# PLC-OPT- 48DC/110DC/3RW - Solid-state relay module

2900393

https://www.phoenixcontact.com/us/products/2900393

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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 x $U_N$ to 1.25 x $U_N$, temperature range: -25°C to +70°C, 1 N/O contact, input: 48 V DC, output: 12 - 140 V DC/3 A

## Your advantages

- Shock resistance in accordance with DIN 50155 (requirements in accordance with EN 61373)
- Temperature range: -25 °C ... +70 °C
- Input voltage range of 0.7 - 1.25 x UN

## Commercial data

| | |
|---|---|
| Item number | 2900393 |
| Packing unit | 10 pc |
| Minimum order quantity | 10 pc |
| Sales key | C461 |
| Product key | DK62AL |
| GTIN | 4046356508988 |
| Weight per piece (including packing) | 35.82 g |
| Weight per piece (excluding packing) | 31.89 g |
| Customs tariff number | 85364190 |
| Country of origin | DE |

## Technical data

### Product properties

| | |
|---|---|
| Product type | Solid-state relay module |
| Product family | PLC-INTERFACE |
| Application | Railway applications |
| Operating mode | 100% operating factor |

Insulation characteristics: Air clearances and creepage distances, input/output

| | |
|---|---|
| Insulation | Basic insulation |
| Overvoltage category | III |
| Pollution degree | 2 |

Data management status

| | |
|---|---|
| Date of last data management | 01.04.2026 |

### Electrical properties

| | |
|---|---|
| Maximum power dissipation for nominal condition | 0.26 W |
| Test voltage (Input/output) | 2.5 kV AC (Input/output) |

Air clearances and creepage distances, input/output

| | |
|---|---|
| Rated insulation voltage | 160 V |
| Rated surge voltage | 4 kV |

### Input data

| | |
|---|---|
| Nominal input voltage $U_N$ | 48 V DC |
| Input voltage range in reference to $U_N$ | 0.7 ... 1.25 (t < 1 s = 0.6 ... 1.4 x $U_N$) |
| Input voltage range | 33.6 V DC ... 60 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 | 800 µs |
| Operating voltage display | Yellow LED |
| Protective circuit | Reverse polarity protection; Series polarity protection diode |
| | Surge protection |
| Surge voltage protection | > 150 V |
| Transmission frequency | 50 Hz |

### Output data

| | |
|---|---|
| Contact switching type | 1 N/O contact |
| Design of digital output | electronic |
| Output nominal voltage | 110 V DC |
| Output voltage range | 12 V DC ... 140 V DC (t < 1 s = 1.40 x $U_N$) |
| 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-conductor, floating |
| Protective circuit | Reverse polarity protection; Parallel polarity protection diode |
| | Surge protection |

## Connection data

| | |
|---|---|
| Connection method | Push-in connection |
| Stripping length | 10 mm |
| Conductor cross-section rigid | 0.14 mm² ... 2.5 mm² |
| Conductor cross-section flexible | 0.14 mm² ... 2.5 mm² |
| | 0.2 mm² ... 2.5 mm² (Single ferrule) |
| | 2x 0.5 mm² ... 1 mm² (TWIN ferrule) |
| Conductor cross-section AWG | 26 ... 14 |

## Dimensions

Item dimensions

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

## Material specifications

| | |
|---|---|
| Color | gray (RAL 7042) |
| Flammability rating according to UL 94 (Housing) | V0 (Housing) |

## Environmental and real-life conditions

Ambient conditions

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

## Approvals

CE

| | |
|---|---|
| Certificate | CE-compliant |

UKCA

| | |
|---|---|
| Certificate | UKCA-compliant |

Corrosive gas test

| | |
|---|---|
| Identification | ISA-S71.04. G3 Harsh Group |
| | EN 60068-2-60 |

Shipbuilding approval

| | |
|---|---|
| Certificate | TAE0000196 |

Shipbuilding data

| | |
|---|---|
| Temperature | D |
| Humidity | A |
| Vibration | B |
| EMC | B |
| Enclosure | Required protection according to the Rules shall be provided upon installation on board |

## EMC data

| | |
|---|---|
| Electromagnetic compatibility | Conformance with EMC directive |
| Low Voltage Directive | Conformance with Low Voltage Directive |

## Standards and regulations

Air clearances and creepage distances, input/output

| | |
|---|---|
| Standards/regulations | IEC 60947-5-1 |

Railway standard

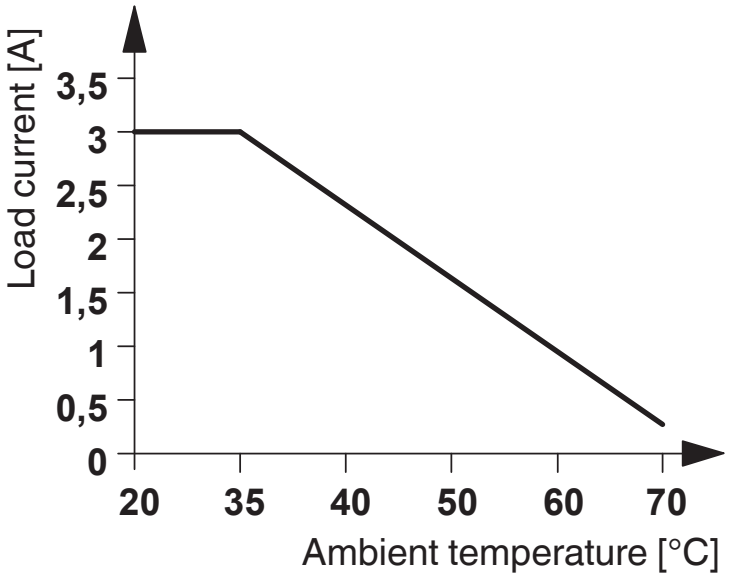
| | |
|---|---|
| Standards/regulations | DIN EN 50155 (in relevant parts) |
| Standards/regulations | DNVGL-CG-0339 |

## Mounting

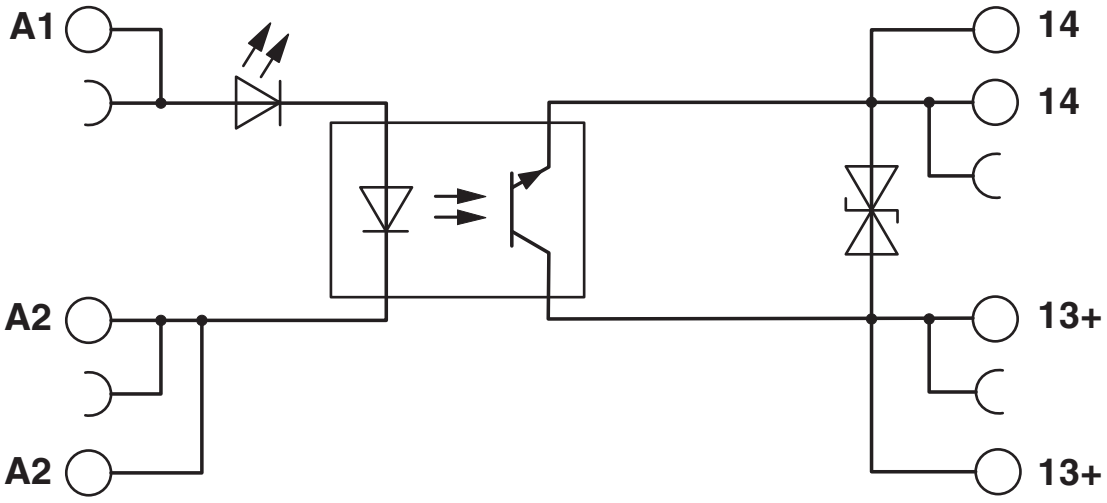
| | |
|---|---|
| Mounting type | DIN rail mounting |
| Assembly note | in rows with zero spacing |
| Mounting position | any |

## Drawings

Diagram




Circuit diagram



## Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2900393

**cULus Listed**
Approval ID: E140324

**cUL Recognized**
Approval ID: E238705

**UL Recognized**
Approval ID: E238705

**UL Listed**
Approval ID: FILE E 172140

**cUL Listed**
Approval ID: FILE E 172140

**cULus Listed**
Approval ID: E140324

**cULus Listed**
Approval ID: E140324

## Classifications

### ECLASS

| | |
|---|---|
| ECLASS-13.0 | 27371604 |
| ECLASS-15.0 | 27371604 |

### ETIM

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|---|---|
| ETIM 10.0 | EC001504 |

### UNSPSC

| | |
|---|---|
| UNSPSC 21.0 | 39122300 |

## Environmental product compliance

EU RoHS

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|---|---|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|---|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|---|---|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | 87bdf099-2937-4f4c-b366-51276acf3c52 |

EF3.1 Climate Change

| | |
|---|---|
| CO2e kg | 2.34 kg CO2e |


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