

MINI MCR-SL-NAM-2RNO - Isolation switch amplifier



2864105

<https://www.phoenixcontact.com/us/products/2864105>

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Configurable NAMUR switching amplifier for proximity sensors, floating switching contacts and switching contacts with resistance circuit. On the output side 2 N/O contact, with screw connection

Product description

The 6.2 mm wide MINI MCR-SL-NAM-2RNO... is a configurable 4-way isolation amplifier. It is suited for the operation of proximity sensors in acc. with EN 60947-5-6 and switches and also has two relay outputs. The second output can either be used to duplicate signals or for signaling faults for the sensor line.

The DIP switches are accessible on the housing side and allow the following parameters to be configured:

- Switchover from open circuit to closed circuit current behavior
- Activation of line fault detection of the sensor line as well as
- Selection of signal duplication/fault signaling

Power (19.2 V DC to 30 V DC) can be supplied through connection terminal blocks on the modules or in conjunction with the DIN rail connector.

Your advantages

- Floating contacts and contacts with resistance circuit can be connected
- Power supply possible via the foot element (TBUS)
- Highly compact isolation amplifier for electrical isolation, amplification, and duplication of proximity sensor signals
- For proximity sensors according to IEC 60947-5-6 and EN 50227
- Second output can be used as a duplicator or error signaling output
- Error indication via diagnostic LED and analog signal
- N/O contacts at output
- Input and output signals can be configured via DIP switches
- Operating current/closed circuit current switch-over (inverted switching behavior)

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2864105 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C403 |
| Product key | DK1133 |
| GTIN | 4046356046459 |
| Weight per piece (including packing) | 100 g |
| Weight per piece (excluding packing) | 71.2 g |
| Customs tariff number | 85365019 |
| Country of origin | DE |

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Technical data

Notes

Utilization restriction

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

Product properties

| | |
|-----------------|----------------------------|
| Product type | Isolating switch amplifier |
| Product family | MINI Analog |
| No. of channels | 1 |
| Configuration | DIP switches |

System properties

Functionality

| | |
|---------------|--------------|
| Configuration | DIP switches |
|---------------|--------------|

Electrical properties

| | |
|---|-----------------|
| Electrical isolation | 4-way isolation |
| Electrical isolation between input and output | yes |

Electrical isolation

| | |
|----------------------|----|
| Overvoltage category | II |
| Pollution degree | 2 |

Electrical isolation Input/power supply IEC/EN 61010

| | |
|--------------------------|------------------|
| Standards/regulations | IEC/EN 61010 |
| Rated insulation voltage | 30 V AC |
| | 50 V DC |
| Insulation | Basic insulation |

Electrical isolation Input/output

| | |
|--------------------------|-----------------------|
| Rated insulation voltage | 150 V AC |
| Insulation | Reinforced insulation |

Electrical isolation Supply/output

| | |
|--------------------------|-----------------------|
| Rated insulation voltage | 150 V AC |
| Insulation | Reinforced insulation |

Electrical isolation Output 1/output 2

| | |
|--------------------------|-----------------------|
| Rated insulation voltage | 150 V AC |
| Insulation | Reinforced insulation |

Electrical isolation Input/output/power supply

| | |
|--------------|-------------------------|
| Test voltage | 1.5 kV AC (50 Hz, 60 s) |
|--------------|-------------------------|

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Supply

| | |
|--------------------------|---|
| Nominal supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (The DIN rail connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, item no. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail in accordance with EN 60715) |
| Max. current consumption | < 25 mA |
| Power consumption | < 600 mW |

Input data

Signal: NAMUR

| | |
|---|---|
| Number of inputs | 1 |
| Available input sources | NAMUR proximity sensors (IEC/EN 60947-5-6) floating switch contacts Switch contacts with resistance circuit |
| Switching threshold "0" signal current | < 1.2 mA (blocking) |
| Switching threshold "1" signal, current | > 2.1 mA (conductive) |
| Line fault detection | > 6 mA (Short circuit) < 0.35 mA (Line break) Activated /deactivated via DIP switch |
| Open-circuit voltage | 8.2 V DC \pm 10 % |

Output data

Switching: Relay

| | |
|---------------------------|---|
| Output description | Output 1: Signal output; Output 2: Fault signaling output or signal duplicator, can be set via DIP switches |
| Contact switching type | 2 N/O contacts |
| Contact material | Hard gold plated AgNi |
| Maximum switching voltage | 250 V AC 125 V DC 150 V AC (UL) 125 V DC (UL) |
| Maximum inrush current | 2 A |
| Min. switching current | 1 mA (5 V DC) |
| Typical response time | 15 ms |
| Typical turn-off time | 20 ms |
| Switching frequency | 0.5 Hz (240 V AC / 30 V DC / 2 A) 10 Hz (without load) |

Signal

| | |
|-------------------|---|
| Number of outputs | 2 |
|-------------------|---|

Connection data

| | |
|-------------------|------------------|
| Connection method | Screw connection |
|-------------------|------------------|

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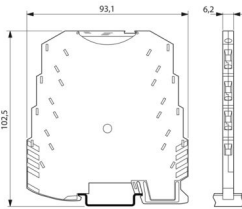
<https://www.phoenixcontact.com/us/products/2864105>

| | |
|----------------------------------|---|
| Stripping length | 12 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 26 ... 12 |

Signaling

| | |
|----------------|------------------------------------|
| Status display | Red LED (error messages) |
| | Yellow LED (relay status messages) |

Dimensions

| | |
|---------------------|---|
| Dimensional drawing |  |
| Width | 6.2 mm |
| Height | 93.1 mm |
| Depth | 101.2 mm |

Material specifications

| | |
|--|------------------|
| Color | green (RAL 6021) |
| Housing material | PBT |
| Fire protection for rail vehicles (DIN EN 45545-2) R22 | HL 1 - HL 2 |
| Fire protection for rail vehicles (DIN EN 45545-2) R23 | HL 1 - HL 2 |
| Fire protection for rail vehicles (DIN EN 45545-2) R24 | HL 1 - HL 2 |

Environmental and real-life conditions

Ambient conditions

| | |
|---|-------------------------------|
| Degree of protection | IP20 |
| Ambient temperature (operation) | -20 °C ... 65 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude | ≤ 2000 m |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |

Approvals

CE

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

UL, USA/Canada

| | |
|----------------|---------------------------------------|
| Identification | UL 508 Recognized |
| | Class I, Div. 2, Groups A, B, C, D T4 |

EMC data

| | |
|-------------------------------|--|
| Electromagnetic compatibility | Conformance with EMC directive |
| Noise immunity | EN 61000-6-2 |
| Note | When being exposed to interference, there may be minimal deviations. |

Noise emission

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-6-4 |
|-----------------------|--------------|

Electromagnetic HF field

| | |
|-----------------------|--------------------------|
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |
| Evaluation criterion | A |

Fast transients (burst)

| | |
|-----------------------|-------------------------|
| Designation | Fast transients (burst) |
| Standards/regulations | EN 61000-4-4 |
| Evaluation criterion | A |

Conducted interference

| | |
|-----------------------|-------------------------|
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |
| Evaluation criterion | A |

Standards and regulations

| | |
|----------------------|-----------------|
| Electrical isolation | 4-way isolation |
|----------------------|-----------------|

Mounting

| | |
|-------------------|-------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any |

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Drawings



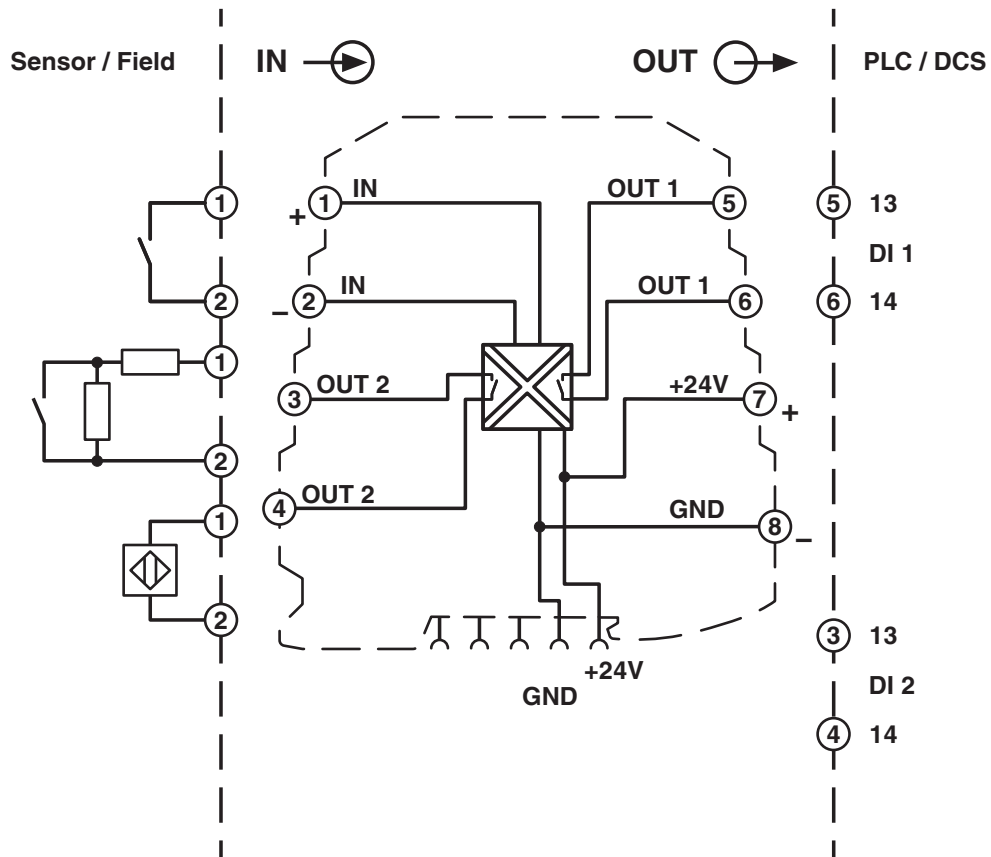
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Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2864105>



cUL Recognized

Approval ID: E238705



UL Recognized

Approval ID: E238705

DNV

Approval ID: TAA000020N



cUL Listed

Approval ID: E199827



UL Listed

Approval ID: E199827

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27210121 |
| ECLASS-15.0 | 27210121 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC001485 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------|
| 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) |
| | 2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7) |
| SCIP | 6c6ab73b-1a05-446f-bf21-c6c060b1b5c1 |

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 2.298 kg CO2e |
|---------|---------------|

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