

## Relay Module - PLC-RPT- 48DC/21HC - 2900294

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PLC-INTERFACE for high continuous currents, consisting of PLC-BPT.../21 HC basic terminal block with push-in connection and plug-in miniature relay, for mounting on DIN rail NS 35/7,5, limiting continuous current up to 10 A, 1 PDT, input voltage 48 V DC

### Your advantages

- ✓ All common input voltages of 12 V DC to 230 V AC
- ✓ Long electrical service life thanks to 16 A relay
- ✓ Efficient connection to system cabling using V8 adapter
- ✓ Safe isolation according to DIN EN 50178 between coil and contact
- ✓ Max. continuous current of 10 A
- ✓ Functional plug-in bridges



### Key Commercial Data

|              |                                                                                                         |
|--------------|---------------------------------------------------------------------------------------------------------|
| Packing unit | 10 pc                                                                                                   |
| GTIN         | <br>4 046356 509886 |
| GTIN         | 4046356509886                                                                                           |

### Technical data

#### Note

|                         |                                                                           |
|-------------------------|---------------------------------------------------------------------------|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---------------------------------------------------------------------------|

#### Dimensions

|        |       |
|--------|-------|
| Width  | 14 mm |
| Height | 80 mm |
| Depth  | 94 mm |

#### Ambient conditions

|                                         |                  |
|-----------------------------------------|------------------|
| Ambient temperature (operation)         | -40 °C ... 60 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Degree of protection                    | RT II (Relay)    |

# Relay Module - PLC-RPT- 48DC/21HC - 2900294

## Technical data

### Ambient conditions

|  |                   |
|--|-------------------|
|  | IP20 (Relay base) |
|--|-------------------|

### Coil side

|                                         |                                                       |
|-----------------------------------------|-------------------------------------------------------|
| Nominal input voltage $U_N$             | 48 V DC                                               |
| Typical input current at $U_N$          | 20 mA                                                 |
| Typical response time                   | 8 ms                                                  |
| Typical release time                    | 10 ms                                                 |
| Protective circuit                      | Reverse polarity protection Polarity protection diode |
|                                         | Free-wheeling diode Damping diode                     |
| Operating voltage display               | Yellow LED                                            |
| Power dissipation for nominal condition | 0.96 W                                                |

### Contact side

|                                               |                                                                                                                                                                                                                                               |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Contact type                                  | 1 PDT                                                                                                                                                                                                                                         |
| Type of switch contact                        | Single contact                                                                                                                                                                                                                                |
| Contact material                              | AgNi                                                                                                                                                                                                                                          |
| Maximum switching voltage                     | 250 V AC/DC (The separating plate PLC-ATP should be installed for voltages larger than 250 V (L1, L2, L3) between identical terminal blocks in adjacent modules. Potential bridging is then carried out with FBST 8-PLC... or ...FBST 500...) |
| Minimum switching voltage                     | 12 V DC (at 10 mA)                                                                                                                                                                                                                            |
| Min. switching current                        | 10 mA (at 12 V)                                                                                                                                                                                                                               |
| Maximum inrush current                        | 30 A (300 ms)                                                                                                                                                                                                                                 |
| Limiting continuous current                   | 10 A                                                                                                                                                                                                                                          |
|                                               | 6 A (value applies to connections 12. If connections 12 are bridged, the normal value applies.)                                                                                                                                               |
| Interrupting rating (ohmic load) max.         | 240 W (at 24 V DC)                                                                                                                                                                                                                            |
|                                               | 58 W (at 48 V DC)                                                                                                                                                                                                                             |
|                                               | 48 W (at 60 V DC)                                                                                                                                                                                                                             |
|                                               | 50 W (at 110 V DC)                                                                                                                                                                                                                            |
|                                               | 80 W (at 220 V DC)                                                                                                                                                                                                                            |
|                                               | 2500 VA (for 250 V AC)                                                                                                                                                                                                                        |
| Interrupting rating (ohmic load) max. bridged | 144 W (for 24 V DC. Value applies to connections 12. If connections 12 are bridged, the normal value applies.)                                                                                                                                |
|                                               | 1500 VA (for 250 V AC. Value applies to connections 12. If connections 12 are bridged, the normal value applies.)                                                                                                                             |
| Switching capacity                            | 2 A (at 24 V, DC13)                                                                                                                                                                                                                           |
|                                               | 0.2 A (at 110 V, DC13)                                                                                                                                                                                                                        |
|                                               | 0.2 A (at 250 V, DC13)                                                                                                                                                                                                                        |
|                                               | 6 A (at 24 V, AC15)                                                                                                                                                                                                                           |
|                                               | 6 A (at 120 V, AC15)                                                                                                                                                                                                                          |
|                                               | 6 A (at 250 V, AC15)                                                                                                                                                                                                                          |

### General

# Relay Module - PLC-RPT- 48DC/21HC - 2900294

## Technical data

### General

|                                        |                           |
|----------------------------------------|---------------------------|
| Operating mode                         | 100% operating factor     |
| Flammability rating according to UL 94 | V0 (Housing)              |
| Mechanical service life                | 3x 10 <sup>7</sup> cycles |
| Mounting position                      | any                       |
| Assembly instructions                  | In rows with zero spacing |

### Connection data

|                                  |                                                              |
|----------------------------------|--------------------------------------------------------------|
| Connection name                  | Coil side                                                    |
| Connection method                | Push-in connection                                           |
| Stripping length                 | 8 mm                                                         |
| Conductor cross section solid    | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                 |
| Conductor cross section flexible | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                 |
|                                  | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> (Single ferrule) |
|                                  | 2x 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup> (TWIN ferrule)  |
| Conductor cross section AWG      | 26 ... 14                                                    |

### Connection data 2

|                                  |                                                              |
|----------------------------------|--------------------------------------------------------------|
| Connection name                  | Contact side                                                 |
| Connection method                | Push-in connection                                           |
| Stripping length                 | 8 mm                                                         |
| Conductor cross section solid    | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                 |
| Conductor cross section flexible | 0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>                 |
|                                  | 0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> (Single ferrule) |
|                                  | 2x 0.5 mm <sup>2</sup> ... 1 mm <sup>2</sup> (TWIN ferrule)  |
| Conductor cross section AWG      | 26 ... 14                                                    |

### Standards and Regulations

|                                  |                                       |
|----------------------------------|---------------------------------------|
| Connection in acc. with standard | CUL                                   |
| Designation                      | Standards/regulations                 |
| Standards/regulations            | IEC 60664                             |
|                                  | EN 50178                              |
| Rated surge voltage              | 6 kV                                  |
| Insulation                       | Safe isolation, reinforced insulation |
| Pollution degree                 | 2                                     |
| Overvoltage category             | III                                   |

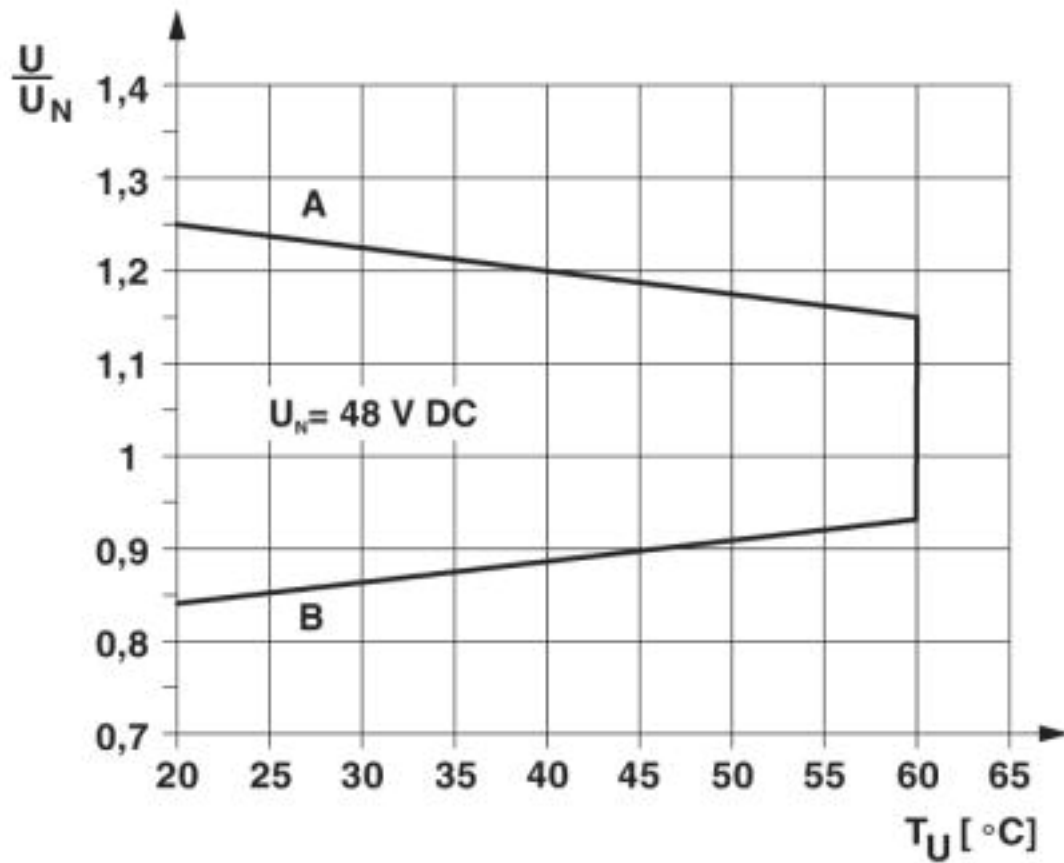
### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
| China RoHS | Environmentally Friendly Use Period = 50 years                                                      |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

## Drawings

## Relay Module - PLC-RPT- 48DC/21HC - 2900294

Diagram



Curve A

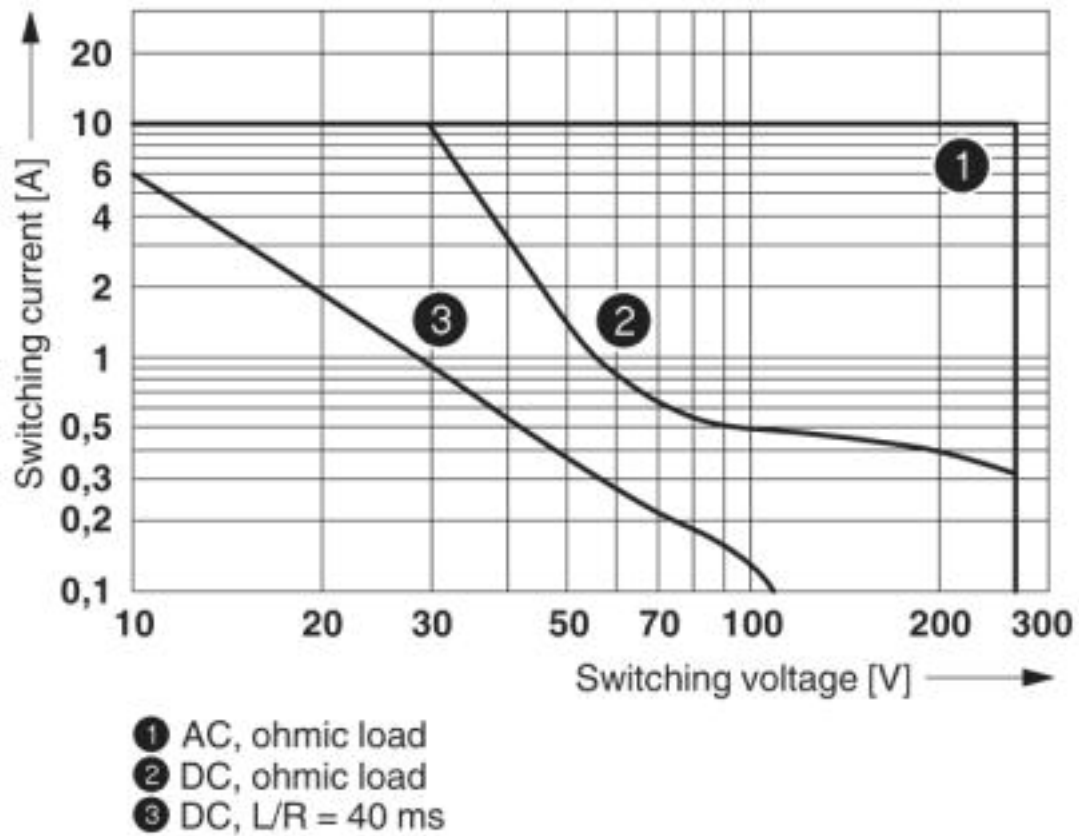
Maximum permissible continuous voltage  $U_{\max}$  with limiting continuous current on the contact side (see relevant technical data)

Curve B

Minimum permissible operate voltage  $U_{\text{op}}$  after pre-excitation (see relevant technical data)

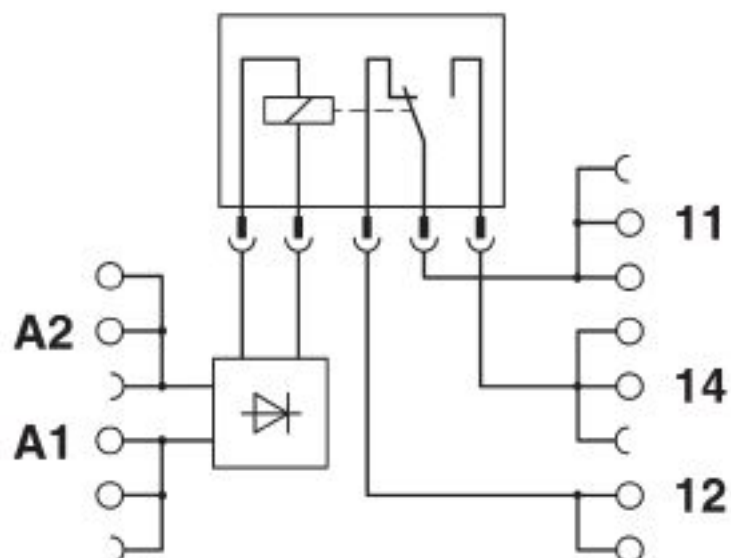
## Relay Module - PLC-RPT- 48DC/21HC - 2900294

Diagram



Interrupting rating

Circuit diagram



## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Articles in set

Relay base - PLC-BPT- 48DC/21HC - 2900256



14 mm PLC basic terminal block for high continuous currents with push-in connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, 1 PDT, input voltage 48 V DC

Single relay - REL-MR- 24DC/21HC - 2961312



Plug-in miniature power relay, with power contact for high continuous currents, 1 PDT, input voltage 24 V DC

### Classifications

#### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27371601 |
| eCl@ss 4.0    | 27371000 |
| eCl@ss 4.1    | 27371000 |
| eCl@ss 5.0    | 27371600 |
| eCl@ss 5.1    | 27371600 |
| eCl@ss 6.0    | 27371600 |
| eCl@ss 7.0    | 27371601 |
| eCl@ss 8.0    | 27371601 |
| eCl@ss 9.0    | 27371601 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001437 |
| ETIM 3.0 | EC001437 |
| ETIM 4.0 | EC001437 |
| ETIM 5.0 | EC001437 |
| ETIM 6.0 | EC001437 |
| ETIM 7.0 | EC001437 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211916 |
| UNSPSC 7.0901 | 39121515 |
| UNSPSC 11     | 39121515 |
| UNSPSC 12.01  | 39121515 |
| UNSPSC 13.2   | 39122334 |

## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Classifications

#### UNSPSC

|             |          |
|-------------|----------|
| UNSPSC 18.0 | 39122334 |
| UNSPSC 19.0 | 39122334 |
| UNSPSC 20.0 | 39122334 |
| UNSPSC 21.0 | 39122334 |

### Approvals

#### Approvals

#### Approvals

UL Listed / UL Recognized / cUL Recognized / cUL Listed / RC FRT / EAC / cULus Recognized / cULus Listed

#### Ex Approvals

#### Approval details

|           |                                                                                     |                                                                                                                                                       |               |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| UL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 172140 |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

|               |                                                                                     |                                                                                                                                                       |               |
|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| UL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 238705 |
|---------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

|                |                                                                                     |                                                                                                                                                       |               |
|----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| cUL Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 238705 |
|----------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

|            |                                                                                     |                                                                                                                                                       |               |
|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| cUL Listed |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 172140 |
|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

|        |                                                                                     |  |         |
|--------|-------------------------------------------------------------------------------------|--|---------|
| RC FRT |  |  | B.00094 |
|--------|-------------------------------------------------------------------------------------|--|---------|

|     |                                                                                     |  |                 |
|-----|-------------------------------------------------------------------------------------|--|-----------------|
| EAC |  |  | TR_TS_D_00573_c |
|-----|-------------------------------------------------------------------------------------|--|-----------------|

## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Approvals

cULus Recognized



cULus Listed



### Accessories

#### Accessories

##### Bridge

Continuous plug-in bridge - FBST 500-PLC RD - 2966786



Continuous plug-in bridge, length: 500 mm, color: red

Continuous plug-in bridge - FBST 500-PLC BU - 2966692



Continuous plug-in bridge, length: 500 mm, color: blue

Continuous plug-in bridge - FBST 500-PLC GY - 2966838



Continuous plug-in bridge, length: 500 mm, color: gray

Single plug-in bridge - FBST 6-PLC RD - 2966236



Single plug-in bridge, length: 6 mm, number of positions: 2, color: red

## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Accessories

Single plug-in bridge - FBST 6-PLC BU - 2966812



Single plug-in bridge, length: 6 mm, number of positions: 2, color: blue

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Single plug-in bridge - FBST 6-PLC GY - 2966825



Single plug-in bridge, length: 6 mm, number of positions: 2, color: gray

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Single plug-in bridge - FBST 8-PLC GY - 2967688



Single plug-in bridge, length: 8 mm, number of positions: 2, color: gray

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Single plug-in bridge - FBST 14-PLC BK - 2967691



Single plug-in bridge, length: 14 mm, number of positions: 2, color: black

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### DIN rail

DIN rail, unperforated - NS 35/ 7,5 V2A UNPERF 2000MM - 0801377



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Stainless steel V2A, uncoated, length: 2000 mm, color: silver

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## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Accessories

DIN rail perforated - NS 35/ 7,5 PERF 2000MM - 0801733



DIN rail perforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

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DIN rail, unperforated - NS 35/ 7,5 CU UNPERF 2000MM - 0801762



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Copper, uncoated, length: 2000 mm, color: copper-colored

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DIN rail, unperforated - NS 35/15 UNPERF 2000MM - 1201714



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

---

DIN rail, unperforated - NS 35/15 CU UNPERF 2000MM - 1201895



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Copper, uncoated, length: 2000 mm, color: copper-colored

---

DIN rail, unperforated - NS 35/15-2,3 UNPERF 2000MM - 1201798



DIN rail, unperforated, Standard profile 2.3 mm, width: 35 mm, height: 15 mm, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

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## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Accessories

DIN rail, unperforated - NS 35/15 AL UNPERF 2000MM - 1201756



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Aluminum, uncoated, length: 2000 mm, color: silver

DIN rail perforated - NS 35/15 PERF 2000MM - 1201730



DIN rail perforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/ 7,5 UNPERF 2000MM - 0801681



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, galvanized, passivated with a thick layer, length: 2000 mm, color: silver

### Labeled terminal marker

Zack marker strip - ZB10,LGS:FORTL.ZAHLEN - 1053014



Zack marker strip, Strip, white, labeled, can be labeled with: CMS-P1-PLOTTER, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 91 ... 100, mounting type: snap into tall marker groove, for terminal block width: 10.2 mm, lettering field size: 10.15 x 10.5 mm, Number of individual labels: 10

### Partition plate

Separating plate - PLC-ATP BK - 2966841



Separating plate, 2 mm thick, required at the start and end of a PLC terminal strip. Furthermore, it is used for: visual separation of groups, safe isolation of different voltages of neighboring PLC relays in acc. with DIN VDE 0106-101, isolation

### Power module

## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Accessories

Power terminal block - PLC-ESK GY - 2966508



Power terminal block, for the input of up to four potentials, for mounting on NS 35/7.5

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### Screwdriver tools

Screwdriver - SZF 1-0,6X3,5 - 1204517



Actuation tool, for ST terminal blocks, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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### Terminal marking

Zack marker strip - ZB10/WH-100:UNBEDRUCKT - 5060883



Zack marker strip, Strip, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into tall marker groove, for terminal block width: 10.2 mm, lettering field size: 10.15 x 10.5 mm, Number of individual labels: 1000

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Zack marker strip - ZB 10:UNBEDRUCKT - 1053001



Zack marker strip, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into tall marker groove, for terminal block width: 10.2 mm, lettering field size: 10.5 x 10.15 mm, Number of individual labels: 10

---

Marker for terminal blocks - UC-TM 12 - 0819194



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into tall marker groove, for terminal block width: 12 mm, lettering field size: 11.45 x 10.5 mm, Number of individual labels: 40

## Relay Module - PLC-RPT- 48DC/21HC - 2900294

### Accessories

Marker for terminal blocks - UCT-TM 12 - 0829144



Marker for terminal blocks, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snap into tall marker groove, for terminal block width: 12 mm, lettering field size: 10.8 x 9.6 mm, Number of individual labels: 30

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### Spare parts

Relay base - PLC-BPT- 48DC/21HC - 2900256



14 mm PLC basic terminal block for high continuous currents with push-in connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, 1 PDT, input voltage 48 V DC

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Single relay - REL-MR- 24DC/21HC - 2961312



Plug-in miniature power relay, with power contact for high continuous currents, 1 PDT, input voltage 24 V DC

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