

# Signal conditioner - MACX MCR-UI-UI-SP-NC - 2811556

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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), spring-cage 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 according to EN 61508
- ✓ Active or passive output
- ✓ Status indicator for supply voltage
- ✓ Plug-in screw or spring-cage connection technology (Push-in technology)
- ✓ Analog signal conditioner for isolating, filtering, amplifying, and converting standard analog signals
- ✓ Configurable input and output signals, including bipolar current and voltage signals
- ✓ 3-way electrical isolation
- ✓ 10 kHz limit frequency for time-critical applications



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 467001
GTIN	4046356467001

## Technical data

### Note

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

Width	12.5 mm
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## Technical data

### Dimensions

Height	99 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

### 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 (please indicate if different setting when ordering)
	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

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## Technical data

### Input data

	-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
	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
	-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
Min. input voltage	± 50 mV
max. input voltage	± 100 V
Max. input current	± 100 mA
Input resistance of voltage input	approx. 1 MΩ (± 1 V DC ... ± 100 V DC)

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## Technical data

### Input data

Input resistance current input	approx. 10 Ω (± 10 mA DC ... ± 100 mA DC)
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### 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 (please indicate if different setting when ordering)
	1 mA ... 5 mA
	2 mA ... 10 mA
	4 mA ... 20 mA
	-5 mA ... 5 mA
	-10 mA ... 10 mA
	-20 mA ... 20 mA
Load/output load voltage output	≥ 1 kΩ (10 V)
Load/output load current output	≤ 600 Ω (20 mA; active)
	passive: ≤ (UB-2 V) / I <sub>outmax</sub>
Ripple	< 10 mV <sub>rms</sub>

### Power supply

Supply voltage range	12 V DC ... 24 V DC (-20 % / +25 %)
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### Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross section solid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 16

### General

No. of channels	1
Maximum transmission error	≤ 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)

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## Technical data

### General

Alignment zero	± 4 %
Alignment span	± 4 %
Step response (10-90%)	35 µs (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
Test voltage, input/output/supply	2.5 kV (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC directive
Color	gray
Housing material	PA 6.6-FR
Mounting position	any
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc
IECEX	Ex nA IIC T4 Gc
UL, USA/Canada	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC
Certificate of classification	DNV GL TAA000020C

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc
IECEX	Ex nA IIC T4 Gc
UL, USA/Canada	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T6
	Class I, Zone 2, Group IIC
DNV GL-Temperature	B
DNV GL-Humidity	B
DNV GL-Vibration	A
DNV GL-EMC	A
DNV GL-Enclosure	Required protection according to the Rules shall be provided upon installation on board

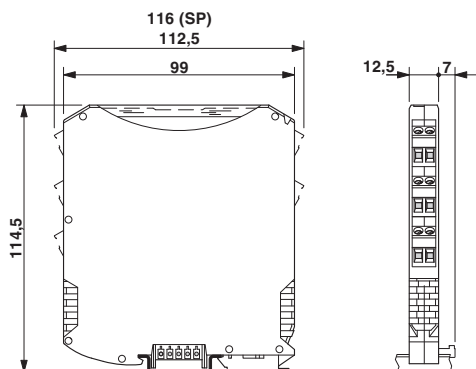
### Environmental Product Compliance

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

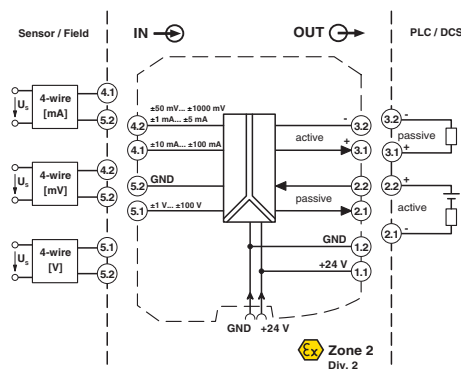
# Signal conditioner - MACX MCR-UI-UI-SP-NC - 2811556

## Drawings

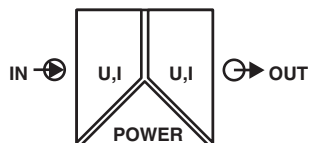
Dimensional drawing



Block diagram



Pictogram



## Approvals

### Approvals

#### Approvals

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

#### Ex Approvals


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

### Approval details

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
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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
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Functional Safety	BVS Pb 01/10
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DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA000020C
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cULus Listed	
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