

# Isolation amplifier - MACX MCR-SL-2NAM-R-UP-SP - 2924304

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2-channel NAMUR isolation amplifier 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, spring-cage connection, SIL 2

The illustration shows the versions with screw connection

## Product Features

- ✔ 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
- ✔ Direction of operation can be selected (operating or closed circuit current behavior)
- ✔ 3-way electrical isolation
- ✔ LED indicators for supply voltage, switching state, and malfunction according to NAMUR NE 44
- ✔ Relay signal output (PDT)
- ✔ 2-channel
- ✔ Wide-range power supply of 19.2 ... 253 V AC/DC
- ✔ Input for NAMUR proximity sensors (EN 60947-5-6), floating contacts or contacts with resistance circuit



## Key commercial data

package_quantity	1
GTIN	4046356491747

## Technical data

Note:

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

Width	17.5 mm
Height	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C

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## Technical data

### Ambient conditions

Maximum altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (no condensation)

### Input data

Non-load voltage	8 V DC ±10 %
Switching points (attenuated)	< 1.2 mA (blocking)
Switching points (unattenuated)	> 2.1 mA (conductive)

### Output data

Switching output	Relay output
Contact type	1 PDT per channel
Contact material	AgSnO <sub>2</sub> , hard gold-plated
Maximum switching voltage	250 V AC (2 A, 60 Hz)
Maximum switching voltage	120 V DC (0.2 A)
Maximum switching voltage	30 V DC (2 A)
Maximum switching capacity	500 VA
Mechanical service life	10 <sup>7</sup> cycles

### Power supply

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

### Connection data

Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	1.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	16
Stripping length	8 mm
Connection method	Spring-cage conn.

### General

No. of channels	2
Step response (10-90%)	typ. 6 ms (N/O contact: OFF/ON)
Step response (10-90%)	typ. 6 ms (N/O contact: ON/OFF)
Step response (10-90%)	typ. 4 ms (N/C contact: ON/OFF)
Step response (10-90%)	typ. 10 ms (N/C contact: OFF/ON)
Status display	Green LED (supply voltage, PWR)
Status display	LED yellow (switching state)
Status display	Red LED (line errors)
Inflammability class according to UL 94	V0
Pollution degree	2

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## Technical data

### General

<b>Surge voltage category</b>	III
<b>Housing material</b>	PA 66-FR
<b>Color</b>	green
<b>Name</b>	Input/power supply
<b>Electrical isolation</b>	300 V <sub>rms</sub> (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1))
<b>Electrical isolation</b>	2.5 kV (50 Hz, 1 min., test voltage)
<b>Name</b>	Output 1/output 2/input, power supply
<b>Electrical isolation</b>	300 V <sub>rms</sub> (Rated insulation voltage (surge voltage category III; pollution degree 2, safe isolation as per EN 61010-1))
<b>Electrical isolation</b>	2.5 kV (50 Hz, 1 min., test voltage)
<b>Conformance</b>	CE-compliant, additionally EN 61326
<b>ATEX</b>	# II 3 G Ex nA nC IIC T4 Gc X

## classifications

### eCl@ss

<b>eCl@ss 4.0</b>	27210121
<b>eCl@ss 4.1</b>	27210121
<b>eCl@ss 5.0</b>	27210121
<b>eCl@ss 5.1</b>	27210121
<b>eCl@ss 6.0</b>	27210121
<b>eCl@ss 7.0</b>	27210121
<b>eCl@ss 8.0</b>	27210121

### ETIM

<b>ETIM 2.0</b>	EC001430
<b>ETIM 3.0</b>	EC001599
<b>ETIM 4.0</b>	EC002653
<b>ETIM 5.0</b>	EC002653

### UNSPSC

<b>UNSPSC 6.01</b>	30211506
<b>UNSPSC 7.0901</b>	39121008
<b>UNSPSC 11</b>	39121008
<b>UNSPSC 12.01</b>	39121008
<b>UNSPSC 13.2</b>	39121008

## approvals

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ATEX / Functional Safety /

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### Approval details

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approvals



Functional Safety

## Drawings

Block diagram

