

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

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's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




Isolating amplifier with safe electrical isolation and wide-range power supply (24 V ... 230 V AC/DC). 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

- ✓ Over 1600 signal conversions can be set via DIP switches on the front
- ✓ Up to SIL 2 according to EN 61508
- ✓ Installation in zone 2 permitted
- ✓ Analog signal conditioner for isolating, filtering, amplifying, and converting standard analog signals
- ✓ Configurable input and output signals including bipolar current and voltage signals
- ✓ Status indicator for supply voltage
- ✓ Wide-range power supply of 19.2 ... 253 V AC/DC
- ✓ Plug-in screw or spring-cage connection technology (Push-in technology)
- ✓ 3-way electrical isolation
- ✓ Active or passive output



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 288910
GTIN	4046356288910
Weight per Piece (excluding packing)	160.000 g
Custom tariff number	85437090
Country of origin	Germany

### Technical data

#### Note

# Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
-------------------------	---

### Dimensions

Width	12.5 mm
Height	112.5 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m
Degree of protection	IP20 (not assessed by UL)
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

### Input data

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

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Technical data

#### Input data

	-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
Current input signal	0 mA ... 1 mA (Configurable via DIP switches)
	0 mA ... 1.5 mA
	0 mA ... 2 mA
	0 mA ... 3 mA
	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

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Technical data

#### Input data

	-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
max. input voltage	± 100 V
Max. input current	± 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

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
Current output signal	0 mA ... 5 mA
	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
Max. output voltage	15 V
Max. output current	35 mA
Load/output load voltage output	≥ 1 kΩ (10 V)
Load/output load current output	≤ 600 Ω (20 mA; active)

# Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

## Technical data

### Output data

	passive: $\leq (U_B - 2 \text{ V}) / I_{\text{outmax}}$
Ripple	$< 10 \text{ mV}_{\text{rms}}$

### Power supply

Supply voltage range	24 V ... 230 V AC/DC (-20 %/+10 %, 50/60 Hz)
----------------------	--

### Connection data

Connection method	Screw connection
Connection technology	COMBICON
Stripping length	8 mm
Screw thread	M3
Conductor cross section solid	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

### General

No. of channels	1
Maximum transmission error	$\leq 0.1 \%$ (Compared to the final value)
Maximum temperature coefficient	0.0075 %/K
Limit frequency (3 dB)	10 kHz (Can be switched to 30 Hz)
Alignment zero	$\pm 4 \%$
Alignment span	$\pm 4 \%$
Step response (10-90%)	35 $\mu\text{s}$ (at 10 kHz) 11 ms (At 30 Hz)
Protective circuit	Transient protection
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	300 V AC
Electromagnetic compatibility	Conformance with EMC directive
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Color	gray
Housing material	PA 6.6-FR
Mounting position	any

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Designation	GB Standard
Standards/regulations	GB 3836.1
	GB 3836.8

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Technical data

#### Conformance/approvals

Designation	CE
Certificate	CE-compliant
Designation	ATEX
Identification	# II 3 G Ex nA IIC T4 Gc
Certificate	BVS 09 ATEX E 028 X
Designation	IECEX
Identification	Ex nA IIC T4 Gc
Certificate	IECEX BVS 09.0013X
Designation	CCC / China-Ex
Identification	Ex nA IIC T4 Gc
Designation	UL, USA/Canada
Identification	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC
Designation	Shipbuilding approval
Certificate	DNV GL TAA00000AG
Designation	Safety Integrity Level (SIL, IEC 61508)
Identification	2
Temperature	B
Humidity	B
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

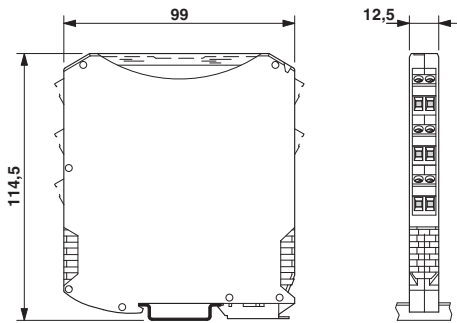
#### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

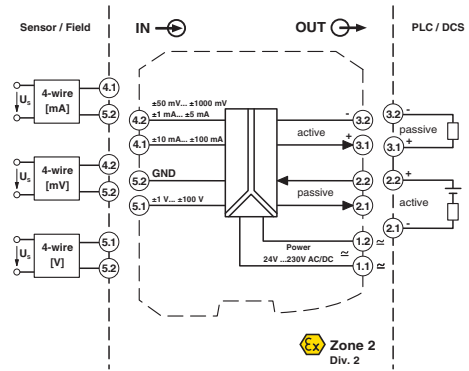
### Drawings

# Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

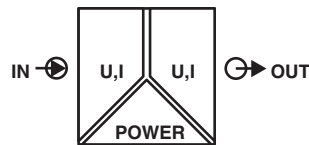
Dimensional drawing



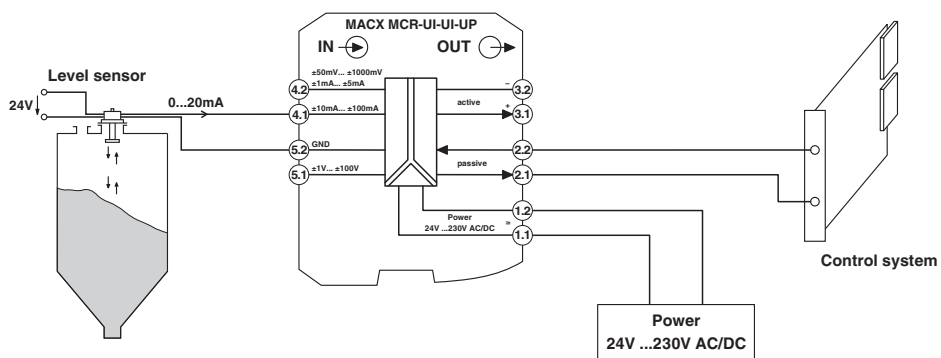
Block diagram



Pictogram



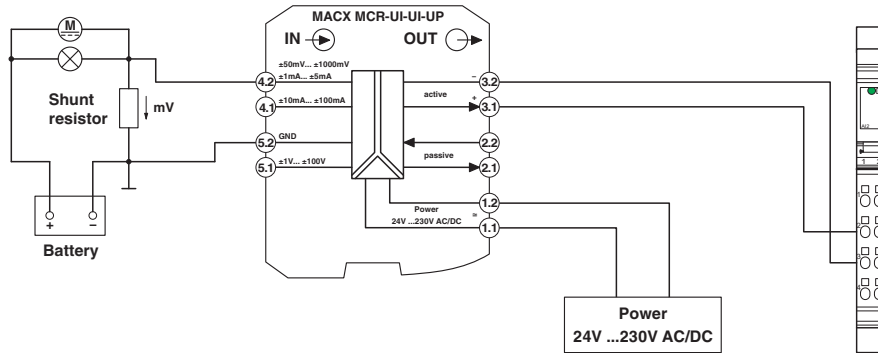
Application drawing



Level measurement with analog input terminals (active input card)

# Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

Application drawing



Shunt measurement and Inline terminal with analog input channels within an Inline station (passive input card)

## Classifications

eCl@ss

eCl@ss 10.0.1	27210120
eCl@ss 11.0	27210120
eCl@ss 4.0	27210100
eCl@ss 4.1	27210100
eCl@ss 5.0	27210100
eCl@ss 5.1	27210100
eCl@ss 6.0	27210100
eCl@ss 7.0	27210120
eCl@ss 9.0	27210120

ETIM

ETIM 4.0	EC002653
ETIM 6.0	EC002653
ETIM 7.0	EC002653

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39121008
UNSPSC 18.0	39121008
UNSPSC 19.0	39121008
UNSPSC 20.0	39121008

# Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

## Classifications

### UNSPSC

UNSPSC 21.0	39121008
-------------	----------

## Approvals

### Approvals

#### Approvals

DNV GL / UL Listed / cUL Listed / CCC / Functional Safety / cULus Listed

#### Ex Approvals

ATEX / IECEx / UL Listed / cUL Listed / EAC Ex / cULus Listed

## Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00000AG
--------	--	---	------------

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330267
-----------	--	---	---------------

cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 330267
------------	--	---	---------------

CCC			2021122304114078
-----	--	--	------------------

Functional Safety			BVS Pb 02/09
-------------------	--	--	--------------

cULus Listed			
--------------	--	--	--

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Accessories

#### Accessories

#### Device marking

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

---

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

---

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

---

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

---

##### Plastic label - US-EMLP (11X9) YE - 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

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Accessories

---

#### Plastic label - US-EMLP (11X9) SR - 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

#### Device marker - LS-EMLP (11X9) WH - 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

#### Device marker - LS-EMLP (11X9) SR - 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

#### Device marker - LS-EMLP (11X9) YE - 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

### Insulating sleeve

#### Insulating sleeve - MPS-IH WH - 0201663



Insulating sleeve, color: white

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Accessories

Insulating sleeve - MPS-IH RD - 0201676

Insulating sleeve, color: red



Insulating sleeve - MPS-IH BU - 0201689

Insulating sleeve, color: blue



Insulating sleeve - MPS-IH YE - 0201692

Insulating sleeve, color: yellow



Insulating sleeve - MPS-IH GN - 0201702

Insulating sleeve, color: green



Insulating sleeve - MPS-IH GY - 0201728

Insulating sleeve, color: gray



## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Accessories

Insulating sleeve - MPS-IH BK - 0201731

Insulating sleeve, color: black



---

### Labeled device marker

Plastic label - UC-EMLP (11X9) CUS - 0824547



Plastic label, can be ordered: by sheet, white, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm

---

Plastic label - UC-EMLP (11X9) YE CUS - 0824548



Plastic label, can be ordered: by sheet, yellow, labeled according to customer specifications, mounting type: adhesive, lettering field size: 11 x 9 mm

---

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

---

### Test plug terminal block

Test plugs - MPS-MT - 0201744



Test plugs, with solder connection up to 1 mm<sup>2</sup> conductor cross section, color: gray

## Signal conditioner - MACX MCR-UI-UI-UP-NC - 2811297

### Accessories

---

---

Phoenix Contact 2021 © - all rights reserved  
<http://www.phoenixcontact.com>