MINI MCR-2-NAM-2RO - NAMUR isolation switch amplifier

2902004

https://www.phoenixcontact.com/us/products/2902004

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.

CRA-READY



Configurable NAMUR isolation amplifier with plug-in connection technology for proximity sensors, floating switch contacts, and switch contacts with resistance circuit. 2 transistor outputs, configurable via DIP switch. Screw connection technology.

Product description

Configurable NAMUR 4-way isolation amplifier with plug-in connection technology for operating proximity sensors in accordance with EN 60947-5-6 as well as floating and resistance-circuit switch contacts. 2 transistor outputs are available on the output side. The second output can be used either for duplicating signals or for signaling faults on the sensor line. You can configure the isolation amplifier via DIP switches. The device supports fault monitoring and NFC communication.

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 fault monitoring output
- Error indication via diagnostic LED and analog signal
- N/O contacts at output
- Input and output signals can be configured via DIP switches
- 3-way isolation

Commercial data

Item number	2902004
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C404
Product key	DK1123
GTIN	4046356651851
Weight per piece (including packing)	68.8 g
Weight per piece (excluding packing)	106.2 g

Customs tariff number	85365019
Country of origin	DE

Technical data

Notes

Note on application

Note on application	As things stand now, we are preparing the product so that, as of December 11, 2027, it will comply with the requirements of the EU Cyber Resilience Act (CRA) based on the information currently available regarding the CRA.

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 Pro
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
Maximum power dissipation for nominal condition	450 mW

Electrical isolation

Overvoltage category	II
Pollution degree	2

Electrical isolation Input/output/power supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V_{rms}
Test voltage	3 kV AC (50 Hz, 60 s)
Insulation	Reinforced insulation

Supply

Nominal supply voltage	24 V DC
Supply voltage range	9.6 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)
Typical current consumption	18 mA (24 V DC)
	35 mA (12 V DC)

Power consumption	450 mW (9.6 V DC)

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 ±10 %

Output data

Switching: Transistor

Output description	Output 1: Signal output; Output 2: Fault monitoring output or signal duplicator, can be set via DIP switches
Contact switching type	2 N/O contacts
Maximum switching voltage	30 V DC
Maximum inrush current	50 mA DC
Min. switching current	5 mA DC
Typical response time	10 µs
Typical turn-off time	35 µs
Switching frequency	5 kHz

Connection data

Connection method	Screw connection
Stripping length	10 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 1.5 mm² (with ferrule)
	0.14 mm² ... 2.5 mm² (without ferrule)
Conductor cross-section flexible	0.14 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 12 (flexible)
Tightening torque	0.5 Nm ... 0.6 Nm

Ex data

Ex installation (EPL)	Gc
	Div. 2

Interfaces

Data: NFC interface

No. of channels	0

Signaling

Status display	Green LED (supply voltage)
	Yellow LED (switching output)
Error indication	Red LED

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Material specifications

Color	gray (RAL 7042)
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 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

ATEX

Identification	Ⓔx II 3 G Ex ec IIC T4 Gc
Certificate	BVS 20 ATEX E 014X

IECEx

Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 20.0010X

CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	2022122310115967

UL, USA/Canada

	UL 508 Listed

Identification	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6

Shipbuilding approval

Certificate	DNV GL TAA000021E Rev. 1

EAC Ex

Identification	Ex ec IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00081

Shipbuilding data

Temperature	B
Humidity	B
Vibration	A
EMC	A
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
Note	When being exposed to interference, there may be minimal deviations.

Noise emission

Standards/regulations	EN 61000-6-4

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.

Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

Standards and regulations

Electrical isolation	4-way isolation

GB Standard

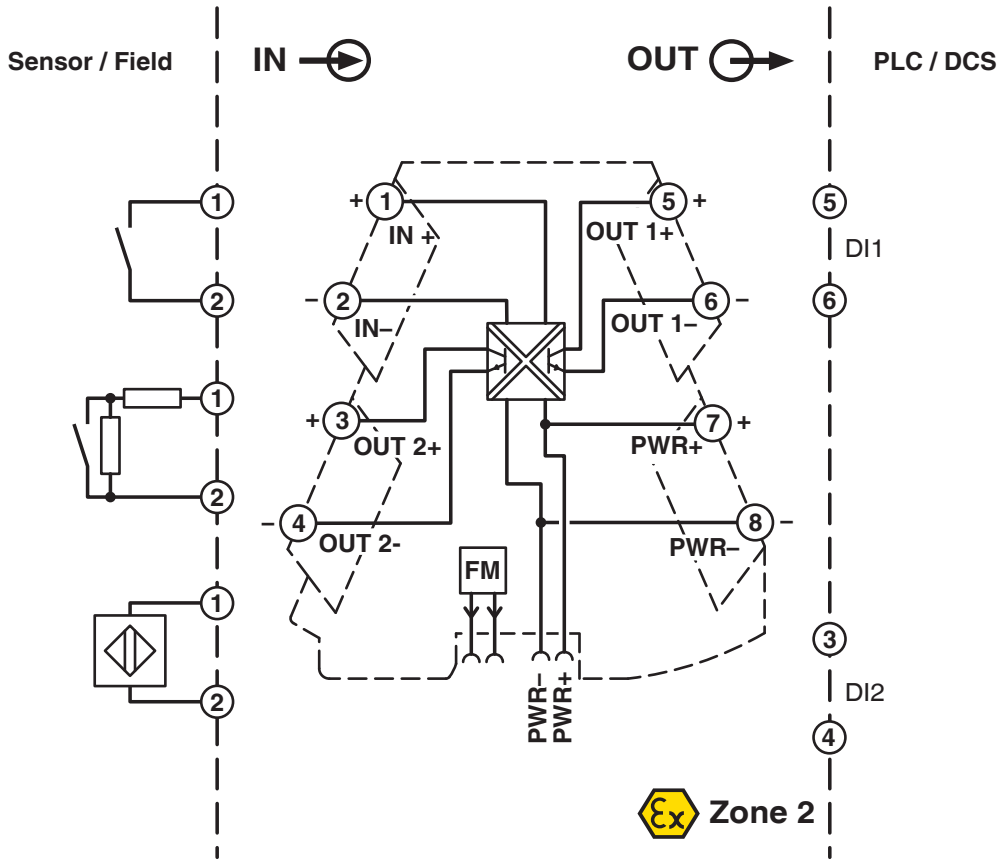
Standards/regulations	GB/T 3836.1
	GB/T 3836.3

Mounting

Mounting type	DIN rail mounting
Assembly note	The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail.
Mounting position	any

Drawings

Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2902004

UL Listed
Approval ID: E238705

cUL Listed
Approval ID: E238705

DNV
Approval ID: TAA000021E

IECEx
Approval ID: IECEx BVS 20.0010X

cUL Listed
Approval ID: E196811

UL Listed
Approval ID: E196811

ATEX
Approval ID: BVS 20 ATEX E 014X

EAC Ex
Approval ID: TR TS_S_103.01.00081

CCC
Approval ID: 2022122310115967

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)
SCIP	9c856824-83a3-4d80-a4f1-79ca52aa9e14

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