

## Signal conditioner - MINI MCR-SL-U-I-4-SP - 2813583

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MCR 3-way signal conditioner, for electrical isolation of analog signals, with spring-cage connection, input signal: 0 V...10 V, output signal: 4 mA...20 mA. Replacement part: 2902030 MINI MCR-2-U-I4-PT.

### Your advantages

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



### Key Commercial Data

|              |                                                                                      |
|--------------|--------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                 |
| GTIN         |  |
| GTIN         | 4046356101905                                                                        |

### 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  |
| Depth  | 102.5 mm |

#### Ambient conditions

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

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## Technical data

### Ambient conditions

|                                  |                                                                                   |
|----------------------------------|-----------------------------------------------------------------------------------|
| 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             |
| Voltage input signal              | 0 V ... 10 V   |
| max. input voltage                | 30 V           |
| Input resistance of voltage input | approx. 100 kΩ |

### Output data

|                                 |                                  |
|---------------------------------|----------------------------------|
| Number of outputs               | 1                                |
| Configurable/programmable       | no                               |
| Current output signal           | 4 mA ... 20 mA                   |
| Max. output current             | 28 mA                            |
| Load/output load current output | ≤ 500 Ω                          |
| Ripple                          | < 20 mV <sub>PP</sub> (at 500 Ω) |

### 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 | < 20 mA                                                                                                                                                                                                         |
| Power consumption        | < 450 mW                                                                                                                                                                                                        |

### Connection data

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Spring-cage connection                      |
| Stripping length                 | 8 mm                                        |
| 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      | 24 ... 12                                   |

### 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 |

# Signal conditioner - MINI MCR-SL-U-I-4-SP - 2813583

## Technical data

### General

|                                                        |                                                                                                                          |
|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 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 |
| Noise emission                   | EN 61000-6-4                   |
| Connection in acc. with standard | CUL                            |
| Designation                      | Electromagnetic RF field       |
| Standards/regulations            | EN 61000-4-3                   |
|                                  | EN 61000-4-4                   |
| Designation                      | Conducted interferences        |
| Standards/regulations            | EN 61000-4-6                   |

## Signal conditioner - MINI MCR-SL-U-I-4-SP - 2813583

### Technical data

#### Standards and Regulations

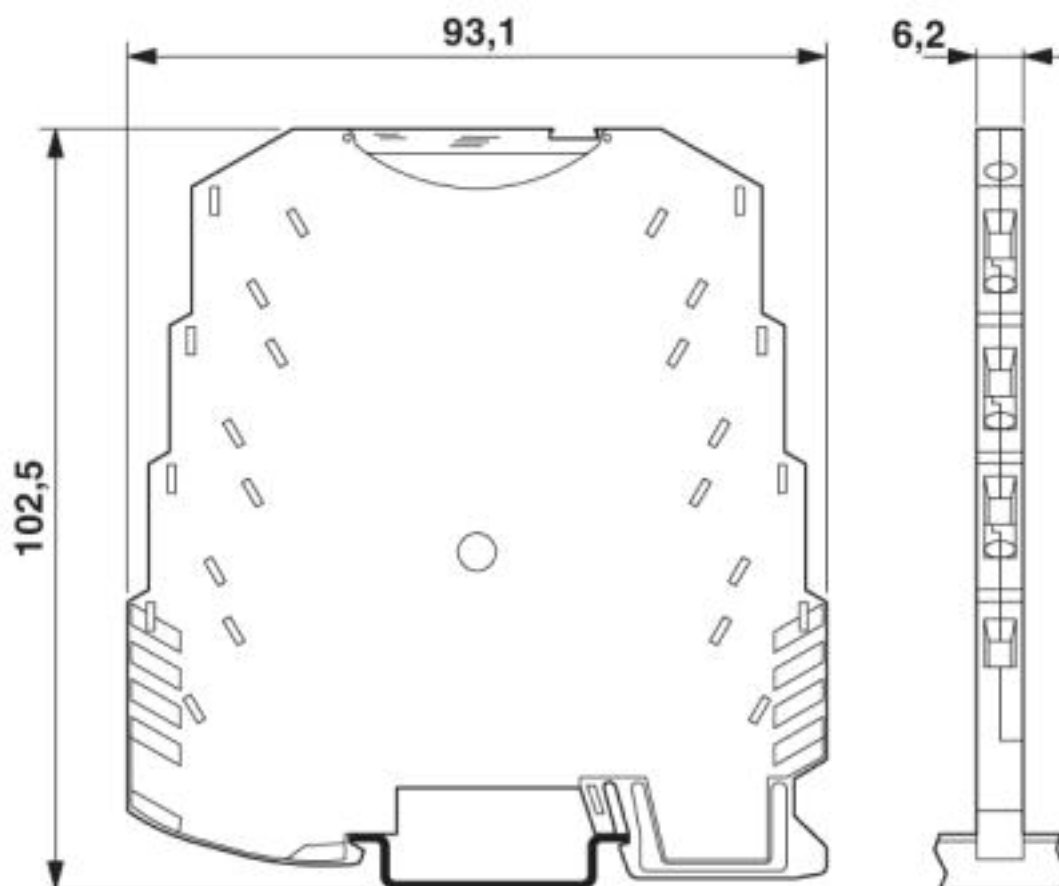
|                      |                                        |
|----------------------|----------------------------------------|
| Electrical isolation | Basic insulation according to EN 61010 |
| Conformance          | CE-compliant                           |
| ATEX                 | # II 3 G Ex 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

Dimensional drawing



## Signal conditioner - MINI MCR-SL-U-I-4-SP - 2813583

### 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 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211506 |
| UNSPSC 7.0901 | 39121008 |
| UNSPSC 11     | 39121008 |
| UNSPSC 12.01  | 39121008 |
| UNSPSC 13.2   | 39121008 |
| UNSPSC 19.0   | 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

## Signal conditioner - MINI MCR-SL-U-I-4-SP - 2813583

### Approvals

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

#### 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.

#### 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

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