

## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

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PLC-INTERFACE for output functions, consisting of PLC-BPT.../ACT basic terminal block with push-in connection and plug-in miniature solid-state relay, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input: 5 V DC, output: 3 - 33 V DC/3 A

### Your advantages

- ✓ Actuator connected directly to relay module
- ✓ Time savings of up to 60 %
- ✓ Efficient connection to system cabling using V8 adapter
- ✓ No need for additional modular terminal blocks
- ✓ Relay modules with safe isolation according to DIN EN 50178 between coil and contact
- ✓ Space savings of up to 80 %
- ✓ Functional plug-in bridges



### Key Commercial Data

|                                      |                                                                                                         |
|--------------------------------------|---------------------------------------------------------------------------------------------------------|
| Packing unit                         | 1 pc                                                                                                    |
| GTIN                                 | <br>4 046356 506861 |
| GTIN                                 | 4046356506861                                                                                           |
| Weight per Piece (excluding packing) | 36.000 g                                                                                                |
| Custom tariff number                 | 85364190                                                                                                |
| Country of origin                    | Germany                                                                                                 |

### Technical data

#### Note

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

#### Dimensions

# Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

## Technical data

### Dimensions

|        |        |
|--------|--------|
| Width  | 6.2 mm |
| Height | 80 mm  |
| Depth  | 94 mm  |

### Ambient conditions

|                                         |                  |
|-----------------------------------------|------------------|
| Ambient temperature (operation)         | -25 °C ... 60 °C |
| Ambient temperature (storage/transport) | -25 °C ... 70 °C |

### Input data

|                                                      |                             |
|------------------------------------------------------|-----------------------------|
| Nominal input voltage $U_N$                          | 5 V DC                      |
| Input voltage range in reference to $U_N$            | 0.8 ... 1.2                 |
| Input voltage range                                  | 4 V DC ... 6 V DC           |
| Switching threshold "0" signal in reference to $U_N$ | $\leq 0.25$                 |
| Switching threshold "1" signal in reference to $U_N$ | $\geq 0.8$                  |
| Typical input current at $U_N$                       | 9.5 mA                      |
| Typical response time                                | 20 $\mu$ s (at $U_N$ )      |
| Typical turn-off time                                | 300 $\mu$ s (at $U_N$ )     |
| Operating voltage display                            | Yellow LED                  |
| Type of protection                                   | Reverse polarity protection |
|                                                      | Free-wheeling diode         |
| Protective circuit/component                         | Polarity protection diode   |
|                                                      | Damping diode               |
| Transmission frequency                               | 300 Hz                      |
| Power dissipation for nominal condition              | 0.05 W                      |

### Output data

|                                                  |                             |
|--------------------------------------------------|-----------------------------|
| Output voltage range                             | 3 V DC ... 33 V DC          |
| Limiting continuous current                      | 3 A (see derating curve)    |
| Maximum inrush current                           | 15 A (10 ms)                |
| Voltage drop at max. limiting continuous current | $\leq 200$ mV               |
| Output circuit                                   | 2-wire, floating            |
| Type of protection                               | Reverse polarity protection |
|                                                  | Surge protection            |
| Protective circuit/component                     | Polarity protection diode   |

### General

|                           |                           |
|---------------------------|---------------------------|
| Test voltage input/output | 2.5 kV (50 Hz, 1 min.)    |
| Mounting position         | any                       |
| Assembly instructions     | In rows with zero spacing |

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## Technical data

### General

|                |                       |
|----------------|-----------------------|
| Operating mode | 100% operating factor |
|----------------|-----------------------|

### Connection data

|                                  |                      |
|----------------------------------|----------------------|
| Connection name                  | Input side           |
| Connection method                | Push-in connection   |
| Stripping length                 | 8 mm                 |
| Conductor cross section solid    | 0.14 mm² ... 2.5 mm² |
| Conductor cross section flexible | 0.14 mm² ... 2.5 mm² |
| Conductor cross section AWG      | 26 ... 14            |

### Connection data 2

|                                  |                      |
|----------------------------------|----------------------|
| Connection name                  | Output side          |
| Connection method                | Push-in connection   |
| Stripping length                 | 8 mm                 |
| Conductor cross section solid    | 0.14 mm² ... 2.5 mm² |
| Conductor cross section flexible | 0.14 mm² ... 2.5 mm² |
| Conductor cross section AWG      | 26 ... 14            |

### Standards and Regulations

|                                  |                       |
|----------------------------------|-----------------------|
| Connection in acc. with standard | CUL                   |
| Designation                      | Standards/regulations |
| Standards/regulations            | IEC 60664             |
|                                  | IEC 60664A            |
|                                  | DIN VDE 0110          |
| Insulation                       | Basic insulation      |
| Pollution degree                 | 2                     |
| Overvoltage category             | III                   |

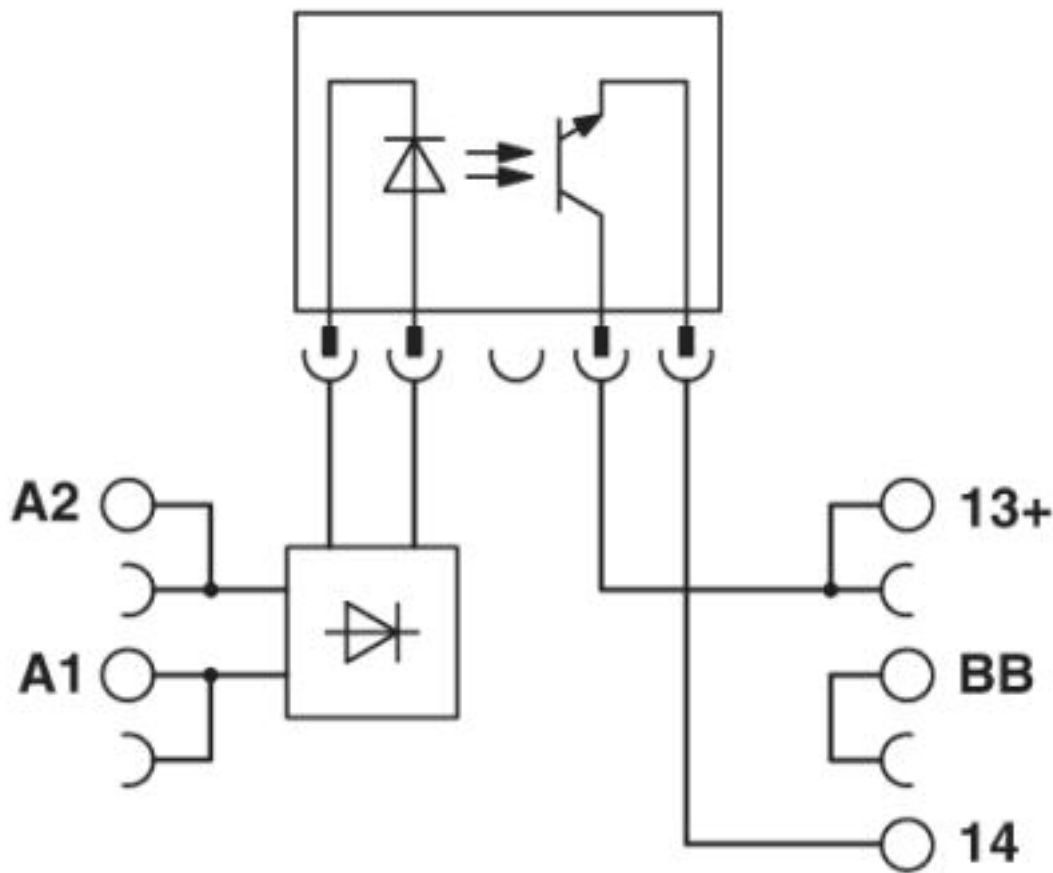
### Environmental Product Compliance

|            |                                                                                                     |
|------------|-----------------------------------------------------------------------------------------------------|
|            | Lead 7439-92-1                                                                                      |
| China RoHS | Environmentally Friendly Use Period = 50                                                            |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

## Drawings

Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

Circuit diagram



Classifications

eCl@ss

|            |          |
|------------|----------|
| eCl@ss 4.0 | 27371100 |
| eCl@ss 4.1 | 27371100 |
| eCl@ss 5.0 | 27371000 |
| eCl@ss 5.1 | 27371000 |
| eCl@ss 6.0 | 27371600 |
| eCl@ss 7.0 | 27371604 |
| eCl@ss 8.0 | 27371604 |
| eCl@ss 9.0 | 27371604 |

ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001504 |
| ETIM 3.0 | EC001504 |

## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

### Classifications

#### ETIM

|          |          |
|----------|----------|
| ETIM 4.0 | EC001504 |
| ETIM 5.0 | EC001504 |
| ETIM 6.0 | EC001504 |
| ETIM 7.0 | EC001504 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211916 |
| UNSPSC 7.0901 | 39121542 |
| UNSPSC 11     | 39121542 |
| UNSPSC 12.01  | 39121542 |
| UNSPSC 13.2   | 39122326 |
| UNSPSC 18.0   | 39122326 |
| UNSPSC 19.0   | 39122326 |
| UNSPSC 20.0   | 39122326 |
| UNSPSC 21.0   | 39122326 |

### Approvals

#### Approvals

##### Approvals

DNV GL / UL Listed / UL Recognized / cUL Recognized / cUL Listed / EAC / cULus Recognized / cULus Listed

##### Ex Approvals

#### Approval details

|        |                                                                                     |                                                                                   |               |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------|
| DNV GL |  | <a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a> | TAE0000196-02 |
|--------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------|

|           |                                                                                     |                                                                                                                                                       |               |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 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 |
|-----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|

## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

### Approvals

UL Recognized



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

cUL Recognized



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 238705

cUL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 172140

EAC



TR\_TS\_D\_00573\_c

cULus Recognized



cULus Listed



### Accessories

#### Accessories

##### DIN rail

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

## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

### Accessories

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

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

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

## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

### Accessories

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

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

### Labeled terminal marker

Zack marker strip - ZB 6,LGS:FORTL.ZAHLEN - 1051016



Zack marker strip, Strip, white, labeled, can be labeled with: CMS-P1-PLOTTER, printed horizontally: consecutive numbers 1 ... 10, 11 ... 20, etc. up to 491 ... 500, mounting type: snap into tall marker groove, for terminal block width: 6.2 mm, lettering field size: 6.15 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

## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

### Accessories

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#### Power module

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

#### Relay socket

Relay base - PLC-BPT- 5DC/ 1/ACT - 2900448



6.2 mm PLC basic terminal block for output functions with push-in connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, with load return line connection (BB), 1 N/O contact, input voltage 5 V DC

#### 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

#### Single solid-state relay

Miniature solid-state relay - OPT- 5DC/ 24DC/ 2 - 2967989



Plug-in miniature solid-state relay, power solid-state relay, 1 N/O contact, input voltage: 5 V DC

#### Terminal marking

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## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

### Accessories

#### Zack marker strip - ZB 6/WH-100:UNBEDRUCKT - 5060935



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: 6.2 mm, lettering field size: 6.15 x 10.5 mm, Number of individual labels: 10

#### Zack marker strip - ZB 6:UNBEDRUCKT - 1051003



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: 6.2 mm, lettering field size: 6.15 x 10.5 mm, Number of individual labels: 10

#### Marker for terminal blocks - UC-TM 6 - 0818085



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: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 80

#### Marker for terminal blocks - UCT-TM 6 - 0828736



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: 6.2 mm, lettering field size: 5.6 x 10.5 mm, Number of individual labels: 60

### Spare parts

#### Relay base - PLC-BPT- 5DC/ 1/ACT - 2900448



6.2 mm PLC basic terminal block for output functions with push-in connection, without relay or solid-state relay, for mounting on DIN rail NS 35/7,5, with load return line connection (BB), 1 N/O contact, input voltage 5 V DC

## Solid-state relay module - PLC-OPT- 5DC/ 24DC/2/ACT - 2900375

### Accessories

Miniature solid-state relay - OPT- 5DC/ 24DC/ 2 - 2967989



Plug-in miniature solid-state relay, power solid-state relay, 1 N/O contact, input voltage: 5 V DC

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