

MINI MCR-SL-UI-UI-NC - Input signal conditioner



2864150

<https://www.phoenixcontact.com/us/products/2864150>

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3-way signal conditioner for the electrical isolation of analog signals, I/O can be configured via DIP switches, with screw connection, standard configuration

Your advantages

- Power supply possible via the foot element (TBUS)
- Up to 36 signal combinations can be configured using DIP switches
- Low power consumption
- Highly-compact isolating amplifier for electrical isolation, conversion, amplification, and filtering of standard analog signals
- 3-way isolation

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2864150 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | C403 |
| Product key | DK1131 |
| GTIN | 4017918956615 |
| Weight per piece (including packing) | 87.7 g |
| Weight per piece (excluding packing) | 77 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 |
| Configuration | DIP switches |

System properties

Functionality

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

Electrical properties

| | |
|-------------------------------------------------|----------------------------------------------------------|
| Electrical isolation | 3-way isolation |
| Electrical isolation between input and output | yes |
| Limit frequency (3 dB) | ~ 100 Hz |
| Maximum power dissipation for nominal condition | 58 mW 184.3 mW |
| Protective circuit | Transient protection |
| Step response (10-90%) | ~ 3.2 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

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

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

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

Supply

| | |
|------------------------|---------|
| Nominal supply voltage | 24 V DC |
|------------------------|---------|

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| | |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 (Current output, at 24 V DC incl. load) |
| | < 9 mA (Voltage output, at 24 V DC incl. load) |
| Power consumption (I output) | < 450 mW (Current output) |
| Power consumption (U output) | < 200 mW (Voltage output) |

Input data

Signal: Voltage/current

| | |
|-----------------------------------|-------------------|
| Number of inputs | 1 |
| Configurable/programmable | Yes, unconfigured |
| Voltage input signal | 0 V ... 10 V |
| | 0 V ... 5 V |
| | 1 V ... 5 V |
| | 2 V ... 10 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 | ~ 100 kΩ |
| Input resistance current input | ~ 50 Ω |

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 | approx. 12.5 V |
| Open-circuit voltage | approx. 12.5 V |
| Current output signal | 0 mA ... 20 mA |
| | 4 mA ... 20 mA |
| Max. current output signal | 28 mA |
| Short-circuit current | approx. 22 mA |
| Load/output load voltage output | ≥ 10 kΩ |
| Load/output load current output | < 500 Ω (at 20 mA) |
| Ripple | < 20 mV _{PP} (at 500 Ω) |
| | < 20 mV _{PP} (at 10 kΩ) |

Connection data

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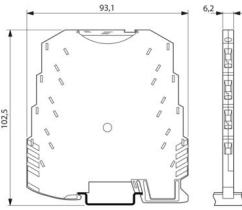


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| | |
|----------------------------------|---------------------------------------------|
| Connection method | Screw connection |
| Stripping length | 12 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor 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 |
| 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 T5 |

EMC data

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

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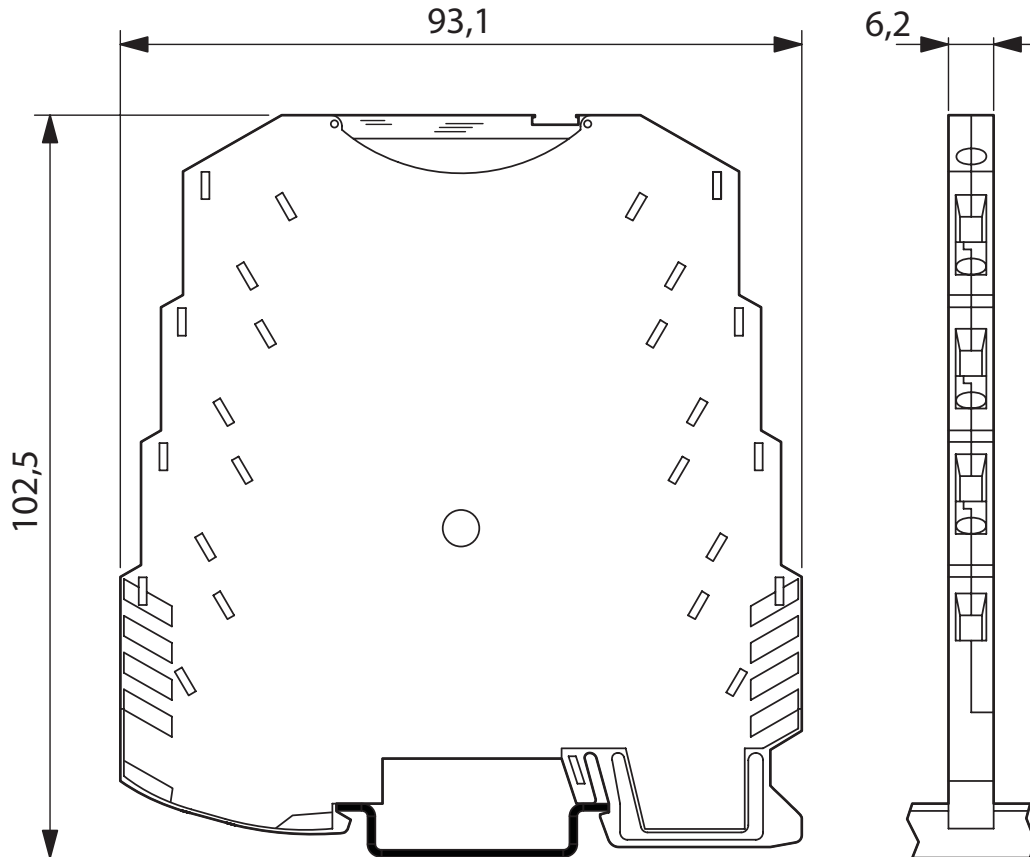


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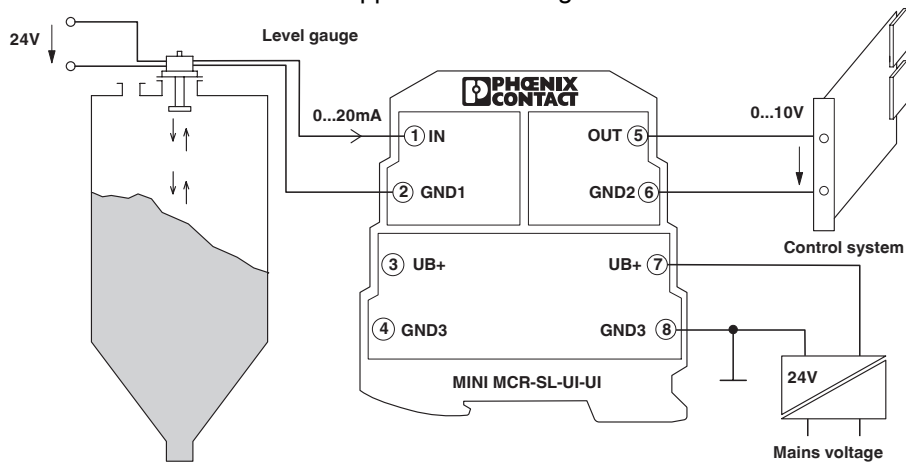
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Drawings

Dimensional drawing



Application drawing

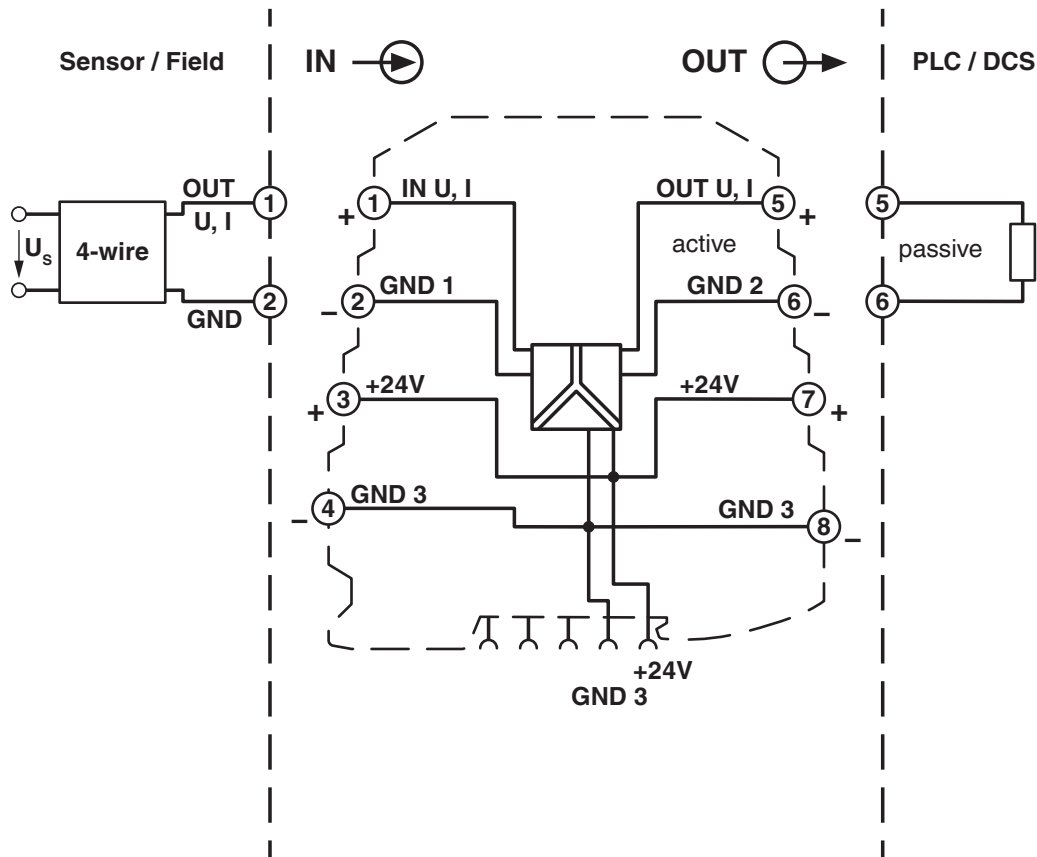


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Block diagram



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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2864150>



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 | 1a98fd1f-71dd-4573-b9dc-118019669a52 |

EF3.1 Climate Change

| | |
|---------|--------------|
| CO2e kg | 2.18 kg CO2e |
|---------|--------------|

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