

# MACX MCR-SL-NAM-R-SP - Isolation switch amplifier



2924252

<https://www.phoenixcontact.com/us/products/2924252>

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 documentation. Our general terms of use for downloads are valid.



NAMUR signal conditioner for operating proximity sensors and switches. The signals are transmitted to the control level via relay output (changeover contact). Line fault detection (LFD), 3-way electrical isolation, SIL 2, with Push-in connection.

## Your advantages

- Power supply and error indication possible via DIN rail connector
- Installation in zone 2, protection type "n" (EN 60079-15) permitted
- Up to SIL 2 in accordance with EN 61508
- Line fault detection (LFD), can be activated/deactivated, error indicated by flashing red 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 in accordance with NAMUR NE 44
- Signal output relay (changeover contact)
- Input for NAMUR proximity sensors (EN 60947-5-6), floating contacts or contacts with resistance circuit

## Commercial data

Item number	2924252
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C402
Product key	DK1113
GTIN	4046356478908
Weight per piece (including packing)	172 g
Weight per piece (excluding packing)	151.7 g
Customs tariff number	85365019
Country of origin	DE

2924252

<https://www.phoenixcontact.com/us/products/2924252>

## Technical data

### Product properties

Product type	Isolating switch amplifier
Product family	MACX Analog
Application	Digital IN
No. of channels	1
Configuration	DIP switches

### System properties

#### Functionality

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

### Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Maximum power dissipation for nominal condition	< 650 mW

#### Electrical isolation

Test voltage	2.5 kV AC (50 Hz, 60 s)
--------------	-------------------------

#### Electrical isolation Input/output IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V <sub>PP</sub>
Overvoltage category	II
Pollution degree	2

#### Electrical isolation Input/output/supply, DIN rail connector IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V <sub>rms</sub>
Overvoltage category	II
Pollution degree	2
Insulation	Safe isolation

#### Electrical isolation Output/input, supply, TBUS IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V <sub>rms</sub>
Overvoltage category	III
Pollution degree	2
Insulation	Safe isolation

#### Electrical isolation Input/supply, DIN rail connector IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V <sub>PP</sub>
Overvoltage category	II

# MACX MCR-SL-NAM-R-SP - Isolation switch amplifier



2924252

<https://www.phoenixcontact.com/us/products/2924252>

Pollution degree	2
------------------	---

## Supply

Nominal supply voltage	24 V DC -20 % ... +25 %
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	21 mA (24 V DC)
Power dissipation	< 650 mW
Power consumption	< 650 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)
Short-circuit current	8 mA
Switching hysteresis	< 0.2 mA
Line fault detection	< 0.05 mA ... 0.35 mA (Line break) < 100 Ω ... 360 Ω (Short circuit) Activated /deactivated via DIP switch
Open-circuit voltage	8 V DC

## Output data

Switching: Relay

Contact switching type	1 changeover contact
Contact material	AgSnO <sub>2</sub> , hard gold-plated
Maximum switching voltage	250 V AC (2 A) 120 V DC (0.2 A) 30 V DC (2 A)
Maximum switching power	500 VA
Recommended minimum load	5 V / 10 mA
Switching frequency	≤ 20 Hz (without load)

Signal

Number of outputs	1
-------------------	---

## Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross-section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross-section flexible (2 conductors with same cross	0.25 mm <sup>2</sup> ... 0.34 mm <sup>2</sup> (TWIN ferrule without plastic sleeve)

# MACX MCR-SL-NAM-R-SP - Isolation switch amplifier



2924252

<https://www.phoenixcontact.com/us/products/2924252>

section)	0.5 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (TWIN ferrule with plastic sleeve)
Conductor cross-section AWG	24 ... 14
	24 ... 22 (TWIN ferrule without plastic sleeve)
	20 ... 16 (TWIN ferrule with plastic sleeve)

## Ex data

Ex installation (EPL)	Gc
	Div. 2

## Interfaces

### Data

No. of channels	0
-----------------	---

## Signaling

Status display	Green LED (supply voltage)
	LED yellow (switching state)
	Red LED (line errors)

## Dimensions

Dimensional drawing	
Width	12.5 mm
Height	107.9 mm
Depth	113.7 mm
Depth NS 35/7,5	114.5 mm (Snapped onto DIN rail NS 35/7,5 in accordance with EN 60715)

## Material specifications

Color	gray (RAL 7042)
Flammability rating according to UL 94 (Housing)	V0 (Housing)
Housing material	PA 6.6-FR

## Characteristics

### Safety data

Safety Integrity Level (SIL)	2
------------------------------	---

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	2
------------------------------	---

Safety data: IEC 61508 - Low demand

Safety Integrity Level (SIL)	2
------------------------------	---

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 60 °C (Any mounting position)
	-40 °C ... 70 °C (Derating)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)

### Altitude range (≤ 2000 m)

Altitude	≤ 2000 m (The technical data refers to altitudes ≤2000 m above mean sea level. For altitudes >2000 m above mean sea level, refer to the data sheet.)
Ambient temperature (operation)	-40 °C ... 60 °C
	-40 °C ... 70 °C (Derating)
Rated insulation voltage	253 V AC (Power supply, input / output)
	125 V DC (Power supply, input / output)

### Altitude range (≤ 3000 m)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 54 °C
	-40 °C ... 63 °C (Derating)
Rated insulation voltage	190 V AC (Power supply, input / output)
	110 V DC (Power supply, input / output)

### Altitude range (≤ 4000 m)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 48 °C
	-40 °C ... 56 °C (Derating)
Rated insulation voltage	60 V AC/DC (Power supply, input / output)

### Altitude range (≤ 5000 m)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 42 °C
	-40 °C ... 49 °C (Derating)
Rated insulation voltage	60 V AC/DC (Power supply, input / output)

## Approvals

### CE

Certificate	CE-compliant
Note	and EN 61326-1

### ATEX

Identification	⊕ II 3G Ex ec nC IIC T4 Gc
----------------	----------------------------

# MACX MCR-SL-NAM-R-SP - Isolation switch amplifier



2924252

<https://www.phoenixcontact.com/us/products/2924252>

Certificate	IBExU 07 ATEX 1069 X
-------------	----------------------

## IECEX

Identification	Ex ec nC IIC T4 Gc
Certificate	IBE 08.0001 X

## CCC / China-Ex

Identification	Ex ec nC IIC T4 Gc
Certificate	2021122304114179

## UL, USA/Canada

Identification	UL 508 Listed
	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC T4

## Shipbuilding approval

Certificate	DNV GL TAA00000AG
-------------	-------------------

## Safety Integrity Level (SIL, IEC 61508)

Identification	2
Certificate	IN-AT-AS-MRL-24-00163

## Systematic Capability

Identification	3
----------------	---

## INMETRO

Identification	Ex ec nC IIC T4 Gc
Certificate	DNV 18.0114 X

## EAC Ex

Identification	Ex ec nC IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00078

## Shipbuilding data

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

## EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2
	EN 61326

## Noise emission

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

2924252

<https://www.phoenixcontact.com/us/products/2924252>

## Standards and regulations

Electrical isolation	3-way isolation
----------------------	-----------------

### GB Standard

Standards/regulations	GB/T 3836.1
	GB/T 3836.3
	GB/T 3836.8

## Mounting

Mounting type	DIN rail mounting
---------------	-------------------

# MACX MCR-SL-NAM-R-SP - Isolation switch amplifier



2924252

<https://www.phoenixcontact.com/us/products/2924252>

## Drawings

Dimensional drawing



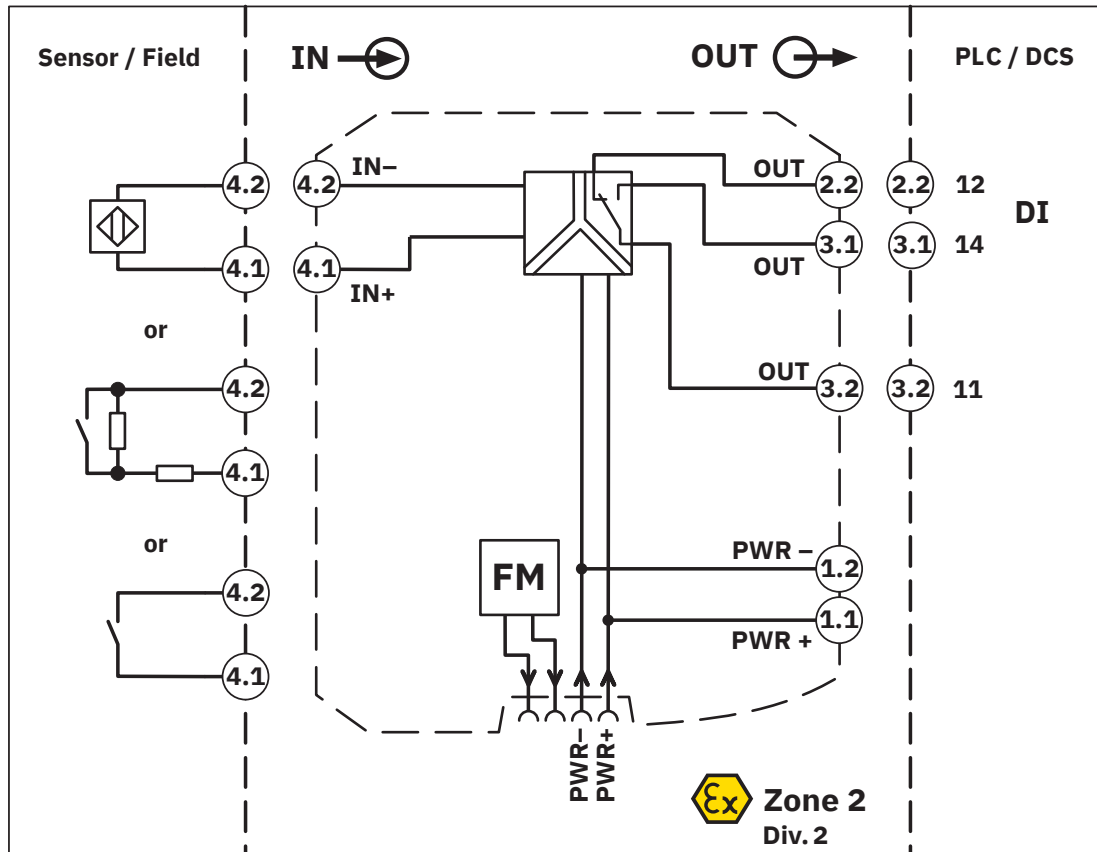
# MACX MCR-SL-NAM-R-SP - Isolation switch amplifier



2924252

<https://www.phoenixcontact.com/us/products/2924252>

Block diagram



2924252

<https://www.phoenixcontact.com/us/products/2924252>

## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2924252>


 **UL Listed**  
Approval ID: E330267

 **cUL Listed**  
Approval ID: E330267

**Functional Safety**  
Approval ID: 07-06-39 R005 V2R2

**DNV**  
Approval ID: TAA00000AG

**TUEV Austria FS**  
Approval ID: IN-AT-AS-24-00163


 **IECEX**  
Approval ID: IECEX IBE 08.0001X

 **cUL Listed**  
Approval ID: E199827

 **UL Listed**  
Approval ID: FILE E 199827

 **ATEX**  
Approval ID: IBExU07ATEX1069

**INMETRO**  
Approval ID: DNV 18.0114 X

 **CCC**  
Approval ID: 2021122304114179

2924252

<https://www.phoenixcontact.com/us/products/2924252>

## Classifications

### ECLASS

ECLASS-13.0	27210121
ECLASS-15.0	27210121

### ETIM

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

### UNSPSC

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

## 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	3e234100-4d61-4ea1-9efa-3229dd7f68c6

### EF3.1 Climate Change

CO2e kg	4.445 kg CO2e
---------	---------------

Phoenix Contact 2026 © - all rights reserved  
<https://www.phoenixcontact.com>

Phoenix Contact USA  
 586 Fulling Mill Road  
 Middletown, PA 17057, United States  
 (+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)