

Signal conditioner - MINI MCR-SL-I-U-0 - 2813541

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

Product Description

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


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



Key Commercial Data

| | |
|--------------|--|
| Packing unit | 1 pc |
| GTIN |  |
| GTIN | 4046356100601 |

Technical data

Note

| | |
|-------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---|

Dimensions

| | |
|--------|---------|
| Width | 6.2 mm |
| Height | 93.1 mm |

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Technical data

Dimensions

| | |
|-------|----------|
| Depth | 102.5 mm |
|-------|----------|

Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -20 °C ... 65 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Maximum altitude | ≤ 2000 m |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Degree of protection | IP20 |
| Noise immunity | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |

Input data

| | |
|--------------------------------|----------------|
| Number of inputs | 1 |
| Configurable/programmable | no |
| Current input signal | 0 mA ... 20 mA |
| Max. input current | 50 mA |
| Input resistance current input | approx. 50 Ω |

Output data

| | |
|---------------------------------|----------------------------------|
| Number of outputs | 1 |
| Configurable/programmable | no |
| Voltage output signal | 0 V ... 10 V |
| Max. output voltage | 12.5 V |
| Short-circuit current | approx. 2 mA |
| Load/output load voltage output | ≥ 10 kΩ |
| Ripple | < 20 mV _{pp} (at 10 kΩ) |

Power 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, Order 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 | < 9 mA |
| Power consumption | < 200 mW |

Connection data

| | |
|----------------------------------|---------------------|
| Connection method | Screw connection |
| Stripping length | 12 mm |
| Screw thread | M3 |
| Conductor cross section solid | 0.2 mm² ... 2.5 mm² |
| Conductor cross section flexible | 0.2 mm² ... 2.5 mm² |
| Conductor cross section AWG | 26 ... 12 |

General

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Technical data

General

| | |
|--|--|
| No. of channels | 1 |
| Maximum transmission error | ≤ 0.1 % (of final value) |
| Maximum temperature coefficient | < 0.01 %/K |
| Temperature coefficient, typical | < 0.002 %/K |
| Limit frequency (3 dB) | approx. 100 Hz |
| Step response (10-90%) | approx. 3.5 ms |
| Electrical isolation | Basic insulation according to EN 61010 |
| Overvoltage category | II |
| Degree of pollution | 2 |
| Rated insulation voltage | 30 V AC |
| Test voltage, input/output/supply | 1.5 kV (50 Hz, 1 min.) |
| Electromagnetic compatibility | Conformance with EMC directive |
| Noise emission | EN 61000-6-4 |
| Noise immunity | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |
| Color | green |
| Housing material | PBT |
| Mounting position | any |
| 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. |
| Conformance | CE-compliant |
| ATEX | # II 3 G Ex nA IIC T4 Gc X |
| UL, USA/Canada | UL 508 Recognized |
| | Class I, Div. 2, Groups A, B, C, D T4 |
| GL | GL EMC 2 D |
| 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 |

EMC data

| | |
|--|--------------------------|
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |
| Typical deviation from the measuring range final value | 5 % |
| Designation | Fast transients (burst) |
| Standards/regulations | EN 61000-4-4 |
| Typical deviation from the measuring range final value | 5 % |
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |
| Typical deviation from the measuring range final value | 5 % |

Standards and Regulations

| | |
|-------------------------------|--------------------------------|
| Electromagnetic compatibility | Conformance with EMC directive |
|-------------------------------|--------------------------------|

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Technical data

Standards and Regulations

| | |
|----------------------------------|--|
| Noise emission | EN 61000-6-4 |
| Connection in acc. with standard | CUL |
| Standards/regulations | EN 61000-4-2 |
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |
| | EN 61000-4-4 |
| | EN 61000-4-5 |
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |
| Electrical isolation | Basic insulation according to EN 61010 |
| Conformance | CE-compliant |
| ATEX | # II 3 G Ex nA IIC T4 Gc X |
| UL, USA/Canada | UL 508 Recognized |
| | Class I, Div. 2, Groups A, B, C, D T4 |
| GL | GL EMC 2 D |

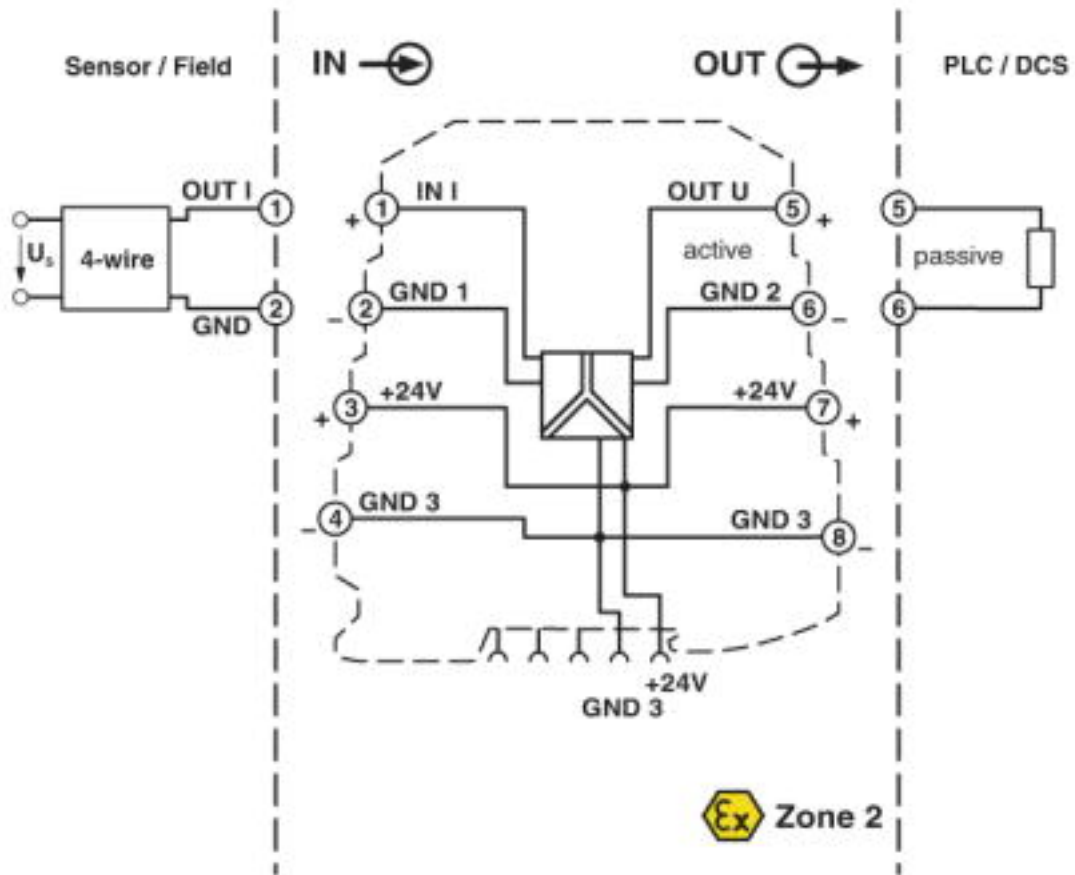
Environmental Product Compliance

| | |
|------------|---|
| 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" |

Drawings

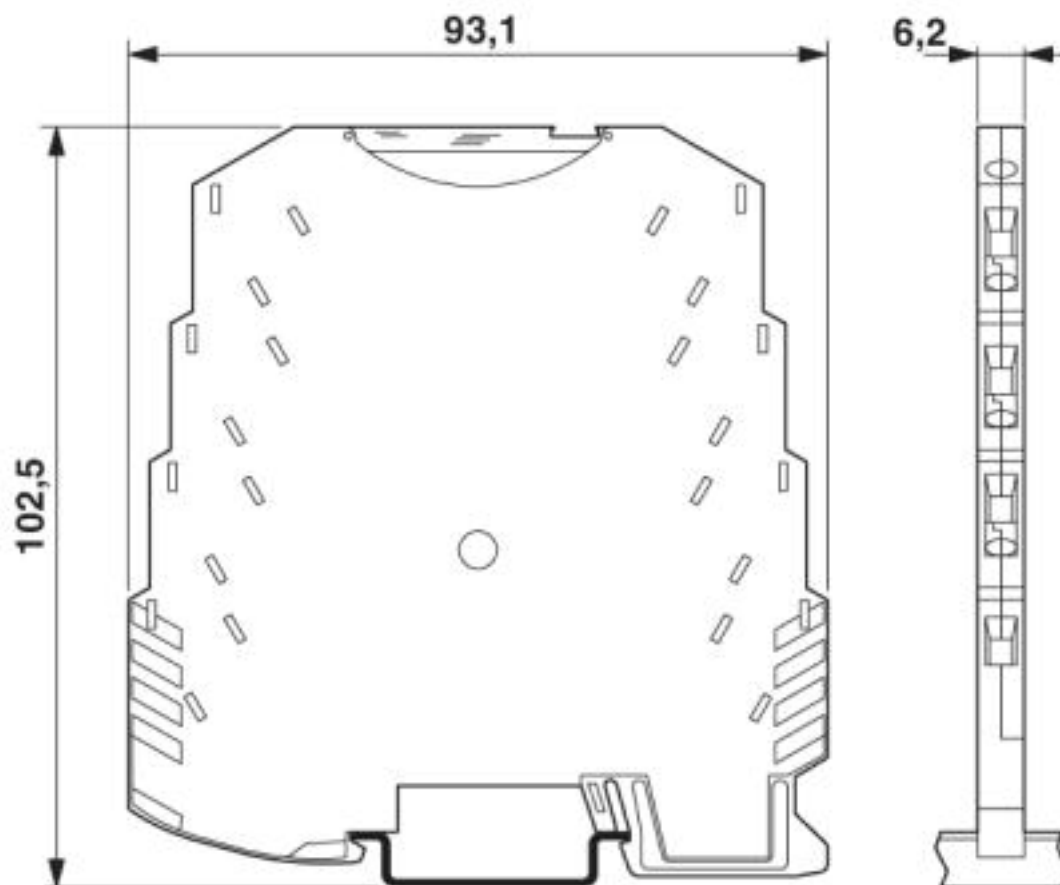
Signal conditioner - MINI MCR-SL-I-U-0 - 2813541

Block diagram



Signal conditioner - MINI MCR-SL-I-U-0 - 2813541

Dimensional drawing



Classifications

eCl@ss

| | |
|------------|----------|
| eCl@ss 4.0 | 27210100 |
| eCl@ss 4.1 | 27210100 |
| eCl@ss 5.0 | 27210100 |
| eCl@ss 5.1 | 27210100 |
| eCl@ss 6.0 | 27210100 |
| eCl@ss 7.0 | 27210120 |
| eCl@ss 8.0 | 27210120 |
| eCl@ss 9.0 | 27210120 |

ETIM

| | |
|----------|----------|
| ETIM 4.0 | EC002653 |
| ETIM 5.0 | EC002653 |
| ETIM 6.0 | EC002653 |
| ETIM 7.0 | EC002653 |

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Classifications

UNSPSC

| | |
|---------------|----------|
| UNSPSC 6.01 | 30211506 |
| UNSPSC 7.0901 | 39121008 |
| UNSPSC 11 | 39121008 |
| UNSPSC 12.01 | 39121008 |
| UNSPSC 13.2 | 39121008 |
| UNSPSC 18.0 | 39121008 |
| UNSPSC 19.0 | 39121008 |
| UNSPSC 20.0 | 39121008 |
| UNSPSC 21.0 | 39121008 |

Approvals

Approvals

Approvals

UL Recognized / cUL Recognized / DNV GL / cULus Recognized

Ex Approvals

ATEX / UL Listed / cUL Listed / EAC Ex / cULus Listed

Approval details

| | | | |
|---------------|---|---|---------------|
| UL Recognized |  | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
|---------------|---|---|---------------|

| | | | |
|----------------|---|---|---------------|
| cUL Recognized |  | http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm | FILE E 238705 |
|----------------|---|---|---------------|

| | | | |
|--------|---|---|------------|
| DNV GL |  | https://approvalfinder.dnvgl.com/ | TAA000020N |
|--------|---|---|------------|

| | | | |
|------------------|---|--|--|
| cULus Recognized |  | | |
|------------------|---|--|--|

Accessories

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Accessories

DIN rail connector

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



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

Marking material

Transparent cover - MINI MCR DKL - 2308111



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

Marking label - MINI MCR-DKL-LABEL - 2810272



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

Power module

Power terminal block - MINI MCR-SL-PTB - 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

Power terminal block - MINI MCR-SL-PTB-SP - 2864147



MCR feed-in terminal for supplying several MINI Analog modules via a DIN rail connector, with spring-cage connection, maximum current consumption of up to 2 A. Replacement part: 2902067 MINI MCR-2-PTB-PT.

Power supply

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Accessories

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Power supply unit - MINI-PS-100-240AC/24DC/1.5/EX - 2866653



Primary-switched power supply MINI POWER for DIN rail mounting, input: 1-phase, output: 24 V DC/1,5 A, for the potentially explosive area

System adapter

System adapter - MINI MCR-SL-V8-FLK 16-A - 2811268



Eight MINI analog signal converters with screw connection method can be connected to a control system using a system adapter and system cabling with a minimum of wiring and very low error risk.

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