

# MINI MCR-2-UI-I-OLP - Loop-powered isolators



2902061

<https://www.phoenixcontact.com/us/products/2902061>

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Output loop-powered 2-way isolator with plug-in connection technology for the electrical isolation of unipolar and bipolar analog signals. Input configurable via DIP switch. Screw connection technology, standard configuration.

## Product description

Output loop-powered 2-way isolator with plug-in connection technology for the electrical isolation, conversion, and filtering of analog signals. The output loop-powered isolator allows operation at an active analog input module. The device is supplied via the current loop of the controller. On the input side, standard analog signals and non-standard analog signals can be connected, ranging from 2 mA or 50 mV up to 40 mA or 30 V. These are converted to 4 mA ... 20 mA signals. You can configure the input signals via DIP switches. The measuring transducer supports NFC communication.

## Commercial data

Item number	2902061
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C404
Product key	CK1413
Catalog page	Page 81 (C-5-2019)
GTIN	4046356652100
Weight per piece (including packing)	123.5 g
Weight per piece (excluding packing)	107.9 g
Customs tariff number	85437090
Country of origin	DE

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## Technical data

### Notes

#### Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
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### Product properties

Product type	Signal conditioner
Product family	MINI Analog Pro
No. of channels	1
Type	Signal conditioner
Configuration	DIP switches

#### Insulation characteristics: GB Standard

Overvoltage category	II
Pollution degree	2

### Electrical properties

Electrical isolation	2-way isolation
Electrical isolation between input and output	yes
Limit frequency (3 dB)	approx. 30 Hz
Step response (10-90%)	20 ms
Maximum temperature coefficient	0.01 %/K
Temperature coefficient, typical	0.005 %/K
Maximum transmission error	≤ 0.1 % (of final value)

#### Electrical isolation Input/output/power supply

Rated insulation voltage	300 V <sub>rms</sub>
Test voltage	3 kV AC (50 Hz, 60 s)
Insulation	Reinforced insulation according to IEC/EN 61010-1

#### Supply

Supply voltage range	8 V DC ... 30 V DC (loop-powered, no external supply necessary)
Typical current consumption	≤ 20 mA
Power consumption	≤ 600 mW

### Input data

#### Signal: Voltage/current

Number of inputs	1
Configurable/programmable	Yes
Voltage input signal	0 mV ... 1000 mV 0 mV ... 750 mV 0 mV ... 500 mV

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0 mV ... 300 mV

0 mV ... 250 mV

0 mV ... 200 mV

0 mV ... 125 mV

0 mV ... 120 mV

0 mV ... 150 mV

0 mV ... 100 mV

0 mV ... 75 mV

0 mV ... 60 mV

0 mV ... 50 mV

0 V ... 10 V

0 V ... 7.5 V

0 V ... 5 V

0 V ... 3 V

0 V ... 2.5 V

0 V ... 2 V

0 V ... 1.5 V

0 V ... 1.25 V

0 V ... 1.2 V

0 V ... 30 V

0 V ... 25 V

0 V ... 20 V

0 V ... 12.5 V

0 V ... 12 V

0 V ... 15 V

-1000 mV ... 1000 mV

-750 mV ... 750 mV

-500 mV ... 500 mV

-300 mV ... 300 mV

-250 mV ... 250 mV

-200 mV ... 200 mV

-125 mV ... 125 mV

-120 mV ... 120 mV

-150 mV ... 150 mV

-100 mV ... 100 mV

-75 mV ... 75 mV

-60 mV ... 60 mV

-50 mV ... 50 mV

-10 V ... 10 V

-7.5 V ... 7.5 V

-5 V ... 5 V

-3 V ... 3 V

-2.5 V ... 2.5 V

-2 V ... 2 V



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	-1.25 V ... 1.25 V
	-1.2 V ... 1.2 V
	-1.5 V ... 1.5 V
	-30 V ... 30 V
	-25 V ... 25 V
	-20 V ... 20 V
	-12.5 V ... 12.5 V
	-12 V ... 12 V
	-15 V ... 15 V
	2 V ... 10 V (additional areas can be configured, see table)
	1 V ... 5 V (additional areas can be configured, see table)
Max. voltage input signal	< 30 V
Current input signal	0 mA ... 40 mA
	0 mA ... 30 mA
	0 mA ... 20 mA
	0 mA ... 12 mA
	0 mA ... 10 mA
	0 mA ... 8 mA
	0 mA ... 7.5 mA
	0 mA ... 6 mA
	0 mA ... 5 mA
	0 mA ... 4 mA
	0 mA ... 3 mA
	0 mA ... 2.5 mA
	0 mA ... 2 mA
	4 mA ... 20 mA
	2 mA ... 10 mA
	1 mA ... 5 mA
Max. current input signal	50 mA (Dielectric strength up to 30 V)
Input resistance of voltage input	≈  kΩ (≤ 1 V)
	≈  MΩ (≥ 1 V)
Input resistance current input	25 Ω (+0.7 V for test diode)

## Output data

Signal: Current

Number of outputs	1
Current output signal	4 mA ... 20 mA
Max. current output signal	32 mA
Load/output load current output	< 1000 Ω ((U <sub>B</sub> - 8 V) / 22 mA)
Ripple	< 10 mV <sub>rms</sub> (at 600 Ω)

## Connection data

Connection method	Screw connection
Stripping length	10 mm

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Screw thread	M3
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> (with ferrule)
	0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> (without ferrule)
Conductor cross section flexible	0.14 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12 (flexible)
Tightening torque	0.5 Nm ... 0.6 Nm

## Ex data

Ex installation (EPL)	Gc
	Div. 2

## Signaling

Status display	Green LED (supply voltage)
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## Dimensions

Width	6.2 mm
Height	109.81 mm
Depth	119.2 mm

## Material specifications

Color	gray (RAL 7042)
Fire protection for rail vehicles (DIN EN 45545-2) R22	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R23	HL 1 - HL 2
Fire protection for rail vehicles (DIN EN 45545-2) R24	HL 1 - HL 2
Housing material	PBT

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

## Approvals

### CE

Certificate	CE-compliant
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### ATEX

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	BVS 19 ATEX E 079 X

### UKCA Ex (UKEX)

Identification	Ⓜ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF21UKEX2901994X

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## IECEX

Identification	Ex ec IIC T4 Gc
Certificate	IECEX BVS 19.0068X

## CCC / China-Ex

Identification	Ex nA IIC T4 Gc
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## UL, USA/Canada

Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T5
	Class I, Zone 2, Group IIC T5

## Shipbuilding approval

Certificate	DNV GL TAA000021E Rev. 1
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## EAC Ex

Identification	Ex ec IIC T4 Gc
Certificate	BY/112 02.01 TP012 103.01 00081

## 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

## Standards and regulations

Electrical isolation	2-way isolation
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## GB Standard

Standards/regulations	GB 3836.1
	GB 3836.8

## Mounting

Mounting type	DIN rail mounting
Mounting position	any

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## Classifications

### ECLASS

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

### ETIM

ETIM 9.0	EC002653
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### UNSPSC

UNSPSC 21.0	39121000
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## 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"

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