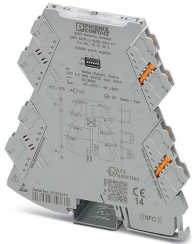**PHŒNIX CONTACT**

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

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Configurable NAMUR signal conditioner with plug-in connection technology for proximity sensors, floating switch contacts, and switch contacts with resistance circuit. 2 transistor outputs. Configurable via DIP switch. Push-in connection technology.

Product Description

Configurable NAMUR 4-way signal conditioner with plug-in connection technology for operating proximity sensors according to EN 60947-5-6, floating switch contacts, and switch contacts with resistance circuit. Two 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 signal conditioner 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 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
- ☑ 3-way isolation

RoHS **Ex Zone 2** **NFC** **COMPLETE line**

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 649513
GTIN	4046356649513
Weight per Piece (excluding packing)	100.000 g
Custom tariff number	85365019
Country of origin	Germany

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CONTACT

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Technical data

Note

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

Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Degree of protection	IP20 (not assessed by UL)
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Non-load voltage	8.2 V DC ±10 %
Switching points (attenuated)	< 1.2 mA (blocking)
Switching points (unattenuated)	> 2.1 mA (conductive)
Signal input	Signal input
Available input sources	NAMUR proximity sensors (IEC/EN 60947-5-6)

Output data

Switching output	Transistor output, passive
Contact type	N/O contact behavior 2x
Maximum switching voltage	30 V DC
Min. contact current	5 mA

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail bus connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, Order No. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715))
Typical current consumption	18 mA (24 V DC)
Power consumption	450 mW (9.6 V DC)

Connection data

Connection method	Push-in connection
Stripping length	10 mm
Conductor cross section solid	0.2 mm² ... 2.5 mm² (with ferrule)

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Technical data

Connection data

	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)

General

No. of channels	1
Status display	Yellow LED (switching output)
	Yellow LED (switching output)
Degree of pollution	2
Overvoltage category	II
Electromagnetic compatibility	Conformance with EMC directive
Interference emission	EN 61000-6-4
Housing material	PBT
Color	gray

EMC data

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

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Standards/regulations	EN 61000-4-2
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Designation	GB Standard
Standards/regulations	GB 3836.1
	GB 3836.8
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1

Conformance/approvals

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Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Technical data

Conformance/approvals

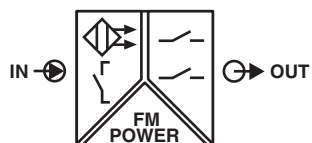| Designation	CE
Certificate	CE-compliant
Designation	ATEX
Identification	# II 3 G Ex ec IIC T4 Gc
Certificate	BVS 20 ATEX E 014X
Designation	IECEx
Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 20.0010X
Designation	CCC / China-Ex
Identification	Ex nA IIC T4 Gc
Certificate	NEPSI GYJ20.1320X
Designation	UL, USA / Canada
Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC T6
Designation	Shipbuilding approval
Certificate	DNV GL TAA000021E
Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

Environmental Product Compliance

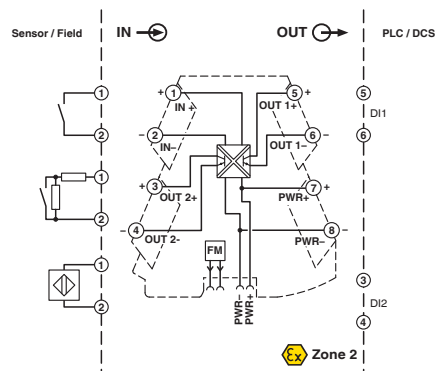| REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Pictogram

Block diagram

Classifications

eCl@ss

eCl@ss 10.0.1	27210121
eCl@ss 11.0	27210121
eCl@ss 4.0	27210100
eCl@ss 4.1	27210100
eCl@ss 5.0	27210100
eCl@ss 5.1	27210100
eCl@ss 6.0	27210100
eCl@ss 7.0	27210121
eCl@ss 9.0	27210121

ETIM

ETIM 2.0	EC001485
ETIM 3.0	EC001485
ETIM 4.0	EC001485
ETIM 6.0	EC001485
ETIM 7.0	EC001485

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008
UNSPSC 18.0	39121008

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Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Classifications

UNSPSC

UNSPSC 19.0	39121008
UNSPSC 20.0	39121008
UNSPSC 21.0	39121008

Approvals

Approvals

Approvals

UL Listed / cUL Listed / DNV GL / EAC / CCC / cULus Listed

Ex Approvals

UL Listed / cUL Listed / ATEX / IECEx / NEPSI / cULus Listed

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
DNV GL		https://approvalfinder.dnvgl.com/	TAA000021E
EAC			RU*DE.*08.B.01536/19
CCC			2021322310003729

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Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Approvals

cULus Listed

Accessories

Accessories

Communication module

Communication module - MINI MCR-2-V8-MOD-RTU - 2905634

Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a Modbus/RTU network via a communication adapter.

Communication module - MINI MCR-2-V8-MOD-TCP - 2905635

Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a Modbus/TCP network via a communication adapter.

Communication module - MINI MCR-2-V8-PB-DP - 2905636

Eight MINI Analog Pro signal conditioners and measuring transducers can be quickly and easily integrated into a PROFIBUS DP network via a communication adapter.

Device marking

Marker for end clamp - UCT-EM (30X5) - 0801505

Marker for end clamp, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

PHŒNIX CONTACT

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Accessories

Plastic label - UC-EMLP (15X5) - 0819301

Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

Plastic label - UC-EMLP (15X5) YE - 0822615

Plastic label, Sheet, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

Plastic label - UC-EMLP (15X5) SR - 0828095

Plastic label, Sheet, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

Plastic label - US-EMLP (15X5) - 0828790

Plastic label, Card, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

Plastic label - US-EMLP (15X5) YE - 0828873

Plastic label, Card, yellow, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

PHŒNIX CONTACT

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Accessories

Plastic label - US-EMLP (15X5) SR - 0828874

Plastic label, Card, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

Marker for end clamp - UCT-EM (30X5) YE - 0830340

Marker for end clamp, Sheet, yellow, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

DIN rail connector

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GY - 2695439

DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rails according to EN 60715

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728

DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

Evaluation unit

Monitoring module - MINI MCR-2-FM-RC - 2904504

Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error message via N/C contact. Screw connection technology, standard configuration

PHŒNIX CONTACT

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Accessories

Monitoring module - MINI MCR-2-FM-RC-PT - 2904508

Fault monitoring module with plug-in connection technology for evaluating and reporting group errors from the FM system and for monitoring the supply voltages. Error message via N/C contact. Push-in connection technology, standard configuration

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Labeled device marker

Marker for end clamp - UCT-EM (30X5) CUS - 0801589

Marker for end clamp, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

Plastic label - UC-EMLP (15X5) CUS - 0824550

Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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Plastic label - UC-EMLP (15X5) YE CUS - 0824551

Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm

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Plastic label - UC-EMLP (15X5) SR CUS - 0828099

Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 10

PHŒNIX CONTACT

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Accessories

Plastic label - US-EMLP (15X5) CUS - 0830076

Plastic label, can be ordered: by card, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

Plastic label - US-EMLP (15X5) YE CUS - 0830077

Plastic label, can be ordered: by card, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

Plastic label - US-EMLP (15X5) SR CUS - 0830078

Plastic label, can be ordered: by card, silver, labeled according to customer specifications, mounting type: adhesive, lettering field size: 15 x 5 mm, Number of individual labels: 189

Marker for end clamp - UCT-EM (30X5) YE CUS - 0830348

Marker for end clamp, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: snapped into marker carrier, lettering field size: 30 x 5 mm, Number of individual labels: 24

Power module

Power terminal block - MINI MCR-2-PTB - 2902066

Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Screw connection technology

PHŒNIX CONTACT

Isolation amplifier - MINI MCR-2-NAM-2RO-PT - 2902005

Accessories

Power terminal block - MINI MCR-2-PTB-PT - 2902067

Power terminal with plug-in connection technology for delivering the supply voltage to the DIN rail connector. Monitoring of the supply voltages in combination with the fault monitoring module. Push-in connection technology

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983

Please use the following item in new systems: 2904614
Primary-switched MINI POWER power supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

System adapter

System adapter - MINI MCR-2-V8-FLK 16 - 2901993

Eight MINI Analog Pro signal conditioners and measuring transducers can be connected to a controller with minimal cabling effort and without any errors using system adapters and system cabling.

Terminal marking

Marker strip - SK 5,0 WH:REEL - 0805221

Marker strip, Roll, white, unlabeled, can be labeled with: THERMOMARK ROLL 2.0, THERMOMARK ROLL, THERMOMARK ROLL X1, THERMOMARK ROLLMASTER 300/600, THERMOMARK X1.2, mounting type: adhesive, for terminal block width: 5 mm, lettering field size: continuous x 5 mm, Number of individual labels: 90000