

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



1292331

<https://www.phoenixcontact.com/us/products/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	C430
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.
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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

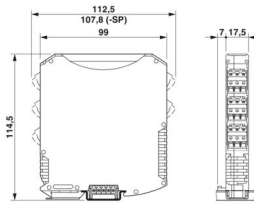
Safety data

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

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
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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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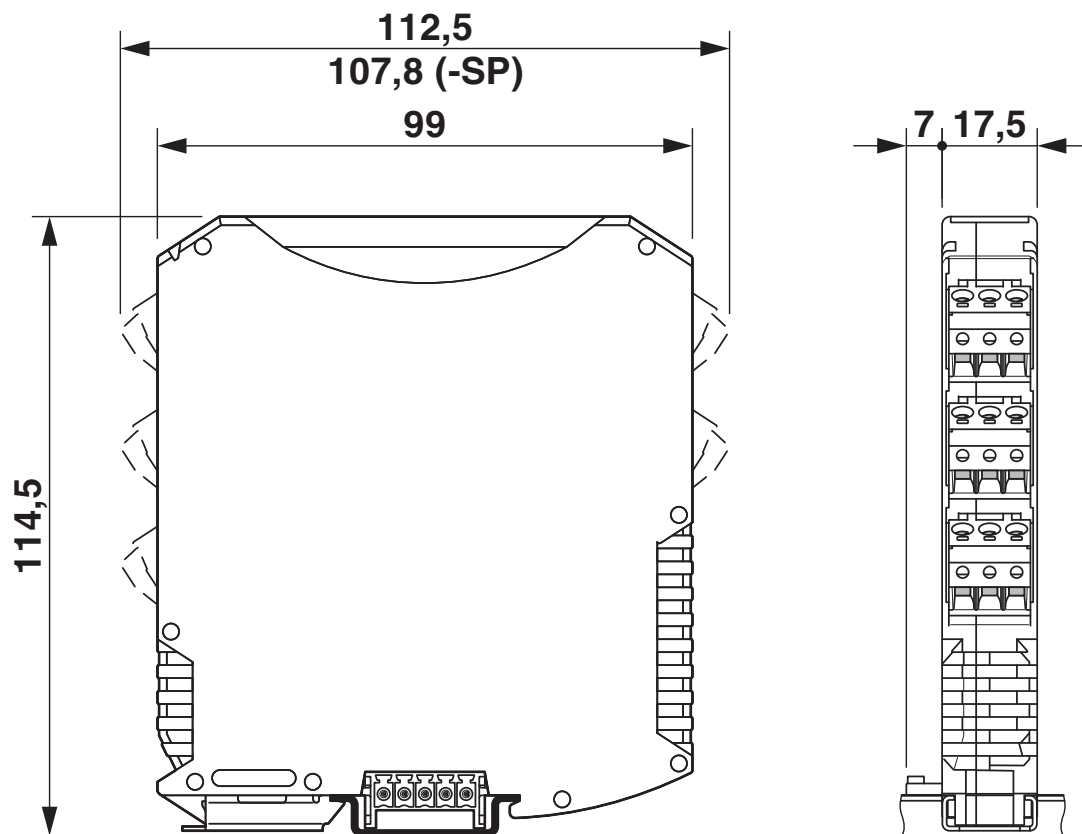
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Drawings

Dimensional drawing



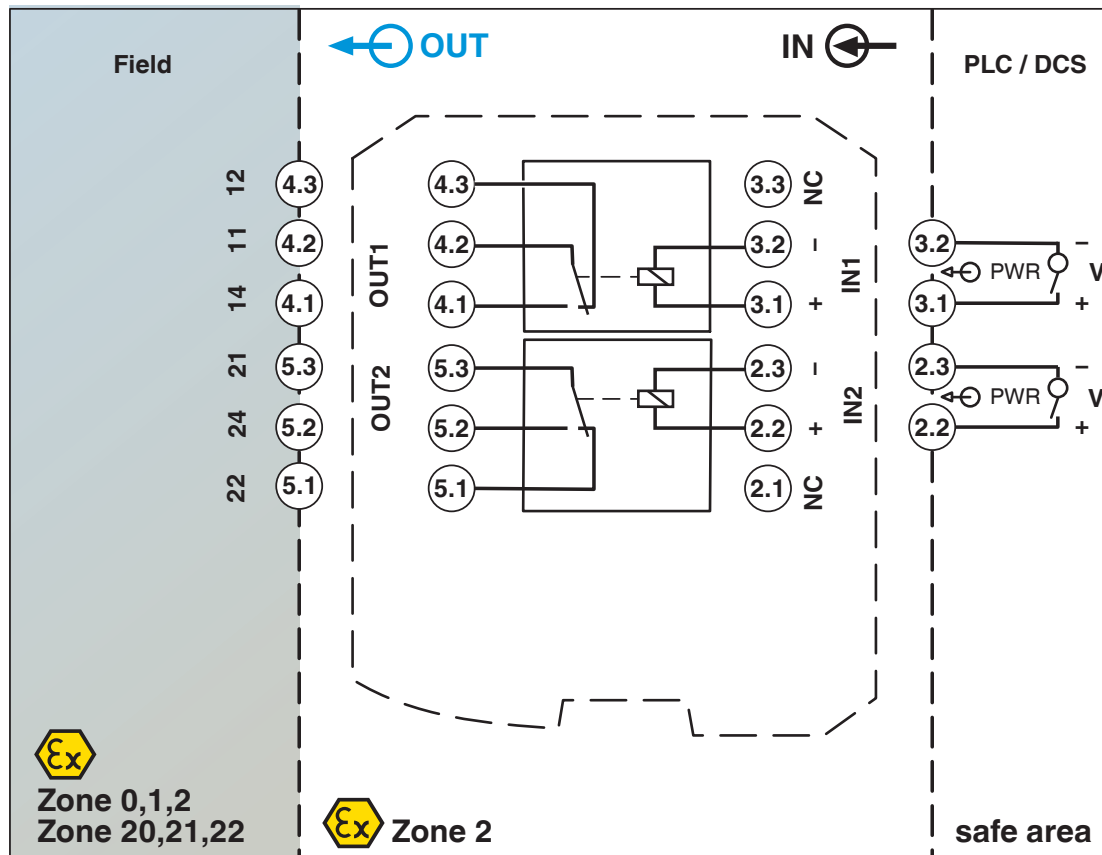
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Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/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 9.0	EC002498
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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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Accessories

MCR-DP - Separating plate

1430594

<https://www.phoenixcontact.com/us/products/1430594>



The partition plate is used to maintain Ex i isolating distances when Ex i and non-Ex i devices are mounted side by side on a DIN rail.

ME-TBUS-A MC 1,5-2 - DIN rail bus connector

1351974

<https://www.phoenixcontact.com/us/products/1351974>



DIN rail bus connector adapter (2-pos.) for connection of MACX MCR-EX-AP ... devices on the right side to the MACX MCR-PTB(-SP) power module with DIN rail bus connector ME 17,5 TBUS 1,5/5-ST-3,81 GY for bridging the supply voltage.

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ME-TBUS-A IMC1,5-2 - DIN rail bus connector

1351982

<https://www.phoenixcontact.com/us/products/1351982>



DIN rail bus connector adapter (2-pos.) for connection of MACX MCR-EX-AP... devices on the left side to the MACX MCR-PTB(-SP) power module with DIN rail bus connector ME 17,5 TBUS 1,5/5-ST-3,81 GY for bridging the supply voltage.

MPS-IH WH - Insulating sleeve

0201663

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Insulating sleeve, color: white



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MPS-IH RD - Insulating sleeve

0201676

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Insulating sleeve, color: red

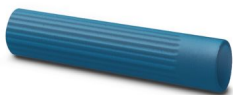


MPS-IH BU - Insulating sleeve

0201689

<https://www.phoenixcontact.com/us/products/0201689>

Insulating sleeve, color: blue



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MPS-IH YE - Insulating sleeve

0201692

<https://www.phoenixcontact.com/us/products/0201692>

Insulating sleeve, color: yellow



MPS-IH GN - Insulating sleeve

0201702

<https://www.phoenixcontact.com/us/products/0201702>

Insulating sleeve, color: green



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MPS-IH GY - Insulating sleeve

0201728

<https://www.phoenixcontact.com/us/products/0201728>

Insulating sleeve, color: gray



MPS-IH BK - Insulating sleeve

0201731

<https://www.phoenixcontact.com/us/products/0201731>

Insulating sleeve, color: black



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MPS-MT - Test plug

0201744

<https://www.phoenixcontact.com/us/products/0201744>



Test plug, with solder connection up to 1 mm² conductor cross-section, number of positions: 1, color: gray

UC-EMLP (11X9) - Plastic label

0819291

<https://www.phoenixcontact.com/us/products/0819291>



Plastic label, Sheet, white, unmarked, can be labeled with: BLUEMARK E. CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 9 mm, text field width: 11 mm

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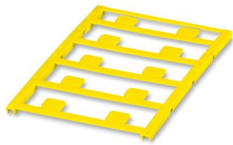
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UC-EMLP (11X9) YE - Plastic label

0822602

<https://www.phoenixcontact.com/us/products/0822602>



Plastic label, Sheet, yellow, unmarked, can be labeled with: BLUEMARK E. CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 9 mm, text field width: 11 mm

UC-EMLP (11X9) CUS - Plastic label

0824547

<https://www.phoenixcontact.com/us/products/0824547>



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, text field height: 9 mm, text field width: 11 mm

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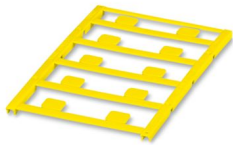
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UC-EMLP (11X9) YE CUS - Plastic label

0824548

<https://www.phoenixcontact.com/us/products/0824548>



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, text field height: 9 mm, text field width: 11 mm

UC-EMLP (11X9) SR - Plastic label

0828094

<https://www.phoenixcontact.com/us/products/0828094>



Plastic label, Sheet, silver, unmarked, can be labeled with: BLUEMARK E. CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 9 mm, text field width: 11 mm

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UC-EMLP (11X9) SR CUS - Plastic label

0828098

<https://www.phoenixcontact.com/us/products/0828098>



Plastic label, can be ordered: by sheet, silver, labeled according to customer specifications, mounting type: adhesive, Number of individual labels: 10, text field height: 9 mm, text field width: 11 mm

US-EMLP (11X9) - Plastic label

0828789

<https://www.phoenixcontact.com/us/products/0828789>



Plastic label, Card, white, unmarked, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, THERMOMARK PRIME 2.0, mounting type: adhesive, Number of individual labels: 135, text field height: 9 mm, text field width: 11 mm

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US-EMLP (11X9) YE - Plastic label

0828871

<https://www.phoenixcontact.com/us/products/0828871>



Plastic label, Card, yellow, unmarked, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, THERMOMARK PRIME 2.0, mounting type: adhesive, Number of individual labels: 135, text field height: 9 mm, text field width: 11 mm

US-EMLP (11X9) SR - Plastic label

0828872

<https://www.phoenixcontact.com/us/products/0828872>



Plastic label, Card, silver, unmarked, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, THERMOMARK PRIME 2.0, mounting type: adhesive, Number of individual labels: 135, text field height: 9 mm, text field width: 11 mm

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LS-EMLP (11X9) WH - Device marker

0831678

<https://www.phoenixcontact.com/us/products/0831678>

Device marker, Sheet, white, unmarked, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, Number of individual labels: 255, text field height: 9 mm, text field width: 11 mm

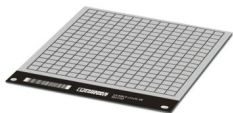


LS-EMLP (11X9) SR - Device marker

0831705

<https://www.phoenixcontact.com/us/products/0831705>

Device marker, Sheet, silver, unmarked, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, Number of individual labels: 255, text field height: 9 mm, text field width: 11 mm



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LS-EMLP (11X9) YE - Device marker

0831732

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Device marker, Sheet, yellow, unmarked, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, Number of individual labels: 255, text field height: 9 mm, text field width: 11 mm



SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/us/products/1205053>

Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip



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