



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Isolation amplifier - MACX MCR-SL-NAM-2RO-SP - 2924265

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://phoenixcontact.com/download>)



NAMUR isolation amplifier for operating proximity sensors and switches. The signals are transferred to the control level using 2 separate relay outputs (N/O contacts). Line fault detection (LFD), galvanic 3-way isolation, SIL 2.

The illustration shows the versions with screw connection

Product Features

- ✓ 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 according to EN 61508
- ✓ Line fault detection (LFD), can be activated/deactivated, error indicated by red flashing LED with de-excitation of output relay
- ✓ 4-way electrical isolation
- ✓ Input for NAMUR proximity sensors (EN 60947-5-6), floating contacts or contacts with resistance circuit
- ✓ LED indicators for supply voltage, switching state, and malfunction according to NAMUR NE 44
- ✓ 2 relay signal outputs (N/O contact); output 2 can also be used as an error signaling output
- ✓ Direction of operation can be selected (operating or closed circuit current behavior)



Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	140.0 GRM
Custom tariff number	85437090
Country of origin	Germany

Technical data

Note

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

Isolation amplifier - MACX MCR-SL-NAM-2RO-SP - 2924265

Technical data

Dimensions

Width	12.5 mm
Height	99 mm
Depth	114.5 mm

Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Noise immunity	EN 61000-6-2
Degree of protection	IP20

Input data

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

Output data

Switching output	Relay output
Contact type	2 N/O contacts
Contact material	AgSnO ₂ , hard gold-plated
Maximum switching voltage	250 V AC (2 A) 120 V DC (0.2 A) 30 V DC (2 A)
Max. switching power	500 VA
Mechanical service life	10 ⁷ cycles

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC
Max. current consumption	30 mA (24 V DC)
Power consumption	< 950 mW

Connection data

Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	1.5 mm ²
Conductor cross section stranded min.	0.2 mm ²
Conductor cross section stranded max.	1.5 mm ²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max.	16

Isolation amplifier - MACX MCR-SL-NAM-2RO-SP - 2924265

Technical data

Connection data

Stripping length	8 mm
Connection method	Spring-cage connection

General

No. of channels	1
Status display	Green LED (supply voltage) LED yellow (switching state) 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
Designation	Input/output/supply, DIN rail connector
Electrical isolation	300 V _{rms} (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) 2.5 kV (50 Hz, 1 min., test voltage)
Designation	Input/supply, DIN rail connector
Electrical isolation	300 V _{rms} (Rated insulation voltage (surge voltage category II; pollution degree 2, safe isolation as per EN 61010-1)) 2.5 kV (50 Hz, 1 min., test voltage)
Designation	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)) 2.5 kV (50 Hz, 1 min., test voltage)
Conformance	CE-compliant, additionally EN 61326
ATEX	# II 3 G Ex nA nC IIC T4 Gc X
UL, USA / Canada	UL applied for

Safety characteristic data

Integrity requirement	IEC 61508 - Low demand
Designation	Non-inverted operation
Equipment type	Type A
Safety Integrity Level (SIL)	Up to 2
Safe Failure Fraction (SFF)	78 %
λ_{SU}	2.49×10^{-7} (249 FIT)
λ_{SD}	6×10^{-9} (6 FIT)
λ_{DU}	6.4×10^{-8} (64 FIT)
λ_{DD}	7×10^{-9} (7 FIT)

Isolation amplifier - MACX MCR-SL-NAM-2RO-SP - 2924265

Technical data

Safety characteristic data

Probability of a hazardous failure on demand (PFD _{AVG})	3.09 x 10 ⁻⁴ (1 year)
	6.17 x 10 ⁻⁴ (2 years)
	1.54 x 10 ⁻³ (5 years)
Diagnostic coverage (DC)	DC _S = 2.4%, DC _D = 9%
Integrity requirement	IEC 61508 - Low demand
Designation	Inverted operation
Equipment type	Type A
Safety Integrity Level (SIL)	Up to 2
Safe Failure Fraction (SFF)	78 %
λ _{SU}	2.48 x 10 ⁻⁷ (248 FIT)
λ _{SD}	1 x 10 ⁻⁹ (1 FIT)
λ _{DU}	6.2 x 10 ⁻⁸ (62 FIT)
λ _{DD}	6 x 10 ⁻⁹ (6 FIT)
Probability of a hazardous failure on demand (PFD _{AVG})	3.01 x 10 ⁻⁴ (1 year)
	6.02 x 10 ⁻⁴ (2 years)
	1.5 x 10 ⁻³ (5 years)
Diagnostic coverage (DC)	DC _S = 0.4%, DC _D = 8%

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	EC002653
ETIM 5.0	EC002653

Isolation amplifier - MACX MCR-SL-NAM-2RO-SP - 2924265

Classifications

UNSPSC

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

Approvals

Approvals

Approvals

GL / Functional Safety

Ex Approvals

ATEX

Approvals submitted

Approval details

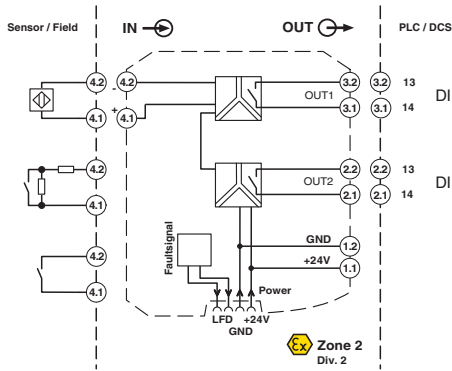
GL

Functional Safety

Drawings

Isolation amplifier - MACX MCR-SL-NAM-2RO-SP - 2924265

Block diagram



Dimensioned drawing

