

# MACX MCR-SL-I-I-ILP - Loop-powered isolators



2905278

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1-channel input loop-powered 2-way isolator with plug-in connection technology for the electrical isolation of analog signals. Input signal = output signal: 0(4) mA ... 20 mA. Screw connection technology.

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## Product description

Single-channel input-loop-powered 2-way isolator with plug-in connection technology for the electrical isolation and filtering of analog signals. The input-loop-powered isolator allows operation with active sensor technology with a supply voltage of 6 V DC to 30 V DC. The device is powered via the current loop of the sensor. Input signal = output signal: 0(4) mA to 20 mA. With screw connection.

## Technical data

### Product properties

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

### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### Electrical properties

Electrical isolation	2-way isolation
Signal transmission behavior	In = Out
Maximum temperature coefficient	≤ 0.002 %/K (of measured value / 100 Ω load)
Transmission error, typical	0.08 % (of 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	loop-powered, no external supply necessary
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### Input data

#### Signal: Current

Number of inputs	1
Configurable/programmable	no
Max. voltage input signal	< 30.5 V
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA
Input voltage limitation	30.5 V
Voltage dissipation	2.9 V (I = 20 mA)
Step response (10-90%)	5 ms (500 Ω load)
Additional error, load-dependent	0.022 % (of measured value / 100 Ω load)
Response current	approx. 50 μA

### Output data

#### Signal: Current

Number of outputs	1
Configurable/programmable	no
Max. voltage output signal	27.5 V

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Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
Load/output load current output	$\leq 1375 \Omega$ ( $I = 20 \text{ mA}$ )
Residual ripple	$< 10 \text{ mV}_{\text{rms}}$ (500 $\Omega$ load)

## 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
Tightening torque	0.5 Nm ... 0.6 Nm

## Test socket

Max. diameter	2.3 mm
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## 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

Color	gray (RAL 7042)
Flammability rating according to UL 94	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 ... 85 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

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Altitude	< 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

## Approvals

### CE

Certificate	CE-compliant
Note	and EN 61326-1

### ATEX

Identification	⊕ II 3 G Ex nA IIC T4 Gc X
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### UKCA Ex (UKEX)

Identification	⊕ II 3 G Ex nA IIC T4 Gc X
Certificate	PxCIF21UKEX2905278X

### UL, USA/Canada

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

### Safety Integrity Level (SIL, IEC 61508)

Identification	3
Certificate	968/FSP 1200.01/21

## EMC data

Noise immunity	EN 61326-1
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

## Standards and regulations

Electrical isolation	2-way isolation
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## Mounting

Mounting type	DIN rail mounting
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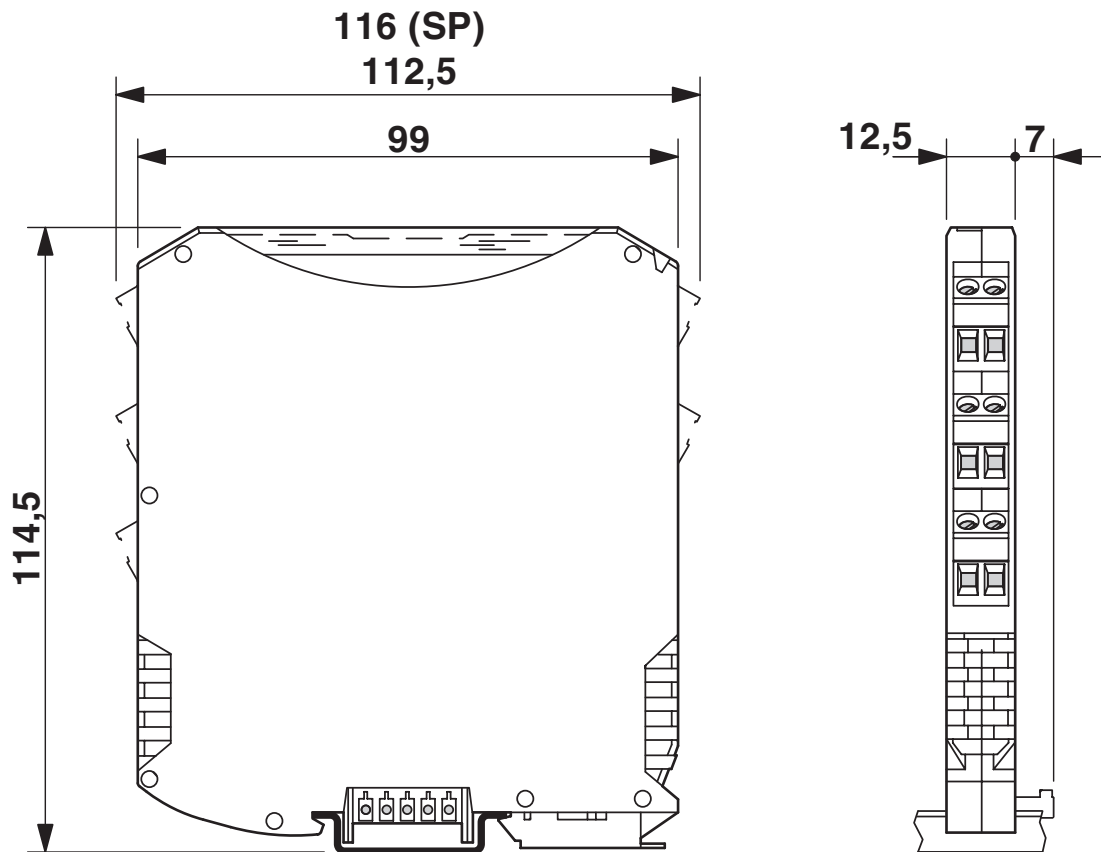


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## Drawings

Dimensional drawing

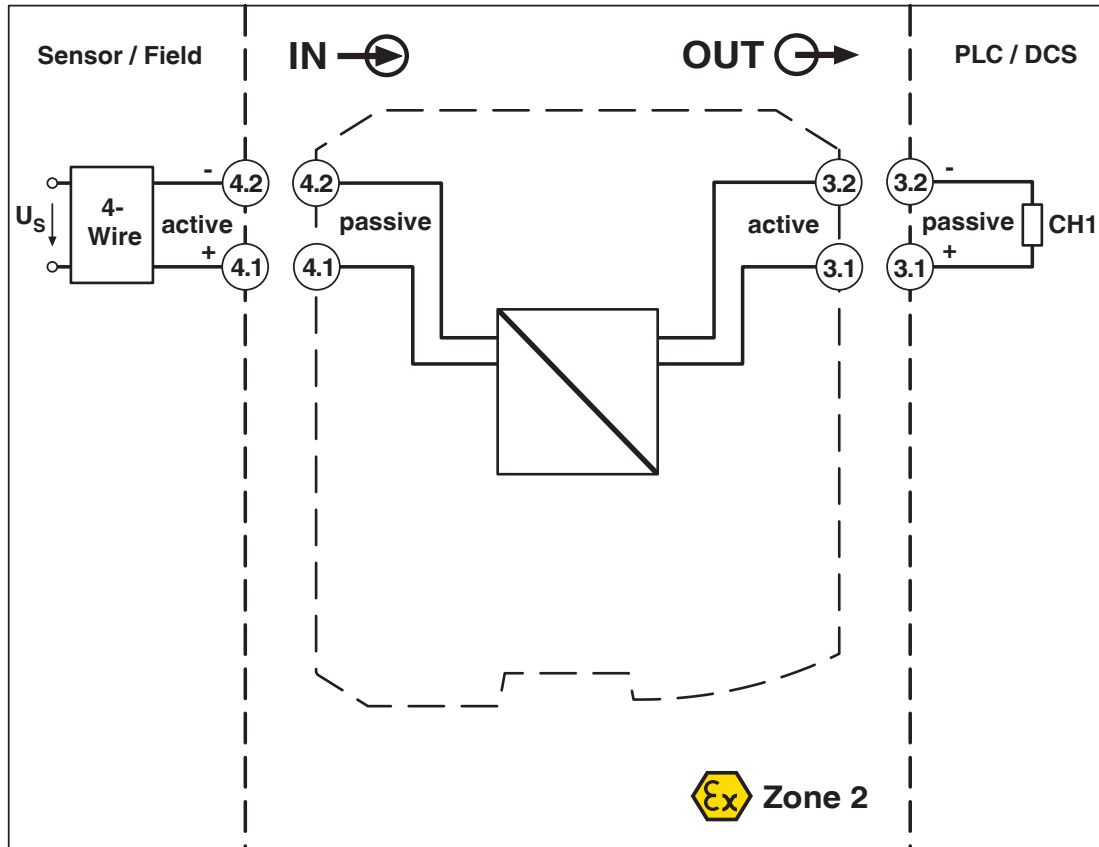


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Block diagram



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