

MINI MCR-SL-UI-2I-NC - Signal duplicator



2864176

<https://www.phoenixcontact.com/us/products/2864176>

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4-way signal duplicator for electrical isolation and duplication of analog signals with screw connection, standard configuration

Product Description

The 6.2 mm wide configurable 4-way isolating amplifier MINI MCR-SL-UI-2I-... is used for electrical isolation, conversion, amplification and filtering of standard signals.

On the input side, the analog standard signals 0...20 mA, 4...20 mA, 0...10 V or 1...5V can be selected, on the output side there are two current outputs that can be set independently of one another with a 0...20 mA-, or 4...20mA signal, electrically isolated (4-way isolation).

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)
- Highly-compact isolating amplifier for electrical isolation, conversion, amplification, filtering, and duplication of standard analog signals
- Up to 8 signal combinations can be configured using DIP switches
- 4-way isolation
- Duplication of a standard analog signal on two current outputs

Commercial Data

| | |
|--------------------------------------|--------------------|
| Item number | 2864176 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales Key | C01 |
| Product Key | CK1211 |
| Catalog Page | Page 98 (C-7-2015) |
| GTIN | 4017918974800 |
| Weight per Piece (including packing) | 88.5 g |
| Weight per Piece (excluding packing) | 84 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 duplicator |
| Product family | MINI Analog |
| No. of channels | 2 |
| Configuration | DIP switches |

Insulation characteristics

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

Electrical properties

| | |
|---|--|
| No. of channels | 2 |
| Rated insulation voltage | 50 V AC/DC |
| Electrical isolation | Basic insulation in accordance with EN 61010 |
| Electrical isolation between input and output | yes |
| Limit frequency (3 dB) | approx. 35 Hz |
| Maximum power dissipation for nominal condition | 500 mW |
| Test voltage (Input/output/supply) | 1.5 kV AC (50 Hz, 60 s) |
| Protective circuit | Transient protection |
| Step response (0–99%) | <input type="checkbox"/> 10 ms |
| Maximum temperature coefficient | < 0.01 %/K |
| Temperature coefficient, typical | < 0.004 %/K |
| Maximum transmission error | ≤ 0.2 % (of final value) |
| Transmission error, typical | < 0.1 % |

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 | < 30 mA (at 24 V DC incl. load) |
| Power consumption | < 600 mW |

Input data

Signal: Voltage/current

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

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| | |
|-----------------------------------|---|
| Voltage input signal | 0 V ... 10 V (please indicate if different setting when ordering) |
| | 1 V ... 5 V |
| Max. voltage input signal | 30 V |
| Current input signal | 0 mA ... 20 mA |
| | 4 mA ... 20 mA |
| Max. current input signal | 50 mA |
| Input resistance of voltage input | approx. 100 k Ω |
| Input resistance current input | approx. 50 Ω |

Output data

Signal: Current

| | |
|---------------------------------|---|
| Number of outputs | 2 |
| Configurable/programmable | Yes, unconfigured |
| Non-load voltage | 9 V |
| Current output signal | 0 mA ... 20 mA |
| | 4 mA ... 20 mA |
| Max. current output signal | approx. 22 mA |
| Load/output load current output | $\leq 250 \Omega$ (at 20 mA) |
| Ripple | $< 20 \text{ mV}_{PP}$ (at 250 Ω) |

Connection data

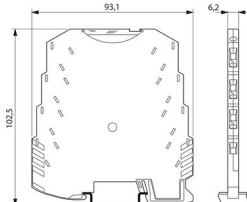
| | |
|----------------------------------|---|
| Connection method | Screw connection |
| Stripping length | 12 mm |
| Screw thread | M3 |
| Conductor cross section solid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section flexible | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 26 ... 12 |

Software

Functionality

| | |
|---------------|--------------|
| Configuration | DIP switches |
|---------------|--------------|

Dimensions

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

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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 ... 60 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Altitude | ≤ 2000 m |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |

Approval data

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 TAA00002R0 |
|-------------|-------------------|

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

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

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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 can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail. |
| Mounting position | any |

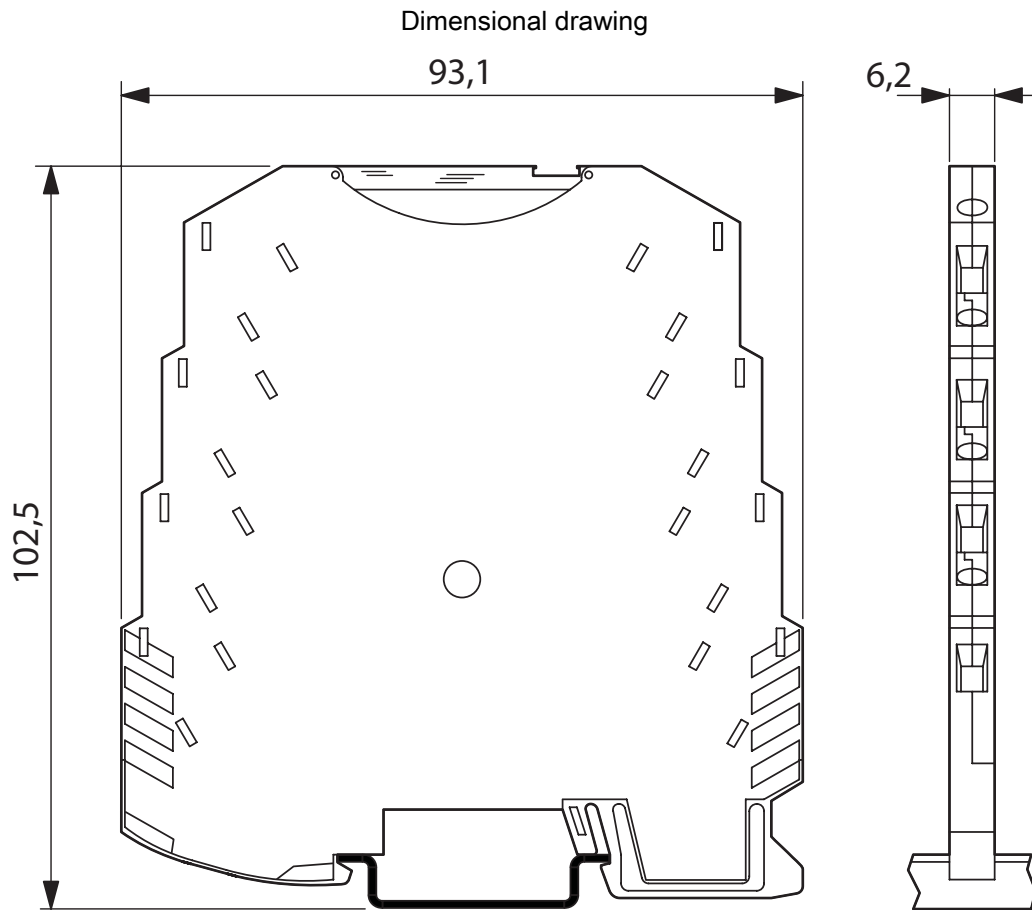
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Drawings

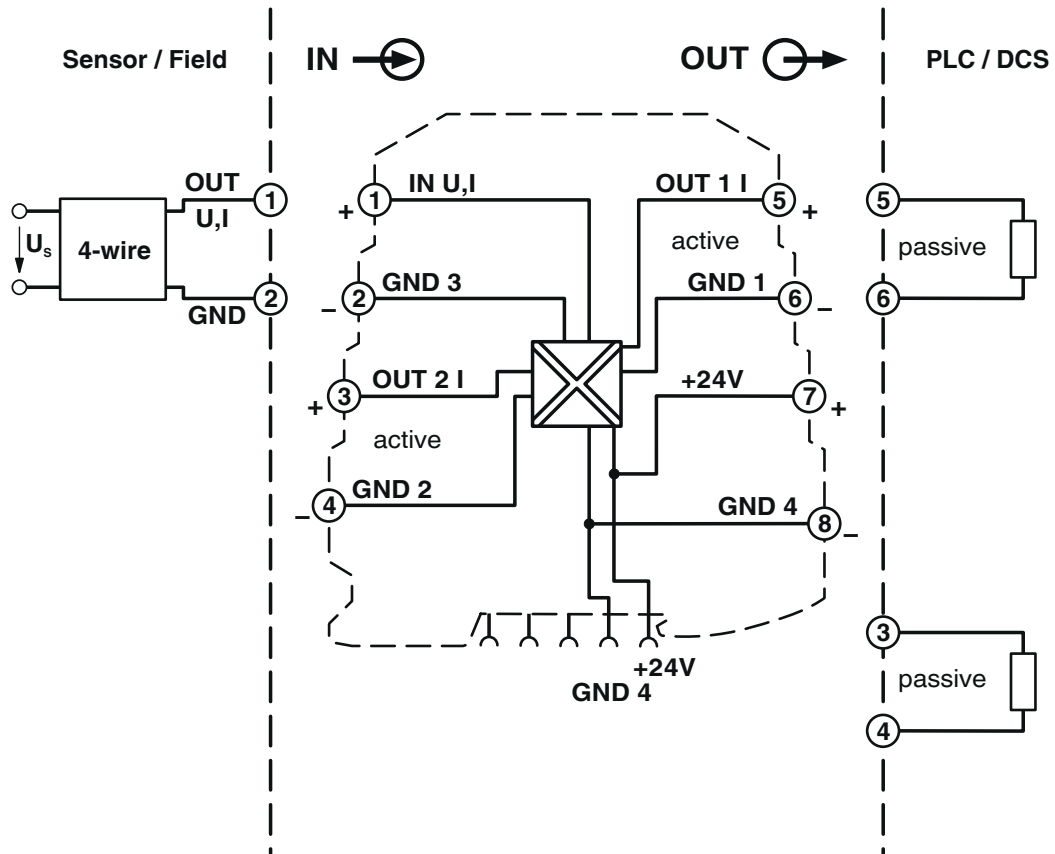


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Block diagram



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Approvals



cUL Recognized
Approval ID: FILE E 238705



UL Recognized
Approval ID: FILE E 238705



DNV GL
Approval ID: TAA00002R0



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

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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Accessories

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

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)

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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

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, input: single-phase, output: 24 V DC/2.5 A

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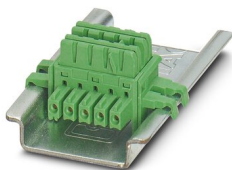
<https://www.phoenixcontact.com/us/products/2864176>



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.

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

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



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