

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



2907704

<https://www.phoenixcontact.com/us/products/2907704>

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

## Product description

Single-channel input-loop-powered 2-way isolator with increased cut-off voltage and 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.

## Commercial data

Item number	2907704
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C402
Product key	CK1113
Catalog page	Page 125 (C-5-2019)
GTIN	4055626219240
Weight per piece (including packing)	140.1 g
Weight per piece (excluding packing)	128.4 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

### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### Electrical properties

No. of channels	1
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	600 V <sub>rms</sub>
Test voltage	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	≈  μA

### Output data

#### Signal: Current

Number of outputs	1
Configurable/programmable	no

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Max. voltage output signal	27.5 V
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

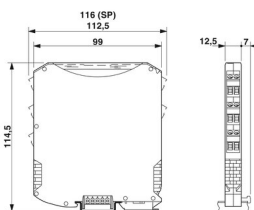
## Test socket

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

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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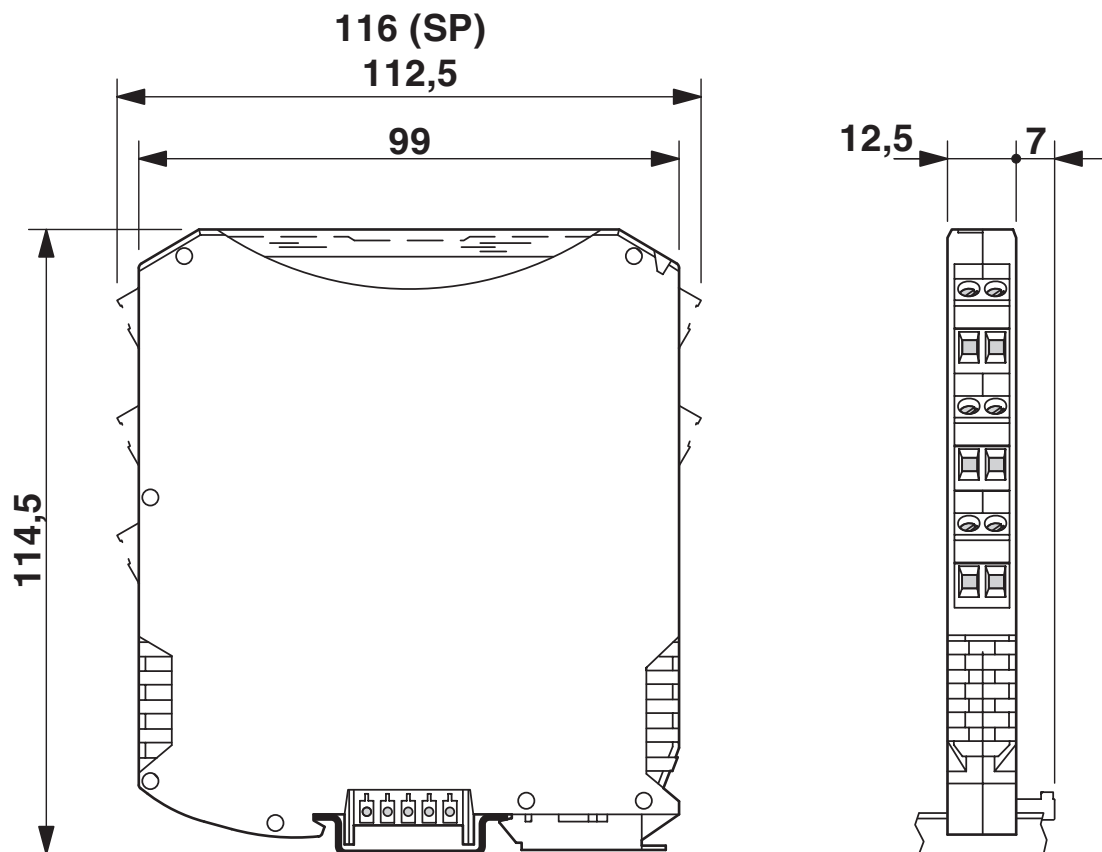


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## Drawings

Dimensional drawing

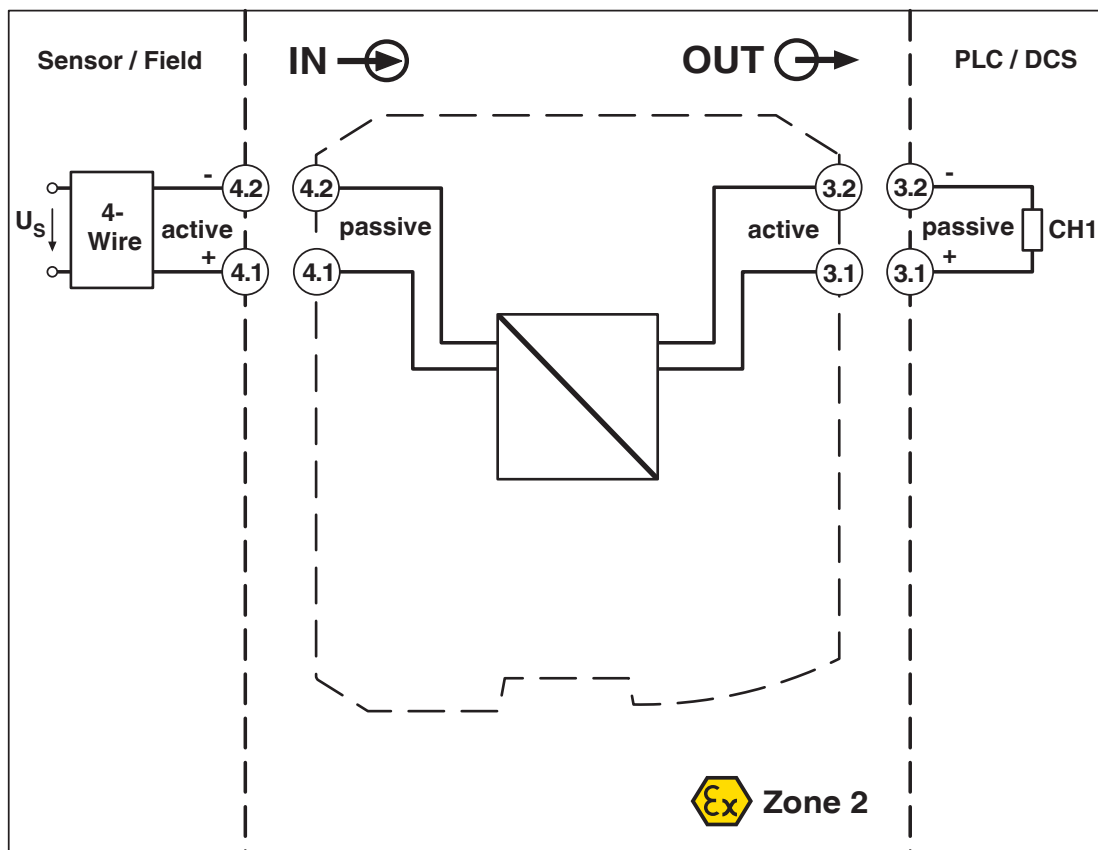


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Block diagram



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




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## Approvals


To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2907704>




**EAC**  
Approval ID: RU\*DE.\*08.B.01608/19




**UL Listed**  
Approval ID: FILE E 330267



**cUL Listed**  
Approval ID: FILE E 330267



**cUL Recognized**  
Approval ID: FILE E 199827



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## Classifications

### ECLASS

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

### ETIM

ETIM 8.0	EC002653
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### UNSPSC

UNSPSC 21.0	39121000
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## Environmental product compliance

China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### EA-MSTB 2,5/ 5 - Accessories

1831016

<https://www.phoenixcontact.com/us/products/1831016>

Cover for screw shafts of the MSTB connector ranges with a pitch of 5.0 mm and 5.08 mm. These can be aligned and shortened for use with different numbers of positions.



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### 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



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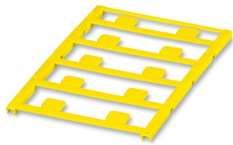
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<https://www.phoenixcontact.com/us/products/2907704>

## 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

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## 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

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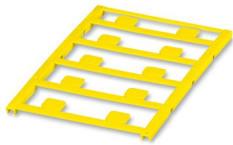
<https://www.phoenixcontact.com/us/products/2907704>

## 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



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## 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



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## 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

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## 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

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## 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

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## 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

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## 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



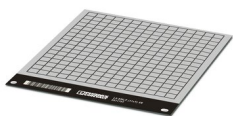
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## LS-EMLP (11X9) SR - Device marker

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



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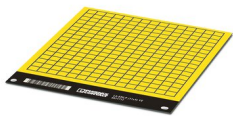
<https://www.phoenixcontact.com/us/products/2907704>

## 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



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## 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



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