

Isolation amplifier - MACX MCR-SL-2NAM-R-UP - 2865052

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



2-channel NAMUR signal conditioner with wide range power supply for proximity sensors and switches. In terms of signal output, for each channel there is a relay with a changeover contact available. Line fault detection (LFD), 3-way isolation, screw connection, SIL 2.

Your advantages

- ✓ Installation in zone 2, protection type "n" (EN 60079-15) permitted
- ✓ Up to SIL 2 according to EN 61508
- ✓ Line fault detection (LFD), can be activated/deactivated, error indicated by red flashing LED with de-excitation of output relay
- ✓ 3-way electrical isolation
- ✓ LED indicators for supply voltage, switching state, and malfunction according to NAMUR NE 44
- ✓ 2-channel
- ✓ Wide-range power supply of 19.2 ... 253 V AC/DC
- ✓ Direction of operation can be selected (operating or closed circuit current behavior)
- ✓ Relay signal output (PDT)
- ✓ Input for NAMUR proximity sensors (EN 60947-5-6), floating contacts or contacts with resistance circuit



Key Commercial Data

| | |
|--------------|---------------|
| Packing unit | 1 pc |
| GTIN | |
| GTIN | 4046356491761 |

Technical data

Note

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

Dimensions

| | |
|--------|----------|
| Width | 17.5 mm |
| Height | 112.5 mm |

Isolation amplifier - MACX MCR-SL-2NAM-R-UP - 2865052

Technical data

Dimensions

| | |
|-------|----------|
| Depth | 114.5 mm |
|-------|----------|

Ambient conditions

| | |
|---|--------------------------------|
| Ambient temperature (operation) | -20 °C ... 60 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Maximum altitude | ≤ 2000 m |
| Permissible humidity (operation) | 10 % ... 95 % (non-condensing) |
| Noise immunity | EN 61000-6-2 |

Input data

| | |
|---------------------------------|--|
| Non-load voltage | ~ 8 V DC |
| Switching points (attenuated) | < 1.2 mA (blocking) |
| Switching points (unattenuated) | > 2.1 mA (conductive) |
| Available input sources | NAMUR proximity sensors (EN 60947-5-6) |
| Short-circuit current | ~ 8 mA |
| Switching hysteresis | < 0.2 mA |
| Line fault detection | Break 0.05 mA < IIN < 0.35 mA |
| | Short circuit 100 Ω < RSensor < 360 Ω |

Output data

| | |
|----------------------------|---------------------------------------|
| Switching output | Relay output |
| Contact type | 1 PDT per channel |
| Contact material | AgSnO ₂ , hard gold-plated |
| Maximum switching voltage | 250 V AC (2 A, 60 Hz) |
| | 120 V DC (0.2 A) |
| | 30 V DC (2 A) |
| Maximum switching capacity | 500 VA |
| Mechanical service life | 10 ⁷ cycles |
| Switching frequency | ≤ 20 Hz (Load-dependent) |

Power supply

| | |
|------------------------------|---|
| Nominal supply voltage range | 24 V AC/DC ... 230 V AC/DC |
| Supply voltage range | 19.2 V AC/DC ... 253 V AC/DC (24 V AC/DC ... 230 V AC/DC (-20 % ... +10 %, 50/60 Hz)) |
| Max. current consumption | < 80 mA |
| Power dissipation | ≤ 1.3 W |
| Power consumption | ≤ 1.3 W |

Connection data

| | |
|---------------------------------------|---------------------|
| Conductor cross section solid min. | 0.2 mm ² |
| Conductor cross section solid max. | 2.5 mm ² |
| Conductor cross section flexible min. | 0.2 mm ² |
| Conductor cross section flexible max. | 2.5 mm ² |
| Conductor cross section AWG min. | 24 |

Isolation amplifier - MACX MCR-SL-2NAM-R-UP - 2865052

Technical data

Connection data

| | |
|----------------------------------|------------------|
| Conductor cross section AWG max. | 14 |
| Stripping length | 7 mm |
| Connection method | Screw connection |
| Tightening torque, min | 0.5 Nm |
| Tightening torque max | 0.6 Nm |

General

| | |
|--|---|
| No. of channels | 2 |
| Step response (10-90%) | typ. 6 ms (N/O contact: OFF/ON) |
| | typ. 6 ms (N/O contact: ON/OFF) |
| | typ. 4 ms (N/C contact: ON/OFF) |
| | typ. 10 ms (N/C contact: OFF/ON) |
| Status display | Green LED (supply voltage, PWR) |
| | LED yellow (switching state) |
| | Red LED (line errors) |
| Flammability rating according to UL 94 | V0 |
| Degree of pollution | 2 |
| Overvoltage category | III |
| Electromagnetic compatibility | Conformance with EMC directive |
| Interference emission | EN 61000-6-4 |
| Housing material | PA 6.6-FR |
| Color | gray |
| Designation | Input/output |
| Electrical isolation | 375 V (Peak value in accordance with EN 60079-11) |
| Designation | Input/power supply |
| Electrical isolation | 375 V (Peak value in accordance with EN 60079-11) |
| | 300 V _{rms} (Rated insulation voltage (overvoltage category II; degree of pollution 2, safe isolation as per EN 61010-1)) |
| | 2.5 kV AC (50 Hz, 1 min., test voltage) |
| Designation | Output 1/output 2/input, power supply |
| Electrical isolation | 300 V _{rms} (Rated insulation voltage (overvoltage category III; degree of pollution 2, safe isolation as per EN 61010-1)) |
| | 2.5 kV (50 Hz, 1 min., test voltage) |
| Conformance | CE-compliant, additionally EN 61326-1 |
| ATEX | # II 3 G Ex nA nC IIC T4 Gc X |
| UL, USA/Canada | UL 508 Listed |
| | UL 61010 Listed |
| | Class I, Div. 2, Groups A, B, C, D T4 |
| | Class I, Zone 2, Group IIC T4 |
| SIL | 2 |

Safety characteristic data

Isolation amplifier - MACX MCR-SL-2NAM-R-UP - 2865052

Technical data

Safety characteristic data

| | |
|------------------------------|---|
| Safety Integrity Level (SIL) | 1 |
| | 1 |

EMC data

| | |
|-----------------------|--------------------------|
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |
| Evaluation criterion | A |
| Designation | Fast transients (burst) |
| Standards/regulations | EN 61000-4-4 |
| Evaluation criterion | A |
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |
| Evaluation criterion | A |

Standards and Regulations

| | |
|--|---|
| Electromagnetic compatibility | Conformance with EMC directive |
| Noise emission | EN 61000-6-4 |
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |
| Evaluation criterion | A |
| Standards/regulations | EN 61000-4-4 |
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |
| Evaluation criterion | A |
| Flammability rating according to UL 94 | V0 |
| Conformance | CE-compliant, additionally EN 61326-1 |
| ATEX | # II 3 G Ex nA nC IIC T4 Gc X |
| UL, USA/Canada | UL 508 Listed |
| | UL 61010 Listed |
| | Class I, Div. 2, Groups A, B, C, D T4 |
| | Class I, Zone 2, Group IIC T4 |
| DNV GL-Temperature | B |
| DNV GL-Humidity | B |
| DNV GL-Vibration | A |
| DNV GL-EMC | A |
| DNV GL-Enclosure | Required protection according to the Rules shall be provided upon installation on board |

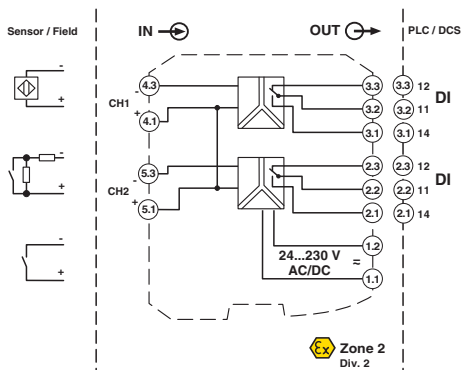
Environmental Product Compliance

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

Isolation amplifier - MACX MCR-SL-2NAM-R-UP - 2865052

Drawings

Block diagram



Approvals

Approvals

Approvals

UL Listed / cUL Listed / Functional Safety / DNV GL / cULus Listed

Ex Approvals

ATEX / UL Listed / cUL Listed / EAC Ex / cULus Listed

Approval details

| | | | |
|-----------|--|---|---------------|
| UL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 330267 |
|-----------|--|---|---------------|

| | | | |
|------------|--|---|---------------|
| cUL Listed | | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 330267 |
|------------|--|---|---------------|

| | | | |
|-------------------|--|--|--------------------|
| Functional Safety | | | 09/12-02 R010 V1R0 |
|-------------------|--|--|--------------------|

| | | | |
|--------|--|---|------------|
| DNV GL | | https://approvalfinder.dnvgl.com/ | TAA000020C |
|--------|--|---|------------|

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

Phoenix Contact 2019 © - all rights reserved
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
Germany
Tel. +49 5235 300
Fax +49 5235 3 41200
<http://www.phoenixcontact.com>