

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier

1291191
<https://www.phoenixcontact.com/in/products/1291191>

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 documentation. Our general terms of use for downloads are valid.



Ex i-Feed and input signal conditioner feeds 2-, 3- and 4-conductor measuring transducer and transmits 1:1 passive or active 0 mA / 4 mA ... 20 mA Ex i input signals as active non Ex i output signal. number of channels: 1, HART-transparent, Standard configuration, 3-way isolation, Safety Integrity Level (SIL, IEC 61508): 3, Screw connection

Commercial data

Item number	1291191
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DK121W
GTIN	4063151522698
Weight per piece (including packing)	199 g
Weight per piece (excluding packing)	160 g
Country of origin	DE

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

Technical data

Notes

Note on application	Accuracy, typically specified as a percentage of the measuring span (20 mA) at U_N , 23°C
Notes on operation	Installation conditions influence the ambient temperature. Please refer to the "Control cabinet installation instructions".
Notes on operation	Output behavior = input signal

Product properties

Product type	Repeater power supply
Product family	MACX Analog
No. of channels	1

Electrical properties

Electrical isolation	3-way isolation
Signal transmission behavior	In = Out
Temperature coefficient, typical	$\leq 0.05\%$ (10 K)
Reverse polarity protection	yes

Electrical isolation Input/output IEC/EN 60079-11

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

Electrical isolation Input/power supply IEC/EN 60079-11

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

Electrical isolation Input/error message output IEC/EN 60079-11

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

Electrical isolation Input 1 / input 2 IEC/EN 60079-11

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

Electrical isolation Output/supply

Test voltage	350 V (50 Hz, 60 s)
--------------	---------------------

Electrical isolation Output 1/output 2

Test voltage	350 V (50 Hz, 60 s)
--------------	---------------------

Electrical isolation Output/supply/error message output

Test voltage	350 V (50 Hz, 60 s)
--------------	---------------------

Supply

Nominal supply voltage	24 V DC
Supply voltage range	18 V ... 31.2 V

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

Power dissipation	2.2 W (R_L 250 Ω)
Power consumption	2.7 W (20 mA)

Input data

Signal: Repeater power supply operation

Description of the input	active and passive current input, intrinsically safe
Input signal	Current
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA (with HART)
	0 mA ... 24 mA (Function area)
Input resistance current input	$\leq 100 \Omega$ (for mA sources)
Input current	≤ 50 mA (for mA sources)
Short-circuit current	≤ 35 mA
Line fault detection	< 3.6 mA (Line break)
	> 20.5 mA (Short circuit)
Non-load voltage	≤ 26 V

Signal: Signal conditioner operation

Description of the input	Passive current input, intrinsically safe
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA (with HART)
	0 mA ... 24 mA (Function area)
Input resistance current input	$\leq 100 \Omega$ (for mA sources)
Input current	≤ 50 mA
Short-circuit current	≤ 35 mA
Line fault detection	< 3.6 mA (Line break)
	> 20.5 mA (Short circuit)
Non-load voltage	≤ 26 V

Output data

Signal: Error message output

Maximum switching voltage	30 V
Max. switching current	100 mA

Signal: Repeater power supply operation

Output description	Current output (active)
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA (with HART)
	0 mA ... 24 mA (Function area)
Load	0 Ω ... 600 Ω
	0 Ω ... 379 Ω (with internal 221 Ω resistance for HART)
Output ripple (current)	$\leq 40 \mu$ A (effective)
Line fault detection	< 3.6 mA (Line break)

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

Signal: Signal conditioner operation

Output description	Signal conditioner operation
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA (with HART)
	0 mA ... 24 mA (Function area)
Load	0 Ω ... 600 Ω
	0 Ω ... 379 Ω (with internal 221 Ω resistance for HART)
Output ripple (current)	$\leq 40 \mu\text{A}$ (effective)

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

Ex data

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

Safety data: Repeater power supply operation

Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Max. output voltage U_o	27 V
Max. output current I_o	88 mA
Max. output power P_o	576 mW
Safety-related maximum voltage U_m	253 V AC
IIA (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	28 mH / 2330 nF
IIB/IIIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	17 mH / 705 nF
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	2.3 mH / 90 nF
I (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	40 mH / 3750 nF
IIA (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	28 mH / 410 nF, 2 mH / 480 nF, 1 mH / 540 nF, 0.2 mH / 820 nF
IIB/IIIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	17 mH / 290 nF, 2 mH / 320 nF, 0.5 mH / 460 nF, 0.2 mH / 600 nF
IIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	2 mH / 42 nF, 1 mH / 56 nF, 0.5 mH / 72 nF, 0.2 mH / 90 nF
I (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	40 mH / 480 nF, 20 mH / 660 nF, 0.5 mH / 810 nF, 0.1 mH / 1200 nF

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

Safety data: Signal conditioner operation

Note	With connection of power sources
Input voltage U_i	30 V
Input current I_i	100 mA
Input power P_i	limited internally
Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Max. output voltage U_o	4.1 V
Safety-related maximum voltage U_m	253 V AC

Interfaces

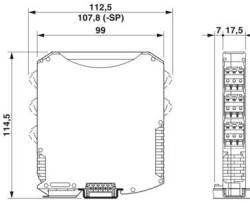
Data communication (bypass)

Protocols supported	HART-transparent
Frequency measuring range	0.5 kHz ... 10 kHz (bidirectional HART transmission)

Signaling

Status display	Green LED (supply voltage)
	Red LED (line errors)

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 ... 55 °C (Group assembly: vertical DIN rail without circulating air)

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

	-20 °C ... 65 °C (Group assembly: vertical DIN rail with circulating air)
	-20 °C ... 60 °C (Group assembly: horizontal DIN rail without circulating air)
	-20 °C ... 65 °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 nA nC [ia Ga] IIC T4 Gc
	⚡ I (M1) [Ex ia Ma] I

IECEX

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

Safety Integrity Level (SIL, IEC 61508)

Identification	3
----------------	---

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	3-way isolation
----------------------	-----------------

Mounting

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

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier

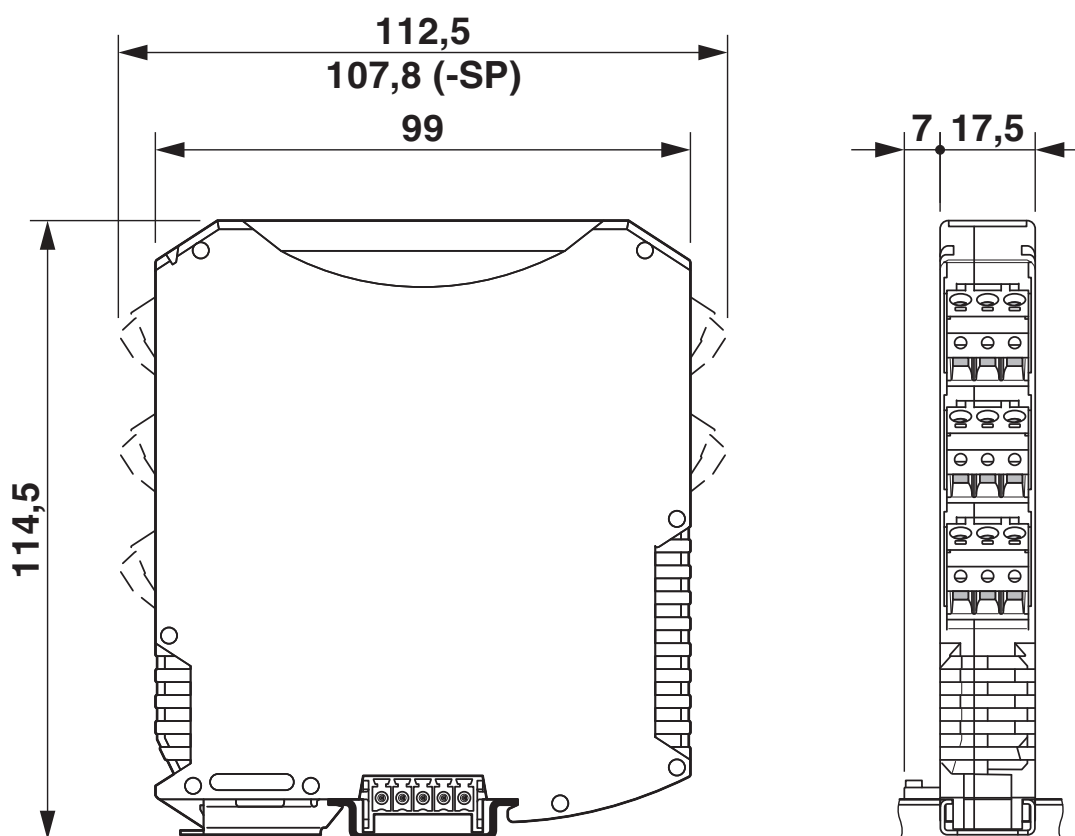


1291191

<https://www.phoenixcontact.com/in/products/1291191>

Drawings

Dimensional drawing

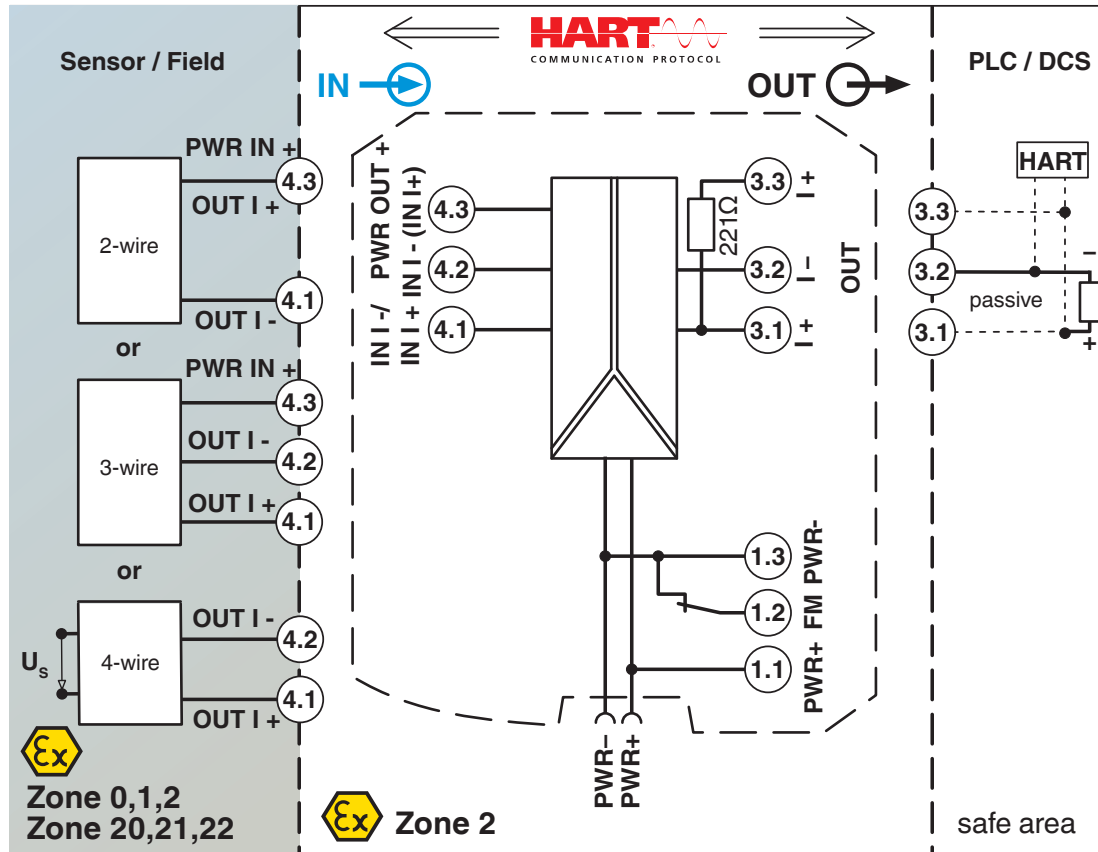


MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier

1291191

<https://www.phoenixcontact.com/in/products/1291191>

Block diagram



MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/in/products/1291191>

Functional Safety

Approval ID: 22/05-248 R029 V1R0



IECEx

Approval ID: IECEx BVS 21.0019X



ATEX

Approval ID: BVS 21 ATEX E 017X

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

Classifications

ECLASS

ECLASS-11.0	27210120
ECLASS-12.0	27210120
ECLASS-13.0	27210120

ETIM

ETIM 9.0	EC002653
----------	----------

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

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	4b176659-68ca-4889-9cce-3fffba2742ba

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

Accessories

GW HART USB MODEM - Cable adapter

1003824

<https://www.phoenixcontact.com/in/products/1003824>



USB HART modem cable for communication between a PC and HART devices, cable length: 1 m.

MACX MCR-PTB - Power and error message module

2865625

<https://www.phoenixcontact.com/in/products/2865625>



Power and fault signaling module with screw connection, including corresponding ME 17,5 TBUS 1,5/ 5-ST-3,81 GY DIN rail connector

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

MACX MCR-PTB-SP - Power and error message module

2924184

<https://www.phoenixcontact.com/in/products/2924184>



Power and fault signaling module with Push-in connection, including corresponding ME 17,5 TBUS 1,5/ 5-ST-3,81 GY DIN rail connector

QUINT4-SYS-PS/1AC/24DC/2.5/SC - Power supply unit

2904614

<https://www.phoenixcontact.com/in/products/2904614>



Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



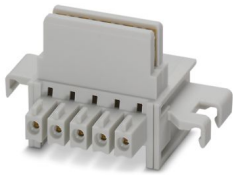
1291191

<https://www.phoenixcontact.com/in/products/1291191>

ME 17,5 TBUS 1,5/ 5-ST-3,81 GY - DIN rail bus connectors

1090049

<https://www.phoenixcontact.com/in/products/1090049>



DIN rail connector, color: gray, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, product range: TBUS5-17,5..., pitch: 3.81 mm, mounting: DIN rail mounting, locking: without, mounting method: without, type of packaging: packed in cardboard, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

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

1351974

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



DIN rail 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 connector ME 17,5 TBUS 1,5/5-ST-3,81 GY for bridging the supply voltage.

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

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

1351982

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



DIN rail 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 connector ME 17,5 TBUS 1,5/5-ST-3,81 GY for bridging the supply voltage.

MCR-DP - Separating plate

1430594

<https://www.phoenixcontact.com/in/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.

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

MPS-IH WH - Insulating sleeve

0201663

<https://www.phoenixcontact.com/in/products/0201663>

Insulating sleeve, color: white



MPS-IH RD - Insulating sleeve

0201676

<https://www.phoenixcontact.com/in/products/0201676>

Insulating sleeve, color: red



MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

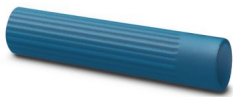
<https://www.phoenixcontact.com/in/products/1291191>

MPS-IH BU - Insulating sleeve

0201689

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

Insulating sleeve, color: blue



MPS-IH YE - Insulating sleeve

0201692

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

Insulating sleeve, color: yellow



MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

MPS-IH GN - Insulating sleeve

0201702

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

Insulating sleeve, color: green



MPS-IH GY - Insulating sleeve

0201728

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

Insulating sleeve, color: gray



MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

MPS-IH BK - Insulating sleeve

0201731

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

Insulating sleeve, color: black



MPS-MT - Test plug

0201744

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

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



MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

UC-EMLP (11X9) - Plastic label

0819291

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

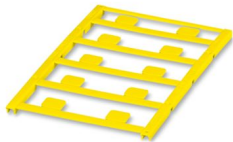


Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 9 mm, text field width: 11 mm

UC-EMLP (11X9) YE - Plastic label

0822602

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



Plastic label, Sheet, yellow, unlabeled, can be labeled with: 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

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

UC-EMLP (11X9) CUS - Plastic label

0824547

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

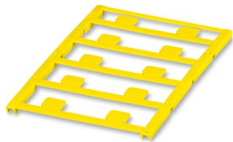


Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, text field height: 9 mm, text field width: 11 mm

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

0824548

<https://www.phoenixcontact.com/in/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

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

UC-EMLP (11X9) SR - Plastic label

0828094

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



Plastic label, Sheet, silver, unlabeled, can be labeled with: 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) SR CUS - Plastic label

0828098

<https://www.phoenixcontact.com/in/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

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

US-EMLP (11X9) - Plastic label

0828789

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



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

US-EMLP (11X9) YE - Plastic label

0828871

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



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

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

US-EMLP (11X9) SR - Plastic label

0828872

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

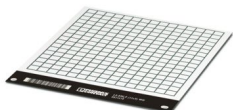


Plastic label, Card, silver, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, THERMOMARK PRIME, THERMOMARK CARD 2.0, THERMOMARK CARD, mounting type: adhesive, Number of individual labels: 135, text field height: 9 mm, text field width: 11 mm

LS-EMLP (11X9) WH - Device marker

0831678

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



Device marker, Sheet, white, unlabeled, 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

MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

LS-EMLP (11X9) SR - Device marker

0831705

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

Device marker, Sheet, silver, unlabeled, 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

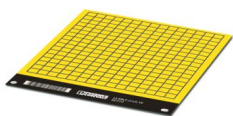


LS-EMLP (11X9) YE - Device marker

0831732

<https://www.phoenixcontact.com/in/products/0831732>

Device marker, Sheet, yellow, unlabeled, 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



MACX MCR-EX-AP-RPSS-I-I - Power/input isolating amplifier



1291191

<https://www.phoenixcontact.com/in/products/1291191>

SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/in/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

Phoenix Contact 2025 © - all rights reserved

<https://www.phoenixcontact.com>

PHOENIX CONTACT (I) Pvt. Ltd.

A-58/2, Okhla Industrial Area, Phase - II, New Delhi-110 020

+91.1275.71420

info@phoenixcontact.co.in