

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 NAMUR signal conditioners. For operating Ex i proximity sensors and switches in hazardous areas. Passive transistor output (resistive, Yokogawa-compatible), line fault transparency, up to SIL 2 according to IEC 61508; Push-in connection

Your advantages

- Signal input: intrinsically safe [Ex ia]; for NAMUR proximity sensors (EN 60947-5-6) or switch contacts
- Signal output with resistive behavior (transistor), compatible with Yokogawa ProSafe DI card SDV 144
- Signal output with line fault transparency, line fault indication directly via the signal output
- Up to 5 kHz switching frequency
- Direction of operation can be selected
- Line fault detection (LFD) can be enabled and disabled
- SIL 2 according to IEC/EN 61508
- 3-way electrical isolation
- Power supply and error indication possible via DIN rail connector
- Plug-in connection terminals, push-in connection technology
- Installation in zone 2 permitted
- Housing width: 12.5 mm

Commercial data

Item number	2905724
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C430
Product key	CK3141
Catalog page	Page 160 (C-5-2019)
GTIN	4046356992374
Weight per piece (including packing)	167 g
Weight per piece (excluding packing)	147.6 g
Customs tariff number	85365019
Country of origin	DE

Technical data

Product properties

Product type	Isolating switch transf.
Product family	MACX Analog
No. of channels	1
Type	Ex i signal conditioners with SIL functional safety
Configuration	DIP switches

Insulation characteristics: GB Standard

Overvoltage category	II
Pollution degree	2

System properties

Functionality

Configuration	DIP switches
---------------	--------------

Electrical properties

Electrical isolation	3-way isolation
Electrical isolation between input and output	yes

Electrical isolation Input/output

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)
----------------------	---

Electrical isolation Input/output/supply, DIN rail connector

Rated insulation voltage	300 V _{rms}
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Safe isolation in accordance with IEC/EN 61010-1

Electrical isolation Input/supply, DIN rail connector

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)
----------------------	---

Supported controller YOKOGAWA ProSafe-RS

Suitable I/O card	SDV144
-------------------	--------

Supply

Nominal supply voltage	24 V DC
Supply voltage range	9.6 V DC ... 30 V DC (12 V DC ... 24 V DC (-20 % ... +25 %))
Power dissipation	< 0.6 W
Power consumption	< 600 mW

Input data

Signal: NAMUR

Description of the input	Intrinsically safe
Number of inputs	1

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

Available input sources	NAMUR proximity sensors (IEC/EN 60947-5-6)
	Floating switch contacts
	Switch contacts with resistance circuit
Switching threshold "0" signal current	< 1.2 mA (blocking)
Switching threshold "1" signal, current	> 2.1 mA (conductive)
Switching hysteresis	< 0.2 mA
Line fault detection	< 0.05 mA ... 0.35 mA (Line break)
	< 100 Ω ... 360 Ω (Short circuit)
	Activated /deactivated via DIP switch
Non-load voltage	8 V DC

Output data

Signal

Number of outputs	1
-------------------	---

Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross section AWG	24 ... 16

Test socket

Max. diameter	2.3 mm
---------------	--------

Ex data

Safety data

Max. internal inductance L_i	negligible
Max. internal capacitance C_i	negligible
Max. output voltage U_o	9.6 V
Max. output current I_o	10 mA
Max. output power P_o	25 mW
Safety-related maximum voltage U_m	253 V AC/DC
IIA (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	1000 mH / 210 μ F
IIB/IIIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	1000 mH / 26 μ F
IIC (simple circuit): Max. external inductivity L_o / Max. external capacitance C_o	300 mH / 3.6 μ F
IIB/IIA/IIIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 1 μ F, 5 mH / 1 μ F, 1 mH / 1 μ F, 10 μ H / 1 μ F
IIC (mixed circuit): Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 510 nF, 50 mH / 580 nF, 5 mH / 600 nF, 1 mH / 600 nF, 10 μ H / 600 nF

Interfaces

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

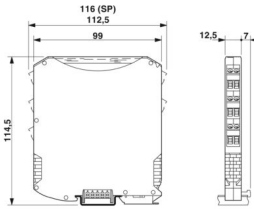
Data

No. of channels	0
-----------------	---

Signaling

Status display	Green LED (supply voltage)
	LED yellow (switching state)
	Red LED (line errors)

Dimensions

Dimensional drawing	
Width	12.5 mm
Height	116 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	V0 (Housing)
Housing material	PA 6.6-FR

Characteristics

Safety data

Safety Integrity Level (SIL)	2
------------------------------	---

Safety data

Safety Integrity Level (SIL)	2
------------------------------	---

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	10 % ... 95 % (non-condensing)

Approvals

CE

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

Certificate	CE-compliant
Note	and EN 61326

ATEX

Identification	II (1) G [Ex ia Ga] IIC
	II (1) D [Ex ia Da] IIIC
	II 3G Ex nA IIC T4 Gc X
Certificate	IBExU 12 ATEX 1169

IECEX

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA IIC T4 Gc
Certificate	IECEX IBE 12.0018X

CCC / China-Ex

Identification	[Ex ia Ga] IIC
	[Ex iaD]
	Ex nA [ia Ga] IIC T4 Gc
Certificate	NEPSI GYJ20.1314X

UL, USA/Canada

Identification	UL 61010 Listed
Certificate	UL C.D.-No 83104549

Safety Integrity Level (SIL, IEC 61508)

Identification	2
----------------	---

EAC Ex

Identification	Ex [Ex ia Ga] IIC
	Ex [Ex ia Da] IIIC
Certificate	RU C-DE.AB72.B.00093/19

INMETRO

Identification	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA IIC T4 Gc
Certificate	DNV 18.0144 X

EMC data

Noise immunity	EN 61000-6-2
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

Standards and regulations

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

GB Standard

Standards/regulations	GB 3626.20
	GB 3836.1
	GB 3836.4
	GB 3836.8
	GB 12476.1
	GB 12476.4

Mounting

Mounting type	DIN rail mounting
---------------	-------------------

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier

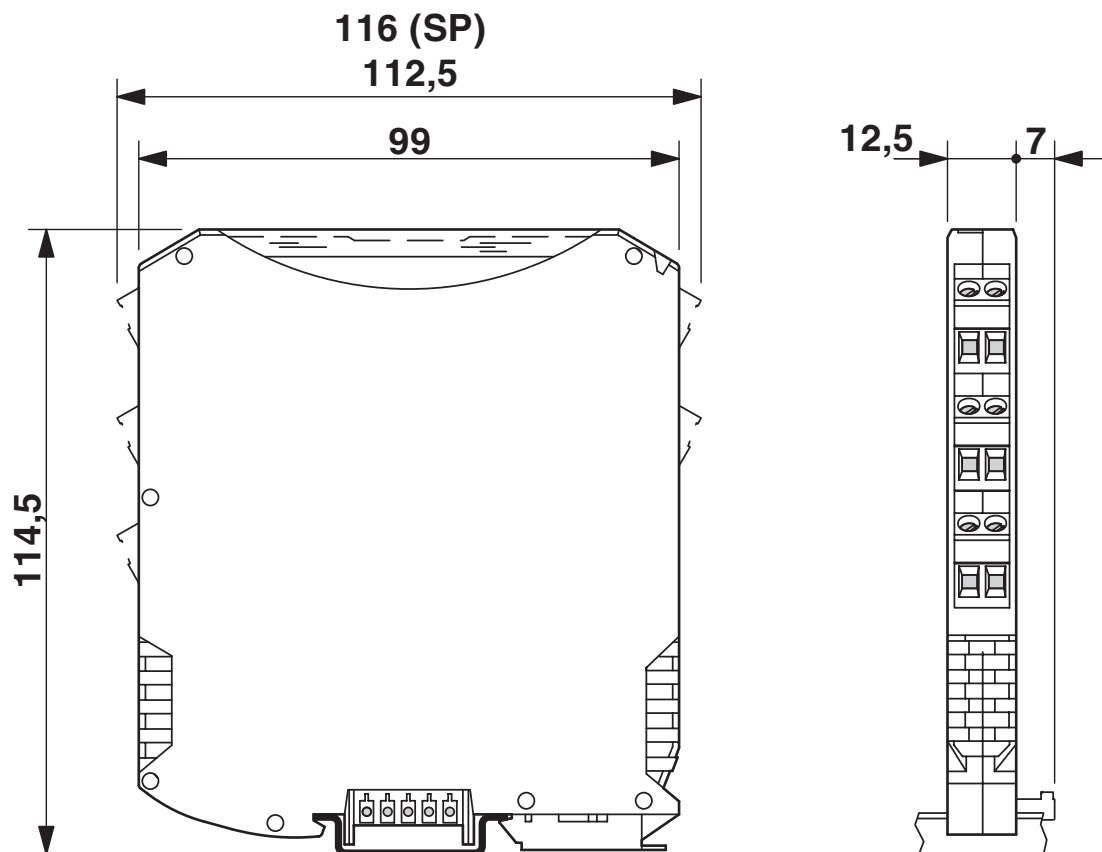


2905724

<https://www.phoenixcontact.com/us/products/2905724>

Drawings

Dimensional drawing



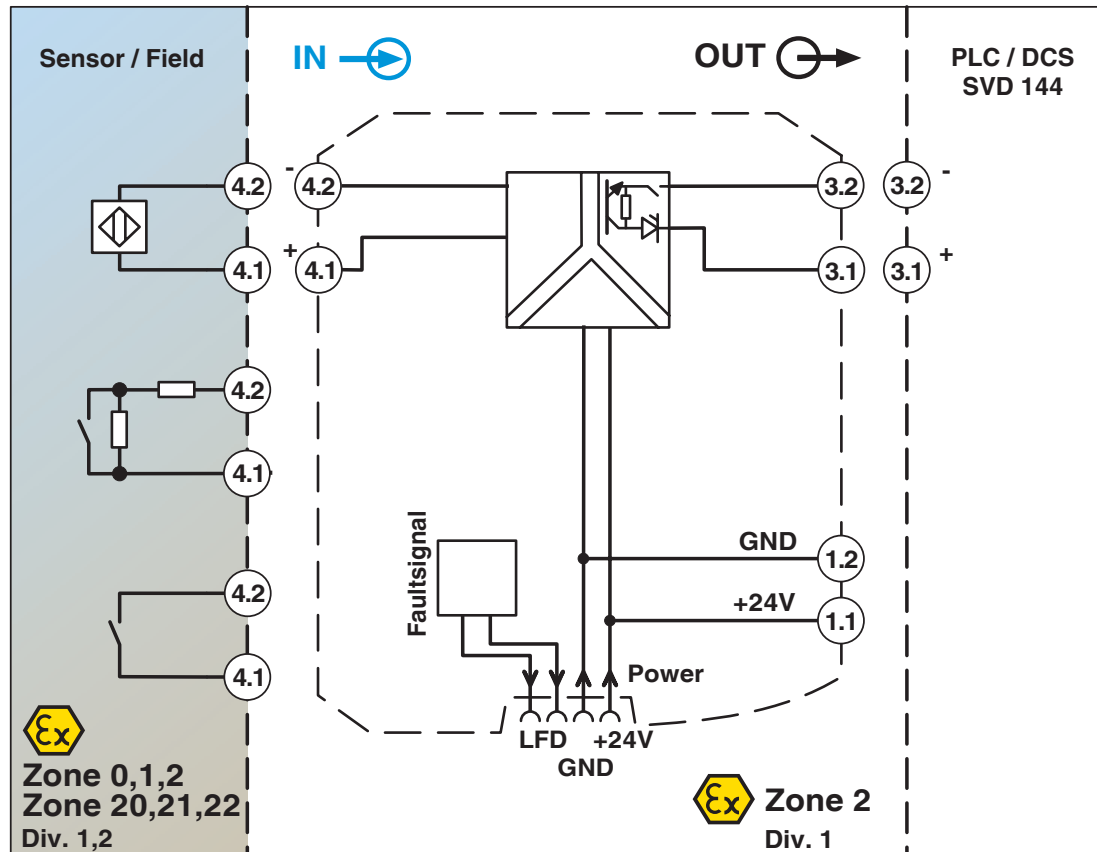
MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

Block diagram



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

Classifications

ECLASS

ECLASS-11.0	27210121
-------------	----------

ETIM

ETIM 8.0	EC001485
----------	----------

UNSPSC

UNSPSC 21.0	39121000
-------------	----------

Environmental product compliance

EU RoHS	
Fulfills EU RoHS substance requirements	Yes
Exemption	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)

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

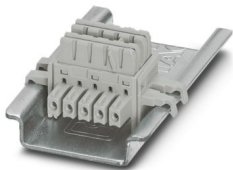
Accessories

ME 6,2 TBUS-2 1,5/5-ST-3,81 GY - DIN rail bus connectors

2695439

<https://www.phoenixcontact.com/us/products/2695439>

DIN rail connector (TBUS), 5-pos., for bridging the supply voltage, can be snapped onto NS 35/... DIN rail in accordance with EN 60715



MACX MCR-PTB - Power and error message module

2865625

<https://www.phoenixcontact.com/us/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-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

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

2924184

<https://www.phoenixcontact.com/us/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/us/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-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

TC-D37SUB-AIO16-EX-PS-UNI - Module carrier

2902932

<https://www.phoenixcontact.com/us/products/2902932>



Universal termination carrier for connecting 16 MACX Analog Ex i signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection), with HART multiplexer connection

TC-D37SUB-ADIO16-EX-P-UNI - Module carrier

2924854

<https://www.phoenixcontact.com/us/products/2924854>



Universal termination carrier for connecting 16 MACX Analog Ex i signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

D-UKK 3/5 - End cover

2770024

<https://www.phoenixcontact.com/us/products/2770024>

End cover, depth: 52 mm, width: 2.5 mm, height: 56 mm, color: gray



D-UKK 3/5 BU - End cover

2770105

<https://www.phoenixcontact.com/us/products/2770105>

End cover, depth: 62 mm, width: 2.5 mm, height: 56 mm, color: blue



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier

2905724

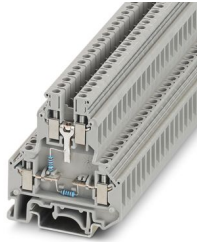
<https://www.phoenixcontact.com/us/products/2905724>



UKK 5-2R/NAMUR - Component terminal block

2941662

<https://www.phoenixcontact.com/us/products/2941662>



Double-level terminal block, with preassembled resistors

MPS-IH WH - Insulating sleeve

0201663

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

Insulating sleeve, color: white



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

MPS-IH RD - Insulating sleeve

0201676

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

Insulating sleeve, color: red

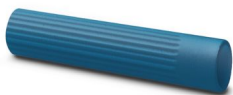


MPS-IH BU - Insulating sleeve

0201689

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

Insulating sleeve, color: blue



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

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



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

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



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

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, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



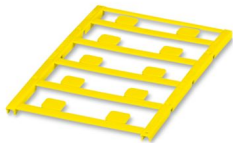
2905724

<https://www.phoenixcontact.com/us/products/2905724>

UC-EMLP (11X9) YE - Plastic label

0822602

<https://www.phoenixcontact.com/us/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, lettering field size: 11 x 9 mm, Number of individual labels: 10

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, lettering field size: 11 x 9 mm

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

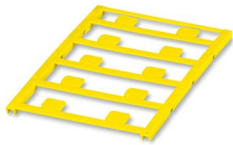
<https://www.phoenixcontact.com/us/products/2905724>

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, lettering field size: 11 x 9 mm



UC-EMLP (11X9) SR - Plastic label

0828094

<https://www.phoenixcontact.com/us/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, lettering field size: 11 x 9 mm, Number of individual labels: 10



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

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, lettering field size: 11 x 9 mm, Number of individual labels: 10

US-EMLP (11X9) - Plastic label

0828789

<https://www.phoenixcontact.com/us/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, lettering field size: 11 x 9 mm, Number of individual labels: 135

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

US-EMLP (11X9) YE - Plastic label

0828871

<https://www.phoenixcontact.com/us/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, lettering field size: 11 x 9 mm, Number of individual labels: 135

US-EMLP (11X9) SR - Plastic label

0828872

<https://www.phoenixcontact.com/us/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, lettering field size: 11 x 9 mm, Number of individual labels: 135

MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

LS-EMLP (11X9) WH - Device marker

0831678

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

Device marker, Sheet, white, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255

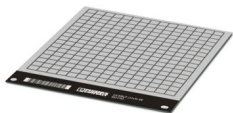


LS-EMLP (11X9) SR - Device marker

0831705

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

Device marker, Sheet, silver, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255



MACX MCR-EX-SL-NAM-YO-SP - Isolation amplifier



2905724

<https://www.phoenixcontact.com/us/products/2905724>

LS-EMLP (11X9) YE - Device marker

0831732

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

Device marker, Sheet, yellow, unlabeled, can be labeled with: TOPMARK NEO, TOPMARK LASER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 255



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



Phoenix Contact 2024 © - all rights reserved
<https://www.phoenixcontact.com>

Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com