

MINI MCR-SL-U-I-0 - Input signal conditioner



2813512

<https://www.phoenixcontact.com/us/products/2813512>

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MCR 3-way isolating amplifier, for electrical isolation of analog signals, with screw connection, input signal: 0 V ... 10 V, output signal: 0 mA ... 20 mA

Product description

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

On the input side, 0...10 V are measured, and made available at the module output as a galvanically isolated 0...20 mA, or 4...20 mA signal.

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)
- Low power consumption
- Entry-level alternative to configurable signal conditioners
- Highly-compact isolating amplifier for electrical isolation, conversion, amplification, and filtering of standard analog signals
- 3-way isolation
- Fixed signal combinations

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2813512 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C403 |
| Product key | DK1131 |
| GTIN | 4046356100656 |
| Weight per piece (including packing) | 87.2 g |
| Weight per piece (excluding packing) | 64.6 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 |
|----------|---|

Product properties

| | |
|-----------------|--------------------------|
| Product type | Input signal conditioner |
| Product family | MINI Analog |
| No. of channels | 1 |

Electrical properties

| | |
|---|--|
| Electrical isolation | 3-way isolation |
| Electrical isolation between input and output | yes |
| Limit frequency (3 dB) | approx. 100 Hz |
| Step response (10-90%) | ≈  ms |
| Maximum temperature coefficient | < 0.01 %/K |
| Temperature coefficient, typical | < 0.002 %/K |
| Maximum transmission error | ≤ 0.1 % (of final value) |

Electrical isolation

| | |
|----------------------|----|
| Overvoltage category | II |
| Pollution degree | 2 |

Electrical isolation Input/output/power supply IEC/EN 61010

| | |
|--------------------------|-------------------------|
| Standards/regulations | IEC/EN 61010 |
| Rated insulation voltage | 30 V AC |
| | 50 V DC |
| Test voltage | 1.5 kV AC (50 Hz, 60 s) |
| Insulation | Basic insulation |

Supply

| | |
|--------------------------|---|
| Nominal supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (The DIN rail 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 in accordance with EN 60715) |
| Max. current consumption | < 28 mA |
| Power consumption | < 600 mW |

Input data

Signal: Voltage

| | |
|---------------------------|----|
| Number of inputs | 1 |
| Configurable/programmable | no |

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| | |
|-----------------------------------|------------------------|
| Voltage input signal | 0 V ... 10 V |
| Max. voltage input signal | 30 V |
| Input resistance of voltage input | approx. 100 k Ω |

Output data

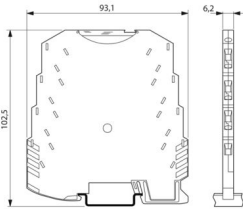
Signal: Current

| | |
|---------------------------------|--|
| Number of outputs | 1 |
| Configurable/programmable | no |
| Open-circuit voltage | approx. 12.5 V |
| Current output signal | 0 mA ... 20 mA |
| Max. current output signal | 28 mA |
| Load/output load current output | $\leq 500 \Omega$ |
| Ripple | $< 20 \text{ mV}_{\text{PP}}$ (at 500 Ω) |

Connection data

| | |
|----------------------------------|---|
| Connection method | Screw connection |
| Stripping length | 12 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section AWG | 26 ... 12 |

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 6.2 mm |
| Height | 93.1 mm |
| Depth | 101.2 mm |

Material specifications

| | |
|--|------------------|
| Color | green (RAL 6021) |
| Housing material | PBT |
| 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 |

Environmental and real-life conditions

Ambient conditions

| | |
|----------------------|------|
| Degree of protection | IP20 |
|----------------------|------|

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| | |
|---|-------------------------------|
| Ambient temperature (operation) | -20 °C ... 65 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude | ≤ 2000 m |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |

Approvals

CE

| | |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

UL, USA/Canada

| | |
|----------------|--|
| Identification | UL 508 Recognized Class I, Div. 2, Groups A, B, C, D T4 |
|----------------|--|

EMC data

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

Noise emission

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-6-4 |
|-----------------------|--------------|

Electrostatic discharge

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-2 |
|-----------------------|--------------|

Electrostatic discharge

| | |
|----------|---|
| Comments | Safety measures must be taken to prevent electrostatic discharge. |
|----------|---|

Electromagnetic HF field

| | |
|--|--------------------------|
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |
| Typical deviation from the measuring range final value | 5 % |

Fast transients (burst)

| | |
|--|-------------------------|
| Designation | Fast transients (burst) |
| Standards/regulations | EN 61000-4-4 |
| Typical deviation from the measuring range final value | 5 % |

Surge current load (surge)

| | |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

Surge current load (surge)

| | |
|----------|-------------|
| Comments | Criterion B |
|----------|-------------|

Conducted interference

| | |
|-----------------------|-------------------------|
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |

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| | |
|--|-----|
| Typical deviation from the measuring range final value | 5 % |
|--|-----|

Standards and regulations

| | |
|----------------------|-----------------|
| Electrical isolation | 3-way isolation |
|----------------------|-----------------|

Mounting

| | |
|-------------------|---|
| Mounting type | DIN rail mounting |
| Assembly note | The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail. |
| Mounting position | any |

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Drawings

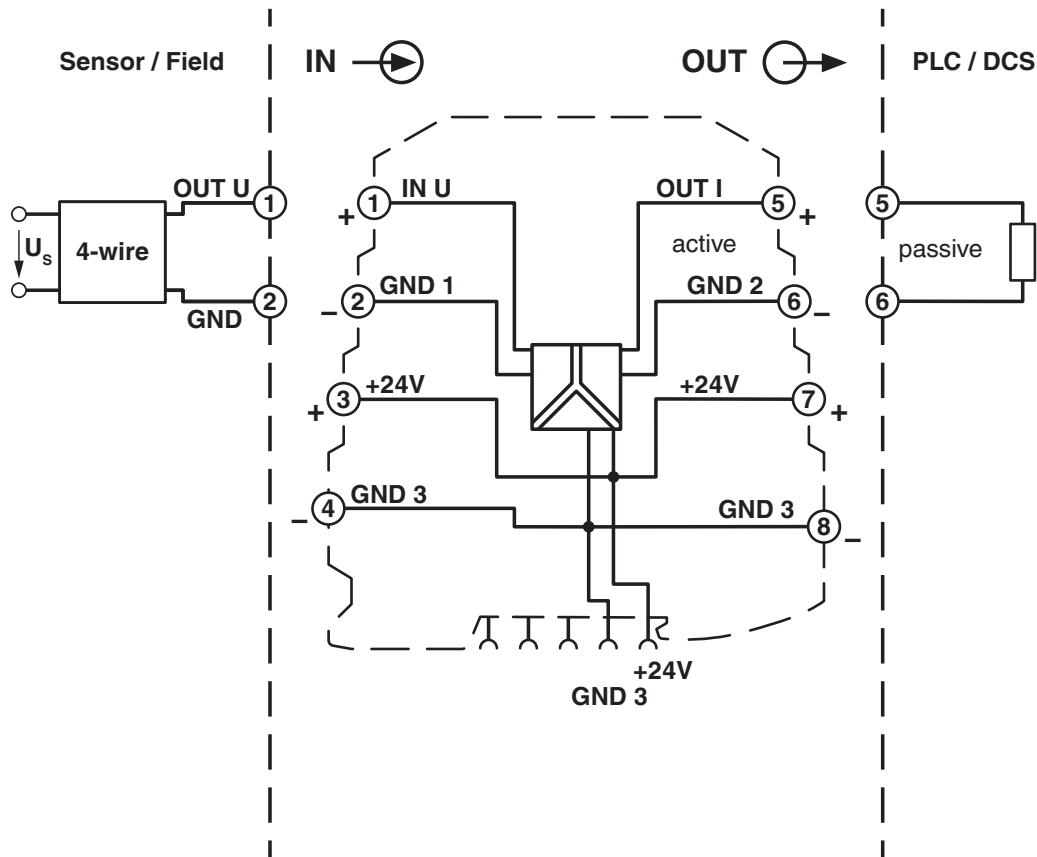


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Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2813512>



cUL Recognized
Approval ID: E238705



UL Recognized
Approval ID: E238705



cUL Listed
Approval ID: E199827



UL Listed
Approval ID: E199827

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Classifications

ECLASS

| | |
|-------------|----------|
| ECLASS-13.0 | 27210120 |
| ECLASS-15.0 | 27210120 |

ETIM

| | |
|-----------|----------|
| ETIM 10.0 | EC002653 |
|-----------|----------|

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 39121000 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 6(c), 7(a), 7(c)-I |

China RoHS

| | |
|--|---|
| Environment friendly use period (EFUP) | EFUP-50 |
| | An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required. |

EU REACH SVHC

| | |
|-------------------------------------|--------------------------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
| SCIP | 56d48da3-7efb-4520-a942-f0fba8994287 |

EF3.1 Climate Change

| | |
|---------|---------------|
| CO2e kg | 2.055 kg CO2e |
|---------|---------------|

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