

Isolation amplifier - MACX MCR-EX-SL-2NAM-R-UP - 2865984

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://download.phoenixcontact.com>)



2-channel Ex-i NAMUR isolation amplifier with wide-range power supply for proximity sensors and switches. Every channel has a relay with PDT contact as a signal output. Line fault detection (LFD), 3-way isolation, SIL 2.

Product Features

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



Key commercial data

package_quantity	1
GTIN	4046356462532

Technical data

Note:

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

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
Maximum altitude	≤ 2000 m

Isolation amplifier - MACX MCR-EX-SL-2NAM-R-UP - 2865984

Technical data

Ambient conditions

Permissible humidity (operation)	10 % ... 95 % (no condensation)
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Degree of protection	IP20

Input data

Non-load voltage	8 V DC \pm 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 ₂ , 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 ⁷ 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 ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	2.5 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil 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)
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)

Isolation amplifier - MACX MCR-EX-SL-2NAM-R-UP - 2865984

Technical data

General

Status display	LED yellow (switching state)
Status display	Red LED (line errors)
Inflammability class according to UL 94	V0
Pollution degree	2
Surge voltage category	III
Housing material	PA 66-FR
Color	green
Name	Input/output
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Name	Input/power supply
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Electrical isolation	300 V _{rms} (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1))
Electrical isolation	2.5 kV AC (50 Hz, 1 min., test voltage)
Name	Output 1/output 2/input, power supply, T connector
Electrical isolation	300 V _{rms} (Rated insulation voltage (surge voltage category III; pollution degree 2, safe isolation as per EN 61010-1))
Electrical isolation	2.5 kV (50 Hz, 1 min., test voltage)
Conformance	CE-compliant, additionally EN 61326
ATEX	# II (1) G [Ex ia Ga] IIC
ATEX	# II (1) D [Ex ia Da] IIIC
ATEX	# II 3(1) G Ex nA nC [ia Ga] IIC T4 Gc X
IECEX	[Ex ia Ga] IIC
IECEX	[Ex ia Da] IIIC
IECEX	Ex nA nC [ia Ga] IIC T4 Gc
UL, USA / Canada	Class I Div 2; IS for Class I, II, III Div 1

Safety data

Max. output voltage U _o	9.6 V
Max. output current I _o	10.3 mA
Max. output power P _o	25 mW
Gas group	IIC
Max. external inductivity L _o	100 mH
Max. external capacity C _o	0.5 µF
Gas group	IIC
Max. external inductivity L _o	10 mH
Max. external capacity C _o	0.75 µF
Gas group	IIC
Max. external inductivity L _o	1 mH
Max. external capacity C _o	1.2 µF
Gas group	IIB
Max. external inductivity L _o	100 mH

Isolation amplifier - MACX MCR-EX-SL-2NAM-R-UP - 2865984

Technical data

Safety data

Max. external capacity C_o	2.7 μ F
Gas group	IIB
Max. external inductivity L_o	10 mH
Max. external capacity C_o	3.9 μ F
Gas group	IIB
Max. external inductivity L_o	1 mH
Max. external capacity C_o	6.3 μ F
Safety-related maximum voltage U_m	253 V AC/DC (Supply terminals)

EMC data

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

classifications

eCl@ss

eCl@ss 4.0	27210121
eCl@ss 4.1	27210121
eCl@ss 5.0	27210121
eCl@ss 5.1	27210121
eCl@ss 6.0	27210121
eCl@ss 7.0	27210121
eCl@ss 8.0	27210121

ETIM

ETIM 2.0	EC001430
ETIM 3.0	EC001599
ETIM 4.0	EC001485
ETIM 5.0	EC001485

UNSPSC

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

Isolation amplifier - MACX MCR-EX-SL-2NAM-R-UP - 2865984

approvals

IECEX / ATEX / Functional Safety /

Approval details

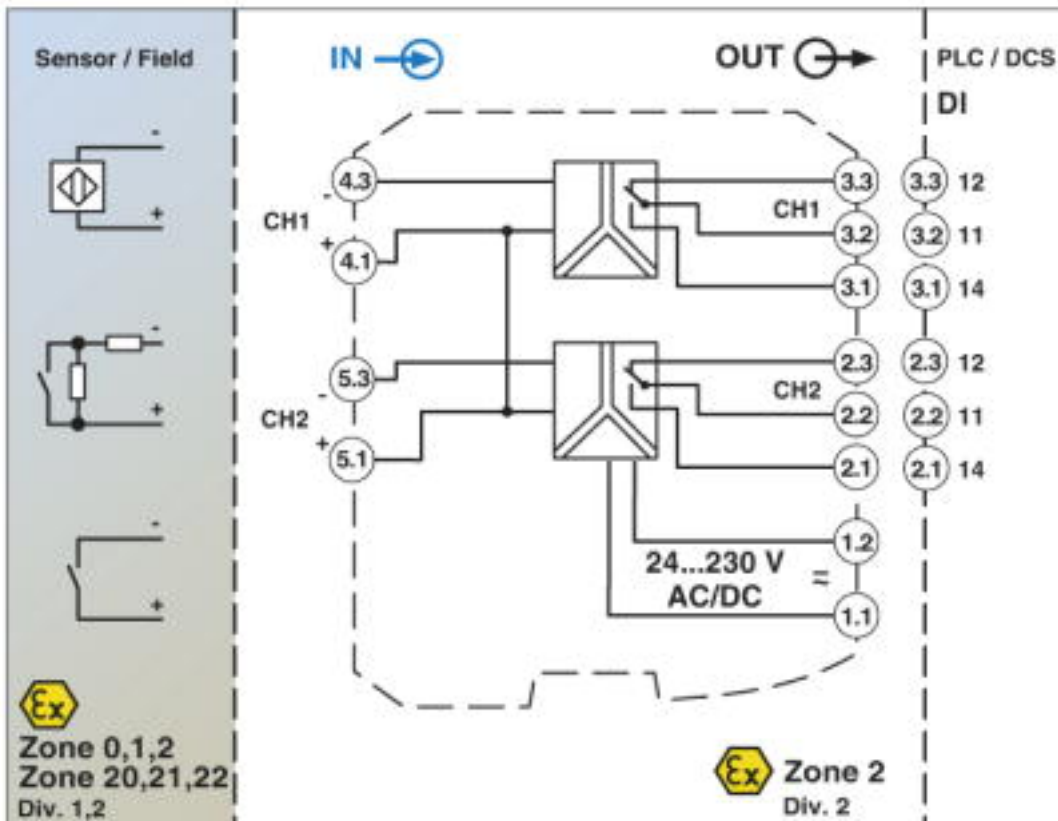
IECEX

ATEX

Functional Safety

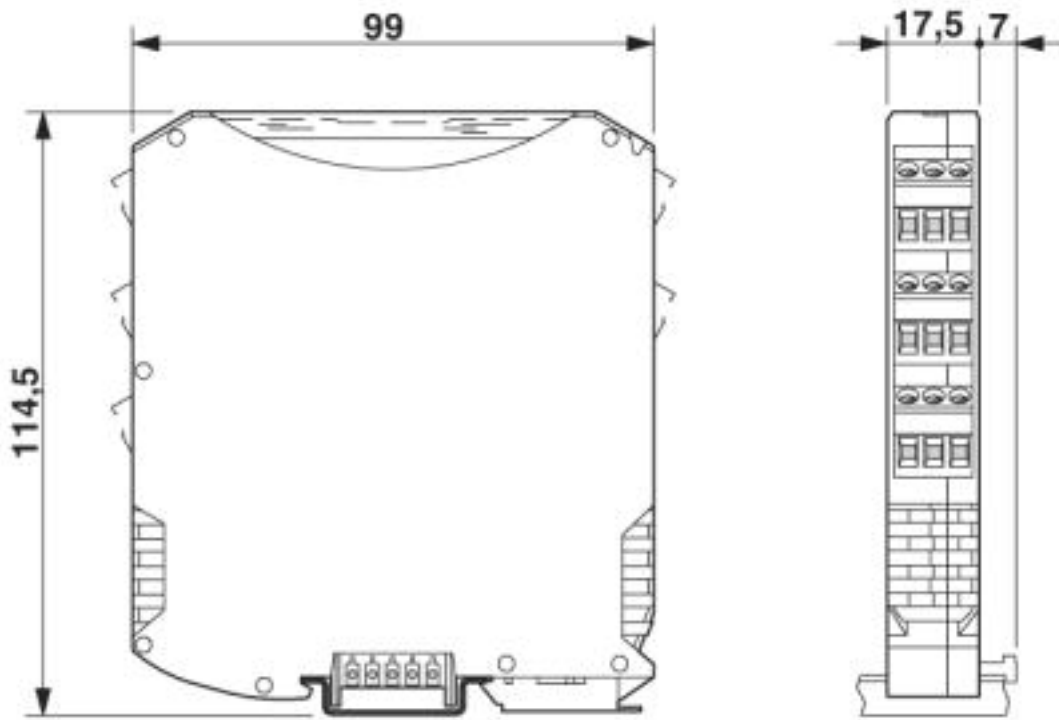
Drawings

Block diagram



Isolation amplifier - MACX MCR-EX-SL-2NAM-R-UP - 2865984

Dimensioned drawing



Isolation amplifier - MACX MCR-EX-SL-2NAM-R-UP - 2865984

Schematic diagram

