MACX MCR-EX-AP-2REL-2DI-LP - Relay module

1292331

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Ex i-Relay module isolates binary Ex i and non Ex i signal and control circuits, and is used for intrinsically safe activation of Ex i field currents via one changeover contact relay per channel. number of channels: 2, Standard configuration, Loop-powered, 4-way isolation, Safety Integrity Level (SIL, IEC 61508): 2, Screw connection

Commercial data

Item number	1292331
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DK121W
Product key	DK121W
GTIN	4063151525613
Weight per piece (including packing)	189.3 g
Weight per piece (excluding packing)	160 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

Notes on operation	Installation conditions influence the ambient temperature. Please refer to the operating instructions.

Product properties

Product type	Relay Module
Product family	MACX Analog
No. of channels	2

Electrical properties

Electrical isolation	4-way isolation
Electrical isolation between input and output	yes

Electrical isolation Input/output IEC/EN 60079-11

Standards/regulations	IEC/EN 60079-11
Rated insulation voltage	375 V_{PP}

Electrical isolation Input 1 / input 2

Test voltage	350 V (50 Hz, 60 s)

Supply

Supply voltage range	loop-powered, no external supply necessary
Power dissipation	≤ 0.4 W

Input data

Control

Description of the input	Control input, not intrinsically safe
Voltage input signal	12 V ... 31.2 V (Switching signal)
Current consumption	< 25 mA (12 V)
	< 17 mA (24 V ... 31.2 V)

Output data

Switching: Relay

Output description	intrinsically safe
Contact switching type	1 changeover contact per channel
Minimum switching voltage	1 V (1 mA)
Maximum switching voltage	45 V DC (0.25 A)
	30 V DC (4 A)
	45 V AC (4 A, cos ϕ >0.7)
Typical response time	≤ 10 ms
Typical turn-off time	≤ 10 ms
Switching frequency	≤ 15 Hz

Connection data

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	24 ... 14
Tightening torque	0.5 Nm ... 0.6 Nm

Ex data

Ex installation (EPL)	Gc
Ex i circuits (EPL)	[Ga]
	[Da]
	[Ma]

Safety data

Input voltage U_i	45 V AC
Input current I_i	4 A
Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Safety-related maximum voltage U_m	253 V AC

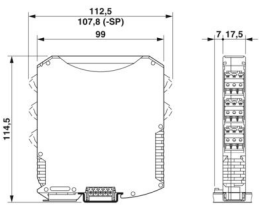
Safety data

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Dimensions

Dimensional drawing	
Width	17.5 mm

Height	112.5 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

Flammability rating according to UL 94	V0
Housing material	PA 6.6

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (Terminal blocks)
	IP30 (Housing)
Ambient temperature (operation)	-20 °C ... 70 °C (Stand-alone device: any mounting position)
	-20 °C ... 70 °C (Group assembly: vertical DIN rail without circulating air)
	-20 °C ... 70 °C (Group assembly: vertical DIN rail with circulating air)
	-20 °C ... 70 °C (Group assembly: horizontal DIN rail without circulating air)
	-20 °C ... 70 °C (Group assembly: horizontal DIN rail with circulating air)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	≤ 95 % (non-condensing)

Approvals

ATEX

Identification	Ⓔx II (1) G [Ex ia Ga] IIC
	Ⓔx II (1) D [Ex ia Da] IIIC
	Ⓔx II 3(1) G Ex ec nC [ia Ga] IIC T4 Gc
	Ⓔx I (M1) [Ex ia Ma] I

IECEx

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex ec nC [ia Ga] IIC T4 Gc
	[Ex ia Ma] I

Safety Integrity Level (SIL, IEC 61508)

Identification	2

EMC data

Electromagnetic compatibility	Tested in accordance with the following standards and regulations: EN 61326-1 For industrial use, NAMUR NE 21

Standards and regulations

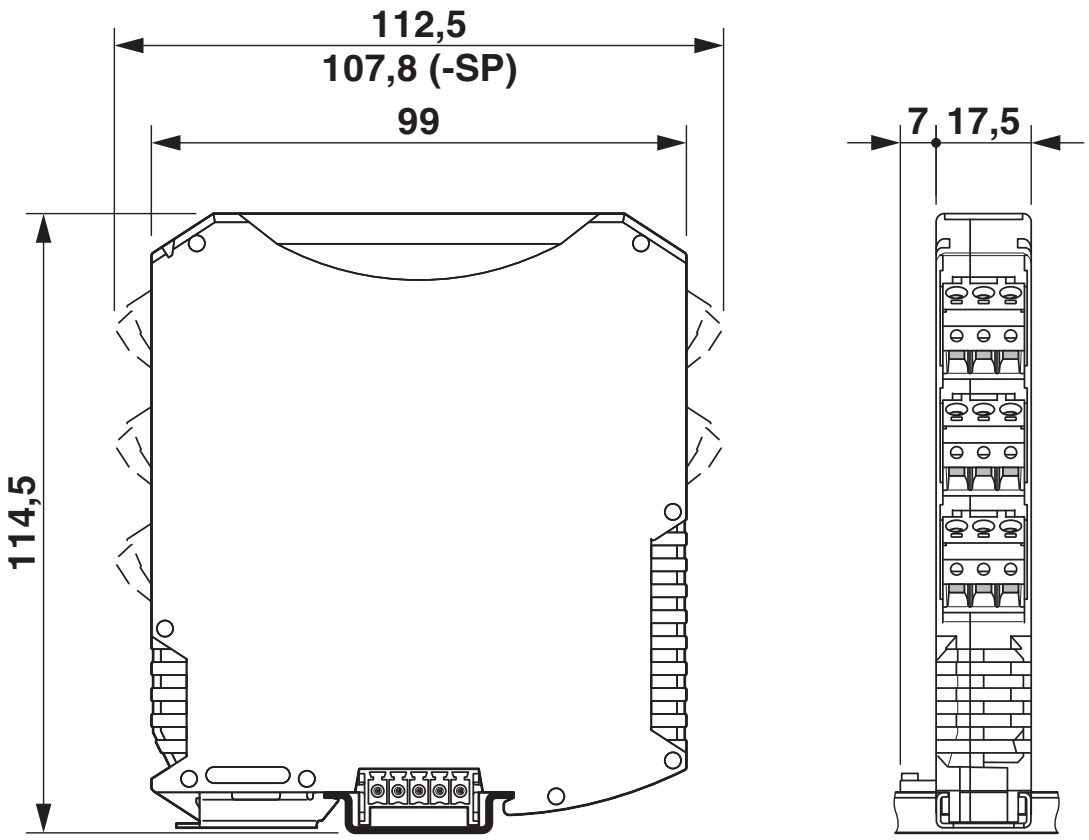
Electrical isolation	4-way isolation

Mounting

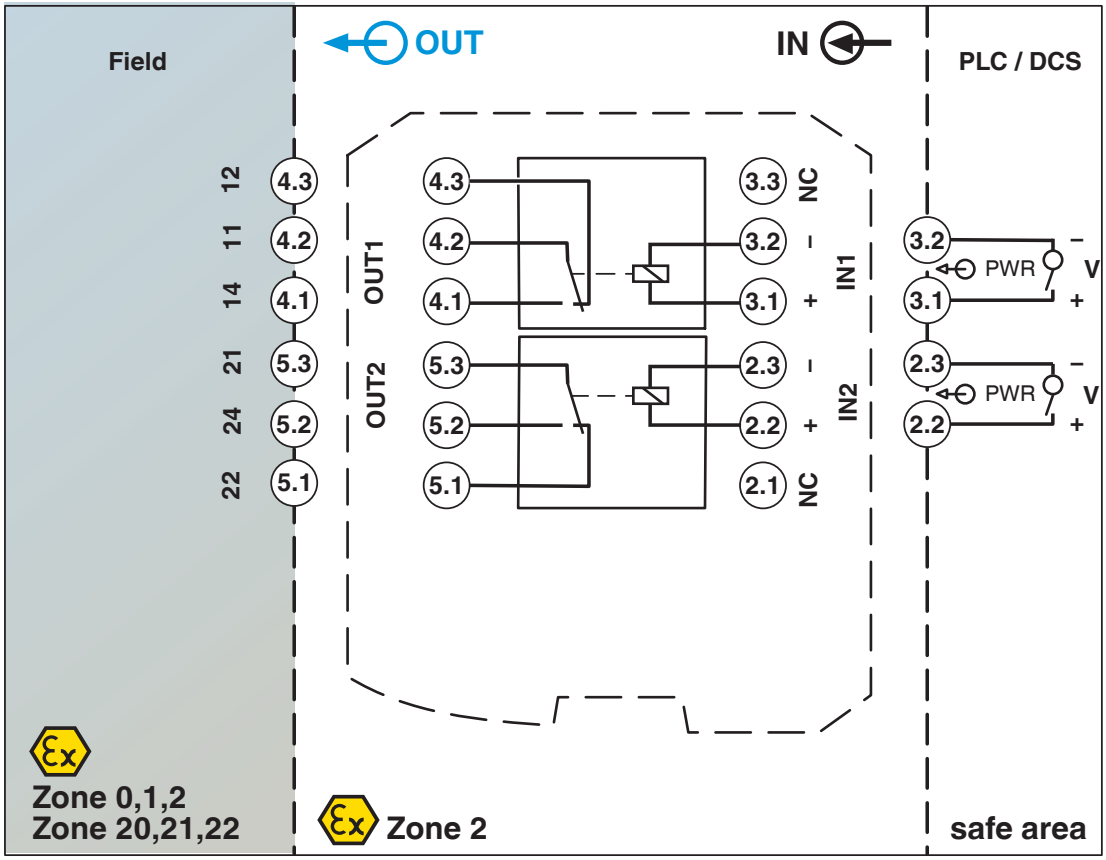
Mounting type	NS 35/15, NS 35/7,5
Mounting position	vertical, horizontal

Drawings

Dimensional drawing



Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/gb/products/1292331

Functional Safety
Approval ID: 22/05-248 R032 V1R0

IECEx
Approval ID: IECEx BVS 21.0058X

ATEX
Approval ID: BVS 21 ATEX E 053X

Classifications

ECLASS

ECLASS-13.0	27210192
ECLASS-15.0	27210192

ETIM

ETIM 10.0	EC002498

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 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	527a5898-3267-4b3a-8030-0259c0dda785

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