting of a plug, base element, and DIN rail bus, with screw connection technology | | | | | | | |
| | 24 V DC | **PT-IQ-1X2-EX-24DC-UT** | **2801512** | 1 | **PT-IQ-2X2-EX-24DC-UT** | **2801513** | 1 |
| **Accessories** | | | | | | | |
| **Replacement plug** | | | | | | | |
| 24 V DC | | **PT-IQ-1X2-EX-24DC-P** | **2801514** | 1 | **PT-IQ-2X2-EX-24DC-P** | **2801515** | 1 |
| **Separating plate** | | | | | | | |
| for DIN rail NS35/7.5 | | **PT-IQ-EX-L-PP** | **2905023** | 1 | **PT-IQ-EX-L-PP** | **2905023** | 1 |
| for DIN rail NS35/15 | | **PT-IQ-EX-H-PP** | **2905024** | 1 | **PT-IQ-EX-H-PP** | **2905024** | 1 |
| **Marking material** | | ZB 6, see Catalog 6, page 111 | | | ZB 6, see Catalog 6, page 111 | | |

## PLUGTRAB PT-IQ

- Surge protection system
- Multi-level state monitoring
- Collective message about supply and remote module
- Multi-level, floating remote signaling
- System supplied via DIN rail bus
- Up to 28 protection modules per supply module
- Maximum ease of maintenance thanks to the two-piece design
- Plugs are coded
- Impedance-neutral disconnection of plug for maintenance purposes
- Base element remains an integral part of the installation

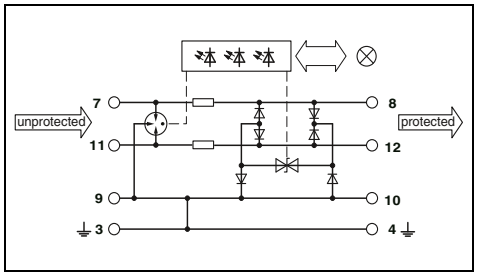



**3-wire with common reference potential, 9/10 connection grounded directly**

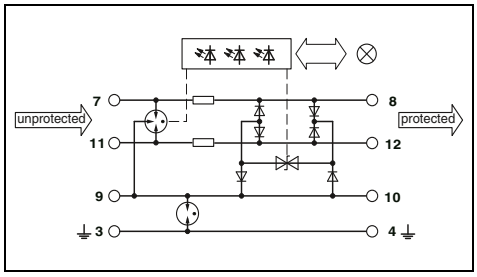



**3-wire with common reference potential, 9/10 connection grounded via gas-filled surge**

Total width 17.7 mm




Total width 17.7 mm




### Technical data

| Electrical data | | ... 5DC | ... 12DC |
|---|---|---|---|
| IEC test classification/EN type | | C1/C2/C3/D1 | C1/C2/C3/D1 |
| Maximum continuous operating voltage $U_C$ | | 6 V DC/4 V AC | 15 V DC/10 V AC |
| Impulse discharge curr. $I_{imp}$ (10/350)µs | Per path | 2.5 kA | 2.5 kA |
| Nominal current $I_N$ | | 600 mA (up to 40°C) | 600 mA (up to 40°C) |
| Nominal discharge current $I_n$ (8/20) µs | Core-core/core-ground | 10 kA/10 kA | 10 kA/10 kA |
| Total surge current (8/20)µs | | 20 kA | 20 kA |
| Voltage protection level $U_P$ | | | |
| | Core-core | ≤ 30 V (C3 - 25 A) | ≤ 40 V (C3 - 25 A) |
| | Core-ground | ≤ 30 V (C3 - 25 A) | ≤ 40 V (C3 - 25 A) |
| Cut-off frequency fg (3 dB) | Symmetrical in the 150 Ω system | > 60 MHz | > 60 MHz |
| General data | | | |
| PT-IQ...PT dimensions W/H/D | | 17.7 mm/109.3 mm/77.5 mm | |
| PT-IQ...UT dimensions W/H/D | | 17.7 mm/91.1 mm/77.5 mm | |
| Connection data, push-in solid/stranded with ferrule/AWG | | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| Connection data solid/stranded with ferrule/AWG | | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| Temperature range | | -40°C ... 70°C | |
| Degree of protection in acc. with IEC 60529/EN 60529 | | IP20 | |
| Inflammability class in acc. with UL 94 | | V0 | |
| Connection method | | Screw connection/push-in connection | |
| Test standards | | EN 61643-21/A1/IEC 61643-21/A2/EN 61000-6-2/A1/ EN 61000-6-3 | |

### Technical data

| Electrical data | | ... 5DC | ... 12DC |
|---|---|---|---|
| IEC test classification/EN type | | C1/C2/C3/D1 | C1/C2/C3/D1 |
| Maximum continuous operating voltage $U_C$ | | 6 V DC/4 V AC | 15 V DC/10 V AC |
| Impulse discharge curr. $I_{imp}$ (10/350)µs | Per path | 2.5 kA | 2.5 kA |
| Nominal current $I_N$ | | 600 mA (up to 40°C) | 600 mA (up to 40°C) |
| Nominal discharge current $I_n$ (8/20) µs | Core-core/core-ground | 10 kA/10 kA | 10 kA/10 kA |
| Total surge current (8/20)µs | | 20 kA | 20 kA |
| Voltage protection level $U_P$ | | | |
| | Core-core | ≤ 30 V (C3 - 25 A) | ≤ 40 V (C3 - 25 A) |
| | Core-ground | ≤ 900 V (C3 - 25 A) | ≤ 900 V (C3 - 25 A) |
| Cut-off frequency fg (3 dB) | Symmetrical in the 150 Ω system | > 60 MHz | > 60 MHz |
| General data | | | |
| PT-IQ...PT dimensions W/H/D | | 17.7 mm/109.3 mm/77.5 mm | |
| PT-IQ...UT dimensions W/H/D | | 17.7 mm/91.1 mm/77.5 mm | |
| Connection data, push-in solid/stranded with ferrule/AWG | | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| Connection data solid/stranded with ferrule/AWG | | 0.2 ... 4 mm²/0.2 ... 2.5 mm²/24 - 12 | |
| Temperature range | | -40°C ... 70°C | |
| Degree of protection in acc. with IEC 60529/EN 60529 | | IP20 | |
| Inflammability class in acc. with UL 94 | | V0 | |
| Connection method | | Screw connection/push-in connection | |
| Test standards | | EN 61643-21/A1/IEC 61643-21/A2/EN 61000-6-2/A1/ EN 61000-6-3 | |

### Ordering data

| Description | Voltage $U_N$ | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **MCR-PLUGTRAB,** consisting of a plug, base element, and DIN rail bus, with screw connection technology | | | | |
| | 5 V DC | **PT-IQ-3-PB-UT** | **2800785** | 1 |
| | 12 V DC | **PT-IQ-3-HF-12DC-UT** | **2800786** | 1 |
| **MCR-PLUGTRAB,** consisting of a plug, base element, and DIN rail bus, with push-in connection technology | | | | |
| | 5 V DC | **PT-IQ-3-PB-PT** | **2801286** | 1 |
| | 12 V DC | **PT-IQ-3-HF-12DC-PT** | **2801288** | 1 |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PT-IQ-3-PB+F-UT** | **2800994** | 1 |
| **PT-IQ-3-HF+F-12DC-UT** | **2800995** | 1 |
| **PT-IQ-3-PB+F-PT** | **2801287** | 1 |
| **PT-IQ-3-HF+F-12DC-PT** | **2801289** | 1 |

### Accessories

| | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Replacement plug** | | | |
| 5 V DC | **PT-IQ-3-PB-P** | **2800783** | 1 |
| 12 V DC | **PT-IQ-3-HF-12DC-P** | **2800784** | 1 |
| **Marking material** | ZB 6, see Catalog 6, page 111 | | |

### Accessories

| | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Replacement plug** | | | |
| 5 V DC | **PT-IQ-3-PB-P** | **2800783** | 1 |
| 12 V DC | **PT-IQ-3-HF-12DC-P** | **2800784** | 1 |
| **Marking material** | ZB 6, see Catalog 6, page 111 | | |

**Notes:**

For approvals and dimensional drawing, visit phoenixcontact.net/products

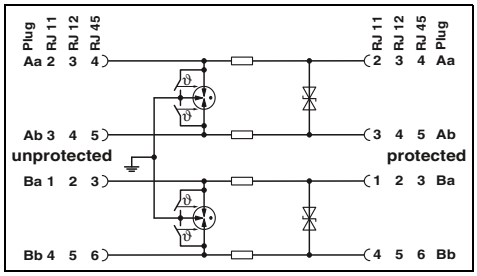
Attenuation characteristics at phoenixcontact.net/products

## Surge protection for SHDSL telecommunications interfaces

- Protection for two SHDSL ports
- Connection: RJ45 (RJ12/RJ11) and plug-in screw terminal block (COMBICON)
- Alternatively, can be snapped onto a DIN rail
- Protective circuit:
  Course/fine protection combination between all cables of signal wire pairs, as well as common mode voltage coarse protection between all signal wires and ground
- Separate ground connection line
- The adapter included enables conversion from RJ45 to RJ11 and RJ12
  (for contacting, see circuit diagram)

**Attachment plug for two SHDSL interfaces (ports)**

Total width 25 mm




### Technical data

| | | |
|---|---|---|
| Electrical data | | |
| IEC test classification/EN type | | B2/C1/C2/C3/D1 |
| Maximum continuous operating voltage $U_C$ | | 185 V DC |
| Nominal current $I_N$ | | ≤ 380 mA (25°C) |
| Nominal discharge current $I_n$ (8/20) µs | | |
| | Core-core/core-ground | ≤ 5 kA/≤ 5 kA |
| Total surge current (8/20)µs | | 10 kA |
| Voltage protection level $U_P$ | | |
| | Core-core/core-ground | ≤ 250 V (C1 - 500 A)/≤ 580 V (C1 - 500 A) |
| Cut-off frequency fg (3 dB) | | |
| In a 100 Ω system | Core-core | 25 MHz |
| General data | | |
| Dimensions W/H/D | | 25 mm/103 mm/63 mm |
| Connection data solid / stranded / AWG | | 0.14 ... 1.5 mm²/0.14 ... 1.5 mm²/28 - 16 |
| Temperature range | | -40°C ... 85°C |
| Degree of protection in acc. with IEC 60529/EN 60529 | | IP20 |
| Connection method | | RJ45/Combicon |
| Test standards | | IEC 61643-21 |

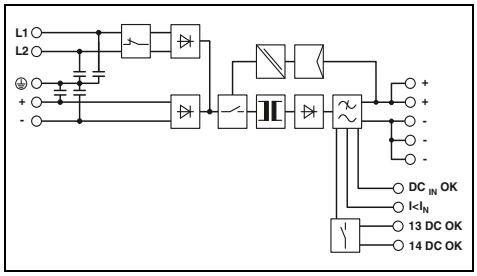
### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **DATATRAB adapter,** protective adapter with RJ45 and screw connection for two SHDSL telecommunications interfaces | **DT-TELE-SHDSL** | **2801593** | 1 |

## QUINT POWER power supplies - with maximum functionality

- AC and DC input in a single device
- Specially designed for connection to two outer conductors of a three-phase system and to a DC intermediate circuit voltage of an inverter; typical applications include injection molding machines.
- Starts up with two-phase AC voltage or DC voltage. In the event of a mains failure connected 24 V loads continue to be supplied using the kinetic energy of the motor. In this way, the motor acts as a generator and supplies energy to the intermediate circuits as long as it is moving.
- Fast tripping of standard circuit breakers with dynamic power reserve SFB (selective fuse breaking) technology with up to 6 times the nominal current for 20 ms
- Reliably start difficult loads with the static POWER BOOST power reserve
- Preventive function monitoring warns against critical operating states before errors occur.

**Power supply with two separate input circuits for frequency inverters**
**2 AC, 1 DC/24 V DC, 20 A**




### Technical data

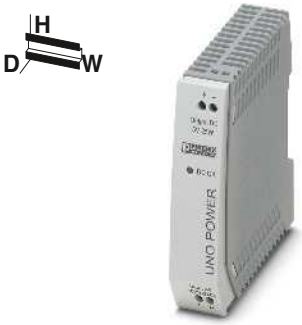
| | |
|---|---|
| Input data of AC | |
| Nominal input voltage range | 2x 400 V AC ... 500 V AC |
| Input voltage range AC | 2x 360 V AC ... 575 V AC |
| Frequency range | 45 Hz ... 65 Hz |
| Current consumption (nominal load) | 2.5 A (400 V AC)/2.1 A (500 V AC) |
| Inrush current limitation at 25°C (typ.) / $I^2t$ | < 85 A/< 1.5 $A^2s$ |
| Mains buffering ($I_N$, typ.) | > 20 ms (400 V AC) |
| Input data of DC | |
| Nominal input voltage range | 600 V DC |
| Input voltage range DC | 450 V DC ... 840 V DC |
| Max. current consumption | approx. 0.9 A (600 V DC) |
| Output data | |
| Nominal output voltage | 24 V DC ±1% |
| Setting range of the output voltage | 18 V DC ... 29.5 V DC ($U_{IN}$ ≥ 360 V AC/480 V DC)<br>18 V DC ... 26 V DC (< 480 V DC) |
| Output current/POWER BOOST/SFB (20 ms) | 20 A/26 A/120 A |
| Magnetic fuse tripping | - |
| Can be connected in parallel/series | Yes/Yes |
| Max. power dissipation (no load/nominal load) | 11 W/51 W |
| Efficiency (typ.) | > 92% (600 V DC) |
| Residual ripple | < 50 $mV_{PP}$ |
| Signaling | |
| Signaling DC OK | LED, relay contact |
| Boost signaling | LED, active switching output |
| General data | |
| Weight/dimensions W x H x D | 2 kg/120 x 130 x 125 mm |
| Spacing when mounting | Alignable: 5 mm horizontally, 15 mm next to active components, 50 mm vertically |
| Connection method | Screw connection |
| Input connection data (solid/stranded/AWG) | 0.2 - 6 $mm^2$/0.2 - 4 $mm^2$/24 - 10 |
| Output connection data (solid/stranded/AWG) | 0.2 - 6 $mm^2$/0.2 - 4 $mm^2$/12 - 10 |
| Signal connection data (solid/stranded/AWG) | 0.2 - 6 $mm^2$/0.2 - 4 $mm^2$/24 - 10 |
| Degree of protection/protection class | IP20/I |
| MTBF (EN 29500, 40°C) | > 500000 h |
| Ambient temperature (operation) | -25°C ... 70°C (> 60°C derating) |
| Standards/regulations | |
| Insulation voltage input/output | 2 kV AC (routine test)/1.5 kV AC (type test) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Electrical safety | EN 60950-1/VDE 0805 (SELV) |
| Electronic equipm. for electrical power installations | EN 50178/VDE 0160 (PELV) |
| Safe isolation | DIN VDE 0100-410 |
| UL approvals | UL applied for |

### Ordering data

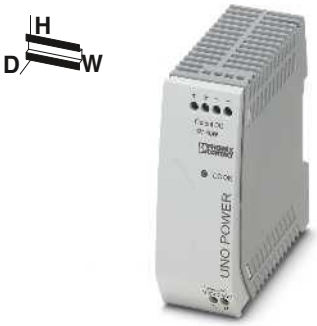
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **DC-DC converter,** primary switched mode | **QUINT-PS/2AC/1DC/24DC/20** | **2320830** | 1 |

## UNO POWER power supplies - with basic functionality

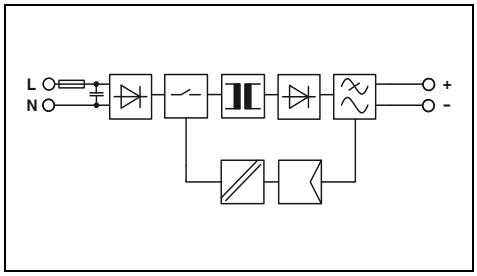
- Save energy, thanks to particularly low idling losses and a high degree of efficiency
- Save space in the control cabinet through compact housing with high power density
- Robust and reliable at temperatures from -25 to 70°C

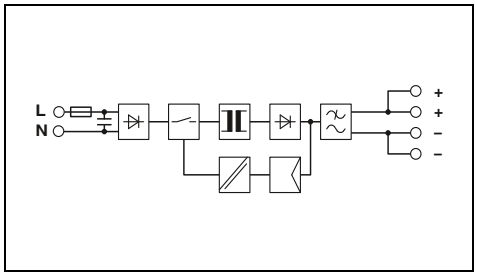



**Power supply, 1 AC, 5 DC, 25 W**




**Power supply, 1 AC, 5 DC, 40 W**



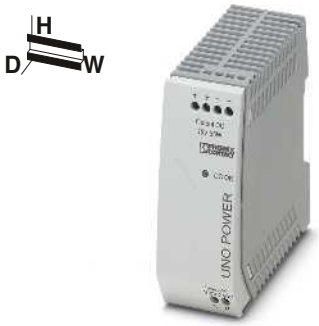




| | Technical data | Technical data |
|---|---|---|
| Input data | | |
| Nominal input voltage range | 100 V AC ... 240 V AC | 100 V AC ... 240 V AC |
| Input voltage range AC/DC | 85 V AC ... 264 V AC | 85 V AC ... 264 V AC |
| Frequency range | 45 Hz ... 65 Hz | 45 Hz ... 65 Hz |
| Current consumption (nominal load) | 0.5 A (120 V AC)/0.3 A (230 V AC) | 0.7 A (120 V AC)/0.5 A (230 V AC) |
| Inrush current limitation at 25°C (typ.) / $I^2t$ | < 30 A/< 0.5 $A^2s$ | < 30 A/< 0.5 $A^2s$ |
| Mains buffering ($I_N$, typ.) | > 35 ms (120 V AC)/> 135 ms (230 V AC) | > 30 ms (120 V AC)/> 120 ms (230 V AC) |
| Output data | | |
| Nominal output voltage | 5 V DC ±1% | 5 V DC ±1% |
| Output current | 5 A | 8 A |
| Can be connected in parallel/series | Yes, with redundancy module/Yes | Yes, with redundancy module/Yes |
| Max. power dissipation (no load/nominal load) | < 0.3 W/< 4.5 W | < 0.3 W/< 7.5 W |
| Efficiency (typ.) | > 84% | > 85% (for 230 V AC and nominal values) |
| Residual ripple | < 40 $mV_{PP}$ | < 100 $mV_{PP}$ |
| Signaling | | |
| Signaling DC OK | LED | LED |
| General data | | |
| Weight/dimensions W x H x D | 0.15 kg/22.5 x 90 x 84 mm | 0.21 kg/35 x 90 x 84 mm |
| Spacing when mounting | Alignable: 0 mm horizontally, 30 mm vertically | Alignable: 0 mm horizontally, 30 mm vertically |
| Connection method | Screw connection | Screw connection |
| Connection data solid / stranded / AWG | 0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14 | 0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14 |
| Degree of protection / Protection class | IP20/II | IP20/II |
| MTBF (EN 29500, 40°C) | > 500000 h | > 500000 h |
| Ambient temperature (operation) | -25°C ... 70°C (> 55° C derating) | -25°C ... 70°C (> 55° C derating) |
| Standards/regulations | | |
| Insulation voltage input/output | 3 kV AC (routine test)/4 kV AC (type test) | 3 kV AC (routine test)/4 kV AC (type test) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC | Conformance with EMC Directive 2004/108/EC |
| Electrical safety | IEC 60950-1/VDE 0805 (SELV) | IEC 60950-1/VDE 0805 (SELV) |
| Electronic equipm. for electrical power installations | EN 50178/VDE 0160 (PELV) | EN 50178/VDE 0160 (PELV) |
| Safe isolation | DIN VDE 0100-410 | DIN VDE 0100-410 |
| UL approvals | UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 | UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 |
| Limitation of harmonic line currents | EN 61000-3-2 | EN 61000-3-2 |

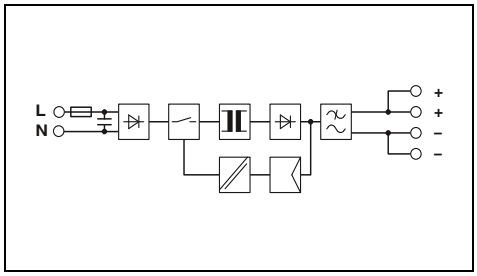
| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Power supply,** primary-switched, 1-phase | | | | | | |
| | **UNO-PS/1AC/ 5DC/ 25W** | **2904374** | 1 | **UNO-PS/1AC/ 5DC/ 40W** | **2904375** | 1 |

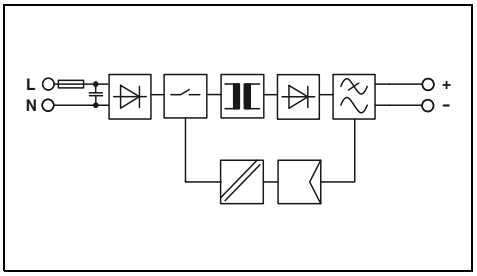
**Power supply, 1 AC, 12 DC, 100 W**

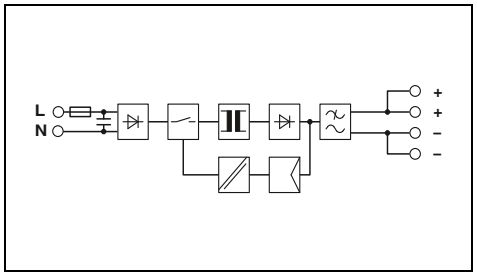
**Power supply, 1 AC, 15 DC, 30 W**




**Power supply, 1 AC, 15 DC, 55 W**




## Technical data

| | |
|---|---|
| | 100 V AC ... 240 V AC<br>85 V AC ... 264 V AC<br>45 Hz ... 65 Hz<br>1.7 A (120 V AC)/1 A (230 V AC)<br>< 30 A/< 1.5 $A^2s$<br>> 20 ms (120 V AC)/> 85 ms (230 V AC) |
| | 12 V DC ±1%<br>8.3 A<br>Yes, with redundancy module/Yes<br>< 0.4 W/< 12 W<br>> 89.5%<br>< 75 $mV_{PP}$ |
| | LED |
| | 0.34 kg/55 x 90 x 84 mm<br>Alignable: 0 mm horizontally, 30 mm vertically<br>Screw connection<br>0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14<br>IP20/II<br>> 500000 h<br>-25°C ... 70°C (> 55° C derating) |
| | 3 kV AC (routine test)/4 kV AC (type test)<br>Conformance with EMC Directive 2004/108/EC<br>IEC 60950-1/VDE 0805 (SELV)<br>EN 50178/VDE 0160 (PELV)<br>DIN VDE 0100-410<br>UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 |
| | EN 61000-3-2 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UNO-PS/1AC/12DC/100W** | **2902997** | 1 |

## Technical data

| | |
|---|---|
| | 100 V AC ... 240 V AC<br>85 V AC ... 264 V AC<br>45 Hz ... 65 Hz<br>0.6 A (120 V AC)/0.4 A (230 V AC)<br>< 30 A/< 0.3 $A^2s$<br>> 20 ms (120 V AC)/> 115 ms (230 V AC) |
| | 15 V DC ±1%<br>2 A<br>Yes, with redundancy module/Yes<br>< 0.3 W/< 4.6 W<br>> 87% (for 230 V AC and nominal values)<br>< 40 $mV_{PP}$ |
| | LED |
| | 0.15 kg/22.5 x 90 x 84 mm<br>Alignable: 0 mm horizontally, 30 mm vertically<br>Screw connection<br>0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14<br>IP20/II<br>> 500000 h<br>-25°C ... 70°C (> 55° C derating) |
| | 3 kV AC (routine test)/4 kV AC (type test)<br>Conformance with EMC Directive 2004/108/EC<br>IEC 60950-1/VDE 0805 (SELV)<br>EN 50178/VDE 0160 (PELV)<br>DIN VDE 0100-410<br>UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 |
| | EN 61000-3-2 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UNO-PS/1AC/15DC/30W** | **2903000** | 1 |

## Technical data

| | |
|---|---|
| | 100 V AC ... 240 V AC<br>85 V AC ... 264 V AC<br>45 Hz ... 65 Hz<br>1 A (120 V AC)/0.6 A (230 V AC)<br>< 25 A/< 0.5 $A^2s$<br>> 25 ms (120 V AC)/> 90 ms (230 V AC) |
| | 15 V DC ±1%<br>3.7 A<br>Yes, with redundancy module/Yes<br>< 0.3 W/< 7 W<br>> 88.5% (for 230 V AC and nominal values)<br>< 50 $mV_{PP}$ |
| | LED |
| | 0.21 kg/35 x 90 x 84 mm<br>Alignable: 0 mm horizontally, 30 mm vertically<br>Screw connection<br>0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14<br>IP20/II<br>> 500000 h<br>-25°C ... 70°C (> 55° C derating) |
| | 3 kV AC (routine test)/4 kV AC (type test)<br>Conformance with EMC Directive 2004/108/EC<br>IEC 60950-1/VDE 0805 (SELV)<br>EN 50178/VDE 0160 (PELV)<br>DIN VDE 0100-410<br>UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 |
| | EN 61000-3-2 |

## Ordering data

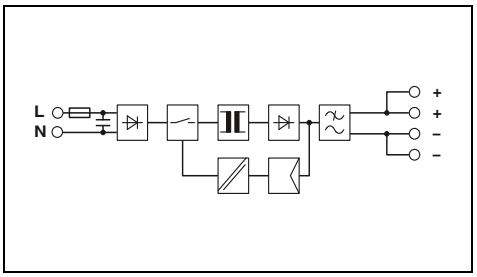
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UNO-PS/1AC/15DC/ 55W** | **2903001** | 1 |

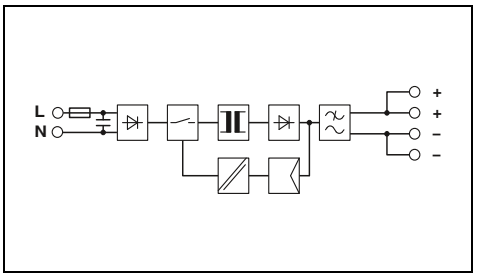
## UNO POWER power supplies - with basic functionality

- Save energy, thanks to particularly low idling losses and a high degree of efficiency
- Save space in the control cabinet through compact housing with high power density
- Robust and reliable at temperatures from -25 to 70°C

**Power supply, 1 AC, 15 DC, 100 W**

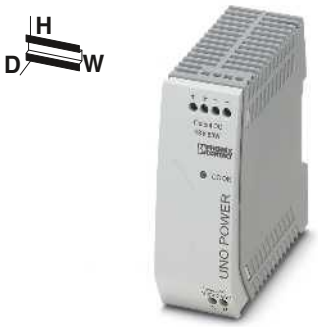
**Power supply, 1 AC, 24 DC, 90 W NEC Class 2**




| | Technical data | Technical data |
|---|---|---|
| Input data | | |
| Nominal input voltage range | 100 V AC ... 240 V AC | 100 V AC ... 240 V AC |
| Input voltage range AC/DC | 85 V AC ... 264 V AC | 85 V AC ... 264 V AC |
| Frequency range | 45 Hz ... 65 Hz | 45 Hz ... 65 Hz |
| Current consumption (nominal load) | 1.7 A (120 V AC)/1 A (230 V AC) | 1.5 A (120 V AC)/1 A (230 V AC) |
| Inrush current limitation at 25°C (typ.) / $I^2t$ | < 30 A/< 1.5 $A^2s$ | < 40 A/< 1.5 $A^2s$ |
| Mains buffering ($I_N$, typ.) | > 20 ms (120 V AC)/> 85 ms (230 V AC) | > 25 ms (120 V AC)/> 100 ms (230 V AC) |
| Output data | | |
| Nominal output voltage | 15 V DC ±1% | 24 V DC ±1% |
| Output current | 6.67 A | 3.75 A |
| Can be connected in parallel/series | Yes, with redundancy module/Yes | Yes, with redundancy module/Yes |
| Max. power dissipation (no load/nominal load) | < 0.4 W/< 12 W | < 0.5 W/< 12 W |
| Efficiency (typ.) | > 89% (for 230 V AC and nominal values) | > 88.5% (for 230 V AC and nominal values) |
| Residual ripple | < 75 $mV_{PP}$ | < 45 $mV_{PP}$ |
| Signaling | | |
| Signaling DC OK | LED | LED |
| General data | | |
| Weight/dimensions W x H x D | 0.34 kg/55 x 90 x 84 mm | 0.34 kg/55 x 90 x 84 mm |
| Spacing when mounting | Alignable: 0 mm horizontally, 30 mm vertically | Alignable: 0 mm horizontally, 30 mm vertically |
| Connection method | Screw connection | Screw connection |
| Connection data 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 - 14 |
| Degree of protection / Protection class | IP20/II | IP20/II |
| MTBF (EN 29500, 40°C) | > 500000 h | > 500000 h |
| Ambient temperature (operation) | -25°C ... 70°C (> 55° C derating) | -25°C ... 70°C (> 55° C derating) |
| Standards/regulations | | |
| Insulation voltage input/output | 3 kV AC (routine test)/4 kV AC (type test) | 3 kV AC (routine test)/4 kV AC (type test) |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC | Conformance with EMC Directive 2004/108/EC |
| Electrical safety | IEC 60950-1/VDE 0805 (SELV) | IEC 60950-1/VDE 0805 (SELV) |
| Electronic equipm. for electrical power installations | EN 50178/VDE 0160 (PELV) | EN 50178/VDE 0160 (PELV) |
| Safe isolation | DIN VDE 0100-410 | DIN VDE 0100-410 |
| UL approvals | UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950 | UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950, NEC Class 2 as per UL 1310 |
| Limitation of harmonic line currents | EN 61000-3-2 | EN 61000-3-2 |

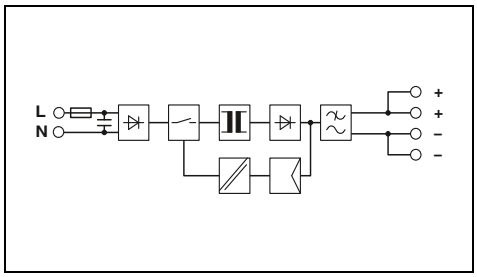
| Description | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Power supply,** primary-switched, 1-phase | | | | | | |
| | **UNO-PS/1AC/15DC/100W** | **2903002** | 1 | **UNO-PS/1AC/24DC/ 90W/C2LPS** | **2902994** | 1 |

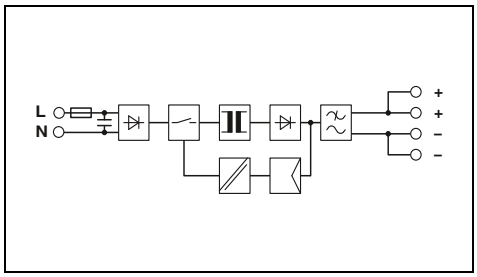


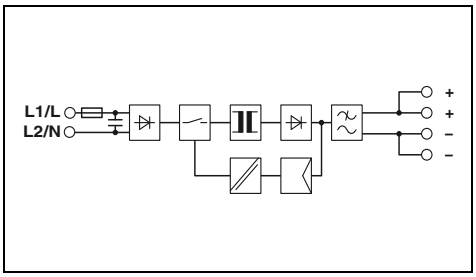

**Power supply,**
**1 AC, 48 DC, 60 W**

**Power supply,**
**1 AC, 48 DC, 100 W**

**Power supply,**
**2 AC, 24 DC, 90 W**
**NEC Class 2**




## Technical data

100 V AC ... 240 V AC
85 V AC ... 264 V AC
45 Hz ... 65 Hz
1 A (120 V AC)/0.6 A (230 V AC)
< 30 A/< 0.5 $A^2s$
> 20 ms (120 V AC)/> 90 ms (230 V AC)

48 V DC ±1%
1.25 A
Yes, with redundancy module/Yes
< 0.4 W/< 7 W
> 90% (for 230 V AC and nominal values)
< 35 $mV_{PP}$

LED

0.21 kg/35 x 90 x 84 mm
Alignable: 0 mm horizontally, 30 mm vertically
Screw connection
0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14
IP20/II
> 500000 h
-25°C ... 70°C (> 55° C derating)

3 kV AC (routine test)/4 kV AC (type test)
Conformance with EMC Directive 2004/108/EC
IEC 60950-1/VDE 0805 (SELV)
EN 50178/VDE 0160 (PELV)
DIN VDE 0100-410
UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950

EN 61000-3-2

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UNO-PS/1AC/48DC/ 60W** | **2902995** | 1 |

## Technical data

100 V AC ... 240 V AC
85 V AC ... 264 V AC
45 Hz ... 65 Hz
1.7 A (120 V AC)/1 A (230 V AC)
< 40 A/< 1.4 $A^2s$
> 25 ms (120 V AC)/> 90 ms (230 V AC)

48 V DC ±1%
2.08 A
Yes, with redundancy module/Yes
< 0.4 W/< 11 W
> 90% (for 230 V AC and nominal values)
< 40 $mV_{PP}$

LED

0.34 kg/55 x 90 x 84 mm
Alignable: 0 mm horizontally, 30 mm vertically
Screw connection
0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14
IP20/II
> 500000 h
-25°C ... 70°C (> 55° C derating)

3 kV AC (routine test)/4 kV AC (type test)
Conformance with EMC Directive 2004/108/EC
IEC 60950-1/VDE 0805 (SELV)
EN 50178/VDE 0160 (PELV)
DIN VDE 0100-410
UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950

EN 61000-3-2

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UNO-PS/1AC/48DC/100W** | **2902996** | 1 |

## Technical data

2x 400 V AC ... 500 V AC
264 V AC ... 575 V AC
45 Hz ... 65 Hz
0.6 A (400 V AC)/0.5 A (500 V AC)
< 30 A/< 0.5 $A^2s$
> 65 ms (400 V AC)/> 100 ms (500 V AC)

24 V DC ±1%
3.75 A/3.38 A
Yes, with redundancy module/Yes
< 0.7 W/< 12 W
> 89.5%
< 50 $mV_{PP}$

LED

0.32 kg/55 x 90 x 84 mm
Alignable: 0 mm horizontally, 30 mm vertically
Screw connection
0.2 - 2.5 $mm^2$/0.2 - 2.5 $mm^2$/24 - 14
IP20/II
> 500000 h
-25°C ... 70°C (> 55° C derating)

3 kV AC (routine test)/4 kV AC (type test)
Conformance with EMC Directive 2004/108/EC
IEC 60950-1/VDE 0805 (SELV)
EN 50178/VDE 0160 (PELV)
DIN VDE 0100-410
UL/C-UL listed UL 508, UL/C-UL Recognized UL 60950,
NEC Class 2 as per UL 1310
EN 61000-3-2

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **UNO-PS/2AC/24DC/90W/C2LPS** | **2904371** | 1 |

## Mounting set

– Used for mounting power storage devices that cannot be mounted on DIN rails
– Suitable for wall and surface mounting

| | Ordering data | | |
|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. |
| **Mounting set** | | | |
| | BATTERY MOUNTING CASE | 2320458 | 1 |

## Accessories for device circuit breakers

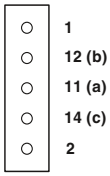
### Base element
– For accommodating CB TM.../CB E.... device circuit breakers
– PCB module
– Codable

### Bridge plug
– Signal contact bridging
– For equipping reserve spaces

**Base element for the PCB**

**Plug for bridging contacts 11 to 14**

Total width 12.3 mm




Total width 12.3 mm

| | Technical data | Technical data |
|---|---|---|
| Electrical data - bridge plug | | |
| Auxiliary contacts | | |
| Operating voltage $U_{max}$ | - | 277 V AC/80 V DC |
| Operating current $I_{max}$ | - | 1 A |
| Electrical data - base element | | |
| Rated surge voltage | 2.5 kV | - |
| Rated insulation voltage $U_i$ | 80 V DC | - |
| Main circuit | | |
| Rated voltage | 80 V DC/277 V AC | - |
| Rated current $I_n$ | 16 A | - |
| Remote indication circuit | | |
| Rated voltage | 80 V DC/277 V AC | - |
| Rated current $I_n$ | 1 A | - |
| General data | | |
| Dimensions W/H/D | 12.3 mm/34.8 mm/36.4 mm | 12.3 mm/45 mm/52 mm |
| Ambient temperature (operation) | -30°C ... 60°C | -30°C ... 60°C |
| Degree of protection in acc. with IEC 60529/EN 60529 | IP30 (plug-in area with plugged-in device)/IP00 (connection area) | IP30 (actuation area)/IP00 (connection area) |
| Inflammability class in acc. with UL 94 | V0 | V0 |
| Connection method | Solder connection | Spade connection |
| Test standards | DIN EN 50155/IEC 60068-2 | IEC 60068-2 |

| | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Soldering base element,** for accommodating device circuit breakers | **CB S-BE** | **2905067** | 30 | | | |
| **Bridge plug,** for bridging contacts 11 to 14 for CB base elements | | | | **CB RC BRIDGE** | **2801616** | 1 |

Highly compact signal conditioners - MINI Analog Pro
**– 3-way signal conditioners**
Page 326

Highly compact signal conditioners - MINI Analog Pro
**– Temperature transducers for resistance thermometers and thermocouples**
Page 330

Highly compact signal conditioners - MINI Analog Pro
**– Potiposition transducers**
Page 334

Highly compact signal conditioners - MINI Analog Pro
**– Supply components, fault monitoring module, marking material**
Page 336

Signal conditioners with PL d and SIL functional safety - MACX Safety
**– Repeater power supply**
Page 342
**– Temperature transducers**
Page 343

Signal conditioners with PL d and SIL functional safety - MACX Safety
**– Repeater power supplies, Ex i**
Page 344
**– Temperature transducers, Ex i**
Page 346

Energy and power measuring technology
**– Software for usage data acquisition**
Page 348
**– Software for data logging**
Page 349

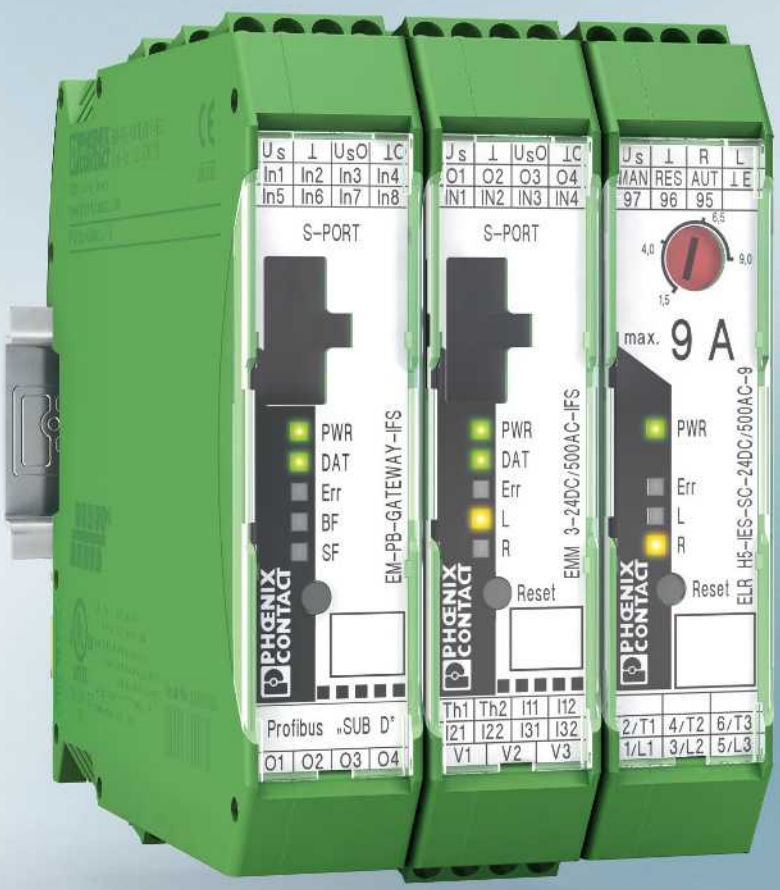
Energy and power measuring technology
**– Pressure sensor with IO-Link**
Page 350

Current and voltage measuring technology
**– PACT RCP... current transformers for retrofitting**
Page 353

Programmable logic relay system - PLC logic
**– Logic modules**
Page 356
**– Accessories**
Page 358

Relay modules - RIFLINE complete
**– Fully mounted RIF-0 relay modules with solid-state relay and push-in connection**
Page 362

Relay modules - RIFLINE complete
**– Fully mounted RIF-1 relay modules with relay with detectable manual operation, status LED, and push-in connection**
Page 364



Relay modules - PLC series
**– With integrated solid-state relay**

Page 366

VARIOFACE system cabling
**– VIP power cabling**
**Universal front adapters for SIMATIC® S7-300**

Page 368

VARIOFACE system cabling
**– VIP I/O modules**

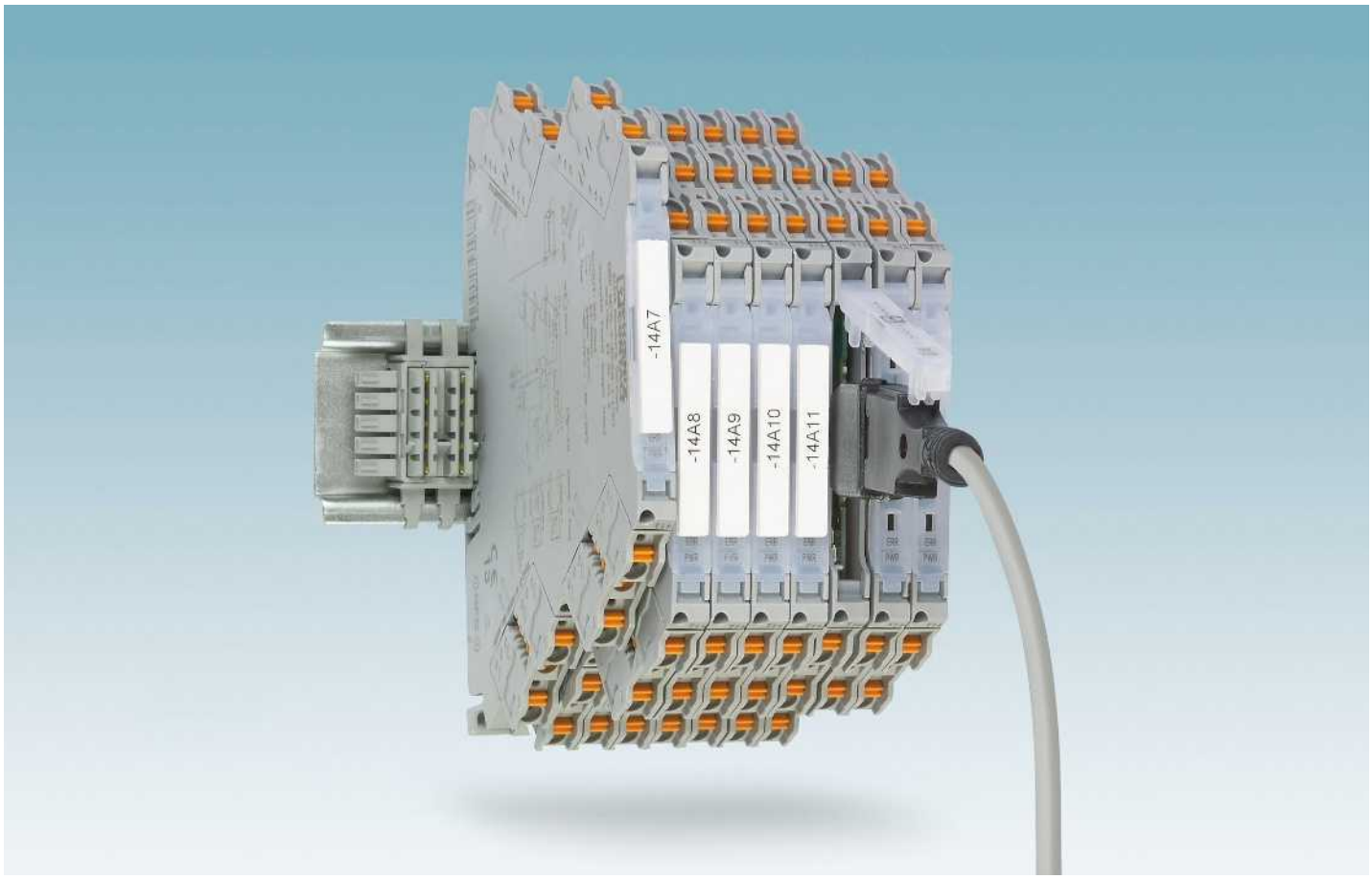
Page 370

**– VIP interface module for Emerson DeltaV**

Page 372

VARIOFACE wiring interface
**– VIP potential distributor with fuses**

Page 373




## Easier than ever but slim as before

The new highly compact MINI Analog Pro signal conditioners offer the easiest installation and startup in a confined space.

Easily accessible terminal points, current measurement during operation, and the unique FASTCON Pro plug-in connection technology make your work considerably easier.

## Choose the right MINI Analog signal conditioner for your application:

### Analog IN/OUT

– Universal and standard 3-way signal conditioners
– 3-way repeater power supplies

### Temperature

– Universal measuring transducers for resistance thermometers and thermocouples

### Universal potiposition transducer

– Potiposition transducers with automatic potentiometer detection

### Accessories

– Supply components
– Fault monitoring module
– Marking material
– Surge protection, see Catalog 6

## Easy installation in a confined space

– Thanks to the front orientation, all terminal points are easily visible and accessible at all times – this not only saves time, but also space above and below devices
– All conductors can be fed individually and in any order, regardless of whether you start wiring from the input or output side
– The FASTCON Pro connection terminal blocks can be inserted and removed in any order

## Measure current signals during operation

You can conveniently measure signals for startup and servicing during operation, thanks to integrated test disconnect terminal blocks:

– The circuit does not have to be separated in order to integrate the measuring device in the signal circuit
– By setting the plug to the disconnect position, signal circuits can be easily interrupted during servicing and startup

## Numerous parameterization options

### Easy DIP switch configuration

Many of the MINI Analog modules can be configured: the basic functions can be easily set using DIP switches – without the need for any software.

### PC configuration for extended function and monitoring

For extended functionality, you can configure the modules conveniently with the S port interface on your PC using one of the free software solutions.

### Smart configuration without accessories

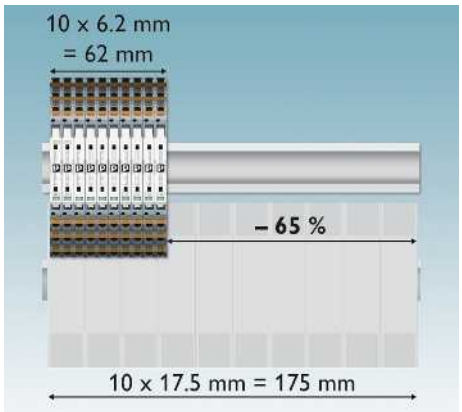
Place your smartphone on the device and establish a wireless connection via near field communication (NFC). Depending on the device type, the free MINI Analog Pro app offers different functions.

**App functions via NFC communication**

**Access to information**
– Access module information

**DIP switch setting help**
– Access module information
– Display DIP switch setting help on the smartphone

**Configuration via NFC**
– Access module information
– Display DIP switch setting help
– Wireless configuration via smartphone



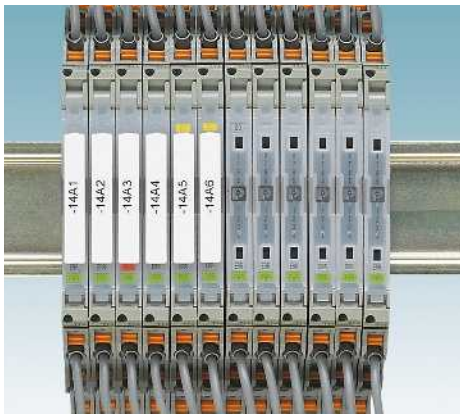

**Space savings of up to 65%**
– Compared to other signal conditioners on the market with design widths up to 17.5 mm.

**Easy installation**
– Easily visible and accessible terminal points and FASTCON Pro plug-in connection terminal blocks.

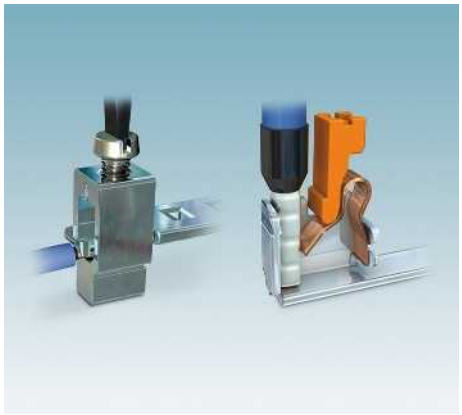
**Power bridging and fault monitoring**
– The DIN rail connector simplifies supply and enables group error monitoring via remote diagnostics.

**Easy to start up and control**
– Measure current signals during operation, without disconnecting current loops, plus optional disconnect function.

**Numerous parameterization options**
– Easy configuration via DIP switches as well as extended configuration via software or smartphone app without additional accessories.

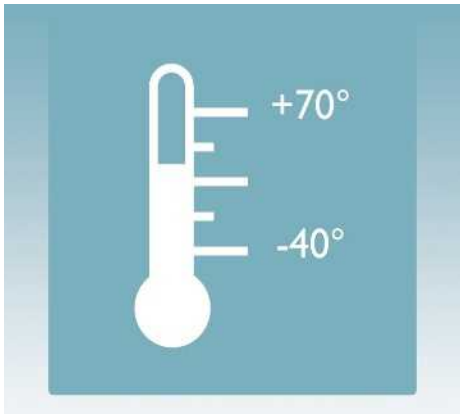


**Easy maintenance**
– Large-surface marking areas for complete loop identification using standard marking material as well as constantly visible status LEDs in every module.



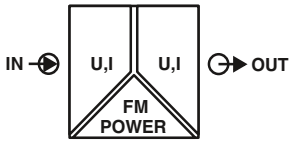
**Choice of connection technology**
– Wiring with screw connection or fast and tool-free push-in technology.

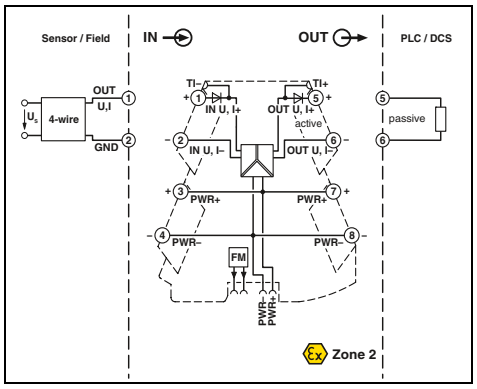
**Optimum signal quality**
– The latest transmission technology and safe electrical isolation between input, output, and supply with 3 kV test voltage.




**Suitable for any application**
– Extended supply voltage and temperature range as well as multifunctional device types.

## Analog IN / Analog OUT
## 3-way signal conditioner



Ex n

NFC

**Configurable,**
**Up to 144 signal combinations**

- Configurable, ultra-compact signal conditioner for electrical isolation, conversion, amplification, and filtering of standard analog signals
- Plug-in connection system
- Safe 3-way isolation
- Standard signal combinations configurable via DIP switches
- Power supply and fault monitoring possible via DIN rail connector
- Status LED

Ex:
Housing width 6.2 mm

### Technical data

| | | |
|---|---|---|
| Input data | U input | I input |
| Input signal | 0 V ... 5 V<br>1 V ... 5 V<br>-5 V ... 5 V<br>0 V ... 10 V<br>2 V ... 10 V<br>-10 V ... 10 V<br>0 V ... 20 V<br>4 V ... 20 V<br>-20 V ... 20 V<br>0 V ... 24 V<br>4.8 V ... 24 V<br>-24 V ... 24 V<br>0 V ... 30 V<br>6 V ... 30 V<br>-30 V ... 30 V | 0 mA ... 20 mA<br>4 mA ... 20 mA<br>-20 mA ... 20 mA |
| Input resistance | > 1000 kΩ | approx. 63 Ω |
| Output data | U output | I output |
| Output signal | 0 V ... 5 V<br>1 V ... 5 V<br>-5 V ... 5 V<br>0 V ... 10 V<br>2 V ... 10 V<br>-10 V ... 10 V | 0 mA ... 20 mA<br>4 mA ... 20 mA |
| Maximum output signal | | 22 mA |
| No-load voltage | | < 17 V |
| Short-circuit current | < 32 mA | |
| Load $R_B$ | ≥ 10 kΩ | ≤ 600 Ω (at 20 mA) |
| Ripple | < 20 $mV_{PP}$ (at 600 Ω) | < 20 $mV_{PP}$ (at 600 Ω) |
| General data | U output | I output |
| Supply voltage $U_B$ | 9.6 V DC ... 30 V DC | |
| Nominal supply voltage | 24 V DC | |
| Current consumption | 25 mA (current output, at 24 V DC incl. load) | 54 mA (current output, at 12 V DC incl. load) |
| Power consumption | | ≤ 800 mW (at $I_{OUT}$ = 20 mA, 9.6 V DC, 600 Ω load) |
| Maximum transmission error | ≤ 0.1% (of final value) | |
| Temperature coefficient | 0.01%/K | |
| Limit frequency (3 dB) | 30 Hz (via DIP switch) | |
| Step response (10-90%) | < 8.5 ms (with 30 Hz filter) | |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 | |
| Test voltage, input/output/supply | 3 kV (50 Hz, 1 min.) | |
| Degree of protection | IP20 | |
| Ambient temperature (operation) | -40°C ... 70°C | |
| Mounting | Any | |
| Housing material | PBT | |
| Dimensions W/H/D | 6.2/110.5/120.5 mm | |
| Push-in connection solid/stranded/AWG | 0.2 ... 2.5 $mm^2$/0.2 ... 2.5 $mm^2$/26 - 12 | |
| Screw connection solid/stranded/AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/26 - 16 | |
| EMC note | Class A product, see page 443 | |
| Conformance / approvals | | |
| Conformance | CE-compliant | |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X | |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for | |
| GL | GL applied for | |

### Ordering data

| Description | | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **3-way signal conditioner**, for electrical isolation of analog signals | | | | |
| Standard configuration | Push-in connection | **MINI MCR-2-UI-UI-PT** | **2902040** | 1 |
| Standard configuration | Screw connection | **MINI MCR-2-UI-UI** | **2902037** | 1 |
| Order configuration | Push-in connection | **MINI MCR-2-UI-UI-PT-C** | **2902039** | 1 |
| Order configuration | Screw connection | **MINI MCR-2-UI-UI-C** | **2902036** | 1 |

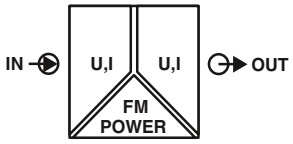
**Order key for MINI-MCR-2-UI-UI...C 3-way signal conditioner** (standard configuration entered as an example)

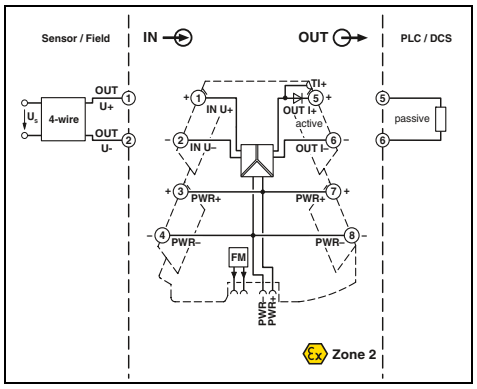
| Order No. | Input | Output | Cut-off frequency |
|---|---|---|---|
| 2902036 / | IN03 / | OUT01 / | 5K |
| 2902036 ≙ MINI-MCR-2-UI-UI-C<br><br>2902039 ≙ MINI-MCR-2-UI-UI-PT-C | IN 01 ≙ 0...20 mA<br>IN 02 ≙ 4...20 mA<br>IN 03 ≙ 0...10 V<br>IN 04 ≙ 2...10 V<br>IN 05 ≙ 0...5 V<br>IN 06 ≙ 1...5 V<br>IN 21 ≙ -5...5 V<br>IN 22 ≙ -10...10 V<br>IN 23 ≙ -20...20 V<br>IN 32 ≙ 0...20 V<br>IN 35 ≙ -20...20 mA<br>IN 38 ≙ 0...24 V<br>IN 39 ≙ 0...30 V<br>IN 80 ≙ -30...30 V<br>IN 93 ≙ -24...24 V<br>IN 94 ≙ 4.8...24 V<br>IN 95 ≙ 6...30 V<br>IN 96 ≙ 4...20 V | OUT 01 ≙ 0...20 mA<br>OUT 02 ≙ 4...20 mA<br>OUT 03 ≙ 0...10 V<br>OUT 04 ≙ 2...10 V<br>OUT 05 ≙ 0...5 V<br>OUT 06 ≙ 1...5 V<br>OUT 13 ≙ -5...5 V<br>OUT 14 ≙ -10...10 V | 30 Hz<br>5 kHz |

**Signal combinations for MINI-MCR-2-UI-UI-... signal conditioners**

| | Output | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Input** | 0...20 mA | 4...20 mA | 0...5 V | 1...5 V | -5...5 V | 0...10 V | 2...10 V | -10...10 V |
| 0...20 mA | X | X | X | X | X | X | X | X |
| 4...20 mA | X | X | X | X | X | X | X | X |
| -20...20 mA | X | X | X | X | X | X | X | X |
| 0...5 V | X | X | X | X | X | X | X | X |
| 1...5 V | X | X | X | X | X | X | X | X |
| -5...5 V | X | X | X | X | X | X | X | X |
| 0...10 V | X | X | X | X | X | X | X | X |
| 2...10 V | X | X | X | X | X | X | X | X |
| -10...10 V | X | X | X | X | X | X | X | X |
| 0...20 V | X | X | X | X | X | X | X | X |
| 4...20 V | X | X | X | X | X | X | X | X |
| -20...20 V | X | X | X | X | X | X | X | X |
| 0...24 V | X | X | X | X | X | X | X | X |
| 4.8...24 V | X | X | X | X | X | X | X | X |
| -24...24 V | X | X | X | X | X | X | X | X |
| 0...30 V | X | X | X | X | X | X | X | X |
| 6...30 V | X | X | X | X | X | X | X | X |
| -30...30 V | X | X | X | X | X | X | X | X |

## Analog IN / Analog OUT
## 3-way signal conditioner




Ex n

NFC

**With fixed signal combinations**

- Highly compact signal conditioner for electrical isolation, conversion, amplification, and filtering of standard analog signals
- Fixed signal combinations
- Plug-in connection system
- Safe 3-way isolation
- Power supply and fault monitoring possible via DIN rail connector
- Status LED

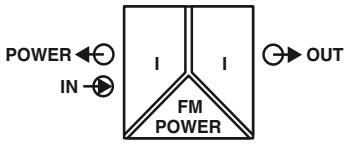
### Technical data

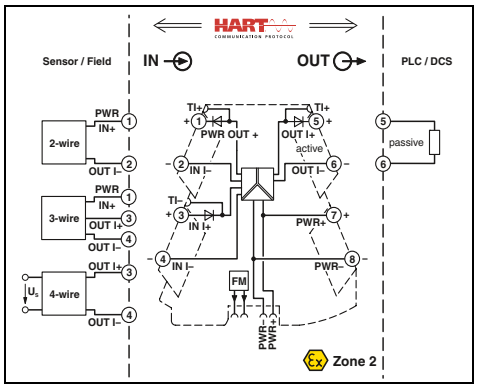
| | | |
|---|---|---|
| Input data | U input | I input |
| Input resistance | approx. 100 kΩ | approx. 63 Ω |
| Output data | U output | I output |
| Maximum output signal | 11 V | 22 mA |
| No-load voltage | | < 17 V |
| Short-circuit current | < 15 mA | |
| Load $R_B$ | ≥ 10 kΩ | ≤ 600 Ω (at 20 mA) |
| Ripple | < 20 $mV_{PP}$ (at 10 kΩ) | < 20 $mV_{PP}$ (at 600 Ω) |
| General data | | |
| Supply voltage $U_B$ | 9.6 V DC ... 30 V DC | |
| Nominal supply voltage | 24 V DC | |
| Typ. current consumption | 25 mA (at 24 V DC) | |
| Maximum transmission error | 0.1% (of final value) | |
| Temperature coefficient | 0.01%/K | |
| Limit frequency (3 dB) | approx. 30 Hz | |
| Step response (10-90%) | approx. 10 ms | |
| Degree of protection | IP20 | |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 | |
| Test voltage, input/output/supply | 3 kV (50 Hz, 1 min.) | |
| Ambient temperature (operation) | -40°C ... 70°C | |
| Housing material | PBT | |
| Dimensions W/H/D | 6.2/110.5/120.5 mm | |
| Push-in connection solid/stranded/AWG | 0.2 ... 2.5 $mm^2$/0.2 ... 2.5 $mm^2$/26 - 12 | |
| Screw connection solid/stranded/AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/26 - 16 | |
| EMC note | Class A product, see page 443 | |
| Conformance / approvals | | |
| Conformance | CE-compliant | |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X | |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for | |
| GL | GL applied for | |

### Ordering data

| Description | Input signal | Output signal | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **3-way signal conditioner**, for electrical isolation of analog signals | | | | | |
| Push-in connection | 0 ... 10 V | 0 ... 20 mA | **MINI MCR-2-U-I0-PT** | **2902023** | 1 |
| Screw connection | 0 ... 10 V | 0 ... 20 mA | **MINI MCR-2-U-I0** | **2902022** | 1 |
| Push-in connection | 0 ... 10 V | 4 ... 20 mA | **MINI MCR-2-U-I4-PT** | **2902030** | 1 |
| Screw connection | 0 ... 10 V | 4 ... 20 mA | **MINI MCR-2-U-I4** | **2902029** | 1 |
| Push-in connection | 0 ... 20 mA | 0 ... 10 V | **MINI MCR-2-I0-U-PT** | **2902001** | 1 |
| Screw connection | 0 ... 20 mA | 0 ... 10 V | **MINI MCR-2-I0-U** | **2902000** | 1 |
| Push-in connection | 4 ... 20 mA | 0 ... 10 V | **MINI MCR-2-I4-U-PT** | **2902003** | 1 |
| Screw connection | 4 ... 20 mA | 0 ... 10 V | **MINI MCR-2-I4-U** | **2902002** | 1 |
| Push-in connection | 0 ... 20 mA,<br>4 ... 20 mA | 0 ... 20 mA,<br>4 ... 20 mA | **MINI MCR-2-I-I-PT** | **2901999** | 1 |
| Screw connection | 0 ... 20 mA,<br>4 ... 20 mA | 0 ... 20 mA,<br>4 ... 20 mA | **MINI MCR-2-I-I** | **2901998** | 1 |
| Push-in connection | 0 ... 10 V,<br>-10 ... 10 V | 0 ... 10 V,<br>-10 ... 10 V | **MINI MCR-2-U-U-PT** | **2902043** | 1 |
| Screw connection | 0 ... 10 V,<br>-10 ... 10 V | 0 ... 10 V,<br>-10 ... 10 V | **MINI MCR-2-U-U** | **2902042** | 1 |

## Analog IN / Analog OUT repeater power supplies



Repeater power supply with HART transmission

Ex n

NFC

- Highly-compact repeater power supply for electrical isolation, conversion, amplification, and filtering of standard analog signals
- Supply of 2-wire and passive 3-wire sensors
- Can also be used as an isolator without supply
- Plug-in connection system
- Safe 3-way isolation
- Bidirectional HART transmission as an option
- Power supply and fault monitoring possible via DIN rail connector
- Status LED

Housing width 6.2 mm

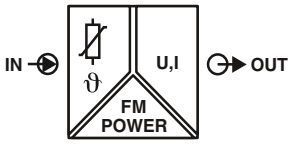
### Technical data

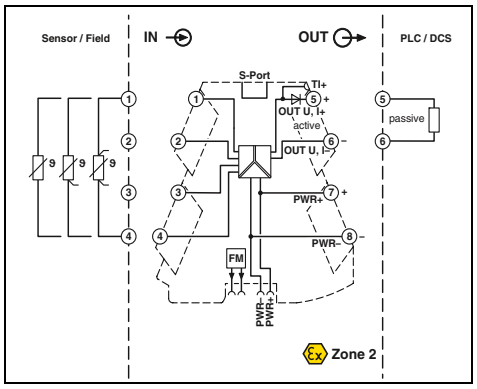
| | |
|---|---|
| Input data | |
| Input signal | 0 ... 20 mA, isolator operation/4 ... 20 mA |
| Input resistance | approx. 68 Ω |
| Transmitter supply voltage | > 19.5 V |
| Output data | |
| Output signal | 0 ... 20 mA/4 ... 20 mA |
| Maximum output signal | |
| No-load voltage | < 20 V |
| Load $R_B$ | ≤ 600 Ω (at 20 mA) |
| Ripple | < 20 $mV_{PP}$ (at 600 Ω) |
| General data | |
| Supply voltage $U_B$ | 9.6 V DC ... 30 V DC |
| Nominal supply voltage | 24 V DC |
| Current consumption | 25 mA (at 24 V DC and in isolator operation) |
| Power consumption | ≤ 1400 mW (at $I_{OUT}$ = 20 mA, 9.6 V DC, 600 Ω load) |
| Maximum transmission error | 0.1% (of final value) |
| Temperature coefficient | 0.01%/K, |
| Limit frequency (3 dB) | > 1.75 kHz (typ.) |
| Communication | HART specification in both operating modes (RPSS isolator/RPSS repeater power supply) |
| Step response (10-90%) | < 200 µs (typ.) |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 |
| Test voltage, input/output/supply | |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40°C ... 70°C |
| Mounting | Any |
| Housing material | PBT |
| Dimensions W/H/D | 6.2/110.5/120.5 mm |
| Push-in connection solid/stranded/AWG | 0.2 ... 2.5 $mm^2$/0.2 ... 2.5 $mm^2$/26 - 12 |
| Screw connection solid/stranded/AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/26 - 16 |
| EMC note | Class A product, see page 443 |
| Conformance / approvals | |
| Conformance | CE-compliant |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for |
| GL | GL applied for |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Repeater power supply with HART transmission** | | | |
| Push-in connection | **MINI MCR-2-RPSS-I-I-PT** | **2902015** | 1 |
| Screw connection | **MINI MCR-2-RPSS-I-I** | **2902014** | 1 |

## Temperature
## Temperature transducers for resistance thermometers



**Universal measuring transducer for resistance thermometers**

Ex: Ex
Housing width 6.2 mm

- Universally configurable, highly compact temperature transducer for electrical isolation, conversion, amplification, and filtering of resistance thermometer and remote resistance-type sensor signals
- For 2, 3 or 4-wire sensors according to IEC 751, JIS, GOST

- Plug-in connection system
- Safe 3-way isolation
- Standard signal combinations configurable via DIP switches
- Freely configurable via software or smartphone app
- Power supply and fault monitoring possible via DIN rail connector
- Status and error indicator LEDs

### Technical data

| | | |
|---|---|---|
| **Input data** | | |
| Input signal (can be configured using DIP switches) | Pt, Ni, Cu sensors : 2, 3, 4-wire | |
| Temperature range | -200°C ... 850°C (range depending on the sensor type) | |
| Measuring range span | ≥ 20 K | |
| Linear resistance measuring range | 0 Ω ... 4000 Ω<br>(Minimum measuring span: 10% of the selected measuring range) | |
| **Output data** | U output | I output |
| Output signal | 0 ... 5 V/1 ... 5 V | 0 ... 20 mA/4 ... 20 mA |
| | 0 ... 10 V/10 ... 0 V | 20 ... 0 mA/20 ... 4 mA |
| Maximum output signal | approx. 12.3 V | 24.6 mA |
| Load $R_B$ | ≥ 10 kΩ | ≤ 600 Ω (at 20 mA) |
| Ripple | < 20 $mV_{PP}$ | < 20 $mV_{PP}$ (at 600 Ω) |
| **General data** | | |
| Supply voltage $U_B$ | 9.6 V DC ... 30 V DC | |
| Current consumption | 32 mA (at 24 V DC) | |
| Power consumption | ≤ 850 mW (at $I_{OUT}$ = 20 mA, 9.6 V DC, 600 Ω load) | |
| Transmission error | 0.1% * 350 K/set measuring range; 0.1% > 350 K (Pt/Ni)<br>0.3% * 200 K/set measuring range; 0.3% > 200 K (Cu) | |
| Temperature coefficient | 0.01%/K | |
| Step response (0–99%) | Typ. 200 ms (2-wire)<br>Typ. 500 ms (3-wire)<br>Typ. 500 ms (4-wire) | |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 | |
| Test voltage, input/output/supply | 3 kV (50 Hz, 1 min.) | |
| Ambient temperature (operation) | -40°C ... 70°C | |
| Housing material | PBT | |
| Dimensions W/H/D | 6.2/110.5/120.5 mm | |
| Push-in connection solid/stranded/AWG | 0.2 ... 2.5 $mm^2$/0.2 ... 2.5 $mm^2$/26 - 12 | |
| Screw connection solid/stranded/AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/26 - 16 | |
| EMC note | Class A product, see page 443 | |
| **Conformance / approvals** | | |
| Conformance | CE-compliant | |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X | |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for | |
| GL | GL applied for | |

### Ordering data

| Description | | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Temperature transducers for resistance thermometers** | | | | |
| Standard configuration | Push-in connection | **MINI MCR-2-RTD-UI-PT** | **2902052** | 1 |
| Standard configuration | Screw connection | **MINI MCR-2-RTD-UI** | **2902049** | 1 |
| Order configuration | Push-in connection | **MINI MCR-2-RTD-UI-PT-C** | **2902051** | 1 |
| Order configuration | Screw connection | **MINI MCR-2-RTD-UI-C** | **2902048** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Programming adapter** for configuring modules with S-PORT interface | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |

**Order key for MINI-MCR-2-RTD-UI...C temperature transducer** (standard configuration entered as an example)

| Order No. | Sensor type | Connection technology | Measuring range Start | Measuring range End | Measuring unit | Output Output signal | Output Start | Output End |
|---|---|---|---|---|---|---|---|---|
| **2902048** / | **PT100** / | **3** / | **-50** / | **150** / | **C** / | **I** / | **4.0** / | **20.0** / ... |
| 2902048 ≙ MINI-MCR-2-RTD-UI-C<br><br>2902051 ≙ MINI-MCR-2-RTD-UI-PT-C | PT100 ≙ Pt 100 IEC 751<br>PT200 ≙ Pt 200 IEC 751<br>PT500 ≙ Pt 500 IEC 751<br>PT1000 ≙ Pt 1000 IEC 751<br>PT100G ≙ Pt 100 GOST 6651-2009 (α = 0.00394)<br>PT1000G ≙ Pt 1000 GOST 6651-2009 (α = 0.00394)<br>PT100J ≙ Pt 100 JIS C1604/1997<br>PT1000J ≙ Pt 1000 JIS C1604/1997<br>NI100 ≙ Ni 100 DIN 43760<br>NI1000 ≙ Ni 1000 DIN 43760<br>CU50 ≙ Cu 50 GOST 6651-2009 (α = 0.00428)<br>CU100 ≙ Cu 100 GOST 6651-2009 (α = 0.00428)<br>CU53 ≙ Cu 53 GOST 6651-2009 (α = 0.00426) | 2 ≙ 2-wire<br>3 ≙ 3-wire<br>4 ≙ 4-wire | freely selectable between -200°C...850°C (measuring range limits depend on sensor type) | freely selectable between -200°C...850°C (measuring range limits depend on sensor type) | C ≙ °C<br>F ≙ °F | I ≙ I<br>U ≙ U | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21 mA<br><br>U: freely selectable between 0.0...10.5 V | 20.0 ≙ 20 mA<br>I: freely selectable between 0.0...21 mA<br><br>U: freely selectable between 0.0...10.5 V |

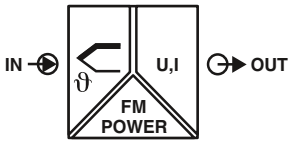
**Failure information**

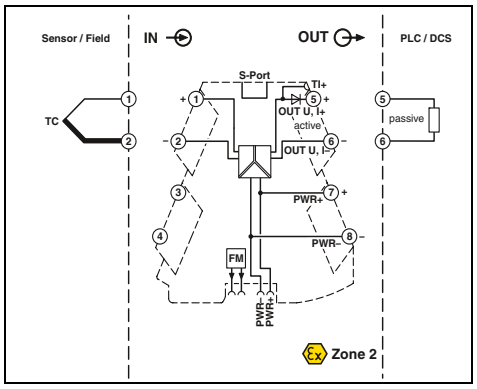
| ... / | Behavior in the event of an error | Open circuit | Short circuit | Overrange | Underrange |
|---|---|---|---|---|---|
| | **NE43DO** / | **0.0** / | **0.0** / | **0.0** / | **0.0** |
| | FD ≙ Freely definable | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) |
| | **Note: failure information according to NE 43 can only be selected for 4...20 mA output** | | | | |
| | NE43UP ≙ NE 43 upscale<br>NE43DO ≙ NE 43 downscale<br>NE430 ≙ NE 43 0 mA<br>NE43UD ≙ NE 43 upscale/downscale | 21.5 mA<br>3.5 mA<br>0 mA<br>3.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>3.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>21.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>21.5 mA |

**Sensor types and measuring ranges for MINI-MCR-2-RTD-UI-... temperature transducers**

| Sensor type | Standard | Measuring range | Smallest measuring span | Adjustable using: |
|---|---|---|---|---|
| Pt100 | IEC 751 = GOST 6651-2009 (α = 0.00385) | -200°C ... +850°C | 20 K | DIP switch |
| Pt200 | IEC 751 = GOST 6651-2009 (α = 0.00385) | -200°C ... +850°C | 20 K | DIP switch |
| Pt500 | IEC 751 = GOST 6651-2009 (α = 0.00385) | -200°C ... +850°C | 20 K | Software or smartphone app |
| Pt1000 | IEC 751 = GOST 6651-2009 (α = 0.00385) | -200°C ... +850°C | 20 K | Software or smartphone app |
| Pt100 | GOST 6651-2009 (α = 0.00391) | -200°C ... +850°C | 20 K | Software or smartphone app |
| Pt1000 | GOST 6651-2009 (α = 0.00391) | -200°C ... +850°C | 20 K | Software or smartphone app |
| Pt100 | JIS C1604-1997 | -200°C ... +850°C | 20 K | Software or smartphone app |
| Pt1000 | JIS C1604-1997 | -200°C ... +850°C | 20 K | Software or smartphone app |
| Ni100 | DIN 43760 | -60°C ... +250°C | 20 K | Software or smartphone app |
| Ni1000 | DIN 43760 | -60°C ... +250°C | 20 K | Software or smartphone app |
| Cu50 | GOST 6651-2009 (α = 0.0428) | -180°C ... +200°C | 20 K | Software or smartphone app |
| Cu100 | GOST 6651-2009 (α = 0.0428) | -180°C ... +200°C | 20 K | Software or smartphone app |
| Cu53 | GOST 6651-2009 (α = 0.0426) | -50°C ... +180°C | 20 K | Software or smartphone app |
| Customer-specific characteristic curves | | -200°C ... +850°C | 20 K | Software or smartphone app |

## Temperature
## Temperature transducers for thermocouples



Ex n

**Universal measuring transducer for thermocouples**

- Universally configurable, highly compact temperature transducer for electrical isolation, conversion, amplification, and filtering of thermocouple signals
- For thermocouples according to IEC 584 and GOST
- Internal cold junction compensation
- Plug-in connection system
- Safe 3-way isolation
- Standard signal combinations configurable via DIP switches
- Freely configurable via software or smartphone app
- Power supply and fault monitoring possible via DIN rail connector
- Status and error indicator LEDs

Ex:
Housing width 6.2 mm

### Technical data

| | | |
|---|---|---|
| Input data | | |
| Input signal (can be configured using DIP switches) | B, E, J, K, N, R, S, T, L, U, A-1, A-2, A-3, M, L | |
| Temperature range | -250°C ... 2500°C (range depending on the sensor type) | |
| Measuring range span | min. 50 K | |
| Output data | U output | I output |
| Output signal (configurable using the DIP switch) | 0 ... 5 V/1 ... 5 V<br>0 ... 10 V/10 ... 0 V | 0 ... 20 mA/4 ... 20 mA<br>20 ... 0 mA/20 ... 4 mA |
| Maximum output signal | approx. 12.3 V | 24.6 mA |
| No-load voltage | | < 17.5 V |
| Short-circuit current | < 31.5 mA | |
| Load $R_B$ | ≥ 10 kΩ | ≤ 600 Ω (at 20 mA) |
| Ripple | < 20 $mV_{PP}$ | < 20 $mV_{PP}$ (at 600 Ω) |
| General data | | |
| Supply voltage $U_B$ | 9.6 V DC ... 30 V DC | |
| Current consumption | 32 mA (at 24 V DC) | |
| Power consumption | ≤ 850 mW (at $I_{OUT}$ = 20 mA, 9.6 V DC, 600 Ω load) | |
| Transmission error | 0.1% * 600 K/set measuring range; 0.1% > 600 K (E, J, K, N, T, L, U, M Gost, L Gost)<br>0.2% * 600 K/set measuring range; 0.2% > 600 K (B, R, S, A1, A2, A3) | |
| Cold junction errors | (0,2 K * ΔT) ( typ. < 2 K ) | |
| Temperature coefficient | ≤ 0.01%/K | |
| Step response (0–99%) | Typ. 400 ms | |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 | |
| Test voltage, input/output/supply | 3 kV (50 Hz, 1 min.) | |
| Ambient temperature (operation) | -40°C ... 70°C | |
| Housing material | PBT | |
| Dimensions W/H/D | 6.2/110.5/120.5 mm | |
| Push-in connection solid/stranded/AWG | 0.2 ... 2.5 $mm^2$/0.2 ... 2.5 $mm^2$/26 - 12 | |
| Screw connection solid/stranded/AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/26 - 16 | |
| EMC note | Class A product, see page 443 | |
| Conformance / approvals | | |
| Conformance | CE-compliant | |
| ATEX | II 3 G Ex nA IIC T4 Gc X | |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for | |
| GL | GL applied for | |

### Ordering data

| Description | | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Temperature transducers for thermocouples** | | | | |
| Standard configuration | Push-in connection | **MINI MCR-2-TC-UI-PT** | **2905249** | 1 |
| Standard configuration | Screw connection | **MINI MCR-2-TC-UI** | **2902055** | 1 |
| Order configuration | Push-in connection | **MINI MCR-2-TC-UI-PT-C** | **2905248** | 1 |
| Order configuration | Screw connection | **MINI MCR-2-TC-UI-C** | **2902053** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Programming adapter** for configuring modules with S-PORT interface | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |

**Order key for MINI-MCR-2-TC-UI...C temperature transducer** (standard configuration entered as an example)

| Order No. | Sensor type | Cold junction compensation | Measuring range Start | Measuring range End | Measuring unit | Output Output signal | Output Start | Output End |
|---|---|---|---|---|---|---|---|---|
| **2902048** / | **J** / | **1** / | **-200** / | **1200** / | **C** / | **I** / | **4.0** / | **20.0** / ... |
| 2902253 ≙ MINI-MCR-2-TC-UI-C<br><br>2905248 ≙ MINI-MCR-2-TC-UI-PT-C | B ≙ B IEC 584-1 (Pt30Rh-Pt6Rh)<br>E ≙ E IEC 584-1 (NiCr-CuNi)<br>J ≙ J IEC 584-1 (Fe-CuNi)<br>K ≙ K IEC 584-1 (NiCr-Ni)<br>N ≙ N IEC 584-1 (NiCrSi-NiSi)<br>R ≙ R IEC 584-1 (Pt13Rh-Pt)<br>S ≙ S IEC 584-1 (Pt10Rh-Pt)<br>T ≙ T IEC 584-1 (Cu-CuNi)<br>L ≙ L DIN 43760 (Fe-CuNi)<br>U ≙ U DIN 43760 (Cu-CuNi)<br>A1G ≙ A-1 GOST 8.585-2001<br>A2G ≙ A-2 GOST 8.585-2001<br>A3G ≙ A-3 GOST 8.585-2001<br>MG ≙ M GOST 8.585-2001<br>LG ≙ L GOST 8.585-2001 | 0 ≙ OFF<br>1 ≙ ON | freely selectable between -250°C...2500°C (measuring range limits depend on sensor type) | freely selectable between -250°C...2500°C (measuring range limits depend on sensor type) | C ≙°C<br>F ≙ °F | I ≙ I<br>U ≙ U | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21 mA<br><br>U: freely selectable between 0.0...10.5 V | 20.0 ≙ 20 mA<br>I: freely selectable between 0.0...21 mA<br><br>U: freely selectable between 0.0...10.5 V |

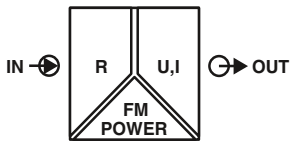
**Failure information**

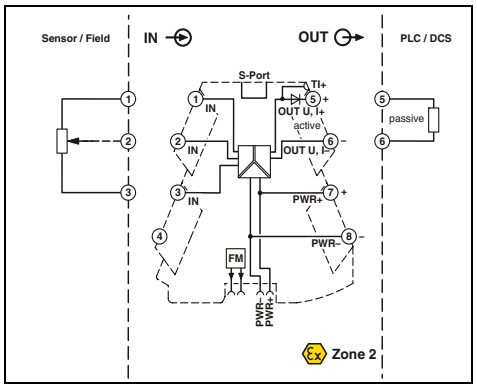
| ... / | Behavior in the event of an error | Open circuit | Overrange | Underrange |
|---|---|---|---|---|
| | **NE43DO** / | **0.0** / | **0.0** / | **0.0** |
| | FD ≙ Freely definable | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) |
| | **Note: failure information according to NE 43 can only be selected for 4...20 mA output** | | | |
| | NE43UP ≙ NE 43 upscale<br>NE43DO ≙ NE 43 downscale<br>NE430 ≙ NE 43 0 mA<br>NE43UD ≙ NE 43 upscale/downscale | 21.5 mA<br>3.5 mA<br>0 mA<br>3.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>21.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>21.5 mA |

**Sensor types and measuring ranges for MINI-MCR-2-TC-UI-... temperature transducers**

| Sensor type | Standard | Measuring range | Smallest measuring span | Adjustable using: |
|---|---|---|---|---|
| B | IEC 584-1 | +500°C ... +1820°C | 50 K | Software or smartphone app |
| E | IEC 584-1 | -230°C ... +1000°C | 50 K | Software or smartphone app |
| J | IEC 584-1 | -210°C ... +1200°C | 50 K | DIP switch |
| K | IEC 584-1 | -250°C ... +1372°C | 50 K | DIP switch |
| N | IEC 584-1 | -200°C ... +1300°C | 50 K | Software or smartphone app |
| R | IEC 584-1 | -50°C ... +1768°C | 50 K | Software or smartphone app |
| S | IEC 584-1 | -50°C ... +1768°C | 50 K | Software or smartphone app |
| T | IEC 584-1 | -200°C ... +400°C | 50 K | Software or smartphone app |
| L | DIN 43710 | -200°C ... +900°C | 50 K | Software or smartphone app |
| U | DIN 43710 | -200°C ... +600°C | 50 K | Software or smartphone app |
| A-1 | GOST 8.585 | 0°C ... +2500°C | 50 K | Software or smartphone app |
| A-2 | GOST 8.585 | 0°C ... +1800°C | 50 K | Software or smartphone app |
| A-3 | GOST 8.585 | 0°C ... +1800°C | 50 K | Software or smartphone app |
| M | GOST 8.585 | -200°C ... +100°C | 50 K | Software or smartphone app |
| L | GOST 8.585 | -200°C ... +800°C | 50 K | Software or smartphone app |
| Customer-specific characteristic curves | | -250°C ... +2500°C | 50 K | Software or smartphone app |

## Potentiometers, potiposition transducers



Ex n

**Configurable, automatic potentiometer detection**

- Universally configurable, highly compact potiposition transducer for electrical isolation, conversion, amplification, and filtering of potentiometer signals
- For potentiometers from 100 Ω to 100 kΩ
- Automatic potentiometer detection without manual adjustment
- Plug-in connection system
- Safe 3-way isolation
- Standard signal combinations configurable via DIP switches
- Freely configurable via software or smartphone app
- Power supply and fault monitoring possible via DIN rail connector
- Status and error indicator LEDs

Ex: Ⓔx
Housing width 6.2 mm

### Technical data

| | | |
|---|---|---|
| Input data | | |
| Potentiometer | 100 Ω ... 100 kΩ | |
| Reference voltage source | - | |
| Output data | U output | I output |
| Output signal | 1 ... 5 V/10 ... 0 V<br>0 ... 5 V/0 ... 10 V | 0 ... 20 mA/4 ... 20 mA<br>20 ... 0 mA/20 ... 4 mA |
| Maximum output signal | approx. 12.3 V | 24.6 mA |
| No-load voltage | | < 17.5 V |
| Short-circuit current | < 31.5 mA | |
| Load $R_B$ | ≥ 10 kΩ | ≤ 600 Ω (at 20 mA) |
| Ripple | < 20 $mV_{PP}$ (at 10 kΩ) | < 20 $mV_{PP}$ |
| Behavior in the event of a sensor error | (configurable) | |
| General data | | |
| Supply voltage $U_B$ | 9.6 V DC ... 30 V DC | |
| Nominal supply voltage | 24 V DC | |
| Current consumption | 33 mA (at 24 V DC) | |
| Power consumption | ≤ 850 mW (at $I_{OUT}$ = 20 mA, 9.6 V DC, 600 Ω load) | |
| Maximum transmission error | < 0.1% (R < 240 Ω = < 0,2%) | |
| Temperature coefficient | 0.01%/K | |
| Step response (0–99%) | - | |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 | |
| Test voltage, input/output/supply | 3 kV (50 Hz, 1 min.) | |
| Degree of protection | IP20 | |
| Ambient temperature (operation) | -40°C ... 70°C | |
| Mounting | Any | |
| Housing material | PBT | |
| Dimensions W/H/D | 6.2/110.5/120.5 mm | |
| Push-in connection solid/stranded/AWG | 0.2 ... 2.5 $mm^2$/0.2 ... 2.5 $mm^2$/26 - 12 | |
| Screw connection solid/stranded/AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/26 - 16 | |
| EMC note | Class A product, see page 443 | |
| Conformance / approvals | | |
| Conformance | CE-compliant | |
| ATEX | Ⓔx II 3 G Ex nA IIC T4 Gc X | |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for | |
| GL | GL applied for | |

### Ordering data

| Description | | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Potiposition transducer** | | | | |
| Standard configuration | Push-in connection | **MINI MCR-2-POT-UI-PT** | **2902017** | 1 |
| Standard configuration | Screw connection | **MINI MCR-2-POT-UI** | **2902016** | 1 |
| Order configuration | Push-in connection | **MINI MCR-2-POT-UI-PT-C** | **2905006** | 1 |
| Order configuration | Screw connection | **MINI MCR-2-POT-UI-C** | **2905005** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Programming adapter** for configuring modules with S-PORT interface | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |

**Order key for MINI-MCR-2-POT-UI...C 3-way signal conditioner** (standard configuration entered as an example)

| Order No. | Automatic potentiometer detection | Output<br>Output signal | Start | End | Filter | Open circuit detect | |
|---|---|---|---|---|---|---|---|
| **2905005** / | **AUTO** / | **I** | **4.0** | **20.0** / | **1** / | **ON** / | ... |
| 2905005 ≙ MINI-MCR-2-POT-UI-C<br><br>2905006 ≙ MINI-MCR-2-POT-UI-PT-C | AUTO ≙ ON<br>OFF ≙ OFF | I ≙ I<br>U ≙ U | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21 mA<br><br>U: freely selectable between 0.0...10.5 V | 20.0 ≙ 20 mA<br>I: freely selectable between 0.0...21 mA<br><br>U: freely selectable between 0.0...10.5 V | 1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10 | ON ≙ ON<br>OFF ≙ OFF | |

**Failure information**

| ... / | Behavior in the event of an error | Open circuit slider | Input open (no potentiometer connected) | Overrange | Underrange |
|---|---|---|---|---|---|
| | **NE43DO** / | **0.0** / | **0.0** / | **0.0** / | **0.0** |
| | FD ≙ Freely definable | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(only if open circuit detection is on)<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) | 0.0 ≙ 0 mA<br>I: freely selectable between 0.0...21.5 mA<br>U: freely selectable between 0.0...11 V<br>(signal type corresponds to selected output signal) |
| | **Note: failure information according to NE 43 can only be selected for 4...20 mA output** | | | | |
| | NE43UP ≙ NE 43 upscale<br>NE43DO ≙ NE 43 downscale<br>NE430 ≙ NE 43 0 mA<br>NE43UD ≙ NE 43 upscale/downscale | 21.5 mA<br>3.5 mA<br>0 mA<br>3.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>3.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>21.5 mA | 21.5 mA<br>3.5 mA<br>0 mA<br>21.5 mA |

## Accessories
## ME 6,2 TBUS... DIN rail connector

- For bridging the supply voltage
- Reduces wiring costs
- Module replacement without interrupting the supply to the remaining modules (hot swappable)
- One DIN rail connector for two MINI Analog modules
- Only distinguished by color coding

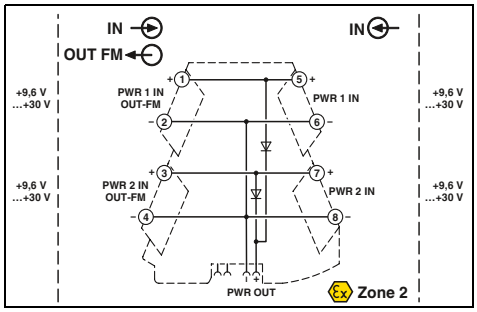
For bridging the supply voltage

For bridging the supply voltage

| Description | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **DIN rail connector (TBUS),** for bridging the supply voltage, can be snapped onto 35 mm DIN rails as per EN 60715, with UL approval | | | | | | |
| Color: green | **ME 6,2 TBUS-2 1,5/5-ST-3,81 GN** | **2869728** | 10 | | | |
| Color: gray | | | | **ME 6,2 TBUS-2 1,5/5-ST-3,81 GY** | **2695439** | 10 |

## Accessories
## Power terminal blocks

- Power terminal block for supplying the supply voltage to the DIN rail connector
- Plug-in connection system
- Increased output current of 3.2 A
- Monitoring of supplies in combination with the fault monitoring module
- Flexible redundant supply from one or both module sides
- Status and error indicator LEDs




Ex n

NFC

Redundant supply for existing 24 V

| Technical data | |
|---|---|
| Input data/output data | |
| Input voltage range | 9.9 V DC ... 30 V DC |
| Output voltage | (Input voltage - 0.3 V) |
| Output current | ≤ 3.2 A |
| General data | |
| Ambient temperature (operation) | -40°C ... 70°C |
| Housing material | PBT |
| EMC note | Class A product, see page 443 |
| Conformance / approvals | |
| Conformance | CE-compliant |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for |
| GL | GL applied for |

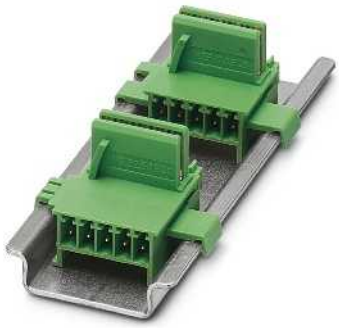
| Description | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **MINI Analog Pro power terminal block** | | | |
| Push-in connection | **MINI MCR-2-PTB-PT** | **2902067** | 1 |
| Screw connection | **MINI MCR-2-PTB** | **2902066** | 1 |

## Accessories
## ME 17,5 TBUS-... DIN rail connector

– For bridging the supply voltage when using a MINI POWER system power supply

**Notes:**

If the system power supply is used, two ME 17,5 TBUS DIN rail connectors are required. This allows you to establish the connection to the ME 6,2 TBUS DIN rail connector of the MINI Analog system and provide an effective power supply.



For system power supply

| | Ordering data | | |
|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. |
| **DIN rail connector,** for bridging the supply voltage, can be snapped onto 35 mm DIN rails as per EN 60715, with UL approval, two pieces are required per system power supply | ME 17,5 TBUS 1,5/ 5-ST-3,81 GN | 2709561 | 10 |

## Accessories
## System power supply

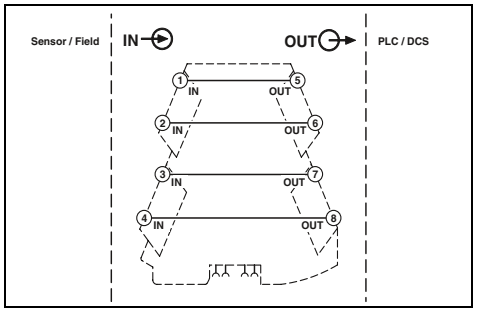
– For supplying the supply voltage via the DIN rail connector where AC voltages are available
– 100 ... 240 V AC nominal input voltage range
– 24 V DC output voltage
– For up to 60 MINI Analog modules
– For up to 1.5 A, secondary
– Status and error signaling via diagnostic LEDs

For applications with local voltages of over 100 V

| | Ordering data | | |
|---|---|---|---|
| Description | Type | Order No. | Pcs. / Pkt. |
| **System power supply,** primary-switched, with zone 2 approval. Further information can be found in Catalog 6, Surge protection and power supplies. | MINI-PS-100-240AC/24DC/1.5/EX | 2866653 | 1 |
| **System power supply,** primary-switched (not for zone 2!) Further information can be found in Catalog 6, Surge protection and power supplies. | MINI-SYS-PS-100-240AC/24DC/1.5 | 2866983 | 1 |

## Accessories
## Feed-through terminal blocks

- Feed-through terminal block for 1:1 forwarding of signals that are already electrically isolated in the MINI Analog Pro group
- Plug-in connection system




Ex n

NFC

1:1 connection

### Technical data

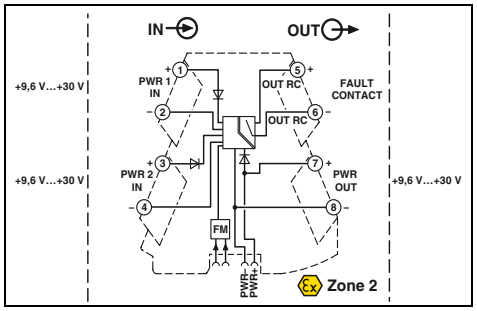
| | |
|---|---|
| General data | |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40°C ... 70°C |
| Mounting | Any |
| Housing material | PBT |
| Dimensions W/H/D | 6.2/110.5/120.5 mm |
| Screw connection solid/stranded/AWG | 0.2 ... 1.5 mm²/0.2 ... 1.5 mm²/26 - 16 |
| Conformance / approvals | |
| Conformance | CE-compliant |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X |
| GL | GL applied for |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **MINI Analog Pro feed-through terminal block** | | | |
| Screw connection | **MINI MCR-2-TB** | **2902068** | 1 |

## Accessories
## Error message modules

- Fault monitoring module for evaluating and reporting group errors from the fault monitoring system
- Monitoring of up to 115 connected MINI Analog Pro modules
- Plug-in connection system
- Monitoring of supply voltages of MINI MCR-2-PTB(-PT) power terminal blocks
- Drawing off the supply is possible
- Fault signaling via an N/C contact
- Status and error indicator LEDs




Ex n

NFC

Group error message and supply monitoring

### Technical data

| | |
|---|---|
| Input data/output data | |
| Input signal | 9.9 V DC ... 30 V DC |
| Output signal | 9.6 V DC ... 29.7 V DC |
| Switching output | |
| Max. switching voltage | 30 V DC |
| Max. switching current | 50 mA |
| General data | |
| Test voltage input/output | 1.5 kV AC (50 Hz, 1 min.) |
| EMC note | Class A product, see page 443 |
| Conformance / approvals | |
| Conformance | CE-compliant |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X |
| UL, USA / Canada | 508 listing applied for<br>Class I, Div. 2, Groups A, B, C, D T5 applied for |
| GL | GL applied for |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **MINI Analog Pro error signaling module** | | | |
| Push-in connection | **MINI MCR-2-FM-RC-PT** | **2904508** | 1 |
| Screw connection | **MINI MCR-2-FM-RC** | **2904504** | 1 |

## Accessories
## Programming adapter

IFS-USB-PROG-ADAPTER programming adapter for configuring Phoenix Contact INTERFACE modules with S-PORT interface.

The adapter is used with FDT/DTM software or ANALOG-CONF software. For programming MACX Analog and MINI Analog.

| | Technical data |
|---|---|
| General data | |
| EMC note | Class A product, see page 443 |

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Programming adapter** for configuring modules with S-PORT interface | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |

## Accessories
## Marking label for transparent cover

- Snap-in labels and adhesive labels with large-area for marking
- For snapping into or sticking onto MINI Analog Pro covers, without overlapping the status and error LEDs
- The sheets can be marked quickly and easily using the BLUEMARK CLED and the THERMOMARK CARD...
- They can also be custom printed according to customer requirements

| Description | Color | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|
| **UniCard,** can be labeled with THERMOMARK CARD and BLUEMARK | | | | | | | |
| Lettering field size: 30 x 5 mm | white | **UCT-EM (30X5)** | **0801505** | 10 | | | |
| Lettering field size: 30 x 5 mm | white | **UCT-EM (30X5) CUS** | **0801589** | 1 | | | |
| 10-section, lettering field size: 15 x 5 mm | white | **UC-EMLP (15X5)** | **0819301** | 10 | | | |
| 10-section, lettering field size: 15 x 5 mm | white | **UC-EMLP (15X5) CUS** | **0824550** | 1 | | | |
| **Self-adhesive marker strips, unprinted, continuous,** material off the roll, for marking with thermal transfer printer, can be separated using cutter, pitch as desired, strip length of up to 1000 mm, 10 strips, strip height of 5.0 mm, 1 roll = 90 m | white | | | | **SK 5,0 WH:REEL** | **0805221** | 1 |

**Integrate analog signals safely**

Integrate analog signals easily into your safety application according to the Machinery Directive. The MACX Safety analog signal conditioners are certified according to EN ISO 13849-1 with performance level PL d.

**Ex i signals**

MACX Safety Ex enables the easy and safe processing of intrinsically safe analog signals according to the Machinery Directive.

**Cost savings**

– Direct safe shutdown without an additional safety controller or in conjunction with a small-scale controller from Phoenix Contact offers a clear cost advantage
– Further cost savings can be made thanks to easy configuration and easy integration in the safety chain
– Versions with push-in technology save installation time

**Choose the right MACX Safety signal conditioner for your application:**

**Analog IN**

– 4...20 mA repeater power supplies and input signal conditioners with 2 electrically isolated outputs

**Temperature**

– Universal temperature transducers for resistance thermometers, resistance-type sensors, potentiometers, thermocouples, and mV sources – with safe limit value relay

**Functional safety – from the initial idea to the finished product**

Phoenix Contact meets the requirements of functional safety according to IEC 61508 in a standardized development process. Here, all fault avoidance and fault control measures are taken into consideration, from the very development and production of a device right up to device operation. The devices are examined by an independent test center.

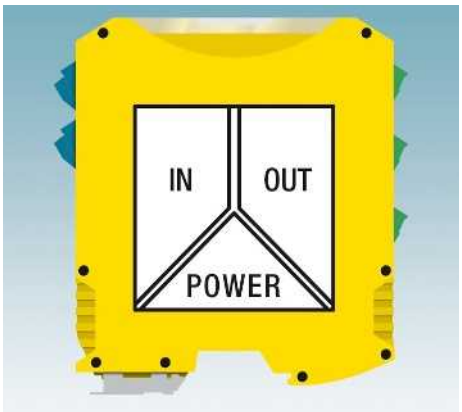
**DIN rail connector-compatible**

The DIN rail connector enables the modular bridging of the 24 V supply voltage.

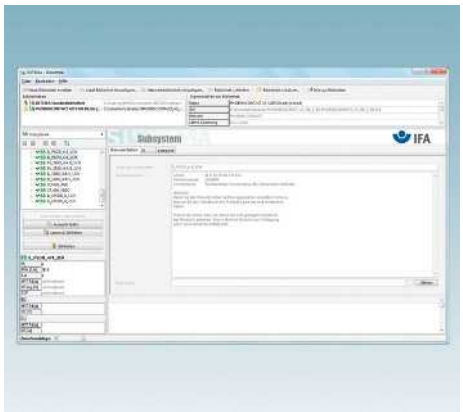
**Wide range supply**

The modules featuring a wide range supply (...-UP) can be used in all power supply networks the world over without the need for additional power supply units.

**Safe and reliable functions**
– Consistent PL d and SIL certification. This ensures the highest level of reliability and safety for your systems.



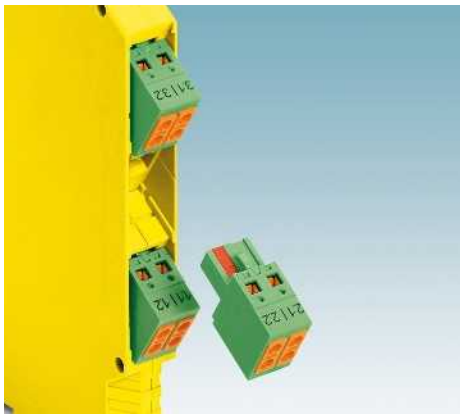

**Precise transmission and high operational reliability**
– Thanks to patented transmission concept
– Safe electrical isolation.



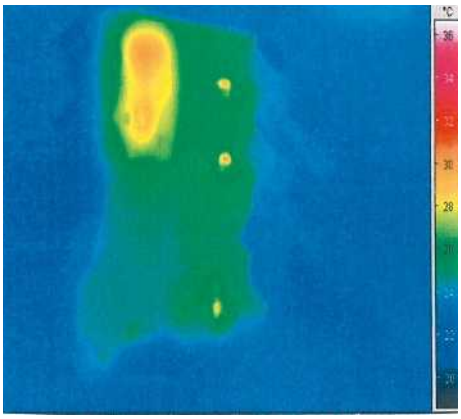
**Easy integration with Sistema**
– Easy integration into the safety chain via Sistema. The required data is already stored in Sistema.

**Easy configuration and monitoring**
– Easy configuration and monitoring with the ANALOG-CONF stand-alone software with integrated monitoring function or with FDT/DTM.

**Easy to combine**
– Analog signals, whether passive or active, can be easily combined with other safety modules.

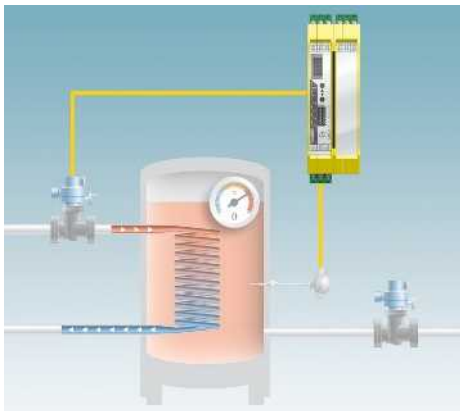


**Easy-maintenance connection technology**
– Plug-in connection terminal blocks with screw connection or fast push-in technology – coded, with integrated sockets.



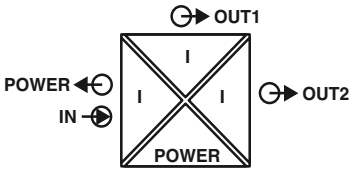
**Precise transmission, long service life**
– Patented circuit concepts ensure precise signal transmission and minimal self-heating.

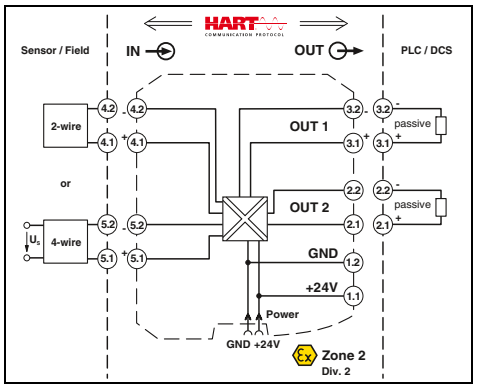
**Even for the Ex area**
– Maximum explosion protection for all Ex zones with the MACX Safety Ex range as associated intrinsically safe equipment and for installation in zone 2.



**Direct safety shutdown**
– Simple and direct shutdown for small applications is possible without an expensive safety controller or in conjunction with a small-scale controller.

## Analog IN
## Repeater power supplies




Ex n

PL EN ISO 13849

**Repeater power supply and input signal conditioner, with two electrically isolated outputs**

- 4...20 mA input, powered and not powered
- Two electrically isolated 4...20 mA (active) outputs
- PL d according to EN ISO 13849-1
- Up to SIL 2 according to EN 61508
- Installation in zone 2 possible
- Plug-in screw and push-in connection technology
- 4-way electrical isolation
- Bidirectional HART communication possible
- Power supply via DIN rail connector possible

Housing width 12.5 mm

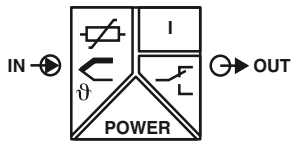
### Technical data

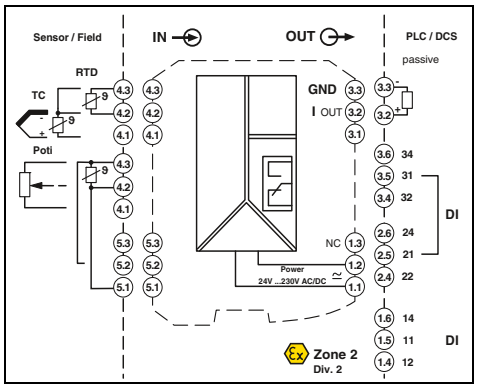
| | |
|---|---|
| Input data | |
| Input signal | 4 mA ... 20 mA/4 mA ... 20 mA |
| Transmitter supply voltage | > 21.5 V (at 20 mA) |
| Voltage drop | < 3.9 V (in input signal conditioner operation) |
| Output data | |
| Output signal (per output) | 4 mA ... 20 mA (active) |
| Load | < 450 Ω (at 20 mA) |
| Output ripple | < 20 $mV_{rms}$ |
| General data | |
| Supply voltage range | 19.2 V DC ... 30 V DC (24 V DC (-20% ... +25%)) |
| Current consumption | < 75 mA (at 24 V DC) |
| Power dissipation | < 1.45 W (at 24 V DC/20 mA) |
| Temperature coefficient | < 0.01%/K |
| Step response (10-90%) | < 1.3 ms (for 4 mA ... 20 mA step) |
| Transmission error, typical | < 0.05% (of final value) |
| Maximum transmission error | < 0.1% (of final value) |
| Under-/overload range | According to NE 43 |
| Electrical isolation | |
| Input/output/power supply | 300 $V_{rms}$ (rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) 2.5 kV (50 Hz, 1 min., test voltage) |
| Output 1/output 2 | 1.5 kV AC (50 Hz, 1 min., test voltage) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Status indication | Green LED (PWR supply voltage) |
| SMART communication (per output) | Yes |
| Protocols supported | HART |
| Housing material | PA 66-FR |
| Dimensions W/H/D | 12.5/99/114.5 mm |
| 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 |
| EMC note | Class A product, see page 443 |
| Conformance / approvals | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II 3 G Ex nA IIC T4 Gc X |
| SIL in accordance with IEC 61508 | 2 |
| Performance level according to ISO 13849 | PLd |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Repeater power supplies and input signal conditioners, signal duplicator,** with performance level | | | |
| Screw connection | **MACX PL-RPSSI-2I** | **2904961** | 1 |
| Spring-cage connection | **MACX PL-RPSSI-2I-SP** | **2904962** | 1 |

## Temperature, temperature transducer




Ex n

PL
EN ISO 13849

**Universal, with limit value relays, wide range power supply**

Ex:
Housing width 35 mm

- Input for resistance thermometers, thermocouples, resistance-type sensors, potentiometers, mV sources
- A safety-related limit value relay, by bridging two relays
- Differential measurement possible with Pt 100
- An additional limit value relay for non-safety-related function
- PL d according to EN ISO 13849-1
- Up to SIL 2 according to EN 61508
- Configuration via software (ANALOG-CONF or FDT/DTM)
- Cold junction compensation with separate plug
- Wide range power supply 19.2 ... 253 V AC/DC
- Status indicators for supply voltage, cable, sensor, and module errors
- Installation in zone 2 possible
- Plug-in screw and push-in connection technology

### Technical data

| | |
|---|---|
| Input data | |
| Resistance thermometers | Pt, Ni, Cu sensors: 2, 3, 4-wire |
| Thermocouple sensors | B, E, J, K, N, R, S, T, L, U, CA, DA, A1G, A2G, A3G, MG, LG |
| Resistor | 0 Ω ... 50 kΩ |
| Potentiometer | 0 Ω ... 50 kΩ |
| Voltage | -1000 mV ... 1000 mV |
| Output data | |
| Output signal | 4 mA ... 20 mA |
| Maximum output signal | 22 mA |
| Load $R_B$ | ≤ 600 Ω (at 20 mA) |
| Behavior in the event of a sensor error | According to NE 43 or freely configurable |
| Switching output | Relay output |
| Contact type | 2 PDT |
| Contact material | $AgSnO_2$, hard gold-plated |
| Max. switching voltage | 250 V AC (250 V DC) |
| Max. switching current | 2 A (250 V AC)/2 A (28 V DC) |
| General data | |
| Supply voltage range | 24 V ... 230 V AC/DC (-20%/+10%, 50/60 Hz) |
| Power consumption | < 2.4 W |
| Temperature coefficient | 0.01%/K |
| Maximum transmission error | 0.1% (e.g. for Pt 100, 300 K span, 4 ... 20 mA) |
| Electrical isolation | |
| Input/output/power supply | 300 $V_{rms}$ (rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) 2.5 kV (50 Hz, 1 min., test voltage) |
| 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) |
| Input/switching output | 375 V (peak value in accordance with EN 60079-11) |
| Ambient temperature range | -20°C ... 65°C |
| Humidity | Typ. 5% ... 95% (non-condensing) |
| Housing material | PA 66-FR |
| Inflammability class in acc. with UL 94 | V0 |
| Dimensions W/H/D | 35/99/114.5 mm |
| 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 |
| EMC note | Class A product, see page 443 |
| Conformance / approvals | |
| Conformance | CE-compliant |
| ATEX | II 3 G Ex nA nC ic IIC T4 Gc X |
| IECEx | Ex nA nC ic IIC T4 Gc X |
| SIL in accordance with IEC 61508 | 2 |
| Performance level according to ISO 13849 | PLd |

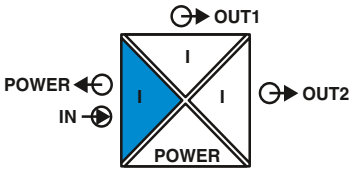
### Ordering data

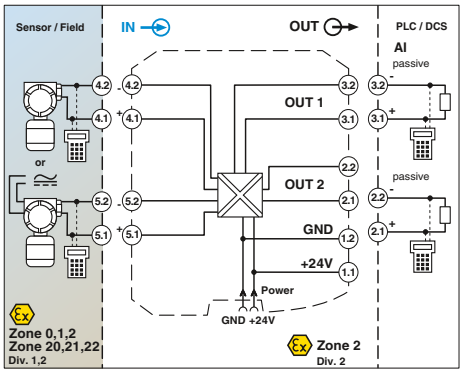
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Temperature transducer and threshold value switch** with performance level | | | |
| Screw connection | **MACX PL-T-UIREL-UP** | **2904901** | 1 |
| Spring-cage connection | **MACX PL-T-UIREL-UP-SP** | **2904903** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Programming adapter** for configuring modules with S-PORT interface | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |
| **Plug with 50 Ω resistor**, for current signals between +20 mA and -20 mA | **MACX MCR-I20** | **2905680** | 1 |

## Analog IN
## Repeater power supply, Ex i



**Repeater power supply and input signal conditioner, with two electrically isolated outputs**

- 4...20 mA input, [Ex ia], powered and not powered
- Two electrically isolated 4...20 mA (active) outputs
- PL d according to EN ISO 13849-1
- Up to SIL 2 according to EN 61508
- Installation in zone 2 possible
- Plug-in screw and push-in connection technology
- 4-way electrical isolation
- Bidirectional HART communication possible
- Power supply via DIN rail connector possible

Housing width 12.5 mm

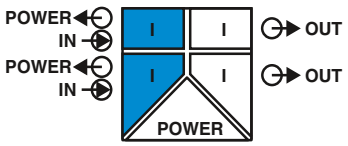
### Technical data

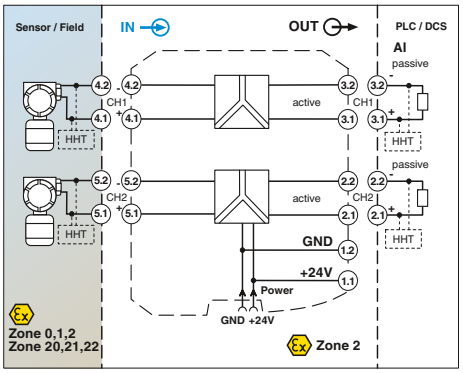
| | |
|---|---|
| Input data | |
| Input signal | 4 mA ... 20 mA/4 mA ... 20 mA |
| Transmitter supply voltage | > 16 V (at 20 mA) |
| Voltage drop | < 3.9 V (in input signal conditioner operation) |
| Output data | |
| Output signal (per output) | 4 mA ... 20 mA (active) |
| Load | < 450 Ω (at 20 mA) |
| Output ripple | < 20 $mV_{rms}$ |
| General data | |
| Supply voltage range | 19.2 V DC ... 30 V DC (24 V DC (-20% ... +25%)) |
| Current consumption | < 75 mA (24 V DC/ 20 mA) |
| Power dissipation | < 1.45 W (24 V DC/ 20 mA) |
| Temperature coefficient | < 0.01%/K |
| Step response (10-90%) | < 1.3 ms (for 4 mA ... 20 mA step) |
| Transmission error, typical | < 0.05% (of final value) |
| Maximum transmission error | < 0.1% (of final value) |
| Under-/overload range | According to NE 43 |
| Electrical isolation | |
| Input/output/power supply | 300 $V_{rms}$ (rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) 2.5 kV (50 Hz, 1 min., test voltage) |
| 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) |
| Output 1/output 2 | 1.5 kV AC (50 Hz, 1 min., test voltage) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Status indication | Green LED (PWR supply voltage) |
| SMART communication (per output) | Yes |
| Protocols supported | HART |
| Housing material | PA 66-FR |
| Dimensions W/H/D | 12.5/99/114.5 mm |
| 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 |
| EMC note | Class A product, see page 443 |
| Safety data as per ATEX | |
| Max. output voltage $U_o$ | 25.2 V |
| Max. output current $I_o$ | 93 mA |
| Max. output power $P_o$ | 587 mW |
| Maximum voltage $U_m$ | 253 V AC (125 V DC) |
| Conformance / approvals | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | Ex II (1) G [Ex ia Ga] IIC/IIB<br>Ex II (1) D [Ex ia Da] IIIC<br>Ex II 3 (1)G Ex nA [ia Ga] IIC/IIB T4 Gc |
| IECEx | [Ex ia Ga] IIC/IIB, [Ex ia Da], Ex nA [ia Ga] IIC/IIB T4 Gc |
| SIL in accordance with IEC 61508 | 2 |
| Performance level according to ISO 13849 | PLd |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Repeater power supplies and input signal conditioners, signal duplicator**, with performance level, intrinsically safe input | | | |
| Screw connection | **MACX PL-EX-RPSSI-2I** | **2904959** | 1 |
| Spring-cage connection | **MACX PL-EX-RPSSI-2I-SP** | **2904960** | 1 |

## Analog IN
## Repeater power supply, Ex i



**2-channel repeater power supply**

Ex:
Housing width 12.5 mm

- 2-channel
- 4...20 mA input, [Ex ia], powered
- 4 ... 20 mA output (active)
- PL d according to EN ISO 13849-1
- Up to SIL 3 according to IEC 61508
- Installation in zone 2 possible
- Plug-in screw and push-in connection technology
- 3-way electrical isolation, per channel
- Bidirectional HART communication possible
- Power supply via DIN rail connector possible

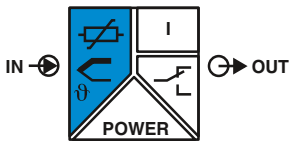
### Technical data

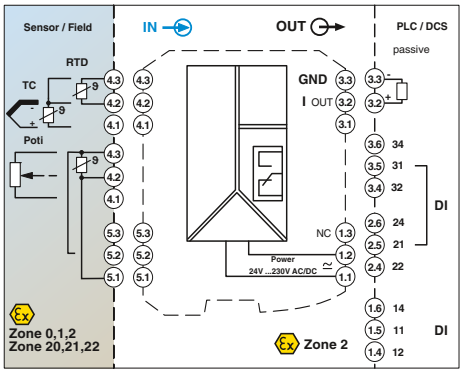
| | |
|---|---|
| Input data | per channel |
| Input signal | 4 mA ... 20 mA |
| Transmitter supply voltage | > 16 V (at 20 mA) |
| Underload/overload signal range | 0 mA ... 24 mA |
| Output data | per channel |
| Output signal | 4 mA ... 20 mA (active) |
| Load | ≤ 450 Ω (20 mA) |
| Underload/overload signal range | 0 mA ... 24 mA |
| General data | |
| Supply voltage range | 19.2 V DC ... 30 V DC (24 V DC (-20% ... +25%)) |
| Current consumption | < 100 mA (24 V/20 mA) |
| Power dissipation | < 1.4 W (at 24 V DC/20 mA) |
| Temperature coefficient | < 0.01%/K |
| Step response (10-90%) | < 1.3 ms (for 4 mA ... 20 mA step) |
| Transmission error, typical | < 0.05% (of final value) |
| Maximum transmission error | < 0.1% (of final value) |
| Electrical isolation | |
| Input/output, power supply | 300 $V_{rms}$ (rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) 2.5 kV (50 Hz, 1 min., test voltage) |
| 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) |
| Output 1/output 2/ power supply | 1.5 kV (50 Hz, 1 min., test voltage) |
| Ambient temperature range | -20°C ... 60°C (any mounting position) |
| Status indication | Green LED (supply voltage) |
| SMART communication | Yes |
| Signal bandwidth | as per HART specifications |
| Protocols supported | HART |
| Housing material | PA 66-FR |
| Dimensions W/H/D | 12.5/99/114.5 mm |
| 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 |
| EMC note | Class A product, see page 443 |
| Safety data as per ATEX | |
| Max. output voltage $U_o$ | 25.2 V |
| Max. output current $I_o$ | 93 mA |
| Max. output power $P_o$ | 587 mW |
| Maximum voltage $U_m$ | 253 V AC (125 V DC) |
| Conformance / approvals | |
| Conformance | CE-compliant, additionally EN 61326 |
| ATEX | II (1) G [Ex ia Ga] IIC/IIB<br>II (1) D [Ex ia Da] IIIC<br>II 3(1) G Ex nA [ia Ga] IIC T4 Gc |
| IECEx | [Ex ia Ga] IIC/IIB, [Ex ia Da] IIIC, Ex nA [ia Ga] IIC T4 Gc |
| SIL in accordance with IEC 61508 | 3 |
| Performance level according to ISO 13849 | PLd |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Repeater power supply,** two-channel, with performance level, intrinsically safe input | | | |
| Screw connection | **MACX PL-EX-RPSS-2I-2I** | **2904963** | 1 |
| Spring-cage connection | **MACX PL-EX-RPSS-2I-2I-SP** | **2904964** | 1 |

## Temperature
## Temperature transducer, Ex i



**Universal, with limit value relays, wide range power supply**

- Input for resistance thermometers, thermocouples, resistance-type sensors, potentiometers, mV sources, [Ex ia]
- Differential measurement possible with Pt 100
- A safety-related limit value relay, by bridging two relays
- An additional limit value relay for non-safety-related function
- PL d according to EN ISO 13849-1
- Up to SIL 2 according to EN 61508
- Configuration via software (ANALOG-CONF or FDT/DTM)
- Cold junction compensation with separate plug
- Wide range power supply 19.2 ... 253 V AC/DC
- Status indicators for supply voltage, cable, sensor, and module errors
- Installation in zone 2 possible
- Plug-in screw and push-in connection technology

Housing width 35 mm

### Technical data

| | |
|---|---|
| Input data | |
| Resistance thermometers | Pt, Ni, Cu sensors: 2, 3, 4-wire |
| Thermocouple sensors | B, E, J, K, N, R, S, T, L, U, CA, DA, A1G, A2G, A3G, MG, LG |
| Resistor | 0 Ω ... 50 kΩ |
| Potentiometer | 0 Ω ... 50 kΩ |
| Voltage | -1000 mV ... 1000 mV |
| Output data | |
| Output signal | 4 mA ... 20 mA |
| Maximum output signal | 22 mA |
| Load $R_B$ | ≤ 600 Ω (20 mA) |
| Behavior in the event of a sensor error | According to NE 43 or freely configurable |
| Switching output | Relay output |
| Contact type | 2 PDT |
| Contact material | $AgSnO_2$, hard gold-plated |
| Max. switching voltage | 250 V AC (250 V DC) |
| Max. switching current | 2 A (250 V AC)/2 A (28 V DC) |
| General data | |
| Supply voltage range | 24 V ... 230 V AC/DC (-20%/+10%, 50/60 Hz) |
| Power consumption | < 2.4 W |
| Temperature coefficient | 0.01%/K |
| Maximum transmission error | 0.1% (e.g. for Pt 100, 300 K span, 4 ... 20 mA) |
| Electrical isolation | |
| Input/output/power supply | 2.5 kV (50 Hz, 1 min., test voltage) |
| 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) |
| Input/switching output | 375 V (peak value in accordance with EN 60079-11) |
| Output/supply | 300 $V_{rms}$ (rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) |
| Ambient temperature range | -20°C ... 65°C |
| Humidity | Typ. 5% ... 95% (non-condensing) |
| Housing material | PA 66-FR |
| Inflammability class in acc. with UL 94 | V0 |
| Dimensions W/H/D | 35/99/114.5 mm |
| 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 |
| EMC note | Class A product, see page 443 |
| Safety data as per ATEX | |
| Max. output voltage $U_o$ | 6 V |
| Max. output current $I_o$ | 7.4 mA |
| Max. output power $P_o$ | 11 mW |
| Conformance / approvals | |
| Conformance | CE-compliant |
| ATEX | Ex II (1) G [Ex ia Ga] IIC<br>Ex II (1) D [Ex ia Da] IIIC<br>Ex II 3 G Ex nA nC ic IIC T4 Gc X |
| IECEx | [Ex ia Ga] IIC, [Ex ia Da] IIIC, Ex nA nC ic IIC T4 Gc X |
| SIL in accordance with IEC 61508 | 2 |
| Performance level according to ISO 13849 | PLd |

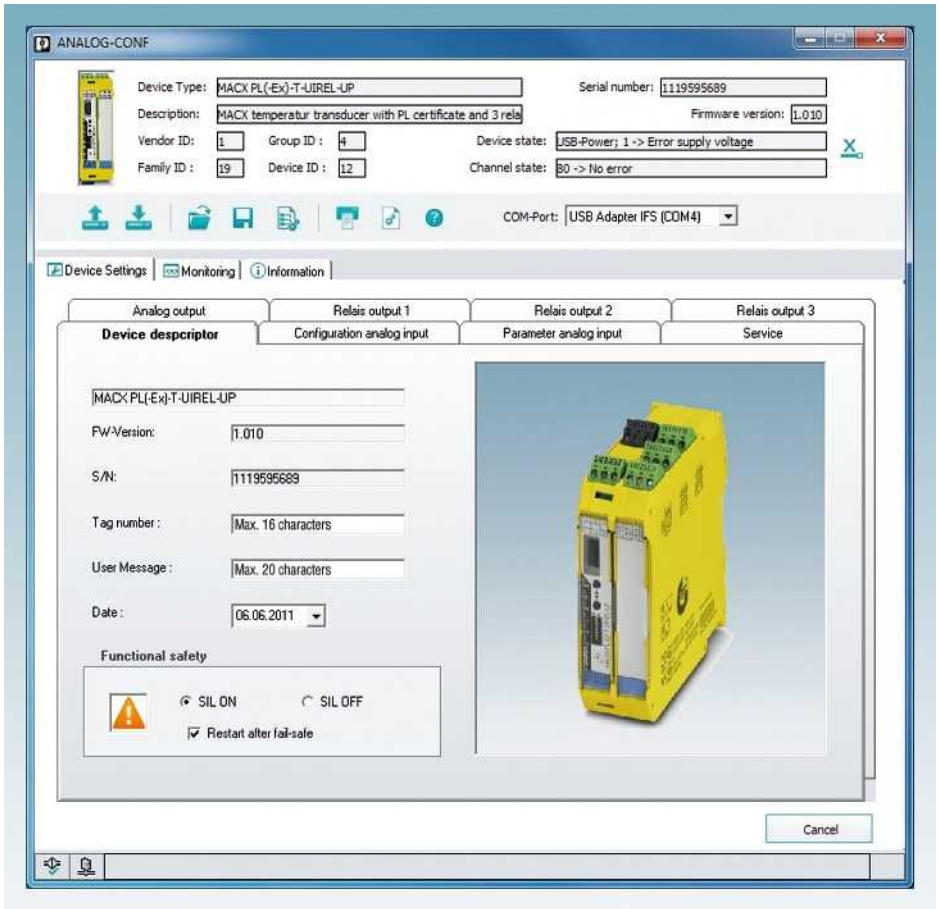
### Ordering data

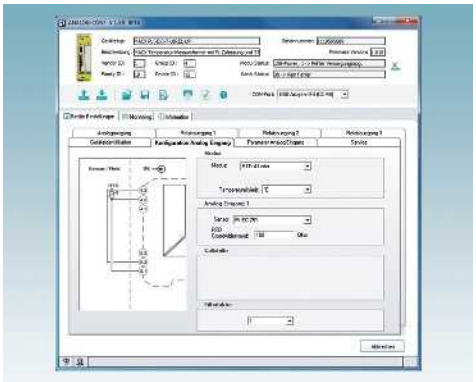
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Temperature transducer with threshold value switch,** with performance level, intrinsically safe input | | | |
| Screw connection | **MACX PL-EX-T-UIREL-UP** | **2904910** | 1 |
| Spring-cage connection | **MACX PL-EX-T-UIREL-UP-SP** | **2904912** | 1 |

### Accessories

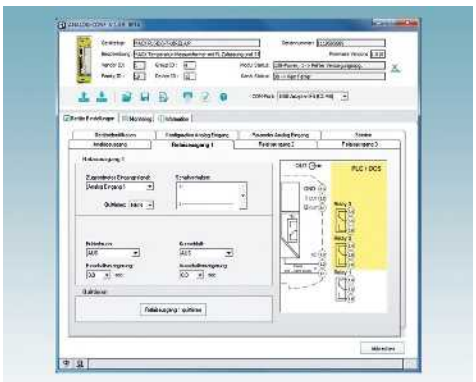
| | | | |
|---|---|---|---|
| **Programming adapter** for configuring modules with S-PORT interface | **IFS-USB-PROG-ADAPTER** | **2811271** | 1 |
| **Plug with 50 Ω resistor**, for current signals between +20 mA and -20 mA | **MACX MCR-EX-I20** | **2905679** | 1 |

## Configuration software
## ANALOG-CONF and FDT/DTM

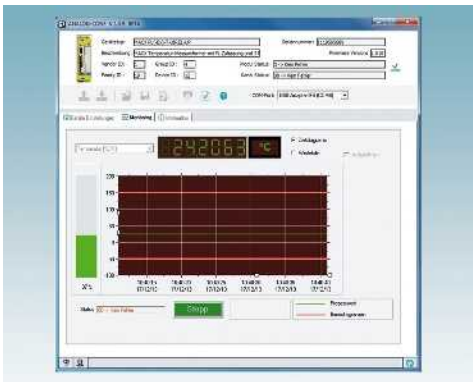


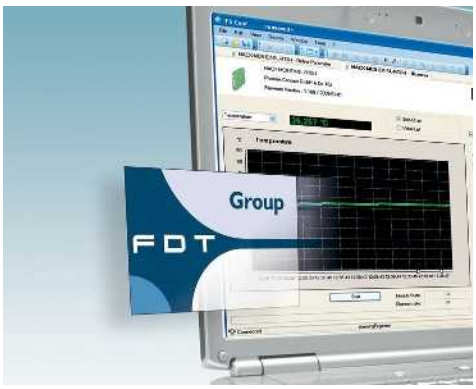
Input configuration with indication of the pin assignment



Relay configuration



Monitoring function




Configuration with FDT/DTM

### ANALOG-CONF

The user-friendly ANALOG-CONF software allows you to quickly and clearly configure the temperature modules. The pin assignment for the input and output is directly displayed. You have access to the complete range of configurable parameters. You have the option to pre-configure parameters and then import them into any number of temperature transducers or read the data from the device and directly display the settings and measured values.

### FDT/DTM

Configuration is also possible via the FDT/DTM universal configuration tool. The DTM files can simply be downloaded in the download area for the item.

### The following parameters can be configured:

– Restart following failsafe

**Input:**
– Resistance thermometer
– Thermocouples
– Potentiometer
– Remote resistance-type sensor
– Voltage signals ±1 V
– User characteristic curve
– Additional analog signals
– Filter
– Cold junction

**Analog output:**
– Type of fault signaling

**Switching outputs:**
– Acknowledgement, switching behavior
– Switch-on/off delay

**Monitoring:**
– Representation in diagram or value list, recording possible

**Service:**
– Reset, password protection, display DIP switch position
– and much more

## Software for acquisition of usage data

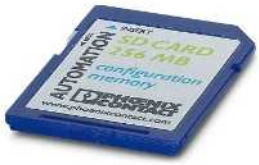
The EMwise software from Phoenix Contact is the efficient solution for acquiring energy data regarding heat, cold, air or electricity in conjunction with a small-scale controller.

Integrate up to 24 digital inputs, 8 analog channels, 50 EMpro energy meters, 30 M-bus counters, and 4 IO-Link measuring sensors.

A web-based interface is available for system parameterization. Each device/channel can be configured individually, without any programming knowledge. The configuration is saved to a file and can be reused for identical systems.

Your advantages:
- Startup without programming knowledge
- Direct parameterization of predefined sensors

Three software versions, suitable for every application:
- EMWISE IMPULS: for up to 16 digital signals
- EMWISE IMP ANALOG: for up to 16 digital and 6 analog signals
- EMWISE EXTENDED: for up to 24 digital and 8 analog signals, EMpro energy meters, M-bus counters, M-bus level converters, IO-Link sensors




### Technical data

See phoenixcontact.net/products

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Program and configuration memory,** plug-in, 2 GB with license key and application program for reading from measuring devices via pulses | **SD FLASH 2GB EMWISE IMPULS** | **2701745** | 1 |
| **Program and configuration memory,** plug-in, 2 GB with license key and application program for reading from measuring devices via pulses and analog values | **SD FLASH 2GB EMWISE IMP ANALOG** | **2701746** | 1 |
| **Program and configuration memory,** plug-in, 2 GB with license key and application program for reading from measuring devices via pulses, analog values, M-bus, Modbus RTU, and IO-Link | **SD FLASH 2GB EMWISE EXTENDED** | **2701747** | 1 |

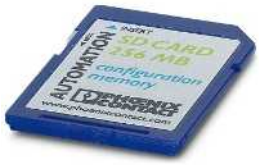
## Software for data logging

Turn your controller into a data logger. The SD FLASH 512MB ILDLC FLEX memory card from Phoenix Contact provides all the software needed to extend your PLC for use as a data logger. The software contains the familiar application from the FLEX data logger kit.

In conjunction with the ILC 151 GSM/GPRS small-scale controller, 3 digital and 4 analog input or output terminal blocks can be mounted. The mounted terminals are automatically detected and started up by the controller. Different PCP channels can also be selected during parameterization.

Your advantages:

– Send digital and analog status information via SMS or e-mail or write it to an SQL database
– Startup without programming knowledge




### Technical data

See phoenixcontact.net/products

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **SD FLASH card with data logger FLEX application** | | | |
| | **SD FLASH 512MB ILDLC FLEX** | **2701873** | 1 |

## Pressure sensor with IO-Link

Pressure sensors from Phoenix Contact detect the operating pressure of gas media in a range from -1 to 10 bar. The overload-proof ceramic measuring cell is designed for in excess of 100 million cycles and enables a high switching point accuracy. The pressure switch offers the option of using the set switching points via two switching outputs or reading all process data via the IO-Link interface.

Your advantages:
- IO-Link communication
- Parameterization, diagnostics, and process value monitoring via IO-Link
- Programmable function
- 4-character alphanumeric display

IO-Link

### Technical data

| | |
|---|---|
| Pressure monitoring | |
| Measuring range | -1 bar ... 10 bar (minimum burst pressure 150 bar) |
| Pressure resistance | 75 bar |
| Process connection | G1/4 I |
| Supply for module electronics | |
| Connection method | M12 connector |
| No. of pos. | 4 |
| Supply voltage range | 18 V DC ... 36 V DC |
| Current draw | < 35 mA |
| Digital outputs | |
| Number of outputs | 2 (OUT1 = switching output, OUT2 = switching output or diagnostic output) |
| Connection method | M12 connectors, assigned four times |
| Delay time | 0.3 s (operational readiness) |
| IO-Link | |
| Specification | V1.1 |
| Transmission speed | (38.4 kbaud) |
| General data | |
| Weight | 263 g |
| Width | 34 mm |
| Height | 91.5 mm |
| Depth | 48 mm |
| Degree of protection | IP65 |
| Protection class | III |
| Ambient temperature (operation) | -25°C ... 80°C |
| Ambient temperature (storage/transport) | -40°C ... 100°C |
| Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 | 20g (10 Hz ... 2000 Hz) |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Pressure switch with indicator**, G1/4 I process connection, IO-Link communication | **PSK APS7004IOL** | **2700710** | 1 |

## Current transformers for retrofitting
## PACT RCP

Fast installation without removing system parts

Eight different current measuring ranges from 100 to 4000 A

### Fast installation in a confined space

PACT current transformers for retrofitting can be conveniently mounted where there is not enough space for split core current transformers. System downtimes are reduced as system parts do not have to be removed for installation.

Simply place the handy Rogowski coil quickly around power rails and circular conductors. The measuring transducer connected downstream supplies the same typical secondary currents as a standard current transformer.

### Your advantages:

- High system availability due to reduced downtimes: fast installation without removing system parts
- Transform alternating currents up to 4000 A using a single measuring system
- Space saving and handy, as the current strength does not affect the size and weight of the coil
- Safe installation and operation: no dangerous open circuit voltages
- Harmonics and transients detected with phase accuracy with a large frequency spectrum from 10 to 5000 Hz
- Rogowski coil secured on power rails and circular conductors thanks to professional holding device

Detect harmonics and transients with a large frequency spectrum from 10 to 5000 Hz

Professional holding device for power rails

## Current transformers for retrofitting PACT RCP

- Practical handling due to the flexible measuring coil for opening
- Universal application possibilities through 8 different current measuring ranges in one device: (0 ... 100/ ... / ... /4,000 A)
- The large bandwidth (10 ... 5,000 Hz) enables harmonics and transients to be detected
- It is not possible for dangerous open circuit voltages to occur
- The bracket ensures optimum alignment of the measuring coil to the power rail
- Low space requirement in the control cabinet

**Current transformer for subsequent installation in the field**

### Technical data

| | |
|---|---|
| Measuring coil input data | |
| Frequency range | 10 Hz ... 5000 Hz |
| Input signal | Sine |
| Position error | < 1% (the measuring coil is at right angles to the live connector.) |
| Measuring coil signal output | |
| Output signal (at 50 Hz) | 100 mV (no load, at 1,000 A) |
| General data, measuring coil | |
| Length of signal cable | 3000 mm |
| Rated insulation voltage | 1000 V AC (rms CAT III)<br>600 V AC (rms CAT IV) |
| Test voltage | 10.45 kV (DC/1 min.) |
| Ambient temperature (operation) | -30°C ... 80°C (measuring coil) |
| Ambient temperature (storage/transport) | -40°C ... 90°C (measuring coil) |
| Measuring transducer input data | |
| Measuring ranges (current) via DIP switch | 100 A 250 A 400 A 630 A 1000 A 1500 A 2000 A 4000 A |
| Phase angle | < 1 ° |
| Measuring transducer signal input | |
| Input signal (at 50 Hz) | 100 mV (1000 A) |
| Measuring transducer signal output | |
| Current output signal | 1 A AC (effective at sine) |
| Miscellaneous data for measuring transducer | |
| Nominal supply voltage | 24 V DC -20 % ... +25 % |
| Nominal supply voltage range | 19.2 V DC ... 30 V DC |
| Transmission error, maximum | ≤ 0.5% (from the range end value) |
| Linearity error | < 0.5% (from the range end value) |
| Frequency range | 45 Hz ... 65 Hz |
| Degree of protection | IP20 |
| Test voltage | 1.5 kV AC (supply/input and output) |
| Dimensions W/H/D | 22.5/70.4/85 mm |
| Ambient temperature (operation) | -20°C ... 70°C (measuring transducer) |
| Ambient temperature (storage/transport) | -25°C ... 85°C (measuring transducer) |
| General data for the set | |
| Altitude | < 2000 m |
| Permissible humidity (operation) | 5% ... 95% (non-condensing) |
| Approvals / conformities | |
| Standards/specifications | IEC 61010-1<br>IEC 61010-031<br>IEC 61010-2-031<br>IEC 61010-2-032 |

### Ordering data

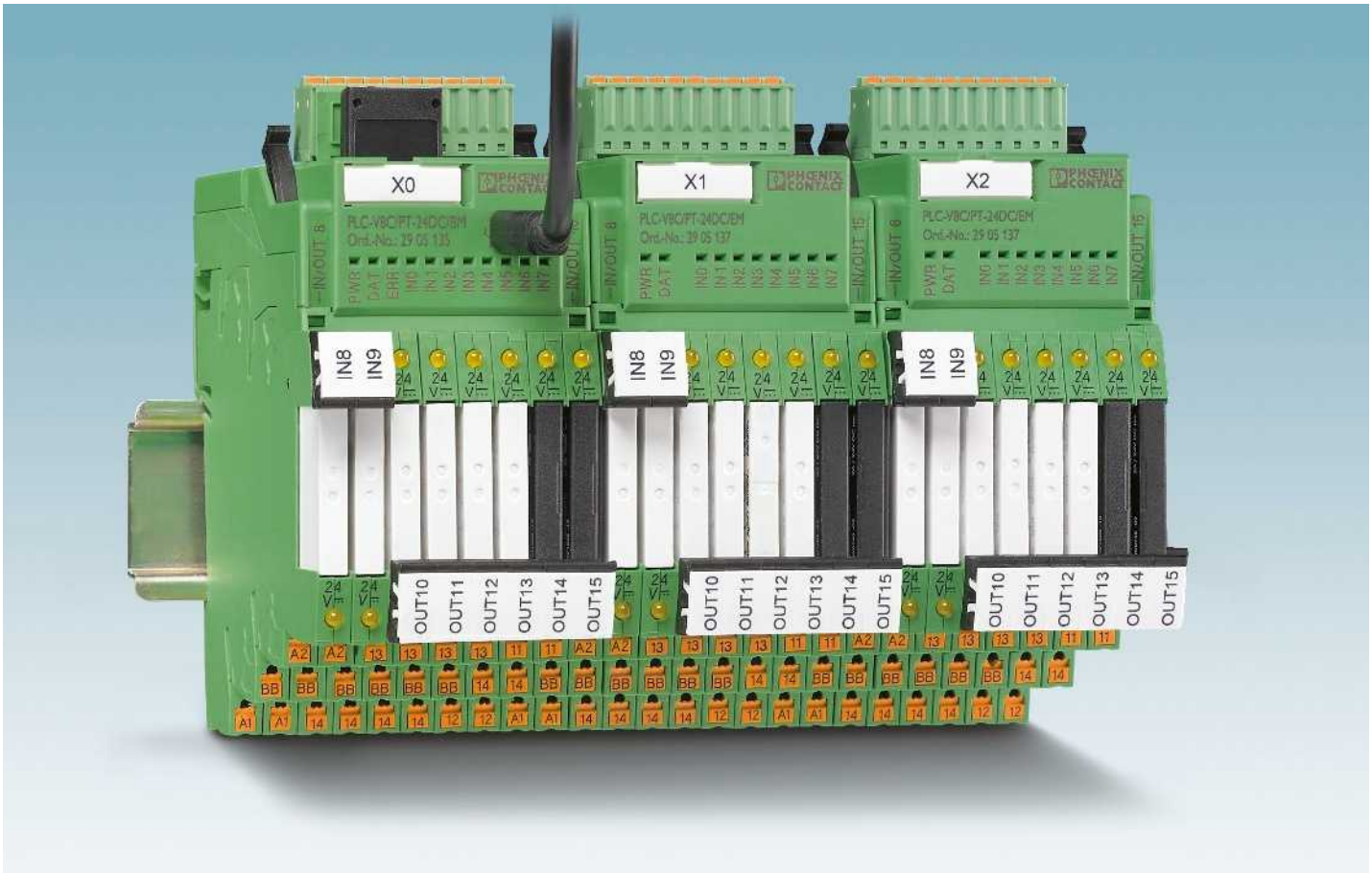
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Current transformer for retrofitting,** set consisting of Rogowski coil and measuring transducer, output signal: 1 A AC (effective for sine) | | | |
| Length of measuring coil 300 mm | **PACT RCP-4000A-1A-D95** | **2904921** | 1 |
| Length of measuring coil 450 mm | **PACT RCP-4000A-1A-D140** | **2904922** | 1 |
| Length of measuring coil 600 mm | **PACT RCP-4000A-1A-D190** | **2904923** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Holding device for power rail** | **PACT RCP-CLAMP** | **2904895** | 1 |

**Recommendations for the use of coil lengths and power rail dimensions**

| Power rail [mm x mm] | Diameter/ coil length [mm] | 1 power rail per phase | 2 power rails per phase | 3 power rails per phase |
|---|---|---|---|---|
| 30 x 10 | 95/300 | X | X | |
| 40 x 10 | 95/300 | X | X | |
| 40 x 10 | 140/450 | | | X |
| 50 x 10 | 95/300 | X | | |
| 50 x 10 | 140/450 | | X | X |
| 60 x 10 | 95/300 | X | | |
| 60 x 10 | 140/450 | | X | X |
| 60 x 10 | 140/450 | X | X | X |
| 100 x 10 | 140/450 | X | X | |
| 100 x 10 | 190/600 | | | X |
| 120 x 10 | 140/450 | X | | |
| 120 x 10 | 190/600 | | X | X |
| 160 x 10 | 190/600 | X | X | X |




## Extremely compact control

The PLC logic programmable logic relay system is the extremely compact way to carry out small automation tasks easily and flexibly. It consists of the PLC-V8C logic modules, the PLC-INTERFACE relay system, and the LOGIC+ software. The logic modules are simply plugged into a row of eight PLC-INTERFACE terminal blocks and combine the logic and interface level in one unit. Depending on the switching requirements, plug-in electromechanical and solid-state relays can be combined in order to flexibly switch and control the I/O signals.

PLC logic processes digital and analog input signals as well as logic functions and timer modules - and replaces conventional switching and control devices. Up to 16 I/O signals can be processed using the stand-alone logic modules - that's with a design width of just 50 mm. If more I/O signals are required, a maximum of 48 I/O signals can be linked using the basic and extension modules.

## Switching and controlling with plug-in relays

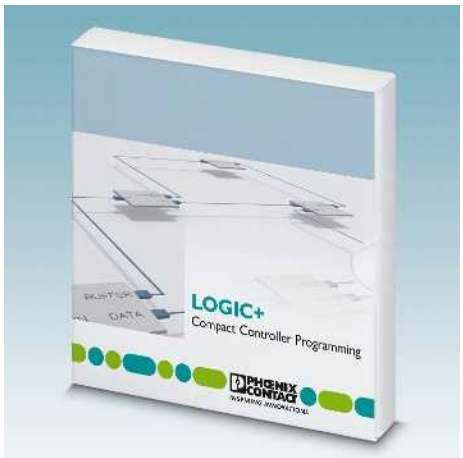
- PLC logic brings together the standard combination of logic module and separate plug-in relay and eliminates the wiring effort and additional switching elements
- Convenient connections with screw or push-in connection technology, which also accommodate return conductors, remove the need for separate potential terminal blocks
- Each relay channel can be freely configured as an input or output. PLC logic therefore perfectly adapts to fit the application at hand

## Intuitive programming

Programming is quick and easy with the intuitive LOGIC+ programming software. Ladder (LD) and function block diagrams (FBD) can be created by selecting the relevant functions and their connection using drag & drop. The graphical representation of PLC logic in the hardware editor supports intuitive operation. The programs created can be simulated offline on the PC and tested online during operation. Basic functions, such as AND, OR, NOT, etc. are complemented by special functions, such as counters, seven-day timers, timer modules, and mathematical functions, to name a few.

**Logic module with plug-in relays**

PLC logic combines a logic module and plug-in relay and eliminates the wiring effort and additional switching elements. Each relay channel can be flexibly equipped with an electromechanical or a solid-state relay. PLC logic processes 16 I/O signals with just one logic module and boasts an extremely compact design width of just 50 mm.




**Intuitive programming with LOGIC+**

- Function block diagram or ladder diagram
- Numerous integrated function blocks
- Specific function blocks are available to download
- Hardware view in the program
- Download free of charge at www.phoenixcontact.com.

**Standard programming cable**

PLC logic is connected to a PC via a standard micro USB cable. The drivers for PLC logic are automatically installed on connection by means of plug and play.

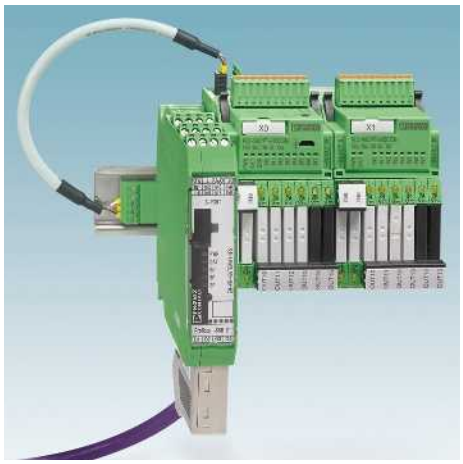
**Easily connect extension modules**

The basic module and the extension module are connected via integrated connectors - no tools required. A maximum of two extension modules can be connected to a basic module. This means that PLC logic can work with up to 48 I/Os.

**Saving and copying data**

PLC logic programs are saved by the memory block or can be easily copied to other devices.

If settings such as time or date are required on the new device, these values can be configured via the integrated web server. The new device does not need access to the LOGIC+ software for this.



**Integration into PROFIBUS DP**

Adaptable fieldbus gateways, available as an option, can be used to integrate PLC logic into a PROFIBUS DP network. This enables communication with a higher-level controller for remote control, diagnostics, and visualization purposes.

DTM device drivers and GSD files for configuring the gateway can be downloaded free of charge at www.phoenixcontact.com.

## Logic modules

PLC-V8C are the plug-in logic modules which form the PLC logic relay system in conjunction with the narrow 6.2 mm PLC-INTERFACE terminal blocks. Eight freely selectable PLC-INTERFACE terminal blocks must be separately ordered for each logic module. You can find an overview of matching PLC-INTERFACE terminal blocks on page 360.

All logic modules feature these properties:

– 8 integrated digital inputs (of which two inputs are configurable as analog inputs), connection via connector with screw or push-in connection technology
– A further 8 channels can be configured with matching PLC-INTERFACE terminal blocks as digital inputs or outputs
– Programming with the LOGIC+ software

### PLC-V8C.../SAM

– Stand-alone logic module with 16 I/Os, not extendable
– Connection to PC via micro USB socket
– Integrated realtime clock (RTC)
– Accommodates external IFS-CONFSTICK memory block

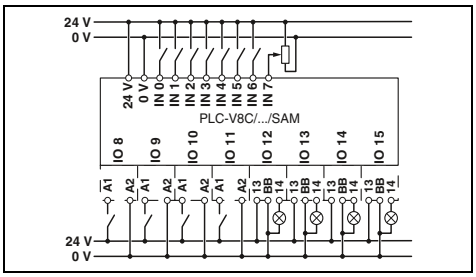
### PLC-V8C.../BM

– Basic logic module with 16 I/Os, can be extended with a maximum of two extension modules (PLC-V8C.../EM) to 48 I/Os
– Connection to PC via micro USB socket
– Integrated realtime clock (RTC)
– Accommodates external IFS-CONFSTICK memory block
– Optional connection to PROFIBUS-GATEWAY-IFS

### PLC-V8C.../EM

– Extension logic module with 16 I/Os, for extending the basic module

Stand-alone module



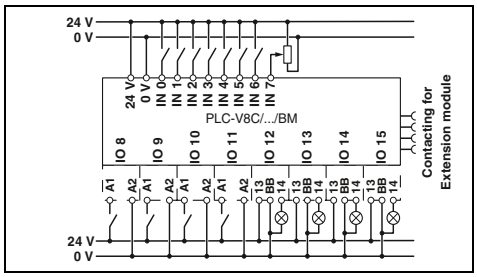

| | Technical data |
|---|---|
| Supply | |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 26.4 V DC |
| Max. input current at $U_N$ | 120 mA |
| Input data (digital) | |
| Number of inputs | 8 (2 configurable as analog) |
| Input voltage | 24 V DC |
| Description of the input | EN 61131-2, type 3 |
| Input current 0-signal | < 1 mA |
| Input current 1-signal | Typ. 2.5 mA |
| Input data (analog) | |
| Number of inputs | 2 (IN6 and IN7 are configurable as analog) |
| Input voltage range | 0 V ... 10 V |
| Input resistance | > 4 kΩ |
| Input data (PLC-INTERFACE) | |
| Number of inputs | ≤ 8 |
| Output data (for controlling PLC-INTERFACE) | |
| Number of outputs | ≤ 8 |
| Nominal voltage | 24 V DC |
| Nominal current | 9 mA |
| Realtime clock (basic module only) | |
| Buffer time (capacitor) | 24 h (capacitor) |
| Realtime clock accuracy | ±2 s/d |
| General data | |
| Ambient temperature (operation) | -20°C ... 45°C |
| Ambient temperature (storage/transport) | -20°C ... 70°C |
| Permissible humidity (operation) | 90% |
| Air and creepage distances between the power circuits | DIN EN 50178 |
| Rated insulation voltage | 50 V |
| Rated surge voltage | 0.8 kV |
| Insulation | Basic insulation |
| Mounting type | Can be plugged onto 8 x PLC-INTERFACE |
| Degree of protection | IP20 |
| Screw connection solid/stranded/AWG | 0.14 - 1.5 mm²/0.14 - 1.5 mm²/28 - 16 |
| Push-in connection solid/stranded/AWG | 0.14 - 1.5 mm²/0.14 - 1.5 mm²/26 - 16 |

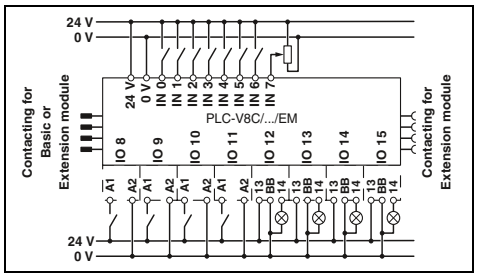
### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **PLC-V8C plug-in logic modules** | | | |
| With screw connection | **PLC-V8C/SC-24DC/SAM** | **2905082** | 1 |
| With push-in connection | **PLC-V8C/PT-24DC/SAM** | **2905136** | 1 |

Basic module

Extension module




| Technical data | Technical data |
|---|---|
| | |
| 24 V DC | 24 V DC |
| 19.2 V DC ... 26.4 V DC | 19.2 V DC ... 26.4 V DC |
| 120 mA | 65 mA |
| | |
| 8 (2 configurable as analog) | 8 (2 configurable as analog) |
| 24 V DC | 24 V DC |
| EN 61131-2, type 3 | EN 61131-2, type 3 |
| < 1 mA | < 1 mA |
| Typ. 2.5 mA | Typ. 2.5 mA |
| | |
| 2 (IN6 and IN7 are configurable as analog) | 2 (IN6 and IN7 are configurable as analog) |
| 0 V ... 10 V | 0 V ... 10 V |
| > 4 kΩ | > 4 kΩ |
| | |
| ≤ 8 | ≤ 8 |
| | |
| ≤ 8 | ≤ 8 |
| 24 V DC | 24 V DC |
| 9 mA | 9 mA |
| | |
| 24 h (capacitor) | - |
| ±2 s/d | - |
| | |
| -20°C ... 45°C | -20°C ... 45°C |
| -20°C ... 70°C | -20°C ... 70°C |
| 90% | 90% |
| DIN EN 50178 | DIN EN 50178 |
| 50 V | 50 V |
| 0.8 kV | 0.8 kV |
| Basic insulation | Basic insulation |
| Can be plugged onto 8 x PLC-INTERFACE | Can be plugged onto 8 x PLC-INTERFACE |
| IP20 | IP20 |
| 0.14 - 1.5 mm²/0.14 - 1.5 mm²/28 - 16 | 0.14 - 1.5 mm²/0.14 - 1.5 mm²/28 - 16 |
| 0.14 - 1.5 mm²/0.14 - 1.5 mm²/26 - 16 | 0.14 - 1.5 mm²/0.14 - 1.5 mm²/26 - 16 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PLC-V8C/SC-24DC/BM** | **2903094** | 1 |
| **PLC-V8C/PT-24DC/BM** | **2905135** | 1 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **PLC-V8C/SC-24DC/EM** | **2903095** | 1 |
| **PLC-V8C/PT-24DC/EM** | **2905137** | 1 |

## Accessories
## Programming cable and memory block

– The programming cable (MICRO USB B to USB A) is used to connect PLC logic to a PC, length: 2 m
– PLC logic programs are saved by the memory block or can be easily copied to other devices

| | Technical data | Technical data |
|---|---|---|
| General data | | |
| EMC note | | Class A product, see page 443 |

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Color | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **Programming cable** | | **CAB-USB A/MICRO USB B/2,0M** | **2701626** | 1 | | | |
| **Multi-functional memory block** for the INTERFACE system<br>- Flat design | | | | | **IFS-CONFSTICK** | **2986122** | 1 |

## Accessories
## Gateway to PROFIBUS DP

The gateways are connected to the PLC-V8C.../BM PLC logic basic modules via the ME 22,5 TBUS... DIN rail connector and the PLC-V8C/CAB... connecting cable.

The gateways are connected to a PC and configured via the integrated S-PORT interface and the IFS-USB-DATACABLE.

| | Technical data | Technical data |
|---|---|---|
| General data | | |
| EMC note | Class A product, see page 443 | |

| | | Ordering data | | | Ordering data | | |
|---|---|---|---|---|---|---|---|
| Description | Color | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
| **IFS gateway** for PROFIBUS DP | green | **EM-PB-GATEWAY-IFS** | **2297620** | 1 | | | |
| **Programming adapter** for configuring modules with S-PORT interface<br>Cable length: 3 m | | **IFS-USB-DATACABLE** | **2320500** | 1 | | | |
| **DIN rail connector** | green | **ME 22,5 TBUS 1,5/ 5-ST-3,81 GN** | **2707437** | 50 | | | |
| **Connecting cable** for connecting PLC logic with the ME 22,5 TBUS DIN rail connector, cable length: 0.3 m | | | | | **PLC-V8C/CAB/TBUS/0,3M** | **2905263** | 1 |

## Accessories
## PLC logic starter kit

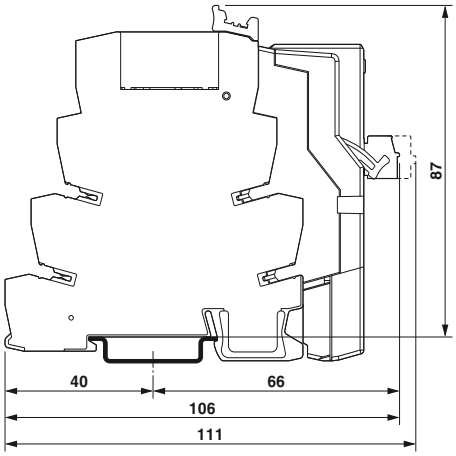
The PLC logic starter kit contains all the components needed to get started quickly and easily with PLC logic with push-in connection technology and 8 inputs and 8 outputs.

– PLC-V8C-PT/24DC/BM plug-in logic module
– PLC-RPT-24DC/1/ACT eight relay output terminal blocks
– Micro USB programming cable
– Software LOGIC+
– "PLC logic quick start guide" poster

**Ordering data**

| Description | Color | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **PLC logic starter kit 1,** 8 integrated inputs (24 V DC) and 8 outputs via PLC-INTERFACE (switching capacity 250 V AC/DC, max. 6 A) | | PLC-LOGIC-STARTERKIT1 | 2905504 | 1 |

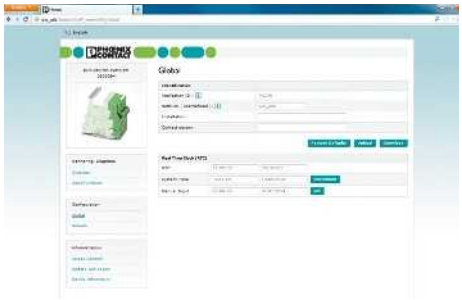
**Dimensional drawing**



## Selection table for PLC-INTERFACE

| | Push-in connection | | Screw connection | |
|---|---|---|---|---|
| **Relay output** | **Type** | **Order No.** | **Type** | **Order No.** |
| 1 PDT, output data 6 A, 250 V AC/DC | PLC-RPT-24DC/21 | 2900299 | PLC-RSC-24DC/21 | 2966171 |
| 1 PDT, output data 50 mA, 36 V DC, gold contact | PLC-RPT-24DC/21AU | 2900306 | PLC-RSC-24DC/21AU | 2966265 |
| 1 N/O contact, output data 6 A, 250 V AC/DC, actuator type | PLC-RPT-24DC/1/ACT | 2900312 | PLC-RSC-24DC/1/ACT | 2966210 |
| 1 N/O contact with switch, output data 6 A, 250 V AC/DC | PLC-RPT-24UC/1/S/H | 2900328 | PLC-RSC-24UC/1/S/H | 2982236 |
| **Solid-state relay output** | | | | |
| Output data 100 mA, 3 V DC - 48 V DC | PLC-OPT-24DC/48DC/100 | 2900352 | PLC-OSC-24DC/48DC/100 | 2966728 |
| Output data 3 A, 3 V DC - 33 V DC | PLC-OPT-24DC/24DC/2 | 2900364 | PLC-OSC-24DC/24DC/2 | 2966634 |
| Output data 750 mA, 24 V AC - 253 V AC | PLC-OPT-24DC/230AC/1 | 2900369 | PLC-OSC-24DC/230AC/1 | 2967840 |
| Output data 3 A, 3 V DC - 33 V DC, actuator type | PLC-OPT-24DC/24DC/2/ACT | 2900376 | PLC-OSC-24DC/24DC/2/ACT | 2966676 |
| Output data 750 mA, 24 V AC - 253 V AC, actuator type | | | PLC-OSC-24DC/230AC/1/ACT | 2967947 |
| Output data 1 A, 12 V DC - 300 V DC | PLC-OPT-24DC/300DC/1 | 2900383 | PLC-OSC-24DC/300DC/1 | 2980678 |
| Output data 10 A, 3 V DC - 33 V DC | PLC-OPT-24DC/24 DC/10/R | 2900398 | PLC-OSC-24DC/24DC/10/R | 2982702 |
| Output data 500 mA, 3 V DC - 48 V DC, electronic PDT | PLC-OPT-24DC/48DC/500/W | 2900378 | PLC-OSC-24DC/48DC/500/W | 2980636 |
| Output data, TTL, 50 mA, 5 V DC | PLC-OPT-24DC/TTL | 2900363 | PLC-OSC-24DC/TTL | 2982728 |
| **Relay input** | | | | |
| Input voltage 24 V DC | PLC-RPT-24DC/1AU/SEN | 2900313 | PLC-RSC-24DC/1AU/SEN | 2966317 |
| Input voltage 120 V AC/DC | PLC-RPT-120UC/1AU/SEN | 2900314 | PLC-RSC-120UC/1AU/SEN | 2966320 |
| Input voltage 230 V AC/DC | PLC-RPT-230UC/1AU/SEN | 2900315 | PLC-RSC-230UC/1AU/SEN | 2966333 |
| Input voltage 5 V DC (basic terminal block without relay) | | | PLC-BSC- 5DC/ 1/SEN | 2980267 |
| Relay for 5 V DC basic terminal block | | | REL-MR-4,5DC/21AU | 2961370 |
| **Solid-state relay input** | | | | |
| Input voltage 24 V DC | PLC-OPT-24DC/48DC/100/V8C/SEN | 2904693 | PLC-OSC-24DC/48DC/100/V8C/SEN | 2904690 |
| Input voltage 120 V AC/DC | PLC-OPT-120UC/48DC/100/V8C/SEN | 2904694 | PLC-OSC-120UC/48DC/100/V8C/SEN | 2904691 |
| Input voltage 230 V AC/DC | PLC-OPT-230UC/48DC/100/V8C/SEN | 2904695 | PLC-OSC-230UC/48DC/100/V8C/SEN | 2904692 |
| **Dummy or reserve** | | | | |
| Basic terminal block output | PLC-BPT-24DC/21 | 2900445 | PLC-BSC-24DC/21 | 2966016 |
| Basic terminal block input | PLC-BPT-24DC/1/SEN | 2900262 | PLC-BSC-24DC/1/SEN | 2966061 |

## LOGIC+ programming software



### Integrated web server

PLC logic basic settings are easily configured via the integrated web server. The LOGIC+ software does not need to be installed in order to do so.

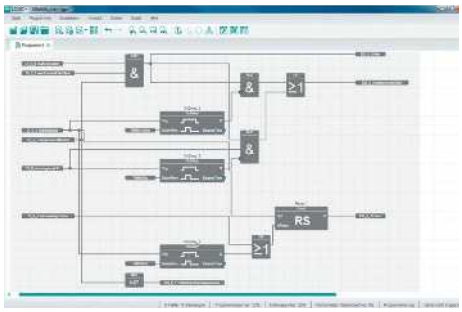
– Time and date
– Password and access control
– Firmware update
– Status indicators for inputs and outputs
– General device information

### LOGIC+ user interface

– Clear separation in program editor, toolbox, hardware view, and signaling window
– All elements can be easily placed using drag & drop
– Notes and errors are highlighted in color in the program editor

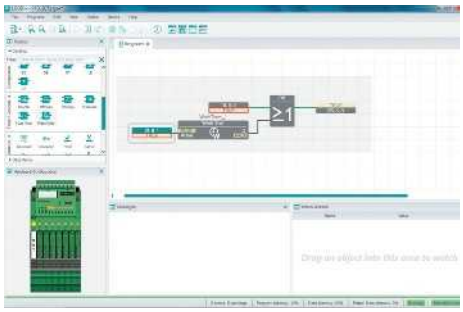
### Hardware configurator

– Each relay channel can be configured as an input or output with an electromechanical or a solid-state relay
– Clear assignment of the inputs and outputs thanks to the graphical representation of the hardware connections



### Function blocks

– Basic functions: AND, OR, NOT, XOR
– Mathematical functions: add, divide, multiply, subtract, generate absolute value
– Positive and negative edge detection
– RS and SR flip-flops
– Switch-on and switch-off delay, pulse encoder, pulse stretching, weekly clock timer
– Up and down counter
– Analog and digital comparators
– Special functions, e.g., solar altitude calculations are available for download



### Simulation and online values

Offline simulation:
– Simulation of the created program directly in LOGIC+
– Virtualization of the values in the program editor, hardware view, and in the observation window

Online values:
– Representation of the program running on the hardware in LOGIC+ with online values
– Overwriting of values from LOGIC+

### Example programs

Numerous application examples make it easy to get started with LOGIC+. These include:

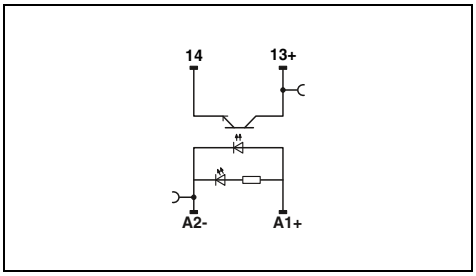
– Underground garage ventilation
– Conveyor belt
– Pumping plant
– Two-way control
– Tips for creating shift registers or surge relays

## Fully mounted RIF-0 relay modules

Fully mounted RIF-0 relay modules, consisting of:
- Relay base with push-in connection
- Solid-state relays
- Relay ejector lever on the housing

The advantages:
- Status LED integrated into the base
- RTIII sealed solid-state relay
- Zero voltage switch at AC output
- Professional bridging of adjacent modules saves wiring time

**Max. DC voltage output of 3 A**

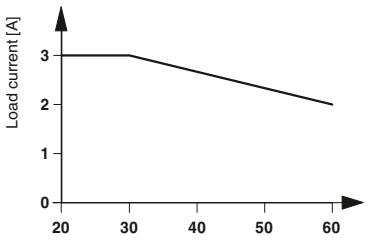



### Technical data

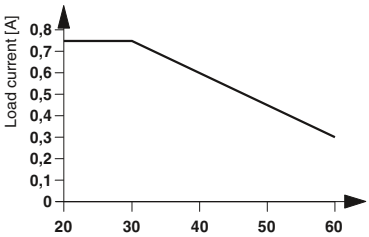
| | | |
|---|---|---|
| Input data | | ① |
| Rated actuating voltage range with reference to $U_C$ | | 0.8 - 1.2 |
| Switching level (with reference to $U_C$) | 1 signal ("H") | > 0.8 |
| | 0 signal ("L") | < 0.4 |
| Rated actuating current $I_C$ | [mA] | 8.5 |
| Typ. switch-on time at $U_N$ | [ms] | 0.02 |
| Typ. switch-off time at $U_N$ | [ms] | 0.3 |
| Transmission frequency $f_{limit}$ | [Hz] | 300 |
| Input circuit DC | | Yellow LED, free-wheeling diode |
| Output data | | |
| Max. switching voltage | | 33 V DC |
| Min. switching voltage | | 3 V DC |
| Max. inrush current | | 15 A (10 ms) |
| Min./max. switching current | | -/3 A (see derating curve) |
| Output protection | | Protection against polarity reversal, surge protection |
| Voltage drop at max. limiting continuous current | | < 200 mV |
| Leakage current in off state | | - |
| Phase angle (cos φ) | | - |
| Max. load value | | - |
| General data | | |
| Test voltage input/output | | 2.5 $kV_{rms}$ (50 Hz, 1 min.) |
| Ambient temperature (operation) | | -25°C ... 60°C |
| Standards/regulations | | DIN EN 50178 |
| Pollution degree/surge voltage category | | 2/III |
| Connection data solid/stranded/AWG | | 0.14 - 1.5 $mm^2$/0.14 - 1.5 $mm^2$/26 - 16 |
| Dimensions | W / H / D | 6.2 mm/93 mm/66 mm |
| EMC note | | Class A product, see page 443 |

### Ordering data

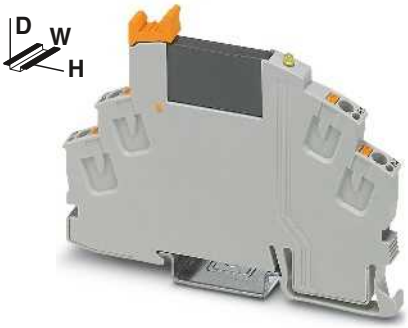
| Description | Rated actuating voltage $U_C$ | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **Coupling relay modules** with solid-state relay and push-in connection ① | 24 V DC | **RIF-0-OPT-24DC/24DC/2** | **2905293** | 10 |



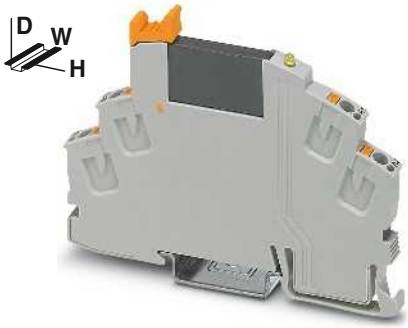

**Derating curve for RIF-0-OPT-24DC/24DC/2**



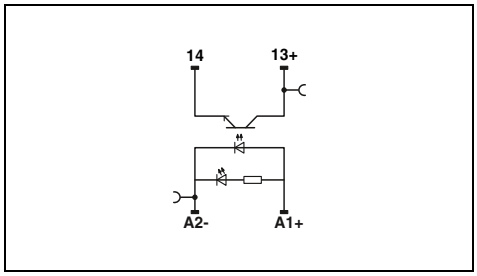

**Derating curve for RIF-0-OPT-24DC/230AC/1**

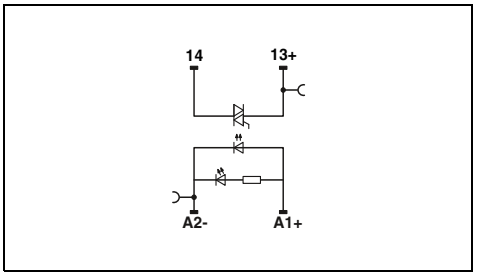



Max. DC voltage output of 100 mA




Max. AC voltage output of 750 mA




## Technical data

| | |
|---|---|
| ① | |
| 0.8 - | 0.8 - |
| 1.2 | 1.2 |
| > 0.8 | > 0.8 |
| < 0.4 | < 0.4 |
| 8.5 | 8 |
| 0.02 | 10 |
| 0.3 | 10 |
| 300 | 10 |
| Yellow LED, free-wheeling diode | Yellow LED, free-wheeling diode |
| | |
| 48 V DC | 253 V AC |
| 3 V DC | 24 V AC |
| - | 30 A (10 ms) |
| -/100 mA | 10 mA/0.75 A (see derating curve) |
| Protection against polarity reversal, surge protection | RCV circuit |
| < 1 V | < 1 V |
| - | 1 mA (in off state) |
| - | 0.5 |
| - | 4.5 $A^2s$ (tp = 10 ms, at 25°C) |
| | |
| 2.5 $kV_{rms}$ (50 Hz, 1 min.) | 2.5 $kV_{rms}$ (50 Hz, 1 min.) |
| -25°C ... 60°C | -25°C ... 60°C |
| DIN EN 50178 | DIN EN 50178 |
| 2/III | 2/III |
| 0.14 - 1.5 $mm^2$/0.14 - 1.5 $mm^2$/26 - 16 | 0.14 - 1.5 $mm^2$/0.14 - 1.5 $mm^2$/26 - 16 |
| 6.2 mm/93 mm/66 mm | 6.2 mm/93 mm/66 mm |
| Class A product, see page 443 | Class A product, see page 443 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **RIF-0-OPT-24DC/48DC/100** | **2905294** | 10 |

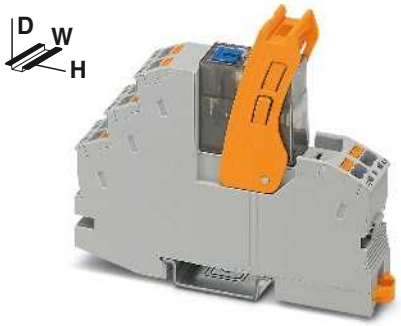
## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **RIF-0-OPT-24DC/230AC/1** | **2905295** | 10 |

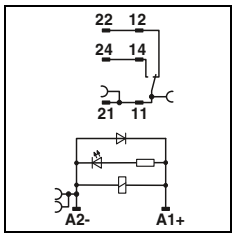
## Fully mounted RIF-1 relay modules

Fully mounted RIF-1 relay modules, consisting of:
- Relay base with push-in connection
- 1 or 2 PDT relays with detectable manual operation
- Relay retaining bracket
- Input module/interference suppr. module (AC types only)

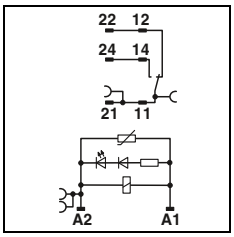
The advantages:
- Relay with lockable manual operation and status LED
- With DC types, free-wheeling diode is integrated into relay
- Mechanical switch position indicator
- Professional bridging of adjacent modules saves wiring time




**RIF-1 relay module with 1 PDT relay**




**DC coils**




**AC coils**

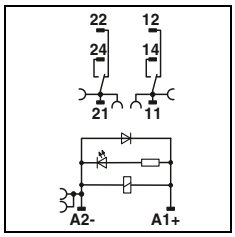
### Technical data

| | | | |
|---|---|---|---|
| Input data | | ① | ② |
| Permissible range (with reference to $U_N$) | | see diagram | |
| Typ. input current at $U_N$ | [mA] | 18 | 4.5 |
| Typ. response time at $U_N$ | [ms] | 9 | 4 - 12 |
| Typ. release time at $U_N$ | [ms] | 10 | 4 - 20 |
| Input circuit AC | | Yellow LED, varistor | |
| Input circuit DC | | Yellow LED, damping diode | |
| Output data | | | |
| Contact type | | 1 PDT | |
| Contact material | | AgNi | |
| Max. switching voltage | | 250 V AC/DC | |
| Min. switching voltage | | 12 V (at 10 mA) | |
| Limiting continuous current | | (see diagram) | |
| Max. inrush current | | 32 A (20 ms, N/O contact) | |
| Min. switching current | | 10 mA (at 12 V) | |
| General data | | | |
| Test voltage (winding / contact) | | 4 $kV_{rms}$ (50 Hz, 1 min.) | |
| Ambient temperature (operation), AC | | -40°C ... 50°C | |
| Ambient temperature (operation), DC | | -40°C ... 70°C | |
| Nominal operating mode | | 100% operating factor | |
| Mechanical service life | | Approx. 5 x $10^6$ cycles | |
| Standards/regulations | | DIN EN 50178, IEC 62103 | |
| Pollution degree/surge voltage category | | 2/III | |
| Mounting position/mounting | | Any/in rows with zero spacing | |
| Connection data solid/stranded/AWG | | 0.14 - 1.5 $mm^2$/0.14 - 1.5 $mm^2$/26 - 16 | |
| Dimensions | W / H / D | 16 mm/93 mm/75 mm | |
| EMC note | | Class A product, see page 443 | |

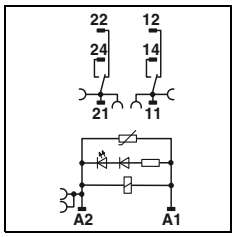
### Ordering data

| Description | | Input voltage $U_N$ | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Coupling relay modules** with power contact relay with manual operation and push-in connection | | | | | |
| | ① | 24 V DC | **RIF-1-RPT-LDP-24DC/1X21MS** | **2905289** | 10 |
| | ② | 230 V AC | **RIF-1-RPT-LV-230AC/1X21MS** | **2905290** | 10 |

**RIF-1 relay module with 2 PDT relay**




**DC coils**




**AC coils**

## Technical data

| ① | ② |
|---|---|
| see diagram | |
| 18 | 4.5 |
| 9 | 4 - 12 |
| 10 | 4 - 20 |
| Yellow LED, varistor | |
| Yellow LED, damping diode | |

2 PDT
AgNi
250 V AC/DC
12 V (at 10 mA)
(see diagram)
16 A (20 ms, N/O contact)
10 mA (at 12 V)

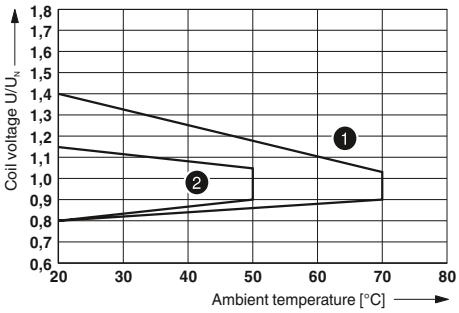
4 $kV_{rms}$ (50 Hz, 1 min.)
-40°C ... 50°C
-40°C ... 70°C
100% operating factor
Approx. 5 x $10^6$ cycles
DIN EN 50178, IEC 62103
2/III
Any/in rows with zero spacing
0.14 - 1.5 $mm^2$/0.14 - 1.5 $mm^2$/26 - 16
16 mm/93 mm/75 mm
Class A product, see page 443

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **RIF-1-RPT-LDP-24DC/2X21MS** | **2905291** | 10 |
| **RIF-1-RPT-LV-230AC/2X21MS** | **2905292** | 10 |

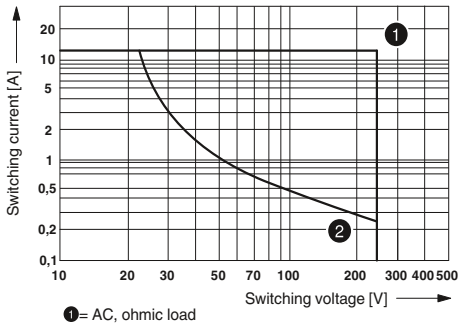
# RIF-1-RPT.../1X21... (1 PDT)

Operating voltage range



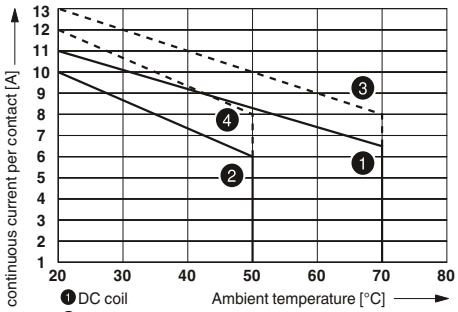

❶ DC coils
❷ AC coils

Interrupting rating



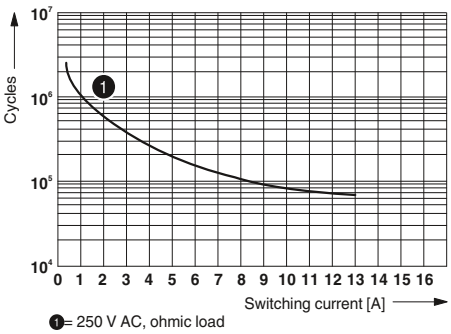

❶ = AC, ohmic load
❷ = DC, ohmic load

Contact derating




❶ DC coil
❷ AC coil
❸ DC coil, jumper between 11 and 21
❹ AC coil, jumper between 11 and 21

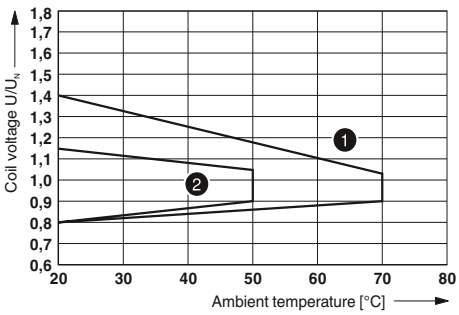
Electrical service life




❶ = 250 V AC, ohmic load

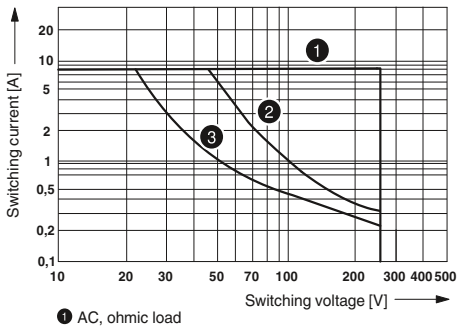
# RIF-1-RPT.../2X21... (2 PDTs)

Operating voltage range



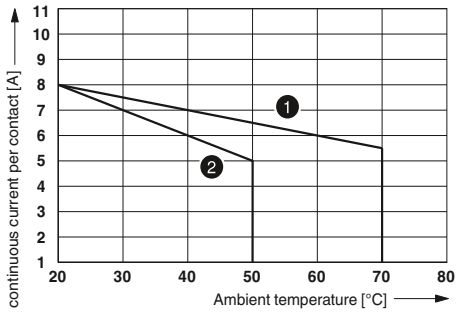

❶ DC coils
❷ AC coils

Interrupting rating



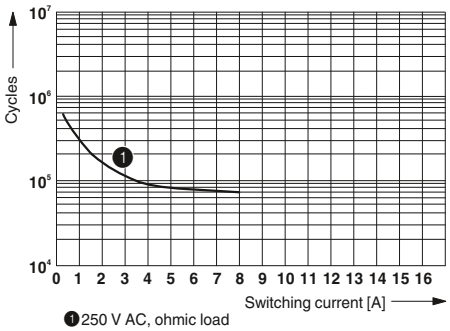

❶ AC, ohmic load
❷ DC, ohmic load, contacts in series
❸ DC, ohmic load

Contact derating




❶ DC coil
❷ AC coil

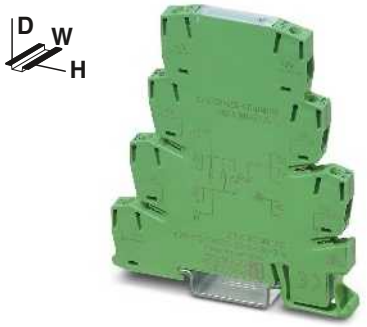
Electrical service life



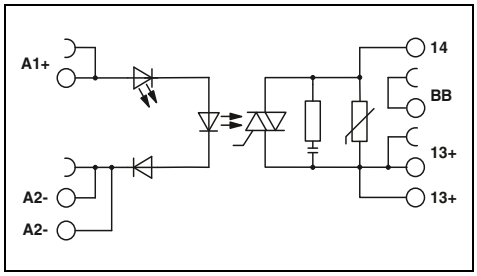

❶ 250 V AC, ohmic load

## PLC RELAY with an integrated solid-state relay

6.2 mm narrow solid-state relay for switching AC loads
– Status display
– Protection circuits in input and output
– Wear-free
– Switching capacity up to 230 V AC/2.4 A
– Screw and push-in connection technology




**Solid-state power relay with AC voltage output of 2.4 A, max.**

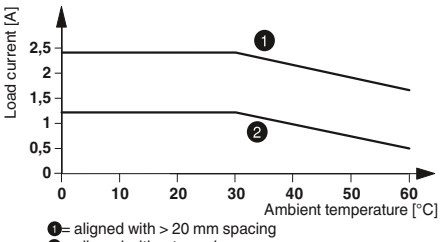



### Technical data

| | | |
|---|---|---|
| Input data | | ① |
| Rated actuating voltage range with reference to $U_C$ | | 0.8 - 1.2 |
| Switching level (with reference to $U_C$) | 1 signal ("H") | > 0.8 |
| | 0 signal ("L") | < 0.4 |
| Rated actuating current $I_C$ | [mA] | 8 |
| Typ. switch-on time at $U_N$ | [ms] | 10 |
| Typ. switch-off time at $U_N$ | [ms] | 10 |
| Transmission frequency $f_{limit}$ | [Hz] | 10 |
| Input circuit DC | | Yellow LED, protection against polarity reversal, surge protection |
| Output data | | |
| Max. switching voltage | | 253 V AC |
| Min. switching voltage | | 24 V AC |
| Max. inrush current | | 250 A (20 ms) |
| Min./max. switching current | | 10 mA/2.4 A (see derating) |
| Output protection | | RCV circuit |
| Voltage drop at max. limiting continuous current | | < 1 V |
| Leakage current in off state | | < 1 mA |
| Phase angle (cos φ) | | - |
| Max. load value | | 340 $A^2s$ (tp = 10 ms, at 25°C) |
| General data | | |
| Rated insulation voltage | | 260 V AC |
| Rated surge voltage | | 4 kV |
| Insulation | | Basic insulation |
| Ambient temperature (operation) | | -25°C ... 60°C |
| Standards/regulations | | DIN EN 50178 |
| Pollution degree/surge voltage category | | 2/III |
| Connection data solid/stranded/AWG | | 0.14 - 2.5 $mm^2$/0.14 - 2.5 $mm^2$/26 - 14 |
| Dimensions | W / H / D | 6.2 mm/80 mm/86 mm |
| EMC note | | Class A product, see page 443 |

### Ordering data

| Description | Rated actuating voltage $U_C$ | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **PLC INTERFACE**, with **screw connection** ① | 24 V DC | **PLC-OSC- 24DC/230AC/2.4/ACT** | **2904631** | 10 |
| **PLC-INTERFACE**, with push-in connection ① | 24 V DC | **PLC-OPT- 24DC/230AC/2.4/ACT** | **2904632** | 10 |




❶= aligned with > 20 mm spacing
❷= aligned without spacing

**Load current as a function of the ambient temperature**
**Operating time: 100% operating factor**

## VIP - power cabling
## Universal front adapters for SIMATIC® S7-300

**Four connection options are available:**

– Connection of 40-pos. modules via four cables, each with a 10-pos. COMBI connector
– Connection of 20-pos. modules via two cables, each with a 10-pos. COMBI connector
– Connection of 40-pos. modules via 40 individual wires in rope structure (not assembled)
– Connection of 20-pos. modules via 20 individual wires in rope structure (not assembled)

**The front adapters have the following features:**

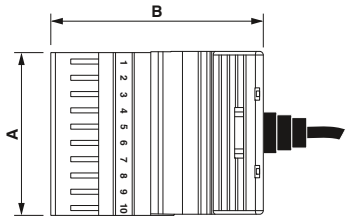
– Can be screwed on/snapped in with the I/O module
– Suitable for all common S7-300 modules, up to max. 250 V AC/DC, 6 A
– Universal 1:1 connection
– Numerically marked wires/connectors

**Combination example:**

A front adapter with punched-on 10-pos. COMBI connectors can be combined with the following modular terminal blocks for field connection:

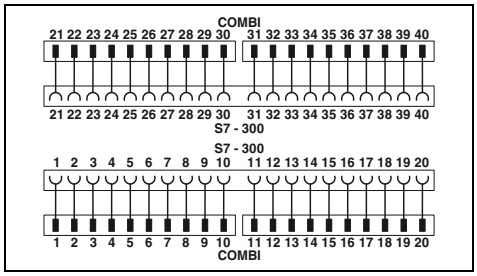
– 3045017 UT 2,5/1P
– 3210033 PT 2,5/1P
– 3040012 ST 2,5/1P
– 3040766 ST 2,5-TWIN-MT/1P

You can find further versions, accessories, and combination options in Catalog 3 “Modular terminal blocks” in the “Plug-in COMBI connection solutions” section, or online at phoenixcontact.net/products.




| | A | B |
|---|---|---|
| ...4X10COMBI... | 52 | 70 |
| ...2X10COMBI... | | |
| ...4X10 PT... | 35 | 62 |
| ...2X10 PT... | | |

**Front adapter with punched-on connectors for 40 plug-in modular terminal blocks**




### Technical data

| | | |
|---|---|---|
| Max. perm. operating voltage | | ≤ 250 V AC/DC |
| Max. perm. current carrying capacity per path | | 6 A (per single wire at 40°C)<br>4 A (per single wire at 60°C) |
| Max. perm. total current | | 20 A (per cable at 40°C)<br>16 A (per cable at 60°C) |
| Rated surge voltage | | 4 kV |
| Insulation | | Basic insulation |
| Max. conductor resistance | | 39 Ω/km |
| Conductor cross section | | AWG 21/0.5 mm² |
| Conductor structure: stranded wires / material | | 16/Cu uninsulated |
| Outside diameter | | 9 mm |
| Ambient temperature range | | -20°C ... 60°C |
| Standards/regulations | | DIN EN 50178, |
| Connection method | Front adapter | Can be plugged onto 40-pin I/O modules |
| | System cable | COMBICON connectors SP-H 2,5/10 |

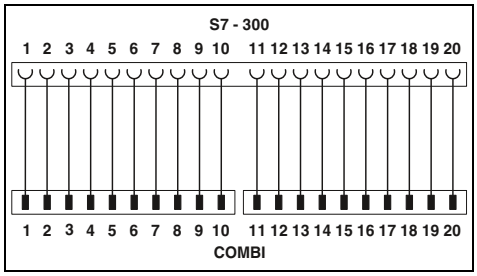
### Ordering data

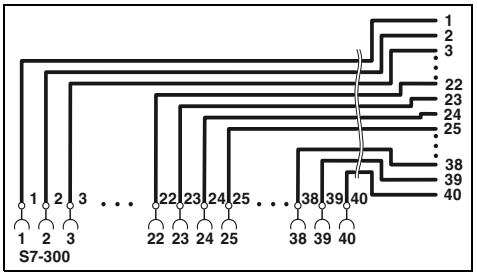
| Description | Cable length | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **VIP - power adapter,** for universal connection of the SIMATIC S7-300 | | | | |
| | 0.5 m | **VIP-PA-PWR/4X10COMBI/ 0,5M/S7** | **2904702** | 1 |
| | 1 m | **VIP-PA-PWR/4X10COMBI/ 1,0M/S7** | **2904703** | 1 |
| | 1.5 m | **VIP-PA-PWR/4X10COMBI/ 1,5M/S7** | **2904704** | 1 |
| | 2 m | **VIP-PA-PWR/4X10COMBI/ 2,0M/S7** | **2904705** | 1 |
| | 2.5 m | **VIP-PA-PWR/4X10COMBI/ 2,5M/S7** | **2904706** | 1 |
| | 3 m | **VIP-PA-PWR/4X10COMBI/ 3,0M/S7** | **2904707** | 1 |
| | 4 m | **VIP-PA-PWR/4X10COMBI/ 4,0M/S7** | **2904708** | 1 |
| | 5 m | **VIP-PA-PWR/4X10COMBI/ 5,0M/S7** | **2904709** | 1 |
| | 6 m | **VIP-PA-PWR/4X10COMBI/ 6,0M/S7** | **2904710** | 1 |
| | 8 m | **VIP-PA-PWR/4X10COMBI/ 8,0M/S7** | **2904711** | 1 |
| | 10 m | **VIP-PA-PWR/4X10COMBI/10,0M/S7** | **2904712** | 1 |

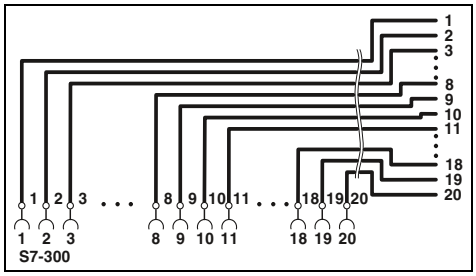
**Front adapter with punched-on connectors for 20 plug-in modular terminal blocks**

**Front adapter with 40 open cable ends**

**Front adapter with 20 open cable ends**




## Technical data

≤ 250 V AC/DC
6 A (per single wire at 40°C)
4 A (per single wire at 60°C)
20 A (per cable at 40°C)
16 A (per cable at 60°C)
4 kV
Basic insulation
39 Ω/km
AWG 21/0.5 mm²
16/Cu uninsulated
9 mm
-20°C ... 60°C
DIN EN 50178,
Can be plugged onto 20-pin I/O modules
COMBICON connectors SP-H 2,5/10

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| VIP-PA-PWR/2X10COMBI/ 0,5M/S7 | 2904713 | 1 |
| VIP-PA-PWR/2X10COMBI/ 1,0M/S7 | 2904714 | 1 |
| VIP-PA-PWR/2X10COMBI/ 1,5M/S7 | 2904715 | 1 |
| VIP-PA-PWR/2X10COMBI/ 2,0M/S7 | 2904716 | 1 |
| VIP-PA-PWR/2X10COMBI/ 2,5M/S7 | 2904717 | 1 |
| VIP-PA-PWR/2X10COMBI/ 3,0M/S7 | 2904718 | 1 |
| VIP-PA-PWR/2X10COMBI/ 4,0M/S7 | 2904719 | 1 |
| VIP-PA-PWR/2X10COMBI/ 5,0M/S7 | 2904720 | 1 |
| VIP-PA-PWR/2X10COMBI/ 6,0M/S7 | 2904721 | 1 |
| VIP-PA-PWR/2X10COMBI/ 8,0M/S7 | 2904722 | 1 |
| VIP-PA-PWR/2X10COMBI/10,0M/S7 | 2904723 | 1 |

## Technical data

≤ 250 V AC/DC
6 A (per single wire at 40°C)
4 A (per single wire at 60°C)
20 A (per cable at 40°C)
16 A (per cable at 60°C)
2.3 kV
Basic insulation
39 Ω/km
AWG 21/0.5 mm²
16/Cu uninsulated
13 mm
-20°C ... 60°C
DIN EN 50178,
Can be plugged onto 40-pin I/O modules
Open cable end

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| VIP-PA-PWR/40XOE/ 1,0M/S7 | 2904731 | 1 |
| VIP-PA-PWR/40XOE/ 2,0M/S7 | 2904732 | 1 |
| VIP-PA-PWR/40XOE/ 3,0M/S7 | 2904733 | 1 |
| VIP-PA-PWR/40XOE/ 4,0M/S7 | 2904734 | 1 |
| VIP-PA-PWR/40XOE/ 6,0M/S7 | 2904735 | 1 |
| VIP-PA-PWR/40XOE/ 8,0M/S7 | 2904736 | 1 |
| VIP-PA-PWR/40XOE/10,0M/S7 | 2904737 | 1 |

## Technical data

≤ 250 V AC/DC
6 A (per single wire at 40°C)
4 A (per single wire at 60°C)
20 A (per cable at 40°C)
16 A (per cable at 60°C)
2.3 kV
Basic insulation
39 Ω/km
AWG 21/0.5 mm²
16/Cu uninsulated
9 mm
-20°C ... 60°C
DIN EN 50178,
Can be plugged onto 20-pin I/O modules
Open cable end

## Ordering data

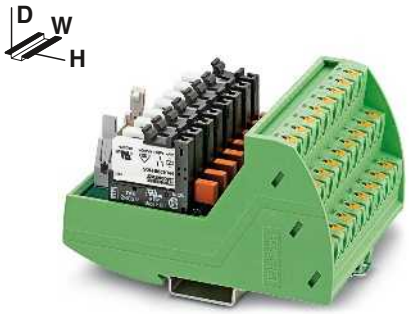
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| VIP-PA-PWR/20XOE/ 1,0M/S7 | 2904724 | 1 |
| VIP-PA-PWR/20XOE/ 2,0M/S7 | 2904725 | 1 |
| VIP-PA-PWR/20XOE/ 3,0M/S7 | 2904726 | 1 |
| VIP-PA-PWR/20XOE/ 4,0M/S7 | 2904727 | 1 |
| VIP-PA-PWR/20XOE/ 6,0M/S7 | 2904728 | 1 |
| VIP-PA-PWR/20XOE/ 8,0M/S7 | 2904729 | 1 |
| VIP-PA-PWR/20XOE/10,0M/S7 | 2904730 | 1 |

## VIP output module

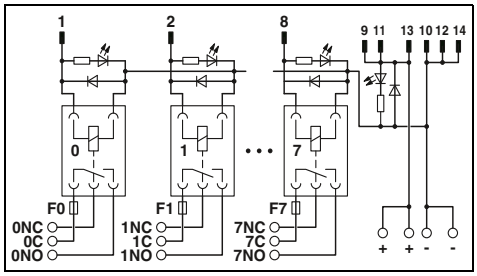
These VIP VARIOFACE output modules are used in combination with the respective front adapters. Like the front adapters, the modules are connected via 14-pos. system cables.

Features:

- Plug-in miniature relays, each with a PDT contact
- LED status display for each signal path and supply voltage
- Free-wheeling diode for each signal path
- Push-in connection




**Output module with 8 miniature relays, 1 PDT and fuse per output circuit**




### Technical data

| | | |
|---|---|---|
| Coil side | | |
| Operating voltage $U_N$ | | 24 V DC |
| Typ. input current at $U_N$ | | 9 mA |
| Typ. response time at $U_N$ | | 5 ms |
| Typ. release time at $U_N$ | | 8 ms |
| Input circuit | | Free-wheeling diode |
| Status display/channel | | Yellow LED |
| Connection method | | IDC/FLK pin strip (2.54 mm) |
| No. of pos. | | 14 |
| Contact side | | |
| 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 | | 5 A (observe derating) |
| Min. switching current | | 10 mA |
| Max. interrupting rating: | 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 |
| Connection method | | Push-in connection |
| Connection data solid/stranded/AWG | | 0.14 ... 2.5 $mm^2$/0.14 ... 2.5 $mm^2$/26 - 14 |
| General data | | |
| Ambient temperature (operation) | | -20°C ... 60°C |
| Nominal operating mode | | 100% operating factor |
| Mechanical service life | | 2 x $10^7$ cycles |
| Standards/regulations | | DIN EN 50178 |
| Mounting position | | Any |
| Mounting | | In rows with zero spacing |
| Dimensions | H / D | 109.8 mm/63 mm |
| EMC note | | Class A product, see page 443 |

### Ordering data

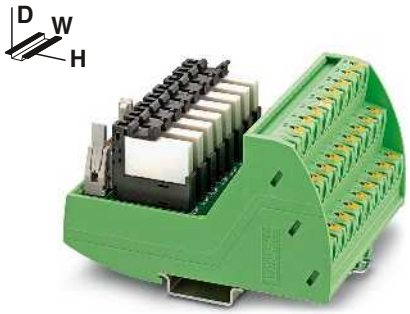
| Description | Module width W | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|
| **VARIOFACE output module,** with eight miniature relays, plugged, for 24 V DC (incl. relays) | 87.6 | **VIP-8RPT-24DC/21/D0/FU/PLC** | **2903601** | 1 |

## VIP input module

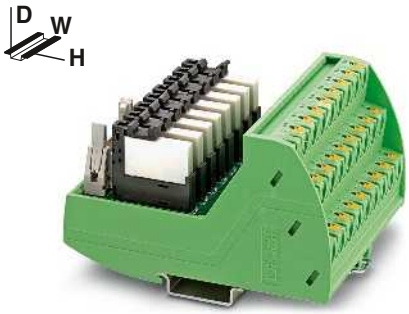
These VIP VARIOFACE input modules are used in combination with the respective front adapters. Like the front adapters, the modules are connected via 14-pos. system cables.

Features:

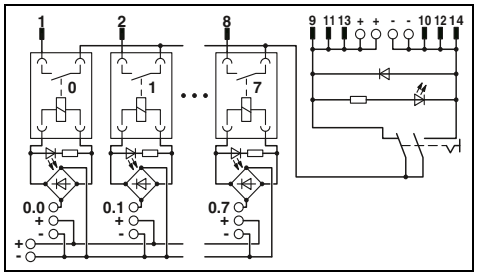
- Plug-in miniature relays, each with an N/O contact
- LED status display for each signal path and supply voltage
- Free-wheeling diode for each signal path
- Push-in connection

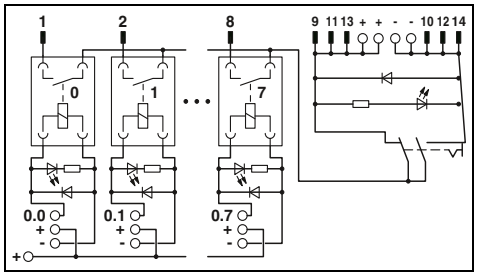



**Digital input module with 8 channels for 24 V DC**




**Digital input module with 8 channels for 120 V AC**




| | Technical data | Technical data |
|---|---|---|
| Coil side | | |
| Operating voltage $U_N$ | 24 V DC ±10% (Supply, 2 A ) | 120 V AC ±10% (Supply, 2 A ) |
| Typ. input current at $U_N$ | 9 mA (per channel) | 3.5 mA (per channel) |
| Typ. response time at $U_N$ | 5 ms | 6 ms |
| Typ. release time at $U_N$ | 8 ms | 15 ms |
| Input circuit | Free-wheeling diode | Free-wheeling diode |
| Status display/channel | Yellow LED | Yellow LED |
| Connection method | Push-in connection | Push-in connection |
| Connection data solid/stranded/AWG | 0.14 ... 2.5 $mm^2$/0.14 ... 2.5 $mm^2$/26 - 14 | 0.14 ... 2.5 $mm^2$/0.14 ... 2.5 $mm^2$/26 - 26 |
| Contact side | | |
| Contact type | 1 N/O contact | 1 N/O contact |
| Contact material | AgSnO, hard gold-plated | AgSnO, hard gold-plated |
| Limiting continuous current | 50 mA | 50 mA |
| Connection method | IDC/FLK pin strip (2.54 mm) | IDC/FLK pin strip (2.54 mm) |
| No. of pos. | 14 | 14 |
| General data | | |
| Ambient temperature (operation) | -20°C ... 60°C | -20°C ... 60°C |
| Nominal operating mode | 100% operating factor | 100% operating factor |
| Mechanical service life | 2 x $10^7$ cycles | 2 x $10^7$ 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 | 109.8 mm/63 mm | 109.8 mm/63 mm |
| EMC note | Class A product, see page 443 | Class A product, see page 443 |

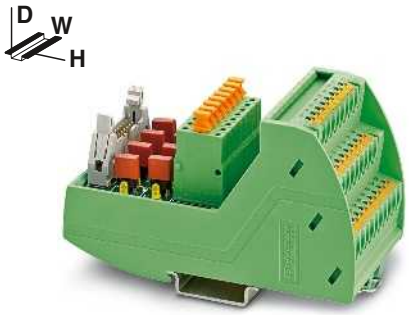
| Description | Module width W | Type | Order No. | Pcs. / Pkt. | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|---|
| **VARIOFACE interface module,** for eight channels, | | | | | | | |
| 24 V DC (incl. relays) | 92.7 | **VIP-8RPT-24DC/1AU/DI/PLC** | **2903600** | 1 | | | |
| 120 V AC (incl. relays) | 92.7 | | | | **VIP-8RPT-120AC/1AU/DI/PLC** | **2904576** | 1 |

## Emerson DeltaV
## VIP controller board with fuses for 8 channels

System-specific interface module for use in combination with the respective system cables. The controller board is connected to 8-channel modules through 16-position "mass termination blocks" with flat ribbon cable connection.

Features:

- Fuse per channel
- Separate equipotential terminals per channel
- Knife disconnection for each channel
- Push-in connection



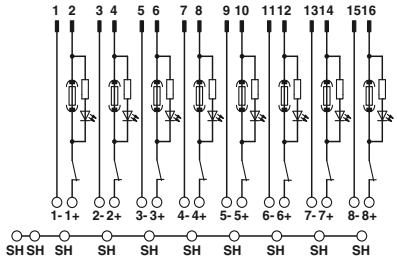

**Interface module with fuses for 16-pos. mass termination block**

### Technical data

| | | |
|---|---|---|
| Max. perm. operating voltage | | 24 V DC |
| Max. perm. current (per branch) | | 63 mA (in as supplied state, with one 63 mA fuse) |
| Ambient temperature (operation) | | -20°C ... 60°C |
| Mounting position | | Any |
| Standards/regulations | | DIN EN 50178, |
| Connection method | Field level | Push-in connection |
| | Controller level | IDC/FLK pin strip (2.54 mm) |
| Connection data solid/stranded/AWG | | 0.14 ... 2.5 mm²/0.14 ... 2.5 mm²/26 - 14 |
| Dimensions | H / D | 109.8 mm/63 mm |

### Ordering data

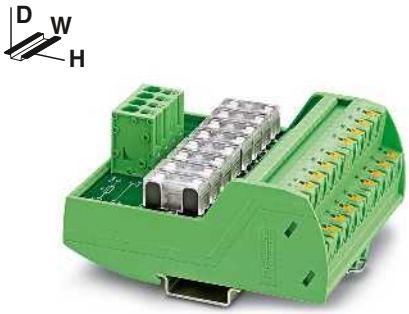
| Description | No. of pos. | Module width W | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **Interface module** for 16-pos. mass termination block | | | | | |
| | 16 | 57.1 mm | **VIP-PT/FLK16/DS/FU/LED/AN/DV** | **2903599** | 1 |



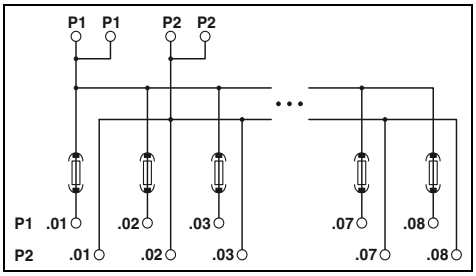

**Connection scheme VIP-PT/FLK16/DS/FU/LED/AN/DV**

## VIP potential distributor with fuses

The VIP-2/PT/PDM-2/16/FU 6.3A module has the following features:
– Two potential levels
– P1 potential has 6.3 A fusing
– Separate supply
– Consecutive labeling
– Push-in connection




Push-in connection and 2 potential levels




### Technical data

| | |
|---|---|
| Operating voltage | 250 V AC/DC |
| Max. perm. current (per branch) | 6.3 A (fuse limited) |
| Total current | 30 A (per potential) |
| Ambient temperature (operation) | -20°C ... 60°C |
| Mounting position | Any |
| Standards/regulations | IEC 60664, DIN EN 50178, IEC 62103 |
| Supply connection data solid/stranded/AWG | 0.2 - 10 $mm^2$/0.2 - 6 $mm^2$/24 - 8 |
| Distribution connection data solid/stranded/AWG | 0.14 - 2.5 $mm^2$/0.14 - 2.5 $mm^2$/26 - 14 |
| Dimensions H / D | 109.8 mm/51 mm |

### Ordering data

| Description | No. of pos. | Module width W | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|
| **VARIOFACE module** with 2 busbars for potential distribution | | | | | |
| - 2 power terminal blocks/8 distributor blocks | | 97.70 | **VIP-2/PT/PDM-2/16/FU 6.3A** | **2903603** | 1 |

Industrial Ethernet

**Power over Ethernet switch** Page 376
**Lean Managed Switch** Page 378
**Smart Managed Switches** Page 379
**Advanced Managed Switches** Page 380

Industrial Ethernet

**Redundancy modules acc. to IEC 61850/IEEE 1613** Page 382
**Managed Switches acc. to IEC 61850/IEEE 1613** Page 383
**Media module** Page 386

Industrial Ethernet

**WLAN access point** Page 387

Industrial communication technology

**Media converters for Ethernet applications in realtime** Page 388
**COM server for extreme fields of application** Page 390
**Patch panel** Page 392

Industrial communication technology

**Remote signaling and remote control system** Page 394

Industrial communication technology

**Fast connection plugs** Page 396

Industrial communication technology

**Wireless system for license-free use in Europe** Page 398

Process infrastructure

**Device couplers for field devices** Page 399

Functional Safety

**Multifunctional safety relays** Page 400

Configurable safety modules

**Safe relay extension module** Page 402

Functional Safety

**Safe I/O modules** Page 404

Functional Safety

**Safe analog value processing** Page 406

I/O systems — Axioline F

**Bus coupler** Page 408
**Digital and analog input and output modules** Page 410
**Temperature recording modules** Page 414

I/O systems — Inline

**M-bus master terminal** Page 416

HMIs and industrial PCs

**HMIs for maritime applications** Page 418

HMIs and industrial PCs

**Box PCs** Page 420
**Panel PCs** Page 422
**Outdoor panel PCs** Page 424
**IP65 panel PCs** Page 426

Software

**Visualization app** Page 428
**Multiplexer function for retrofitting** Page 429

Controllers

**Standard logic modules** Page 430
**Programmable logic relay system** Page 354

## Power over Ethernet switch

### Gigabit switch

The FL SWITCH 1708 M12 POE offers a unique combination of a high degree of protection, gigabit transmission, and Power over Ethernet.

The IP67 switches can be installed in a distributed manner and enable connection of Power over Ethernet devices with gigabit transmission.

### Features:

- Connection via gigabit M12 plug CAT6A
- Flexible use of PoE devices thanks to powerful 30 W PoE ports (IEEE 802.3at)
- -40°C ... +70°C ambient temperature
- Gigabit support
- Jumbo frames with up to 9720 bytes
- Rugged metal housing
- IP67 protection
- Easy panel mounting

**Ethernet**

**8 ports (M12 socket), for wall mounting**

### Technical data

| | |
|---|---|
| **Ethernet interface** | |
| Number of ports | 8 (M12 socket) |
| Transmission speed | 10/100/1000 Mbps |
| Connection method | M12 connector, 8-pos. |
| **Function** | |
| Basic functions | Store-and-forward switch, 10/100/1000 Mbps, auto negotiation, complies with standard IEEE 802.3, 4 priority classes according to IEEE 802.1p, PoE according to IEEE 802.3at/802.3af, jumbo frames up to 9720 bytes |
| Status and diagnostic indicators | 3 status LEDs per Ethernet port: LINK, Activity, and PoE status. Supply voltage $U_{S1}$ and $U_{S2}$ (redundant supply voltage) as well as FAIL. PoE Power Status. |
| **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 (M12 connector) |
| Residual ripple | 3.6 $V_{PP}$ |
| Supply voltage range | 18 V DC ... 32 V DC |
| Typical current consumption | 300 mA (at $U_S$ = 24 V DC) |
| **General data** | |
| Weight | 2300 g |
| Width | 176 mm |
| Height | 112 mm |
| Depth | 100 mm |
| Degree of protection | IP65/IP66/IP67 |
| Ambient temperature (operation) | -40°C ... 70°C (non-condensing) |
| Permissible humidity (operation) | 10% ... 95% |
| Noise emission | EN 61000-6-4 |
| Noise immunity | EN 61000-6-2:2005 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Gigabit Power-over-Ethernet switch** | | | |
| | **FL SWITCH 1708 M12 POE** | **2701883** | 1 |

## Managed switches

### Lean Managed Switch

Maximum possible diagnostics in the minimum amount of space. The compact Ethernet switch is optimized for PROFINET applications in standard machine production.

The switch supports the functions required by PROFINET Class A, such as PTCP filter and Quality of Service. In addition, the Lean Managed Switch features important management functions such as a broadcast limiter, port mirroring, as well as the non-proprietary redundancy protocol RSTP.

**Ethernet**

**8 RJ45 ports**

### Features:

- Compact housing
- PROFINET support
- RSTP
- PTCP filter
- Web-based management, SNMP
- Configuration can be stored externally
- Configurable alarm contact

### Technical data

| | |
|---|---|
| Ethernet interface | |
| Number of ports | 8 (RJ45 ports) |
| Transmission speed | 10/100 Mbps |
| Connection method | RJ45 |
| Other connections | |
| Serial (RS-232) | RS-232-C, 6-pos. MINI-DIN socket (PS/2) |
| Function | |
| Basic functions | Store-and-forward switch complies with IEEE 802.3 2, priority classes according to IEEE 802.1 P, TCP/IP protocol, BootP-compatible, port mirroring, integrated web server function, multicast filtering, IGMP snooping, VLAN, Rapid Spanning Tree (RSTP), DHCP server, PTCP filter |
| Supported browsers | Internet Explorer 5.5 or higher |
| SNMP – Simple Network Management Protocol | Supported SNMP-MIBs: Enterprise, MIB II, Bridge |
| Redundancy | Rapid Spanning Tree 802.1w, Fast Ring Detection |
| Status and diagnostic indicators | 2 status LEDs per Ethernet port: Link and Status Activity, 100 Mbps, full duplex, supply voltage $U_{S1}$ and $U_{S2}$ (redundant supply voltage) |
| 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 |
| Residual ripple | 3.6 $V_{PP}$ |
| Supply voltage range | 18.5 V DC ... 30.5 V DC |
| Typical current consumption | 250 mA (at $U_S$ = 24 V DC) |
| General data | |
| Weight | 230 g |
| Width | 45 mm |
| Height | 99 mm |
| Depth | 112 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | 0°C ... 55°C |
| Permissible humidity (operation) | 30% ... 95% (non-condensing) |
| EMC note | Class A product, see page 443 |
| Noise emission | EN 61000-6-3/-4 |
| Noise immunity | EN 61000-6-2:2005 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Lean Managed Switch** | | | |
| | **FL SWITCH LM 8TX-B** | **2989446** | 1 |

## Smart Managed Switches

The Smart Managed Narrow switch **FL SWITCH SMN 8TX-PN** is an Ethernet switch suitable for industrial applications with eight Fast Ethernet ports in RJ45 format. The switch is optimized for use in PROFINET RT and EtherNet/IP™ applications.

The switch has PROFINET mode activated by default. You can easily and quickly switch to EtherNet/IP™ or universal mode using the SMART button.

**Ethernet**

PROFI NET

**8 RJ45 ports**

**Features:**
- Narrow design
- VLANs
- RSTP
- MRP client
- MRP master with FL MEM PLUG/MRM configuration memory as an option
- Web-based management, SNMP
- PROFINET device function
- LLDP

### Technical data

| | |
|---|---|
| Ethernet interface | |
| Number of ports | 8 (RJ45 ports) |
| Transmission speed | 10/100 Mbps |
| Connection method | RJ45 |
| Other connections | |
| Serial (RS-232) | RS-232-C, 6-pos. MINI-DIN socket (PS/2) |
| Function | |
| Basic functions | Store-and-forward switch complies with IEEE 802.3 4 priority classes in acc. with IEEE 802.1 P TCP/IP protocol, BootP-capable, port-mirroring, integrated web server function, multicast filtering, IGMP snooping, VLAN, Rapid Spanning Tree (RSTP), PROFINET Device, Media Redundancy Protocol (MRP). |
| Status and diagnostic indicators | 2 status LEDs per Ethernet: LINK and selectable Status Activity, 100 Mbps, full duplex, supply voltage $U_{S1}$ and $U_{S2}$ (redundant supply voltage) and FAIL. FD/FO LED indicates duplex mode for Twisted-Pair ports and the system reserve for optical interfaces. |
| 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 |
| Residual ripple | 3.6 $V_{PP}$ |
| Supply voltage range | 18 V DC ... 32 V DC |
| Typical current consumption | 320 mA (at $U_S$ = 24 V DC) |
| General data | |
| Weight | 720 g |
| Width | 56 mm |
| Height | 133 mm |
| Depth | 125 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | 0°C ... 55°C (non-condensing) |
| Permissible humidity (operation) | 5% ... 95% (non-condensing) |
| Noise emission | EN 61000-6-3 +A11 |
| Noise immunity | EN 61000-6-2:2005 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Smart Managed Narrow Switch** | | | |
| | **FL SWITCH SMN 8TX-PN** | **2989501** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Configuration memory**, replaceable | **FL MEM PLUG** | **2891259** | 1 |
| **Configuration memory**, can be replaced with MRM function | **FL MEM PLUG/MRM** | **2891275** | 1 |

## Advanced Managed Switches

The automation switches in the 7000 series are the first switches to support direct integration into a Device Level Ring (DLR). Direct integration of the switches into the DLR is a considerable advantage when installing and operating EtherNet/IP™ networks.

Up to six devices can be integrated into a DLR via the FL SWITCH 7000. In system networks, the switches allow the redundant rings to be connected to the higher-level networking level. In this way, you can create networks with minimal switch-over times of less than three milliseconds (< 3 ms).

The Managed Switches of the 7000 series communicate directly via the Common Industrial Protocol (CIP) in the EtherNet/IP™ network. Via CIP, you can integrate the switch into an EtherNet/IP™ control system from where it can be configured and diagnosed.

Pure copper versions and versions with up to three fiberglass ports are available for flexible use.

**Features:**

– Narrow design
– -40°C ... +70°C ambient temperature
– VLANs
– Common Industrial Protocol (CIP)
– Device Level Ring (DLR)
– RSTP
– Web-based management

**Ethernet**

EtherNet/IP

**8 RJ45 ports**

### Technical data

| | |
|---|---|
| **Ethernet interface** | |
| Number of ports | 8 (RJ45 ports) |
| Transmission speed | 10/100 Mbps |
| Connection method | RJ45 |
| **Fiber optic interface** | |
| Number of ports | - |
| Transmission speed | - |
| Connection method | - |
| Transmission length | - |
| **Fiber optic interface** | |
| Number of ports | - |
| Transmission speed | - |
| Connection method | - |
| Transmission length | - |
| **Function** | |
| Basic functions | Store-and-forward switch complies with IEEE 802.3, 8 priority classes in acc. with IEEE 802.1 P (QoS), N:1 port mirroring, IGMP snooping, VLANs, Rapid Spanning Tree (RSTP), Large Tree Support, Fast Ring Detection (FRD), link aggregation (802.3ad), MAC-based port security, DHCP option 82, LLDP, ACD, Device Level Ring (DLR), Common Industrial Protocol (CIP) |
| Status and diagnostic indicators | 2 status LEDs per Ethernet: LINK and selectable status LED: activity, 100 Mbps, full duplex. Supply voltage: $U_{S1}$ and $U_{S2}$ (redundant supply voltage) and FAIL. EtherNet/IP™ status LED: Net, Mod |
| **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 |
| Residual ripple | 3.6 $V_{PP}$ |
| Supply voltage range | 12 V DC ... 60 V DC |
| Typical current consumption | 350 mA (at $U_S$ = 24 V DC) |
| **General data** | |
| Weight | 900 g |
| Width | 60 mm |
| Height | 130 mm |
| Depth | 135.5 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40°C ... 70°C |
| Permissible humidity (operation) | 10% ... 95% (non-condensing) |
| Noise emission | EN 61000-6-4 |
| Noise immunity | EN 61000-6-2:2005 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Advanced Managed Switch**<br>- 8 RJ45 ports<br>- 6 RJ45 ports, 2 SC FO ports (multi-mode)<br>- 5 RJ45 ports, 2 SC fiber optic ports (multi-mode), 1 SC fiber optic port (single-mode | **FL SWITCH 7008-EIP** | **2701418** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Parameterization memory**, replaceable | **SD FLASH 512MB** | **2988146** | 1 |

## Ethernet

EtherNet/IP

**6 RJ45 ports and**
**2 fiber optic ports (multi-mode)**

### Technical data

| |
|---|
| 6 (RJ45 ports)<br>10/100 Mbps<br>RJ45 |
| 2 (SC multi-mode)<br>100 Mbps (full duplex)<br>SC<br>11000 m (fiberglass with F-G 62.5/125 0.7 dB/km F1000) |
| -<br>-<br>-<br>- |
| Store-and-forward switch complies with IEEE 802.3, 8 priority classes in acc. with IEEE 802.1 P (QoS), N:1 port mirroring, IGMP snooping, VLANs, Rapid Spanning Tree (RSTP), Large Tree Support, Fast Ring Detection (FRD), link aggregation (802.3ad), MAC-based port security, DHCP option 82, LLDP, ACD, Device Level Ring (DLR), Common Industrial Protocol (CIP)<br><br>2 status LEDs per Ethernet: LINK and selectable status LED: activity, 100 Mbps, full duplex. Supply voltage: $U_{S1}$ and $U_{S2}$ (redundant supply voltage) and FAIL. EtherNet/IP™ status LED: Net, Mod |
| Network, linear, and star structure: any<br>100 m |
| 24 V DC<br>3.6 $V_{PP}$<br>12 V DC ... 60 V DC<br>470 mA (at $U_S$ = 24 V DC) |
| 990 g<br>60 mm<br>130 mm<br>135.5 mm<br>IP20<br>-40°C ... 70°C<br>10% ... 95% (non-condensing)<br>EN 61000-6-4<br>EN 61000-6-2:2005 |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL SWITCH 7006/2FX-EIP** | **2701419** | 1 |

### Accessories

| | | |
|---|---|---|
| **SD FLASH 512MB** | **2988146** | 1 |

## Ethernet

EtherNet/IP

**5 RJ45 ports and**
**1 fiber optic port (multi-mode),**
**2 fiber optic ports (single-mode)**

### Technical data

| |
|---|
| 5 (RJ45 ports)<br>10/100 Mbps<br>RJ45 |
| 1 (SC multi-mode)<br>100 Mbps (full duplex)<br>SC<br>11000 m (fiberglass with F-G 62.5/125 0.7 dB/km F1000) |
| 2 (SC single-mode)<br>100 Mbps (full duplex)<br>SC<br>36000 m (fiberglass with F-G 9/125 0.36 dB/km) |
| Store-and-forward switch complies with IEEE 802.3, 8 priority classes in acc. with IEEE 802.1 P (QoS), N:1 port mirroring, IGMP snooping, VLANs, Rapid Spanning Tree (RSTP), Large Tree Support, Fast Ring Detection (FRD), link aggregation (802.3ad), MAC-based port security, DHCP option 82, LLDP, ACD, Device Level Ring (DLR), Common Industrial Protocol (CIP)<br><br>2 status LEDs per Ethernet: LINK and selectable status LED: activity, 100 Mbps, full duplex. Supply voltage: $U_{S1}$ and $U_{S2}$ (redundant supply voltage) and FAIL. EtherNet/IP™ status LED: Net, Mod |
| Network, linear, and star structure: any<br>100 m |
| 24 V DC<br>3.6 $V_{PP}$<br>12 V DC ... 60 V DC<br>520 mA (at $U_S$ = 24 V DC) |
| 1000 g<br>60 mm<br>130 mm<br>135.5 mm<br>IP20<br>-40°C ... 70°C<br>10% ... 95% (non-condensing)<br>EN 61000-6-4<br>EN 61000-6-2:2005 |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL SWITCH 7005/FX-2FXSM-EIP** | **2701420** | 1 |

### Accessories

| | | |
|---|---|---|
| **SD FLASH 512MB** | **2988146** | 1 |

## Redundancy modules according to IEC 61850/IEEE 1613

Energy networks rely on particularly high fault tolerance. The new PRP redundancy modules enable parallel redundancy without switch-over time in the event of a fault. You can therefore ensure maximum availability of your network.

### Interruption-free communication

- The FL RED 2000E redundancy module is equipped with the Parallel Redundancy Protocol (PRP)
- Interoperability in high-availability networks is possible, as required in the energy sector
- The system continues to operate in the case of redundancy without switch-over time

### Robust design

- Developed according to the requirements of IEC 61850-3 and IEEE 1613: complies with the high requirements for network technology in this area
- Robust to withstand voltage fluctuations due to a wide input voltage range of 18 V DC ... 58 V DC
- Rugged metal housing
- -40°C ... 70°C operating termperature

### Easy handling

- Design of a high-availability network without configuration
- LED indicators provide on-site information regarding the status of the network and redundancy
- Alarm signal contact indicates the status of the module and network

**Ethernet**

**IEC 61850-3**

**Redundancy module**

### Technical data

| | FL RED 2003E PRP | FL RED 2001E PRP 2LC |
|---|---|---|
| Ethernet interface | | |
| Number of ports | 3 (RJ45 ports) | 1 (RJ45 port) |
| Transmission speed | 10/100 Mbps | |
| Transmission length | 100 m (per segment) | |
| Fiber optic interface | | |
| Interface | - | Ethernet FO |
| Number of ports | - | 2 |
| Transmission speed | - | 100 Mbps (full duplex) |
| Connection method | - | LC |
| Transmission length | - | 2 km (per segment) |
| Function | | |
| Basic functions | Ethernet redundancy module for the Parallel Redundancy Protocol | |
| Status and diagnostic indicators | LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port | |
| Power supply | | |
| Supply voltage | 24 V DC (redundant)<br>48 V DC (redundant) | |
| Residual ripple | 3.6 $V_{PP}$ | |
| Supply voltage range | 18 V DC ... 58 V DC | |
| Typical current consumption | 250 mA (@24 V DC) | |
| General data | | |
| Weight | | |
| Width | 40 mm | |
| Height | 100 mm | |
| Depth | 109 mm | |
| Degree of protection | IP20 | |
| Ambient temperature (operation) | -40°C ... 70°C | |
| Permissible humidity (operation) | 10% ... 95% (non-condensing) | |
| Noise emission | EN 61000-6-4 | |
| Noise immunity | IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005 | |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Redundancy module** | | | |
| - 3 RJ45 ports | **FL RED 2003E PRP** | **2701863** | 1 |
| - 1 RJ45 port, 2 LC fiber optic ports (multi-mode) | **FL RED 2001E PRP 2LC** | **2701864** | 1 |

## Managed Switches according to IEC 61850/IEEE 1613

Ethernet switches control Ethernet traffic and maximize uptime. Operation in extreme environments is assured with a wide temperature range and an electrical noise immunity up to four times that of normal industrial switches.

Features:

- DIN rail mounting
- Mix IEEE and Extended Ring redundancy options which provide 15 ms recovery time for hundreds of switches
- Comprehensive IEEE security and performance functions
- Unique web customization, diagnostic viewing mode and, help pages simplify maintenance
- Optional PRP redundancy modules provide 0 ms recovery times

**Ethernet**

**IEC 61850-3**

**16 RJ45 ports**

### Technical data

| | FL SWITCH 3016E | FL SWITCH 3012E-2SFX |
|---|---|---|
| Ethernet interface | | |
| Number of ports | 16 (RJ45 ports) | 12 (RJ45 ports) |
| Transmission speed | 10/100 Mbps (with auto negotiation) | |
| Fiber optic interface | | |
| Number of ports | - | 2 (FO ports) |
| Transmission speed | - | 100 Mbps (full duplex) |
| Connection method | - | SFP ports |
| Function | | |
| Basic functions | Store and forward switch, Extended Ring and IEEE redundancy, Multicast control, IGMP snooping, trunking, Port and Tagging VLANs, Port and IEEE 802.1x security, SNMP V3 and Https security, SNTP, web customization, user accounts | |
| Status and diagnostic indicators | LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port | |
| 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 | |
| Residual ripple | 3.6 $V_{PP}$ | |
| Supply voltage range | 12 V DC ... 48 V DC | |
| Typical current consumption | 312 mA (24 V DC) | |
| General data | | |
| Weight | | |
| Width | 66 mm | |
| Height | 173 mm | |
| Depth | 140 mm | |
| Degree of protection | IP20 | |
| Ambient temperature (operation) | -40°C ... 70°C | |
| Permissible humidity (operation) | 5% ... 95% (non-condensing) | |
| EMC note | Class A product, see page 443 | |
| Noise emission | EN 61000-6-4 | |
| Noise immunity | IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005 | |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Managed switch** | | | |
| - 16 RJ45 ports | **FL SWITCH 3016E** | **2891066** | 1 |
| - 12 RJ45 and 2 SFP FO ports | **FL SWITCH 3012E-2SFX** | **2891067** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Redundancy module** | | | |
| - 3 RJ45 ports | **FL RED 2003E PRP** | **2701863** | 1 |
| - 1 RJ45 port, 2 LC fiber optic ports (multi-mode) | **FL RED 2001E PRP 2LC** | **2701864** | 1 |

## Managed Switches according to IEC 61850/IEEE 1613, 19" rack-mount

The FL SWITCH 4800E line of managed switches combines 24 ports of 10/100 Mbps device connections with four 10/100/1000 Mbps uplink ports for a total of 28 ports. Application flexibility is assured with different mixes of copper/fiber and fiber types, gigabit fiber/copper "combination" ports and modular power supplies. Operation in extreme environments is assured with a wide temperature range and an electrical noise immunity up to four times that of normal industrial switches.

### Features:

- All switches have four Gigabit RJ45/SFP combination ports for supervisory or high throughput field network connections
- Flexible cabling using eight or 24 10/100 Mbps RJ45 connections with up to 16 fiber (100 Mbps) fiber connections
- Mix IEEE and Extended Ring redundancy options which provide 15 ms recovery time for hundreds of switches
- Optional PRP redundancy modules provide 0 ms recovery times
- Comprehensive IEEE security and performance functions
- Unique web customization, diagnostic viewing mode and help pages simplify maintenance
- Supports up to two modular, hot-swappable power supplies for maximum power flexibility and uptime
- Electrical noise immunity per IEC 61850-3 and IEEE 1613

**Notes:**

[1]) Requires the installation of at least one FL SWITCH 4800E-P1 or FL SWITCH 4800E-P5 for operation.

## Ethernet

IEC 61850-3

**24 RJ45 ports and 4 gigabit combo (SFP or RJ45) ports**

### Technical data

| | |
|---|---|
| Ethernet interface | |
| Number of ports | 24 (RJ45 ports) |
| Transmission speed | 10/100 Mbps |
| Ethernet (RJ45/FO combo) | |
| Interface | Ethernet (RJ45/FO combo) |
| Connection method | RJ45, shielded or SFP module (LC) |
| Note on connection method | Auto negotiation and autocrossing (RJ45 interface) |
| Fiber optic interface | |
| Number of ports | - |
| Transmission speed | - |
| Connection method | - |
| Transmission length | - |
| Function | |
| Basic functions | Store and forward switch, Extended Ring and IEEE redundancy, Multicast control, IGMP snooping, trunking, Port and Tagging VLANs, Port and IEEE 802.1x security, SNMP V3 and Https security, SNTP, web customization, user accounts |
| Status and diagnostic indicators | LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port |
| Network expansion parameters | |
| Cascading depth | Network, linear, and star structure: any |
| Maximum conductor length (twisted pair) | 100 m |
| Power supply | |
| Power supply connection | From FL SWITCH 4800E-P... |
| Supply voltage | - |
| Nominal input voltage range | - |
| General data | |
| Weight | 4494 g |
| Width | 442 mm |
| Height | 44 mm |
| Depth | 375 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -40°C ... 70°C |
| Permissible humidity (operation) | 5% ... 95% (non-condensing) |
| Noise emission | EN 61000-6-4 |
| Noise immunity | IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Managed switch,** 19-inch rack mounted<br>- 24 RJ45 and 4 GB combo ports | **FL SWITCH 4824E-4GC[1])** | **2891072** | 1 |
| **Managed switch,** 19-inch rack mounted with 8 RJ45 and 4 GB combo ports<br>- 16 fiber optic (LC duplex) ports<br>- 16 fiber optic (LC single-mode) ports<br>- 16 fiber optic (SC duplex) ports<br>- 16 fiber optic (SC single-mode) ports | | | |

### Accessories

| | | | |
|---|---|---|---|
| **Power supply,** modular redundant | | | |
| - 48 V DC nominal | **FL SWITCH 4800E-P1** | **2891075** | 1 |
| - 230 V nominal | **FL SWITCH 4800E-P5** | **2891076** | 1 |
| **Redundancy module** | | | |
| - 3 RJ45 ports | **FL RED 2003E PRP** | **2701863** | 1 |
| - 1 RJ45 port, 2 LC fiber optic ports (multi-mode) | **FL RED 2001E PRP 2LC** | **2701864** | 1 |

## Ethernet

IEC 61850-3

**8 RJ45 ports,
4 gigabit combo (SFP or RJ45) ports,
and 16 LC FO ports**

### Technical data

| | | |
|---|---|---|
| FL SWITCH 4808E-16FX LC-4GC[1]) | FL SWITCH 4808E-16FX SM LC-4GC[1]) | |
| 8 (RJ45 ports) | | |
| 10/100 Mbps | | |
| Ethernet (RJ45/FO combo) | | |
| RJ45, shielded or SFP module (LC) | | |
| Auto negotiation and autocrossing (RJ45 interface) | | |
| 16 (multi-mode) | 16 (single-mode) | |
| 100 Mbps (full duplex) | | |
| LC | | |
| 2 km (typical) | 40 km (typical) | |
| Store and forward switch, Extended Ring and IEEE redundancy, Multicast control, IGMP snooping, trunking, Port and Tagging VLANs, Port and IEEE 802.1x security, SNMP V3 and Https security, SNTP, web customization, user accounts | | |
| LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port | | |
| Network, linear, and star structure: any | | |
| 100 m | | |
| From FL SWITCH 4800E-P... | | |
| - | | |
| - | | |
| 4706 g | 4700 g | |
| 442 mm | | |
| 44 mm | | |
| 375 mm | | |
| IP20 | | |
| -40°C ... 70°C | | |
| 5% ... 95% (non-condensing) | | |
| EN 61000-6-4 | | |
| IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005 | | |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL SWITCH 4808E-16FX LC-4GC[1])** | **2891073** | 1 |
| **FL SWITCH 4808E-16FX SM LC-4GC[1])** | **2891074** | 1 |

### Accessories

| | | |
|---|---|---|
| **FL SWITCH 4800E-P1** | **2891075** | 1 |
| **FL SWITCH 4800E-P5** | **2891076** | 1 |
| **FL RED 2003E PRP** | **2701863** | 1 |
| **FL RED 2001E PRP 2LC** | **2701864** | 1 |

## Ethernet

IEC 61850-3

**8 RJ45 ports,
4 gigabit combo (SFP or RJ45) ports,
and 16 SC FO ports**

### Technical data

| | | |
|---|---|---|
| FL SWITCH 4808E-16FX-4GC[1]) | FL SWITCH 4808E-16FX SM-4GC[1]) | |
| 8 (RJ45 ports) | | |
| 10/100 Mbps | | |
| Ethernet (RJ45/FO combo) | | |
| RJ45, shielded or SFP module (LC) | | |
| Auto negotiation and autocrossing (RJ45 interface) | | |
| 16 (multi-mode) | 16 (single-mode) | |
| 100 Mbps (full duplex) | | |
| SC | | |
| 2 km (typical) | 40 km (typical) | |
| Store and forward switch, Extended Ring and IEEE redundancy, Multicast control, IGMP snooping, trunking, Port and Tagging VLANs, Port and IEEE 802.1x security, SNMP V3 and Https security, SNTP, web customization, user accounts | | |
| LEDs: $U_{S1}$, $U_{S2}$ (redundant voltage supply), link and activity per port | | |
| Network, linear, and star structure: any | | |
| 100 m | | |
| From FL SWITCH 4800E-P... | | |
| - | | |
| - | | |
| 4470 g | 4680 g | |
| 442 mm | | |
| 44 mm | | |
| 375 mm | | |
| IP20 | | |
| -40°C ... 70°C | | |
| 5% ... 95% (non-condensing) | | |
| EN 61000-6-4 | | |
| IEC 61850-3, IEEE 1613, EN 61000-6-2: 2005 | | |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL SWITCH 4808E-16FX-4GC[1])** | **2891079** | 1 |
| **FL SWITCH 4808E-16FX SM-4GC[1])** | **2891080** | 1 |

### Accessories

| | | |
|---|---|---|
| **FL SWITCH 4800E-P1** | **2891075** | 1 |
| **FL SWITCH 4800E-P5** | **2891076** | 1 |
| **FL RED 2003E PRP** | **2701863** | 1 |
| **FL RED 2001E PRP 2LC** | **2701864** | 1 |

## IEC 61850-3

**Power supply modules for 4800E switches**

### Technical data

| | |
|---|---|
| FL SWITCH 4800E-P1 | FL SWITCH 4800E-P5 |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| - | |
| 48 V DC | 230 V AC/DC |
| 36 V DC ... 75 V DC | 88 V DC ... 370 V DC<br>90 V AC ... 264 V AC |
| 836 g | 884 g |
| 150 mm | |
| 40 mm | |
| 193 mm | |
| IP20 | |
| -40°C ... 75°C | |
| 5% ... 95% (non-condensing) | |
| - | |
| - | |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|

### Accessories

| | | |
|---|---|---|
| **FL SWITCH 4800E-P1** | **2891075** | 1 |
| **FL SWITCH 4800E-P5** | **2891076** | 1 |

## Fiber optic interface module

Rugged, small form-factor pluggable (SFP) modules provide a variety of fiber optic interfaces. They are inserted into SFP sockets on managed switches, customizing both quantity and type of fiber used.

**Features:**

– Supports 100 Mbps full duplex fiber communication
– Electrical noise immunity per IEC 61850-3 and IEEE 1613
– Wide temperature range

**IEC 61850-3**

**SFP modules for transmission ranges up to 40 km**

### Technical data

| | FL SFP FX | FL SFP FX SM |
|---|---|---|
| Fiber optic interface | | |
| Number of ports | 1 (LC multi-mode) | 1 (LC single-mode) |
| Wavelength | 1300 nm | |
| Transmission length | Typ. 2 km | Typ. 40 km |
| Function | | |
| Basic functions | SFP module as FO port | |
| Power supply | | |
| Power supply connection | via SFP slot | |
| General data | | |
| Ambient temperature (operation) | -40°C ... 85°C (non-condensing) | |
| Permissible humidity (operation) | 30% ... 95% (non-condensing) | |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| Small form pluggable (SFP) fiber module (100 Mbps) | | | |
| - Multi-mode (2 km) | **FL SFP FX** | **2891081** | 1 |
| - Single-mode (40 km) | **FL SFP FX SM** | **2891082** | 1 |

## WLAN access point

The latest generation of WLAN modules offers maximum reliability, data throughput, and range.

### Faster
– The new high-speed WLAN 5100 brings WLAN 802.11n to industrial applications and with it a data rate of up to 300 Mbps

### Configuration
– Central cluster management enables the entire wireless network to be set up in just minutes

### More reliable
– MiMo technology with three antennas for wireless communication that is more robust, faster, and covers a wider range

**WLAN**

**WLAN access point/client 2.4 GHz, 5 GHz**
**802.11 a, b, g, n**
**Approval for Japan**

| | Technical data |
|---|---|
| Wireless interface | |
| Wireless standard | IEEE 802.11 |
| Frequency band | 2.4 GHz/5 GHz |
| Antenna connection method | RSMA (female) |
| Number | 3 |
| Antenna | |
| Assembly instructions | Antennas not included in scope of supply |
| Ethernet ports | |
| Number | 2 |
| Connection method | RJ45 socket |
| Power supply for module electronics | |
| Supply voltage | 24 V DC |
| Connection method | Via COMBICON |
| Supply voltage range | 10 V DC ... 36 V DC |
| Supply current | 200 mA |
| Security | |
| | 802.11i<br>WPA PSK (preshared key)<br>WPA2<br>AES<br>TKIP<br>Supports 802.1X/RADIUS<br>MAC filter |
| Function | |
| Operating modes | Access point/client adapter/repeater/WDS bridge |
| Basic functions | SNMP (V2/V3), CLI, WPS, DHCP, DCP, BootP, HTTP, HTTPS, Syslog, SD card, dual FW image, 1 x DI, 1 x DO, 2 x Ethernet 10/100 Mbit, auto crossover, auto negotiation, MODE button |
| Configuration | Cluster management, web-based management, WPS |
| General data | |
| Weight | 418 g |
| Width | 40 mm |
| Height | 109 mm |
| Depth | 109 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | -25°C ... 60°C (extended temperature range on request) |
| Permissible humidity (operation) | 10% ... 95% (non-condensing) |
| Air pressure (operation) | 800 hPa ... 1080 hPa (up to 2000 m above mean sea level) |
| Shock in acc. with EN 60068-2-27/IEC 60068-2-27 | 30g |
| Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 | 5g |

**Ordering data**

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Wireless LAN Access Point**<br>- Approval for Japan | **FL WLAN 5102** | **2701850** | 1 |

**Accessories**

| | | | |
|---|---|---|---|
| **Parameterization memory**, Flash card without license | **SD FLASH 2GB** | **2988162** | 1 |

## Media converters

FL MC 2000T... media converters optimize the performance and reliability of industrial Ethernet applications and are optimized for use in extreme environments. Selectable port settings provide usability with a wider range of devices. Selectable low latency (700 ns) allows the media converter to be used in time-critical applications. Configurable link monitoring diagnostics increase network reliability.

**Features:**

- Optional multi-mode or single-mode SC duplex fiber optic connection at 100 Mbps
- DIP switch selectable auto negotiate or fixed port settings, data rate and half or full duplex
- DIP switch selectable store-and-forward or pass-through mode (low latency, 700 ns)
- Alarm contact provides power and link status diagnostics
- Link fault pass through (LFP) function for easy connection monitoring
- Wide operating temperature range (-40°C... 75°C)

**Ethernet**

**Multi-mode fiberglass**
**SC duplex or B-FOC (ST®) connection**

### Technical data

| | | |
|---|---|---|
| Supply | | |
| Supply voltage | | 12 V DC ... 48 V DC |
| Nominal current consumption | | 110 mA (24 V DC) |
| FO interface | | |
| Wavelength | | 1310 nm |
| Transmission length Incl. 3 dB system reserve | | 9.6 km (fiberglass with F-G 50/125 0.7 dB/km F1200) |
| Signal LEDs | | LNK/ACT |
| Switching output | | Floating relay output |
| Ethernet interface | | |
| Connection method | | RJ45 socket, shielded |
| Transmission speed | | 10/100 Mbps |
| Link through | | Link fault pass through |
| MDI-/MDI-X switchover | | Auto-MDI(X) |
| Signal LEDs | | LNK/ACT, 100 |
| General data | | |
| Ambient temperature (operation) | | -40°C ... 75°C |
| Test voltage | | 500 V DC |
| Dimensions | W / H / D | 28 mm/110 mm/70 mm |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **FO converter,** for converting 10/100 BASE-TX to: | | | |
| Multi-mode fiberglass (1300 nm), SC duplex connection | **FL MC 2000T SC** | **2891315** | 1 |
| Multi-mode fiberglass (1300 nm), B-FOC (ST®) connection | **FL MC 2000T ST** | **2891316** | 1 |
| **FO converter,** for converting 10/100 BASE-TX to: | | | |
| Single-mode fiberglass (1300 nm), SC duplex connection | | | |
| Single-mode fiberglass (1300 nm), LC duplex connection | | | |

## Ethernet

**Single-mode fiberglass**
**SC duplex connection**

### Technical data

| |
|---|
| 12 V DC ... 48 V DC<br>110 mA (24 V DC) |
| 1310 nm<br>20 km (fiberglass with F-G 9/125 0.3 dB/km)<br><br>LNK/ACT<br>Floating relay output |
| RJ45 socket, shielded<br>10/100 Mbps<br>Link fault pass through<br>Auto-MDI(X)<br>LNK/ACT, 100 |
| -40°C ... 75°C<br>500 V DC<br>28 mm/110 mm/70 mm |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL MC 2000T SM20 SC** | **2891317** | 1 |

## Ethernet

**Single-mode fiberglass**
**SC duplex connection**

### Technical data

| |
|---|
| 12 V DC ... 48 V DC<br>110 mA (24 V DC) |
| 1310 nm<br>40 km (fiberglass with F-G 9/125 0.3 dB/km)<br><br>LNK/ACT<br>Floating relay output |
| RJ45 socket, shielded<br>10/100 Mbps<br>Link fault pass through<br>Auto-MDI(X)<br>LNK/ACT, 100 |
| -40°C ... 75°C<br>500 V DC<br>28 mm/110 mm/70 mm |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL MC 2000T SM40 SC** | **2891318** | 1 |

## Ethernet

**IEC 61850-3**

**Single-mode fiberglass**
**LC duplex connection**

### Technical data

| |
|---|
| 12 V DC ... 57 V DC<br>110 mA (24 V DC) |
| 1300 nm<br>40 km (typical)<br><br>LNK/ACT<br>Floating relay output |
| RJ45 socket, shielded<br>100 Mbps<br>Link fault pass through<br>Auto-MDI(X)<br>LNK/ACT, 100 |
| -40°C ... 75°C<br>500 V DC<br>30 mm/130 mm/100 mm |

### Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL MC 2000E SM40 LC** | **2891156** | 1 |

## COM server for extreme fields of application

The **FL COMSERVER...232/422/485-T** offer extended temperature and supply voltage ranges. This means that you can now integrate serial RS-232/422/485 interfaces in existing Ethernet networks, even under extreme ambient conditions. Implement functions such as cable replacement, network integration or a Modbus gateway with ease.

Both devices extend the existing FL COMSERVER product range.

– FL COMSERVER BASIC 232/422/485 (Order No.: 2313478)
– FL COMSERVER UNI 232/422/485 (Order No.: 2313452)
– FL COMSERVER WLAN 232/422/485 (Order No.: 2313559)
– FL COMSERVER PRO 232/422/485 (Order No.: 2313465)

### Cable replacement

Two devices in combination tunnel serial connections via Ethernet, using either the TCP or UDP protocol.

### Network integration

You can integrate automation devices such as controllers or frequency inverters into a network using corresponding programming and diagnostics software. COM diversion software creates a virtual COM port on the PC and transmits the data to the FL COMSERVER.

### Modbus gateway

The integrated Modbus gateway function provided in FL COMSERVER UNI converts serial Modbus ASCII or RTU data into Modbus TCP. Naturally, the conversion process also works in the opposite direction.

### Features of the T versions

– Extended temperature range −40°C to +70°C
– Supply voltage 12 ... 30 V AC/DC
– Serial interfaces: RS-232, RS-422, RS-485
– 10/100 Base-T(X) interface
– Software for virtual COM ports supplied as standard
– 3-way electrical isolation VCC // RS-232/RS-422/RS-485 // network
– Configuration via web-based management

### FL COMSERVER UNI...-T

– Supports TCP, UDP, Modbus TCP/RTU/ASCII
– Can be used exactly as required on Modbus master or slave

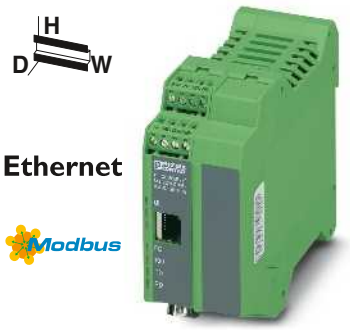
### FL COMSERVER BAS...-T

– Best-value version
– Supports TCP and UDP

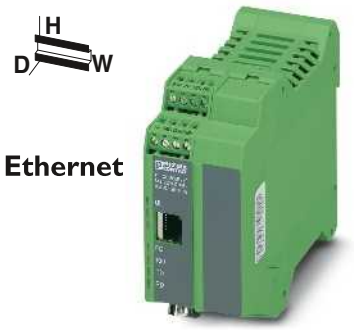
| | |
|---|---|
| Supply | |
| Supply voltage | |
| Nominal current consumption | |
| Serial port | |
| Interfaces | |
| Connection method | RS-232<br>RS-422<br>RS-485 |
| Data format/encoding | |
| Data flow control/protocols | |
| Transmission speed | |
| Termination resistor | |
| Ethernet interface | |
| Connection method | |
| Transmission speed | |
| Transmission length | |
| Supported protocols | |
| Auxiliary protocols | |
| Functions | |
| Management | |
| General data | |
| Ambient temperature (operation) | |
| Electrical isolation | |
| Test voltage | |
| Electromagnetic compatibility | |
| Standards/regulations | |
| Dimensions | W / H / D |
| Conformance / approvals | |
| ATEX | |

| Description |
|---|
| **FL COMSERVER...232/422/485**, for converting serial interfaces to Ethernet. COM port redirector software and additional software supplied as standard |
| TCP, UDP, MODBUS, PPP |
| TCP, UDP |

| | |
|---|---|
| **D-SUB plug,** with screw connection<br>- 9-pos., socket | |
| **RS-232-D-SUB cable**, length: 2 m<br>- 9-pos. socket on 9-pos. socket<br>- 9-pos. socket on 25-pos. socket | |
| **Patch cable**, CAT5, preassembled | 3 m |
| **Shield connection clamp** for RS-485/422 operation | |




**Universal device - Modbus gateway between RTU/ASCII and TCP**




**Basic version for redirector operation - TCP and UDP**

## Technical data

12 V AC/DC ... 30 V AC/DC (observe derating)
100 mA (24 V DC)

RS-232, RS-422, RS-485
D-SUB-9 plug
Plug-in/screw connection via COMBICON
Plug-in/screw connection via COMBICON
UART/NRZ: 7/8 bit data, 1/2 bit stop, 1 bit parity

Software handshake, Xon/Xoff, or hardware handshake RTS/CTS // 3964 R compatible, Modbus RTU/ASCII

0.3; 0.6; 1.2; 2.4; 4.8; 7.2; 9.6; 19.2; 38.4; 57.6; 115.2; 187.5; 230.4 kbps
390 Ω/180 Ω/390 Ω (configurable)

RJ45 socket, shielded
10/100 Mbps, auto negotiation
≤ 100 m (shielded twisted pair)
TCP/IP, UDP, Modbus (TCP, RTU/ASCII), PPP
ARP, DHCP, BOOTP, SNMP, RIP, RARP, HTTP, TFTP

Web-based management, SNMP, emergency exit with Telnet and serial

-40°C ... 70°C (free-standing, 40mm space on all sides)

DIN EN 50178 (VCC // Ethernet // Serial)
1.5 $kV_{rms}$ (50 Hz, 1 min.)
Conformance with EMC Directive 2004/108/EC
EN 50121-4
45 mm/99 mm/116 mm

Ex II 3G Ex nA IIC T4 Gc X

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL COMSERVER UNI 232/422/485-T** | **2904817** | 1 |

## Accessories

| | | |
|---|---|---|
| **SUBCON 9/F-SH** | **2761499** | 1 |
| **PSM-KA9SUB9/BB/2METER** | **2799474** | 1 |
| **PSM-KA 9 SUB 25/BB/2METER** | **2761059** | 1 |
| **FL CAT5 PATCH 3,0** | **2832292** | 10 |
| **ME-SAS** | **2853899** | 10 |

## Technical data

12 V AC/DC ... 30 V AC/DC (observe derating)
100 mA (24 V DC)

RS-232, RS-422, RS-485
D-SUB-9 plug
Plug-in/screw connection via COMBICON
Plug-in/screw connection via COMBICON
UART/NRZ: 7/8 bit data, 1/2 bit stop, 1 bit parity

Software handshake, Xon/Xoff, or hardware handshake RTS/CTS // 3964 R compatible, Modbus RTU/ASCII

0.3; 0.6; 1.2; 2.4; 4.8; 7.2; 9.6; 19.2; 38.4; 57.6; 115.2; 187.5; 230.4 kbps
390 Ω/180 Ω/390 Ω (configurable)

RJ45 socket, shielded
10/100 Mbps, auto negotiation
≤ 100 m (shielded twisted pair)
TCP/IP, UDP
ARP, DHCP, BOOTP, SNMP, RIP, RARP, HTTP, TFTP

Web-based management, SNMP, emergency exit with Telnet and serial

-40°C ... 70°C (free-standing, 40mm space on all sides)

DIN EN 50178 (VCC // Ethernet // Serial)
1.5 $kV_{rms}$ (50 Hz, 1 min.)
Conformance with EMC Directive 2004/108/EC
EN 50121-4
45 mm/99 mm/116 mm

Ex II 3G Ex nA IIC T4 Gc X

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **FL COMSERVER BAS 232/422/485-T** | **2904681** | 1 |

## Accessories

| | | |
|---|---|---|
| **SUBCON 9/F-SH** | **2761499** | 1 |
| **PSM-KA9SUB9/BB/2METER** | **2799474** | 1 |
| **PSM-KA 9 SUB 25/BB/2METER** | **2761059** | 1 |
| **FL CAT5 PATCH 3,0** | **2832292** | 10 |
| **ME-SAS** | **2853899** | 10 |

## Passive patch panel for the DIN rail

Ethernet

The mini patch panels provide a convenient alternative to on-site assembly of RJ45 plugs.

The cross-control-cabinet field cabling is simply connected to screw connection terminal blocks or RJ45 sockets, depending on the version selected.

The connection to the termination devices is then completed using pre-assembled RJ45 patch cables.

The new patch panels extend the product range of passive connection fields with new properties.

### General features

– CAT5e
– 10/100 Mbps
– Mounted on DIN rails

### FL-PP-RJ45/RJ45-B

Ethernet interface module with two RJ45 sockets as basic version with compact design and extended temperature range.

– Two RJ45 sockets
– 8-pin assignment: 1:1
– Extended temperature range -40°C to 85°C
– Narrow design W/H/D: 22.5 mm/78 mm/44 mm

### FL-PP-RJ45-SCC/...

Y-splitter for transmission of two individual network connections with 10/100 Mbps via a CAT cable with eight wires.

– Spring-cage connection terminal blocks
– Option of shield contacting on DIN rail via jumpers
– For **FL-PP-.../SC041:** two RJ45 sockets, vertical
– For **FL-PP-.../SC045:** two RJ45 sockets, horizontal

### Technical data

| | |
|---|---|
| General data | |
| Cable impedance | 100 Ω |
| Transmission speed | 10/100 Mbps |
| Connection line | twisted pair, shielded, CAT5 or better |
| Transmission length | 100 m (including patch cables) |
| Plug connection | RJ45 CAT5 |
| Insertion/withdrawal cycles | ≤ 2500 |
| Degree of protection | IP20 |
| Housing material | PA 6.6-FR |
| Weight | 33 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Patch panel, two RJ45 sockets** (1:1 assignment), **extended temperature range,** CAT5, 10/100 Mbps, DIN rail mounting, IP20, consistent shield, width 22.5 mm | **FL-PP-RJ45/RJ45-B** | **2904933** | 10 |
| **Cable sharing module,** two RJ45 sockets with Ethernet assignment, to 8 spring-cage connection terminal blocks, CAT5e, 10/100 Mbps, DIN rail mounting, IP20, option of shield contacting on DIN rail via jumpers | | | |
| - Cable outlet at the front, width 52 mm | **FL-PP-RJ45-SCC/SC041** | **2903532** | 1 |
| - Cable outlet at the top, width 56 mm | **FL-PP-RJ45-SCC/SC045** | **2904577** | 1 |

## Remote signaling and remote control system

### Alarm and remote control via the mobile phone network

Use the mobile phone network, monitor analog and digital values, and switch relays remotely using the TC mobile I/O product range.

Depending on the product version, data is transmitted via SMS, e-mail, GPRS or ODP protocol.

Thanks to the large voltage range and the different inputs, the signaling system is suitable for use in a wide range of applications.

### Features:

- Event-controlled or continual communication
- 4 digital inputs
- 2 analog inputs (current/voltage)
- 4 relay outputs, switchable via mobile phone
- Alarming in case of voltage failure via SMS
- Configuration via USB and web browser
- Standard SIM card
- Compact design: 4 pitches (DIN 43880)
- Cover can be sealed
- Numerous helpful software functions

### Applications:

- Machine, building and system monitoring
- Pumps, sewage treatment plants, water supply
- Light controllers, remote switching systems
- Lifts, doors
- Alarm and domestic engineering
- Climate and ventilation engineering
- Battery monitoring up to 60 V
- Railway applications according to EN 50121-4

**Communication via SMS and e-mail, 2 additional analog inputs**

### Technical data

| | | |
|---|---|---|
| Supply | | |
| Supply voltage | | 10 V DC ... 60 V DC |
| Supply voltage | | - |
| Nominal current consumption | | 110 mA (24 V DC) |
| Stand-by current consumption | | 40 mA (stand by) |
| USB interface | | USB 2.0 |
| Connection method | | Mini-USB type B, 5-pos. |
| Transmission length | | ≤ 3 m (only for configuration and diagnostics) |
| Mobile phone network | | |
| Frequencies | | 850 MHz (2 W (EGSM))/900 MHz (2 W (EGSM)) / 1800 MHz (1 W (EGSM))/1900 MHz (1 W (EGSM)) |
| Digital input | | |
| Number of inputs | | 4 |
| Analog input | | |
| Number of inputs | | 2 |
| Signal range | | 0 V DC ... 60 V DC/0 mA ... 20 mA/4 mA ... 20 mA (configurable) |
| Resolution | | 15 bit |
| Accuracy | | ± 0.1% |
| Switching output | | |
| Contact type | | 4 x N/O contact |
| Max. switching voltage | | 60 V |
| Limiting continuous current | | 6 A |
| General data | | |
| Ambient temperature (operation) | | -25°C ... 70°C (for derating, see technical documentation) |
| Approvals for countries | | EU, other countries in preparation |
| Electromagnetic compatibility | | Conformance with EMC Directive 2004/108/EC |
| Dimensions | W / H / D | 72 mm/90 mm/62 mm |
| ATEX | | Ex II 3 G Ex nA nC IIC T4 Gc X |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Compact signaling system,** for mobile phone networks, monitors inputs, switches relay outputs<br>- Analog and digital inputs<br>- Digital inputs | **TC MOBILE I/O X200** | **2903805** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Multi-band antenna** for UMTS and quad band GSM, with omnidirectional characteristic, 2 m antenna cable with SMA round plug, degree of protection: IP65, dimensions: 76 x 20 mm | **PSI-GSM/UMTS-QB-ANT** | **2313371** | 1 |
| **Multiband antenna** for external panel and external mast mounting for UMTS and quad-band GSM, with omnidirectional characteristics, 5 m antenna cable with SMA round plug | **PSI-GSM/UMTS-ANT-OMNI-2-5** | **2900982** | 1 |
| **Antenna extension cable** for UMTS and quad-band GSM, 5 m long, antenna cable with SMA plug and SMA coupling | **PSI-CAB-GSM/UMTS- 5M** | **2900980** | 1 |
| **Antenna extension cable** for UMTS and quad-band GSM, 10 m long, antenna cable with SMA plug and SMA coupling | **PSI-CAB-GSM/UMTS-10M** | **2900981** | 1 |
| **Power supply unit,** primary-switched | **STEP-PS/ 1AC/24DC/0.75** | **2868635** | 1 |
| **USB connecting cable** (individual) for configuration | **CABLE-USB/MINI-USB-3,0M** | **2986135** | 1 |
| **Surge protection** for UMTS and quad-band GSM antenna, with SMA plug and SMA coupling | **CSMA-LAMBDA/4-2.0-BS-SET** | **2800491** | 1 |

**Communication via SMS and e-mail, with wide range power supply**

**Communication via ODP protocol, 2 additional analog inputs**

**Communication via ODP protocol, with wide range power supply**

## Technical data

| | |
|---|---|
| - | |
| 93 V AC ... 250 V AC (47.5 Hz ... 63 Hz) | |
| 30 mA (230 V AC) | |
| 10 mA (stand by) | |
| USB 2.0 | |
| Mini-USB type B, 5-pos. | |
| ≤ 3 m (only for configuration and diagnostics) | |
| 850 MHz (2 W (EGSM))/900 MHz (2 W (EGSM))/ 1800 MHz (1 W (EGSM))/1900 MHz (1 W (EGSM)) | |
| 4 | |
| - | |
| - | |
| - | |
| - | |
| 4 x N/O contact | |
| 60 V | |
| 5 A | |
| -25°C ... 70°C (for derating, see technical documentation) | |
| EU, other countries in preparation | |
| Conformance with EMC Directive 2004/108/EC | |
| 72 mm/90 mm/62 mm | |
| Ex II 3 G Ex nA nC IIC T4 Gc X | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| TC MOBILE I/O X200 AC | 2903806 | 1 |

## Accessories

| | | |
|---|---|---|
| PSI-GSM/UMTS-QB-ANT | 2313371 | 1 |
| PSI-GSM/UMTS-ANT-OMNI-2-5 | 2900982 | 1 |
| PSI-CAB-GSM/UMTS- 5M | 2900980 | 1 |
| PSI-CAB-GSM/UMTS-10M | 2900981 | 1 |
| STEP-PS/ 1AC/24DC/0.75 | 2868635 | 1 |
| CABLE-USB/MINI-USB-3,0M | 2986135 | 1 |
| CSMA-LAMBDA/4-2.0-BS-SET | 2800491 | 1 |

## Technical data

| | |
|---|---|
| 10 V DC ... 60 V DC | |
| - | |
| 110 mA (24 V DC) | |
| 40 mA (stand by) | |
| USB 2.0 | |
| Mini-USB type B, 5-pos. | |
| ≤ 3 m (only for configuration and diagnostics) | |
| 850 MHz (2 W (EGSM))/900 MHz (2 W (EGSM))/ 1800 MHz (1 W (EGSM))/1900 MHz (1 W (EGSM)) | |
| 4 | |
| 2 | |
| 0 V DC ... 60 V DC/0 mA ... 20 mA/4 mA ... 20 mA (configurable) | |
| 15 bit | |
| ± 0.1% | |
| 4 x N/O contact | |
| 250 V AC | |
| 6 A | |
| -25°C ... 70°C (for derating, see technical documentation) | |
| EU, other countries in preparation | |
| Conformance with EMC Directive 2004/108/EC | |
| 72 mm/90 mm/62 mm | |
| Ex II 3 G Ex nA nC IIC T4 Gc X | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| TC MOBILE I/O X300 | 2903807 | 1 |

## Accessories

| | | |
|---|---|---|
| PSI-GSM/UMTS-QB-ANT | 2313371 | 1 |
| PSI-GSM/UMTS-ANT-OMNI-2-5 | 2900982 | 1 |
| PSI-CAB-GSM/UMTS- 5M | 2900980 | 1 |
| PSI-CAB-GSM/UMTS-10M | 2900981 | 1 |
| STEP-PS/ 1AC/24DC/0.75 | 2868635 | 1 |
| CABLE-USB/MINI-USB-3,0M | 2986135 | 1 |
| CSMA-LAMBDA/4-2.0-BS-SET | 2800491 | 1 |

## Technical data

| | |
|---|---|
| - | |
| 93 V AC ... 250 V AC (48 Hz ... 62 Hz) | |
| 30 mA (230 V AC) | |
| 10 mA (stand by) | |
| USB 2.0 | |
| Mini-USB type B, 5-pos. | |
| ≤ 3 m (only for configuration and diagnostics) | |
| 850 MHz (2 W (EGSM))/900 MHz (2 W (EGSM))/ 1800 MHz (1 W (EGSM))/1900 MHz (1 W (EGSM)) | |
| 4 | |
| - | |
| - | |
| - | |
| - | |
| 4 x N/O contact | |
| 250 V AC | |
| 5 A | |
| -25°C ... 70°C (for derating, see technical documentation) | |
| EU, other countries in preparation | |
| Conformance with EMC Directive 2004/108/EC | |
| 72 mm/90 mm/62 mm | |
| Ex II 3 G Ex nA nC IIC T4 Gc X | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| TC MOBILE I/O X300 AC | 2903808 | 1 |

## Accessories

| | | |
|---|---|---|
| PSI-GSM/UMTS-QB-ANT | 2313371 | 1 |
| PSI-GSM/UMTS-ANT-OMNI-2-5 | 2900982 | 1 |
| PSI-CAB-GSM/UMTS- 5M | 2900980 | 1 |
| PSI-CAB-GSM/UMTS-10M | 2900981 | 1 |
| STEP-PS/ 1AC/24DC/0.75 | 2868635 | 1 |
| CABLE-USB/MINI-USB-3,0M | 2986135 | 1 |
| CSMA-LAMBDA/4-2.0-BS-SET | 2800491 | 1 |

## SUBCON-PLUS-M12-
## fast connection

The new SUBCON-PLUS fast connection plugs with M12 connection ensure error-free installation of bus systems, thanks to the use of fully-tested components, such as cables and connection plugs.

The innovative housing concept is lightweight yet offers optimum mechanical protection against environmental influences. This means that the fast connection plugs are ideal, even in applications subject to vibration.

The unique SPEEDCON fast locking system on the M12 connections offers reliable connection with just half a turn.

### Features:

- Easy startup, plug and play
- Error-free installation, particularly in standard machine production
- Quick connection thanks to M12-SPEEDCON fast locking system
- Low weight
- Termination using M12 termination resistor
- Adapter between IP20 and IP67 environments
- For PROFIBUS and CANopen® systems

90° version, long, suitable for Siemens S7

### Technical data

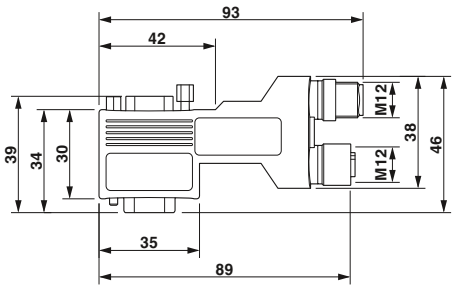
| | | |
|---|---|---|
| General data | | |
| Cable entry | | 90° (left) |
| Ambient temperature (operation) | | -30°C ... 80°C |
| Degree of protection | | IP40 |
| Housing material | | Polyamide |
| Number of positions | | 5 |
| Termination resistor | | (separately via M12 termination resistor) |
| SUBCON fixing | | 4-40 UNC 0.4 Nm |
| Dimensions | W / H / D | 16 mm/41 mm/93 mm |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Fast connection plugs,** for PROFIBUS systems, Pin assignment 3, 5, 6, 8 | | | |
| - Standard version | **SUBCON-PLUS-PROFIB/90X/M12** | **2902729** | 1 |
| Pg version with programming connection | **SUBCON-PLUS-PROFIB/90X/PG/M12** | **2902728** | 1 |
| **Fast connection plugs,** for CAN-based systems, Pin assignment 2, 3, 5, 7, 9 | | | |
| - Standard version | **SUBCON-PLUS-CAN/90X/M12** | **2902731** | 1 |
| Pg version with programming connection | **SUBCON-PLUS-CAN/90X/PG/M12** | **2902730** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **PROFIBUS termination resistor** | | | |
| - M12 pin design | **SAC-5P-M12MS PB TR** | **1507803** | 5 |
| - M12 socket design | **SAC-5P-M12FS PB TR** | **1403911** | 1 |
| **PROFIBUS bus cable**, Straight socket, shielded, M12 B-coded, 2-pos., Straight pin, shielded, M12 B-coded, 2-pos. | | | |
| - Cable length 1 m | **SAC-2P-MSB/ 1,0-910/FSB SCO** | **1518122** | 1 |
| - Variable cable length | **SAC-2P-MSB-FSB SCO/910/...** | **1538092** | 1 |
| **DeviceNet™/CANopen® termination resistor** | | | |
| - M12 pin design | **SAC-5P-M12MS CAN TR** | **1507816** | 5 |
| - M12 socket design | **SAC-5P-M12FS CAN TR** | **1529344** | 5 |
| **DeviceNet™/CANopen® bus cable**, Straight socket, shielded, M12 A-coded, 5-pos., Straight pin, shielded, M12 A-coded, 5-pos. | | | |
| - Cable length 1 m | **SAC-5P-MS/ 1,0-920/FS SCO** | **1518274** | 1 |
| - Variable cable length | **SAC-5P-MS-FS SCO/920/...** | **1538157** | 1 |




SUBCON-PLUS...90X...M12 dimensional drawing, long 90° version

90° version, short, universal

35° version, universal

## Technical data

| | |
|---|---|
| 90° (left) | |
| -30°C ... 80°C | |
| IP40 | |
| Polyamide | |
| 5 | |
| (separately via M12 termination resistor) | |
| 4-40 UNC 0.4 Nm | |
| 16 mm/41 mm/72 mm | |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| SUBCON-PLUS-PROFIB/90/M12 | 2902318 | 1 |
| SUBCON-PLUS-PROFIB/90/PG/M12 | 2902317 | 1 |
| SUBCON-PLUS-CAN/90/M12 | 2902323 | 1 |
| SUBCON-PLUS-CAN/90/PG/M12 | 2902322 | 1 |

## Accessories

| | | |
|---|---|---|
| SAC-5P-M12MS PB TR | 1507803 | 5 |
| SAC-5P-M12FS PB TR | 1403911 | 1 |
| SAC-2P-MSB/ 1,0-910/FSB SCO | 1518122 | 1 |
| SAC-2P-MSB-FSB SCO/910/... | 1538092 | 1 |
| SAC-5P-M12MS CAN TR | 1507816 | 5 |
| SAC-5P-M12FS CAN TR | 1529344 | 5 |
| SAC-5P-MS/ 1,0-920/FS SCO | 1518274 | 1 |
| SAC-5P-MS-FS SCO/920/... | 1538157 | 1 |

## Technical data

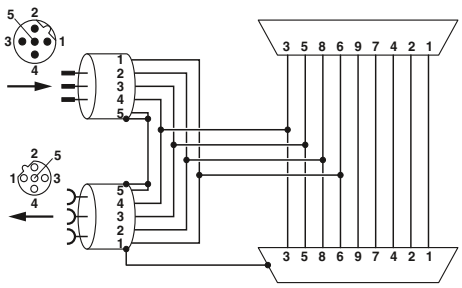
| | |
|---|---|
| 35° (left) | |
| -30°C ... 80°C | |
| IP40 | |
| Polyamide | |
| 5 | |
| (separately via M12 termination resistor) | |
| 4-40 UNC 0.4 Nm | |
| 16 mm/48 mm /80 mm | |

## Ordering data

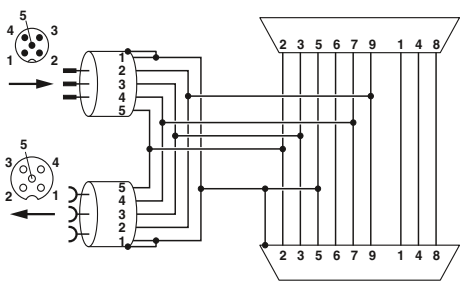
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| SUBCON-PLUS-PROFIB/35/M12 | 2902320 | 1 |
| SUBCON-PLUS-PROFIB/35/PG/M12 | 2902319 | 1 |
| SUBCON-PLUS-CAN/35/M12 | 2902325 | 1 |
| SUBCON-PLUS-CAN/35/PG/M12 | 2902324 | 1 |

## Accessories

| | | |
|---|---|---|
| SAC-5P-M12MS PB TR | 1507803 | 5 |
| SAC-5P-M12FS PB TR | 1403911 | 1 |
| SAC-2P-MSB/ 1,0-910/FSB SCO | 1518122 | 1 |
| SAC-2P-MSB-FSB SCO/910/... | 1538092 | 1 |
| SAC-5P-M12MS CAN TR | 1507816 | 5 |
| SAC-5P-M12FS CAN TR | 1529344 | 5 |
| SAC-5P-MS/ 1,0-920/FS SCO | 1518274 | 1 |
| SAC-5P-MS-FS SCO/920/... | 1538157 | 1 |




SUBCON-PLUS-PROFIB/...M12 function block diagram



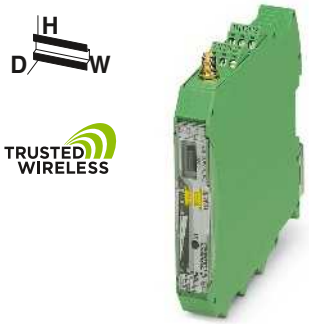

SUBCON-PLUS-CAN/...M12 function block diagram

## Wireless system for license-free use in Europe

The RAD-868-IFS wireless module is suitable for license-free use in Europe.

**Features:**

- Trusted Wireless 2.0 wireless technology
- 868 MHz frequency band
- Adjustable transmission power up to 500 mW
- Range of up to several kilometers
- Integrated RS-232 and RS-485 interface
- Distribute signals at the turn of a switch (I/O mapping)
- Can be easily extended with up to 32 I/O extension modules via T-connector
- Optionally transmits I/O signals or serial data




**868 MHz wireless transceiver, can be extended with I/O extension modules**

Housing width 17.5 mm

### Technical data

| | | |
|---|---|---|
| Wireless path | | |
| Direction | Bi-directional | |
| Frequency range | 869.4 MHz ... 869.65 MHz | |
| Transmission power | ≤ 500 mW (default setting, adjustable) | |
| Security | 128-bit data encryption | |
| Connection method | RSMA (female) | |
| Serial port | RS-232 | RS-485 |
| Connection method | COMBICON plug-in screw terminal block | COMBICON plug-in screw terminal block |
| Serial transmission speed | 0.3 ... 115.2 kbit/s | 0.3 ... 187.5 kbit/s |
| Termination resistor (switchable via DIP switches) | - | 390 Ω/150 Ω/390 Ω |
| Analog output | RSSI voltage output | |
| Signal range | 0 V ... 3 V | |
| Digital output | RF link relay output | |
| Contact type | PDT | |
| Switching voltage | 30 V AC/60 V DC | |
| Switching current | 500 mA | |
| General data | | |
| Supply voltage | 19.2 V DC ... 30.5 V DC | |
| Degree of protection | IP20 | |
| Ambient temperature range | -40°C ... 70°C | |
| Permissible humidity (operation) | 20% ... 85% | |
| Housing material | PA 6.6-FR | |
| Dimensions W / H / D | 17.5/99/114.5 mm | |
| Screw connection solid / stranded / AWG | 0.2 ... 2.5 $mm^2$/0.2 ... 2.5 $mm^2$/24 - 14 | |
| Conformance / approvals | | |
| Conformance | CE compliance (R&TTE directive 1999/5/EC) | |
| ATEX | Ex II 3 G Ex nA nC IIC T4 Gc X | |

### Ordering data

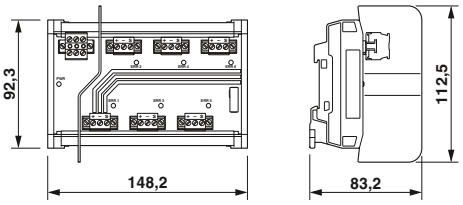
| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Wireless module** | | | |
| | **RAD-868-IFS** | **2904909** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Memory stick,** for saving custom configuration data | **RAD-MEMORY** | **2902828** | 1 |
| **USB cable,** for diagnostics and extended configuration | **RAD-CABLE-USB** | **2903447** | 1 |

## Device couplers for field devices

- Couple field devices and provide short-circuit current limiting
- Provide non-sparking and FISCO ic spur connections
- Single-sided connection configuration simplifies wiring in field housing
- Diagnostic LEDs indicate DC OK and errors at the spur connection
- Fulfills the requirements of EN 60079-0:2012, EN 60079-11:2012, EN 60079-15:2005, and EN 60079-15:2010.



**Device couplers for 6 and 12 spurs**

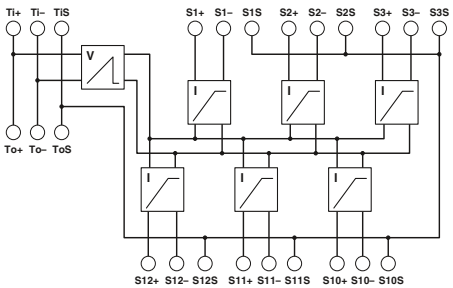
Ex:

### Technical data

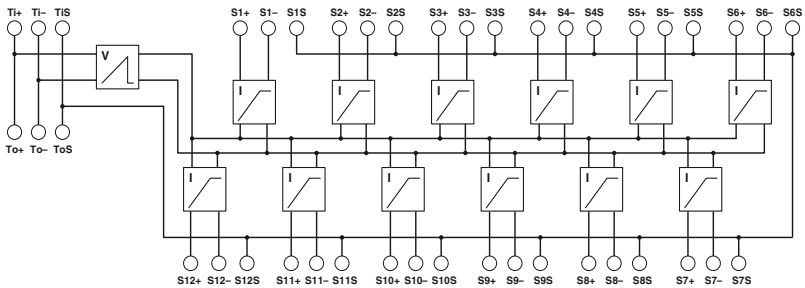
| | | | |
|---|---|---|---|
| Supply | | FB-6SP | FB-12SP |
| Supply voltage range | | 10.5 V DC ... 32 V DC (input on trunk line side) | |
| Rated current | | ≤ 2 A | |
| Nominal current consumption | | 4.8 mA | 6.5 mA |
| Fieldbus interface | | | |
| Rated voltage | | ≤ 32 V (each spur) | ≤ 32 V (each spur) |
| Rated current | | 38 mA | 38 mA |
| Termination resistor | | 100 Ω, external removable plug included | |
| General data | | FB-6SP | FB-12SP |
| Screw connection solid / stranded / AWG | | 0.2 - 2.5 mm²/0.2 - 2.5 mm²/24 - 12 | |
| Weight | | 240 g | 395 g |
| Dimensions | W / H / D | 148.2 mm/112.5 mm/83.5 mm | 254.1 mm/112.5 mm/83.5 mm |
| Degree of protection | | IP20 | |
| Ambient temperature (operation) | | -50°C ... 90°C | |
| Max. permissible relative humidity (operation) | | < 95% (non-condensing) | |
| Conformance / approvals | | | |
| NE | | NE21 | |
| ATEX | | Sira 13ATEX4247X; Ex II 3(3)G<br>Ex nA [ic] IIC T4 Gc, Entity/FISCO ic spurs<br>Ex nA [nL] IIC T4 Gc; Ex II 3G Ex ic IIC T4 Gc, FISCO ic | |
| IECEx | | SIR 08.0110X; Ex nA [ic] IIC T4 Gc, Entity/FISCO ic spurs;<br>Ex nA [nL] IIC T4 Gc; Ex ic IIC T4 Gc, FISCO ic | |
| CSA, USA/Canada | | Class I, Div. 2, Groups A, B, C, D;<br>Ex nA [nL] IIC T4; Class I, Zone 2, AEx nA [nC] IIC T4 | |
| Fieldbus Foundation | | FF-846 | |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Device coupler,** for Foundation Fieldbus and PROFIBUS PA | | | |
| - 6 spurs | **FB-6SP** | **2316307** | 1 |
| - 12 spurs | **FB-12SP** | **2316310** | 1 |




**Connection diagram: FB-6SP**




**Connection diagram: FB-12SP**

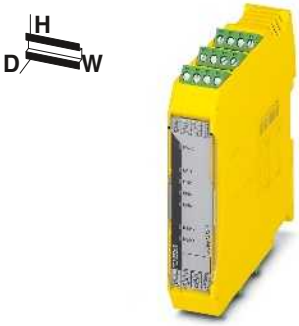
## Multifunctional safety relays

You can easily implement three safety functions, such as emergency stop, safety door or light grid monitoring, with the PSR-MXF device range – and all using a single device.

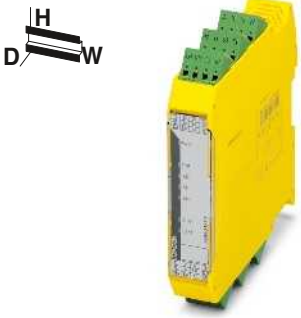
In total, there are four function versions available each with three connection methods.

### Features:

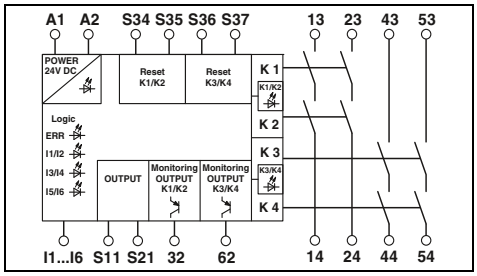
- Up to cat. 4/PL e according to EN ISO 13849-1
- Up to SIL 3 according to IEC 61508
- Up to SILCL 3 according to EN 62061
- Low housing width of only 22.5mm
- No software configuration required

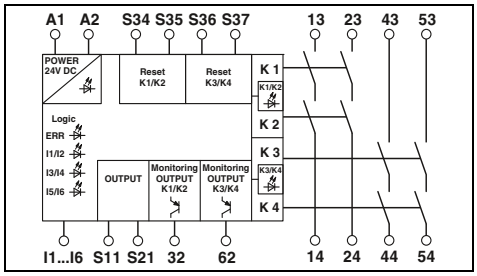



Screw connection




Spring-cage connection

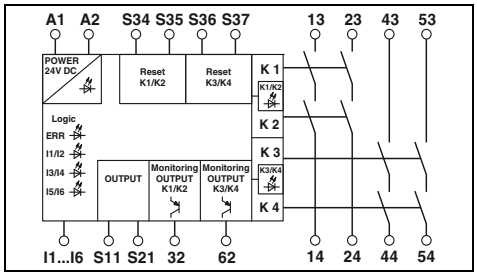



| | Technical data | Technical data |
|---|---|---|
| **Input data** | | |
| Nominal input voltage $U_N$ | 24 V DC | 24 V DC |
| Permissible range (with reference to $U_N$) | 0.85 ... 1.1 | 0.85 ... 1.1 |
| Typ. current consumption (with reference to $U_N$) | 125 mA (with actuated relays)/55 mA (two-channel 24 V/0 V + max. 200 mA control (message outputs 32/62) with non-actuated relays) | 125 mA (with actuated relays)/55 mA (two-channel 24 V/0 V + max. 200 mA control (message outputs 32/62) with non-actuated relays) |
| Recovery time | 1 s (availability time after activation of sensor circuit: 100ms) | 1 s (availability time after activation of sensor circuit: 100ms) |
| **Output data** | | |
| Contact type | 4 enabling current paths<br>2 semiconductor alarm outputs | 4 enabling current paths<br>2 semiconductor alarm outputs |
| Contact material | AgCuNi, +0.2 -0.4 µm Au | AgCuNi, +0.2 -0.4 µm Au |
| Max./min. switching voltage | 250 V AC/DC/10 V AC/DC | 250 V AC/DC/10 V AC/DC |
| Limiting continuous current | 6 A (N/O contact), max. 100 mA (Alarm output (24 V DC)) | 6 A (N/O contact), max. 100 mA (Alarm output (24 V DC)) |
| Max./min. inrush current | 6 A/10 mA | 6 A/10 mA |
| Min. switching power | 0.1 W | 0.1 W |
| Switching capacity (360/h cycles) | 5 A (0.1 Hz; DC13; 24 V) | 5 A (0.1 Hz; DC13; 24 V) |
| Switching capacity (3600/h cycles) | 3 A (AC15; 230 V) | 3 A (AC15; 230 V) |
| Short-circuit protection of the output circuits | 6 A gL/gG NEOZED (N/O contact),<br>4 A gL/gG NEOZED (for low-demand applications) | 6 A gL/gG NEOZED (N/O contact),<br>4 A gL/gG NEOZED (for low-demand applications) |
| **General data** | | |
| Ambient temperature range | -20°C ... 45°C (see derating curve) | -20°C ... 45°C (see derating curve) |
| Air and creepage distances between the circuits | DIN EN 50178/VDE 0160 | DIN EN 50178/VDE 0160 |
| Rated surge voltage/insulation | 4 kV/basic isolation (safe isolation, reinforced insulation and 6 kV between input circuit, enabling current paths and safety circuit 1 (13/14, 23/24) and safety circuit 2 (43/44, 53/54).) | 4 kV/basic isolation (safe isolation, reinforced insulation and 6 kV between input circuit, enabling current paths and safety circuit 1 (13/14, 23/24) and safety circuit 2 (43/44, 53/54).) |
| **Dimensions** W / H / D | 22.5 mm/112.2 mm/114.5 mm | 22.5 mm/117.4 mm/114.5 mm |
| Screw connection Solid/stranded/AWG | 0.2 - 2.5 mm²/0.2 - 2.5 mm²/24 - 12 | 0.2 - 1.5 mm²/0.2 - 1.5 mm²/24 - 16 |
| EMC note | Class A product, see page 443 | Class A product, see page 443 |

| Description | Ordering data: Type | Order No. | Pcs. / Pkt. | Ordering data: Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|---|---|---|
| **Multi-functional safety relay,** three safety functions, one and two-channel, two local shutdown levels | | | | | | |
| - Emergency stop and safety door monitoring | **PSR-SCP- 24DC/MXF1/4X1/2X2/B** | **2902725** | 1 | **PSR-SPP-24DC/MXF1/4X1/2X2/B** | **2902726** | 1 |
| - Emergency stop and magnetic switch monitoring | **PSR-SCP-24DC/MXF2/4X1/2X2/B** | **2903254** | 1 | **PSR-SPP-24DC/MXF2/4X1/2X2/B** | **2903255** | 1 |
| - Emergency stop, safety door, and light grid monitoring | **PSR-SCP-24DC/MXF3/4X1/2X2/B** | **2903257** | 1 | **PSR-SPP-24DC/MXF3/4X1/2X2/B** | **2903258** | 1 |
| - Emergency stop, magnetic switch, and light grid monitoring | **PSR-SCP-24DC/MXF4/4X1/2X2/B** | **2903260** | 1 | **PSR-SPP-24DC/MXF4/4X1/2X2/B** | **2903261** | 1 |

Push-in connection




## Technical data

24 V DC
0.85 ... 1.1
125 mA (with actuated relays)/55 mA (two-channel 24 V/0 V + max. 200 mA control (message outputs 32/62) with non-actuated relays)

1 s (availability time after activation of sensor circuit: 100ms)

4 enabling current paths
2 semiconductor alarm outputs
AgCuNi, +0.2 -0.4 µm Au
250 V AC/DC/10 V AC/DC
6 A (N/O contact), max. 100 mA (Alarm output (24 V DC))

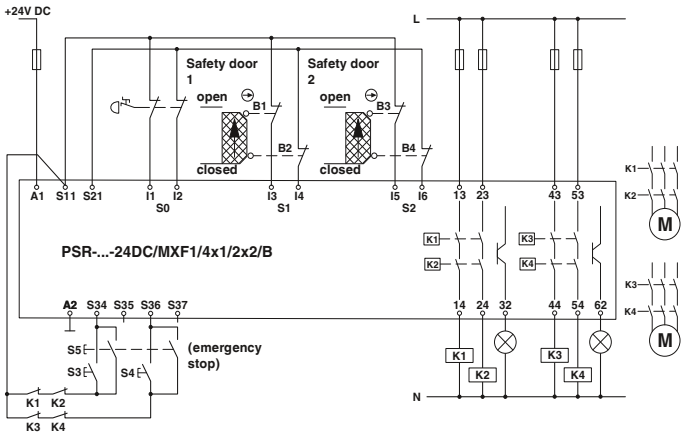
6 A/10 mA
0.1 W
5 A (0.1 Hz; DC13; 24 V)
3 A (AC15; 230 V)
6 A gL/gG NEOZED (N/O contact),
4 A gL/gG NEOZED (for low-demand applications)

-20°C ... 45°C (see derating curve)
DIN EN 50178/VDE 0160
4 kV/basic isolation (safe isolation, reinforced insulation and 6 kV between input circuit, enabling current paths and safety circuit 1 (13/14, 23/24) and safety circuit 2 (43/44, 53/54).)

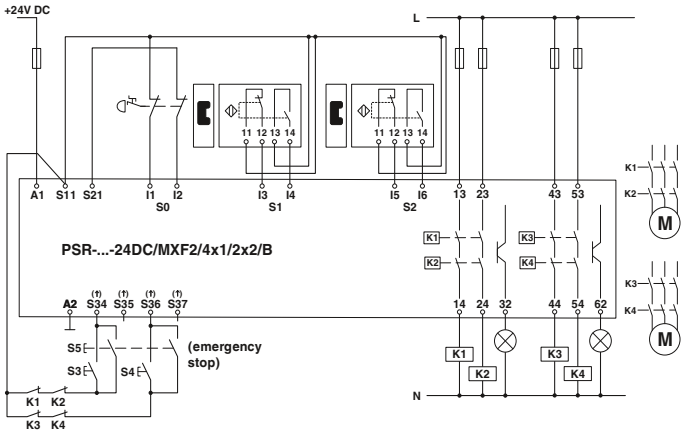
22.5 mm/116.4 mm/114.5 mm
0.2 - 2.5 mm²/0.2 - 2.5 mm²/24 - 12
Class A product, see page 443

## Ordering data

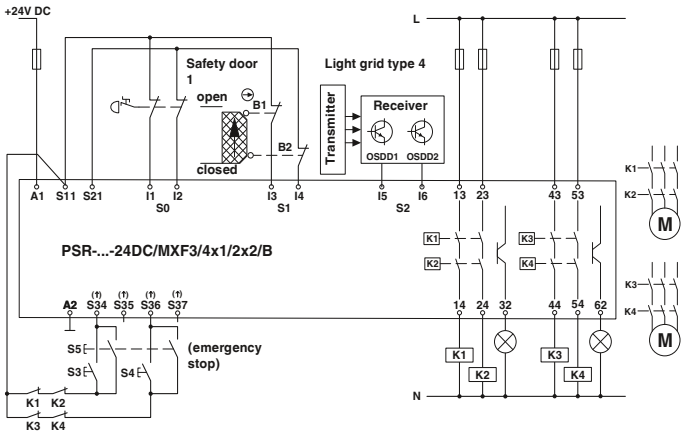
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| PSR-PIP-24DC/MXF1/4X1/2X2/B | 2903253 | 1 |
| PSR-PIP-24DC/MXF2/4X1/2X2/B | 2903256 | 1 |
| PSR-PIP-24DC/MXF3/4X1/2X2/B | 2903259 | 1 |
| PSR-PIP-24DC/MXF4/4X1/2X2/B | 2903262 | 1 |



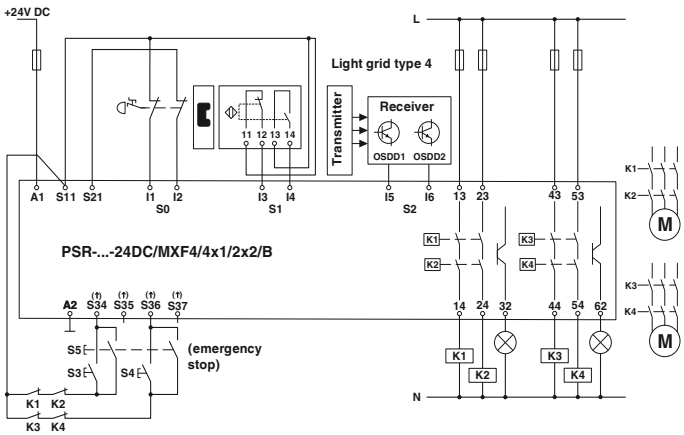

Emergency stop and safety door monitoring




Emergency stop and magnetic switch monitoring




Emergency stop, safety door, and light grid monitoring



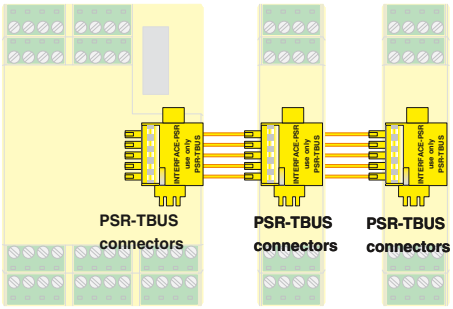

Emergency stop, magnetic switch, and light grid monitoring

## PSR-TRISAFE modular

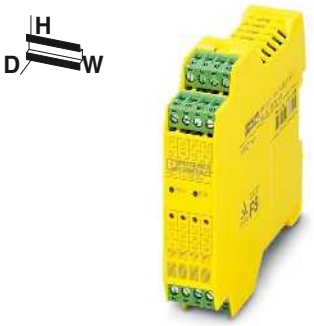
The PSR-TS-SDOR4 is a safe relay extension module for the PSR-TRISAFE-M safety module. It makes additional configurable relay outputs available to the master module.

### Features:

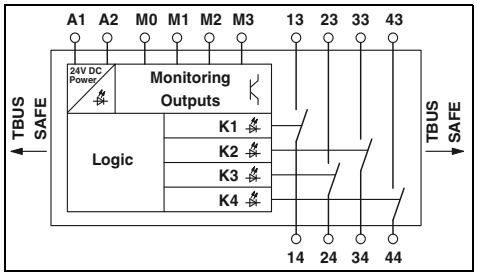
- Output extension for PSR-TRISAFE-M (modular)
- 4 single-channel relay outputs or (configurable via SAFECONF) 2 two-channel relay outputs
- 4 signal outputs
- Slim 22.5 mm housing
- Including PSR-TBUS DIN rail connector for adapting to the PSR-TRISAFE-M master module
- Up to cat. 4/PL e according to EN ISO 13849-1
- Up to SIL 3 according to IEC 61508
- Up to SILCL 3 according to EN 62061




PSR-TBUS DIN rail connectors are used for cross-wiring between the modules.




Extension module with 4 relay outputs




### Technical data

| | |
|---|---|
| **Module data** | |
| Nominal input voltage $U_N$ | 24 V DC (via PSR-TBUS) |
| Permissible range (with reference to $U_N$) | 0.85 ... 1.1 |
| Typ. current consumption (with reference to $U_N$) | 120 mA |
| Interfaces | DIN rail TBUS for connection to the master module, supplied as standard |
| **Output data** | |
| Contact type | 4 enabling current paths |
| Contact material | AgCuNi, + 0.2 µm Au |
| Max./min. switching voltage | 250 V AC/5 V AC/DC |
| Limiting continuous current | 4 A (see derating curve) |
| Max./min. inrush current | 6 A/5 mA |
| Min. switching power | 60 mW |
| Switching capacity (3600/h cycles) | 3 A (230 V (AC 15)) ; 5 A (24 V (DC13)) |
| Short-circuit protection of the output circuits | 6 A gL/gG |
| Response time | Max. 50 ms |
| Alarm outputs | 4 |
| **General data** | |
| Ambient temperature range | -20°C ... 55°C |
| Screw connection solid/stranded/AWG | 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 |
| Dimensions W / H / D — Screw version | 22.5 mm/99 mm/114.5 mm |
| Dimensions W / H / D — Spring-cage version | 22.5 mm/112 mm/114.5 mm |
| EMC note | Class A product, see page 443 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Extension module**, 4 relay outputs (1-channel) or 2 relay outputs (2-channel) | | | |
| With screw connection | **PSR-SCP- 24DC/TS/SDOR4/4X1** | **2986096** | 1 |
| With spring-cage connection | **PSR-SPP- 24DC/TS/SDOR4/4X1** | **2986106** | 1 |

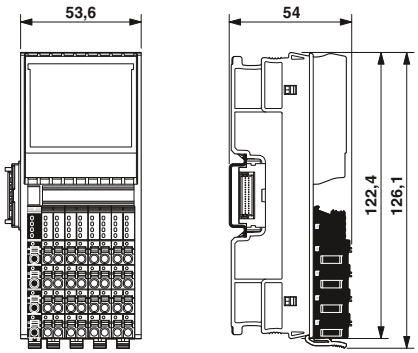
### Accessories

| | | | |
|---|---|---|---|
| **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 DIN rail connector | | | |
| With screw connection | **PSR-SCP- 24DC/TS/M** | **2986012** | 1 |
| With spring-cage connection | **PSR-SPP- 24DC/TS/M** | **2986025** | 1 |
| **PSR-TBUS DIN rail connector**, for supplying/controlling/monitoring (depending on the module) | **PSR-TBUS** | **2890425** | 50 |

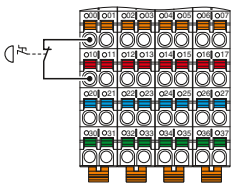
## Safe I/O modules

You can install the safety-related Axioline F PROFIsafe I/O modules anywhere inside an Axioline station. In addition to standard signals, this means you can now also read and output safe signals in the Axioline system.

Depending on the installation and parameterization, you can achieve the following safety characteristics with these modules:
– Up to cat. 4/PL e according to EN ISO 13849-1
– Up to SIL 3 according to IEC 61508
– Up to SILCL 3 according to EN 62061



Digital input module



### Technical data

| | |
|---|---|
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | Bus base module |
| Power supply for module electronics | |
| Communications power $U_{Bus}$ | 5 V DC (via bus base module) |
| Current consumption from $U_{bus}$ | Typ. 280 mA (Normal operation) |
| I/O supply | |
| Supply of digital input modules $U_I$ | 24 V DC |
| Supply voltage range $U_I$ | 19.2 V DC ... 30.2 V DC (including all tolerances, including ripple) |
| Current consumption from $U_I$ | Typ. 40 mA (when using the appropriate clock supply) |
| Protective circuit | Protection against polarity reversal, EMC protective circuit, undervoltage detection |
| Digital inputs | |
| Connection method | 2, 3, 4-wire |
| Number of inputs | 4 (with two-channel assignment)<br>8 (for single-channel assignment) |
| Description of the inputs | IEC 61131-2 type 3 |
| Nominal input voltage $U_{IN}$ | 24 V DC |
| Nominal input current at $U_{IN}$ | Typ. 4.2 mA |
| Input filter time | 1.5 ms<br>3 ms (default)<br>5 ms<br>15 ms |
| General data | |
| Connection method | Direct plug-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 mm²/0.2 ... 1.5 mm²/24 - 16 |
| Weight | 220 g |
| Width | 53.6 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| Ambient temperature (operation) | -35°C ... 60°C (mounting position: any) |

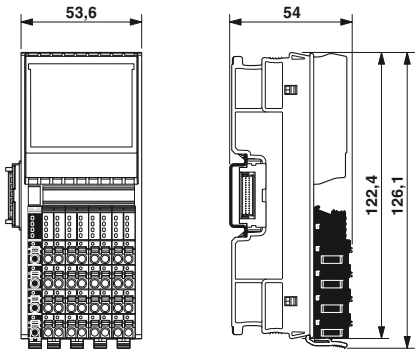
### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Fail-safe digital input module** | | | |
| - 4 inputs (two-channel), 8 inputs (single-channel) | **AXL F PSDI8/4 1F** | **2701559** | 1 |

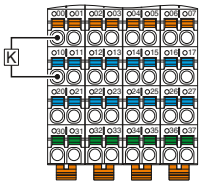
## Safe I/O modules

You can install the safety-related Axioline F PROFIsafe I/O modules anywhere inside an Axioline station. In addition to standard signals, this means you can now also read and output safe signals in the Axioline system.

Depending on the installation and parameterization, you can achieve the following safety characteristics with these modules:
– Up to cat. 4/PL e according to EN ISO 13849-1
– Up to SIL 3 according to IEC 61508
– Up to SILCL 3 according to EN 62061



Digital output module



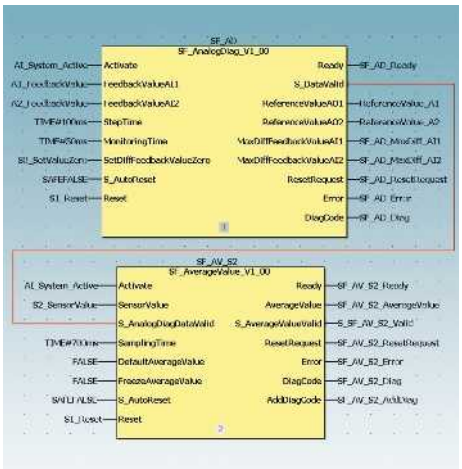

### Technical data

| | |
|---|---|
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | Bus base module |
| Power supply for module electronics | |
| Communications power $U_{Bus}$ | 5 V DC (via bus base module) |
| Current consumption from $U_{bus}$ | Typ. 260 mA (Normal operation) |
| I/O supply | |
| Supply of digital output modules $U_O$ | 24 V DC |
| Supply voltage range $U_O$ | 19.2 V DC ... 30.2 V DC (including all tolerances, including ripple) |
| Current consumption from $U_O$ | Typ. 26 mA (all outputs set including actuator current) |
| Protective circuit | Protection against polarity reversal, EMC protective circuit, undervoltage detection |
| Digital outputs | |
| Connection method | 2, 3-wire |
| Number of outputs | 4 (with two-channel assignment)<br>8 (for single-channel assignment) |
| Output voltage | 24 V DC |
| Maximum output current per channel | 2 A |
| Maximum output current per module / terminal block | 8 A |
| Behavior with overload | Affected output is disabled and a diagnostic message is generated. |
| Protective circuit | Overload protection, freewheeling circuit for inductive loads, Discharge circuit for accelerated discharge of capacitive loads |
| General data | |
| Connection method | Direct plug-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/24 - 16 |
| Weight | 220 g |
| Width | 53.6 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| Ambient temperature (operation) | -35°C ... 60°C (mounting position: any) |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Fail-safe digital output module** | | | |
| - 4 outputs (two-channel), 8 outputs (single-channel) | **AXL F PSDO8/3 1F** | **2701560** | 1 |

## Safe analog value processing



Wherever analog values need to be processed in a safety-related manner, the Safe AI solution package from Phoenix Contact is the ideal solution. With this TÜV-certified and software-based analog value processing, no safety-related I/O modules are required. This saves you money and offers flexibility.

**Components of the Safe AI solution package:**

- Initial application advice via telephone on the required software and hardware components
- License key for using the ANALOGINPUT_SF function block library including user documentation
- Advice from the Competence Center Safety in the form of a web meeting

**24-hour safety hotline**
+49 5281 9-462777
safety-service@phoenixcontact.com

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Function block library** for safety-related analog acquisition with standard I/O modules | **SAFE AI** | **2400057** | 1 |

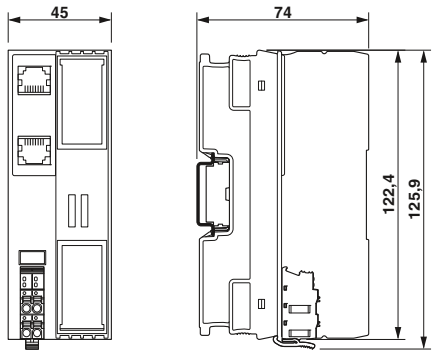
## Bus couplers

The Axioline F bus coupler is the link between the Axioline F system and the higher-level third-generation Sercos network.

For startup tests, the Axioline F station can be started up independently of the higher-level network via either the service interface or an Ethernet port on the bus coupler using the Startup+ software.

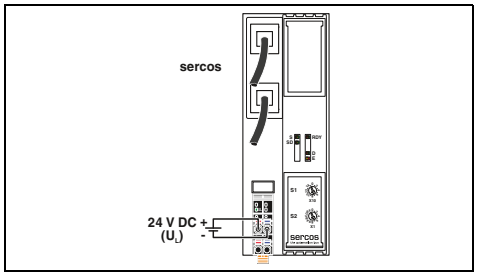
### Features:

- Sercos specification V1.3
- Minimum Sercos cycle time of 31.25 µs
- Two rotary encoding switches for address assignment
- 2 RJ45 connections (with integrated switch)
- Up to 63 additional Axioline devices can be connected
- Typical cycle time of the Axioline F local bus is around 10 µs
- Runtime in bus coupler is negligible (almost 0 µs)
- FSP-IO (Function Specific Profile-IO) for modular I/O devices
- Firmware can be updated
- Diagnostic and status indicators




sercos
the automation bus

Sercos III bus coupler




### Technical data

| | |
|---|---|
| Interface | |
| Fieldbus system | Sercos |
| Connection method | RJ45 socket, auto negotiation and auto crossing |
| Number | 2 |
| Transmission speed | 100 Mbps (full duplex) |
| Transmission length | Max. 100 m |
| Network/bus system | |
| Device profile | FSP_IO |
| Equipment type | Sercos slave |
| Update rate | 31.25 µs |
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |
| Number of supported devices | Max. 63 (per station) |
| Power supply for module electronics | |
| Supply of communications power $U_L$ | 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 | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 mm²/0.2 ... 1.5 mm²/24 - 16 |
| Weight | 177 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline bus coupler**<br>- For Sercos | **AXL F BK S3** | **2701686** | 1 |

### Accessories

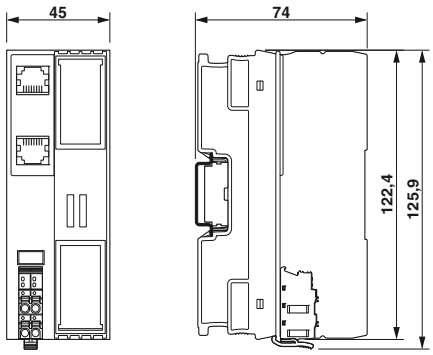
| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL BS BK** | **2701422** | 5 |

## Bus coupler

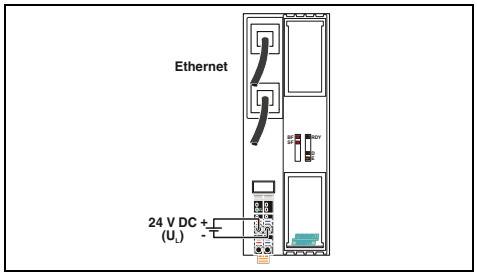
The Axioline F bus coupler is the link between the Axioline F system and the higher-level Ethernet system.

The new version of the device features web-based management. It can be used to access static information (e.g., technical data, MAC address) or dynamic information (e.g., IP address, status information).

For startup tests, the Axioline F station can be started up independently of the higher-level network via either the service interface or an Ethernet port on the bus coupler using the Startup+ software.



PROFINET bus coupler




### Features:

- PROFINET RT and PROFINET IRT support
- Minimum cycle time of PROFINET for RT and IRT is 250 µs
- Module replacement without software possible
- 2 RJ45 connections (with integrated switch)
- Up to 63 additional Axioline devices can be connected
- Typical cycle time of the Axioline F local bus is around 10 µs
- MRP client
- Shared device
- Firmware can be updated
- Diagnostic and status indicators

### Technical data

| | |
|---|---|
| Interface | |
| Fieldbus system | PROFINET |
| Connection method | RJ45 socket, auto negotiation and autocrossing |
| Number | 2 |
| Transmission speed | 100 Mbps (full duplex) |
| Transmission length | Max. 100 m |
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | Bus base module |
| Transmission speed | 100 Mbps |
| Number of supported devices | Max. 63 (per station) |
| Power supply for module electronics | |
| Supply of communications power $U_L$ | 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 | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 mm²/0.2 ... 1.5 mm²/24 - 16 |
| Weight | 177 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline bus coupler**<br>- For PROFINET | **AXL F BK PN** | **2701815** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL BS BK** | **2701422** | 5 |

## Digital input and output modules

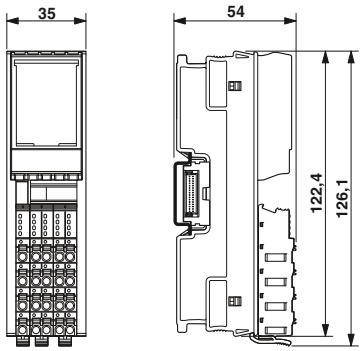
This module is designed for use within an Axioline F station.

It is used to acquire and output digital data.

You can adjust the filter times of the inputs to increase noise immunity. Filter times of 100 µs enable you to implement a counting function with a maximum input frequency of 5 kHz in the application.

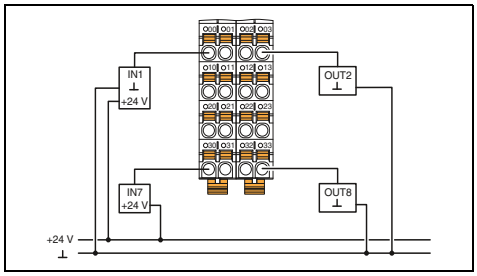
**Features:**

- 8 digital inputs and 8 digital outputs
- 24 V DC, 500 mA
- Connection of sensors or actuators in single-wire technology
- Minimum update time < 100 µs, bus synchronous
- Filter times can be set in three increments:
  < 100 µs, 1000 µs or 3000 µs
- Maximum input frequency: 5 kHz
- Short-circuit-proof outputs
- Stored device rating plate
- Diagnostic and status indicators



**8 digital inputs and 8 digital outputs**

BSH




### Technical data

| | |
|---|---|
| **Local bus interface** | |
| Name | Axioline F local bus |
| Connection method | 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** | |
| Digital input and output module supply $U_{IO}$ | 24 V DC |
| Supply voltage range $U_{IO}$ | 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 |
| **Digital inputs** | |
| Connection method | 1-wire |
| Number of inputs | 8 |
| Description of the inputs | EN 61131-2 types 1 and 3 |
| Nominal input voltage $U_{IN}$ | 24 V DC |
| Nominal input current at $U_{IN}$ | 2.4 mA |
| Input filter time | < 100 µs<br>1000 µs<br>3000 µs (default) |
| Protective circuit | Polarity reversal protection of the inputs |
| **Digital outputs** | |
| Connection method | 1-wire |
| Maximum number of outputs | 8 |
| Output voltage | 24 V |
| Maximum output current per channel | 500 mA |
| Maximum output current per module | 4 A (external fuse) |
| Behavior with overload | Shutdown with automatic restart |
| Protective circuit | Short-circuit protection, overload protection of the outputs |
| **General data** | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 mm²/0.2 ... 1.5 mm²/24 - 16 |
| Weight | 133 g |
| Width | 35 mm |
| Height | 126.1 mm |
| Depth | 54 mm |
| EMC note | Class A product, see page 443 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline digital input/output module,** complete with accessories (bus base module)<br>- 8 inputs, 8 outputs | **AXL F DI8/1 DO8/1 1H** | **2701916** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL F BS H** | **2700992** | 5 |

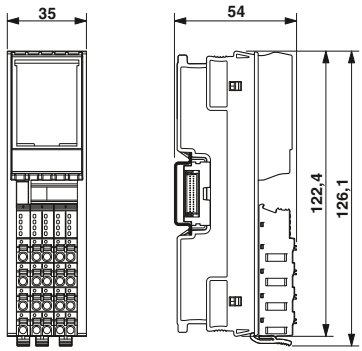
## Analog input modules

This module is designed for use within an Axioline F station.

It is used to acquire standard analog voltage signals. Connection is via 2, 3 or 4-wire technology and a shield connection.

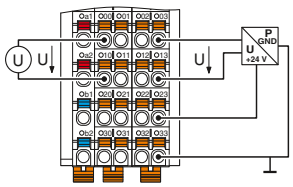
**Features:**

- 4 analog differential signal inputs
- Voltage measuring ranges
- Input filter selection
- Minimum update time of 250 µs, bus synchronous
- 16-bit measured value representation
- Stored device rating plate
- Integrated sensor supply
- Diagnostic and status indicators



**4 analog inputs**
**Voltage signals**

BSH




### Technical data

| | |
|---|---|
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | 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. 150 mA |
| I/O supply | |
| Supply of analog modules $U_A$ | 24 V DC |
| Protective circuit | Surge protection<br>Protection against polarity reversal<br>Transient protection |
| Analog inputs | |
| Connection method | 2, 3, 4-wire (shielded) |
| Number of inputs | Max. 4 (differential inputs, voltage) |
| Voltage input signal | 0 V ... 5 V/-5 V ... 5 V/0 V ... 10 V/-10 V ... 10 V |
| Characteristics | |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Input filter | 30 Hz, 12 kHz and mean-value generation (can be parameterized) |
| Precision | 0.1% (of measuring range final value for active mean-value generation and 30 Hz filter) |
| General data | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 mm²/0.2 ... 1.5 mm²/24 - 16 |
| Weight | 145 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline analog input module,** complete with accessories (bus base module)<br>- 4 inputs | **AXL F AI4 U 1H** | **2688501** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL F BS H** | **2700992** | 5 |
| **Axioline shield connection set** | **AXL SHIELD SET** | **2700518** | 1 |

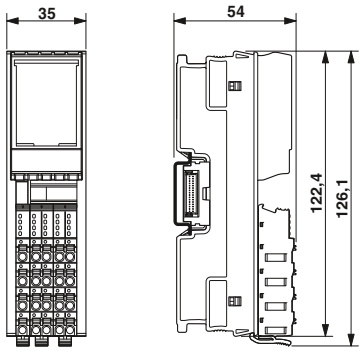
## Analog input modules

This module is designed for use within an Axioline F station.

It is used to acquire standard analog current signals. Connection is via 2, 3 or 4-wire technology and a shield connection.

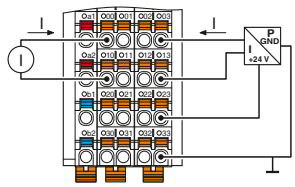
**Features:**

- 4 analog differential signal inputs
- Current measuring ranges
- Input filter selection
- Minimum update time of 250 µs, bus synchronous
- 16-bit measured value representation
- Stored device rating plate
- Integrated sensor supply
- Diagnostic and status indicators



**4 analog inputs**
**Current signals**

BSH




### Technical data

| | |
|---|---|
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | 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. 150 mA |
| I/O supply | |
| Supply of analog modules $U_A$ | 24 V DC |
| Protective circuit | Surge protection<br>Protection against polarity reversal<br>Transient protection |
| Analog inputs | |
| Connection method | 2, 3, 4-wire (shielded) |
| Number of inputs | Max. 4 (differential inputs, current) |
| Current input signal | 0 mA ... 20 mA/4 mA ... 20 mA/-20 mA ... 20 mA |
| Characteristics | |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Input filter | 30 Hz, 12 kHz and mean-value generation (can be parameterized) |
| Precision | 0.1% (of measuring range final value for active mean-value generation and 30 Hz filter) |
| General data | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 mm²/0.2 ... 1.5 mm²/24 - 16 |
| Weight | 145 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline analog input module,** complete with accessories (bus base module)<br>- 4 inputs | **AXL F AI4 I 1H** | **2688491** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL F BS H** | **2700992** | 5 |
| **Axioline shield connection set** | **AXL SHIELD SET** | **2700518** | 1 |

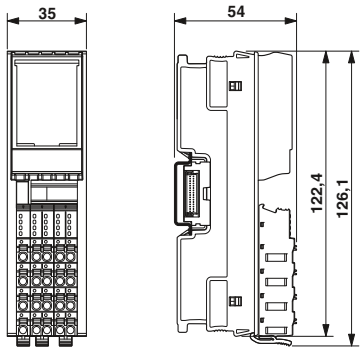
## Analog output modules

This module is designed for use within an Axioline F station.

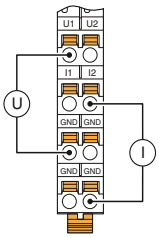
The module is used to output standard analog current and voltage signals. It is connected using 2-wire technology and a shield connection.

**Features:**

- 4 analog outputs
- Bipolar voltage outputs, Unipolar current outputs
- Minimum update time of 250 µs, bus synchronous
- 16-bit output value
- Overload and short-circuit protected
- Stored device rating plate
- Diagnostic and status indicators



**4 analog outputs**
**Current/voltage signals**




### Technical data

| | |
|---|---|
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | 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. 150 mA |
| I/O supply | |
| Supply of analog modules $U_A$ | 24 V DC |
| Analog outputs | |
| Connection method | 2-wire (shielded, twisted pair) |
| Number of outputs | 4 |
| Voltage output signal | 0 V ... 5 V/-5 V ... 5 V/0 V ... 10 V/-10 V ... 10 V |
| Current output signal | 0 mA ... 20 mA/4 mA ... 20 mA |
| Load/output load current output | to 500 Ω |
| Protective circuit | Short-circuit and overload protection<br>Transient protection |
| Characteristics | |
| Representation of output values | 16 bits (15 bits + sign) |
| Precision | Typ. 0.1% (of output range final value) |
| General data | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/24 - 16 |
| Weight | 145 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline analog output module,** complete with accessories (bus base module)<br>- 4 outputs | **AXL F AO4 1H** | **2688527** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL F BS H** | **2700992** | 5 |
| **Axioline shield connection set** | **AXL SHIELD SET** | **2700518** | 1 |

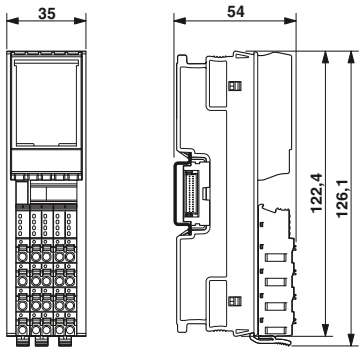
## Temperature recording modules

This module is designed for use within an Axioline F station.

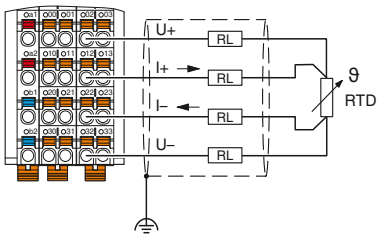
It is used to record resistive temperature sensors. Connection is via 2, 3 or 4-wire technology and a shield connection.

### RTD features:

– 4 inputs for temperature shunts
– 500 Ω and 5 kΩ linear inputs
– Programmable filters
– Short-circuit-proof inputs
– Stored device rating plate



4 RTD inputs




### Technical data

| | |
|---|---|
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | 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. 140 mA |
| I/O supply | |
| Supply of analog modules $U_A$ | 24 V DC |
| Protective circuit | Surge protection<br>Protection against polarity reversal<br>Transient protection |
| Analog inputs | |
| Connection method | 2, 3, 4-wire (shielded) |
| Number of inputs | 4 (for resistance temperature detectors) |
| Protective circuit | Short-circuit protection, overload protection of the inputs<br>Transient protection of inputs<br>Transient protection of sensor supplies |
| Sensor types (RTD) that can be used | Pt, Ni, KTY, Cu sensors |
| Linear resistance measuring range | 0 Ω ... 500 Ω/0 kΩ ... 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. ± 0.1 K (Pt100 with 3-wire termination) |
| General data | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/24 - 16 |
| Weight | 144 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline analog input module,** complete with accessories (bus base module)<br>- 4 inputs for connecting resistance temperature detectors | **AXL F RTD4 1H** | **2688556** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL F BS H** | **2700992** | 5 |
| **Axioline shield connection set** | **AXL SHIELD SET** | **2700518** | 1 |

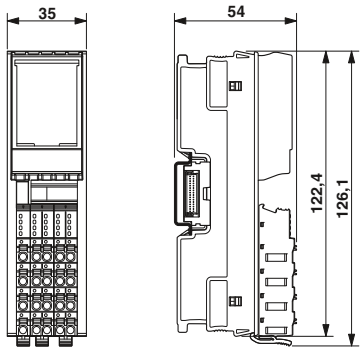
## Temperature recording modules

This module is designed for use within an Axioline F station.

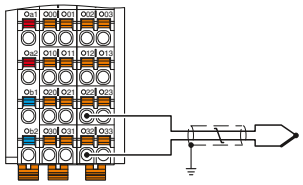
It is used to acquire data from thermocouples. Connection is via 2-wire technology and a shield connection.

**Features of UTH:**

– 4 inputs for thermocouples
– Linear voltages from -100 mV to +100 mV
– 1 input from -5 V to +5 V
– 2 Pt 100 inputs (external cold junction)
– Configurable cold junction type
– Stored device rating plate



4 UTH inputs



### Technical data

| | |
|---|---|
| Local bus interface | |
| Name | Axioline F local bus |
| Connection method | 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. 40 mA |
| I/O supply | |
| Supply of analog modules $U_A$ | 24 V DC |
| Protective circuit | Surge protection of the supply voltage<br>Polarity reversal protection of the supply voltage<br>Transient protection |
| Analog inputs | |
| Connection method | 2-wire (shielded, twisted pair) |
| Number of inputs | 4 +1 (4 inputs for thermocouples or linear voltage, plus 1 input -5 V to +5 V) |
| Protective circuit | Short-circuit protection, overload protection of the inputs<br>Transient protection of inputs |
| Sensor types (RTD) that can be used | Pt 100 (2 external cold junctions, can also be used as a sensor input) |
| Linear voltage range | -100 mV ... 100 mV |
| Characteristics | |
| Measured value representation | 16 bits (15 bits + sign bit) |
| Input filter time | 40 ms/60 ms/100 ms/120 ms (adjustable) |
| Accuracy | Typ. ± 0.19 K (Thermocouple type K, plus tolerance of cold junction) |
| General data | |
| Connection method | Push-in technology |
| Connection data solid / stranded / AWG | 0.2 ... 1.5 $mm^2$/0.2 ... 1.5 $mm^2$/24 - 16 |
| Weight | 144 g |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Axioline analog input module,** complete with accessories (bus base module)<br>- 4 inputs for connection of thermocouple sensors | **AXL F UTH4 1H** | **2688598** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Axioline bus base module** (replacement part) | **AXL F BS H** | **2700992** | 5 |
| **Axioline shield connection set** | **AXL SHIELD SET** | **2700518** | 1 |

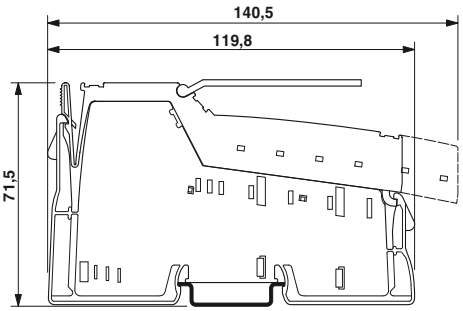
## M-bus master terminal

The Inline terminal is designed for use within an Inline station.

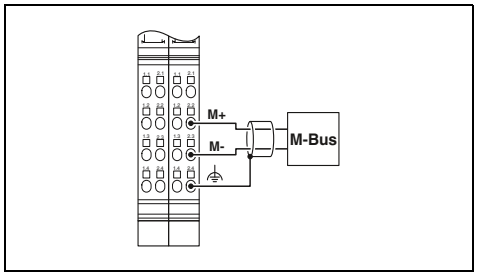
It enables communication with standard M-bus counters according to EN 13757.

**Features:**

- M-bus connection for up to 30 devices
- Transmission speed can be set from 300 baud to 19,200 baud
- Parameterization via process data
- Process data width: 16 words
- Diagnostic and status indicators



M-bus master




### Technical data

| | |
|---|---|
| Local bus interface | |
| Connection method | Inline data jumper |
| Communication interface | |
| Interface | M-Bus |
| Connection method | Inline plugs |
| Power supply for module electronics | |
| Communications power $U_L$ | 7.5 V (via potential jumper) |
| Current consumption from $U_L$ | Typ. 65 mA |
| General data | |
| Connection method | Spring-cage connection |
| Connection data solid / stranded / AWG | 0.08 ... 1.5 $mm^2$/0.08 ... 1.5 $mm^2$/28 - 16 |
| Weight | 125 g |
| Width | 24.4 mm |
| Ambient temperature (operation) | -25°C ... 55°C |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Inline Modular communication terminal**, complete with accessories (connector plug and labeling field) | | | |
| - for the connection of M-bus devices | **IB IL MBUS-PAC** | **2701927** | 1 |

## HMIs for maritime applications

HMI devices for maritime applications are the reliable and robust solution for demanding applications on ships. The touch panels are specifically tested and approved for shipbuilding.

**Your advantages:**

- Tested quality - certified according to GL, LR, BV, DNV, and ABS
- Flexible communication, even with third-party systems, thanks to numerous drivers
- Save costs and increase service life, thanks to LED backlighting that can be adjusted directly via buttons
- Increase system availability, thanks to temperature and voltage monitoring
- Save costs for acoustic signaling devices: integrated buzzer
- Global use: additional fonts are easy to install
- Cost-effective solution, since there are no additional costs for SCADA runtime: unlimited runtime license for Visu+ RT and AX OPC Server included

**17.8 cm (7") TFT color display**

### Technical data

| | |
|---|---|
| Display data | |
| Display | 17.8 cm/7" TFT |
| Monitor resolution | 800 x 480 pixels (WVGA) |
| Display lighting type | LED |
| Brightness | 350 cd/m², typical (adjustable) |
| Display backlight MTBF | 50000 h |
| Color spectrum | 65,536 colors |
| Touch screen | Resistive industrial touch screen |
| Computer data | |
| Operating systems | Windows CE 6.0 |
| Processor | Xscale® PXA320, 806 MHz |
| RAM | 128 MByte SDRAM |
| Mass storage | 1 GB Flash |
| Interfaces | 2x USB Host 1.1, 1x Compact Flash® |
| Network | 1 x Ethernet (10/100 Mbps), RJ45 |
| External dimensions | |
| Width | 203 mm |
| Height | 165 mm |
| Depth | 5 mm |
| Installation dimensions | |
| Width | 195 mm |
| Height | 157 mm |
| Installation depth | 56 mm |
| General data | |
| Degree of protection | IP65 (front), IP20 (back) |
| Ambient temperature (operation) | 0°C ... 55°C |
| Mounting type | Installation in front plate |
| Vibration (operation) | DIN EN 60068-2-6 |
| Shock | DIN EN 60068-2-27 |
| EMC note | Class A product, see page 443 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Touch panel** with graphics-capable display, for maritime applications | **TP 07T/M 211** | **2701452** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Stylus** for touch screens | **TOUCH PEN** | **2701379** | 1 |
| **USB Flash memory** | **2 GB USB STICK** | **2701382** | 1 |
| **CMOS battery** | **HMI BATTERY** | **2701383** | 1 |
| **Mounting kit**, including hardware for installation<br>- panel installation | **HMI SCB MOUNTING KIT 6** | **2701385** | 1 |
| **Protective foil** for touch screen | **7" DISPLAY PROTECTIVE FOIL** | **2701374** | 1 |

26.4 cm (10.4") TFT color display

30.7 cm (12.1") TFT color display

38.1 cm (15") color TFT display

## Technical data

26.4 cm/10.4" TFT
640 x 480 pixels (VGA)
LED
350 cd/m², typical (adjustable)
50000 h
65,536 colors
Resistive industrial touch screen

Windows CE 6.0
Xscale® PXA320, 806 MHz
128 MByte SDRAM
1 GB Flash
2x USB Host 1.1, 1x Compact Flash®
1 x Ethernet (10/100 Mbps), RJ45

328 mm
265 mm
5 mm

303 mm
238 mm
57 mm

IP65 (front), IP20 (back)
0°C ... 55°C
Installation in front plate
DIN EN 60068-2-6
DIN EN 60068-2-27
Class A product, see page 443

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| TP 10T/M 211 | 2701843 | 1 |

## Accessories

| | | |
|---|---|---|
| TOUCH PEN | 2701379 | 1 |
| 2 GB USB STICK | 2701382 | 1 |
| HMI BATTERY | 2701383 | 1 |
| HMI SCB MOUNTING KIT 8 | 2701387 | 1 |
| 10,4" DISPLAY PROTECTIVE FOIL | 2701376 | 1 |

## Technical data

30.7 cm/12.1" TFT
800 x 600 pixels (SVGA)
LED
300 cd/m², typical (adjustable)
50000 h
65,536 colors
Resistive industrial touch screen

Windows CE 6.0
Xscale® PXA320, 806 MHz
128 MByte SDRAM
1 GB Flash
2x USB Host 1.1, 1x Compact Flash®
1 x Ethernet (10/100 Mbps), RJ45

340 mm
285 mm
5 mm

315 mm
259 mm
62 mm

IP65 (front), IP20 (back)
0°C ... 55°C
Installation in front plate
DIN EN 60068-2-6
DIN EN 60068-2-27
Class A product, see page 443

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| TP 12T/M 211 | 2701844 | 1 |

## Accessories

| | | |
|---|---|---|
| TOUCH PEN | 2701379 | 1 |
| 2 GB USB STICK | 2701382 | 1 |
| HMI BATTERY | 2701383 | 1 |
| HMI SCB MOUNTING KIT 8 | 2701387 | 1 |
| 12,1" DISPLAY PROTECTIVE FOIL | 2701377 | 1 |

## Technical data

38.1 cm/15" TFT
1024 x 768 pixels (XGA)
LED
480 cd/m²
50000 h
256 colors
Resistive industrial touch screen

Windows CE 6.0
Xscale® PXA320, 806 MHz
128 MByte SDRAM
1 GB Flash
2x USB Host 1.1, 1x Compact Flash®
1 x Ethernet (10/100 Mbps), RJ45

400 mm
338 mm
5 mm

373 mm
312 mm
62 mm

IP65 (front), IP20 (back)
0°C ... 55°C
Installation in front plate
DIN EN 60068-2-6
DIN EN 60068-2-27
Class A product, see page 443

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| TP 15T/M 211 | 2701845 | 1 |

## Accessories

| | | |
|---|---|---|
| TOUCH PEN | 2701379 | 1 |
| 2 GB USB STICK | 2701382 | 1 |
| HMI BATTERY | 2701383 | 1 |
| HMI SCB MOUNTING KIT 8 | 2701387 | 1 |
| 15,1" DISPLAY PROTECTIVE FOIL | 2701378 | 1 |

## Box PCs

Box PCs are compact and flexible. They can be used in a wide variety of applications such as measurement, control and process testing. The compact size and numerous mounting options also work well for distributed systems with remote monitors.

**Features:**

- High system availability thanks to a fanless design or convection booster, suitable for industrial applications and absence of moving parts
- 3rd generation of Intel® Celeron® and Core™ i7 processors
- Versatile use, thanks to various mounting options, e.g., on the DIN rail
- Large-scale compatibility with open IT standards, numerous interfaces and operating system options

**Box PC for DIN rail or wall mounting**

### Technical data

| | |
|---|---|
| Computer data | |
| Processor | Intel® Celeron® N2920 2.0 GHz |
| RAM (configuration option) | 2 GB DDR3 SODIMM<br>4 GB DDR3 SODIMM |
| Mass storage (configuration option) | CompactFlash®<br>2.5" SATA hard drive<br>2.5" SATA solid-state drive |
| Interfaces | 1x USB 3.0<br>1x COM (RS-232/422/485)<br>2x COM (RS-232)<br>3x USB 2.0 |
| Network | 2x Ethernet (10/100/1000 Mbps), RJ45 |
| Power supply unit | 24 V DC ±20% |
| General data | |
| Width | 162 mm |
| Height | 146.2 mm |
| Depth | 49 mm |
| Degree of protection | IP20 |
| Ambient temperature (operation) | 0°C ... 50°C |
| Permissible humidity (operation) | 5% ... 95% (non-condensing) |
| Mounting type | Wall or DIN rail |
| 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**<br>- Configurable | **BL BPC 2000** | **2701712** | 1 |
| **Industrial computer**<br>- Preconfigured with 2 GB RAM, no mass storage or operating system<br>- Preconfigured with 4 GB RAM, no mass storage or operating system | **BL BPC 2001** | **2701711** | 1 |

**Box PC for wall mounting**

**High-performance box PC for wall mounting**

## Technical data

| | |
|---|---|
| Intel® Celeron® 1020E 2.2 GHz | Intel® Core™ i7-3555LE 3.2 GHz |
| 4 GB DDR3 SODIMM | 4 GB DDR3 SODIMM |
| 8 GB DDR3 SODIMM | 8 GB DDR3 SODIMM |
| 16 GB DDR3 SODIMM | 16 GB DDR3 SODIMM |
| CompactFlash® | CompactFlash® |
| 2.5" SATA hard drive | 2.5" SATA hard drive |
| 2.5" SATA solid-state drive | 2.5" SATA solid-state drive |
| 4x USB 2.0 | 4x USB 2.0 |
| 1x COM (RS-232/422/485) | 1x COM (RS-232/422/485) |
| 2x COM (RS-232) | 2x COM (RS-232) |
| 2x Ethernet (10/100/1000 Mbps), RJ45 | 2x Ethernet (10/100/1000 Mbps), RJ45 |
| 24 V DC ±20% | 24 V DC ±20% |
| 357 mm | 357 mm |
| 190 mm | 190 mm |
| 87 mm | 87 mm |
| IP20 | IP20 |
| 0°C ... 45°C | 0°C ... 45°C |
| 5% ... 95% (non-condensing) | 5% ... 95% (non-condensing) |
| Wall mount | Wall mount |
| DIN EN 60068-2-6 | DIN EN 60068-2-6 |
| 15g, 11 ms in accordance with IEC 60068-2-27 | 15g, 11 ms in accordance with IEC 60068-2-27 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **BL BPC 3000** | **2400082** | 1 |
| **BL BPC 3001** | **2400080** | 1 |

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **BL BPC 7000** | **2400083** | 1 |
| **BL BPC 7001** | **2400081** | 1 |

## Panel PCs

Panel PCs combine the advantages of a modern industrial PC with the operation and monitoring functions of a touch screen monitor. Typically installed in the front of the control cabinet, they provide monitoring and control directly on site.

**Features:**

- High system availability thanks to a fanless design or convection booster, suitable for industrial applications and absence of moving parts
- 3rd generation of Intel® Celeron® and Core™ i7 processors
- Large-scale compatibility with open IT standards, numerous interfaces and operating system options
- Display sizes from 12 (SVGA) to 17 (SXGA) inches
- High graphic performance with Intel HD graphics 4000

**Panel PC with Atom™ processor**

### Technical data

| | |
|---|---|
| Display data | |
| Display (configuration option) | 30.7 cm/12.1" TFT<br>38.1 cm/15" TFT<br>43.2 cm/17"-TFT |
| Monitor resolution | 800 x 600 pixels (SVGA)<br>1024 x 768 pixels (XGA)<br>1280 x 1024 pixels (SXGA) |
| Brightness | 350 cd/m², typical (adjustable) |
| Display backlight MTBF | > 50000 h |
| Touch screen | Resistive industrial touch screen |
| Computer data | |
| Processor (configuration option) | Intel® Atom™ N455 1.66 GHz |
| RAM (configuration option) | 2 GB DDR3 SODIMM |
| Mass storage (configuration option) | CompactFlash®<br>2.5" SATA hard drive<br>2.5" SATA solid-state drive |
| Interfaces | 4x USB 2.0<br>1x COM (RS-232/422/485)<br>2x COM (RS-232) |
| Network | 2x Ethernet (10/100/1000 Mbps), RJ45 |
| Power supply unit | 24 V DC ±20% |
| General data | |
| Degree of protection | IP65 (front), IP20 (back) |
| Ambient temperature (operation) | 0°C ... 50°C |
| Permissible humidity (operation) | 5% ... 95% (non-condensing) |
| Mounting type | Panel PC for mounting in the front panel |
| Vibration (operation) | DIN EN 60068-2-6 |
| Shock | 15g, 11 ms in accordance with IEC 60068-2-27 |
| EMC note | Class A product, see page 443 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Industrial panel PC (PPC)** with resistive touch screen.<br>Configurable options for display size, memory and mass storage.<br>- Atom processor<br>- Celeron processor<br>- Core i7 processor | **BL PPC 1000** | **2701401** | 1 |
| **Industrial panel PC (PPC)** with resistive touch screen. | | | |
| - Preconfigured with 12.1-inch display, 2 GB RAM, no mass storage or operating system | **BL PPC12 1000** | **2701336** | 1 |
| - Preconfigured with 15-inch display, 2 GB RAM, no mass storage or operating system | **BL PPC15 1000** | **2701338** | 1 |
| - Preconfigured with 17-inch display, 2 GB RAM, no mass storage or operating system | **BL PPC17 1000** | **2701337** | 1 |
| - Preconfigured with 15-inch display, 4 GB RAM, no mass storage or operating system | | | |
| - Preconfigured with 17-inch display, 4 GB RAM, no mass storage or operating system | | | |

**Panel PC with Celeron® processor**

**Panel PC with Core™ i7 processor**

## Technical data

38.1 cm/15" TFT
43.2 cm/17"-TFT

1024 x 768 pixels (XGA)
1280 x 1024 pixels (SXGA)

350 cd/m², typical (adjustable)
> 50000 h
Resistive industrial touch screen

Intel® Celeron® 1020E 2.2 GHz
4 GB DDR3 SODIMM
8 GB DDR3 SODIMM
16 GB DDR3 SODIMM
CompactFlash®
2.5" SATA hard drive
2.5" SATA solid-state drive
4x USB 2.0
1x COM (RS-232/422/485)
2x COM (RS-232)
2x Ethernet (10/100/1000 Mbps), RJ45
24 V DC ±20%

IP65 (front), IP20 (back)
0°C ... 45°C
5% ... 95% (non-condensing)
Panel PC for mounting in the front panel
DIN EN 60068-2-6
15g, 11 ms in accordance with IEC 60068-2-27
Class A product, see page 443

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **BL PPC 3000** | **2701397** | 1 |
| **BL PPC15 3000** | **2701393** | 1 |
| **BL PPC17 3000** | **2701394** | 1 |

## Technical data

38.1 cm/15" TFT
43.2 cm/17"-TFT

1024 x 768 pixels (XGA)
1280 x 1024 pixels (SXGA)

350 cd/m², typical (adjustable)
> 50000 h
Resistive industrial touch screen

Intel® Core™ i7-3555LE 3.2 GHz
4 GB DDR3 SODIMM
8 GB DDR3 SODIMM
16 GB DDR3 SODIMM
CompactFlash®
2.5" SATA hard drive
2.5" SATA solid-state drive
4x USB 2.0
1x COM (RS-232/422/485)
2x COM (RS-232)
2x Ethernet (10/100/1000 Mbps), RJ45
24 V DC ±20%

IP65 (front), IP20 (back)
0°C ... 45°C
5% ... 95% (non-condensing)
Panel PC for mounting in the front panel
DIN EN 60068-2-6
15g, 11 ms in accordance with IEC 60068-2-27
Class A product, see page 443

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **BL PPC 7000** | **2701398** | 1 |
| **BL PPC15 7000** | **2701395** | 1 |
| **BL PPC17 7000** | **2701396** | 1 |

## Outdoor panel PCs

The new outdoor panel PCs fit seamlessly into the existing portfolio of panel PCs. Designed for use under extreme ambient conditions, the devices meet the requirements for an extended temperature range, easily readable displays in direct sunlight, UV resistance, and a high level of mechanical and chemical resistance.

### Additional features:

– Display can be read in direct sunlight
– Resistant to UV and IR radiation
– Extended temperature range
– Watertight thanks to IP67 protection
– Resistant to environmental influences, such as salt spray and termites
– Resistant to chemicals, e.g., aggressive cleaning agents, deicers for aircraft
– Can be operated when wearing work gloves

**17.8 cm (7") widescreen display**

### Technical data

| | |
|---|---|
| Display data | |
| Display | 17.8 cm/7" TFT |
| Monitor resolution | 800 x 400 pixels (WVGA) |
| Display lighting type | LED |
| Brightness | 350 cd/m², typical (adjustable) |
| Display backlight MTBF | > 50000 h |
| Touch screen | Resistive industrial touch screen (GFG) |
| Computer data | |
| Processor | Intel® Atom™ E680T 1.6 GHz |
| RAM | 2 GB DDR2 800 |
| Mass storage (configuration option) | Flash SSD 8 GB<br>Flash SSD 16 GB<br>Flash SSD 32 GB |
| Interfaces | 4 x USB host 2.0 |
| Slots | SD card |
| Monitor output | Without |
| Network | 1 x Ethernet (10/100/1000 Mbps), RJ45 |
| Power supply unit | 24 V DC ±20% |
| General data | |
| Degree of protection | IP67 (front), IP20 (back) |
| Ambient temperature (operation) | -20°C ... 65°C |
| Permissible humidity (operation) | 20% ... 85% (non-condensing) |
| 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 for outdoor applications** | | | |
| | **EL PPC7 1000/WT** | **2400065** | 1 |

30.5 cm (12.1") display

38.1 cm (15") display

| Technical data |
|---|
| |
| 30.7 cm/12.1" TFT |
| 800 x 600 pixels (SVGA) |
| LED |
| 350 cd/m², typical (adjustable) |
| > 50000 h |
| Resistive industrial touch screen (GFG) |
| |
| Intel® Atom™ E680T 1.6 GHz |
| 2 GB DDR2 800 |
| Flash SSD 8 GB |
| Flash SSD 16 GB |
| Flash SSD 32 GB |
| 4 x USB host 2.0 |
| SD card |
| Without |
| 1 x Ethernet (10/100/1000 Mbps), RJ45 |
| 24 V DC ±20% |
| |
| IP67 (front), IP20 (back) |
| -20°C ... 65°C |
| 20% ... 85% (non-condensing) |
| Installation in front plate |
| DIN EN 60068-2-6 |
| DIN EN 60068-2-27 |

| Ordering data | | |
|---|---|---|
| **Type** | **Order No.** | Pcs. / Pkt. |
| **EL PPC12 1000/WT** | **2400066** | 1 |

| Technical data |
|---|
| |
| 38.1 cm/15" TFT |
| 1024 x 768 pixels (XGA) |
| LED |
| 350 cd/m², typical (adjustable) |
| > 50000 h |
| Resistive industrial touch screen (GFG) |
| |
| Intel® Atom™ E680T 1.6 GHz |
| 2 GB DDR2 800 |
| Flash SSD 8 GB |
| Flash SSD 16 GB |
| Flash SSD 32 GB |
| 4 x USB host 2.0 |
| SD card |
| Without |
| 1 x Ethernet (10/100/1000 Mbps), RJ45 |
| 24 V DC ±20% |
| |
| IP67 (front), IP20 (back) |
| -20°C ... 65°C |
| 20% ... 85% (non-condensing) |
| Installation in front plate |
| DIN EN 60068-2-6 |
| DIN EN 60068-2-27 |

| Ordering data | | |
|---|---|---|
| **Type** | **Order No.** | Pcs. / Pkt. |
| **EL PPC15 1000/WT** | **2400067** | 1 |

## IP65 panel PCs

Designline 7000 IPCs are powerful panel PCs that utilize Intel® Core™ i7 processors. The fanless design and completely enclosed IP65 housing makes the Designline 7000 suitable for demanding industrial applications. VESA 100 mounting allows installation directly on a machine or system for an integrated, attractive appearance.

### Features:

- 4th generation Intel Core i7 processors
- Projected capacitive touch screen (PCT)
- 15-inch XGA to 21.5-inch displays with Intel HD graphics 5000
- Fanless for clean, quiet operation
- Slim, attractive design
- All-in-one, IP65-rated design
- Conforms to VESA MIS-D, 100 mounting standard

**Notes:**

[1]) Configuration options can affect the operating temperature. See data sheet for details.

**Fully enclosed IP65 IPC with 38.1 cm (15") display**

### Technical data

| | |
|---|---|
| Display data | |
| Display | 38.1 cm/15" TFT |
| Monitor resolution | 1024 x 768 pixels (XGA) |
| Display lighting type | LED |
| Brightness | 400 cd/m², typical (adjustable) |
| Display backlight MTBF | > 50000 h |
| Touch screen | Capacitive multi-touch screen |
| Computer data | |
| Processor | Intel®Core™ i7-4650U 3.30 GHz |
| RAM (configuration option) | 4 GB DDR3<br>8 GB DDR3<br>12 GB DDR3 |
| Mass storage (configuration option) | 2.5" SATA hard drive<br>2.5" SATA solid-state drive |
| Interfaces | 4x USB 2.0, 1x USB 3.0<br>1x COM (RS-232/422/485)<br>1x Audio |
| Network | 2x Ethernet (10/100/1000 Mbps), RJ45 |
| Power supply unit | 24 V DC ±20% |
| General data | |
| Degree of protection | IP65 |
| Ambient temperature (operation) | 0°C ... 45°C[1]) |
| Permissible humidity (operation) | 5% ... 95% (non-condensing) |
| Mounting type | VESA MIS-D (100 x 100) |
| Vibration (operation) | 1g with SSD, 0.5g with HDD, according to EN 60068-2-6 |
| Shock | 15g, 11 ms in accordance with IEC 60068-2-27 |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **High performance IPC** with touch screen and IP65 housing<br><br>- 38.1 cm (15") display<br>- 47 cm (18.5") display<br>- 54.6 cm (21.5") display | **DL PPC15M 7000** | **2400017** | 1 |

**Fully enclosed IP65 IPC with 47 cm (18.5") display**

**Fully enclosed IP65 IPC with 54.6 cm (21.5") display**

## Technical data

47 cm/18,5" TFT
1366 x 768 pixels (WXGA)
LED
300 cd/m², typical (adjustable)
> 50000 h
Capacitive multi-touch screen

Intel®Core™ i7-4650U 3.30 GHz
4 GB DDR3
8 GB DDR3
12 GB DDR3
2.5" SATA hard drive
2.5" SATA solid-state drive
4x USB 2.0, 1x USB 3.0
1x COM (RS-232/422/485)
1x Audio
2x Ethernet (10/100/1000 Mbps), RJ45
24 V DC ±20%

IP65
0°C ... 45°C[1])
5% ... 95% (non-condensing)
VESA MIS-D (100 x 100)
1g with SSD, 0.5g with HDD, according to EN 60068-2-6
15g, 11 ms in accordance with IEC 60068-2-27

## Ordering data

| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **DL PPC18.5M 7000** | **2400015** | 1 |

## Technical data

54.6 cm/21,5" TFT
1920 x 1080 pixels (Full HD)
LED
300 cd/m², typical (adjustable)
> 50000 h
Capacitive multi-touch screen

Intel®Core™ i7-4650U 3.30 GHz
4 GB DDR3
8 GB DDR3
12 GB DDR3
2.5" SATA hard drive
2.5" SATA solid-state drive
4x USB 2.0, 1x USB 3.0
1x COM (RS-232/422/485)
1x Audio
2x Ethernet (10/100/1000 Mbps), RJ45
24 V DC ±20%

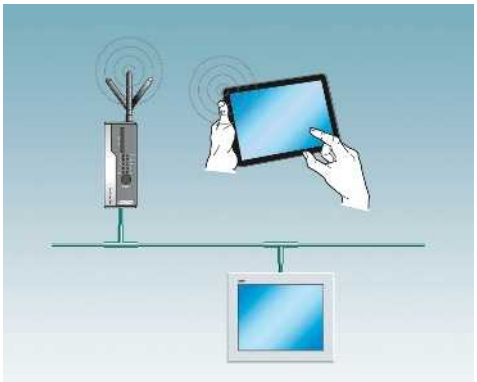
IP65
0°C ... 45°C[1])
5% ... 95% (non-condensing)
VESA MIS-D (100 x 100)
1g with SSD, 0.5g with HDD, according to EN 60068-2-6
15g, 11 ms in accordance with IEC 60068-2-27

## Ordering data

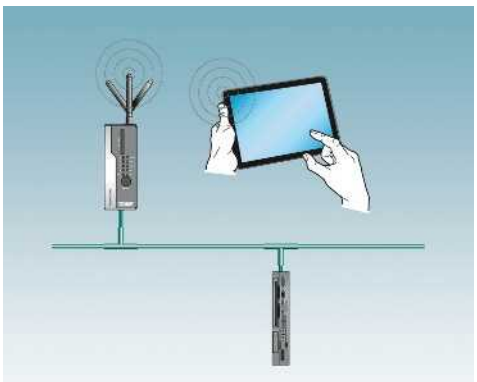
| Type | Order No. | Pcs. / Pkt. |
|---|---|---|
| **DL PPC21.5M 7000** | **2400016** | 1 |

## Visualization app

Easy app installation via Google Play store or Apple app store



Visu+ mobile on a mobile termination device via access point, with a touch panel and web server



Visu+ mobile on a mobile termination device via access point, with an industrial PC and web server

Extend your system visualization to smartphones or tablets with the **Visu+ mobile** visualization app from Phoenix Contact. You can design flexible operating and monitoring concepts, as the Visu+ mobile app allows you to access your system at any time and from any location.

Integrate Visu+ mobile quickly and easily in existing touch panel or industrial PC visualization solutions. The Visu+ web server required for the app is already pre-installed in numerous devices from Phoenix Contact, such as touch panels. IPCs with Visu+ simply need to be extended with the web license option.

You can conveniently download the app in the usual way from the Google Play Store for Android or the App Store for Apple devices.

**Features:**

- Familiar comfort: simply use conventional smartphones or tablets to perform operation and monitoring
- Conventional SCADA functions such as trend display or alarm handling now also available on mobile devices
- Easy installation via Google Play store or App store
- High-performance, scalable Visu+ web server: up to 100 clients can be operated simultaneously in its maximum configuration
- Convenient generation of HTML visualization pages for the Visu+ web server from the Visu+ development environment

## Multiplexer function for retrofitting

With the software for multiplexer systems, you can create a multiplexer system from two ILC 131 ETH small-scale controllers. Without any time-consuming programming.

To do so, extend each smale-scale controller with an SD FLASH 512MB MODULAR MUX SD card and the corresponding I/O panel. Configuration is easy with few wire bridges - you just need to define the master and slave.

The software is therefore ideal for all areas of application where a multiplexer solution is required, without additional programming work for the controller.

– Wireless, Ethernet cable or network connection
– Multiplexer solution with standard components (2x ILC 131 ETH and 2x SD FLASH 512MB MODULAR MUX)
– Integration in Ethernet network via web interface, with PC and standard browser

**Notes:**

When ordering, please note that you require two controllers and two SD cards respectively.

### Technical data

See phoenixcontact.net/products

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Multiplexer application on SD card** for configuring two ILC 131 ETH controllers as a multiplexer | **SD FLASH 512MB MODULAR MUX** | **2701872** | 1 |

## Logic modules

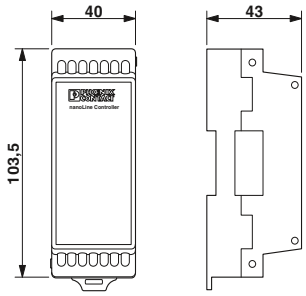
Minimal effort with maximum benefits – for Nanoline programmable logic modules the focus is on simplicity and flexibility. This means a modular and adaptable design with optimum networking options.

**Your advantages:**

- Save time – by intelligently controlling basic tasks
- Easy use without prior knowledge, thanks to intuitive programming
- Versatile communication with numerous integration and networking options
- Maximum flexibility, thanks to the modular design

**Additional features:**

- Two high-speed counters and two analog inputs
- Supports four mathematical functions
- Integrated digital I/O
- Add an additional digital I/O extension module for a maximum of 12 I/O points
- Support for large Nanoline operator panel
- Integrated realtime clock (RTC)
- Integrated RS-232 for connection to a PC for programming and configuration
- Integrated RS-232 and RS-485 allow you to use your logic module as a Modbus RTU server
- Flexible programming with nanoNavigator or LOGIC+



**24 V DC, 4 digital inputs and 2 relay outputs**

### Technical data

| | NLC-035-024D 041-02QRD-05A | NLC-040-O24D-04I-02QRD-05A |
|---|---|---|
| Power supply | | |
| Supply voltage | 24 V DC (power available to the I/O and Communications modules) | |
| Supply voltage range | 19.2 V DC ... 30 V DC | |
| Typical current consumption | 74 mA | |
| Max. current consumption | 81 mA | |
| Digital inputs | | |
| Number of inputs | 4 | |
| Description of the inputs | PNP | |
| Typical response time | 10 µs (channel 1 and 2) | |
| Digital outputs | | |
| Number of outputs | 2 | |
| Description of the outputs | Relay output | |
| Maximum output current per channel | 5 A | |
| Maximum output current per module / terminal block | 10 A | |
| Software interfaces | | |
| Programming tool | nanoNavigator 4.2 or above | LOGIC+ |
| General data | | |
| Connection method | Screw connection | |
| Degree of protection | IP20 | |
| Ambient temperature (operation) | -25°C ... 70°C | |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Nanoline controller** | | | |
| - Programmable with nanoNavigator 4.2 and above | **NLC-035-024D 041-02QRD-05A** | **2702031** | 1 |
| - Programmable with LOGIC+ | **NLC-040-O24D-04I-02QRD-05A** | **2400079** | 1 |

### Accessories

| | | | |
|---|---|---|---|
| **Programming cable** | | | |
| - 9-pos. D-SUB to RJ11/12 | **NLC-PC/SERIAL-CBL 1M** | **2701234** | 1 |

## Large operator panel

The operator panel is your interface for interacting with the Nanoline system. Read the status of all I/O points, registers, timers, counters, and system flags directly. In addition, the application program sends prompts and instructions to the display. The operator panel offers numerical (0-9), directional (up, down, left, right), and input keys. In addition, each of the 14 keys on the operator panel can be used to create user-specific menus in a flow chart.

### Additional features:

– 76 mm diagonal screen
– Variable text sizes for enhanced readability of custom messages (4 x 20 or 2 x 10 or a combination)
– Cable length of up to 15 m allows remote mounting away from the logic module
– External 24 V DC
– Variable backlight: red, blue or green
– Adjustable backlight timer to save energy

User interface for Nanoline controllers

### Technical data

| | |
|---|---|
| Display data | |
| Display | Backlit LC display, monochrome, 4 lines with 20 characters or 2 lines with 10 characters |
| Interfaces | |
| Operator panel | 9-pos. D-SUB male |
| Transmission length | Max. 15 m |
| Power supply for module electronics | |
| Supply voltage | 24 V DC |
| Connection method | 3-pos. Combicon |
| Typical current consumption | 38 mA (24 V DC) |
| Max. current consumption | 40 mA (24 V DC) |
| General data | |
| Programming tool | nanoNavigator |
| Mounting type | Panel mounting |
| Keys | 17 |
| Height | 102 mm |
| Width | 128 mm |
| Depth | 44.5 mm |
| Degree of protection | IP66 |
| Ambient temperature (operation) | 0°C ... 50°C |
| Ambient temperature (storage/transport) | 0°C ... 60°C |

### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| Operator panel | **NLC-OP2-LCD-076-4X20** | **2701945** | 1 |

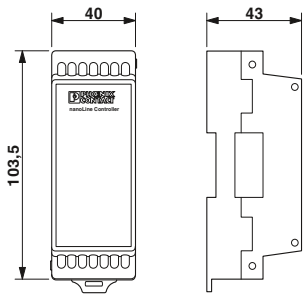
### Accessories

| | | | |
|---|---|---|---|
| Base module for remote mounting Operator Panel (included in nLC-OP1-MKT) | **NLC-OP1-MKT-BASE** | **2701250** | 1 |
| **D-SUB plug**, with **two** cable entries, **universal type**, pin assignment 1,2,3,4,5,6,7,8,9 on **every** screw terminal block | **SUBCON-PLUS-M/AX 9** | **2904467** | 1 |

## Analog I/O extension module

Temperature extension module provides RTD and thermocouple inputs as well as four digital outputs.

- Two temperature sensor inputs
- Configuration options for PT100 and PT1000 RTD sensors with two or three wires
- Configuration options for thermocouple types B, E, J, K, N R, S, and T
- Four PNP digital outputs
- Automatically recognized by nanoNavigator



**2 temperature inputs, 4 PNP outputs**

| | Technical data |
|---|---|
| Power supply for module electronics | |
| Supply voltage | 24 V |
| Temperature input | |
| Connection method | 2 or 3-wire (shielded) |
| Number of inputs | 2 |
| Sensor types (RTD) that can be used | Pt 100, Pt 1000 |
| Sensor types that can be used (TC) | B, E, J, K, N, R, S, T |
| Digital outputs | |
| Number of outputs | 4 |
| Description of the outputs | PNP outputs |
| Nominal output voltage | 24 V DC |
| Maximum output current per channel | 0.5 A |
| Maximum output current per module / terminal block | 2 A |
| Maximum switching voltage | 24 V DC |
| Minimum switching voltage | 0.8 V DC |
| General data | |
| Connection method | Screw connection |
| Ambient temperature (operation) | 0°C ... 60°C |

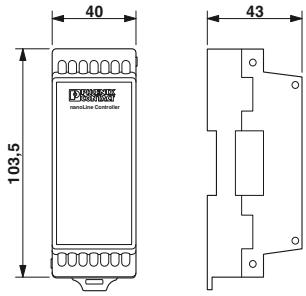
### Ordering data

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Nanoline controllers,** I/O extension module | | | |
| - 2 temperature inputs, 4 PNP outputs | **NLC-IO-2RTD/UTH-4QTP-01A** | **2701671** | 1 |

## Digital I/O extension module for NLC-035 and NLC-040 logic modules

You can extend your Nanoline with an additional I/O extension module. Extension modules provide additional inputs and outputs beyond what is available on the logic module.

- The NLC-IOX is only compatible with the NLC-035 and NLC-040
- One module can be added to the right side of a logic module
- Automatically recognized by nanoNavigator



Digital I/O extension module

| | Technical data |
|---|---|
| Power supply for module electronics | |
| Supply voltage | 24 V DC |
| Digital inputs | |
| Maximum number of inputs | 4 |
| Description of the inputs | PNP |
| Digital outputs | |
| Number of outputs | 2 |
| Description of the outputs | Relay output |
| Maximum output current per channel | 5 A |
| Maximum output current per module / terminal block | 10 A |

**Ordering data**

| Description | Type | Order No. | Pcs. / Pkt. |
|---|---|---|---|
| **Nanoline controllers,** I/O extension module | | | |
| - 4 digital inputs, 2 relay outputs | **NLC-IOX-041-02QRD-05A** | **2702032** | 1 |

| Type | Order No. | Page |
|---|---|---|
| **1** | | |
| 10,4" DISPLAY PROTECTIVE FOIL | 2701376 | 419 |
| 12,1" DISPLAY PROTECTIVE FOIL | 2701377 | 419 |
| 15,1" DISPLAY PROTECTIVE FOIL | 2701378 | 419 |
| **2** | | |
| 2 GB USB STICK | 2701382 | 418 |
| **7** | | |
| 7" DISPLAY PROTECTIVE FOIL | 2701374 | 418 |
| **A** | | |
| A-EXB-20-66L-N-S | 1411117 | 237 |
| A-EXB-20-66L-S-S | 1411118 | 237 |
| A-EXB-25-66L-N-S | 1411120 | 237 |
| A-EXB-25-66L-S-S | 1411121 | 237 |
| A-EXSH-M20-68L-N-S | 1411104 | 236 |
| A-EXSH-M20-68L-S-S | 1411105 | 236 |
| A-EXSH-M25-68L-N-S | 1411107 | 236 |
| A-EXSH-M25-68L-S-S | 1411108 | 236 |
| A-EXSH-M32-68L-N-S | 1411109 | 236 |
| A-EXSH-M32-68L-S-S | 1411110 | 236 |
| A-EXSH-M40-68L-N-S | 1411111 | 236 |
| A-EXSH-M40-68L-S-S | 1411112 | 236 |
| A-EXSH-M50-68L-N-S | 1411113 | 236 |
| A-EXSH-M50-68L-S-S | 1411114 | 236 |
| A-EXSH-M63-68L-N-S | 1411115 | 236 |
| A-EXSH-M63-68L-S-S | 1411116 | 236 |
| A-INL-M12-N-S | 1411240 | 229 |
| A-INL-M12-P-BK | 1411213 | 225 |
| A-INL-M12-P-GY | 1411205 | 224 |
| A-INL-M16-N-S | 1411241 | 229 |
| A-INL-M16-P-BK | 1411214 | 225 |
| A-INL-M16-P-GY | 1411206 | 224 |
| A-INL-M20-N-S | 1411242 | 229 |
| A-INL-M20-P-BK | 1411215 | 225 |
| A-INL-M20-P-GY | 1411207 | 224 |
| A-INL-M20-S-S | 1411249 | 238 |
| A-INL-M25-N-S | 1411243 | 229 |
| A-INL-M25-P-BK | 1411216 | 225 |
| A-INL-M25-P-GY | 1411208 | 224 |
| A-INL-M25-S-S | 1411250 | 238 |
| A-INL-M32-N-S | 1411244 | 229 |
| A-INL-M32-P-BK | 1411217 | 225 |
| A-INL-M32-P-GY | 1411209 | 224 |
| A-INL-M32-S-S | 1411251 | 238 |
| A-INL-M40-N-S | 1411246 | 229 |
| A-INL-M40-P-BK | 1411218 | 225 |
| A-INL-M40-P-GY | 1411210 | 224 |
| A-INL-M40-S-S | 1411252 | 238 |
| A-INL-M50-N-S | 1411247 | 229 |
| A-INL-M50-P-BK | 1411219 | 225 |
| A-INL-M50-P-GY | 1411211 | 224 |
| A-INL-M50-S-S | 1411253 | 238 |
| A-INL-M63-N-S | 1411248 | 229 |
| A-INL-M63-P-BK | 1411220 | 225 |
| A-INL-M63-P-GY | 1411212 | 224 |
| A-INL-M63-S-S | 1411254 | 238 |
| A-INL-NPT1-P-BK | 1411239 | 228 |
| A-INL-NPT1-P-GY | 1411235 | 227 |
| A-INL-NPT1/2-P-BK | 1411237 | 228 |
| A-INL-NPT1/2-P-GY | 1411233 | 227 |
| A-INL-NPT3/4-P-BK | 1411238 | 228 |
| A-INL-NPT3/4-P-GY | 1411234 | 227 |
| A-INL-NPT3/8-P-BK | 1411236 | 228 |
| A-INL-NPT3/8-P-GY | 1411231 | 227 |
| A-INL-PG11-N-S | 1411257 | 230 |
| A-INL-PG11-P-GY | 1411223 | 226 |
| A-INL-PG13,5-N-S | 1411259 | 230 |
| A-INL-PG13,5-P-GY | 1411224 | 226 |
| A-INL-PG16-N-S | 1411260 | 230 |
| A-INL-PG16-P-GY | 1411225 | 226 |
| A-INL-PG21-N-S | 1411262 | 230 |
| A-INL-PG21-P-GY | 1411226 | 226 |
| A-INL-PG29-N-S | 1411263 | 230 |
| A-INL-PG29-P-GY | 1411227 | 226 |
| A-INL-PG36-N-S | 1411264 | 230 |
| A-INL-PG36-P-GY | 1411228 | 226 |
| A-INL-PG42-N-S | 1411265 | 230 |
| A-INL-PG42-P-GY | 1411229 | 226 |
| A-INL-PG48-N-S | 1411266 | 230 |
| A-INL-PG48-P-GY | 1411230 | 226 |
| A-INL-PG7-N-S | 1411255 | 230 |
| A-INL-PG7-P-GY | 1411221 | 226 |
| A-INL-PG9-N-S | 1411256 | 230 |
| A-INL-PG9-P-GY | 1411222 | 226 |
| A-INLE-M12-N-S | 1411267 | 232 |
| A-INLE-M16-N-S | 1411268 | 232 |
| A-INLE-M20-N-S | 1411269 | 232 |
| A-INLE-M25-N-S | 1411270 | 232 |
| A-INLE-M32-N-S | 1411271 | 232 |
| A-INLE-M40-N-S | 1411272 | 232 |
| A-INLE-M50-N-S | 1411273 | 232 |
| A-INLE-M63-N-S | 1411274 | 232 |
| A-INLE-PG11-N-S | 1411277 | 233 |
| A-INLE-PG13,5-N-S | 1411278 | 233 |
| A-INLE-PG16-N-S | 1411279 | 233 |
| A-INLE-PG21-N-S | 1411280 | 233 |
| A-INLE-PG29-N-S | 1411281 | 233 |
| A-INLE-PG36-N-S | 1411282 | 233 |
| A-INLE-PG7-N-S | 1411275 | 233 |
| A-INLE-PG9-N-S | 1411276 | 233 |
| A-SEW-20-P-W | 1411283 | 238 |
| A-SEW-25-P-W | 1411284 | 238 |
| A-SEW-32-P-W | 1411285 | 238 |
| A-SEW-40-P-W | 1411286 | 238 |
| A-SEW-50-P-W | 1411287 | 238 |
| A-SEW-63-P-W | 1411288 | 238 |
| AI 1,0-8 RD-S | 1212523 | 294 |
| AI 1,0-8 YE-S | 1212782 | 294 |
| AI 1,5-8 BK-S | 1212524 | 295 |
| AI 1,5-8 RD-S | 1212781 | 295 |
| ALU-SB | 1404531 | 195 |
| AP RSC-T | 3059139 | 101 |
| AP-FTP METER | 3069899 | 101 |
| AP-ME METER | 3034361 | 101 |
| APH-ME | 3034374 | 101 |
| APH-UTWE 6-2 | 3069057 | 101 |
| APT-ME | 3034358 | 93 |
| ATP-QTC QUATTRO | 3206225 | 173 |
| ATP-QTC TWIN | 3206212 | 172 |
| ATP-ST QUATTRO | 3030815 | 157 |
| ATP-ST-TWIN | 3030789 | 156 |
| ATP-STTB 4 | 3030747 | 157 |
| ATP-UK | 3003224 | 170 |
| ATP-UT-TWIN | 3047183 | 162 |
| AXL BS BK | 2701422 | 408 |
| AXL F AI4 I 1H | 2688491 | 412 |
| AXL F AI4 U 1H | 2688501 | 411 |
| AXL F AO4 1H | 2688527 | 413 |
| AXL F BK PN | 2701815 | 409 |
| AXL F BK S3 | 2701686 | 408 |
| AXL F BS H | 2700992 | 410 |
| AXL F DI8/1 DO8/1 1H | 2701916 | 410 |
| AXL F PSDI8/4 1F | 2701559 | 404 |
| AXL F PSDO8/3 1F | 2701560 | 405 |
| AXL F RTD4 1H | 2688556 | 414 |
| AXL F UTH4 1H | 2688598 | 415 |
| AXL SHIELD SET | 2700518 | 411 |
| **B** | | |
| BATTERY MOUNTING CASE | 2320458 | 320 |
| BL BPC 2000 | 2701712 | 420 |
| BL BPC 2001 | 2701711 | 420 |
| BL BPC 3000 | 2400082 | 421 |
| BL BPC 3001 | 2400080 | 421 |
| BL BPC 7000 | 2400083 | 421 |
| BL BPC 7001 | 2400081 | 421 |
| BL PPC 1000 | 2701401 | 422 |
| BL PPC 3000 | 2701397 | 423 |
| BL PPC 7000 | 2701398 | 423 |
| BL PPC12 1000 | 2701336 | 422 |
| BL PPC15 1000 | 2701338 | 422 |
| BL PPC15 3000 | 2701393 | 423 |
| BL PPC15 7000 | 2701395 | 423 |
| BL PPC17 1000 | 2701337 | 422 |
| BL PPC17 3000 | 2701394 | 423 |
| BL PPC17 7000 | 2701396 | 423 |
| **C** | | |
| C-FCI 1,5/M3 | 3240032 | 96 |
| C-FCI 2,5/M3 | 3240037 | 96 |
| C-RCI 1,5/M3 | 3240016 | 96 |
| C-RCI 2,5/M3 | 3240021 | 96 |
| CAB-USB A/MICRO USB B/2,0M | 2701626 | 358 |
| CABLE-USB/MINI-USB-3,0M | 2986135 | 394 |
| CARRIER-EMP (27X15) | 0827451 | 254 |
| CARRIER-EMP (49X15) | 0827452 | 254 |
| CARRIER-EMP (60X15) | 0827453 | 254 |
| CARRIER-EMP (60X30) | 0827454 | 254 |
| CARRIER-EMP (85,6X54) | 0829365 | 254 |
| CARRIER-EMP 22 (27X15) | 0827447 | 254 |
| CARRIER-EMP 22 (27X18) | 0827448 | 254 |
| CARRIER-PMP (108X38) | 0830958 | 285 |
| CB RC BRIDGE | 2801616 | 321 |
| CB S-BE | 2905067 | 321 |
| CES-B16-8XSRC-BK | 1411073 | 222 |
| CES-B24-10XSRC-BK | 1411074 | 222 |
| CES-SFFS-H | 0801728 | 222 |
| CF CRIMPHANDY 1,0 | 1212465 | 294 |
| CF CRIMPHANDY 1,5 | 1212466 | 295 |
| CF CRIMPHANDY/ACCU | 1212518 | 294 |
| CF CRIMPHANDY/CHARGER | 1212519 | 294 |
| CK2,5-ED-0,50BU AG | 1663640 | 199 |
| CK2,5-ED-0,50BU AU | 1674859 | 199 |
| CK2,5-ED-0,50ST AG | 1663572 | 199 |
| CK2,5-ED-0,50ST AU | 1674804 | 199 |
| CK2,5-ED-0,75BU AG | 1663653 | 199 |
| CK2,5-ED-0,75ST AG | 1663585 | 199 |
| CK2,5-ED-1,00BU AG | 1663666 | 199 |
| CK2,5-ED-1,00BU AU | 1674833 | 199 |
| CK2,5-ED-1,00ST AG | 1663598 | 199 |
| CK2,5-ED-1,00ST AU | 1674781 | 199 |
| CK2,5-ED-1,50BU AG | 1663679 | 199 |
| CK2,5-ED-1,50BU AU | 1674820 | 199 |
| CK2,5-ED-1,50ST AG | 1663608 | 199 |
| CK2,5-ED-1,50ST AU | 1674778 | 199 |
| CK2,5-ED-2,50BU AG | 1663682 | 199 |
| CK2,5-ED-2,50BU AU | 1674862 | 199 |
| CK2,5-ED-2,50ST AG | 1663611 | 199 |
| CK2,5-ED-2,50ST AU | 1674817 | 199 |
| CK2,5-ED-4,00BU AG | 1663705 | 199 |
| CK2,5-ED-4,00BU AU | 1674846 | 199 |
| CK2,5-ED-4,00ST AG | 1663637 | 199 |
| CK2,5-ED-4,00ST AU | 1674794 | 199 |
| CK2,5-M-2,5 AG | 1409207 | 77 |
| CK2,5-M-4 AG | 1409208 | 77 |
| CK2,5-M-6 AG | 1409209 | 77 |
| CLIP-PROJECT ADVANCED | 5146040 | 291 |
| CLIP-PROJECT PROFESSIONAL | 5146053 | 291 |
| CP-DMC 1,5-THR NAT | 1790647 | 35 |
| CP-HC-S | 1410916 | 221 |
| CP-QPD | 1582459 | 195 |
| CP-QPD 5X2,5 | 1404530 | 195 |
| CRIMPFOX 10S CUS | 1212764 | 301 |
| CRIMPFOX 25R CUS | 1212765 | 299 |
| CRIMPFOX 50R CUS | 1212766 | 299 |
| CRIMPFOX 6 CUS | 1212767 | 299 |
| CRIMPFOX 6H CUS | 1212768 | 301 |
| CRIMPFOX 6S-F CUS | 1212769 | 299 |
| CRIMPFOX 6T CUS | 1212770 | 299 |
| CRIMPFOX 6T-F CUS | 1212771 | 299 |
| CRIMPFOX-1,6/2,5-ED-4,0 | 1687419 | 185 |
| CRIMPFOX-RC 10 CUS | 1212776 | 301 |
| CRIMPFOX-RC 2,5 CUS | 1212777 | 299 |
| CRIMPFOX-RC 25 CUS | 1212778 | 301 |
| CRIMPFOX-RCI 1 CUS | 1212772 | 299 |
| CRIMPFOX-RCI 2,5 CUS | 1212773 | 299 |
| CRIMPFOX-RCI 6 CUS | 1212774 | 299 |
| CRIMPFOX-RCI 6-1 CUS | 1212775 | 299 |
| CRIMPFOX-SC 1,5 CUS | 1212779 | 299 |
| CRIMPFOX-SC 6 CUS | 1212780 | 301 |
| CSMA-LAMBDA/4-2.0-BS-SET | 2800491 | 394 |
| CUC-IND-C1ZNI-B/R4QE8 | 1406336 | 44 |
| CUC-IND-C1ZNI-B/R4QE8:30 | 1406354 | 44 |
| CUC-IND-C1ZNI-B/R4QP8 | 1406337 | 44 |
| CUC-IND-C1ZNI-B/R4QP8:30 | 1406355 | 44 |
| CUC-IND-C1ZNI-S/R4QE8 | 1406333 | 44 |
| CUC-IND-C1ZNI-S/R4QE8:30 | 1406351 | 44 |
| CUC-IND-C1ZNI-S/R4QP8 | 1406334 | 44 |
| CUC-IND-C1ZNI-S/R4QP8:30 | 1406352 | 44 |
| CUC-IND-C1ZNI-T/R4QE8 | 1406339 | 45 |
| CUC-IND-C1ZNI-T/R4QE8:30 | 1406357 | 45 |
| CUC-IND-C1ZNI-T/R4QP8 | 1406340 | 45 |
| CUC-IND-C1ZNI-T/R4QP8:30 | 1406358 | 45 |
| CUC-PP-FRAME-19 | 1407986 | 50 |
| CUC-PP-FRAME-19 BK | 1409140 | 50 |
| CUC-PP-MODUL-COVER | 1407988 | 50 |
| CUC-PP-MODUL-RJ45:6-RJ45:6/... | 1407995 | 50 |
| CUC-PP-PATCHBAY | 1407994 | 50 |
| CUC-PP-PATCHBAY-MH | 1409283 | 50 |
| CUC-PP-PATCHBAY-MH BK | 1409284 | 50 |
| CUC-V14-C1ZNI-B/R4IE8 | 1408011 | 47 |
| CUC-V14-C1ZNI-B/R4IE8:10 | 1467804 | 47 |
| CUC-V14-C1ZNI-B/R4IP8 | 1407895 | 47 |
| CUC-V14-C1ZNI-B/R4IP8:10 | 1408046 | 47 |
| CUC-V14-C1ZNI-B/SJFG:10 | 1408056 | 49 |
| CUC-V14-C1ZNI-S/R4IE8 | 1407890 | 46 |
| CUC-V14-C1ZNI-S/R4IE8:10 | 1467901 | 46 |
| CUC-V14-C1ZNI-S/R4IP8 | 1407889 | 46 |
| CUC-V14-C1ZNI-S/R4IP8:10 | 1408039 | 46 |
| CUC-V14-C1ZNI-T/R4IE8 | 1468007 | 46 |
| CUC-V14-C1ZNI-T/R4IE8:10 | 1467807 | 46 |
| CUC-V14-C1ZNI-T/R4IP8 | 1408027 | 46 |
| CUC-V14-C1ZNI-T/R4IP8:10 | 1408092 | 46 |
| CUC-V14-C1ZNI-T/SJFG:10 | 1408095 | 48 |
| CUTFOX-ES | 1212621 | 222 |
| **D** | | |
| D-PT 1,5/S-MT-0,8 | 3210303 | 156 |
| D-PT 1,5/S-MT-0,8 OG | 3210304 | 156 |
| D-PT 1,5/S-QUATTRO-MT-0,8 | 3210333 | 157 |
| D-PT 1,5/S-QUATTRO-MT-0,8 OG | 3210334 | 157 |
| D-PT 1,5/S-TWIN-MT-0,8 | 3210313 | 157 |
| D-PT 1,5/S-TWIN-MT-0,8 OG | 3210314 | 157 |
| D-PTT 1,5/S-2MT-0,8 | 3210353 | 157 |
| D-PTT 1,5/S-2MT-0,8 OG | 3210354 | 157 |
| D-PTT 2,5-2MT-0,8 | 3210300 | 158 |
| D-PTT 2,5-2MT-0,8 OG | 3210299 | 158 |
| D-PTTBS 2,5-2MTB | 3210404 | 160 |
| D-QTC 2,5-QUATTRO | 3206449 | 173 |
| D-QTCU 2,5-TWIN-MT | 3050511 | 172 |
| D-UK 4-SD | 3246862 | 170 |
| D-UTT 2,5/4 | 3044676 | 164 |
| DL PPC15M 7000 | 2400017 | 426 |
| DL PPC18.5M 7000 | 2400015 | 427 |
| DL PPC21.5M 7000 | 2400016 | 427 |
| DMET 5X20 | 3032075 | 168 |
| DP-UTT 2,5/4 | 3044677 | 164 |

| Type | Order No. | Page |
|---|---|---|
| DS-QTC 2,5 | 3206607 | 173 |
| DT-TELE-SHDSL | 2801593 | 314 |

## E

| Type | Order No. | Page |
|---|---|---|
| EB 2- 6 | 0201155 | 170 |
| EB 3- 6 | 0201142 | 170 |
| EB 10- 6 | 0201139 | 170 |
| EL PPC12 1000/WT | 2400066 | 425 |
| EL PPC15 1000/WT | 2400067 | 425 |
| EL PPC7 1000/WT | 2400065 | 424 |
| EM-PB-GATEWAY-IFS | 2297620 | 358 |
| EML (100X40)R-EX | 0803258 | 277 |
| EML (100X40)R-EX CUS | 0803268 | 277 |
| EML (100X73)R-EX | 0803259 | 277 |
| EML (100X73)R-EX CUS | 0803269 | 277 |
| EML (100X90)R-EX | 0803260 | 277 |
| EML (100X90)R-EX CUS | 0803270 | 277 |
| EML (10X4)R-EX | 0803251 | 277 |
| EML (10X4)R-EX CUS | 0803261 | 277 |
| EML (15X9)R-EX | 0803253 | 277 |
| EML (15X9)R-EX CUS | 0803262 | 277 |
| EML (20X8)R-EX | 0803254 | 277 |
| EML (20X8)R-EX CUS | 0803263 | 277 |
| EML (30X20)R-EX | 0803255 | 277 |
| EML (30X20)R-EX CUS | 0803264 | 277 |
| EML (40X25)R-EX | 0803256 | 277 |
| EML (40X25)R-EX CUS | 0803266 | 277 |
| EML (70X50)R-EX | 0803257 | 277 |
| EML (70X50)R-EX CUS | 0803267 | 277 |
| EMLP (13X9)R | 0819453 | 195 |
| EMT (25X6)R | 0817264 | 272 |
| EMT (29X8)R | 0817277 | 273 |
| EMT (40X17)R | 0817293 | 273 |
| EMT (60X15)R | 0801846 | 273 |
| EV-GBM4C-DC60A-5,0M16ESBK00 | 1621468 | 85 |
| EV-ICCPD-T1C-EU-S-13A1-A-GEN2 | 1621797 | 83 |
| EV-ICCPD-T2C-EU-S-13A1-A | 1621516 | 83 |
| EV-T1L2C-1AC16A-4,0M14ASBK00 | 1621484 | 80 |
| EV-T1L2C-1AC30A-4,0M10ASBK00 | 1409949 | 80 |
| EV-T1L2CC-DC125A-5,0M1ASBK00 | 1409950 | 84 |
| EV-T1L2CC-DC200A-5,0M00ASBK00 | 1621489 | 84 |
| EV-T1L2CC-DC60A-5,0M6ASBK00 | 1621488 | 84 |
| EV-T1M3C-1AC20A-4,0M2,5EHBK00 | 1621670 | 80 |
| EV-T1M3C-1AC32A-4,0M6,0EHBK00 | 1621794 | 80 |
| EV-T2M3C-1AC20A-4,0M2,5ESBK00 | 1409319 | 81 |
| EV-T2M3C-1AC32A-4,0M6,0ESBK00 | 1405198 | 81 |
| EV-T2M3C-3AC20A-4,0M2,5ESBK00 | 1409320 | 81 |
| EV-T2M3C-3AC32A-4,0M6,0ESBK00 | 1405199 | 81 |
| EV-T2M3PC-1AC20A-4,0M2,5ESBK001405193 | | 82 |
| EV-T2M3PC-3AC32A-4,0M6,0ESBK001404569 | | 82 |
| EV-T2M4CC-DC125A-5,0M50ESBK001409060 | | 84 |
| EV-T2M4CC-DC200A-5,0M70ESBK001621653 | | 84 |
| EV-T2M4CC-DC60A-4,5M16ESBK00 | 1618306 | 84 |
| EV-TAM3PC-1AC20A-4,0M2,5ESBK001621481 | | 82 |
| EV-TAM3PC-1AC32A-4,0M6,0ESBK001410090 | | 82 |

## F

| Type | Order No. | Page |
|---|---|---|
| FB-12SP | 2316310 | 399 |
| FB-6SP | 2316307 | 399 |
| FBP-2/10 | 3069881 | 98 |
| FBP-2/12 | 3069883 | 98 |
| FBP-2/14 | 3069885 | 98 |
| FBP-2/15 | 3069886 | 98 |
| FBP-2/17 | 3069888 | 98 |
| FBP-2/19 | 3069890 | 98 |
| FBP-2/20 | 3069891 | 98 |
| FBP-2/21 | 3069892 | 98 |
| FBP-2/22 | 3069893 | 98 |
| FBP-2/25 | 3069896 | 98 |
| FBP-2/4 | 3069875 | 98 |
| FBP-2/5 | 3069876 | 98 |
| FBP-2/9 | 3069880 | 98 |
| FBP-2/A14 | 3069500 | 109 |
| FBP-2/A7 | 3069497 | 103 |
| FBP-2/B14 | 3069501 | 111 |
| FBP-2/B19 | 3069503 | 115 |
| FBP-2/B7 | 3069498 | 105 |
| FBP-2/C14 | 3069502 | 113 |
| FBP-2/C19 | 3069504 | 117 |
| FBP-2/D19 | 3069671 | 119 |
| FBP-2/E7 | 3069499 | 107 |
| FBP-2/F19 | 3069675 | 121 |
| FBP-2/G19 | 3069676 | 123 |
| FBP-2/H19 | 3069677 | 125 |
| FBP-2/I19 | 3069678 | 127 |
| FBS 1/3-8 | 3032363 | 101 |
| FBS 1/3/5-8 | 3032389 | 101 |
| FBS 1/4-8 | 3032376 | 101 |
| FBS 1/4/7/10-8 | 3032402 | 101 |
| FBS 2-5 | 3030161 | 160 |
| FBS 2-6 | 3030336 | 166 |
| FBS 2-8 | 3030284 | 100 |
| FBS 3-5 | 3030174 | 160 |
| FBS 3-6 | 3030242 | 166 |
| FBS 3-8 | 3030297 | 100 |
| FBS 4-5 | 3030187 | 160 |
| FBS 4-6 | 3030255 | 166 |
| FBS 4-8 | 3030307 | 100 |
| FBS 5-5 | 3030190 | 160 |
| FBS 5-6 | 3030349 | 166 |
| FBS 5-8 | 3030310 | 100 |
| FBS 6-8 | 3032470 | 100 |
| FBS 10-3,5 | 3213056 | 156 |
| FBS 10-5 | 3030213 | 160 |
| FBS 10-6 | 3030271 | 166 |
| FBS 10-8 | 3030323 | 100 |
| FBS 2-18 | 2801068 | 306 |
| FBS 2-3,5 | 3213014 | 156 |
| FBS 20-3,5 | 3213069 | 156 |
| FBS 20-5 | 3030226 | 160 |
| FBS 20-6 | 3030365 | 166 |
| FBS 3-3,5 | 3213027 | 156 |
| FBS 4-3,5 | 3213030 | 156 |
| FBS 5-3,5 | 3213043 | 156 |
| FBS-PV | 3032185 | 160 |
| FBSR 16-8 | 3033816 | 100 |
| FBSRH 2-8 | 3033802 | 100 |
| FBSRH 3-8 | 3033803 | 100 |
| FBSRH 4-8 | 3033804 | 100 |
| FL CAT5 PATCH 3,0 | 2832292 | 391 |
| FL COMSERVER BAS 232/422/485-T | 2904681 | 391 |
| FL COMSERVER UNI 232/422/485-T | 2904817 | 391 |
| FL MC 2000E SM40 LC | 2891156 | 389 |
| FL MC 2000T SC | 2891315 | 388 |
| FL MC 2000T SM20 SC | 2891317 | 389 |
| FL MC 2000T SM40 SC | 2891318 | 389 |
| FL MC 2000T ST | 2891316 | 388 |
| FL MEM PLUG | 2891259 | 379 |
| FL MEM PLUG/MRM | 2891275 | 379 |
| FL RED 2001E PRP 2LC | 2701864 | 382 |
| FL RED 2003E PRP | 2701863 | 382 |
| FL SFP FX | 2891081 | 386 |
| FL SFP FX SM | 2891082 | 386 |
| FL SWITCH 1708 M12 POE | 2701883 | 376 |
| FL SWITCH 3012E-2SFX | 2891067 | 383 |
| FL SWITCH 3016E | 2891066 | 383 |
| FL SWITCH 4800E-P1 | 2891075 | 384 |
| FL SWITCH 4800E-P5 | 2891076 | 384 |
| FL SWITCH 4808E-16FX LC-4GC | 2891073 | 385 |
| FL SWITCH 4808E-16FX SM LC-4GC | 2891074 | 385 |
| FL SWITCH 4808E-16FX SM-4GC | 2891080 | 385 |
| FL SWITCH 4808E-16FX-4GC | 2891079 | 385 |
| FL SWITCH 4824E-4GC | 2891072 | 384 |
| FL SWITCH 7005/FX-2FXSM-EIP | 2701420 | 381 |
| FL SWITCH 7006/2FX-EIP | 2701419 | 381 |
| FL SWITCH 7008-EIP | 2701418 | 380 |
| FL SWITCH LM 8TX-B | 2989446 | 378 |
| FL SWITCH SMN 8TX-PN | 2989501 | 379 |
| FL WLAN 5102 | 2701850 | 387 |
| FL-PP-RJ45-SCC/SC041 | 2903532 | 392 |
| FL-PP-RJ45-SCC/SC045 | 2904577 | 392 |
| FL-PP-RJ45/RJ45-B | 2904933 | 392 |
| FOC-V14-C1ZNI-B/SJFG | 1407905 | 49 |
| FOC-V14-C1ZNI-B/SJFH | 1407904 | 49 |
| FOC-V14-C1ZNI-B/SJFH:10 | 1408055 | 49 |
| FOC-V14-C1ZNI-B/SJFP | 1407902 | 49 |
| FOC-V14-C1ZNI-B/SJFP:10 | 1408053 | 49 |
| FOC-V14-C1ZNI-S/SJFG | 1407898 | 48 |
| FOC-V14-C1ZNI-S/SJFG:10 | 1408049 | 48 |
| FOC-V14-C1ZNI-S/SJFH | 1407897 | 48 |
| FOC-V14-C1ZNI-S/SJFH:10 | 1408048 | 48 |
| FOC-V14-C1ZNI-S/SJFP | 1407896 | 48 |
| FOC-V14-C1ZNI-S/SJFP:10 | 1408047 | 48 |
| FOC-V14-C1ZNI-T/SJFG | 1408030 | 48 |
| FOC-V14-C1ZNI-T/SJFH | 1408029 | 48 |
| FOC-V14-C1ZNI-T/SJFH:10 | 1408094 | 48 |
| FOC-V14-C1ZNI-T/SJFP | 1408028 | 48 |
| FOC-V14-C1ZNI-T/SJFP:10 | 1408093 | 48 |
| FT NUT M25 BK | 1457937 | 77 |
| FTP-2/1 | 3069469 | 103 |
| FTP-2/10 | 3001712 | 96 |
| FTP-2/12 | 3001714 | 96 |
| FTP-2/14 | 3001716 | 96 |
| FTP-2/15 | 3001717 | 96 |
| FTP-2/17 | 3001720 | 96 |
| FTP-2/19 | 3001723 | 96 |
| FTP-2/20 | 3001724 | 96 |
| FTP-2/21 | 3001725 | 96 |
| FTP-2/22 | 3001726 | 96 |
| FTP-2/25 | 3001729 | 96 |
| FTP-2/4 | 3001706 | 96 |
| FTP-2/5 | 3001707 | 96 |
| FTP-2/9 | 3001711 | 96 |
| FTP-2/A14 | 3069474 | 109 |
| FTP-2/A7 | 3069470 | 103 |
| FTP-2/B14 | 3069475 | 111 |
| FTP-2/B19 | 3069477 | 115 |
| FTP-2/B7 | 3069471 | 105 |
| FTP-2/C14 | 3069476 | 113 |
| FTP-2/C19 | 3069478 | 117 |
| FTP-2/D19 | 3069479 | 119 |
| FTP-2/E7 | 3069472 | 107 |
| FTP-2/F19 | 3069480 | 121 |
| FTP-2/G19 | 3069481 | 123 |
| FTP-2/H19 | 3069482 | 125 |
| FTP-2/I19 | 3069483 | 127 |
| FTPR-2/10 | 3001688 | 96 |
| FTPR-2/12 | 3001690 | 96 |
| FTPR-2/14 | 3001692 | 96 |
| FTPR-2/15 | 3001693 | 96 |
| FTPR-2/17 | 3001696 | 96 |
| FTPR-2/19 | 3001698 | 96 |
| FTPR-2/20 | 3001699 | 96 |
| FTPR-2/21 | 3001700 | 96 |
| FTPR-2/22 | 3001701 | 96 |
| FTPR-2/25 | 3001704 | 96 |
| FTPR-2/4 | 3001681 | 96 |
| FTPR-2/5 | 3001683 | 96 |
| FTPR-2/9 | 3001687 | 96 |
| FTPR-2/A14 | 3069487 | 109 |
| FTPR-2/A7 | 3069484 | 103 |
| FTPR-2/B14 | 3069488 | 111 |
| FTPR-2/B19 | 3069490 | 115 |
| FTPR-2/B7 | 3069485 | 105 |
| FTPR-2/C14 | 3069489 | 113 |
| FTPR-2/C19 | 3069491 | 117 |
| FTPR-2/D19 | 3069492 | 119 |
| FTPR-2/E7 | 3069486 | 107 |
| FTPR-2/F19 | 3069493 | 121 |
| FTPR-2/G19 | 3069494 | 123 |
| FTPR-2/H19 | 3069495 | 125 |
| FTPR-2/I19 | 3069496 | 127 |

## G

| Type | Order No. | Page |
|---|---|---|
| G-EDSWU-M20-M66L-STES-S | 1411091 | 235 |
| G-EDSWU-M20S-S66L-STES-S | 1411089 | 235 |
| G-EDSWU-M25-M66L-STES-S | 1411093 | 235 |
| G-EDSWU-M32-L66L-STES-S | 1411095 | 235 |
| G-EDSWU-M40-L66L-STES-S | 1411099 | 235 |
| G-EDSWU-M50-L66L-STES-S | 1411101 | 235 |
| G-EDSWU-M63-L66L-STES-S | 1411103 | 235 |
| G-ESS-M20-S66L-NTES-S | 1411075 | 234 |
| G-ESS-M20-S66L-STES-S | 1411076 | 234 |
| G-ESS-M25-M66L-NTES-S | 1411077 | 234 |
| G-ESS-M25-M66L-STES-S | 1411078 | 234 |
| G-ESS-M32-M66L-NTES-S | 1411079 | 234 |
| G-ESS-M32-M66L-STES-S | 1411080 | 234 |
| G-ESS-M40-L66L-NTES-S | 1411081 | 234 |
| G-ESS-M40-L66L-STES-S | 1411082 | 234 |
| G-ESS-M50-L66L-NTES-S | 1411084 | 234 |
| G-ESS-M50-L66L-STES-S | 1411085 | 234 |
| G-ESS-M63-L66L-NTES-S | 1411086 | 234 |
| G-ESS-M63-L66L-STES-S | 1411087 | 234 |
| G-ESSWU-M20-M66L-NTES-S | 1411090 | 235 |
| G-ESSWU-M20S-S66L-NTES-S | 1411088 | 235 |
| G-ESSWU-M25-M66L-NTES-S | 1411092 | 235 |
| G-ESSWU-M32-L66L-NTES-S | 1411094 | 235 |
| G-ESSWU-M40-L66L-NTES-S | 1411097 | 235 |
| G-ESSWU-M50-L66L-NTES-S | 1411100 | 235 |
| G-ESSWU-M63-L66L-NTES-S | 1411102 | 235 |
| G-INS-M12-S68N-NNES-S | 1411160 | 229 |
| G-INS-M12-S68N-PNES-BK | 1411131 | 225 |
| G-INS-M12-S68N-PNES-GY | 1411123 | 224 |
| G-INS-M16-S68N-NNES-S | 1411162 | 229 |
| G-INS-M16-S68N-PNES-BK | 1411132 | 225 |
| G-INS-M16-S68N-PNES-GY | 1411124 | 224 |
| G-INS-M20-S68N-NNES-S | 1411163 | 229 |
| G-INS-M20-S68N-PNES-BK | 1411133 | 225 |
| G-INS-M20-S68N-PNES-GY | 1411125 | 224 |
| G-INS-M25-M68N-NNES-S | 1411165 | 229 |
| G-INS-M25-M68N-PNES-BK | 1411134 | 225 |
| G-INS-M25-M68N-PNES-GY | 1411126 | 224 |
| G-INS-M32-M68N-NNES-S | 1411166 | 229 |
| G-INS-M32-M68N-PNES-BK | 1411136 | 225 |
| G-INS-M32-M68N-PNES-GY | 1411127 | 224 |
| G-INS-M40-M68N-NNES-S | 1411167 | 229 |
| G-INS-M40-M68N-PNES-BK | 1411137 | 225 |
| G-INS-M40-M68N-PNES-GY | 1411128 | 224 |
| G-INS-M50-L68L-PNES-BK | 1411138 | 225 |
| G-INS-M50-L68L-PNES-GY | 1411129 | 224 |
| G-INS-M50-L68N-NNES-S | 1411168 | 229 |
| G-INS-M63-L68L-PNES-BK | 1411139 | 225 |
| G-INS-M63-L68L-PNES-GY | 1411130 | 224 |
| G-INS-M63-L68N-NNES-S | 1411169 | 229 |
| G-INS-N1-M68L-PNES-BK | 1411159 | 228 |
| G-INS-N1-M68L-PNES-GY | 1411155 | 227 |
| G-INS-N1/2-S68L-PNES-BK | 1411157 | 228 |
| G-INS-N1/2-S68L-PNES-GY | 1411153 | 227 |
| G-INS-N3/4-M68L-PNES-BK | 1411158 | 228 |
| G-INS-N3/4-M68L-PNES-GY | 1411154 | 227 |
| G-INS-N3/8-S68L-PNES-BK | 1411156 | 228 |
| G-INS-N3/8-S68L-PNES-GY | 1411152 | 227 |
| G-INS-NPT1-M68L-NNES-S | 1411185 | 231 |
| G-INS-NPT1/2-S68L-NNES-S | 1411183 | 231 |
| G-INS-NPT3/4-M68L-NNES-S | 1411184 | 231 |
| G-INS-NPT3/8-S68L-NNES-S | 1411182 | 231 |
| G-INS-PG11-S68N-NNES-S | 1411172 | 230 |
| G-INS-PG11-S68N-PNES-GY | 1411142 | 226 |
| G-INS-PG13,5-S68N-NNES-S | 1411173 | 230 |
| G-INS-PG13,5-S68N-PNES-GY | 1411143 | 226 |
| G-INS-PG16-S68N-NNES-S | 1411174 | 230 |
| G-INS-PG16-S68N-PNES-GY | 1411144 | 226 |
| G-INS-PG21-M68N-NNES-S | 1411175 | 230 |
| G-INS-PG21-M68N-PNES-GY | 1411145 | 226 |
| G-INS-PG29-M68N-NNES-S | 1411176 | 230 |
| G-INS-PG29-M68N-PNES-GY | 1411146 | 226 |
| G-INS-PG36-L68N-NNES-S | 1411178 | 230 |
| G-INS-PG36-L68N-PNES-GY | 1411147 | 226 |
| G-INS-PG42-L68N-NNES-S | 1411179 | 230 |
| G-INS-PG42-L68N-PNES-GY | 1411149 | 226 |
| G-INS-PG48-L68N-NNES-S | 1411181 | 230 |
| G-INS-PG48-L68N-PNES-GY | 1411150 | 226 |
| G-INS-PG7-S68N-NNES-S | 1411170 | 230 |
| G-INS-PG7-S68N-PNES-GY | 1411140 | 226 |
| G-INS-PG9-S68N-NNES-S | 1411171 | 230 |
| G-INS-PG9-S68N-PNES-GY | 1411141 | 226 |
| G-INSEC-M12-S68N-NCRS-S | 1411187 | 232 |
| G-INSEC-M16-S68N-NCRS-S | 1411188 | 232 |

| Type | Order No. | Page |
|---|---|---|
| G-INSEC-M20-S68N-NCRS-S | 1411189 | 232 |
| G-INSEC-M25-S68N-NCRS-S | 1411190 | 232 |
| G-INSEC-M32-M68N-NCRS-S | 1411191 | 232 |
| G-INSEC-M40-M68N-NCRS-S | 1411192 | 232 |
| G-INSEC-M50-L68N-NCRS-S | 1411193 | 232 |
| G-INSEC-M63-L68N-NCRS-S | 1411194 | 232 |
| G-INSEC-PG11-S68N-NNES-S | 1411197 | 233 |
| G-INSEC-PG13,5-S68N-NNES-S | 1411198 | 233 |
| G-INSEC-PG16-S68N-NNES-S | 1411199 | 233 |
| G-INSEC-PG21-M68N-NNES-S | 1411200 | 233 |
| G-INSEC-PG29-M68N-NNES-S | 1411201 | 233 |
| G-INSEC-PG36-L68N-NNES-S | 1411202 | 233 |
| G-INSEC-PG42-L68N-NNES-S | 1411203 | 233 |
| G-INSEC-PG48-L68N-NNES-S | 1411204 | 233 |
| G-INSEC-PG7-S68N-NNES-S | 1411195 | 233 |
| G-INSEC-PG9-S68N-NNES-S | 1411196 | 233 |
| GPE 13X 9 WH | 0806932 | 195 |

## H

| Type | Order No. | Page |
|---|---|---|
| HC-B 6-FL-MDI | 1410929 | 221 |
| HC-B 10-FL-MDI | 1410932 | 221 |
| HC-B 16-FL-MDI | 1410945 | 221 |
| HC-B 24-FL-MDI | 1410958 | 221 |
| HC-B-G-M20-EC-AL | 1411439 | 204 |
| HC-B-G-M20-ER-AL | 1411442 | 218 |
| HC-B-G-M25-EC-AL | 1411446 | 204 |
| HC-B-G-M25-ER-AL | 1411443 | 218 |
| HC-B-G-M32-EC-AL | 1411440 | 204 |
| HC-B-G-M32-ER-AL | 1411444 | 218 |
| HC-B-G-M40-EC-AL | 1411441 | 204 |
| HC-B-G-M40-ER-AL | 1411445 | 218 |
| HC-B06-SG-CBK | 1411483 | 220 |
| HC-B06-SP-CBK | 1411477 | 220 |
| HC-B10-SG-CBK | 1411484 | 220 |
| HC-B10-SP-CBK | 1411479 | 220 |
| HC-B16-SG-CBK | 1411485 | 220 |
| HC-B16-SP-CBK | 1411480 | 220 |
| HC-B24-SG-CBK | 1411486 | 220 |
| HC-B24-SP-CBK | 1411482 | 220 |
| HC-BB10-I-CT-F | 1584703 | 199 |
| HC-BB10-I-CT-M | 1584774 | 199 |
| HC-BB18-I-CT-F | 1584729 | 199 |
| HC-BB18-I-CT-M | 1584716 | 199 |
| HC-BB32-I-CT-F | 1584745 | 199 |
| HC-BB32-I-CT-F 33-64 | 1406543 | 199 |
| HC-BB32-I-CT-M | 1584732 | 199 |
| HC-BB32-I-CT-M 33-64 | 1406544 | 199 |
| HC-BB46-I-CT-F | 1584758 | 199 |
| HC-BB46-I-CT-F 47-92 | 1406545 | 199 |
| HC-BB46-I-CT-M | 1584761 | 199 |
| HC-BB46-I-CT-M 47-92 | 1406546 | 199 |
| HC-D-G-M20-PLRBK | 1411350 | 196 |
| HC-D-G-M25-PLRBK | 1411351 | 196 |
| HC-D-TA-M25-PLRBK | 1411352 | 219 |
| HC-D-TA-NPT-3/4-PLR-BK | 1411354 | 219 |
| HC-D-TA-PG16-PLR-BK | 1411353 | 219 |
| HC-EVO-A10UT-BWS-HH-M20-PLRBK | 1411356 | 196 |
| HC-EVO-A10UT-BWSC-HH-M20-PLRBK | 1411357 | 196 |
| HC-EVO-A16UT-BWS-HH-M25-PLRBK | 1411358 | 197 |
| HC-EVO-A16UT-BWSC-HH-M25-PLRBK | 1411359 | 197 |
| HC-EVO-B06-CHWS-ELC-AL | 1411450 | 204 |
| HC-EVO-B06-HHFS-EL-AL | 1411447 | 204 |
| HC-EVO-B06-HLFS-EL-AL | 1411448 | 204 |
| HC-EVO-B06PT-BWSC-HL-M20ELC-AL | 1411487 | 204 |
| HC-EVO-B10-CHWD-ELC-AL | 1411458 | 206 |
| HC-EVO-B10-CHWS-ELC-AL | 1411459 | 205 |
| HC-EVO-B10-HHFD-EL-AL | 1411451 | 206 |
| HC-EVO-B10-HHFS-EL-AL | 1411453 | 205 |
| HC-EVO-B10-HHWD-EL-AL | 1411454 | 207 |
| HC-EVO-B10-HLFD-EL-AL | 1411455 | 206 |
| HC-EVO-B10-HLFS-EL-AL | 1411456 | 205 |
| HC-EVO-B10-HLWD-EL-AL | 1411457 | 207 |
| HC-EVO-B10PT-BWD-HL-M25ELC-AL | 1411488 | 206 |
| HC-EVO-B10PT-BWSC-HL-M25ELC-AL | 1411491 | 205 |
| HC-EVO-B16-CHWD-ELC-AL | 1411463 | 209 |
| HC-EVO-B16-CHWS-ELC-AL | 1411464 | 208 |
| HC-EVO-B16-HHFD-EL-AL | 1411460 | 209 |
| HC-EVO-B16-HHFS-EL-AL | 1411461 | 208 |
| HC-EVO-B16-HHWD-EL-AL | 1411462 | 210 |
| HC-EVO-B16PT-BWD-HH-M25ELC-AL | 1411489 | 209 |
| HC-EVO-B16PT-BWSC-HH-M25ELC-AL | 1411492 | 208 |
| HC-EVO-B24-CHWD-ELC-AL | 1411475 | 212 |
| HC-EVO-B24-CHWS-ELC-AL | 1411476 | 211 |
| HC-EVO-B24-HHFD-EL-AL | 1411472 | 212 |
| HC-EVO-B24-HHFS-EL-AL | 1411473 | 211 |
| HC-EVO-B24-HHWD-EL-AL | 1411474 | 213 |
| HC-EVO-B24PT-BWD-HH-M32ELC-AL | 1411490 | 212 |
| HC-EVO-B24PT-BWSC-HH-M32ELC-AL | 1411493 | 211 |
| HC-EVO-D15-BWS-PLR-BK | 1411336 | 196 |
| HC-EVO-D15-BWSC-PLR-BK | 1411337 | 196 |
| HC-EVO-D15-CHWS-PL-BK | 1411338 | 196 |
| HC-EVO-D15-HHFS-PL-BK | 1411340 | 196 |
| HC-EVO-D15-SLWS-2SSM25-PLR-BK | 1411341 | 196 |
| HC-EVO-D15-SLWSC-2SSM25-PLR-BK | 1411343 | 196 |
| HC-EVO-D25-BWS-PLR-BK | 1411344 | 197 |
| HC-EVO-D25-BWSC-PLR-BK | 1411345 | 197 |
| HC-EVO-D25-CHWS-PLR-BK | 1411346 | 197 |
| HC-EVO-D25-HHFS-PL-BK | 1411347 | 197 |
| HC-EVO-D25-SLWS-2SSM25-PLR-BK | 1411348 | 197 |
| HC-EVO-D25-SLWSC-2SSM25-PLR-BK | 1411349 | 197 |
| HC-HPR-B06-BFH-EMR-BK | 1411122 | 214 |
| HC-HPR-B06-HHWH-1STM20-EM-BK | 1411878 | 214 |
| HC-HPR-B06-HHWH-1STM25-EM-BK | 1411119 | 214 |
| HC-HPR-B06-HHWH-1TTM20-EM-BK | 1411879 | 214 |
| HC-HPR-B06-HHWH-1TTM25-EM-BK | 1411106 | 214 |
| HC-HPR-B06-SHFH-2SSM20-EMR-BK | 1411880 | 214 |
| HC-HPR-B06-SHFH-2SSM25-EMR-BK | 1411135 | 214 |
| HC-HPR-B10-BFH-EMR-BK | 1411083 | 215 |
| HC-HPR-B10-HHWH-1STM25EM-BK | 1411881 | 215 |
| HC-HPR-B10-HHWH-1STM32-EM-BK | 1411070 | 215 |
| HC-HPR-B10-HHWH-1TTM25-EM-BK | 1411882 | 215 |
| HC-HPR-B10-HHWH-1TTM32-EM-BK | 1411067 | 215 |
| HC-HPR-B10-SHFH-2SSM25-EMR-BK | 1411883 | 215 |
| HC-HPR-B10-SHFH-2SSM32-EMR-BK | 1411096 | 215 |
| HC-HPR-B16-BFH-EMR-BK | 1411060 | 216 |
| HC-HPR-B16-HHWH-1STM32-EM-BK | 1411058 | 216 |
| HC-HPR-B16-HHWH-1STM40-EM-BK | 1411884 | 216 |
| HC-HPR-B16-HHWH-1TTM32-EM-BK | 1411059 | 216 |
| HC-HPR-B16-HHWH-1TTM40-EM-BK | 1411885 | 216 |
| HC-HPR-B16-SHFH-2SSM32-EMR-BK | 1411054 | 216 |
| HC-HPR-B16-SHFH-2SSM40-EMR-BK | 1411886 | 216 |
| HC-HPR-B24-BFH-EMR-BK | 1411055 | 217 |
| HC-HPR-B24-HHWH-1STM32-EM-BK | 1411887 | 217 |
| HC-HPR-B24-HHWH-1STM40-EM-BK | 1411061 | 217 |
| HC-HPR-B24-HHWH-1TTM32-EM-BK | 1411888 | 217 |
| HC-HPR-B24-HHWH-1TTM40-EM-BK | 1411062 | 217 |
| HC-HPR-B24-SHFH-2SSM32-EMR-BK | 1411889 | 217 |
| HC-HPR-B24-SHFH-2SSM40-EMR-BK | 1411063 | 217 |
| HC-HS06-I-UT-F | 1406530 | 201 |
| HC-HS06-I-UT-F 7-12 | 1406533 | 201 |
| HC-HS06-I-UT-M | 1406531 | 201 |
| HC-HS06-I-UT-M 7-12 | 1406534 | 201 |
| HC-K-BS-M25 BK | 1411245 | 219 |
| HC-K-BS-M32-BK | 1410754 | 219 |
| HC-K-BS-M40-BK | 1410767 | 219 |
| HC-K-KV-M20(5-13)BK | 1411261 | 218 |
| HC-K-KV-M25(8-17)BK | 1411258 | 218 |
| HC-K-KV-M32(12-21)BK | 1407673 | 218 |
| HC-K-KV-M40(16-28)BK | 1407674 | 218 |
| HC-STA-B06-BWS-ELC-AL | 1411318 | 204 |
| HC-STA-B06-BWSC-ELC-AL | 1411319 | 204 |
| HC-STA-B10-BFDC-ELC-AL | 1411323 | 207 |
| HC-STA-B10-BWD-ELC-AL | 1411322 | 206 |
| HC-STA-B10-BWS-ELC-AL | 1411320 | 205 |
| HC-STA-B10-BWSC-ELC-AL | 1411321 | 205 |
| HC-STA-B16-BFDC-ELC-AL | 1411328 | 210 |
| HC-STA-B16-BWD-ELC-AL | 1411327 | 209 |
| HC-STA-B16-BWS-ELC-AL | 1411324 | 208 |
| HC-STA-B16-BWSC-ELC-AL | 1411325 | 208 |
| HC-STA-B24-BFDC-ELC-AL | 1411332 | 213 |
| HC-STA-B24-BWD-ELC-AL | 1411331 | 212 |
| HC-STA-B24-BWS-ELC-AL | 1411329 | 211 |
| HC-STA-B24-BWSC-ELC-AL | 1411330 | 211 |
| HMI BATTERY | 2701383 | 418 |
| HMI SCB MOUNTING KIT 6 | 2701385 | 418 |
| HMI SCB MOUNTING KIT 8 | 2701387 | 419 |
| HSCH 2,5-2U-2220 9005 | 2201792 | 35 |
| HSCH 2,5-2U-TT00 9005 | 2201791 | 35 |
| HSCH 2,5-2U-TTTT 9005 | 2201790 | 35 |
| HSCH 2,5-2U/ 8 9005 | 2201789 | 35 |
| HSCH 2,5-3U/12 9005 | 2201788 | 35 |
| HSCP-SP 2,5-1U-20 7035 | 2201782 | 35 |
| HSCP-SP 2,5-1U-TT 7035 | 2201781 | 35 |
| HSCP-SP 2,5-1U/ 4 7035 | 2201780 | 35 |

## I

| Type | Order No. | Page |
|---|---|---|
| IB IL MBUS-PAC | 2701927 | 416 |
| IFS-CONFSTICK | 2986122 | 358 |
| IFS-USB-DATACABLE | 2320500 | 358 |
| IFS-USB-PROG-ADAPTER | 2811271 | 339 |
| IMC 1,5/ 2-G-3,5 P20 THR | 1830414 | 16 |
| IMC 1,5/ 2-G-3,5 RN P20 THR | 1830566 | 17 |
| IMC 1,5/ 3-G-3,5 P20 THR | 1830427 | 16 |
| IMC 1,5/ 3-G-3,5 RN P20 THR | 1830579 | 17 |
| IMC 1,5/ 4-G-3,5 P20 THR | 1830430 | 16 |
| IMC 1,5/ 4-G-3,5 RN P20 THR | 1830582 | 17 |
| IMC 1,5/ 5-G-3,5 P20 THR | 1830443 | 16 |
| IMC 1,5/ 5-G-3,5 RN P20 THR | 1830595 | 17 |
| IMC 1,5/ 6-G-3,5 P20 THR | 1830456 | 16 |
| IMC 1,5/ 6-G-3,5 RN P20 THR | 1830605 | 17 |
| IMC 1,5/ 7-G-3,5 P20 THR | 1830469 | 16 |
| IMC 1,5/ 7-G-3,5 RN P20 THR | 1830618 | 17 |
| IMC 1,5/ 8-G-3,5 P20 THR | 1830472 | 16 |
| IMC 1,5/ 8-G-3,5 RN P20 THR | 1830621 | 17 |
| IMC 1,5/ 9-G-3,5 P20 THR | 1830485 | 16 |
| IMC 1,5/ 9-G-3,5 RN P20 THR | 1830634 | 17 |
| IMC 1,5/10-G-3,5 P20 THR | 1830498 | 16 |
| IMC 1,5/10-G-3,5 RN P20 THR | 1830647 | 17 |
| IMC 1,5/11-G-3,5 P20 THR | 1830508 | 16 |
| IMC 1,5/11-G-3,5 RN P20 THR | 1830650 | 17 |
| IMC 1,5/12-G-3,5 P20 THR | 1830511 | 16 |
| IMC 1,5/12-G-3,5 RN P20 THR | 1830663 | 17 |
| IMCV 1,5/ 2-G-3,5 P20 THR | 1830715 | 17 |
| IMCV 1,5/ 2-G-3,5 RN P20 THR | 1830867 | 17 |
| IMCV 1,5/ 3-G-3,5 P20 THR | 1830728 | 17 |
| IMCV 1,5/ 3-G-3,5 RN P20 THR | 1830870 | 17 |
| IMCV 1,5/ 4-G-3,5 P20 THR | 1830731 | 17 |
| IMCV 1,5/ 4-G-3,5 RN P20 THR | 1830883 | 17 |
| IMCV 1,5/ 5-G-3,5 P20 THR | 1830744 | 17 |
| IMCV 1,5/ 5-G-3,5 RN P20 THR | 1830896 | 17 |
| IMCV 1,5/ 6-G-3,5 P20 THR | 1830757 | 17 |
| IMCV 1,5/ 6-G-3,5 RN P20 THR | 1830906 | 17 |
| IMCV 1,5/ 7-G-3,5 P20 THR | 1830760 | 17 |
| IMCV 1,5/ 7-G-3,5 RN P20 THR | 1830919 | 17 |
| IMCV 1,5/ 8-G-3,5 P20 THR | 1830773 | 17 |
| IMCV 1,5/ 8-G-3,5 RN P20 THR | 1830922 | 17 |
| IMCV 1,5/ 9-G-3,5 P20 THR | 1830786 | 17 |
| IMCV 1,5/ 9-G-3,5 RN P20 THR | 1830935 | 17 |
| IMCV 1,5/10-G-3,5 P20 THR | 1830799 | 17 |
| IMCV 1,5/10-G-3,5 RN P20 THR | 1830948 | 17 |
| IMCV 1,5/11-G-3,5 P20 THR | 1830809 | 17 |
| IMCV 1,5/11-G-3,5 RN P20 THR | 1830951 | 17 |
| IMCV 1,5/12-G-3,5 P20 THR | 1830812 | 17 |
| IMCV 1,5/12-G-3,5 RN P20 THR | 1830964 | 17 |
| ISH 2,5/0,2 | 3002843 | 160 |
| ISH 2,5/0,5 | 3002856 | 160 |
| ISH 2,5/1,0 | 3002869 | 160 |

## K

| Type | Order No. | Page |
|---|---|---|
| KMK HP (25X6) | 0830720 | 272 |
| KMK HP (29X8) | 0830721 | 273 |
| KMK HP (40X17) | 0830723 | 273 |
| KMK HP (60X15) | 0830722 | 273 |
| KMK UV (25X6) | 1014106 | 274 |
| KMK UV (29X8) | 1014107 | 275 |
| KMK UV (40X17) | 1014109 | 275 |
| KMK UV (60X15) | 1014108 | 275 |
| KV-DI-PG16-1XASI | 1582462 | 195 |
| KV-DI-PG16-2XASI | 1582464 | 195 |

## L

| Type | Order No. | Page |
|---|---|---|
| LS-EML (180X180) BK-WH | 0831784 | 262 |
| LS-EML (180X180) BK-WH CUS | 0832070 | 262 |
| LS-EMLP (100X60) SR | 0831726 | 257 |
| LS-EMLP (100X60) SR CUS | 0832012 | 259 |
| LS-EMLP (100X60) WH | 0831699 | 256 |
| LS-EMLP (100X60) WH CUS | 0831985 | 258 |
| LS-EMLP (100X60) YE | 0831753 | 257 |
| LS-EMLP (100X60) YE CUS | 0832039 | 259 |
| LS-EMLP (11X9) SR | 0831705 | 257 |
| LS-EMLP (11X9) SR CUS | 0831991 | 259 |
| LS-EMLP (11X9) WH | 0831678 | 256 |
| LS-EMLP (11X9) WH CUS | 0831964 | 258 |
| LS-EMLP (11X9) YE | 0831732 | 257 |
| LS-EMLP (11X9) YE CUS | 0832018 | 259 |
| LS-EMLP (13X9) SR | 0831706 | 257 |
| LS-EMLP (13X9) SR CUS | 0831992 | 259 |
| LS-EMLP (13X9) WH | 0831679 | 256 |
| LS-EMLP (13X9) WH CUS | 0831965 | 258 |
| LS-EMLP (13X9) YE | 0831733 | 257 |
| LS-EMLP (13X9) YE CUS | 0832019 | 259 |
| LS-EMLP (17,5X12) SR | 0831709 | 257 |
| LS-EMLP (17,5X12) SR CUS | 0831995 | 259 |
| LS-EMLP (17,5X12) WH | 0831682 | 256 |
| LS-EMLP (17,5X12) WH CUS | 0831968 | 258 |
| LS-EMLP (17,5X12) YE | 0831736 | 257 |
| LS-EMLP (17,5X12) YE CUS | 0832022 | 259 |
| LS-EMLP (17,5X15) SR | 0831710 | 257 |
| LS-EMLP (17,5X15) SR CUS | 0831996 | 259 |
| LS-EMLP (17,5X15) WH | 0831683 | 256 |
| LS-EMLP (17,5X15) WH CUS | 0831969 | 258 |
| LS-EMLP (17,5X15) YE | 0831737 | 257 |
| LS-EMLP (17,5X15) YE CUS | 0832023 | 259 |
| LS-EMLP (17X7) SR | 0831707 | 257 |
| LS-EMLP (17X7) SR CUS | 0831993 | 259 |
| LS-EMLP (17X7) WH | 0831680 | 256 |
| LS-EMLP (17X7) WH CUS | 0831966 | 258 |
| LS-EMLP (17X7) YE | 0831734 | 257 |
| LS-EMLP (17X7) YE CUS | 0832020 | 259 |
| LS-EMLP (17X9) SR | 0831708 | 257 |
| LS-EMLP (17X9) SR CUS | 0831994 | 259 |
| LS-EMLP (17X9) WH | 0831681 | 256 |
| LS-EMLP (17X9) WH CUS | 0831967 | 258 |
| LS-EMLP (17X9) YE | 0831735 | 257 |
| LS-EMLP (17X9) YE CUS | 0832021 | 259 |
| LS-EMLP (20X7) SR | 0831711 | 257 |
| LS-EMLP (20X7) SR CUS | 0831997 | 259 |
| LS-EMLP (20X7) WH | 0831684 | 256 |
| LS-EMLP (20X7) WH CUS | 0831970 | 258 |
| LS-EMLP (20X7) YE | 0831738 | 257 |
| LS-EMLP (20X7) YE CUS | 0832024 | 259 |
| LS-EMLP (20X8) SR | 0831712 | 257 |
| LS-EMLP (20X8) SR CUS | 0831998 | 259 |
| LS-EMLP (20X8) WH | 0831685 | 256 |
| LS-EMLP (20X8) WH CUS | 0831971 | 258 |
| LS-EMLP (20X8) YE | 0831739 | 257 |
| LS-EMLP (20X8) YE CUS | 0832025 | 259 |
| LS-EMLP (22X12) SR | 0831713 | 257 |
| LS-EMLP (22X12) SR CUS | 0831999 | 259 |
| LS-EMLP (22X12) WH | 0831686 | 256 |
| LS-EMLP (22X12) WH CUS | 0831972 | 258 |
| LS-EMLP (22X12) YE | 0831740 | 257 |
| LS-EMLP (22X12) YE CUS | 0832026 | 259 |
| LS-EMLP (22X22) SR | 0831714 | 257 |
| LS-EMLP (22X22) SR CUS | 0832000 | 259 |
| LS-EMLP (22X22) WH | 0831687 | 256 |
| LS-EMLP (22X22) WH CUS | 0831973 | 258 |
| LS-EMLP (22X22) YE | 0831741 | 257 |
| LS-EMLP (22X22) YE CUS | 0832027 | 259 |
| LS-EMLP (27X12,5) SR | 0831716 | 257 |
| LS-EMLP (27X12,5) SR CUS | 0832002 | 259 |
| LS-EMLP (27X12,5) WH | 0831689 | 256 |
| LS-EMLP (27X12,5) WH CUS | 0831975 | 258 |

| Type | Order No. | Page |
|---|---|---|
| LS-EMLP (27X12,5) YE | 0831743 | 257 |
| LS-EMLP (27X12,5) YE CUS | 0832029 | 259 |
| LS-EMLP (27X15) SR | 0831717 | 257 |
| LS-EMLP (27X15) SR CUS | 0832003 | 259 |
| LS-EMLP (27X15) WH | 0831690 | 256 |
| LS-EMLP (27X15) WH CUS | 0831976 | 258 |
| LS-EMLP (27X15) YE | 0831744 | 257 |
| LS-EMLP (27X15) YE CUS | 0832030 | 259 |
| LS-EMLP (27X18) SR | 0831718 | 257 |
| LS-EMLP (27X18) SR CUS | 0832004 | 259 |
| LS-EMLP (27X18) WH | 0831691 | 256 |
| LS-EMLP (27X18) WH CUS | 0831977 | 258 |
| LS-EMLP (27X18) YE | 0831745 | 257 |
| LS-EMLP (27X18) YE CUS | 0832031 | 259 |
| LS-EMLP (27X27) SR | 0831719 | 257 |
| LS-EMLP (27X27) SR CUS | 0832005 | 259 |
| LS-EMLP (27X27) WH | 0831692 | 256 |
| LS-EMLP (27X27) WH CUS | 0831978 | 258 |
| LS-EMLP (27X27) YE | 0831746 | 257 |
| LS-EMLP (27X27) YE CUS | 0832032 | 259 |
| LS-EMLP (27X8) SR | 0831715 | 257 |
| LS-EMLP (27X8) SR CUS | 0832001 | 259 |
| LS-EMLP (27X8) WH | 0831688 | 256 |
| LS-EMLP (27X8) WH CUS | 0831974 | 258 |
| LS-EMLP (27X8) YE | 0831742 | 257 |
| LS-EMLP (27X8) YE CUS | 0832028 | 259 |
| LS-EMLP (45X14) SR | 0831720 | 257 |
| LS-EMLP (45X14) SR CUS | 0832006 | 259 |
| LS-EMLP (45X14) WH | 0831693 | 256 |
| LS-EMLP (45X14) WH CUS | 0831979 | 258 |
| LS-EMLP (45X14) YE | 0831747 | 257 |
| LS-EMLP (45X14) YE CUS | 0832033 | 259 |
| LS-EMLP (45X15) SR | 0831721 | 257 |
| LS-EMLP (45X15) SR CUS | 0832007 | 259 |
| LS-EMLP (45X15) WH | 0831694 | 256 |
| LS-EMLP (45X15) WH CUS | 0831980 | 258 |
| LS-EMLP (45X15) YE | 0831748 | 257 |
| LS-EMLP (45X15) YE CUS | 0832034 | 259 |
| LS-EMLP (49X15) SR | 0831722 | 257 |
| LS-EMLP (49X15) SR CUS | 0832008 | 259 |
| LS-EMLP (49X15) WH | 0831695 | 256 |
| LS-EMLP (49X15) WH CUS | 0831981 | 258 |
| LS-EMLP (49X15) YE | 0831749 | 257 |
| LS-EMLP (49X15) YE CUS | 0832035 | 259 |
| LS-EMLP (60X15) SR | 0831723 | 257 |
| LS-EMLP (60X15) SR CUS | 0832009 | 259 |
| LS-EMLP (60X15) WH | 0831696 | 256 |
| LS-EMLP (60X15) WH CUS | 0831982 | 258 |
| LS-EMLP (60X15) YE | 0831750 | 257 |
| LS-EMLP (60X15) YE CUS | 0832036 | 259 |
| LS-EMLP (60X30) SR | 0831724 | 257 |
| LS-EMLP (60X30) SR CUS | 0832010 | 259 |
| LS-EMLP (60X30) WH | 0831697 | 256 |
| LS-EMLP (60X30) WH CUS | 0831983 | 258 |
| LS-EMLP (60X30) YE | 0831751 | 257 |
| LS-EMLP (60X30) YE CUS | 0832037 | 259 |
| LS-EMLP (85,6X54) SR | 0831725 | 257 |
| LS-EMLP (85,6X54) SR CUS | 0832011 | 259 |
| LS-EMLP (85,6X54) WH | 0831698 | 256 |
| LS-EMLP (85,6X54) WH CUS | 0831984 | 258 |
| LS-EMLP (85,6X54) YE | 0831752 | 257 |
| LS-EMLP (85,6X54) YE CUS | 0832038 | 259 |
| LS-EMLP 24 (30X12) SR | 0831727 | 260 |
| LS-EMLP 24 (30X12) SR CUS | 0832013 | 260 |
| LS-EMLP 24 (30X12) WH | 0831700 | 260 |
| LS-EMLP 24 (30X12) WH CUS | 0831986 | 260 |
| LS-EMLP 24 (30X12) YE | 0831754 | 260 |
| LS-EMLP 24 (30X12) YE CUS | 0832040 | 260 |
| LS-EMLP 30 (45X10) SR | 0831728 | 261 |
| LS-EMLP 30 (45X10) SR CUS | 0832014 | 261 |
| LS-EMLP 30 (45X10) WH | 0831701 | 261 |
| LS-EMLP 30 (45X10) WH CUS | 0831987 | 261 |
| LS-EMLP 30 (45X10) YE | 0831755 | 261 |
| LS-EMLP 30 (45X10) YE CUS | 0832041 | 261 |
| LS-EMLP 32 (38X14) SR | 0831729 | 261 |
| LS-EMLP 32 (38X14) SR CUS | 0832015 | 261 |
| LS-EMLP 32 (38X14) WH | 0831702 | 261 |
| LS-EMLP 32 (38X14) WH CUS | 0831988 | 261 |
| LS-EMLP 32 (38X14) YE | 0831756 | 261 |
| LS-EMLP 32 (38X14) YE CUS | 0832042 | 261 |

| Type | Order No. | Page |
|---|---|---|
| LS-EMLP-AL (100X60) | 0831586 | 252 |
| LS-EMLP-AL (100X60) BK | 0831595 | 253 |
| LS-EMLP-AL (100X60) BK CUS | 0831881 | 253 |
| LS-EMLP-AL (100X60) CUS | 0831872 | 252 |
| LS-EMLP-AL (27X15) | 0831580 | 252 |
| LS-EMLP-AL (27X15) BK | 0831589 | 253 |
| LS-EMLP-AL (27X15) BK CUS | 0831875 | 253 |
| LS-EMLP-AL (27X15) CUS | 0831866 | 252 |
| LS-EMLP-AL (27X18) | 0831581 | 252 |
| LS-EMLP-AL (27X18) BK | 0831590 | 253 |
| LS-EMLP-AL (27X18) BK CUS | 0831876 | 253 |
| LS-EMLP-AL (27X18) CUS | 0831867 | 252 |
| LS-EMLP-AL (49X15) | 0831582 | 252 |
| LS-EMLP-AL (49X15) BK | 0831591 | 253 |
| LS-EMLP-AL (49X15) BK CUS | 0831877 | 253 |
| LS-EMLP-AL (49X15) CUS | 0831868 | 252 |
| LS-EMLP-AL (60X15) | 0831583 | 252 |
| LS-EMLP-AL (60X15) BK | 0831592 | 253 |
| LS-EMLP-AL (60X15) BK CUS | 0831878 | 253 |
| LS-EMLP-AL (60X15) CUS | 0831869 | 252 |
| LS-EMLP-AL (60X30) | 0831584 | 252 |
| LS-EMLP-AL (60X30) BK | 0831593 | 253 |
| LS-EMLP-AL (60X30) BK CUS | 0831879 | 253 |
| LS-EMLP-AL (60X30) BU | 0831606 | 253 |
| LS-EMLP-AL (60X30) BU CUS | 0831892 | 253 |
| LS-EMLP-AL (60X30) CUS | 0831870 | 252 |
| LS-EMLP-AL (60X30) GN | 0831610 | 253 |
| LS-EMLP-AL (60X30) GN CUS | 0831896 | 253 |
| LS-EMLP-AL (60X30) OG | 0831602 | 253 |
| LS-EMLP-AL (60X30) OG CUS | 0831888 | 253 |
| LS-EMLP-AL (60X30) RD | 0831598 | 253 |
| LS-EMLP-AL (60X30) RD CUS | 0831884 | 253 |
| LS-EMLP-AL (85,6X54) | 0831585 | 252 |
| LS-EMLP-AL (85,6X54) BK | 0831594 | 253 |
| LS-EMLP-AL (85,6X54) BK CUS | 0831880 | 253 |
| LS-EMLP-AL (85,6X54) BU | 0831607 | 253 |
| LS-EMLP-AL (85,6X54) BU CUS | 0831893 | 253 |
| LS-EMLP-AL (85,6X54) CUS | 0831871 | 252 |
| LS-EMLP-AL (85,6X54) GN | 0831611 | 253 |
| LS-EMLP-AL (85,6X54) GN CUS | 0831897 | 253 |
| LS-EMLP-AL (85,6X54) OG | 0831603 | 253 |
| LS-EMLP-AL (85,6X54) OG CUS | 0831889 | 253 |
| LS-EMLP-AL (85,6X54) RD | 0831599 | 253 |
| LS-EMLP-AL (85,6X54) RD CUS | 0831885 | 253 |
| LS-EMP-AL (100X60) | 0831667 | 254 |
| LS-EMP-AL (100X60) BK | 0831675 | 255 |
| LS-EMP-AL (100X60) BK CUS | 0831961 | 255 |
| LS-EMP-AL (100X60) CUS | 0831953 | 254 |
| LS-EMP-AL (27X15) | 0831661 | 254 |
| LS-EMP-AL (27X15) BK | 0831669 | 255 |
| LS-EMP-AL (27X15) BK CUS | 0831955 | 255 |
| LS-EMP-AL (27X15) CUS | 0831947 | 254 |
| LS-EMP-AL (27X18) | 0831662 | 254 |
| LS-EMP-AL (27X18) BK | 0831670 | 255 |
| LS-EMP-AL (27X18) BK CUS | 0831956 | 255 |
| LS-EMP-AL (27X18) CUS | 0831948 | 254 |
| LS-EMP-AL (49X15) | 0831663 | 254 |
| LS-EMP-AL (49X15) BK | 0831671 | 255 |
| LS-EMP-AL (49X15) BK CUS | 0831957 | 255 |
| LS-EMP-AL (49X15) CUS | 0831949 | 254 |
| LS-EMP-AL (60X15) | 0831664 | 254 |
| LS-EMP-AL (60X15) BK | 0831672 | 255 |
| LS-EMP-AL (60X15) BK CUS | 0831958 | 255 |
| LS-EMP-AL (60X15) CUS | 0831950 | 254 |
| LS-EMP-AL (60X30) | 0831665 | 254 |
| LS-EMP-AL (60X30) BK | 0831673 | 255 |
| LS-EMP-AL (60X30) BK CUS | 0831959 | 255 |
| LS-EMP-AL (60X30) CUS | 0831951 | 254 |
| LS-EMP-AL (85,6X54) | 0831666 | 254 |
| LS-EMP-AL (85,6X54) BK | 0831674 | 255 |
| LS-EMP-AL (85,6X54) BK CUS | 0831960 | 255 |
| LS-EMP-AL (85,6X54) CUS | 0831952 | 254 |
| LS-EMSP-AL (110X80) | 0831620 | 251 |
| LS-EMSP-AL (110X80) BK | 0831631 | 251 |
| LS-EMSP-AL (110X80) BK CUS | 0831917 | 251 |
| LS-EMSP-AL (110X80) CUS | 0831906 | 251 |
| LS-EMSP-AL (150X120) | 0831622 | 251 |
| LS-EMSP-AL (150X120) BK | 0831633 | 251 |
| LS-EMSP-AL (150X120) BK CUS | 0831919 | 251 |
| LS-EMSP-AL (150X120) CUS | 0831908 | 251 |

| Type | Order No. | Page |
|---|---|---|
| LS-EMSP-AL (150X80) | 0831621 | 251 |
| LS-EMSP-AL (150X80) BK | 0831632 | 251 |
| LS-EMSP-AL (150X80) BK CUS | 0831918 | 251 |
| LS-EMSP-AL (150X80) CUS | 0831907 | 251 |
| LS-EMSP-AL (170X180) | 0831623 | 251 |
| LS-EMSP-AL (170X180) BK | 0831634 | 251 |
| LS-EMSP-AL (170X180) BK CUS | 0831920 | 251 |
| LS-EMSP-AL (170X180) CUS | 0831909 | 251 |
| LS-EMSP-AL (39X15) | 0831615 | 251 |
| LS-EMSP-AL (39X15) BK | 0831626 | 251 |
| LS-EMSP-AL (39X15) BK CUS | 0831912 | 251 |
| LS-EMSP-AL (39X15) CUS | 0831901 | 251 |
| LS-EMSP-AL (50X15) | 0831616 | 251 |
| LS-EMSP-AL (50X15) BK | 0831627 | 251 |
| LS-EMSP-AL (50X15) BK CUS | 0831913 | 251 |
| LS-EMSP-AL (50X15) CUS | 0831902 | 251 |
| LS-EMSP-AL (50X30) | 0831617 | 251 |
| LS-EMSP-AL (50X30) BK | 0831628 | 251 |
| LS-EMSP-AL (50X30) BK CUS | 0831914 | 251 |
| LS-EMSP-AL (50X30) BU | 0831645 | 251 |
| LS-EMSP-AL (50X30) BU CUS | 0831931 | 251 |
| LS-EMSP-AL (50X30) CUS | 0831903 | 251 |
| LS-EMSP-AL (50X30) GN | 0831649 | 251 |
| LS-EMSP-AL (50X30) GN CUS | 0831935 | 251 |
| LS-EMSP-AL (50X30) OG | 0831641 | 251 |
| LS-EMSP-AL (50X30) OG CUS | 0831927 | 251 |
| LS-EMSP-AL (50X30) RD | 0831637 | 251 |
| LS-EMSP-AL (50X30) RD CUS | 0831923 | 251 |
| LS-EMSP-AL (75,6X54) | 0831618 | 251 |
| LS-EMSP-AL (75,6X54) BK | 0831629 | 251 |
| LS-EMSP-AL (75,6X54) BK CUS | 0831915 | 251 |
| LS-EMSP-AL (75,6X54) BU | 0831646 | 251 |
| LS-EMSP-AL (75,6X54) BU CUS | 0831932 | 251 |
| LS-EMSP-AL (75,6X54) CUS | 0831904 | 251 |
| LS-EMSP-AL (75,6X54) GN | 0831650 | 251 |
| LS-EMSP-AL (75,6X54) GN CUS | 0831936 | 251 |
| LS-EMSP-AL (75,6X54) OG | 0831642 | 251 |
| LS-EMSP-AL (75,6X54) OG CUS | 0831928 | 251 |
| LS-EMSP-AL (75,6X54) RD | 0831638 | 251 |
| LS-EMSP-AL (75,6X54) RD CUS | 0831924 | 251 |
| LS-EMSP-AL (90X60) | 0831619 | 251 |
| LS-EMSP-AL (90X60) BK | 0831630 | 251 |
| LS-EMSP-AL (90X60) BK CUS | 0831916 | 251 |
| LS-EMSP-AL (90X60) CUS | 0831905 | 251 |
| LS-EMSP-V4A (39X15) | 0831653 | 250 |
| LS-EMSP-V4A (39X15) CUS | 0831939 | 250 |
| LS-EMSP-V4A (50X15) | 0831654 | 250 |
| LS-EMSP-V4A (50X15) CUS | 0831940 | 250 |
| LS-EMSP-V4A (50X30) | 0831655 | 250 |
| LS-EMSP-V4A (50X30) CUS | 0831941 | 250 |
| LS-EMSP-V4A (75,6X54) | 0831656 | 250 |
| LS-EMSP-V4A (75,6X54) CUS | 0831942 | 250 |
| LS-EMSP-V4A (90X60) | 0831657 | 250 |
| LS-EMSP-V4A (90X60) CUS | 0831943 | 250 |
| LS-WMTB-AL (100X15) | 0831503 | 247 |
| LS-WMTB-AL (100X15) BK | 0831511 | 247 |
| LS-WMTB-AL (100X15) BK CUS | 0831797 | 247 |
| LS-WMTB-AL (100X15) CUS | 0831789 | 247 |
| LS-WMTB-AL (29X8) | 0831500 | 247 |
| LS-WMTB-AL (29X8) BK | 0831508 | 247 |
| LS-WMTB-AL (29X8) BK CUS | 0831794 | 247 |
| LS-WMTB-AL (29X8) CUS | 0831786 | 247 |
| LS-WMTB-AL (40X15) | 0831501 | 247 |
| LS-WMTB-AL (40X15) BK | 0831509 | 247 |
| LS-WMTB-AL (40X15) BK CUS | 0831795 | 247 |
| LS-WMTB-AL (40X15) CUS | 0831787 | 247 |
| LS-WMTB-AL (60X15) | 0831502 | 247 |
| LS-WMTB-AL (60X15) BK | 0831510 | 247 |
| LS-WMTB-AL (60X15) BK CUS | 0831796 | 247 |
| LS-WMTB-AL (60X15) CUS | 0831788 | 247 |
| LS-WMTB-AL (D25) | 0831504 | 249 |
| LS-WMTB-AL (D25) BK | 0831512 | 249 |
| LS-WMTB-AL (D25) BK CUS | 0831798 | 249 |
| LS-WMTB-AL (D25) CUS | 0831790 | 249 |
| LS-WMTB-AL (D30) | 0831505 | 249 |
| LS-WMTB-AL (D30) BK | 0831513 | 249 |
| LS-WMTB-AL (D30) BK CUS | 0831799 | 249 |
| LS-WMTB-AL (D30) CUS | 0831791 | 249 |
| LS-WMTB-V4A (100X15) | 0831519 | 247 |
| LS-WMTB-V4A (100X15) CUS | 0831805 | 247 |

| Type | Order No. | Page |
|---|---|---|
| LS-WMTB-V4A (29X8) | 0831516 | 247 |
| LS-WMTB-V4A (29X8) CUS | 0831802 | 247 |
| LS-WMTB-V4A (40X15) | 0831517 | 247 |
| LS-WMTB-V4A (40X15) CUS | 0831803 | 247 |
| LS-WMTB-V4A (60X15) | 0831518 | 247 |
| LS-WMTB-V4A (60X15) CUS | 0831804 | 247 |
| LS-WMTB-V4A (D25) | 0831520 | 249 |
| LS-WMTB-V4A (D25) CUS | 0831806 | 249 |
| LS-WMTB-V4A (D30) | 0831521 | 249 |
| LS-WMTB-V4A (D30) CUS | 0831807 | 249 |


## M


| Type | Order No. | Page |
|---|---|---|
| MACX MCR-EX-I20 | 2905679 | 346 |
| MACX MCR-I20 | 2905680 | 343 |
| MACX PL-EX-RPSS-2I-2I | 2904963 | 345 |
| MACX PL-EX-RPSS-2I-2I-SP | 2904964 | 345 |
| MACX PL-EX-RPSSI-2I | 2904959 | 344 |
| MACX PL-EX-RPSSI-2I-SP | 2904960 | 344 |
| MACX PL-EX-T-UIREL-UP | 2904910 | 346 |
| MACX PL-EX-T-UIREL-UP-SP | 2904912 | 346 |
| MACX PL-RPSSI-2I | 2904961 | 342 |
| MACX PL-RPSSI-2I-SP | 2904962 | 342 |
| MACX PL-T-UIREL-UP | 2904901 | 343 |
| MACX PL-T-UIREL-UP-SP | 2904903 | 343 |
| MC 1,5/13-G-3,81 P20 THR | 1829056 | 18 |
| MC 1,5/13-G-3,81 P20 THRR72 | 1828691 | 20 |
| MC 1,5/13-GF-3,81 P20 THR | 1829137 | 19 |
| MC 1,5/13-GF-3,81 P20 THRR72 | 1828772 | 21 |
| MC 1,5/14-G-3,81 P20 THR | 1829069 | 18 |
| MC 1,5/14-G-3,81 P20 THRR88 | 1828701 | 20 |
| MC 1,5/14-GF-3,81 P20 THR | 1829140 | 19 |
| MC 1,5/14-GF-3,81 P20 THRR88 | 1828785 | 21 |
| MC 1,5/15-G-3,81 P20 THR | 1829072 | 18 |
| MC 1,5/15-G-3,81 P20 THRR88 | 1828714 | 20 |
| MC 1,5/15-GF-3,81 P20 THR | 1829153 | 19 |
| MC 1,5/15-GF-3,81 P20 THRR88 | 1828798 | 21 |
| MC 1,5/16-G-3,81 P20 THR | 1829085 | 18 |
| MC 1,5/16-G-3,81 P20 THRR88 | 1828727 | 20 |
| MC 1,5/16-GF-3,81 P20 THR | 1829166 | 19 |
| MC 1,5/16-GF-3,81 P20 THRR88 | 1828808 | 21 |
| MC 1,5/17-G-3,81 P20 THR | 1829098 | 18 |
| MC 1,5/17-G-3,81 P20 THRR88 | 1828730 | 20 |
| MC 1,5/17-GF-3,81 P20 THR | 1829179 | 19 |
| MC 1,5/17-GF-3,81 P20 THRR88 | 1828811 | 21 |
| MC 1,5/18-G-3,81 P20 THR | 1829108 | 18 |
| MC 1,5/18-G-3,81 P20 THRR88 | 1828743 | 20 |
| MC 1,5/18-GF-3,81 P20 THR | 1829182 | 19 |
| MC 1,5/18-GF-3,81 P20 THRR88 | 1828824 | 21 |
| MC 1,5/19-G-3,81 P20 THR | 1829111 | 18 |
| MC 1,5/19-G-3,81 P20 THRR104 | 1828756 | 20 |
| MC 1,5/19-GF-3,81 P20 THR | 1829195 | 19 |
| MC 1,5/19-GF-3,81 P20 THRR104 | 1828837 | 21 |
| MC 1,5/20-G-3,81 P20 THR | 1829124 | 18 |
| MC 1,5/20-G-3,81 P20 THRR104 | 1828769 | 20 |
| MC 1,5/20-GF-3,81 P20 THR | 1829205 | 19 |
| MC 1,5/20-GF-3,81 P20 THRR104 | 1828840 | 21 |
| MCV 1,5/13-G-3,81 P20 THR | 1828895 | 19 |
| MCV 1,5/13-G-3,81 P20 THRR72 | 1828536 | 21 |
| MCV 1,5/13-GF-3,81 P20 THR | 1828976 | 19 |
| MCV 1,5/13-GF-3,81 P20 THRR72 | 1828617 | 21 |
| MCV 1,5/14-G-3,81 P20 THR | 1828905 | 19 |
| MCV 1,5/14-G-3,81 P20 THRR88 | 1828549 | 21 |
| MCV 1,5/14-GF-3,81 P20 THR | 1828989 | 19 |
| MCV 1,5/14-GF-3,81 P20 THRR88 | 1828620 | 21 |
| MCV 1,5/15-G-3,81 P20 THR | 1828918 | 19 |
| MCV 1,5/15-G-3,81 P20 THRR88 | 1828522 | 21 |
| MCV 1,5/15-GF-3,81 P20 THR | 1828992 | 19 |
| MCV 1,5/15-GF-3,81 P20 THRR88 | 1828633 | 21 |
| MCV 1,5/16-G-3,81 P20 THR | 1828921 | 19 |
| MCV 1,5/16-G-3,81 P20 THRR88 | 1828565 | 21 |
| MCV 1,5/16-GF-3,81 P20 THR | 1829001 | 19 |
| MCV 1,5/16-GF-3,81 P20 THRR88 | 1828646 | 21 |
| MCV 1,5/17-G-3,81 P20 THR | 1828934 | 19 |
| MCV 1,5/17-G-3,81 P20 THRR88 | 1828578 | 21 |
| MCV 1,5/17-GF-3,81 P20 THR | 1829014 | 19 |
| MCV 1,5/17-GF-3,81 P20 THRR88 | 1828659 | 21 |

| Type | Order No. | Page |
|---|---|---|
| MCV 1,5/18-G-3,81 P20 THR | 1828947 | 19 |
| MCV 1,5/18-G-3,81 P20 THRR88 | 1828581 | 21 |
| MCV 1,5/18-GF-3,81 P20 THR | 1829027 | 19 |
| MCV 1,5/18-GF-3,81 P20 THRR88 | 1828662 | 21 |
| MCV 1,5/19-G-3,81 P20 THR | 1828950 | 19 |
| MCV 1,5/19-G-3,81 P20 THRR104 | 1828594 | 21 |
| MCV 1,5/19-GF-3,81 P20 THR | 1829030 | 19 |
| MCV 1,5/19-GF-3,81 P20 THRR104 | 1828675 | 21 |
| MCV 1,5/20-G-3,81 P20 THR | 1828963 | 19 |
| MCV 1,5/20-G-3,81 P20 THRR104 | 1828604 | 21 |
| MCV 1,5/20-GF-3,81 P20 THR | 1829043 | 19 |
| MCV 1,5/20-GF-3,81 P20 THRR104 | 1828688 | 21 |
| ME 17,5 TBUS 1,5/ 5-ST-3,81 GN | 2709561 | 337 |
| ME 17,5 TBUS 1,5/4P1S KMGY | 2201731 | 39 |
| ME 17,5 TBUS ADAPTER KMGY | 2201757 | 39 |
| ME 18,8 TBUS 1,5/5-ST-3,81KMGY | 2201813 | 35 |
| ME 22,5 TBUS 1,5/ 5-ST-3,81 GN | 2707437 | 358 |
| ME 22,5 TBUS 1,5/4P1S KMGY | 2201732 | 39 |
| ME 22,5 TBUS ADAPTER KMGY | 2201756 | 39 |
| ME 6,2 TBUS-2 1,5/5-ST-3,81 GN | 2869728 | 336 |
| ME 6,2 TBUS-2 1,5/5-ST-3,81 GY | 2695439 | 336 |
| ME-IO 18,8 B/FE 3/9U TBUS 7035 | 2201963 | 34 |
| ME-IO 18,8 B/FE 5/9U TBUS 7035 | 2201962 | 34 |
| ME-IO 18,8 B/FE 7/9U TBUS 7035 | 2201961 | 34 |
| ME-IO 18,8 B/FE 9/9U TBUS 7035 | 2201960 | 34 |
| ME-IO 18,8 C 2U 7035 | 2201799 | 35 |
| ME-IO 18,8 C 3U 7035 | 2201800 | 35 |
| ME-IO 18,8 C 3U S1 7035 | 2201801 | 35 |
| ME-IO 18,8 C 4U 7035 | 2201802 | 35 |
| ME-IO 18,8 C 5U 7035 | 2201803 | 35 |
| ME-IO 18,8 C 6U 7035 | 2201804 | 35 |
| ME-IO 18,8 C 7U 7035 | 2201805 | 35 |
| ME-SAS | 2853899 | 391 |
| MICROFOX-SP-1 | 1212487 | 44 |
| MINI FD BLUETOOTH | 0830986 | 289 |
| MINI MCR-2-FM-RC | 2904504 | 338 |
| MINI MCR-2-FM-RC-PT | 2904508 | 338 |
| MINI MCR-2-I-I | 2901998 | 328 |
| MINI MCR-2-I-I-PT | 2901999 | 328 |
| MINI MCR-2-I0-U | 2902000 | 328 |
| MINI MCR-2-I0-U-PT | 2902001 | 328 |
| MINI MCR-2-I4-U | 2902002 | 328 |
| MINI MCR-2-I4-U-PT | 2902003 | 328 |
| MINI MCR-2-POT-UI | 2902016 | 334 |
| MINI MCR-2-POT-UI-C | 2905005 | 334 |
| MINI MCR-2-POT-UI-PT | 2902017 | 334 |
| MINI MCR-2-POT-UI-PT-C | 2905006 | 334 |
| MINI MCR-2-PTB | 2902066 | 336 |
| MINI MCR-2-PTB-PT | 2902067 | 336 |
| MINI MCR-2-RPSS-I-I | 2902014 | 329 |
| MINI MCR-2-RPSS-I-I-PT | 2902015 | 329 |
| MINI MCR-2-RTD-UI | 2902049 | 330 |
| MINI MCR-2-RTD-UI-C | 2902048 | 330 |
| MINI MCR-2-RTD-UI-PT | 2902052 | 330 |
| MINI MCR-2-RTD-UI-PT-C | 2902051 | 330 |
| MINI MCR-2-TB | 2902068 | 338 |
| MINI MCR-2-TC-UI | 2902055 | 332 |
| MINI MCR-2-TC-UI-C | 2902053 | 332 |
| MINI MCR-2-TC-UI-PT | 2905249 | 332 |
| MINI MCR-2-TC-UI-PT-C | 2905248 | 332 |
| MINI MCR-2-U-I0 | 2902022 | 328 |
| MINI MCR-2-U-I0-PT | 2902023 | 328 |
| MINI MCR-2-U-I4 | 2902029 | 328 |
| MINI MCR-2-U-I4-PT | 2902030 | 328 |
| MINI MCR-2-U-U | 2902042 | 328 |
| MINI MCR-2-U-U-PT | 2902043 | 328 |
| MINI MCR-2-UI-UI | 2902037 | 326 |
| MINI MCR-2-UI-UI-C | 2902036 | 326 |
| MINI MCR-2-UI-UI-PT | 2902040 | 326 |
| MINI MCR-2-UI-UI-PT-C | 2902039 | 326 |
| MINI-PS-100-240AC/24DC/1.5/EX | 2866653 | 337 |
| MINI-SYS-PS-100-240AC/24DC/1.5 | 2866983 | 337 |
| MPB 18/1-57 | 2809238 | 306 |
| MPS-IH RD | 0201676 | 156 |
| MPS-MT | 0201744 | 156 |

## N

| Type | Order No. | Page |
|---|---|---|
| NLC-035-024D-04I-02QRD-05A | 2702031 | 430 |
| NLC-040-O24D-04I-02QRD-05A | 2400079 | 430 |
| NLC-IO-2RTD/UTH-4QTP-01A | 2701671 | 432 |
| NLC-IOX-041-02QRD-05A | 2702032 | 433 |
| NLC-OP1-MKT-BASE | 2701250 | 431 |
| NLC-OP2-LCD-076-4X20 | 2701945 | 431 |
| NLC-PC/SERIAL-CBL 2M | 2701234 | 430 |

## P

| Type | Order No. | Page |
|---|---|---|
| P-CO | 3036796 | 158 |
| P-DI | 3036783 | 158 |
| P-FIX | 3038956 | 158 |
| P-FU 5X20 | 3036806 | 164 |
| P-FU 5X20 LA 250-EX | 3036836 | 163 |
| P-FU 5X20 LED 24-5 | 3209248 | 158 |
| P-FU 5X20 LED 24-EX | 3036821 | 163 |
| P-FU 5X20 LED 250-5 | 3209264 | 158 |
| P-FU 5X20 LED 60-5 | 3209251 | 158 |
| P-FU 5X20 LED 60-EX | 3036823 | 163 |
| P-FU 5X20-5 | 3209235 | 158 |
| P-FU 5X20-EX | 3036807 | 163 |
| P-FU 6,3X32 LA 250-EX | 3046525 | 163 |
| P-FU 6,3X32 LED 24-EX | 3046509 | 163 |
| P-FU 6,3X32 LED 60-EX | 3046512 | 163 |
| P-FU 6,3X32-EX | 3046499 | 163 |
| PACT RCP-4000A-1A-D140 | 2904922 | 353 |
| PACT RCP-4000A-1A-D190 | 2904923 | 353 |
| PACT RCP-4000A-1A-D95 | 2904921 | 353 |
| PACT RCP-CLAMP | 2904895 | 353 |
| PAI-4-N GY | 3032871 | 162 |
| PBR 42A BU | 2201916 | 38 |
| PBR 42A KMGY | 2201917 | 38 |
| PBR 42A RD | 2201915 | 38 |
| PC-FTP-TRI | 3069898 | 99 |
| PC-UTWE-TRI | 3069897 | 99 |
| PCO 17,5-L KMGY | 2201684 | 38 |
| PCO 22,5-L KMGY | 2201685 | 38 |
| PLC-LOGIC-STARTERKIT1 | 2905504 | 359 |
| PLC-OPT- 24DC/230AC/2.4/ACT | 2904632 | 366 |
| PLC-OSC- 24DC/230AC/2.4/ACT | 2904631 | 366 |
| PLC-V8C/CAB/TBUS/0,3M | 2905263 | 358 |
| PLC-V8C/PT-24DC/BM | 2905135 | 357 |
| PLC-V8C/PT-24DC/EM | 2905137 | 357 |
| PLC-V8C/PT-24DC/SAM | 2905136 | 356 |
| PLC-V8C/SC-24DC/BM | 2903094 | 357 |
| PLC-V8C/SC-24DC/EM | 2903095 | 357 |
| PLC-V8C/SC-24DC/SAM | 2905082 | 356 |
| PMST (9X38) | 0830960 | 285 |
| PMST (9X38) BK | 0830965 | 285 |
| PMST (9X38) BN | 0830968 | 285 |
| PMST (9X38) BU | 0830969 | 285 |
| PMST (9X38) GN | 0830961 | 285 |
| PMST (9X38) GY | 0830963 | 285 |
| PMST (9X38) OG | 0830966 | 285 |
| PMST (9X38) RD | 0830962 | 285 |
| PMST (9X38) VT | 0830967 | 285 |
| PMST (9X38) YE | 0830964 | 285 |
| PRC 3-FC-FS6 8-12 | 1410658 | 76 |
| PRC 3-FC-FS6 8-21 | 1410661 | 76 |
| PRC 3-FC-FS6 12-16 | 1409217 | 76 |
| PRC 3-FC-FS6 16-21 | 1410659 | 76 |
| PRC 3-FT25-MC | 1409218 | 77 |
| PRC 3-FT25-MC2,5-150 | 1409219 | 77 |
| PRC 3-FT25-MC4-150 | 1409220 | 77 |
| PRC 3-FT25-MC6-150 | 1409221 | 77 |
| PRC 3-TC-FS6 8-21 | 1621326 | 76 |
| PRC 5-FC-FS6 8-12 | 1410629 | 76 |
| PRC 5-FC-FS6 8-21 | 1410656 | 76 |
| PRC 5-FC-FS6 12-16 | 1409205 | 76 |
| PRC 5-FC-FS6 16-21 | 1410655 | 76 |
| PRC 5-FT25-MC | 1409206 | 77 |
| PRC 5-FT25-MC2,5-150 | 1409211 | 77 |
| PRC 5-FT25-MC4-150 | 1409212 | 77 |
| PRC 5-FT25-MC6-150 | 1409213 | 77 |
| PRC 5-TC-FS6 8-21 | 1621325 | 76 |
| PRC COVER F | 1409236 | 76 |
| PRC COVER M | 1409237 | 77 |
| PS 6-CT-SD | 3246857 | 171 |
| PS 6-DI-SD | 3246856 | 171 |
| PS 6-VT-SD | 3246858 | 171 |
| PS-5 | 3030983 | 160 |
| PS-5/2,3MM RD | 3038723 | 158 |
| PS-6 | 3030996 | 162 |
| PSBJ-URTK 6 BK | 3026447 | 99 |
| PSBJ-URTK 6 BN | 3026971 | 99 |
| PSBJ-URTK 6 BU | 3026434 | 99 |
| PSBJ-URTK 6 FARBLOS | 3026450 | 99 |
| PSBJ-URTK 6 GN | 3026418 | 99 |
| PSBJ-URTK 6 GY | 3026612 | 99 |
| PSBJ-URTK 6 RD | 3026719 | 99 |
| PSBJ-URTK 6 VT | 3026421 | 99 |
| PSBJ-URTK 6 YE | 3026405 | 99 |
| PSI-CAB-GSM/UMTS- 5M | 2900980 | 394 |
| PSI-CAB-GSM/UMTS-10M | 2900981 | 394 |
| PSI-GSM/UMTS-ANT-OMNI-2-5 | 2900982 | 394 |
| PSI-GSM/UMTS-QB-ANT | 2313371 | 394 |
| PSK APS7004IOL | 2700710 | 350 |
| PSM-KA 9 SUB 25/BB/2METER | 2761059 | 391 |
| PSM-KA9SUB9/BB/2METER | 2799474 | 391 |
| PSR-PIP-24DC/MXF1/4X1/2X2/B | 2903253 | 401 |
| PSR-PIP-24DC/MXF2/4X1/2X2/B | 2903256 | 401 |
| PSR-PIP-24DC/MXF3/4X1/2X2/B | 2903259 | 401 |
| PSR-PIP-24DC/MXF4/4X1/2X2/B | 2903262 | 401 |
| PSR-SCP- 24DC/MXF1/4X1/2X2/B | 2902725 | 400 |
| PSR-SCP- 24DC/TS/M | 2986012 | 402 |
| PSR-SCP- 24DC/TS/SDOR4/4X1 | 2986096 | 402 |
| PSR-SCP-24DC/MXF2/4X1/2X2/B | 2903254 | 400 |
| PSR-SCP-24DC/MXF3/4X1/2X2/B | 2903257 | 400 |
| PSR-SCP-24DC/MXF4/4X1/2X2/B | 2903260 | 400 |
| PSR-SPP- 24DC/TS/M | 2986025 | 402 |
| PSR-SPP- 24DC/TS/SDOR4/4X1 | 2986106 | 402 |
| PSR-SPP-24DC/MXF1/4X1/2X2/B | 2902726 | 400 |
| PSR-SPP-24DC/MXF2/4X1/2X2/B | 2903255 | 400 |
| PSR-SPP-24DC/MXF3/4X1/2X2/B | 2903258 | 400 |
| PSR-SPP-24DC/MXF4/4X1/2X2/B | 2903261 | 400 |
| PSR-TBUS | 2890425 | 402 |
| PT 1,5/S-MT | 3210301 | 156 |
| PT 1,5/S-MT BU | 3210302 | 156 |
| PT 1,5/S-MTD | 3210308 | 156 |
| PT 1,5/S-MTD BU | 3210309 | 156 |
| PT 1,5/S-QUATTRO-MT | 3210321 | 157 |
| PT 1,5/S-QUATTRO-MT BU | 3210322 | 157 |
| PT 1,5/S-QUATTRO-MTD | 3210328 | 157 |
| PT 1,5/S-QUATTRO-MTD BU | 3210329 | 157 |
| PT 1,5/S-TWIN-MT | 3210311 | 157 |
| PT 1,5/S-TWIN-MT BU | 3210312 | 157 |
| PT 1,5/S-TWIN-MTD | 3210317 | 157 |
| PT 1,5/S-TWIN-MTD BU | 3210319 | 157 |
| PT-IQ-1X2-EX-24DC-P | 2801514 | 312 |
| PT-IQ-1X2-EX-24DC-UT | 2801512 | 312 |
| PT-IQ-2X2+F-48DC-PT | 2801266 | 311 |
| PT-IQ-2X2+F-48DC-UT | 2800987 | 311 |
| PT-IQ-2X2+F-5DC-PT | 2801260 | 311 |
| PT-IQ-2X2+F-5DC-UT | 2800809 | 311 |
| PT-IQ-2X2-48DC-P | 2800810 | 310 |
| PT-IQ-2X2-48DC-PT | 2801265 | 310 |
| PT-IQ-2X2-48DC-UT | 2800986 | 310 |
| PT-IQ-2X2-5DC-P | 2800802 | 310 |
| PT-IQ-2X2-5DC-PT | 2801259 | 310 |
| PT-IQ-2X2-5DC-UT | 2800807 | 310 |
| PT-IQ-2X2-EX-24DC-P | 2801515 | 312 |
| PT-IQ-2X2-EX-24DC-UT | 2801513 | 312 |
| PT-IQ-3-HF+F-12DC-PT | 2801289 | 313 |
| PT-IQ-3-HF+F-12DC-UT | 2800995 | 313 |
| PT-IQ-3-HF-12DC-P | 2800784 | 313 |
| PT-IQ-3-HF-12DC-PT | 2801288 | 313 |
| PT-IQ-3-HF-12DC-UT | 2800786 | 313 |
| PT-IQ-3-PB+F-PT | 2801287 | 313 |
| PT-IQ-3-PB+F-UT | 2800994 | 313 |
| PT-IQ-3-PB-P | 2800783 | 313 |
| PT-IQ-3-PB-PT | 2801286 | 313 |
| PT-IQ-3-PB-UT | 2800785 | 313 |
| PT-IQ-4X1+F-5DC-PT | 2801268 | 311 |
| PT-IQ-4X1+F-5DC-UT | 2801216 | 311 |
| PT-IQ-4X1-5DC-P | 2800811 | 311 |
| PT-IQ-4X1-5DC-PT | 2801267 | 311 |
| PT-IQ-4X1-5DC-UT | 2801215 | 311 |
| PT-IQ-EX-H-PP | 2905024 | 312 |
| PT-IQ-EX-L-PP | 2905023 | 312 |
| PT/FS 4,8 | 1670497 | 195 |
| PTRE 6-2/10 | 3069855 | 93 |
| PTRE 6-2/12 | 3069861 | 93 |
| PTRE 6-2/14 | 3069863 | 93 |
| PTRE 6-2/15 | 3069864 | 93 |
| PTRE 6-2/17 | 3069866 | 93 |
| PTRE 6-2/19 | 3069868 | 93 |
| PTRE 6-2/20 | 3069869 | 93 |
| PTRE 6-2/21 | 3069870 | 93 |
| PTRE 6-2/22 | 3069871 | 93 |
| PTRE 6-2/25 | 3069874 | 93 |
| PTRE 6-2/4 | 3069849 | 93 |
| PTRE 6-2/5 | 3069850 | 93 |
| PTRE 6-2/9 | 3069854 | 93 |
| PTRE 6-2/A14 | 3069452 | 109 |
| PTRE 6-2/A7 | 3069449 | 103 |
| PTRE 6-2/B14 | 3069453 | 111 |
| PTRE 6-2/B19 | 3069455 | 115 |
| PTRE 6-2/B7 | 3069450 | 105 |
| PTRE 6-2/C14 | 3069454 | 113 |
| PTRE 6-2/C19 | 3069456 | 117 |
| PTRE 6-2/D19 | 3069457 | 119 |
| PTRE 6-2/E7 | 3069451 | 107 |
| PTRE 6-2/F19 | 3069458 | 121 |
| PTRE 6-2/G19 | 3069459 | 123 |
| PTRE 6-2/H19 | 3069460 | 125 |
| PTRE 6-2/I19 | 3069461 | 127 |
| PTSM 0,5/ 1-2,5-H SMD WH L R24 | 1840035 | 23 |
| PTSM 0,5/ 2-HTB-2,5-SMD WH R32 | 1830126 | 23 |
| PTSM 0,5/ 2-HV-2,5-SMD WH R32 | 1778696 | 23 |
| PTSM 0,5/ 3-HTB-2,5-SMD WH R32 | 1830139 | 23 |
| PTSM 0,5/ 3-HV-2,5-SMD WH R32 | 1778706 | 23 |
| PTSM 0,5/ 4-HTB-2,5-SMD WH R44 | 1830142 | 23 |
| PTSM 0,5/ 4-HV-2,5-SMD WH R44 | 1778719 | 23 |
| PTSM 0,5/ 5-HTB-2,5-SMD WH R44 | 1830155 | 23 |
| PTSM 0,5/ 5-HV-2,5-SMD WH R44 | 1778722 | 23 |
| PTSM 0,5/ 6-HTB-2,5-SMD WH R44 | 1830168 | 23 |
| PTSM 0,5/ 6-HV-2,5-SMD WH R44 | 1778735 | 23 |
| PTSM 0,5/ 7-HTB-2,5-SMD WH R44 | 1830171 | 23 |
| PTSM 0,5/ 7-HV-2,5-SMD WH R44 | 1778748 | 23 |
| PTSM 0,5/ 8-HTB-2,5-SMD WH R44 | 1830184 | 23 |
| PTSM 0,5/ 8-HV-2,5-SMD WH R44 | 1778751 | 23 |
| PTT 1,5/S-2L | 3210356 | 157 |
| PTT 1,5/S-2L BU | 3210357 | 157 |
| PTT 1,5/S-2MT | 3210351 | 157 |
| PTT 1,5/S-2MT BU | 3210352 | 157 |
| PTT 1,5/S-L/MT | 3210341 | 157 |
| PTT 1,5/S-L/MT BU | 3210342 | 157 |
| PTT 2,5-2L | 3210267 | 159 |
| PTT 2,5-2L BU | 3210268 | 159 |
| PTT 2,5-2MT | 3210258 | 159 |
| PTT 2,5-2MT BU | 3210265 | 159 |
| PTT 2,5-L/MT | 3210251 | 159 |
| PTT 2,5-L/MT BU | 3210257 | 159 |
| PTT 2,5-L/TG | 3210230 | 158 |
| PTT 2,5-L/TG BU | 3210270 | 158 |
| PTTBS 2,5-2MTB | 3210400 | 161 |
| PTTBS 2,5-2MTB BU | 3210401 | 161 |
| PTTBS 2,5-2TGB | 3210402 | 160 |
| PTWE 6-2/10 | 3069833 | 92 |
| PTWE 6-2/12 | 3069835 | 92 |
| PTWE 6-2/14 | 3069837 | 92 |
| PTWE 6-2/15 | 3069838 | 92 |
| PTWE 6-2/17 | 3069840 | 92 |
| PTWE 6-2/19 | 3069842 | 92 |
| PTWE 6-2/20 | 3069843 | 92 |
| PTWE 6-2/21 | 3069844 | 92 |
| PTWE 6-2/22 | 3069845 | 92 |
| PTWE 6-2/25 | 3069848 | 92 |
| PTWE 6-2/4 | 3069827 | 92 |
| PTWE 6-2/5 | 3069828 | 92 |
| PTWE 6-2/9 | 3069832 | 92 |
| PTWE 6-2/A14 | 3069439 | 108 |
| PTWE 6-2/A7 | 3069436 | 102 |

| Type | Order No. | Page |
|---|---|---|
| PTWE 6-2/B14 | 3069440 | 110 |
| PTWE 6-2/B19 | 3069442 | 114 |
| PTWE 6-2/B7 | 3069437 | 104 |
| PTWE 6-2/C14 | 3069441 | 112 |
| PTWE 6-2/C19 | 3069443 | 116 |
| PTWE 6-2/D19 | 3069444 | 118 |
| PTWE 6-2/E7 | 3069438 | 106 |
| PTWE 6-2/F19 | 3069445 | 120 |
| PTWE 6-2/G19 | 3069446 | 122 |
| PTWE 6-2/H19 | 3069447 | 124 |
| PTWE 6-2/I19 | 3069448 | 126 |
| PV-MI-CABLE SPLICE 3P | 1812403 | 72 |
| PV-MI-CABLE TERMINATOR 3P | 1812416 | 72 |
| PV-MI-YC-1,15-3-12-NA-0,50-OE | 1706518 | 70 |
| PV-MI-YC-1,15-3-25-EU-0,50-OE | 1621351 | 70 |
| PV-MI-YC-CARRIER-CAP-TP | 1706608 | 70 |
| PV-MI-YC-CARRIER-CAP-TS | 1706599 | 70 |
| PV-MI-YC-GC-P-1,00-3-12-NA SET | 1707091 | 70 |
| PV-MI-YC-GC-P-1,00-3-25-EU SET | 1621349 | 70 |
| PV-MI-YC-GC-S-1,00-3-12-NA SET | 1707092 | 71 |
| PV-MI-YC-GC-S-1,00-3-25-EU SET | 1621350 | 71 |
| PV-MI-YC-PATCH-1,00-3-12-NA | 1707090 | 71 |
| PV-MI-YC-PATCH-1,00-3-25-EU | 1621352 | 71 |
| PV-MI-YC-PROTECTION-CAP-TP | 1706610 | 70 |
| PV-MI-YC-PROTECTION-CAP-TS | 1706515 | 70 |
| PV-MI-YC-UNLOCKTOOL | 1706514 | 70 |
| PWO 16-UW | 1844387 | 29 |
| PWO 16-UW/S | 1844390 | 29 |

## Q

| Type | Order No. | Page |
|---|---|---|
| Q-MU M16 | 1640692 | 195 |
| Q-MU M20 | 1640702 | 195 |
| Q-MU M25 | 1640715 | 195 |
| Q-MU PG 21 BK | 1582655 | 195 |
| QPD 5P/ 1,0-PVC/5P 5X2,5 BK | 1408720 | 194 |
| QPD 5P/ 3,0-PVC/5P 5X2,5 BK | 1408721 | 194 |
| QPD 5P/ 5,0-PVC/5P 5X2,5 BK | 1408722 | 194 |
| QPD 5P/10,0-PVC/5P 5X2,5 BK | 1408723 | 194 |
| QPD C 4PE6,0 1X12-20 BK | 1410416 | 190 |
| QPD C 4PE6,0 1X12-20 GY | 1410418 | 190 |
| QPD C 4PE6,0 1X9-14 BK | 1410415 | 190 |
| QPD C 4PE6,0 1X9-14 GY | 1410417 | 190 |
| QPD C 4PE6,0 2X12-20 BK | 1410412 | 190 |
| QPD C 4PE6,0 2X12-20 GY | 1410414 | 190 |
| QPD C 4PE6,0 2X9-14 BK | 1410410 | 190 |
| QPD C 4PE6,0 2X9-14 GY | 1410413 | 190 |
| QPD CLIP 2,5 BK | 1582235 | 195 |
| QPD H 4PE6,0 4X12-20 BK | 1411425 | 188 |
| QPD H 4PE6,0 4X12-20 GY | 1411429 | 188 |
| QPD H 4PE6,0 4X9-14 BK | 1411422 | 188 |
| QPD H 4PE6,0 4X9-14 GY | 1411428 | 188 |
| QPD H 4PE6,0 BK | 1411426 | 188 |
| QPD H 4PE6,0 GY | 1411427 | 188 |
| QPD N 4PE6,0 12-20 BK | 1410406 | 188 |
| QPD N 4PE6,0 12-20 GY | 1410405 | 188 |
| QPD N 4PE6,0 9-14 BK | 1410409 | 188 |
| QPD N 4PE6,0 9-14 GY | 1410407 | 188 |
| QPD PSK 2,5 | 1582151 | 195 |
| QPD PSK 5X2,5 | 1404529 | 195 |
| QPD PSK 5X6,0 | 1411404 | 195 |
| QPD QSK 2,5 | 1582150 | 195 |
| QPD QSK 2,5 FS | 1582488 | 195 |
| QPD QSK 5X2,5 | 1404528 | 195 |
| QPD QSK 5X6,0 | 1411403 | 195 |
| QPD QSK BK 2,5 FS | 1582645 | 195 |
| QPD QSK BK 5X2,5 FS | 1404525 | 195 |
| QPD QSK GY 5X2,5 FS | 1404526 | 195 |
| QPD T 4PE6,0 2X12-20 BK | 1411417 | 189 |
| QPD T 4PE6,0 2X12-20 GY | 1411421 | 189 |
| QPD T 4PE6,0 2X9-14 BK | 1411416 | 189 |
| QPD T 4PE6,0 2X9-14 GY | 1411420 | 189 |
| QPD T 4PE6,0 3X12-20 BK | 1411415 | 189 |
| QPD T 4PE6,0 3X12-20 GY | 1411419 | 189 |
| QPD T 4PE6,0 3X9-14 BK | 1411414 | 189 |
| QPD T 4PE6,0 3X9-14 GY | 1411418 | 189 |
| QPD W 4PE2,5 6-11 M20 0,5 EX | 1411393 | 192 |
| QPD W 4PE2,5 6-11 M20 1,0 EX | 1411394 | 192 |
| QPD W 4PE2,5 6-11 M20 FC EX | 1411395 | 192 |
| QPD W 4PE2,5 6-11 M25 0,5 EX | 1411387 | 192 |
| QPD W 4PE2,5 6-11 M25 1,0 EX | 1411388 | 192 |
| QPD W 4PE2,5 6-11 M25 DT BK | 1411432 | 191 |
| QPD W 4PE2,5 6-11 M25 DT GY | 1411434 | 191 |
| QPD W 4PE2,5 6-11 M25 FC EX | 1411389 | 192 |
| QPD W 4PE2,5 9-16 M20 0,5 EX | 1411397 | 192 |
| QPD W 4PE2,5 9-16 M20 1,0 EX | 1411398 | 192 |
| QPD W 4PE2,5 9-16 M20 FC EX | 1411399 | 192 |
| QPD W 4PE2,5 9-16 M25 0,5 EX | 1411390 | 192 |
| QPD W 4PE2,5 9-16 M25 1,0 EX | 1411391 | 192 |
| QPD W 4PE2,5 9-16 M25 DT BK | 1411433 | 191 |
| QPD W 4PE2,5 9-16 M25 DT GY | 1411435 | 191 |
| QPD W 4PE2,5 9-16 M25 FC EX | 1411392 | 192 |
| QPD W 4PE6,0 12-20 M25 0,5 BK | 1410394 | 193 |
| QPD W 4PE6,0 12-20 M25 0,5 GY | 1410401 | 193 |
| QPD W 4PE6,0 12-20 M25 1,0 BK | 1410395 | 193 |
| QPD W 4PE6,0 12-20 M25 1,0 GY | 1410402 | 193 |
| QPD W 4PE6,0 9-14 M25 0,5 BK | 1410392 | 193 |
| QPD W 4PE6,0 9-14 M25 0,5 GY | 1410399 | 193 |
| QPD W 4PE6,0 9-14 M25 1,0 BK | 1410393 | 193 |
| QPD W 4PE6,0 9-14 M25 1,0 GY | 1410400 | 193 |
| QPD W 4PE6,0 M25 0,5 BK | 1410396 | 193 |
| QPD W 4PE6,0 M25 0,5 GY | 1410403 | 193 |
| QPD W 4PE6,0 M25 1,0 BK | 1410397 | 193 |
| QPD W 4PE6,0 M25 1,0 GY | 1410404 | 193 |
| QSS 15 | 1641992 | 195 |
| QSS 19 | 1670895 | 195 |
| QSS 22 | 1670206 | 195 |
| QSS 24 | 1670219 | 195 |
| QSS 27 | 1670646 | 195 |
| QTC 2,5-QUATTRO | 3206446 | 173 |
| QTC 2,5-QUATTRO BU | 3206447 | 173 |
| QTC 2,5-QUATTRO-PE | 3206448 | 173 |
| QTCU 2,5-TWIN-MT | 3050304 | 172 |
| QTCU 2,5-TWIN-MT BU | 3050317 | 172 |
| QUINT-PS/2AC/1DC/24DC/20 | 2320830 | 315 |

## R

| Type | Order No. | Page |
|---|---|---|
| RAD-868-IFS | 2904909 | 398 |
| RAD-CABLE-USB | 2903447 | 398 |
| RAD-MEMORY | 2902828 | 398 |
| RB ST (2,5/4)-1,5/S | 3214356 | 156 |
| RB ST 6-1,5/S | 3213250 | 156 |
| RFMARK HF | 5148010 | 281 |
| RFMARK HF POWER LINK STATION | 5148013 | 281 |
| RFMARK HF PROTECTION CASE | 5148017 | 281 |
| RFMARK HF/ACCU | 5148015 | 281 |
| RFMARK HF/BELTPOUCH | 5148018 | 281 |
| RFMARK UHF | 5148011 | 281 |
| RFMARK UHF FD | 5148012 | 281 |
| RFMARK UHF POWER LINK STATION | 5148014 | 281 |
| RFMARK UHF PROTECTION CASE | 5148020 | 281 |
| RFMARK UHF/ACCU | 5148016 | 281 |
| RFMARK UHF/BELTPOUCH | 5148021 | 281 |
| RIF-0-OPT-24DC/230AC/1 | 2905295 | 363 |
| RIF-0-OPT-24DC/24DC/2 | 2905293 | 362 |
| RIF-0-OPT-24DC/48DC/100 | 2905294 | 363 |
| RIF-1-RPT-LDP-24DC/1X21MS | 2905289 | 364 |
| RIF-1-RPT-LDP-24DC/2X21MS | 2905291 | 365 |
| RIF-1-RPT-LV-230AC/1X21MS | 2905290 | 364 |
| RIF-1-RPT-LV-230AC/2X21MS | 2905292 | 365 |
| RVT-PA 3,5 BK | 0830959 | 285 |

## S

| Type | Order No. | Page |
|---|---|---|
| S-MT | 3247954 | 159 |
| SAC-2P- 1,5-PUR/DTFS | 1410723 | 182 |
| SAC-2P- 1,5-PUR/DTFS-1L | 1410728 | 182 |
| SAC-2P- 1,5-PUR/DTFS-1L-S | 1410732 | 183 |
| SAC-2P- 1,5-PUR/SUSFS | 1410748 | 181 |
| SAC-2P- 3,0-PUR/DTFS | 1410724 | 182 |
| SAC-2P- 3,0-PUR/DTFS-1L | 1410729 | 182 |
| SAC-2P- 3,0-PUR/DTFS-1L-S | 1410733 | 183 |
| SAC-2P- 3,0-PUR/SUSFS | 1410749 | 181 |
| SAC-2P- 5,0-PUR/DTFS | 1410726 | 182 |
| SAC-2P- 5,0-PUR/DTFS-1L | 1410730 | 182 |
| SAC-2P- 5,0-PUR/DTFS-1L-S | 1410734 | 183 |
| SAC-2P- 5,0-PUR/SUSFS | 1410750 | 181 |
| SAC-2P-10,0-PUR/DTFS | 1410727 | 182 |
| SAC-2P-10,0-PUR/DTFS-1L | 1410731 | 182 |
| SAC-2P-10,0-PUR/DTFS-1L-S | 1410735 | 183 |
| SAC-2P-10,0-PUR/SUSFS | 1410751 | 181 |
| SAC-2P-MSB-FSB SCO/910/... | 1538092 | 396 |
| SAC-2P-MSB/ 1,0-910/FSB SCO | 1518122 | 396 |
| SAC-2P-SUSMS/ 0,3-PUR/SUSFS | 1410757 | 181 |
| SAC-2P-SUSMS/ 0,6-PUR/SUSFS | 1410759 | 181 |
| SAC-2P-SUSMS/ 1,5-PUR | 1410752 | 181 |
| SAC-2P-SUSMS/ 1,5-PUR/SUSFS | 1410760 | 181 |
| SAC-2P-SUSMS/ 3,0-PUR | 1410753 | 181 |
| SAC-2P-SUSMS/ 3,0-PUR/SUSFS | 1410761 | 181 |
| SAC-2P-SUSMS/ 5,0-PUR | 1410755 | 181 |
| SAC-2P-SUSMS/10,0-PUR | 1410756 | 181 |
| SAC-3P- 1,0-PVC/FRS PE SCO | 1411648 | 184 |
| SAC-3P- 1,0-PVC/FSS PE SCO | 1411644 | 184 |
| SAC-3P- 1,5-PUO/A-1L-Z OD | 1407287 | 180 |
| SAC-3P- 1,5-PUR/A-1L-R-ES 4A | 1400827 | 177 |
| SAC-3P- 1,5-PUR/B-1L-R-ES | 1401294 | 177 |
| SAC-3P- 1,5-PUR/BI-1L-R-ES | 1401340 | 178 |
| SAC-3P- 1,5-PUR/C-1L-R-ES | 1401434 | 178 |
| SAC-3P- 1,5-PUR/CI-1L-R-ES | 1401466 | 179 |
| SAC-3P- 2,0-PVC/FRS PE SCO | 1411649 | 184 |
| SAC-3P- 2,0-PVC/FSS PE SCO | 1411645 | 184 |
| SAC-3P- 3,0-PUO/A-1L-Z OD | 1407288 | 180 |
| SAC-3P- 3,0-PUR/A-1L-R-ES 4A | 1401131 | 177 |
| SAC-3P- 3,0-PUR/B-1L-R-ES | 1401295 | 177 |
| SAC-3P- 3,0-PUR/BI-1L-R-ES | 1401350 | 178 |
| SAC-3P- 3,0-PUR/C-1L-R-ES | 1401435 | 178 |
| SAC-3P- 3,0-PUR/CI-1L-R-ES | 1401542 | 179 |
| SAC-3P- 5,0-PUO/A-1L-Z OD | 1407289 | 180 |
| SAC-3P- 5,0-PUR/A-1L-R-ES 4A | 1401136 | 177 |
| SAC-3P- 5,0-PUR/B-1L-R-ES | 1401338 | 177 |
| SAC-3P- 5,0-PUR/BI-1L-R-ES | 1401358 | 178 |
| SAC-3P- 5,0-PUR/C-1L-R-ES | 1401448 | 178 |
| SAC-3P- 5,0-PUR/CI-1L-R-ES | 1401544 | 179 |
| SAC-3P- 5,0-PVC/FRS PE SCO | 1411650 | 184 |
| SAC-3P- 5,0-PVC/FSS PE SCO | 1411646 | 184 |
| SAC-3P-10,0-PUO/A-1L-Z OD | 1407290 | 180 |
| SAC-3P-10,0-PUR/A-1L-R-ES 4A | 1401168 | 177 |
| SAC-3P-10,0-PUR/B-1L-R-ES | 1401339 | 177 |
| SAC-3P-10,0-PUR/BI-1L-R-ES | 1401359 | 178 |
| SAC-3P-10,0-PUR/C-1L-R-ES | 1401465 | 178 |
| SAC-3P-10,0-PUR/CI-1L-R-ES | 1401617 | 179 |
| SAC-3P-10,0-PVC/FRS PE SCO | 1411651 | 184 |
| SAC-3P-10,0-PVC/FSS PE SCO | 1411647 | 184 |
| SAC-3P-MRS/ 1,0-PVC PE SCO | 1411640 | 184 |
| SAC-3P-MRS/ 2,0-PVC PE SCO | 1411641 | 184 |
| SAC-3P-MRS/ 5,0-PVC PE SCO | 1411642 | 184 |
| SAC-3P-MRS/10,0-PVC PE SCO | 1411643 | 184 |
| SAC-3P-MSS/ 1,0-PVC PE SCO | 1411636 | 184 |
| SAC-3P-MSS/ 2,0-PVC PE SCO | 1411637 | 184 |
| SAC-3P-MSS/ 5,0-PVC PE SCO | 1411638 | 184 |
| SAC-3P-MSS/10,0-PVC PE SCO | 1411639 | 184 |
| SAC-4PY-MT/2XFT VP | 1410632 | 186 |
| SAC-5P- 1,5-PUO/AD-2L OD | 1407291 | 180 |
| SAC-5P- 2,0-92X/M12FS SH OD | 1410474 | 187 |
| SAC-5P- 3,0-PUO/AD-2L OD | 1407292 | 180 |
| SAC-5P- 5,0-92X/M12FS SH OD | 1410494 | 187 |
| SAC-5P- 5,0-PUO/AD-2L OD | 1407293 | 180 |
| SAC-5P-10,0-92X/M12FS SH OD | 1410496 | 187 |
| SAC-5P-10,0-PUO/AD-2L OD | 1407294 | 180 |
| SAC-5P-M12FS CAN TR | 1529344 | 396 |
| SAC-5P-M12FS PB TR | 1403911 | 396 |
| SAC-5P-M12MS CAN TR | 1507816 | 396 |
| SAC-5P-M12MS PB TR | 1507803 | 396 |
| SAC-5P-M12MS/ 2,0-92X SH OD | 1410471 | 187 |
| SAC-5P-M12MS/ 5,0-92X SH OD | 1410472 | 187 |
| SAC-5P-M12MS/10,0-92X SH OD | 1410473 | 187 |
| SAC-5P-M12MS/2,0-92X/M12FSSHOD | 1410467 | 187 |
| SAC-5P-M12MS/5,0-92X/M12FSSHOD | 1410470 | 187 |
| SAC-5P-MS-FS SCO/920/... | 1538157 | 396 |
| SAC-5P-MS/ 1,0-920/FS SCO | 1518274 | 396 |
| SACC-CC1,0-T-0,50-M AU PU100 | 1412351 | 185 |
| SACC-DSI-M12FS-12P-M16XL/0,5 | 1411589 | 54 |
| SACC-DSI-M12FS-17P-M16XL/0,5 | 1411590 | 54 |
| SACC-DSI-M12FS-4P-M16XL/0,5 | 1411584 | 54 |
| SACC-DSI-M12FS-5P-M16XL/0,5 | 1411586 | 54 |
| SACC-DSI-M12FS-8P-M16XL/0,5 | 1411588 | 54 |
| SACC-DSI-M12FSB-5P-M16XL/0,5 | 1411587 | 54 |
| SACC-DSI-M12FSD-4P-M16XL/0,5 | 1411585 | 54 |
| SACC-DSI-M12FSS-3P-M16/0,5 PE | 1411652 | 58 |
| SACC-DSI-M12FSS-4P-M16XL/0,5PE | 1411598 | 56 |
| SACC-DSI-M12FST-4P-M16XL/0,5 | 1411599 | 56 |
| SACC-DSI-M12MS-12P-M16XL/0,5 | 1411596 | 54 |
| SACC-DSI-M12MS-17P-M16XL/0,5 | 1411597 | 54 |
| SACC-DSI-M12MS-4P-M16XL/0,5 | 1411591 | 54 |
| SACC-DSI-M12MS-5P-M16XL/0,5 | 1411593 | 54 |
| SACC-DSI-M12MS-8P-M16XL/0,5 | 1411595 | 54 |
| SACC-DSI-M12MSB-5P-M16XL/0,5 | 1411594 | 54 |
| SACC-DSI-M12MSD-4P-M16XL/0,5 | 1411592 | 54 |
| SACC-DSI-M12MSS-3P-M16/0,5 PE | 1411653 | 58 |
| SACC-DSI-M12MSS-4P-M16XL/0,5PE | 1411603 | 56 |
| SACC-DSI-M12MST-4P-M16XL/0,5 | 1411604 | 56 |
| SACC-E-M12FS-12P-M16XL/0,5 | 1411574 | 55 |
| SACC-E-M12FS-17P-M16XL/0,5 | 1411576 | 55 |
| SACC-E-M12FS-4P-M16XL/0,5 | 1411568 | 55 |
| SACC-E-M12FS-5P-M16XL/0,5 | 1411571 | 55 |
| SACC-E-M12FS-8P-M16XL/0,5 | 1411573 | 55 |
| SACC-E-M12FSB-5P-M16XL/0,5 | 1411572 | 55 |
| SACC-E-M12FSD-4P-M16XL/0,5 | 1411569 | 55 |
| SACC-E-M12FSS-3P-M16/0,5 PE | 1411654 | 58 |
| SACC-E-M12FSS-4P-M16XL/0,5 PE | 1411605 | 57 |
| SACC-E-M12FST-4P-M16XL/0,5 | 1411606 | 57 |
| SACC-E-M12MS-12P-M16XL/0,5 | 1411582 | 55 |
| SACC-E-M12MS-17P-M16XL/0,5 | 1411583 | 55 |
| SACC-E-M12MS-4P-M16XL/0,5 | 1411577 | 55 |
| SACC-E-M12MS-5P-M16XL/0,5 | 1411579 | 55 |
| SACC-E-M12MS-8P-M16XL/0,5 | 1411581 | 55 |
| SACC-E-M12MSB-5P-M16XL/0,5 | 1411580 | 55 |
| SACC-E-M12MSD-4P-M16XL/0,5 | 1411578 | 55 |
| SACC-E-M12MSS-3P-M16/0,5 PE | 1411655 | 58 |
| SACC-E-M12MSS-4P-M16XL/0,5 PE | 1411607 | 57 |
| SACC-E-M12MST-4P-M16XL/0,5 | 1411608 | 57 |
| SACC-M12MRD-4CT SH PN | 1411047 | 185 |
| SACC-M12MSD-4CT SH PN | 1411046 | 185 |
| SAFE AI | 2400057 | 406 |
| SCRT 9X16-27 | 0830970 | 285 |
| SCRT 9X25-40 | 0830971 | 285 |
| SCRT 9X40-60 | 0830972 | 285 |
| SCRT 9X60-80 | 0830973 | 285 |
| SCRT 9X80-100 | 0830974 | 285 |
| SCRT 9X100-120 | 0830975 | 285 |
| SCRT 9X140-160 | 0830976 | 285 |
| SCRT 9X160-180 | 0830977 | 285 |
| SCRT 9X180-200 | 0830978 | 285 |
| SD FLASH 2GB | 2988162 | 387 |
| SD FLASH 2GB EMWISE EXTENDED | 2701747 | 348 |
| SD FLASH 2GB EMWISE IMP ANALOG | 2701746 | 348 |
| SD FLASH 2GB EMWISE IMPULS | 2701745 | 348 |
| SD FLASH 512MB | 2988146 | 380 |
| SD FLASH 512MB ILDLC FLEX | 2701873 | 349 |
| SD FLASH 512MB MODULAR MUX | 2701872 | 429 |
| SEALING PLUG 10X16 RD | 1400284 | 195 |
| SEALING PLUG 14X22 RD | 1400270 | 195 |
| SF-08KP010 | 1621574 | 66 |
| SF-08KP020 | 1621575 | 66 |
| SF-08KS010 | 1621571 | 66 |
| SF-08KS020 | 1621573 | 66 |
| SF-20KP021 | 1621579 | 66 |
| SF-20KP022 | 1621580 | 66 |
| SF-20KP023 | 1621581 | 66 |
| SF-20KS021 | 1621576 | 66 |
| SF-20KS022 | 1621577 | 66 |
| SF-20KS023 | 1621578 | 66 |
| SF-BIT-HEX 3-50 | 1212647 | 222 |
| SF-M BH | 1212070 | 222 |
| SF-SL 0,6X3,5-100 S-VDE | 1212587 | 170 |
| SF-SL 0,8X4,0-100 | 1212551 | 92 |
| SH-8EPC58A8LB1S | 1621533 | 62 |
| SH-8EPC58A8LB2S | 1621532 | 62 |
| SH-8EPC58A8LB3S | 1621531 | 62 |
| SH-8EPC58A8LB4S | 1621530 | 62 |
| SH-8EPC58A8LDLS | 1621529 | 62 |
| SH-8EPC58A9LB1S | 1621553 | 63 |
| SH-8EPC58A9LB2S | 1621552 | 63 |
| SH-8EPC58A9LB3S | 1621551 | 63 |
| SH-8EPC58A9LB4S | 1621550 | 63 |
| SH-8EPC58A9LDLS | 1621549 | 63 |

| Type | Order No. | Page |
|---|---|---|
| SH-8EPC58AAC00S | 1621561 | 65 |
| SH-8EPC58AAD00S | 1621565 | 65 |
| SH-8EPC58AWA00S | 1621569 | 64 |
| SH-8EPS48A8LB1S | 1621538 | 62 |
| SH-8EPS48A8LB2S | 1621537 | 62 |
| SH-8EPS48A8LB3S | 1621536 | 62 |
| SH-8EPS48A8LB4S | 1621535 | 62 |
| SH-8EPS48A8LDLS | 1621534 | 62 |
| SH-8EPS48A9LB1S | 1621558 | 63 |
| SH-8EPS48A9LB2S | 1621557 | 63 |
| SH-8EPS48A9LB3S | 1621556 | 63 |
| SH-8EPS48A9LB4S | 1621555 | 63 |
| SH-8EPS48A9LDLS | 1621554 | 63 |
| SH-8EPS48AAC00S | 1621562 | 65 |
| SH-8EPS48AAD00S | 1621566 | 65 |
| SH-8EPS48AWA00S | 1621570 | 64 |
| SH-8ESC58A8LB1S | 1621523 | 62 |
| SH-8ESC58A8LB2S | 1621522 | 62 |
| SH-8ESC58A8LB3S | 1621521 | 62 |
| SH-8ESC58A8LB4S | 1621520 | 62 |
| SH-8ESC58A8LDLS | 1621517 | 62 |
| SH-8ESC58A9LB1S | 1621543 | 63 |
| SH-8ESC58A9LB2S | 1621542 | 63 |
| SH-8ESC58A9LB3S | 1621541 | 63 |
| SH-8ESC58A9LB4S | 1621540 | 63 |
| SH-8ESC58A9LDLS | 1621539 | 63 |
| SH-8ESC58AAC00S | 1621559 | 65 |
| SH-8ESC58AAD00S | 1621563 | 65 |
| SH-8ESC58AWA00S | 1621567 | 64 |
| SH-8ESS48A8LB1S | 1621528 | 62 |
| SH-8ESS48A8LB2S | 1621527 | 62 |
| SH-8ESS48A8LB3S | 1621526 | 62 |
| SH-8ESS48A8LB4S | 1621525 | 62 |
| SH-8ESS48A8LDLS | 1621524 | 62 |
| SH-8ESS48A9LB1S | 1621548 | 63 |
| SH-8ESS48A9LB2S | 1621547 | 63 |
| SH-8ESS48A9LB3S | 1621546 | 63 |
| SH-8ESS48A9LB4S | 1621545 | 63 |
| SH-8ESS48A9LDLS | 1621544 | 63 |
| SH-8ESS48AAC00S | 1621560 | 65 |
| SH-8ESS48AAD00S | 1621564 | 65 |
| SH-8ESS48AWA00S | 1621568 | 64 |
| SK 5,0 WH:REEL | 0805221 | 339 |
| SPT-SMD 1,5/ 2-H-3,5 R24 | 1824527 | 7 |
| SPT-SMD 1,5/ 2-H-3,81 R24 | 1824637 | 7 |
| SPT-SMD 1,5/ 2-H-5,0 R24 | 1824747 | 9 |
| SPT-SMD 1,5/ 2-H-5,08 R24 | 1824857 | 9 |
| SPT-SMD 1,5/ 2-V-3,5 R24 | 1824080 | 7 |
| SPT-SMD 1,5/ 2-V-3,81 R24 | 1824190 | 7 |
| SPT-SMD 1,5/ 2-V-5,0 R24 | 1824307 | 9 |
| SPT-SMD 1,5/ 2-V-5,08 R24 | 1824417 | 9 |
| SPT-SMD 1,5/ 3-H-3,5 R24 | 1824530 | 7 |
| SPT-SMD 1,5/ 3-H-3,81 R24 | 1824640 | 7 |
| SPT-SMD 1,5/ 3-H-5,0 R32 | 1824750 | 9 |
| SPT-SMD 1,5/ 3-H-5,08 R32 | 1824860 | 9 |
| SPT-SMD 1,5/ 3-V-3,5 R32 | 1824093 | 7 |
| SPT-SMD 1,5/ 3-V-3,81 R32 | 1824200 | 7 |
| SPT-SMD 1,5/ 3-V-5,0 R32 | 1824310 | 9 |
| SPT-SMD 1,5/ 3-V-5,08 R32 | 1824420 | 9 |
| SPT-SMD 1,5/ 4-H-3,5 R44 | 1824543 | 7 |
| SPT-SMD 1,5/ 4-H-3,81 R44 | 1824653 | 7 |
| SPT-SMD 1,5/ 4-H-5,0 R44 | 1824763 | 9 |
| SPT-SMD 1,5/ 4-H-5,08 R44 | 1824873 | 9 |
| SPT-SMD 1,5/ 4-V-3,5 R44 | 1824103 | 7 |
| SPT-SMD 1,5/ 4-V-3,81 R44 | 1824213 | 7 |
| SPT-SMD 1,5/ 4-V-5,0 R44 | 1824323 | 9 |
| SPT-SMD 1,5/ 4-V-5,08 R44 | 1824433 | 9 |
| SPT-SMD 1,5/ 5-H-3,5 R44 | 1824556 | 7 |
| SPT-SMD 1,5/ 5-H-3,81 R44 | 1824666 | 7 |
| SPT-SMD 1,5/ 5-H-5,0 R44 | 1824776 | 9 |
| SPT-SMD 1,5/ 5-H-5,08 R44 | 1824885 | 9 |
| SPT-SMD 1,5/ 5-V-3,5 R44 | 1824116 | 7 |
| SPT-SMD 1,5/ 5-V-3,81 R44 | 1824226 | 7 |
| SPT-SMD 1,5/ 5-V-5,0 R44 | 1824336 | 9 |
| SPT-SMD 1,5/ 5-V-5,08 R44 | 1824446 | 9 |
| SPT-SMD 1,5/ 6-H-3,5 R44 | 1824569 | 7 |
| SPT-SMD 1,5/ 6-H-3,81 R44 | 1824679 | 7 |
| SPT-SMD 1,5/ 6-H-5,0 R44 | 1824789 | 9 |
| SPT-SMD 1,5/ 6-H-5,08 R44 | 1824899 | 9 |
| SPT-SMD 1,5/ 6-V-3,5 R44 | 1824129 | 7 |
| SPT-SMD 1,5/ 6-V-3,81 R44 | 1824239 | 7 |
| SPT-SMD 1,5/ 6-V-5,0 R44 | 1824349 | 9 |
| SPT-SMD 1,5/ 6-V-5,08 R44 | 1824459 | 9 |
| SPT-SMD 1,5/ 7-H-3,5 R44 | 1824572 | 7 |
| SPT-SMD 1,5/ 7-H-3,81 R44 | 1824682 | 7 |
| SPT-SMD 1,5/ 7-H-5,0 R88 | 1824792 | 9 |
| SPT-SMD 1,5/ 7-H-5,08 R88 | 1824909 | 9 |
| SPT-SMD 1,5/ 7-V-3,5 R44 | 1824132 | 7 |
| SPT-SMD 1,5/ 7-V-3,81 R44 | 1824242 | 7 |
| SPT-SMD 1,5/ 7-V-5,0 R88 | 1824352 | 9 |
| SPT-SMD 1,5/ 7-V-5,08 R88 | 1824462 | 9 |
| SPT-SMD 1,5/ 8-H-3,5 R72 | 1824585 | 7 |
| SPT-SMD 1,5/ 8-H-3,81 R72 | 1824695 | 7 |
| SPT-SMD 1,5/ 8-H-5,0 R88 | 1824802 | 9 |
| SPT-SMD 1,5/ 8-H-5,08 R88 | 1824912 | 9 |
| SPT-SMD 1,5/ 8-V-3,5 R72 | 1824145 | 7 |
| SPT-SMD 1,5/ 8-V-3,81 R72 | 1824255 | 7 |
| SPT-SMD 1,5/ 8-V-5,0 R88 | 1824365 | 9 |
| SPT-SMD 1,5/ 8-V-5,08 R88 | 1824475 | 9 |
| SPT-SMD 1,5/ 9-H-3,5 R72 | 1824598 | 7 |
| SPT-SMD 1,5/ 9-H-3,81 R72 | 1824705 | 7 |
| SPT-SMD 1,5/ 9-H-5,0 R88 | 1824815 | 9 |
| SPT-SMD 1,5/ 9-H-5,08 R88 | 1824925 | 9 |
| SPT-SMD 1,5/ 9-V-3,5 R72 | 1824158 | 7 |
| SPT-SMD 1,5/ 9-V-3,81 R72 | 1824268 | 7 |
| SPT-SMD 1,5/ 9-V-5,0 R88 | 1824378 | 9 |
| SPT-SMD 1,5/ 9-V-5,08 R88 | 1824488 | 9 |
| SPT-SMD 1,5/10-H-3,5 R72 | 1824608 | 7 |
| SPT-SMD 1,5/10-H-3,81 R72 | 1824718 | 7 |
| SPT-SMD 1,5/10-H-5,0 R88 | 1824828 | 9 |
| SPT-SMD 1,5/10-H-5,08 R88 | 1824938 | 9 |
| SPT-SMD 1,5/10-V-3,5 R72 | 1824161 | 7 |
| SPT-SMD 1,5/10-V-3,81 R72 | 1824271 | 7 |
| SPT-SMD 1,5/10-V-5,0 R88 | 1824381 | 9 |
| SPT-SMD 1,5/10-V-5,08 R88 | 1824491 | 9 |
| SPT-SMD 1,5/11-H-3,5 R72 | 1824611 | 7 |
| SPT-SMD 1,5/11-H-3,81 R72 | 1824721 | 7 |
| SPT-SMD 1,5/11-H-5,0 R88 | 1824831 | 9 |
| SPT-SMD 1,5/11-H-5,08 R88 | 1824941 | 9 |
| SPT-SMD 1,5/11-V-3,5 R72 | 1824174 | 7 |
| SPT-SMD 1,5/11-V-3,81 R72 | 1824284 | 7 |
| SPT-SMD 1,5/11-V-5,0 R88 | 1824394 | 9 |
| SPT-SMD 1,5/11-V-5,08 R88 | 1824501 | 9 |
| SPT-SMD 1,5/12-H-3,5 R72 | 1824624 | 7 |
| SPT-SMD 1,5/12-H-3,81 R72 | 1824734 | 7 |
| SPT-SMD 1,5/12-H-5,0 R88 | 1824844 | 9 |
| SPT-SMD 1,5/12-H-5,08 R88 | 1824954 | 9 |
| SPT-SMD 1,5/12-V-3,5 R72 | 1824187 | 7 |
| SPT-SMD 1,5/12-V-3,81 R72 | 1824297 | 7 |
| SPT-SMD 1,5/12-V-5,0 R88 | 1824404 | 9 |
| SPT-SMD 1,5/12-V-5,08 R88 | 1824514 | 9 |
| SPT-THR 1,5/ 2-H-3,5 P20 R24 | 1823638 | 11 |
| SPT-THR 1,5/ 2-H-3,5 P26 | 1822752 | 10 |
| SPT-THR 1,5/ 2-H-3,81 P20 R24 | 1823748 | 11 |
| SPT-THR 1,5/ 2-H-3,81 P26 | 1822862 | 10 |
| SPT-THR 1,5/ 2-H-5,0 P20 R24 | 1823858 | 13 |
| SPT-THR 1,5/ 2-H-5,0 P26 | 1822972 | 12 |
| SPT-THR 1,5/ 2-H-5,08 P20 R24 | 1823968 | 13 |
| SPT-THR 1,5/ 2-H-5,08 P26 | 1823081 | 12 |
| SPT-THR 1,5/ 2-V-3,5 P20 R24 | 1823191 | 11 |
| SPT-THR 1,5/ 2-V-3,5 P26 | 1822312 | 11 |
| SPT-THR 1,5/ 2-V-3,81 P20 R24 | 1823308 | 11 |
| SPT-THR 1,5/ 2-V-3,81 P26 | 1822422 | 11 |
| SPT-THR 1,5/ 2-V-5,0 P20 R24 | 1823418 | 13 |
| SPT-THR 1,5/ 2-V-5,0 P26 | 1822532 | 13 |
| SPT-THR 1,5/ 2-V-5,08 P20 R24 | 1823528 | 13 |
| SPT-THR 1,5/ 2-V-5,08 P26 | 1822642 | 13 |
| SPT-THR 1,5/ 3-H-3,5 P20 R32 | 1823641 | 11 |
| SPT-THR 1,5/ 3-H-3,5 P26 | 1822765 | 10 |
| SPT-THR 1,5/ 3-H-3,81 P20 R32 | 1823751 | 11 |
| SPT-THR 1,5/ 3-H-3,81 P26 | 1822875 | 10 |
| SPT-THR 1,5/ 3-H-5,0 P20 R32 | 1823861 | 13 |
| SPT-THR 1,5/ 3-H-5,0 P26 | 1822985 | 12 |
| SPT-THR 1,5/ 3-H-5,08 P20 R32 | 1823971 | 13 |
| SPT-THR 1,5/ 3-H-5,08 P26 | 1823094 | 12 |
| SPT-THR 1,5/ 3-V-3,5 P20 R24 | 1823201 | 11 |
| SPT-THR 1,5/ 3-V-3,5 P26 | 1822325 | 11 |
| SPT-THR 1,5/ 3-V-3,81 P20 R24 | 1823311 | 11 |
| SPT-THR 1,5/ 3-V-3,81 P26 | 1822435 | 11 |
| SPT-THR 1,5/ 3-V-5,0 P20 R32 | 1823421 | 13 |
| SPT-THR 1,5/ 3-V-5,0 P26 | 1822545 | 13 |
| SPT-THR 1,5/ 3-V-5,08 P20 R32 | 1823531 | 13 |
| SPT-THR 1,5/ 3-V-5,08 P26 | 1822655 | 13 |
| SPT-THR 1,5/ 4-H-3,5 P20 R32 | 1823654 | 11 |
| SPT-THR 1,5/ 4-H-3,5 P26 | 1822778 | 10 |
| SPT-THR 1,5/ 4-H-3,81 P20 R32 | 1823764 | 11 |
| SPT-THR 1,5/ 4-H-3,81 P26 | 1822888 | 10 |
| SPT-THR 1,5/ 4-H-5,0 P20 R32 | 1823874 | 13 |
| SPT-THR 1,5/ 4-H-5,0 P26 | 1822998 | 12 |
| SPT-THR 1,5/ 4-H-5,08 P20 R32 | 1823984 | 13 |
| SPT-THR 1,5/ 4-H-5,08 P26 | 1823104 | 12 |
| SPT-THR 1,5/ 4-V-3,5 P20 R44 | 1823214 | 11 |
| SPT-THR 1,5/ 4-V-3,5 P26 | 1822338 | 11 |
| SPT-THR 1,5/ 4-V-3,81 P20 R44 | 1823324 | 11 |
| SPT-THR 1,5/ 4-V-3,81 P26 | 1822448 | 11 |
| SPT-THR 1,5/ 4-V-5,0 P20 R56 | 1823434 | 13 |
| SPT-THR 1,5/ 4-V-5,0 P26 | 1822558 | 13 |
| SPT-THR 1,5/ 4-V-5,08 P20 R56 | 1823544 | 13 |
| SPT-THR 1,5/ 4-V-5,08 P26 | 1822668 | 13 |
| SPT-THR 1,5/ 5-H-3,5 P20 R32 | 1823667 | 11 |
| SPT-THR 1,5/ 5-H-3,5 P26 | 1822781 | 10 |
| SPT-THR 1,5/ 5-H-3,81 P20 R32 | 1823777 | 11 |
| SPT-THR 1,5/ 5-H-3,81 P26 | 1822891 | 10 |
| SPT-THR 1,5/ 5-H-5,0 P20 R56 | 1823887 | 13 |
| SPT-THR 1,5/ 5-H-5,0 P26 | 1823007 | 12 |
| SPT-THR 1,5/ 5-H-5,08 P20 R56 | 1823997 | 13 |
| SPT-THR 1,5/ 5-H-5,08 P26 | 1823117 | 12 |
| SPT-THR 1,5/ 5-V-3,5 P20 R44 | 1823227 | 11 |
| SPT-THR 1,5/ 5-V-3,5 P26 | 1822341 | 11 |
| SPT-THR 1,5/ 5-V-3,81 P20 R44 | 1823337 | 11 |
| SPT-THR 1,5/ 5-V-3,81 P26 | 1822451 | 11 |
| SPT-THR 1,5/ 5-V-5,0 P20 R56 | 1823447 | 13 |
| SPT-THR 1,5/ 5-V-5,0 P26 | 1822561 | 13 |
| SPT-THR 1,5/ 5-V-5,08 P20 R56 | 1823557 | 13 |
| SPT-THR 1,5/ 5-V-5,08 P26 | 1822671 | 13 |
| SPT-THR 1,5/ 6-H-3,5 P20 R44 | 1823670 | 11 |
| SPT-THR 1,5/ 6-H-3,5 P26 | 1822794 | 10 |
| SPT-THR 1,5/ 6-H-3,81 P20 R44 | 1823780 | 11 |
| SPT-THR 1,5/ 6-H-3,81 P26 | 1822901 | 10 |
| SPT-THR 1,5/ 6-H-5,0 P20 R56 | 1823890 | 13 |
| SPT-THR 1,5/ 6-H-5,0 P26 | 1823010 | 12 |
| SPT-THR 1,5/ 6-H-5,08 P20 R56 | 1824006 | 13 |
| SPT-THR 1,5/ 6-H-5,08 P26 | 1823120 | 12 |
| SPT-THR 1,5/ 6-V-3,5 P20 R44 | 1823230 | 11 |
| SPT-THR 1,5/ 6-V-3,5 P26 | 1822354 | 11 |
| SPT-THR 1,5/ 6-V-3,81 P20 R44 | 1823340 | 11 |
| SPT-THR 1,5/ 6-V-3,81 P26 | 1822464 | 11 |
| SPT-THR 1,5/ 6-V-5,0 P20 R56 | 1823450 | 13 |
| SPT-THR 1,5/ 6-V-5,0 P26 | 1822574 | 13 |
| SPT-THR 1,5/ 6-V-5,08 P20 R56 | 1823560 | 13 |
| SPT-THR 1,5/ 6-V-5,08 P26 | 1822684 | 13 |
| SPT-THR 1,5/ 7-H-3,5 P20 R44 | 1823683 | 11 |
| SPT-THR 1,5/ 7-H-3,5 P26 | 1822804 | 10 |
| SPT-THR 1,5/ 7-H-3,81 P20 R44 | 1823793 | 11 |
| SPT-THR 1,5/ 7-H-3,81 P26 | 1822914 | 10 |
| SPT-THR 1,5/ 7-H-5,0 P20 R56 | 1823900 | 13 |
| SPT-THR 1,5/ 7-H-5,0 P26 | 1823023 | 12 |
| SPT-THR 1,5/ 7-H-5,08 P20 R56 | 1824019 | 13 |
| SPT-THR 1,5/ 7-H-5,08 P26 | 1823133 | 12 |
| SPT-THR 1,5/ 7-V-3,5 P20 R44 | 1823243 | 11 |
| SPT-THR 1,5/ 7-V-3,5 P26 | 1822367 | 11 |
| SPT-THR 1,5/ 7-V-3,81 P20 R44 | 1823353 | 11 |
| SPT-THR 1,5/ 7-V-3,81 P26 | 1822477 | 11 |
| SPT-THR 1,5/ 7-V-5,0 P20 R56 | 1823463 | 13 |
| SPT-THR 1,5/ 7-V-5,0 P26 | 1822587 | 13 |
| SPT-THR 1,5/ 7-V-5,08 P20 R56 | 1823573 | 13 |
| SPT-THR 1,5/ 7-V-5,08 P26 | 1822697 | 13 |
| SPT-THR 1,5/ 8-H-3,5 P20 R44 | 1823696 | 11 |
| SPT-THR 1,5/ 8-H-3,5 P26 | 1822817 | 10 |
| SPT-THR 1,5/ 8-H-3,81 P20 R44 | 1823803 | 11 |
| SPT-THR 1,5/ 8-H-3,81 P26 | 1822927 | 10 |
| SPT-THR 1,5/ 8-H-5,0 P20 R56 | 1823913 | 13 |
| SPT-THR 1,5/ 8-H-5,0 P26 | 1823036 | 12 |
| SPT-THR 1,5/ 8-H-5,08 P20 R56 | 1824022 | 13 |
| SPT-THR 1,5/ 8-H-5,08 P26 | 1823146 | 12 |
| SPT-THR 1,5/ 8-V-3,5 P20 R72 | 1823256 | 11 |
| SPT-THR 1,5/ 8-V-3,5 P26 | 1822370 | 11 |
| SPT-THR 1,5/ 8-V-3,81 P20 R72 | 1823366 | 11 |
| SPT-THR 1,5/ 8-V-3,81 P26 | 1822480 | 11 |
| SPT-THR 1,5/ 8-V-5,0 P20 R88 | 1823476 | 13 |
| SPT-THR 1,5/ 8-V-5,0 P26 | 1822590 | 13 |
| SPT-THR 1,5/ 8-V-5,08 P20 R88 | 1823586 | 13 |
| SPT-THR 1,5/ 8-V-5,08 P26 | 1822707 | 13 |
| SPT-THR 1,5/ 9-H-3,5 P20 R72 | 1823706 | 11 |
| SPT-THR 1,5/ 9-H-3,5 P26 | 1822820 | 10 |
| SPT-THR 1,5/ 9-H-3,81 P20 R72 | 1823816 | 11 |
| SPT-THR 1,5/ 9-H-3,81 P26 | 1822930 | 10 |
| SPT-THR 1,5/ 9-H-5,0 P20 R88 | 1823926 | 13 |
| SPT-THR 1,5/ 9-H-5,0 P26 | 1823049 | 12 |
| SPT-THR 1,5/ 9-H-5,08 P20 R88 | 1824035 | 13 |
| SPT-THR 1,5/ 9-H-5,08 P26 | 1823159 | 12 |
| SPT-THR 1,5/ 9-V-3,5 P20 R72 | 1823269 | 11 |
| SPT-THR 1,5/ 9-V-3,5 P26 | 1822383 | 11 |
| SPT-THR 1,5/ 9-V-3,81 P20 R72 | 1823379 | 11 |
| SPT-THR 1,5/ 9-V-3,81 P26 | 1822493 | 11 |
| SPT-THR 1,5/ 9-V-5,0 P20 R88 | 1823489 | 13 |
| SPT-THR 1,5/ 9-V-5,0 P26 | 1822600 | 13 |
| SPT-THR 1,5/ 9-V-5,08 P20 R88 | 1823599 | 13 |
| SPT-THR 1,5/ 9-V-5,08 P26 | 1822710 | 13 |
| SPT-THR 1,5/10-H-3,5 P20 R72 | 1823719 | 11 |
| SPT-THR 1,5/10-H-3,5 P26 | 1822833 | 10 |
| SPT-THR 1,5/10-H-3,81 P20 R72 | 1823829 | 11 |
| SPT-THR 1,5/10-H-3,81 P26 | 1822943 | 10 |
| SPT-THR 1,5/10-H-5,0 P20 R88 | 1823939 | 13 |
| SPT-THR 1,5/10-H-5,0 P26 | 1823052 | 12 |
| SPT-THR 1,5/10-H-5,08 P20 R88 | 1824048 | 13 |
| SPT-THR 1,5/10-H-5,08 P26 | 1823162 | 12 |
| SPT-THR 1,5/10-V-3,5 P20 R72 | 1823272 | 11 |
| SPT-THR 1,5/10-V-3,5 P26 | 1822396 | 11 |
| SPT-THR 1,5/10-V-3,81 P20 R72 | 1823382 | 11 |
| SPT-THR 1,5/10-V-3,81 P26 | 1822503 | 11 |
| SPT-THR 1,5/10-V-5,0 P20 R88 | 1823492 | 13 |
| SPT-THR 1,5/10-V-5,0 P26 | 1822613 | 13 |
| SPT-THR 1,5/10-V-5,08 P20 R88 | 1823609 | 13 |
| SPT-THR 1,5/10-V-5,08 P26 | 1822723 | 13 |
| SPT-THR 1,5/11-H-3,5 P20 R72 | 1823722 | 11 |
| SPT-THR 1,5/11-H-3,5 P26 | 1822846 | 10 |
| SPT-THR 1,5/11-H-3,81 P20 R72 | 1823832 | 11 |
| SPT-THR 1,5/11-H-3,81 P26 | 1822956 | 10 |
| SPT-THR 1,5/11-H-5,0 P20 R88 | 1823942 | 13 |
| SPT-THR 1,5/11-H-5,0 P26 | 1823065 | 12 |
| SPT-THR 1,5/11-H-5,08 P20 R88 | 1824051 | 13 |
| SPT-THR 1,5/11-H-5,08 P26 | 1823175 | 12 |
| SPT-THR 1,5/11-V-3,5 P20 R72 | 1823285 | 11 |
| SPT-THR 1,5/11-V-3,5 P26 | 1822406 | 11 |
| SPT-THR 1,5/11-V-3,81 P20 R72 | 1823395 | 11 |
| SPT-THR 1,5/11-V-3,81 P26 | 1822516 | 11 |
| SPT-THR 1,5/11-V-5,0 P20 R88 | 1823502 | 13 |
| SPT-THR 1,5/11-V-5,0 P26 | 1822626 | 13 |
| SPT-THR 1,5/11-V-5,08 P20 R88 | 1823612 | 13 |
| SPT-THR 1,5/11-V-5,08 P26 | 1822736 | 13 |
| SPT-THR 1,5/12-H-3,5 P20 R72 | 1823735 | 11 |
| SPT-THR 1,5/12-H-3,5 P26 | 1822859 | 10 |
| SPT-THR 1,5/12-H-3,81 P20 R72 | 1823845 | 11 |
| SPT-THR 1,5/12-H-3,81 P26 | 1822969 | 10 |
| SPT-THR 1,5/12-H-5,0 P20 R88 | 1823955 | 13 |
| SPT-THR 1,5/12-H-5,0 P26 | 1823078 | 12 |
| SPT-THR 1,5/12-H-5,08 P20 R88 | 1824064 | 13 |
| SPT-THR 1,5/12-H-5,08 P26 | 1823188 | 12 |
| SPT-THR 1,5/12-V-3,5 P20 R72 | 1823298 | 11 |
| SPT-THR 1,5/12-V-3,5 P26 | 1822419 | 11 |
| SPT-THR 1,5/12-V-3,81 P20 R72 | 1823405 | 11 |
| SPT-THR 1,5/12-V-3,81 P26 | 1822529 | 11 |
| SPT-THR 1,5/12-V-5,0 P20 R88 | 1823515 | 13 |
| SPT-THR 1,5/12-V-5,0 P26 | 1822639 | 13 |
| SPT-THR 1,5/12-V-5,08 P20 R88 | 1823625 | 13 |
| SPT-THR 1,5/12-V-5,08 P26 | 1822749 | 13 |
| SPTA 16/ 1-10,0 | 1819192 | 27 |
| SPTA 16/ 2-10,0-ZB | 1819202 | 27 |
| SPTA 16/ 3-10,0-ZB | 1819215 | 27 |
| SPTA 16/ 4-10,0-ZB | 1819228 | 27 |
| SPTA 16/ 5-10,0-ZB | 1819231 | 27 |
| SPTA 16/ 6-10,0-ZB | 1819244 | 27 |
| SPTA 16/ 7-10,0-ZB | 1819257 | 27 |
| SPTA 16/ 8-10,0-ZB | 1819260 | 27 |
| SPTA 16/ 9-10,0-ZB | 1819273 | 27 |
| SPTA 5/ 1-7,5 | 1819079 | 25 |
| SPTA 5/ 2-7,5-ZB | 1819082 | 25 |
| SPTA 5/ 3-7,5-ZB | 1819095 | 25 |
| SPTA 5/ 4-7,5-ZB | 1819105 | 25 |

| Type | Order No. | Page |
|---|---|---|
| SPTA 5/ 5-7,5-ZB | 1819118 | 25 |
| SPTA 5/ 6-7,5-ZB | 1819121 | 25 |
| SPTA 5/ 7-7,5-ZB | 1819134 | 25 |
| SPTA 5/ 8-7,5-ZB | 1819147 | 25 |
| SPTA 5/ 9-7,5-ZB | 1819150 | 25 |
| SPTA 5/10-7,5-ZB | 1819163 | 25 |
| SPTA 5/11-7,5-ZB | 1819176 | 25 |
| SPTA 5/12-7,5-ZB | 1819189 | 25 |
| SPTD 1,5/ 2-H-3,5 | 1841490 | 15 |
| SPTD 1,5/ 3-H-3,5 | 1841500 | 15 |
| SPTD 1,5/ 4-H-3,5 | 1841513 | 15 |
| SPTD 1,5/ 5-H-3,5 | 1841526 | 15 |
| SPTD 1,5/ 6-H-3,5 | 1841539 | 15 |
| SPTD 1,5/ 7-H-3,5 | 1841542 | 15 |
| SPTD 1,5/ 8-H-3,5 | 1841555 | 15 |
| SPTD 1,5/ 9-H-3,5 | 1841568 | 15 |
| SPTD 1,5/10-H-3,5 | 1841571 | 15 |
| SPTD 1,5/11-H-3,5 | 1841584 | 15 |
| SPTD 1,5/12-H-3,5 | 1841597 | 15 |
| ST-10KP010 | 1618255 | 66 |
| ST-10KP020 | 1618256 | 66 |
| ST-10KP030 | 1618261 | 66 |
| ST-10KS010 | 1618239 | 66 |
| ST-10KS020 | 1618251 | 66 |
| ST-10KS030 | 1618254 | 66 |
| STEP-PS/ 1AC/24DC/0.75 | 2868635 | 394 |
| STP 5-2-ZB | 3037643 | 173 |
| SUBCON 9/F-SH | 2761499 | 391 |
| SUBCON-PLUS-CAN/35/M12 | 2902325 | 397 |
| SUBCON-PLUS-CAN/35/PG/M12 | 2902324 | 397 |
| SUBCON-PLUS-CAN/90/M12 | 2902323 | 397 |
| SUBCON-PLUS-CAN/90/PG/M12 | 2902322 | 397 |
| SUBCON-PLUS-CAN/90X/M12 | 2902731 | 396 |
| SUBCON-PLUS-CAN/90X/PG/M12 | 2902730 | 396 |
| SUBCON-PLUS-M/AX 9 | 2904467 | 431 |
| SUBCON-PLUS-PROFIB/35/M12 | 2902320 | 397 |
| SUBCON-PLUS-PROFIB/35/PG/M12 | 2902319 | 397 |
| SUBCON-PLUS-PROFIB/90/M12 | 2902318 | 397 |
| SUBCON-PLUS-PROFIB/90/PG/M12 | 2902317 | 397 |
| SUBCON-PLUS-PROFIB/90X/M12 | 2902729 | 396 |
| SUBCON-PLUS-PROFIB/90X/PG/M12 | 2902728 | 396 |
| SZF 0-0,4X2,5 | 1204504 | 156 |
| SZF 1-0,6X3,5 | 1204517 | 158 |
| SZG 0,6X3,5 VDE | 1205121 | 164 |
| SZS 0,6X3,5 | 1205053 | 162 |
| SZS 1,0X4,0 VDE | 1205066 | 163 |

## T

| Type | Order No. | Page |
|---|---|---|
| TC MOBILE I/O X200 | 2903805 | 394 |
| TC MOBILE I/O X200 AC | 2903806 | 395 |
| TC MOBILE I/O X300 | 2903807 | 395 |
| TC MOBILE I/O X300 AC | 2903808 | 395 |
| TF-SCRJ-POF KONF SET | 1405246 | 48 |
| THERMOMARK CARD | 5146464 | 289 |
| THERMOMARK CARD PLUS | 5146481 | 289 |
| THERMOMARK CARD-UCT-MAG25 | 0802935 | 268 |
| THERMOMARK CARD-UCT-MAG26 | 0802988 | 272 |
| THERMOMARK CARD-UCT-MAG27 | 0802989 | 270 |
| THERMOMARK CARD-UM-MAG1 | 0831200 | 264 |
| THERMOMARK CARD-UM-MAG3 | 0831202 | 265 |
| THERMOMARK CARD-UM-MAG4 | 0831203 | 265 |
| THERMOMARK CARD-US-MAG1 | 5146451 | 278 |
| THERMOMARK ROLL | 5146477 | 289 |
| THERMOMARK ROLL X1 | 5146723 | 289 |
| THERMOMARK X1.2 | 5146231 | 289 |
| TM-RIBBON 110-EX | 0803211 | 277 |
| TMT 5 R | 0816430 | 44 |
| TMT 5 R GN | 0816401 | 44 |
| TMT 5 R RD | 0816427 | 44 |
| TMT (EX10)R | 0803068 | 266 |
| TMT (EX10)R CUS | 0803080 | 266 |
| TMT (EX10,5)R | 0803070 | 266 |
| TMT (EX10,5)R CUS | 0803081 | 266 |
| TMT (EX12)R | 0803071 | 266 |
| TMT (EX12)R CUS | 0803082 | 266 |
| TMT (EX5,5)R | 0803062 | 266 |
| TMT (EX5,5)R CUS | 0803072 | 266 |
| TMT (EX6,2)R | 0803063 | 266 |
| TMT (EX6,2)R CUS | 0803073 | 266 |
| TMT (EX6,5)R | 0803064 | 266 |
| TMT (EX6,5)R CUS | 0803075 | 266 |
| TMT (EX7,5)R | 0803065 | 266 |
| TMT (EX7,5)R CUS | 0803076 | 266 |
| TMT (EX8)R | 0803066 | 266 |
| TMT (EX8)R CUS | 0803077 | 266 |
| TMT (EX8,5)R | 0803067 | 266 |
| TMT (EX8,5)R CUS | 0803078 | 266 |
| TMT (EX9,5)R | 0828295 | 266 |
| TMT (EX9,5)R CUS | 0803079 | 266 |
| TMT TOOL | 0816650 | 266 |
| TMT2 (EX11)R | 0802683 | 266 |
| TMT2 (EX11)R CUS | 0830811 | 266 |
| TOOL-BAG CUS | 1200081 | 296 |
| TOOL-BELTPOUCH CUS | 1200084 | 297 |
| TOOL-CARRIER CUS | 1200082 | 296 |
| TOOL-CASE | 1212629 | 296 |
| TOOL-CASE CUS | 1200072 | 296 |
| TOOL-KIT CUS | 1200085 | 297 |
| TOOL-WRAP CUS | 1200083 | 297 |
| TOPMARK LASER | 0831831 | 245 |
| TOPMARK LASER STATION | 0831835 | 245 |
| TOPMARK LASER-MAG CARD | 0831837 | 245 |
| TOPMARK LASER-MAG SHEET | 0831836 | 245 |
| TOUCH PEN | 2701379 | 418 |
| TP 07T/M 211 | 2701452 | 418 |
| TP 10T/M 211 | 2701843 | 419 |
| TP 12T/M 211 | 2701844 | 419 |
| TP 15T/M 211 | 2701845 | 419 |

## U

| Type | Order No. | Page |
|---|---|---|
| UC-EMLP (15X5) | 0819301 | 339 |
| UC-EMLP (15X5) CUS | 0824550 | 339 |
| UC-EMLP (22X22)-EX | 0803224 | 276 |
| UC-EMLP (22X22)-EX CUS | 0803229 | 276 |
| UC-EMLP (27X18)-EX | 0803225 | 276 |
| UC-EMLP (27X18)-EX CUS | 0803230 | 276 |
| UC-EMLP (27X27)-EX | 0803226 | 276 |
| UC-EMLP (27X27)-EX CUS | 0803231 | 276 |
| UC-EMLP (49X15)-EX | 0803227 | 276 |
| UC-EMLP (49X15)-EX CUS | 0803232 | 276 |
| UC-EMLP (60X30)-EX | 0803228 | 276 |
| UC-EMLP (60X30)-EX CUS | 0803233 | 276 |
| UC-TMF 5 | 0818153 | 44 |
| UCT-EM (30X5) | 0801505 | 339 |
| UCT-EM (30X5) CUS | 0801589 | 339 |
| UCT-EMP (25X6) | 1014117 | 272 |
| UCT-EMP (25X6) CUS | 1014121 | 272 |
| UCT-EMP (29X8) | 1014118 | 273 |
| UCT-EMP (29X8) CUS | 1014122 | 273 |
| UCT-EMP (40X17) | 1014120 | 273 |
| UCT-EMP (40X17) CUS | 1014124 | 273 |
| UCT-EMP (60X15) | 1014119 | 273 |
| UCT-EMP (60X15) CUS | 1014123 | 273 |
| UCT-PMLP (90X38) | 0803041 | 286 |
| UCT-PMLP (90X38) CUS | 0803042 | 286 |
| UCT-PMLP-RFID/HF (90X38) | 0830956 | 282 |
| UCT-PMLP-RFID/UHF (90X38) | 0830957 | 283 |
| UCT-PMP (90X38) | 0803039 | 287 |
| UCT-PMP (90X38) BU | 0803047 | 287 |
| UCT-PMP (90X38) BU CUS | 8190566 | 287 |
| UCT-PMP (90X38) CUS | 0803040 | 287 |
| UCT-PMP (90X38) VT | 0803132 | 287 |
| UCT-PMP (90X38) VT CUS | 8190707 | 287 |
| UCT-PMP (90X38) YE | 0803133 | 287 |
| UCT-PMP (90X38) YE CUS | 8190708 | 287 |
| UCT-PMP-RFID/HF (90X38) | 0830954 | 284 |
| UCT-PMP-RFID/UHF (90X38) | 0830955 | 285 |
| UCT-PMP-RFID/UHF (90X38) OG | 0803048 | 285 |
| UCT-WMCO 2,9 (12X4) | 0830780 | 268 |
| UCT-WMCO 2,9 (12X4) CUS | 0830788 | 268 |
| UCT-WMCO 2,9 (18X4) | 0830781 | 268 |
| UCT-WMCO 2,9 (18X4) CUS | 0830789 | 268 |
| UCT-WMCO 3,5 (12X4) | 0830782 | 269 |
| UCT-WMCO 3,5 (12X4) CUS | 0830790 | 269 |
| UCT-WMCO 3,5 (18X4) | 0830783 | 269 |
| UCT-WMCO 3,5 (18X4) CUS | 0830791 | 269 |
| UCT-WMCO 4,1 (12X4) | 0830784 | 269 |
| UCT-WMCO 4,1 (12X4) CUS | 0830792 | 269 |
| UCT-WMCO 4,1 (18X4) | 0830785 | 269 |
| UCT-WMCO 4,1 (18X4) CUS | 0830793 | 269 |
| UCT-WMCO 4,7 (12X4) | 0830786 | 269 |
| UCT-WMCO 4,7 (12X4) CUS | 0830794 | 269 |
| UCT-WMCO 4,7 (18X4) | 0830787 | 269 |
| UCT-WMCO 4,7 (18X4) CUS | 0830795 | 269 |
| UCT-WMTBA (24X4) | 1014082 | 270 |
| UCT-WMTBA (24X4) CUS | 1014088 | 270 |
| UCT-WMTBA (24X4) YE | 1014083 | 270 |
| UCT-WMTBA (24X4) YE CUS | 1014089 | 270 |
| UCT-WMTBA (29X6) | 1014084 | 271 |
| UCT-WMTBA (29X6) CUS | 1014090 | 271 |
| UCT-WMTBA (29X6) YE | 1014085 | 271 |
| UCT-WMTBA (29X6) YE CUS | 1014091 | 271 |
| UCT-WMTBA (40X17) | 1014086 | 271 |
| UCT-WMTBA (40X17) CUS | 1014092 | 271 |
| UCT-WMTBA (40X17) YE | 1014087 | 271 |
| UCT-WMTBA (40X17) YE CUS | 1014093 | 271 |
| UK 4-SD | 3246861 | 170 |
| UM1-TM (12X10) | 0830916 | 264 |
| UM1-TM (3,5X12) | 0830925 | 264 |
| UM1-TM (5X10) | 0830905 | 264 |
| UM1-TM (5X12) | 0830912 | 264 |
| UM1-TM (6X10) | 0830903 | 264 |
| UM1-TM (6X12) | 0830909 | 264 |
| UM1-TM (8X10) | 0830906 | 264 |
| UM1-TM (8X12) | 0830920 | 264 |
| UM1-TMF (3,5X5) | 0830935 | 265 |
| UM1-TMF (5X5) | 0830902 | 265 |
| UM1-TMF (6X5) | 0830904 | 265 |
| UM1-TMF (8X5) | 0830924 | 265 |
| UM1U-TM (5X10) | 0830910 | 265 |
| UM1U-TM (6X10) | 0830907 | 265 |
| UNO-PS/1AC/ 5DC/ 25W | 2904374 | 316 |
| UNO-PS/1AC/ 5DC/ 40W | 2904375 | 316 |
| UNO-PS/1AC/12DC/100W | 2902997 | 317 |
| UNO-PS/1AC/15DC/ 55W | 2903001 | 317 |
| UNO-PS/1AC/15DC/100W | 2903002 | 318 |
| UNO-PS/1AC/15DC/30W | 2903000 | 317 |
| UNO-PS/1AC/24DC/ 90W/C2LPS | 2902994 | 318 |
| UNO-PS/1AC/48DC/ 60W | 2902995 | 319 |
| UNO-PS/1AC/48DC/100W | 2902996 | 319 |
| UNO-PS/2AC/24DC/90W/C2LPS | 2904371 | 319 |
| US-EMLP-HA (17X7) | 0830988 | 278 |
| US-EMLP-HA (17X7) CUS | 0830994 | 278 |
| US-EMLP-HA (20X9) | 0830989 | 278 |
| US-EMLP-HA (20X9) CUS | 0830995 | 278 |
| US-EMLP-HA (60X30) | 0830990 | 278 |
| US-EMLP-HA (60X30) CUS | 0830996 | 278 |
| US-EMLP-HA (60X30) SR | 0830991 | 278 |
| US-EMLP-HA (60X30) SR CUS | 0830997 | 278 |
| US-EMLP-HA (85,6X54) | 0830992 | 278 |
| US-EMLP-HA (85,6X54) CUS | 0830998 | 278 |
| US-EMLP-HA (85,6X54) SR | 0830993 | 278 |
| US-EMLP-HA (85,6X54) SR CUS | 0830999 | 278 |
| US-EMP (25X6)-1 | 0802754 | 272 |
| US-EMP (29X8) | 0829436 | 273 |
| US-EMP (40X17) | 0829437 | 273 |
| US-EMP (60X15) | 0828781 | 273 |
| USA 10/4,6 | 1202713 | 195 |
| UT 4-L | 3214363 | 166 |
| UT 4-L/HESI (5X20) | 3214325 | 168 |
| UT 4-L/L | 3214362 | 166 |
| UT 4-MT-EX | 3046141 | 163 |
| UT 4-MT-P/P-EX | 3046173 | 163 |
| UT 4-PE/L/HEDI | 3214324 | 169 |
| UT 4-PE/L/HESI (5X20) | 3214320 | 169 |
| UT 4-PE/L/HESILED 24 (5X20) | 3214321 | 169 |
| UT 4-PE/L/HESILED 250 (5X20) | 3214323 | 169 |
| UT 4-PE/L/HESILED 60 (5X20) | 3214322 | 169 |
| UT 4-PE/L/L | 3214360 | 167 |
| UT 4-PE/L/MT | 3214364 | 167 |
| UT 4-PE/L/N | 3214361 | 167 |
| UT 4-PE/L/TG | 3214365 | 167 |
| UT 4-TG-EX | 3046143 | 162 |
| UT 4-TG-P/P-EX | 3046169 | 162 |
| UT 6-TG P/P-EX | 3073870 | 163 |
| UT 6-TG-EX | 3046486 | 163 |
| UTRE 6-2/10 | 3069811 | 95 |
| UTRE 6-2/12 | 3069813 | 95 |
| UTRE 6-2/14 | 3069815 | 95 |
| UTRE 6-2/15 | 3069816 | 95 |
| UTRE 6-2/17 | 3069818 | 95 |
| UTRE 6-2/19 | 3069820 | 95 |
| UTRE 6-2/20 | 3069821 | 95 |
| UTRE 6-2/21 | 3069822 | 95 |
| UTRE 6-2/22 | 3069823 | 95 |
| UTRE 6-2/25 | 3069826 | 95 |
| UTRE 6-2/4 | 3069805 | 95 |
| UTRE 6-2/5 | 3069806 | 95 |
| UTRE 6-2/9 | 3069810 | 95 |
| UTRE 6-2/A14 | 3069426 | 135 |
| UTRE 6-2/A7 | 3069423 | 129 |
| UTRE 6-2/B14 | 3069427 | 137 |
| UTRE 6-2/B19 | 3069429 | 141 |
| UTRE 6-2/B7 | 3069424 | 131 |
| UTRE 6-2/C14 | 3069428 | 139 |
| UTRE 6-2/C19 | 3069430 | 143 |
| UTRE 6-2/D19 | 3069431 | 145 |
| UTRE 6-2/E7 | 3069425 | 133 |
| UTRE 6-2/F19 | 3069432 | 147 |
| UTRE 6-2/G19 | 3069433 | 149 |
| UTRE 6-2/H19 | 3069434 | 151 |
| UTRE 6-2/I19 | 3069435 | 153 |
| UTT 2,5-2MT-P/P | 3044670 | 165 |
| UTT 2,5-2MT-P/P BU | 3044671 | 165 |
| UTTB 2,5-MT-P/P | 3044640 | 165 |
| UTTB 2,5-MT-P/P BU | 3044641 | 165 |
| UTTB 2,5-TG-P/P | 3044644 | 164 |
| UTWE 6-2/10 | 3069658 | 94 |
| UTWE 6-2/12 | 3069660 | 94 |
| UTWE 6-2/14 | 3069663 | 94 |
| UTWE 6-2/15 | 3069664 | 94 |
| UTWE 6-2/17 | 3069667 | 94 |
| UTWE 6-2/19 | 3069672 | 94 |
| UTWE 6-2/20 | 3069673 | 94 |
| UTWE 6-2/21 | 3069800 | 94 |
| UTWE 6-2/22 | 3069801 | 94 |
| UTWE 6-2/25 | 3069804 | 94 |
| UTWE 6-2/4 | 3069650 | 94 |
| UTWE 6-2/5 | 3069651 | 94 |
| UTWE 6-2/9 | 3069656 | 94 |
| UTWE 6-2/A14 | 3069413 | 134 |
| UTWE 6-2/A7 | 3069410 | 128 |
| UTWE 6-2/B14 | 3069414 | 136 |
| UTWE 6-2/B19 | 3069416 | 140 |
| UTWE 6-2/B7 | 3069411 | 130 |
| UTWE 6-2/C14 | 3069415 | 138 |
| UTWE 6-2/C19 | 3069417 | 142 |
| UTWE 6-2/D19 | 3069418 | 144 |
| UTWE 6-2/E7 | 3069412 | 132 |
| UTWE 6-2/F19 | 3069419 | 146 |
| UTWE 6-2/G19 | 3069420 | 148 |
| UTWE 6-2/H19 | 3069421 | 150 |
| UTWE 6-2/I19 | 3069422 | 152 |

## V

| Type | Order No. | Page |
|---|---|---|
| VAL-MS 350 VF ST | 2856595 | 306 |
| VAL-MS 75 VF ST | 2805318 | 306 |
| VAL-MS BE-AR | 2801065 | 306 |
| VAL-MS BE-AR/FM | 2801066 | 306 |
| VAL-MS-AR 350 VF | 2801489 | 306 |
| VAL-MS-AR 350 VF/FM | 2801490 | 306 |
| VAL-MS-AR 75 VF | 2801487 | 306 |
| VAL-MS-AR 75 VF/FM | 2801488 | 306 |
| VAL-MS-AR-T1/T2 75 | 2801491 | 306 |
| VAL-MS-AR-T1/T2 75/FM | 2801492 | 306 |
| VAL-MS-T1/T2 48/12.5 ST | 2801242 | 307 |
| VAL-MS-T1/T2 48/12.5/1+1V | 2801532 | 307 |
| VAL-MS-T1/T2 48/12.5/1+1V-FM | 2801533 | 307 |
| VAL-MS-T1/T2 75/12.5 ST | 2801146 | 306 |
| VAL-SQ NP 120-2-A 32 | 2800371 | 309 |
| VAL-SQ NP 120-2-A 32 ST | 2800369 | 309 |

| Type | Order No. | Page |
|---|---|---|
| VAL-SQ NP 120-2-A BE | 2800749 | 309 |
| VIP-2/PT/PDM-2/16/FU 6.3A | 2903603 | 373 |
| VIP-8RPT-120AC/1AU/DI/PLC | 2904576 | 371 |
| VIP-8RPT-24DC/1AU/DI/PLC | 2903600 | 371 |
| VIP-8RPT-24DC/21/D0/FU/PLC | 2903601 | 370 |
| VIP-PA-PWR/20XOE/ 1,0M/S7 | 2904724 | 369 |
| VIP-PA-PWR/20XOE/ 2,0M/S7 | 2904725 | 369 |
| VIP-PA-PWR/20XOE/ 3,0M/S7 | 2904726 | 369 |
| VIP-PA-PWR/20XOE/ 4,0M/S7 | 2904727 | 369 |
| VIP-PA-PWR/20XOE/ 6,0M/S7 | 2904728 | 369 |
| VIP-PA-PWR/20XOE/ 8,0M/S7 | 2904729 | 369 |
| VIP-PA-PWR/20XOE/10,0M/S7 | 2904730 | 369 |
| VIP-PA-PWR/2X10COMBI/ 0,5M/S7 | 2904713 | 369 |
| VIP-PA-PWR/2X10COMBI/ 1,0M/S7 | 2904714 | 369 |
| VIP-PA-PWR/2X10COMBI/ 1,5M/S7 | 2904715 | 369 |
| VIP-PA-PWR/2X10COMBI/ 2,0M/S7 | 2904716 | 369 |
| VIP-PA-PWR/2X10COMBI/ 2,5M/S7 | 2904717 | 369 |
| VIP-PA-PWR/2X10COMBI/ 3,0M/S7 | 2904718 | 369 |
| VIP-PA-PWR/2X10COMBI/ 4,0M/S7 | 2904719 | 369 |
| VIP-PA-PWR/2X10COMBI/ 5,0M/S7 | 2904720 | 369 |
| VIP-PA-PWR/2X10COMBI/ 6,0M/S7 | 2904721 | 369 |
| VIP-PA-PWR/2X10COMBI/ 8,0M/S7 | 2904722 | 369 |
| VIP-PA-PWR/2X10COMBI/10,0M/S7 | 2904723 | 369 |
| VIP-PA-PWR/40XOE/ 1,0M/S7 | 2904731 | 369 |
| VIP-PA-PWR/40XOE/ 2,0M/S7 | 2904732 | 369 |
| VIP-PA-PWR/40XOE/ 3,0M/S7 | 2904733 | 369 |
| VIP-PA-PWR/40XOE/ 4,0M/S7 | 2904734 | 369 |
| VIP-PA-PWR/40XOE/ 6,0M/S7 | 2904735 | 369 |
| VIP-PA-PWR/40XOE/ 8,0M/S7 | 2904736 | 369 |
| VIP-PA-PWR/40XOE/10,0M/S7 | 2904737 | 369 |
| VIP-PA-PWR/4X10COMBI/ 0,5M/S7 | 2904702 | 368 |
| VIP-PA-PWR/4X10COMBI/ 1,0M/S7 | 2904703 | 368 |
| VIP-PA-PWR/4X10COMBI/ 1,5M/S7 | 2904704 | 368 |
| VIP-PA-PWR/4X10COMBI/ 2,0M/S7 | 2904705 | 368 |
| VIP-PA-PWR/4X10COMBI/ 2,5M/S7 | 2904706 | 368 |
| VIP-PA-PWR/4X10COMBI/ 3,0M/S7 | 2904707 | 368 |
| VIP-PA-PWR/4X10COMBI/ 4,0M/S7 | 2904708 | 368 |
| VIP-PA-PWR/4X10COMBI/ 5,0M/S7 | 2904709 | 368 |
| VIP-PA-PWR/4X10COMBI/ 6,0M/S7 | 2904710 | 368 |
| VIP-PA-PWR/4X10COMBI/ 8,0M/S7 | 2904711 | 368 |
| VIP-PA-PWR/4X10COMBI/10,0M/S7 | 2904712 | 368 |
| VIP-PT/FLK16/DS/FU/LED/AN/DV | 2903599 | 372 |
| VS-CABLE-STRIP-VARIO | 1657407 | 44 |


## W


| Type | Order No. | Page |
|---|---|---|
| WIREFOX 10 CUS | 1212760 | 301 |
| WIREFOX 16 CUS | 1212761 | 301 |
| WIREFOX 4 CUS | 1212762 | 301 |
| WIREFOX 6SC CUS | 1212763 | 301 |
| WT-HP HF 3,6X140 | 0830982 | 272 |
| WT-HP HF 4,5X290 | 0830984 | 272 |
| WT-HP HF 4,8X200 | 0830983 | 272 |
| WT-UV HF 3,6X140 BK | 3240832 | 274 |
| WT-UV HF 4,5X200 BK | 3240834 | 274 |
| WT-UV HF 4,5X290 BK | 3240835 | 274 |

| Type | Order No. | Page | Type | Order No. | Page | Type | Order No. | Page | Type | Order No. | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|

**EMC: Class A product:**

In accordance with statutory regulations, our products are indicated with this footnote if they are intended for use in industrial environments. This means that the permissible limit values for residential applications may be exceeded in the event of conducted and emitted interference. In such cases, the operator may have to take additional safety measures in order to ensure electromagnetic compatibility in residential applications.

PHOENIX CONTACT
INSPIRING INNOVATIONS

ООО «ЛайфЭлектроникс» “LifeElectronics” LLC

ИНН 7805602321 КПП 780501001 Р/С 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 30101810900000000703 БИК 044030703

*Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.*

*С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров*

*Мы предлагаем:*

- *Конкурентоспособные цены и скидки постоянным клиентам.*
- *Специальные условия для постоянных клиентов.*
- *Подбор аналогов.*
- *Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.*

- *Приемлемые сроки поставки, возможна ускоренная поставка.*
- *Доставку товара в любую точку России и стран СНГ.*
- *Комплексную поставку.*
- *Работу по проектам и поставку образцов.*
- *Формирование склада под заказчика.*

- *Сертификаты соответствия на поставляемую продукцию (по желанию клиента).*
- *Тестирование поставляемой продукции.*
- *Поставку компонентов, требующих военную и космическую приемку.*
- *Входной контроль качества.*
- *Наличие сертификата ISO.*

*В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.*

*Конструкторский отдел помогает осуществить:*

- *Регистрацию проекта у производителя компонентов.*
- *Техническую поддержку проекта.*
- *Защиту от снятия компонента с производства.*
- *Оценку стоимости проекта по компонентам.*
- *Изготовление тестовой платы монтаж и пусконаладочные работы.*

*Тел: +7 (812) 336 43 04 (многоканальный)*
*Email: org@lifeelectronics.ru*

***www.lifeelectronics.ru***