

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

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PLC-INTERFACE with confirmation contact, consisting of basic terminal block with push-in connection and integrated miniature solid-state relay, for mounting on DIN rail NS 35/7,5, 1 N/O contact, input: 24 V DC, output: 3 - 33 V DC/10 A

### Your advantages

- ✓ Resistant to vibrations and shocks
- ✓ Wear-free switching with no contact bounce
- ✓ Protective circuit in input and output
- ✓ Status indicator
- ✓ DC voltage outputs up to 24 V DC/10 A
- ✓ Option of bridging adjacent modules



### Key Commercial Data

|              |                                                                                      |
|--------------|--------------------------------------------------------------------------------------|
| Packing unit | 10 pc                                                                                |
| GTIN         |  |
| GTIN         | 4046356506960                                                                        |

### Technical data

#### Note

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

#### Dimensions

|        |        |
|--------|--------|
| Width  | 6.5 mm |
| Height | 80 mm  |
| Depth  | 86 mm  |

#### Ambient conditions

|                                         |                  |
|-----------------------------------------|------------------|
| Ambient temperature (operation)         | -25 °C ... 60 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Degree of protection                    | IP20             |

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## Technical data

### Input data

|                                                      |                             |
|------------------------------------------------------|-----------------------------|
| Nominal input voltage $U_N$                          | 24 V DC                     |
| Input voltage range in reference to $U_N$            | 0.8 ... 1.2                 |
| Input voltage range                                  | 19.2 V DC ... 28.8 V DC     |
| Switching threshold "0" signal in reference to $U_N$ | $\leq 0.4$                  |
| Switching threshold "1" signal in reference to $U_N$ | $\geq 0.8$                  |
| Typical input current at $U_N$                       | 3 mA                        |
| Typical response time                                | 0.15 ms                     |
| Typical turn-off time                                | 1 ms                        |
| Operating voltage display                            | Yellow LED                  |
| Type of protection                                   | Reverse polarity protection |
|                                                      | Surge protection            |
| Protective circuit/component                         | Polarity protection diode   |
| Transmission frequency                               | 100 Hz                      |
| Power dissipation for nominal condition              | 0.07 W                      |

### Output data

|                                                  |                                                                  |
|--------------------------------------------------|------------------------------------------------------------------|
| Designation                                      | DC voltage output                                                |
| Output voltage range                             | 5 V DC ... 33 V DC                                               |
| Limiting continuous current                      | 10 A (see derating curve)                                        |
| Maximum inrush current                           | 100 A ( $t = 20$ ms)                                             |
| Voltage drop at max. limiting continuous current | $\leq 50$ mV                                                     |
| Output circuit                                   | 3-conductor, ground-referenced                                   |
| Type of protection                               | Protection against polarity reversal (not continuous protection) |
|                                                  | Surge protection                                                 |
| Designation                                      | Alarm output                                                     |
| Limiting continuous current                      | 100 mA                                                           |
| Voltage drop at max. limiting continuous current | $< 1.2$ V                                                        |
| Indication                                       | Red LED                                                          |
| Type of protection                               | Reverse polarity protection                                      |
|                                                  | Surge protection                                                 |
| Protective circuit/component                     | Polarity protection diode                                        |
|                                                  | Suppressor diode                                                 |

### General

|                                        |                           |
|----------------------------------------|---------------------------|
| Mounting position                      | any                       |
| Assembly instructions                  | In rows with zero spacing |
| Operating mode                         | 100% operating factor     |
| Flammability rating according to UL 94 | V0 (Housing)              |

### Connection data

|                   |                    |
|-------------------|--------------------|
| Connection name   | Input side         |
| Connection method | Push-in connection |

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### Technical data

#### Connection data

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| 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> |
| 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 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> |
| 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 insulation voltage         | 300 V                 |
| Rated surge voltage              | 4 kV                  |
| Insulation                       | Basic insulation      |
| Pollution degree                 | 2                     |
| Overvoltage category             | III                   |

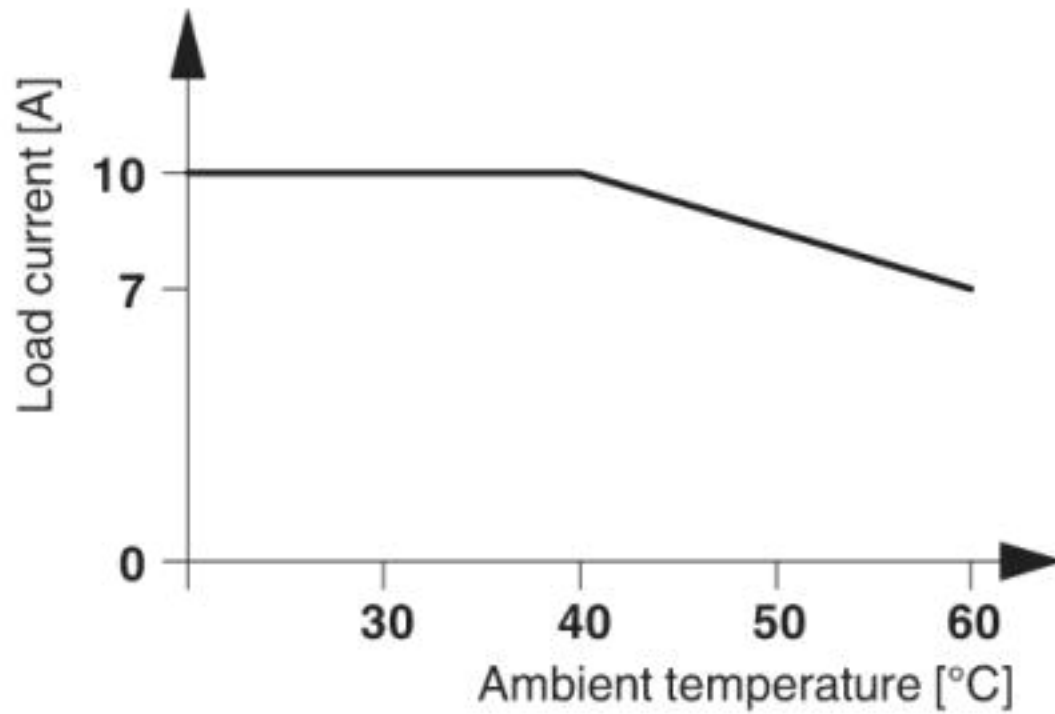
#### Environmental Product Compliance

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

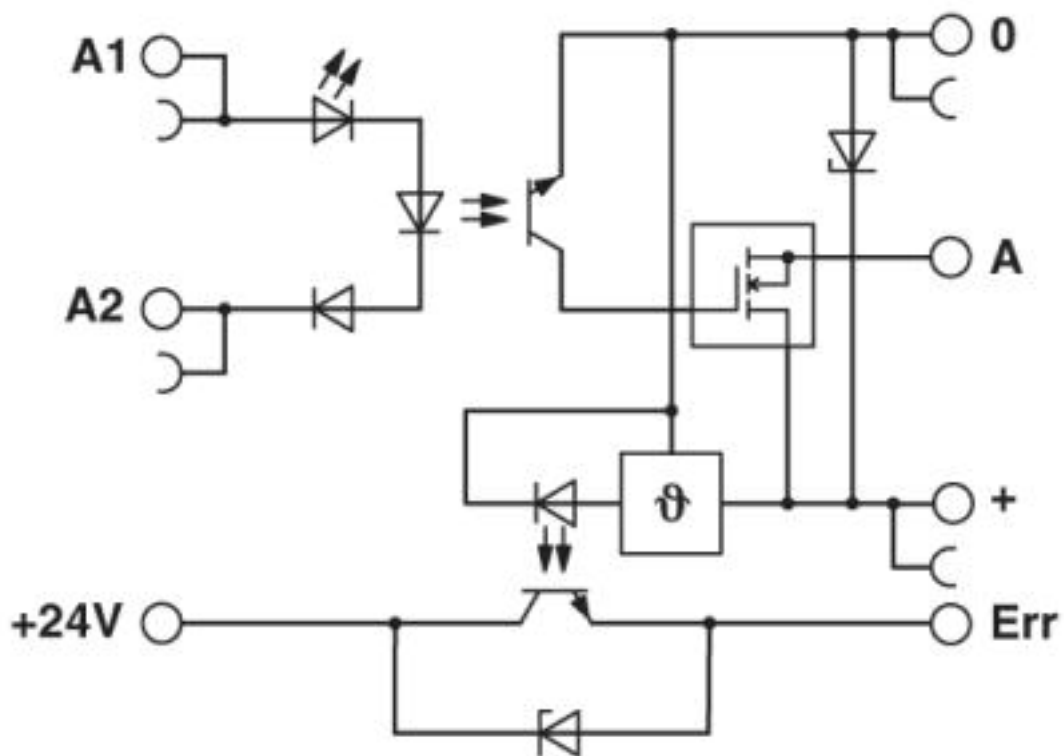
### Drawings

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

Diagram



Circuit diagram



## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

### Classifications

#### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27371604 |
| 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 |
| 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

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#### Approvals

UL Listed / UL Recognized / cUL Recognized / cUL Listed / EAC / cULus Recognized / cULus Listed

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#### Ex Approvals

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#### Approval details

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

### Approvals

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

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

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

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

### Accessories

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

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



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

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



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

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

### Accessories

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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### Controller board

System connection - PLC-V8/FLK14/OUT - 2295554



V8 adapter for 8 x PLC-INTERFACE (6.2 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: IDC/FLK pin strip 1x 14-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: positive switching

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System connection - PLC-V8/FLK14/OUT/M - 2304102



V8 adapter for 8 x PLC-INTERFACE (6.2 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: IDC/FLK pin strip 1x 14-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: negative switching

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Adapter module - PLC-V8/D15S/OUT - 2296058



V8 adapter for 8 x PLC-INTERFACE (6.2 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: D-SUB pin strip 1x 15-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: positive switching

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System connection - PLC-V8/D15B/OUT - 2296061



V8 adapter for 8 x PLC-INTERFACE (6.2 mm), controller: PLC system cabling of output cards, connection 1: Screw connection 1x, connection 2: D-SUB socket strip 1x 15-position, connection 3: Plug connection (Can be snapped onto 8x PLC-INTERFACE terminals), number of channels: 8, control logic: positive switching

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### DIN rail

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

### Accessories

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

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

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

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

### Accessories

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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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

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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

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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

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### 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

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### Power module

## Solid-state relay module - PLC-OPT- 24DC/ 24DC/10/R - 2900398

### 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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