

MINI MCR-SL-U-UI-NC - Signal conditioner



2865007

<https://www.phoenixcontact.com/us/products/2865007>

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MCR 3-way signal conditioner, with configurable input/output, for electrical isolation and conversion of analog signals up to 30 V, with screw connection, standard configuration

Product description

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

The signals 0...24 V and 0...30 V can be processed on the input side.

The analog signals 0...20 mA, 4...20 mA, 0...10 V, 2...10 V, 0...5 V or 1..5 V are available electrically isolated on the output side.

The DIP switches, which can be accessed on the side of the housing, can be used to configure the input and output signal ranges.

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
- Highly-compact isolating amplifier for electrical isolation, conversion, amplification, and filtering of 24 V or
- 30 V DC signals to create standard analog signals
- Up to 12 signal combinations can be configured using DIP switches
- 3-way isolation

Commercial data

| | |
|--------------------------------------|--------------------|
| Item number | 2865007 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C403 |
| Product key | CK1211 |
| Catalog page | Page 96 (C-7-2015) |
| GTIN | 4046356046565 |
| Weight per piece (including packing) | 87.4 g |
| Weight per piece (excluding packing) | 65.8 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 | Signal conditioner |
| Product family | MINI Analog |
| No. of channels | 1 |
| Configuration | DIP switches |

Insulation characteristics

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

Electrical properties

| | |
|---|--|
| Electrical isolation | Basic insulation in accordance with EN 61010 |
| Electrical isolation between input and output | yes |
| Limit frequency (3 dB) | approx. 100 Hz |
| Protective circuit | Transient protection |
| Step response (10-90%) | approx. 3.5 ms |
| Maximum temperature coefficient | < 0.01 %/K |
| Temperature coefficient, typical | < 0.002 %/K |
| Maximum transmission error | < 0.1 % (of final value) < 0.4 % (Without adjustment) |

Electrical isolation Input/output/power supply

| | |
|--------------------------|-------------------------|
| Rated insulation voltage | 50 V AC/DC |
| Test voltage | 1.5 kV AC (50 Hz, 60 s) |

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 | < 19 mA (at 24 V DC incl. load) |
| Power consumption | < 450 mW |

Input data

Signal: Voltage

| | |
|---------------------------|-------------------|
| Number of inputs | 1 |
| Configurable/programmable | Yes, unconfigured |

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| | |
|-----------------------------------|---------------------------------------|
| Voltage input signal | 0 V ... 24 V |
| | 0 V ... 30 V |
| Max. voltage input signal | 50 V DC |
| Input resistance of voltage input | approx. 125 k Ω (0 ... 24 V) |
| | approx. 155 k Ω (0 V ... 30 V) |

Output data

Signal: Voltage/current

| | |
|---------------------------------|---|
| Number of outputs | 1 |
| Configurable/programmable | Yes, unconfigured |
| Voltage output signal | 0 V ... 10 V |
| | 0 V ... 5 V |
| | 1 V ... 5 V |
| | 2 V ... 10 V |
| Max. voltage output signal | ≤ 12.5 V |
| Non-load voltage | ≤ 12.5 V |
| Current output signal | 0 mA ... 20 mA |
| | 4 mA ... 20 mA |
| Max. current output signal | 28 mA |
| Short-circuit current | ≤ 22 mA |
| Load/output load voltage output | > 10 k Ω |
| Load/output load current output | < 500 Ω (at 20 mA) |
| Ripple | < 20 mV _{PP} (at 500 Ω) |
| | < 20 mV _{PP} (at 10 k 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 |

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Material specifications

| | |
|--|------------------|
| Color | green (RAL 6021) |
| 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 |
| Altitude | ≤ 2000 m |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |

Approvals

CE

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

UKCA

| | |
|-------------|----------------|
| Certificate | UKCA-compliant |
|-------------|----------------|

UL, USA/Canada

| | |
|----------------|---------------------------------------|
| Identification | UL 508 Recognized |
| | Class I, Div. 2, Groups A, B, C, D T5 |

Shipbuilding approval

| | |
|-------------|-------------------|
| Certificate | DNV GL TAA000020N |
|-------------|-------------------|

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

| | |
|-------------------------------|--|
| 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 |

Electrostatic discharge

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

Standards and regulations

| | |
|----------------------|--|
| Electrical isolation | Basic insulation in accordance with EN 61010 |
|----------------------|--|

Mounting

| | |
|-----------------------|--|
| Mounting type | DIN rail mounting |
| Assembly instructions | 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. |
| Mounting position | any |

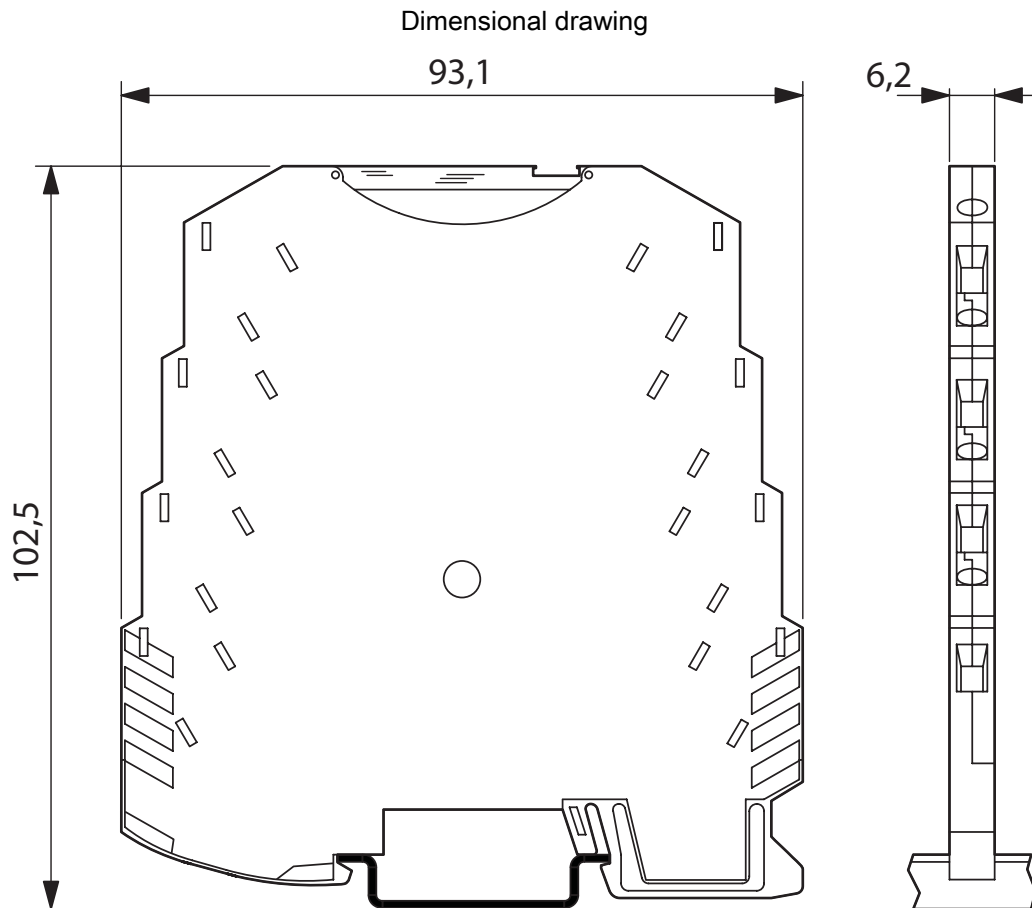
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Drawings

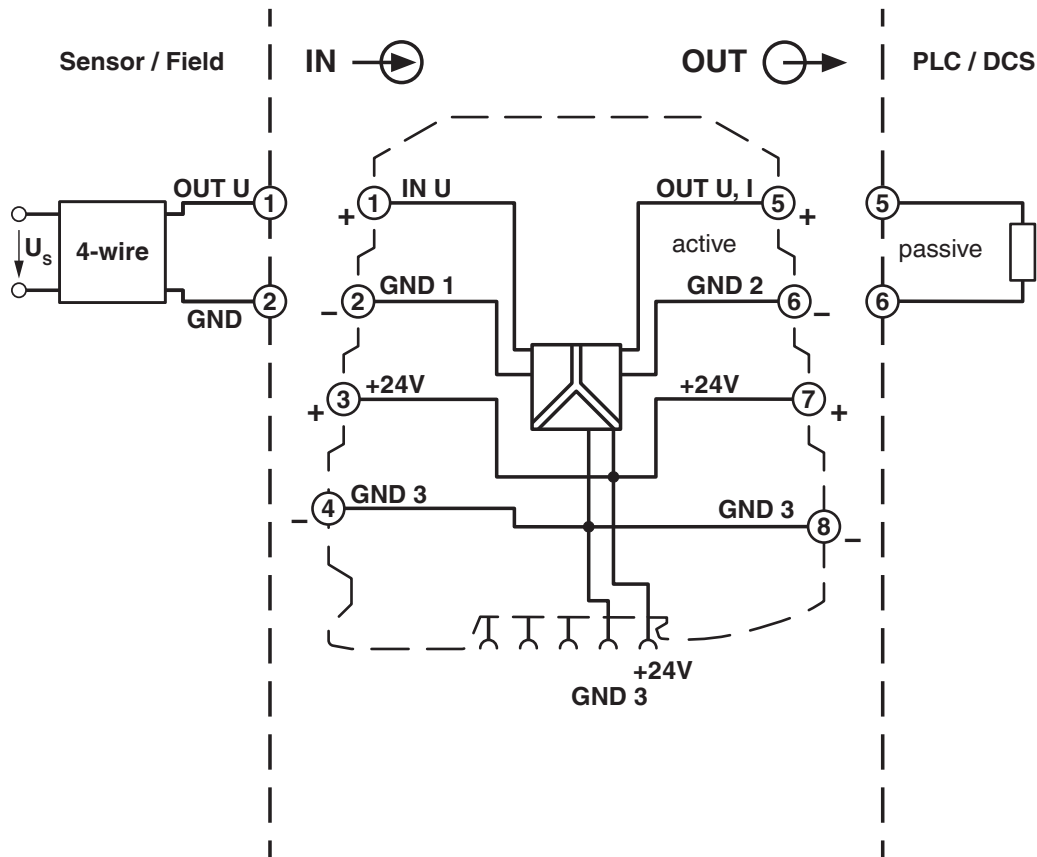


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Block diagram

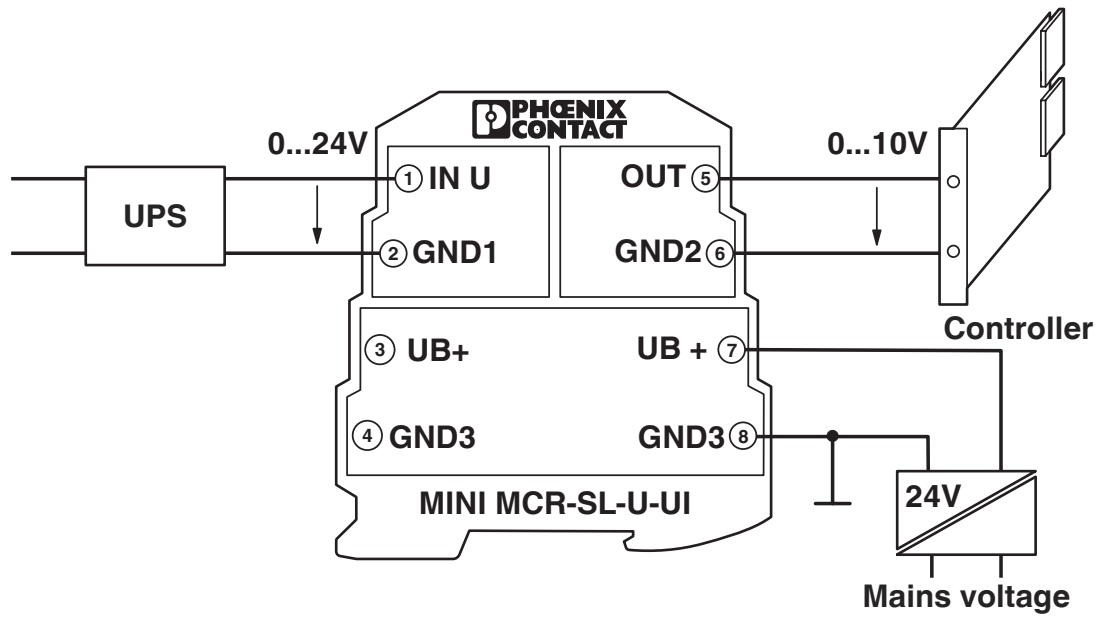


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Application drawing



Signal conversion to uninterruptible power supply (UPS)

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2865007>



cUL Recognized
Approval ID: FILE E 238705



UL Recognized
Approval ID: FILE E 238705



DNV GL
Approval ID: TAA000020N



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

ETIM

| | |
|----------|----------|
| ETIM 9.0 | EC002653 |
|----------|----------|

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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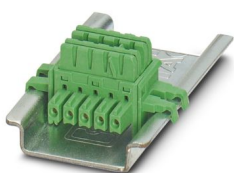
<https://www.phoenixcontact.com/us/products/2865007>

Accessories

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

2869728

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



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

TC-D37SUB-AIO16-M-PS-UNI - Module carrier

2902934

<https://www.phoenixcontact.com/us/products/2902934>



Universal termination carrier for connecting 16 MINI Analog signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection), with HART multiplexer connection

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TC-D37SUB-ADIO16-M-P-UNI - Module carrier

2902933

<https://www.phoenixcontact.com/us/products/2902933>



Universal termination carrier for connecting 16 MINI Analog signal conditioners to digital or analog I/O cards, via D-SUB connector, 37-pos. (1:1 connection)

MINI MCR DKL - Transparent cover

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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MINI MCR-DKL-LABEL - Marking label

2810272

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

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



MINI MCR-SL-PTB - Power terminal block

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

2904614

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



Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

SZS 0,6X3,5 - Screwdriver

1205053

<https://www.phoenixcontact.com/us/products/1205053>



Actuation tool, for ST terminal blocks, insulated, also suitable for use as a bladed screwdriver, size: 0.6 x 3.5 x 100 mm, 2-component grip, with non-slip grip

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