

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

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.



Configurable 3-way isolating amplifier with safe electrical isolation, 24 V, power bridging. DIP switches on the front, over 1600 signal conversions can be set. Standard configuration (IN 0 ... 10 V/OUT 0 ... 20 mA), screw connection, SIL.

## Your advantages

- Power supply possible via DIN rail connector
- Over 1600 signal conversions can be set via DIP switches on the front
- Installation in zone 2 permitted
- Up to SIL 2 in accordance with EN 61508
- 3-way electrical isolation
- Analog signal conditioner for isolating, filtering, amplifying, and converting standard analog signals
- Configurable input and output signals, including bipolar current and voltage signals
- 10 kHz limit frequency for time-critical applications
- Status indicator for supply voltage
- Active or passive output
- Plug-in screw or spring-cage connection technology (Push-in technology)

## Commercial Data

Item number	2811446
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	CK1
Product Key	CK1111
Catalog Page	Page 116 (C-5-2019)
GTIN	4046356288927
Weight per Piece (including packing)	178.05 g
Weight per Piece (excluding packing)	150 g
Customs tariff number	85437090
Country of origin	DE

## Technical Data

### Product properties

Product type	Signal conditioner
Product family	MACX Analog
No. of channels	1
Type	Signal conditioners with SIL functional safety
Configuration	DIP switches

### Insulation characteristics: GB Standard

Overvoltage category	II
Pollution degree	2

### Electrical properties

Alignment span	$\pm 4 \%$
Alignment zero	$\pm 4 \%$
No. of channels	1
Rated insulation voltage	300 V AC
Electrical isolation between input and output	yes
Limit frequency (3 dB)	10 kHz (Can be switched to 30 Hz)
Maximum power dissipation for nominal condition	< 0.7 W (20 mA)
Protective circuit	Transient protection
Step response (10-90%)	35 $\mu$ s (10 kHz) 11 ms (30 Hz)
Maximum temperature coefficient	0.0075 %/K
Maximum transmission error	$\leq 0.1 \%$ (Compared to the final value)

### Electrical isolation Input/output/power supply

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

### Supply

Supply voltage range	9.6 V DC ... 30 V DC
Power dissipation	500 mW (at 24 V DC / 20 mA)
Power consumption	$\leq 700$ mW

### Input data

#### Signal: Voltage/current

Number of inputs	1
Voltage input signal	0 mV ... 50 mV 0 mV ... 60 mV 0 mV ... 75 mV 0 mV ... 100 mV

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

	0 mV ... 120 mV
	0 mV ... 150 mV
	0 mV ... 200 mV
	0 mV ... 300 mV
	0 mV ... 500 mV
	0 V ... 1 V
	0 V ... 1.5 V
	0 V ... 2 V
	0 V ... 3 V
	0 V ... 5 V
	0 V ... 10 V (Configurable via DIP switches)
	0 V ... 15 V
	0 V ... 20 V
	0 V ... 30 V
	0 V ... 50 V
	0 V ... 100 V
	-50 mV ... 50 mV
	-60 mV ... 60 mV
	-75 mV ... 75 mV
	-100 mV ... 100 mV
	-120 mV ... 120 mV
	-150 mV ... 150 mV
	-200 mV ... 200 mV
	-300 mV ... 300 mV
	-500 mV ... 500 mV
	-1 V ... 1 V
	-1.5 V ... 1.5 V
	-2 V ... 2 V
	-3 V ... 3 V
	-5 V ... 5 V
	-10 V ... 10 V
	-15 V ... 15 V
	-20 V ... 20 V
	-30 V ... 30 V
	-50 V ... 50 V
	-100 V ... 100 V
	1 V ... 5 V
	2 V ... 10 V
Min. voltage input signal	± 50 mV
Max. voltage input signal	± 100 V
Current input signal	0 mA ... 1 mA (Configurable via DIP switches)
	0 mA ... 1.5 mA
	0 mA ... 2 mA
	0 mA ... 3 mA

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

	0 mA ... 5 mA
	0 mA ... 10 mA
	0 mA ... 15 mA
	0 mA ... 20 mA
	0 mA ... 30 mA
	0 mA ... 50 mA
	0 mA ... 100 mA
	-1 mA ... 1 mA
	-1.5 mA ... 1.5 mA
	-2 mA ... 2 mA
	-3 mA ... 3 mA
	-5 mA ... 5 mA
	-10 mA ... 10 mA
	-15 mA ... 15 mA
	-20 mA ... 20 mA
	-30 mA ... 30 mA
	-50 mA ... 50 mA
	-100 mA ... 100 mA
	1 mA ... 5 mA
	2 mA ... 10 mA
	4 mA ... 20 mA
Minimum current input signal	± 1 mA
Max. current input signal	± 100 mA
Input resistance of voltage input	approx. 1 MΩ (±1 V DC ... ±100 V DC)
Input resistance current input	approx. 10 Ω (± 10 mA DC ... ± 100 mA DC)

## Output data

Signal: Voltage/current

Number of outputs	1
Configurable/programmable	Yes, can be switched
Voltage output signal	0 V ... 10 V (Configurable via DIP switches)
	0 V ... 5 V
	2 V ... 10 V
	1 V ... 5 V
	-10 V ... 10 V
	-5 V ... 5 V
	0 V ... 2.5 V
	0.5 V ... 2.5 V
	-2.5 V ... 2.5 V
Output signal voltage inverse	0 V ... 2.5 V
	0 V ... 5 V
	0 V ... 10 V
	0 mA ... 5 mA

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

Current output signal	0 mA ... 10 mA
	0 mA ... 20 mA (Configurable via DIP switches)
	1 mA ... 5 mA
	2 mA ... 10 mA
	4 mA ... 20 mA
	-5 mA ... 5 mA
	-10 mA ... 10 mA
	-20 mA ... 20 mA
Output signal current inverse	0 mA ... 5 mA
	0 mA ... 10 mA
	0 mA ... 20 mA
Load/output load voltage output	$\geq 1 \text{ k}\Omega$ (10 V)
Load/output load current output	$\leq 600 \Omega$ (20 mA; active)
	passive: $\leq (U_B - 2 \text{ V}) / I_{\text{outmax}}$
Ripple	$< 10 \text{ mV}_{\text{rms}}$

## Connection data

Connection method	Screw connection
Stripping length	7 mm
Screw thread	M3
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 14

## Ex data

Ex installation (EPL)	Gc
	Div. 2

## Dimensions

Dimensional drawing	
Width	12.5 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

Housing material	PA 6.6-FR
------------------	-----------

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-20 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

### Altitude range (≤ 2000 m)

Altitude	≤ 2000 m (For use at altitudes ≥2000 m above sea level, see data sheet.)
Ambient temperature (operation)	-20 °C ... 70 °C

### Altitude range (≤ 3000 m)

Height range	> 2000 m ... 3000 m
Ambient temperature (operation)	-20 °C ... 60 °C
Rated insulation voltage	190 V

### Altitude range (≤ 4000 m)

Height range	> 3000 m ... 4000 m
Ambient temperature (operation)	-20 °C ... 55 °C
Rated insulation voltage	63 V

### Altitude range (≤ 5000 m)

Height range	> 4000 m ... 5000 m
Ambient temperature (operation)	-20 °C ... 45 °C
Rated insulation voltage	63 V

## Approvals

### CE

Certificate	CE-compliant
-------------	--------------

### ATEX

Identification	<input type="checkbox"/> II 3 G Ex ec IIC T4 Gc
Certificate	BVS 10 ATEX E 059 X

### UKCA Ex (UKEX)

Identification	<input type="checkbox"/> II 3 G Ex nA IIC T4 Gc
Certificate	PxCIF21UKEX2811284X

### IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX BVS 10.0044X

### CCC / China-Ex

Identification	Ex ec IIC T4 Gc
Certificate	2021122304114077

### UL, USA/Canada

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

Identification	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC

## Shipbuilding approval

Certificate	DNV GL TAA000020C
-------------	-------------------

## Safety Integrity Level (SIL, IEC 61508)

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

## Systematic Capability

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

## INMETRO

Identification	Ex ec IIC T4 Gc
Certificate	DNV 21.0063 X

## EAC Ex

Identification	<input type="checkbox"/> 2Ex ec IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00078

## DNV GL data

Temperature	B
Humidity	B
Vibration	A
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

## EMC data

Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

## Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	1 %

## Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	1 %

## Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

Typical deviation from the measuring range final value	1 %
--	-----

## Standards and regulations

### GB Standard

Standards/regulations	GB 3836.1
	GB 3836.3

## Mounting

Mounting type	DIN rail mounting
Mounting position	any



# MACX MCR-UI-UI-NC - Signal conditioner

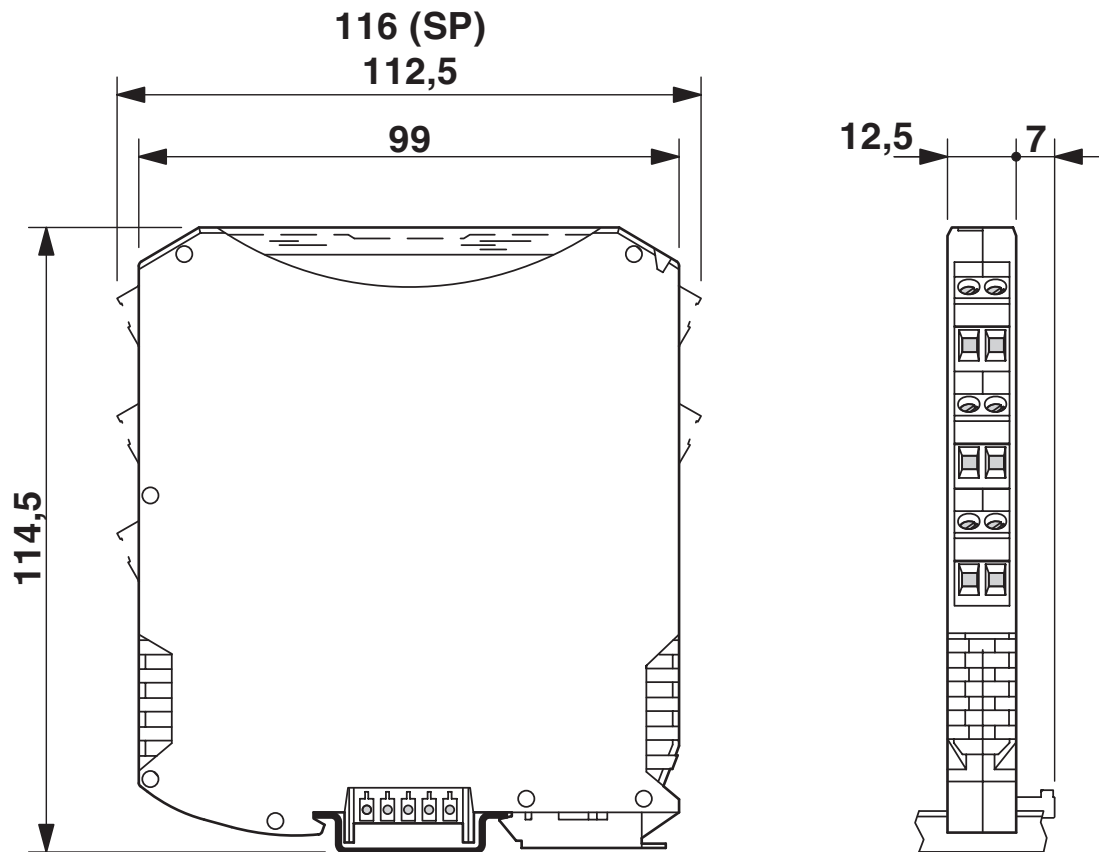
2811446

<https://www.phoenixcontact.com/in/products/2811446>



## Drawings

Dimensional drawing



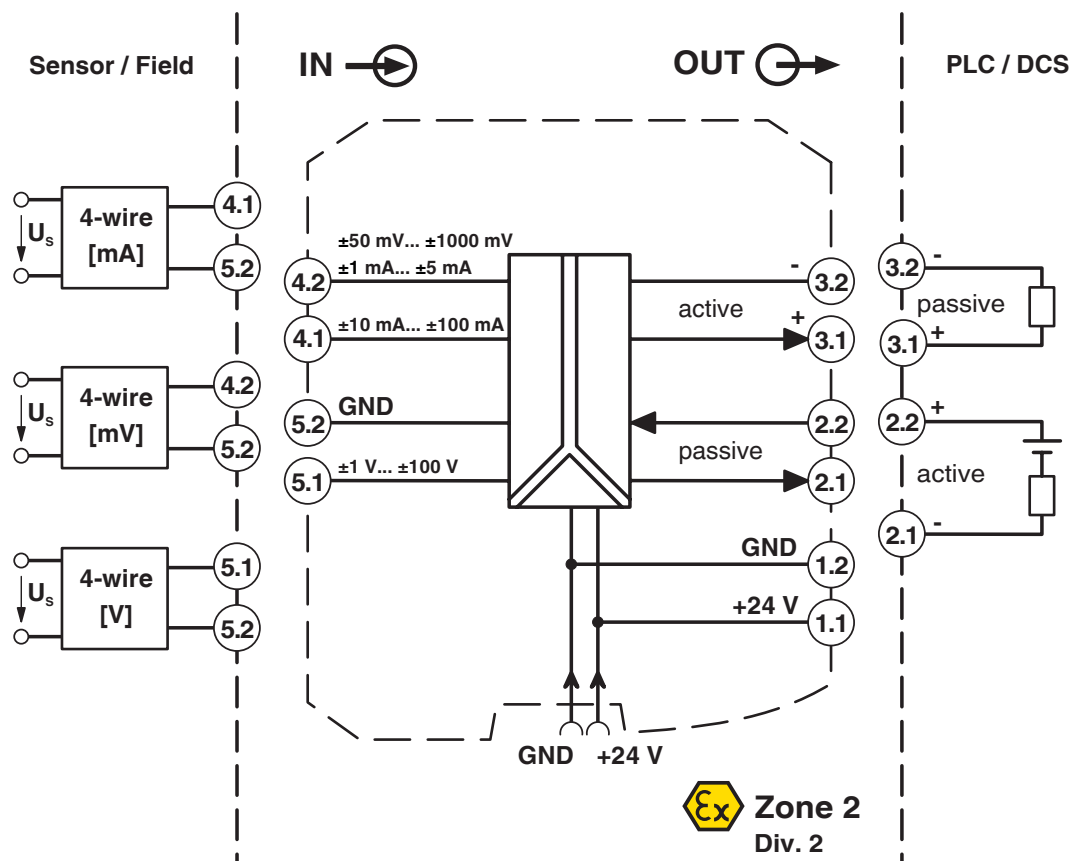
# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

Block diagram



# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## Approvals



**DNV GL**

Approval ID: TAA000020C



**UL Listed**

Approval ID: FILE E 330267



**CCC**

Approval ID: 2021122304114077



**cUL Listed**

Approval ID: FILE E 330267



**IECEx**

Approval ID: IECEx BVS 10.0044X



**cUL Listed**

Approval ID: FILE E 199827



**UL Listed**

Approval ID: FILE E 199827



**ATEX**

Approval ID: BVS 10 ATEX E059 X



**EAC Ex**

Approval ID: TP012 103.01 00078

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## Classifications

### ECLASS

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

### ETIM

ETIM 8.0	EC002653
----------	----------

### UNSPSC

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

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## Accessories

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

2695439

<https://www.phoenixcontact.com/in/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/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-UI-UI-NC - Signal conditioner

2811446

<https://www.phoenixcontact.com/in/products/2811446>

## 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-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

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

2902932

<https://www.phoenixcontact.com/in/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/in/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-UI-UI-NC - Signal conditioner

2811446

<https://www.phoenixcontact.com/in/products/2811446>



## MPS-IH WH - Insulating sleeve

0201663

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

Insulating sleeve, fuse type: , mounting type: , , color: white



---

## MPS-IH RD - Insulating sleeve

0201676

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

Insulating sleeve, fuse type: , mounting type: , , color: red



# MACX MCR-UI-UI-NC - Signal conditioner

2811446

<https://www.phoenixcontact.com/in/products/2811446>

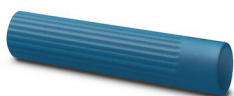


## MPS-IH BU - Insulating sleeve

0201689

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

Insulating sleeve, fuse type: , mounting type: , , color: blue



---

## MPS-IH YE - Insulating sleeve

0201692

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

Insulating sleeve, fuse type: , mounting type: , , color: yellow



# MACX MCR-UI-UI-NC - Signal conditioner

2811446

<https://www.phoenixcontact.com/in/products/2811446>



## MPS-IH GN - Insulating sleeve

0201702

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

Insulating sleeve, fuse type: , mounting type: , , color: green



---

## MPS-IH GY - Insulating sleeve

0201728

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

Insulating sleeve, fuse type: , mounting type: , , color: gray



# MACX MCR-UI-UI-NC - Signal conditioner

2811446

<https://www.phoenixcontact.com/in/products/2811446>



## MPS-IH BK - Insulating sleeve

0201731

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

Insulating sleeve, fuse type: , mounting type: , , color: black



---

## MPS-MT - Test plugs

0201744

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

Test plugs, with solder connection up to 1 mm<sup>2</sup> conductor cross section, number of positions: 1, fuse type: , mounting type: , , color: gray



# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## UC-EMLP (11X9) - Plastic label

0819291

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



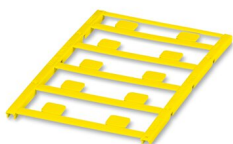
Plastic label, Sheet, white, unlabeled, can be labeled with: BLUEMARK ID COLOR, BLUEMARK ID, BLUEMARK CLED, PLOTMARK, CMS-P1-PLOTTER, mounting type: adhesive, lettering field size: 11 x 9 mm, Number of individual labels: 10

---

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

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## 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, lettering field size: 11 x 9 mm



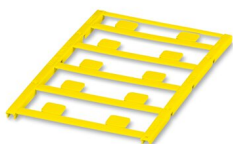
---

## 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, lettering field size: 11 x 9 mm



# MACX MCR-UI-UI-NC - Signal conditioner

2811446

<https://www.phoenixcontact.com/in/products/2811446>

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

---

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

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## 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, lettering field size: 11 x 9 mm, Number of individual labels: 135

---

## 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, lettering field size: 11 x 9 mm, Number of individual labels: 135



# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## 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, lettering field size: 11 x 9 mm, Number of individual labels: 135

---

## 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, lettering field size: 11 x 9 mm, Number of individual labels: 255

# MACX MCR-UI-UI-NC - Signal conditioner



2811446

<https://www.phoenixcontact.com/in/products/2811446>

## 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, lettering field size: 11 x 9 mm, Number of individual labels: 255



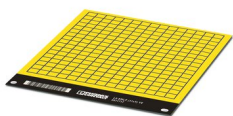
---

## 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, lettering field size: 11 x 9 mm, Number of individual labels: 255



---

Phoenix Contact 2023 © - 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](mailto:info@phoenixcontact.co.in)