

Solid-state relay module - PLC-OPT-110DC/110DC/3RW - 2900396

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PLC-INTERFACE for railway applications, consisting of basic terminal block with push-in connection and integrated miniature solid-state relay, range: $0.7 \times U_N$ to $1.25 \times U_N$, temperature range: -25°C to $+70^\circ\text{C}$, 1 N/O contact, input: 110 V DC, output: 12 - 140 V DC/3 A


Your advantages

- ✓ Shock resistance according to DIN 50155 (requirements according to EN 61373)
- ✓ Temperature range of -25°C to $+70^\circ\text{C}$
- ✓ Input voltage range of $0.7 - 1.25 \times U_N$

RoHS



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 506953 |
| GTIN | 4046356506953 |
| Weight per Piece (excluding packing) | 99.990 g |
| Custom tariff number | 85364900 |
| Country of origin | Germany |

Technical data

Note

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

Dimensions

| | |
|--------|--------|
| Width | 6.2 mm |
| Height | 80 mm |
| Depth | 86 mm |

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Technical data

Ambient conditions

| | |
|---|------------------|
| Ambient temperature (operation) | -25 °C ... 70 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Degree of protection | IP20 |

Input data

| | |
|--|---|
| Nominal input voltage U_N | 110 V DC |
| Input voltage range in reference to U_N | 0.7 ... 1.25 ($t < 1 \text{ s} = 0.6 \dots 1.4 \times U_N$) |
| Input voltage range | 77 V DC ... 137.5 V DC |
| Switching threshold "0" signal in reference to U_N | < 0.3 |
| Switching threshold "1" signal in reference to U_N | > 0.6 |
| Typical input current at U_N | 5.5 mA |
| Typical response time | 400 μs |
| Typical turn-off time | 200 μs |
| Operating voltage display | Yellow LED |
| Type of protection | Reverse polarity protection |
| | Surge protection |
| Protective circuit/component | Series polarity protection diode |
| Surge voltage protection | > 150 V |
| Transmission frequency | 300 Hz |
| Power dissipation for nominal condition | 0.6 W |

Output data

| | |
|--|--|
| Output nominal voltage | 110 V DC |
| Output voltage range | 12 V DC ... 140 V DC ($t < 1 \text{ s} = 1.40 \times U_N$) |
| Limiting continuous current | 3 A (see derating curve) |
| Surge voltage protection | > 150 V |
| Voltage drop at max. limiting continuous current | < 150 mV |
| Output circuit | 2-wire, floating |
| Type of protection | Reverse polarity protection |
| | Surge protection |
| Protective circuit/component | Parallel polarity protection diode |

General

| | |
|--|---------------------------|
| Test voltage input/output | 2.5 kV _{rms} |
| Mounting position | any |
| Assembly instructions | In rows with zero spacing |
| Operating mode | 100% operating factor |
| Flammability rating according to UL 94 | V0 (Housing) |

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Technical data

Connection data

| | |
|----------------------------------|--|
| Connection name | Input side |
| Connection method | Push-in connection |
| Stripping length | 8 mm |
| Conductor cross section solid | 0.14 mm ² ... 2.5 mm ² |
| Conductor cross section flexible | 0.14 mm ² ... 2.5 mm ² |
| 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 ² ... 2.5 mm ² |
| Conductor cross section flexible | 0.14 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 26 ... 14 |

Standards and Regulations

| | |
|----------------------------------|--|
| Connection in acc. with standard | CUL |
| Designation | Air clearances and creepage distances between the power circuits |
| Standards/regulations | IEC 60664 |
| | EN 50178 |
| Rated insulation voltage | 160 V DC |
| Rated surge voltage | 4 kV |
| Insulation | Basic insulation |
| Pollution degree | 2 |
| Overvoltage category | III |

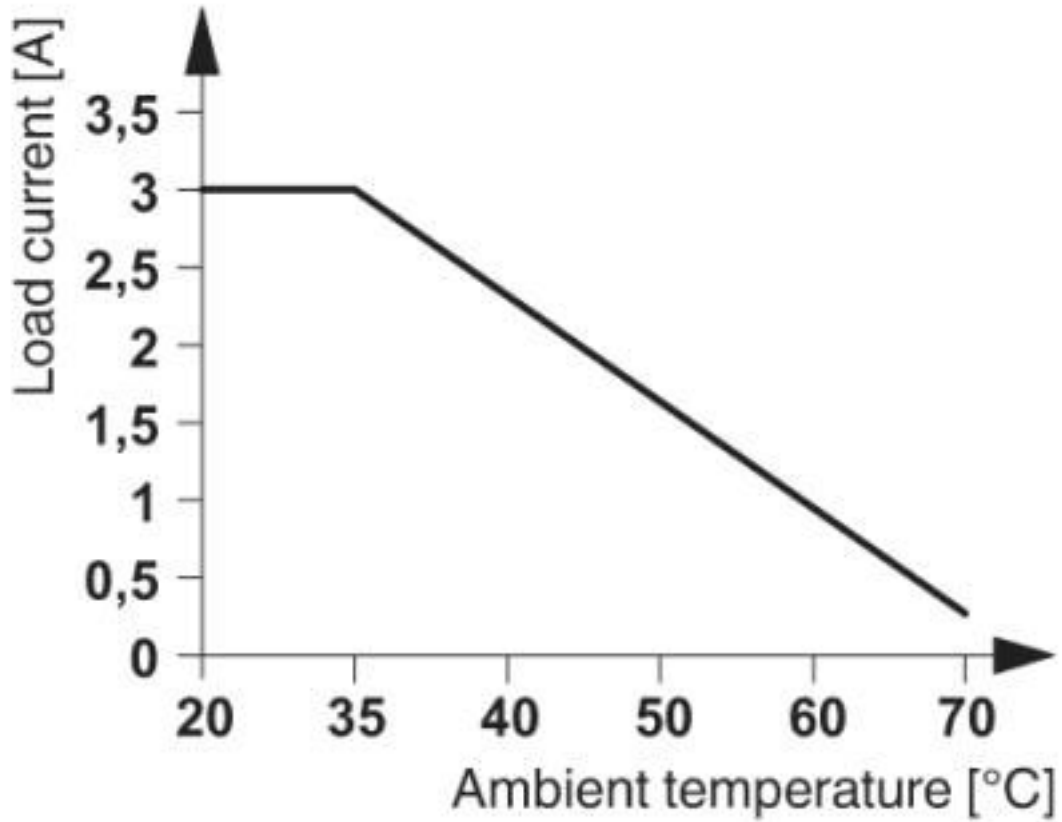
Environmental Product Compliance

| | |
|------------|---|
| 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" |

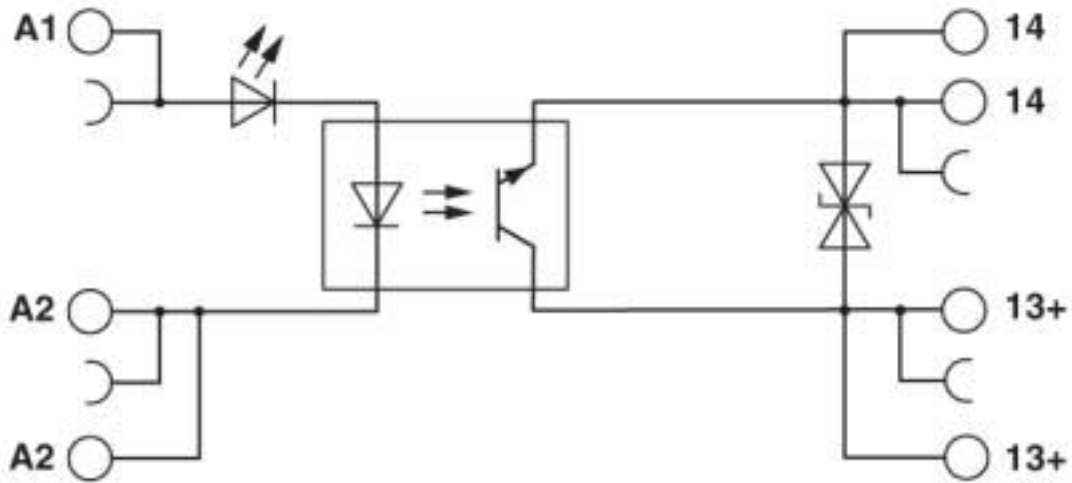
Drawings

Solid-state relay module - PLC-OPT-110DC/110DC/3RW - 2900396

Diagram



Circuit diagram



Solid-state relay module - PLC-OPT-110DC/110DC/3RW - 2900396

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

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

Ex Approvals

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Approvals

Approval details

| | | | |
|-----------|--|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 172140 |
|-----------|--|---|---------------|

| | | | |
|---------------|--|---|---------------|
| UL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
|---------------|--|---|---------------|

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| cUL Recognized | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
|----------------|--|---|---------------|

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| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 172140 |
|------------|--|---|---------------|

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

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|-----|--|--|---------------------|
| EAC | | | RU*C-DE.*08.B.00010 |
|-----|--|--|---------------------|

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| cULus Recognized | | | |
|------------------|--|--|--|

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|--------------|--|--|--|
| cULus Listed | | | |
|--------------|--|--|--|

Accessories

Accessories

Bridge

Solid-state relay module - PLC-OPT-110DC/110DC/3RW - 2900396

Accessories

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

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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Accessories

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



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

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



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

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

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 perforated - NS 35/ 7,5 WH PERF 2000MM - 1204119



DIN rail perforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

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Accessories

DIN rail, unperforated - NS 35/ 7,5 WH UNPERF 2000MM - 1204122



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/ 7,5 AL UNPERF 2000MM - 0801704



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

DIN rail perforated - NS 35/ 7,5 ZN PERF 2000MM - 1206421



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

DIN rail, unperforated - NS 35/ 7,5 ZN UNPERF 2000MM - 1206434



DIN rail, unperforated, Standard profile, width: 35 mm, height: 7.5 mm, acc. to EN 60715, material: Steel, galvanized, 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

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Accessories

End cap - NS 35/ 7,5 CAP - 1206560



DIN rail end piece, for DIN rail NS 35/7.5

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 35/15 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 perforated - NS 35/15 WH PERF 2000MM - 0806602



DIN rail perforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

DIN rail, unperforated - NS 35/15 WH UNPERF 2000MM - 1204135



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, Galvanized, white passivated, length: 2000 mm, color: silver

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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 ZN PERF 2000MM - 1206599



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

DIN rail, unperforated - NS 35/15 ZN UNPERF 2000MM - 1206586



DIN rail, unperforated, Standard profile, width: 35 mm, height: 15 mm, similar to EN 60715, material: Steel, galvanized, 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

End cap - NS 35/15 CAP - 1206573



DIN rail end piece, for DIN rail NS 35/15

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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

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

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

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