

2813525

<https://www.phoenixcontact.com/us/products/2813525>

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3-way signal conditioner, for electrical isolation of analog signals, with screw connection, input signal: 0 V ... 10 V, output signal: 4 mA ... 20 mA

Your advantages

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

Commercial data

|                                      |               |
|--------------------------------------|---------------|
| Item number                          | 2813525       |
| Packing unit                         | 1 pc          |
| Minimum order quantity               | 1 pc          |
| Sales key                            | C403          |
| Product key                          | DK1131        |
| GTIN                                 | 4046356100618 |
| Weight per piece (including packing) | 60.9 g        |
| Weight per piece (excluding packing) | 51.9 g        |
| Customs tariff number                | 85437090      |
| Country of origin                    | DE            |

# MINI MCR-SL-U-I-4 - Input signal conditioner



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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                        |

### Electrical properties

|                                                 |                                                                                                  |
|-------------------------------------------------|--------------------------------------------------------------------------------------------------|
| Electrical isolation                            | 3-way isolation                                                                                  |
| Electrical isolation between input and output   | yes                                                                                              |
| Limit frequency (3 dB)                          | approx. 100 Hz                                                                                   |
| Maximum power dissipation for nominal condition | 88 mW                                                                                            |
| Step response (10-90%)                          | $\approx$  ms |
| Maximum temperature coefficient                 | $< 0.01$ %/K                                                                                     |
| Temperature coefficient, typical                | $< 0.002$ %/K                                                                                    |
| Maximum transmission error                      | $\leq 0.1$ % (of final value)                                                                    |

#### 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 | 30 V AC<br>50 V DC      |
| Test voltage             | 1.5 kV AC (50 Hz, 60 s) |
| Insulation               | Basic insulation        |

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

### Input data

#### Signal: Voltage

|                  |   |
|------------------|---|
| Number of inputs | 1 |
|------------------|---|

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|                                   |                        |
|-----------------------------------|------------------------|
| Configurable/programmable         | no                     |
| Voltage input signal              | 0 V ... 10 V           |
| Max. voltage input signal         | 30 V                   |
| Input resistance of voltage input | approx. 100 k $\Omega$ |

## Output data

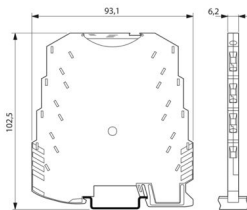
Signal: Current

|                                 |                                                  |
|---------------------------------|--------------------------------------------------|
| Number of outputs               | 1                                                |
| Configurable/programmable       | no                                               |
| Open-circuit voltage            | approx. 12.5 V                                   |
| Current output signal           | 4 mA ... 20 mA                                   |
| Max. current output signal      | 28 mA                                            |
| Load/output load current output | $\leq 500 \Omega$                                |
| Ripple                          | $< 20 \text{ mV}_{\text{PP}}$ (at 500 $\Omega$ ) |

## Connection data

|                                  |                                             |
|----------------------------------|---------------------------------------------|
| Connection method                | Screw connection                            |
| Stripping length                 | 12 mm                                       |
| Screw thread                     | M3                                          |
| Conductor cross-section rigid    | 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      | 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

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|                                         |                               |
|-----------------------------------------|-------------------------------|
| 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 T4 |

## EMC data

|                               |                                                                      |
|-------------------------------|----------------------------------------------------------------------|
| Electromagnetic compatibility | Conformance with EMC directive                                       |
| 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 upper range value | 5 %                      |

### Fast transients (burst)

|                                              |                         |
|----------------------------------------------|-------------------------|
| Designation                                  | Fast transients (burst) |
| Standards/regulations                        | EN 61000-4-4            |
| Typical deviation from the upper range value | 5 %                     |

### Surge current load (surge)

|                       |              |
|-----------------------|--------------|
| Standards/regulations | EN 61000-4-5 |
|-----------------------|--------------|

### Surge current load (surge)

|          |             |
|----------|-------------|
| Comments | Criterion B |
|----------|-------------|

### Conducted interference

|             |                         |
|-------------|-------------------------|
| Designation | Conducted interferences |
|-------------|-------------------------|

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|                                              |              |
|----------------------------------------------|--------------|
| Standards/regulations                        | EN 61000-4-6 |
| Typical deviation from the upper range 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                                                                                                                   |

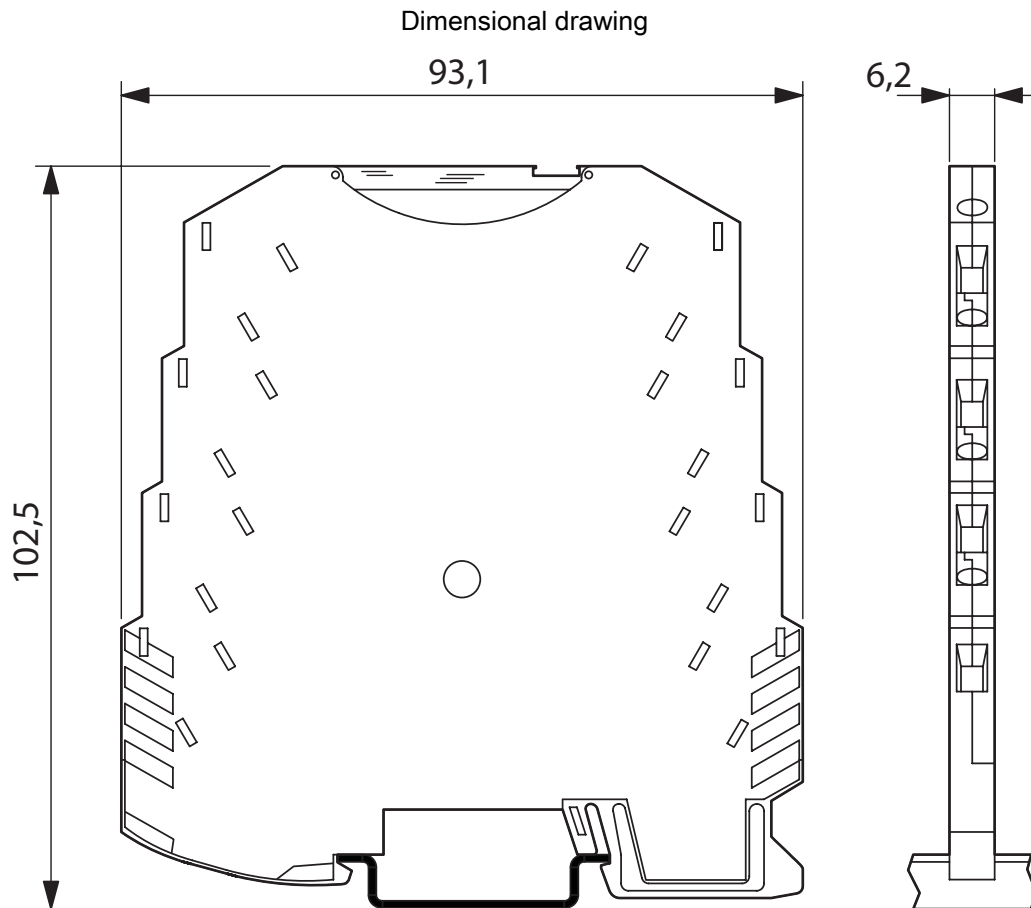
# MINI MCR-SL-U-I-4 - Input signal conditioner

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## Drawings



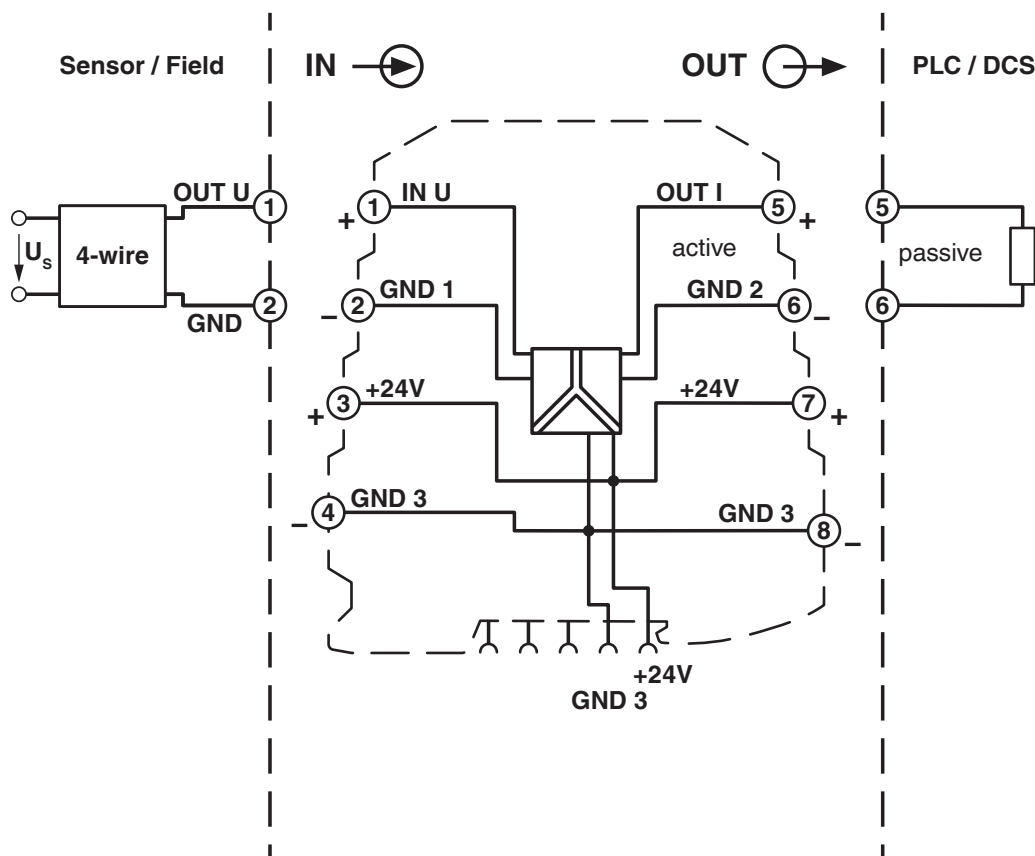
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Block diagram



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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2813525>



**cUL Recognized**

Approval ID: E238705



**UL Recognized**

Approval ID: E238705



**cUL 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                                | 839007c8-d78e-49d6-8f32-ec02754c8d3f |

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