

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
Note	Made to order (non-returnable)
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

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Technical data

Notes

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

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Connection data

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm ² ... 2.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 2.5 mm ²
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

Input voltage U_i	45 V DC
Input current I_i	0.25 A
Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Safety-related maximum voltage U_m	253 V AC

Safety data

Input voltage U_i	30 V DC
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

Dimensions

Dimensional drawing	
Width	17.5 mm

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

Identification	[Ex ia Ga] IIC [Ex ia Da] IIIC Ex ec nC [ia Ga] IIC T4 Gc [Ex ia Ma] I
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Safety Integrity Level (SIL, IEC 61508)

Identification	2
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EMC data

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

Electrical isolation	4-way isolation
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Mounting

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

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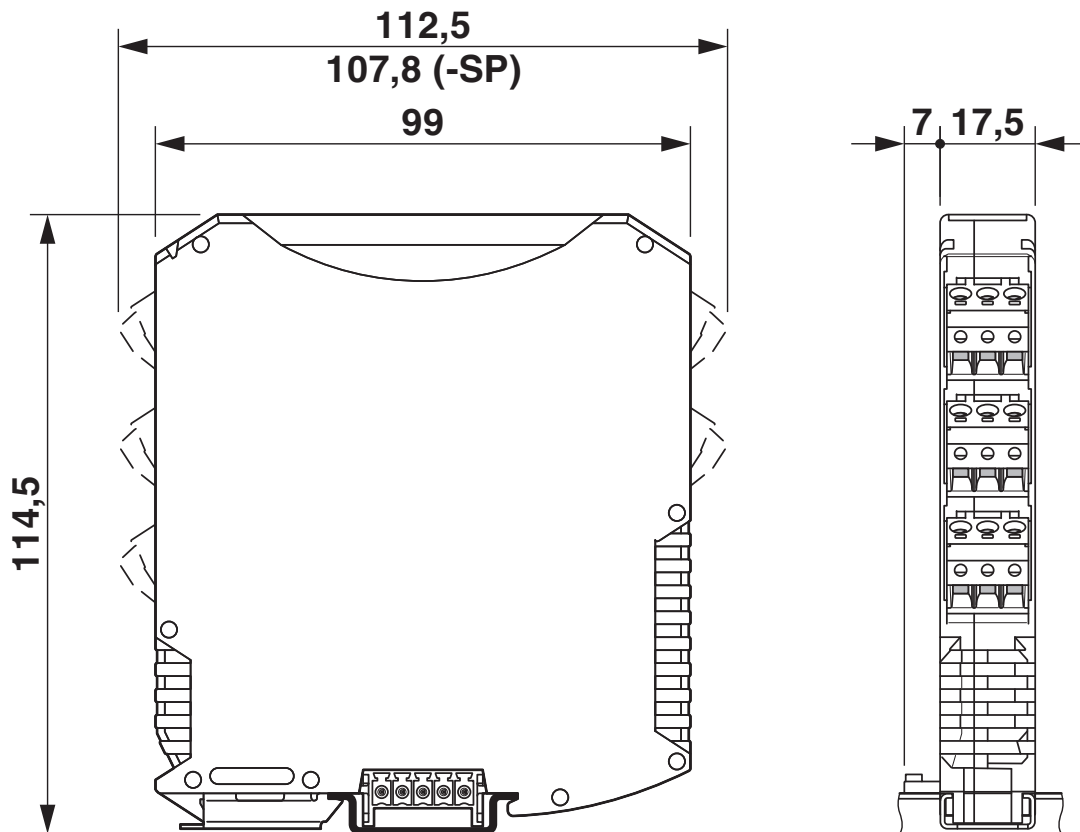


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Drawings

Dimensional drawing



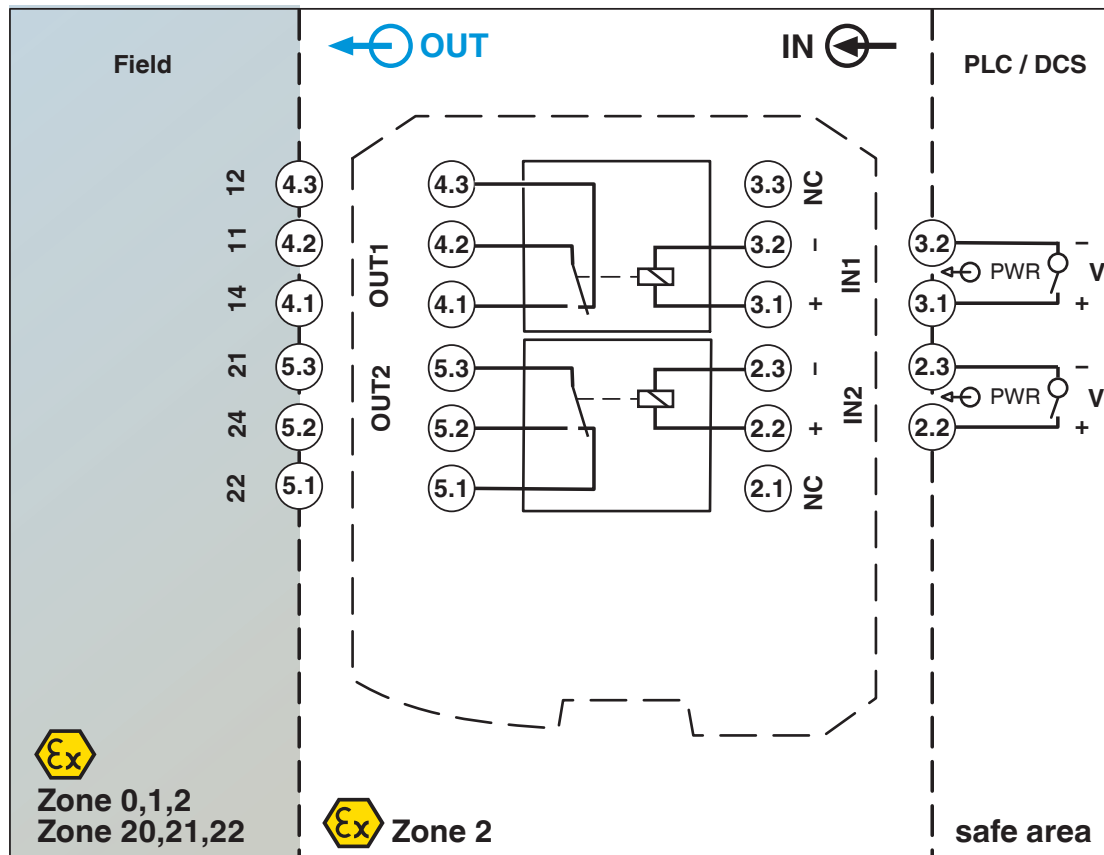
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Block diagram



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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

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Classifications

ECLASS

ECLASS-13.0	27210192
ECLASS-15.0	27210192

ETIM

ETIM 10.0	EC002498
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UNSPSC

UNSPSC 21.0	39121000
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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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