

MACX MCR-SL-RPSSI-I-UP-SP - Repeater power supply



2924210

<https://www.phoenixcontact.com/pc/products/2924210>

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Repeater power supply for supplying 2- and 4-conductor transmitters with HART transparency and wide-range power supply, SIL 2 (1oo1)/SIL 3 (1oo2), Push-in connection

Your advantages

- 250 Ω resistor that can be activated via DIP switches to increase HART impedance for low-resistance systems
- Up to SIL 2 in accordance with EN 61508
- Installation in zone 2, protection type "n" (EN 60079-15) permitted
- Wide-range power supply of 19.2 ... 253 V AC/DC
- 3-way electrical isolation
- Plug-in screw or spring-cage connection technology (Push-in technology), with integrated sockets for HART communicators
- Input: 0/4 mA ... 20 mA (powered or not powered)
- Bidirectional transmission of digital HART communication signals
- 0/4 ... 20 mA output (active or passive), 0/1 ... 5 V, can be selected via DIP switches

Commercial data

Item number	2924210
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DK1111
GTIN	4046356449502
Weight per piece (including packing)	176.1 g
Weight per piece (excluding packing)	144.5 g
Customs tariff number	85437090
Country of origin	DE

MACX MCR-SL-RPSSI-I-UP-SP - Repeater power supply



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Technical data

Product properties

Product type	Repeater power supply
Product family	MACX Analog
Application	Analog IN
No. of channels	1
Configuration	DIP switches

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes
Signal transmission behavior	In = Out
Step response (10-90%)	< 600 µs (for 4 mA ... 20 mA step)
Maximum temperature coefficient	< 0.01 %/K
Maximum transmission error	< 0.1 % (of final value)
Transmission error, typical	< 0.05 % (of final value)

Electrical isolation

Test voltage	2.5 kV AC (50 Hz, 60 s)
Overvoltage category	II
Pollution degree	2

Electrical isolation Input/output/power supply IEC/EN 61010-1

Standards/regulations	IEC/EN 61010-1
Rated insulation voltage	300 V _{rms}
Insulation	Safe isolation

Supply

Designation	Repeater power supply operation
Nominal supply voltage range	24 V AC/DC ... 230 V AC/DC -20 % ... +10 % (50/60 Hz)
Supply voltage range	19.2 V AC/DC ... 253 V AC/DC (50/60 Hz)
Max. current consumption	< 75 mA (24 V DC / 20 mA)
Power dissipation	< 1.6 W (24 V DC / 20 mA)
Power consumption	< 1.9 W

Supply

Designation	Signal conditioner operation
Nominal supply voltage range	24 V AC/DC ... 230 V AC/DC -20 % ... +10 % (50/60 Hz)
Supply voltage range	19.2 V AC/DC ... 253 V AC/DC (50/60 Hz)
Max. current consumption	< 45 mA (24 V DC / 20 mA)
Power dissipation	< 1.1 W (24 V DC / 20 mA)
Power consumption	< 1.1 W

Input data

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Signal: Repeater power supply operation

Description of the input	Active current input
Number of inputs	1
Current input signal	4 mA ... 20 mA
Transmitter supply voltage	> 16 V (20 mA)
	> 15.3 V (22.5 mA)

Signal: Signal conditioner operation

Description of the input	Passive current input
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA
Voltage drop	< 3.5 V (in input isolating amplifier operation)

Output data

Signal: Repeater power supply operation

Output description	Current output (active and passive)
Number of outputs	1
Voltage output signal	1 V ... 5 V (internal resistance, 250 Ω, 0.1%)
	Configurable via DIP switches
Current output signal	4 mA ... 20 mA (active)
	4 mA ... 20 mA (14 ... 26 V ext. source voltage)
Load/output load current output	< 600 Ω (20 mA)
	< 525 Ω (22.5 mA)
Output ripple	< 20 mV _{rms}
Output behavior in the event of an error	0 mA (Cable break in the input)
	≥ 22.5 mA (Cable short-circuit in the input)

Signal: Signal conditioner operation

Output description	Current output (active and passive)
Voltage output signal	0 V ... 5 V (internal resistance, 250 Ω, 0.1%)
	1 V ... 5 V (internal resistance, 250 Ω, 0.1%)
Current output signal	0 mA ... 20 mA (active)
	4 mA ... 20 mA (active)
	0 mA ... 20 mA (14 ... 26 V ext. source voltage)
	4 mA ... 20 mA (14 ... 26 V ext. source voltage)
Load/output load current output	< 600 Ω (20 mA)
	< 525 Ω (22.5 mA)
Output ripple	< 20 mV _{rms}
Output behavior in the event of an error	0 mA (Cable break in the input)
	0 mA (Cable short-circuit in the input)

Connection data

Connection method	Push-in connection
Stripping length	10 mm

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Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible (2 conductors with same cross section)	0.25 mm² ... 0.34 mm² (TWIN ferrule without plastic sleeve)
	0.5 mm² ... 1.5 mm² (TWIN ferrule with plastic sleeve)
Conductor cross-section AWG	24 ... 14
	24 ... 22 (TWIN ferrule without plastic sleeve)
	20 ... 16 (TWIN ferrule with plastic sleeve)

Ex data

Ex installation (EPL)	Gc
	Div. 2

Interfaces

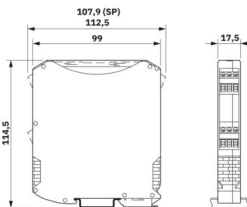
Data communication (bypass)

HART function	HART transparency
Protocols supported	HART

Signaling

Status display	Green LED (supply voltage)
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Dimensions

Dimensional drawing	
Width	17.5 mm
Height	107.9 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

Color	gray (RAL 7042)
Flammability rating according to UL 94 (Housing)	V0 (Housing)
Housing material	PA 6.6-FR

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 60 °C (Any mounting position)
	-40 °C ... 70 °C (Derating)

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Ambient temperature (storage/transport)	-40 °C ... 80 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

Altitude range (≤ 2000 m)

Altitude	≤ 2000 m (The technical data refers to altitudes ≤2000 m above mean sea level. For altitudes >2000 m above mean sea level, refer to the data sheet.)
Ambient temperature (operation)	-40 °C ... 60 °C -40 °C ... 70 °C (Derating)
Rated insulation voltage	375 V _{PP} (Power supply, input / output)

Altitude range (≤ 3000 m)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-40 °C ... 54 °C -40 °C ... 63 °C (Derating)
Rated insulation voltage	190 V AC (Power supply, input / output) 110 V DC (Power supply, input / output)

Altitude range (≤ 4000 m)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-40 °C ... 48 °C -40 °C ... 56 °C (Derating)
Rated insulation voltage	60 V AC/DC (Power supply, input / output)

Altitude range (≤ 5000 m)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-40 °C ... 42 °C -40 °C ... 49 °C (Derating)
Rated insulation voltage	60 V AC/DC (Power supply, input / output)

Approvals

CE

Certificate	CE-compliant
Note	and EN 61326-1

ATEX

Identification	Ex II 3 G Ex ec IIC T4 Gc X
Certificate	PxCIF08ATEX2865968X

UKCA Ex (UKEX)

Identification	Ex II 3 G Ex nA IIC T4 Gc
Certificate	PxCIF21UKEX2865968X

IECEx

Identification	Ex ec IIC T4 Gc
Certificate	IECEx BVS 08.0035X

UL, USA/Canada

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Identification	UL 508 Listed
	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC T4

Safety Integrity Level (SIL / SILCL, IEC 61508)

Identification	2
Certificate	ZP/C031/20

Systematic Capability (SC / SILCL)

Identification	3
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EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2

Noise emission

Standards/regulations	EN 61000-6-4
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Standards and regulations

Electrical isolation	3-way isolation
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Mounting

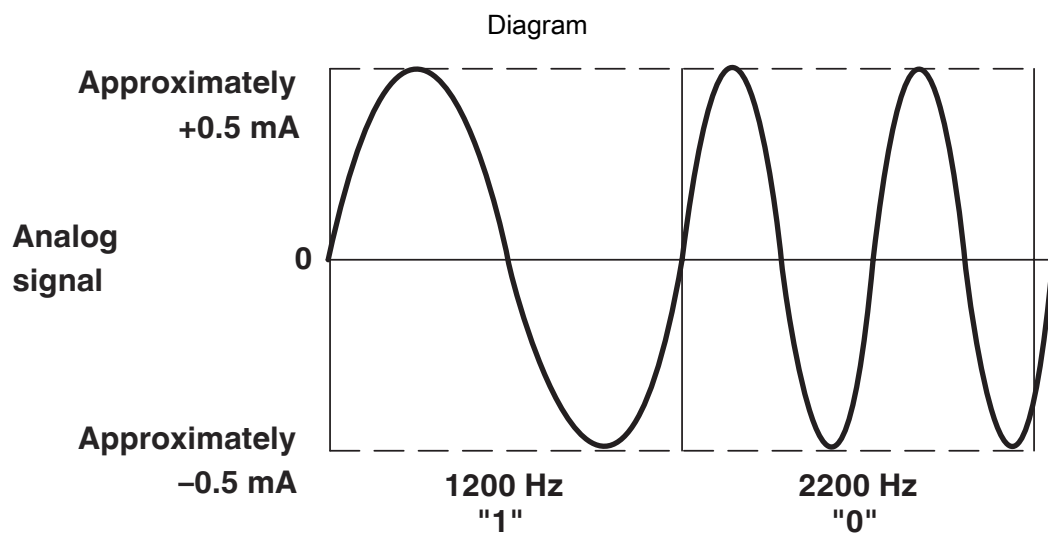
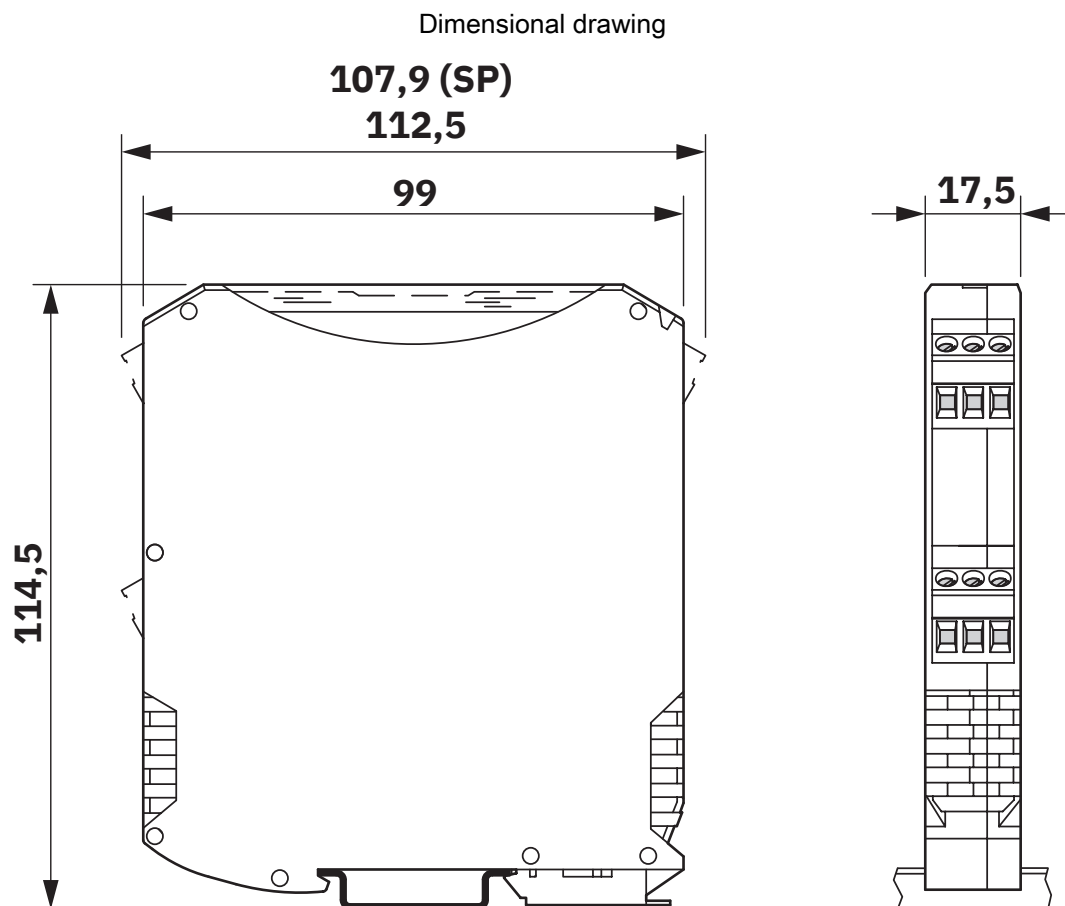
Mounting type	DIN rail mounting
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Drawings



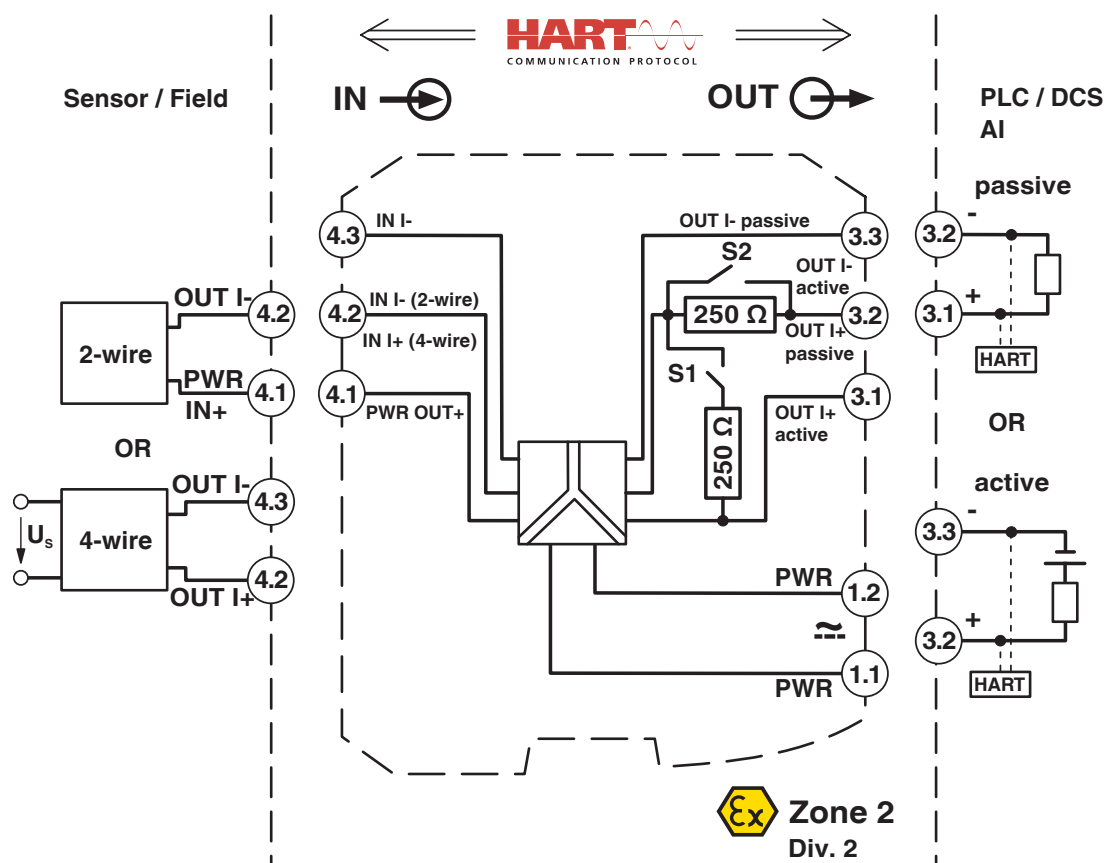
Signal transmission analog and digital at the same time

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Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2924210>



UL Listed

Approval ID: E330267



cUL Listed

Approval ID: E330267

Functional Safety

Approval ID: ZP/C031/20



EAC Ex

Approval ID: BY/112 02.01 TP012xx



cUL Listed

Approval ID: E199827



UL Listed

Approval ID: FILE E 199827



IECEx

Approval ID: IECEx BVS 08.0035X

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Classifications

ECLASS

ECLASS-13.0	27210120
ECLASS-15.0	27210120

ETIM

ETIM 10.0	EC002653
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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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	c7ab9d4b-0920-4f27-b5f1-a18540c1f140

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Accessories

GW HART USB MODEM - Cable adapter

1003824

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



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

MCR-DP - Separating plate

1430594

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

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CLIPX ENGINEER DEVICE PARAMETERIZATION - Software

1371665

<https://www.phoenixcontact.com/pc/products/1371665>



Parameterization software for Phoenix Contact devices. It includes online monitoring of current device process values, adjustment of device parameters, and logging of parameter changes. Windows installation version with online update.

CLIPX ENGINEER DEVICE PARAMETERIZATION P - Software

1371666

<https://www.phoenixcontact.com/pc/products/1371666>



Parameterization software for Phoenix Contact devices. It includes online monitoring of current device process values, adjustment of device parameters, and logging of parameter changes. Windows version can be used straight away without online update.

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MPS-IH WH - Insulating sleeve

0201663

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

Insulating sleeve, color: white



MPS-IH RD - Insulating sleeve

0201676

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

Insulating sleeve, color: red



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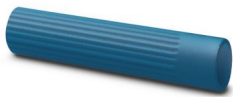
<https://www.phoenixcontact.com/pc/products/2924210>

MPS-IH BU - Insulating sleeve

0201689

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

Insulating sleeve, color: blue



MPS-IH YE - Insulating sleeve

0201692

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Insulating sleeve, color: yellow



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MPS-IH GN - Insulating sleeve

0201702

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

Insulating sleeve, color: green



MPS-IH GY - Insulating sleeve

0201728

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

Insulating sleeve, color: gray



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MPS-IH BK - Insulating sleeve

0201731

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

Insulating sleeve, color: black



MPS-MT - Test plug

0201744

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

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



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UC-EMLP (11X9) - Plastic label

0819291

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

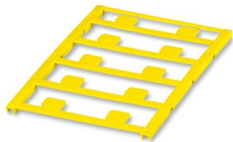


Plastic label, Sheet, white (RAL 9010), unmarked, can be labeled with: BLUEMARK E.CARD, BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, Number of individual labels: 10, text field height: 9 mm, text field width: 11 mm

UC-EMLP (11X9) YE - Plastic label

0822602

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



Plastic label, Sheet, yellow (RAL 1018), 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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2924210

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UC-EMLP (11X9) CUS - Plastic label

0824547

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

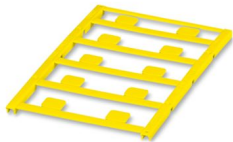


Plastic label, can be ordered: by sheet, white (RAL 9010), labeled according to customer specifications, mounting type: adhesive, text field height: 9 mm, text field width: 11 mm

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

0824548

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Plastic label, can be ordered: by sheet, yellow (RAL 1018), labeled according to customer specifications, mounting type: adhesive, text field height: 9 mm, text field width: 11 mm

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UC-EMLP (11X9) SR - Plastic label

0828094

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



Plastic label, Sheet, 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) SR CUS - Plastic label

0828098

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



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

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US-EMLP (11X9) - Plastic label

0828789

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



Plastic label, Card, white (RAL 9010), 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) YE - Plastic label

0828871

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



Plastic label, Card, yellow (RAL 1018), 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) SR - Plastic label

0828872

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

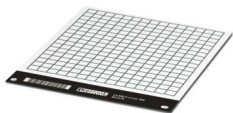


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LS-EMLP (11X9) WH - Device marker

0831678

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



Device marker, Sheet, white (RAL 9010), 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) SR - Device marker

0831705

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Device marker, Sheet, 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

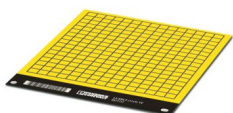


LS-EMLP (11X9) YE - Device marker

0831732

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

Device marker, Sheet, yellow (RAL 1018), 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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MACX MCR-PTB - Power and error message module

2865625

<https://www.phoenixcontact.com/pc/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-PTB-SP - Power and error message module

2924184

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

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

2904614

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

SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/pc/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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MACX SET-TVFKC 3-POLE - Connector set

1584398

<https://www.phoenixcontact.com/pc/products/1584398>

TVFKC plug set for MACX, not Ex i devices, with 3-pos. plugs



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