

# Signal conditioner - MINI MCR-SL-I-I



2864406

<https://www.phoenixcontact.com/us/products/2864406>

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MCR 3-way isolating amplifier, for electrical isolation of analog signals, with screw connection, input signal: 0(4) mA ... 20 mA, output signal: 0(4) mA ... 20 mA

## Product Description

The 6.2 mm wide standard signal 3-way isolating amplifier MINI MCR-SL-I-I(-SP) is used for electrical isolation, amplification and filtering of standard signals.

On the input and output side, the analog standard signals 0...20 mA or 4...20 mA are available, electrically isolated.

Power (19.2 V DC to 30 V DC) can be supplied through connection terminal blocks on the modules or in conjunction with the DIN rail connector.

## Your advantages

- Power supply possible via the foot element (TBUS)
- Entry-level alternative to configurable signal conditioners
- Low power consumption
- 3-way isolation
- Highly-compact isolating amplifier for electrical isolation, conversion, amplification, and filtering of standard analog signals
- Fixed signal combinations

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## Commercial Data

Item number	2864406
Packing unit	1 pc
Minimum order quantity	1 pc
Sales Key	C01
Product Key	CK1211
Catalog Page	Page 97 (C-7-2015)
GTIN	4017918956158
Weight per Piece (including packing)	86.9 g
Weight per Piece (excluding packing)	71.1 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
No. of channels	1

#### Insulation characteristics

Overvoltage category	II
Degree of pollution	2

### Electrical properties

No. of channels	1
Rated insulation voltage	50 V AC/DC
Electrical isolation	Basic insulation according to EN 61010
Electrical isolation between input and output	yes
Limit frequency (3 dB)	approx. 100 Hz
Maximum power dissipation for nominal condition	250 mW
Test voltage Input/output/supply	1.5 kV AC (50 Hz, 60 s)
Protective circuit	Transient protection
Step response (10-90%)	□ 3.2 ms
Maximum temperature coefficient	< 0.01 %/K
Temperature coefficient, typical	< 0.002 %/K
Maximum transmission error	≤ 0.1 % (of final value)

### Supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (The DIN rail bus connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, Item No. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715))
Max. current consumption	< 20 mA
Power consumption	< 450 mW

### Input data

#### Signal: Current input

Number of inputs	1
Configurable/programmable	no
Current input signal	0 mA ... 20 mA 4 mA ... 20 mA
Max. current input signal	50 mA

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Input resistance current input	approx. 50 $\Omega$
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## Output data

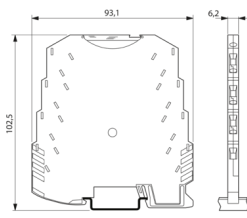
Signal:

Number of outputs	1
Configurable/programmable	no
Non-load voltage	approx. 12.5 V
Current output signal	0 mA ... 20 mA 4 mA ... 20 mA
Max. current output signal	28 mA
Load/output load current output	< 500 $\Omega$ (at 20 mA)
Ripple	< 20 mV <sub>PP</sub> (at 500 $\Omega$ )

## Connection data

Connection method	Screw connection
Stripping length	12 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	26 ... 12

## Dimensions

Dimensional drawing	
Width	6.2 mm
Height	93.1 mm
Depth	101.2 mm

## Material specifications

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
Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C

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

## Approval data

### CE

Certificate	CE-compliant
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### UKCA

Certificate	UKCA-compliant
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### UL, USA / Canada

Identification	UL 508 Recognized Class I, Div. 2, Groups A, B, C, D T5
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### Shipbuilding approval

Certificate	DNV GL TAA000020N
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### DNV GL data

Temperature	B
Humidity	B
Vibration	B
EMC	A
Enclosure	Required protection according to the Rules shall be provided upon installation on board

## EMC data

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

### Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.
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### Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	10 %

### Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	10 %

### Conducted interference

Designation	Conducted interferences
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Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	10 %

## Standards and regulations

Electrical isolation	Basic insulation according to EN 61010
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## Mounting

Mounting type	DIN rail mounting
Assembly instructions	The T connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715.
Mounting position	any

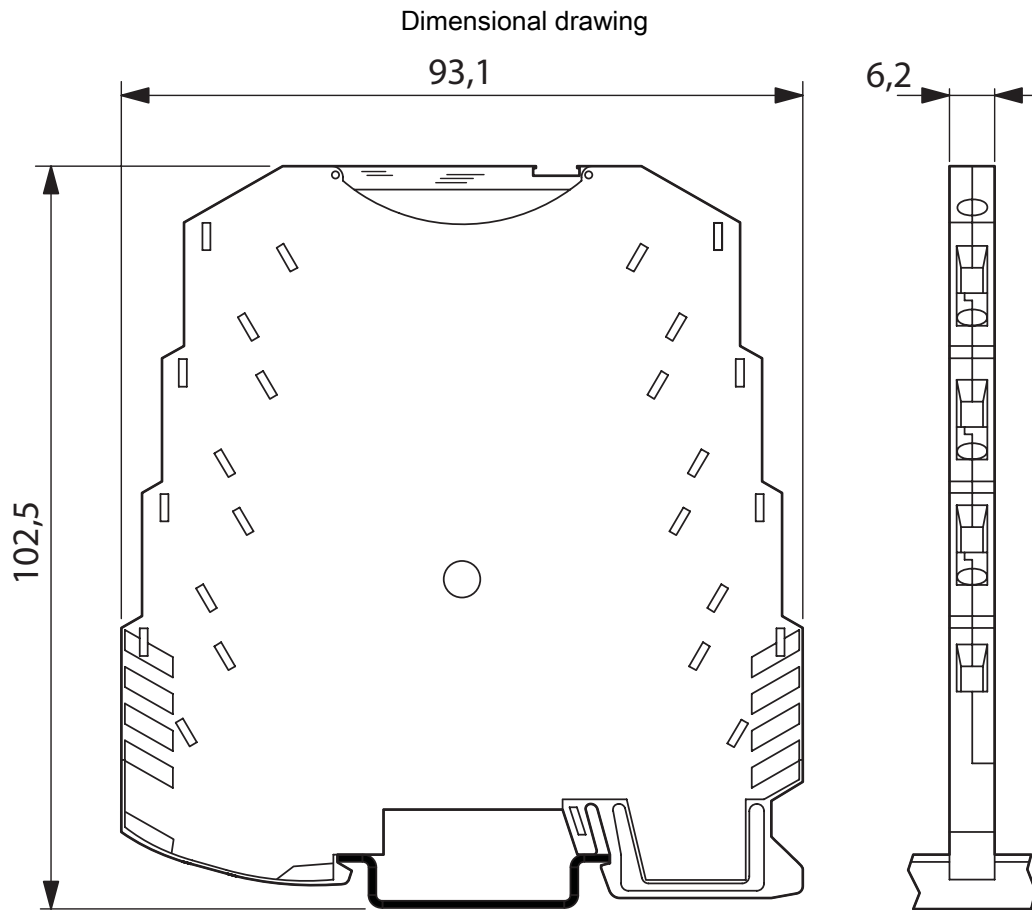
# Signal conditioner - MINI MCR-SL-I-I

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## Drawings

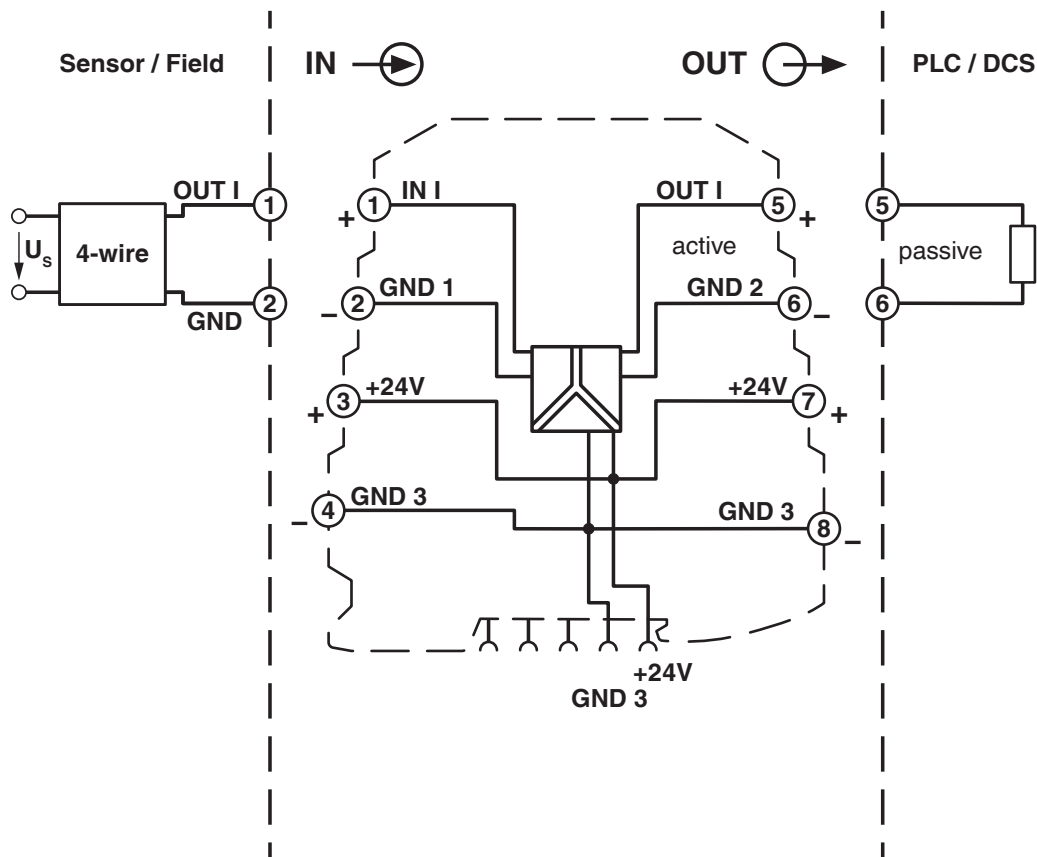


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Block diagram





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## Approvals



**cUL Recognized**  
Approval ID: FILE E 238705



**UL Recognized**  
Approval ID: FILE E 238705



**BV**  
Approval ID: 39933/B0\_BV



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



**UL Listed**  
Approval ID: FILE E 199827

**cULus Recognized**

**cULus Listed**

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## Classifications

### ECLASS

ECLASS-9.0	27210120
ECLASS-10.0.1	27210120
ECLASS-11.0	27210120

### ETIM

ETIM 8.0	EC002653
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### UNSPSC

UNSPSC 21.0	39121008
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## 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"

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## Accessories

### Transparent cover

Transparent cover - MINI MCR DKL - 2308111

<https://www.phoenixcontact.com/us/products/2308111>



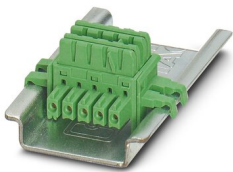
Fold up transparent cover for MINI MCR modules with additional labeling option using insert strips and flat Zack marker strip 6.2 mm

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## DIN rail bus connectors

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728

<https://www.phoenixcontact.com/us/products/2869728>



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

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## Power terminal block

Power terminal block - MINI MCR-SL-PTB - 2864134

<https://www.phoenixcontact.com/us/products/2864134>



MCR power terminal block for supplying several MINI Analog modules via the DIN rail connector, with screw connection, maximum current consumption of up to 2 A

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## Marking label

Marking label - MINI MCR-DKL-LABEL - 2810272

<https://www.phoenixcontact.com/us/products/2810272>



Label for extended marking of MINI MCR modules in connection with the MINI MCR-DKL

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## Power supply unit

Power supply unit - QUINT4-SYS-PS/1AC/24DC/2.5/SC - 2904614

<https://www.phoenixcontact.com/us/products/2904614>



Primary-switched power supply unit, QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 2.5 A

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)