

# MINI MCR-SL-UI-REL - Limit value switches



2864480

<https://www.phoenixcontact.com/in/products/2864480>

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MCR limit value switch, with adjustable hysteresis and delay time, with screw connection



## Product Description

The only 6.2 mm wide configurable 3-way threshold value switch MINI MCR-SL-UI-REL... is used for the closed-loop control and monitoring of standard analog signals.

On the input side, the analog standard signals 0...20 mA or 0...10 V per DIP switch can be set. A relay with changeover contact is available on the output side. The switching thresholds are set via a potentiometer.

The DIP switches, which can be accessed on the side of the housing, have the following functions:

- Configuring the switching hysteresis,
- Configuring the operating and closed circuit current behavior,
- Setting the relay energizing times as well as
- Setting the dropout delays.

The relay status is shown by a yellow LED in the front of the housing.

Power (19.2 V DC to 30 V DC) can either be supplied via the connection terminal blocks of the modules or in conjunction with the DIN rail connector.

## Your advantages

- Power supply possible via the foot element (TBUS)
- Highly-compact threshold value switch for switching analog limit values
- Status and error indication via two diagnostic LEDs
- Operating current/closed circuit current switch-over
- Changeover contact relay at the output
- Limit value can be freely adjusted via potentiometer on the front
- Input signal, hysteresis, and delay time can be configured via DIP switches
- 3-way isolation

## Commercial Data

|                                      |                     |
|--------------------------------------|---------------------|
| Item number                          | 2864480             |
| Packing unit                         | 1 pc                |
| Minimum order quantity               | 1 pc                |
| Sales Key                            | CK1                 |
| Product Key                          | CK1243              |
| Catalog Page                         | Page 113 (C-7-2015) |
| GTIN                                 | 4017918974879       |
| Weight per Piece (including packing) | 101.2 g             |
| Weight per Piece (excluding packing) | 70.9 g              |

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|                       |          |
|-----------------------|----------|
| 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    | Threshold value switch |
| Product family  | MINI Analog            |
| No. of channels | 1                      |
| Configuration   | DIP switches           |

#### Insulation characteristics

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

### System properties

#### Functionality

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

### Electrical properties

|   |                 |
|---|-----------------|
| No. of channels                                 | 1               |
| Electrical isolation                            | 3-way isolation |
| Electrical isolation between input and output   | yes             |
| Maximum power dissipation for nominal condition | < 405 mW        |
| Switching point accuracy                        | < 0.05 %        |
| Step response (0–99%)                           | < 35 ms         |
| Maximum temperature coefficient                 | < 0.02 %/K      |

#### Electrical isolation Input/power supply

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

#### Supply

|                          |   |
|--------------------------|---|
| Nominal supply voltage   | 24 V DC $\pm$ 15 %  |
| 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 | < 14 mA (at 24 V DC)  |
| Power consumption        | < 330 mW (at 24 V DC)   |

### Input data

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Signal: Voltage/current

|                                      |                             |
|--------------------------------------|-----------------------------|
| Number of inputs                     | 1                           |
| Voltage input signal                 | 0 V ... 10 V                |
| Max. voltage input signal            | 30 V                        |
| Current input signal                 | 0 mA ... 20 mA              |
| Max. current input signal            | 100 mA                      |
| Input resistance of voltage input    | > 100 k $\Omega$            |
| Input resistance current input       | 50 $\Omega$                 |
| Specification of the switching point | With 25-speed potentiometer |

## Output data

Switching: Relay

|                                     |  |
|-------------------------------------|--|
| Contact type                        | 1 changeover contact                                   |
| Contact material                    | AgSnO <sub>2</sub> , hard gold-plated                  |
| Maximum switching voltage           | 250 V AC<br>240 V AC (UL)                              |
| Limiting continuous current         | 2 A  |
| Setting range of the response delay | 0 s ... 10 s (0 s; 1 s; 2 s; 3 s; 4 s; 6 s; 8 s; 10 s) |
| Internal hysteresis                 | 0.1 %; 1 %; 2.5 %; 5 %                                 |

Signal

|                   |   |
|-------------------|---|
| Number of outputs | 1 |
|-------------------|---|

## 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

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

|                |                                   |
|----------------|-----------------------------------|
| Identification | Class I, Zone 2, AEx nA nC IIC T5 |
|----------------|-----------------------------------|

### UL, USA/Canada

|                |                   |
|----------------|-------------------|
| Identification | UL 508 Recognized |
|----------------|-------------------|

### UL, Canada

|                |                                     |
|----------------|-------------------------------------|
| Identification | Class I, Zone 2, Ex nA nC IIC T5 Gc |
|----------------|-------------------------------------|

### 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

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

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## 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 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   |

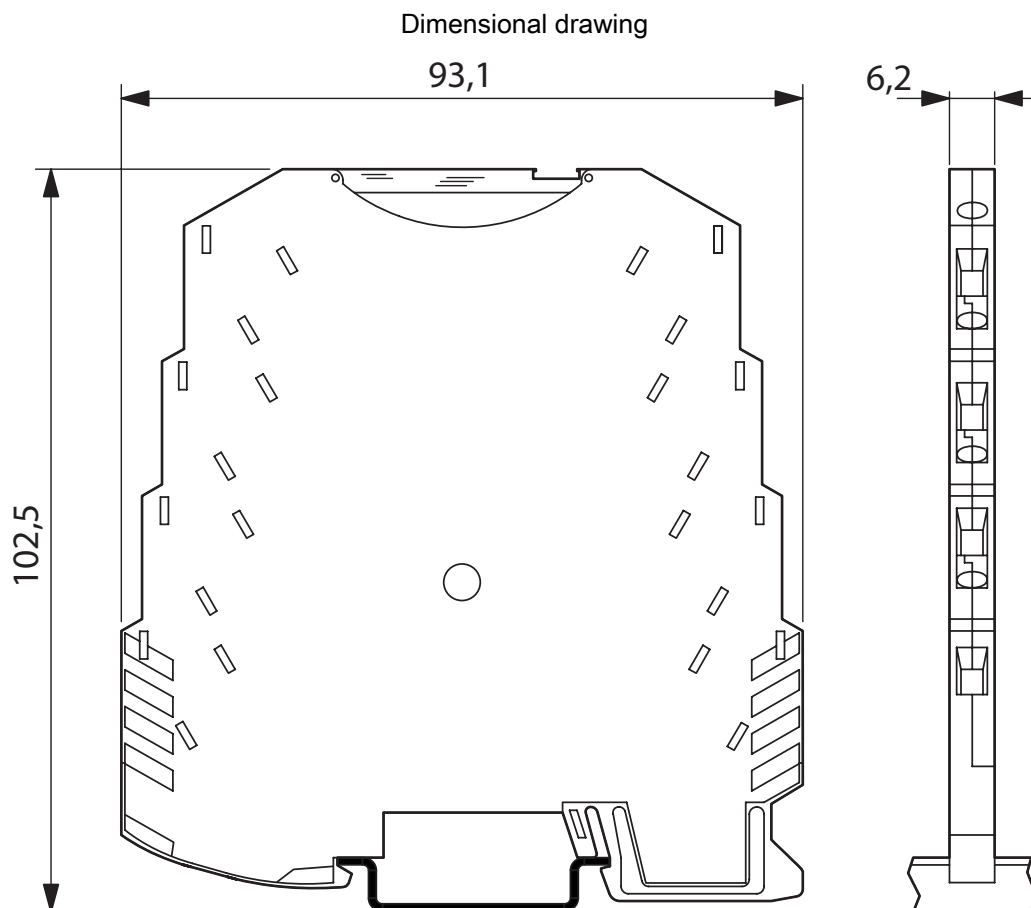
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## Drawings

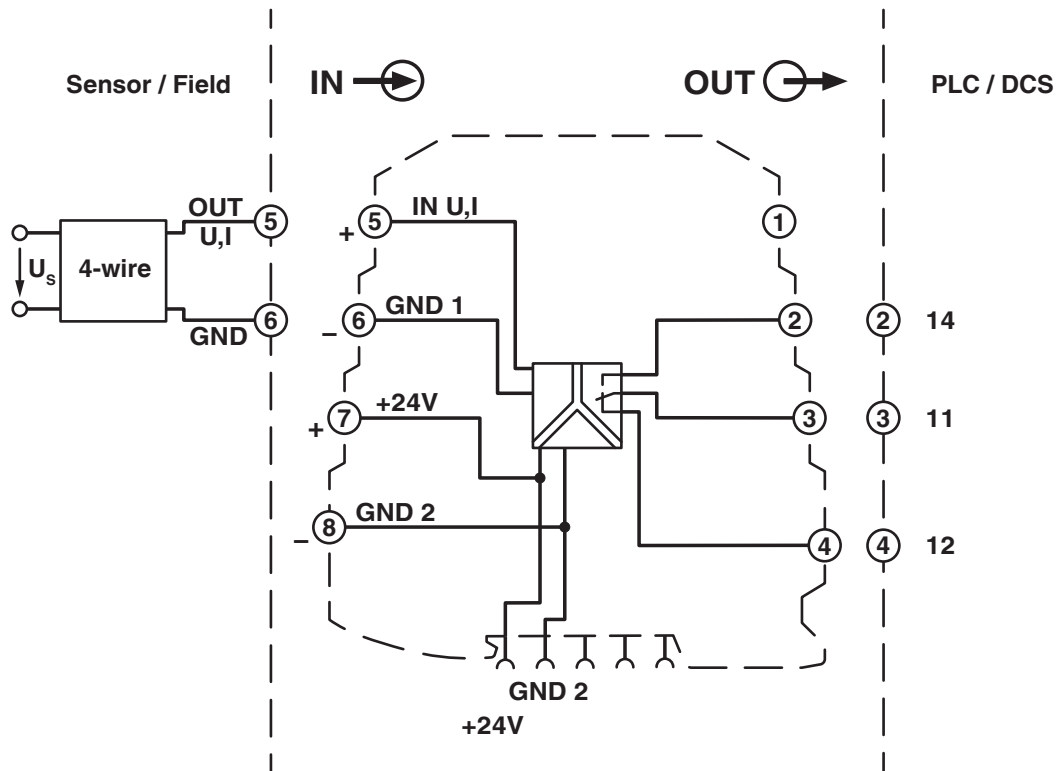


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Block diagram





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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

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## Classifications

### ECLASS

|             |          |
|-------------|----------|
| ECLASS-11.0 | 27210120 |
| ECLASS-12.0 | 27210120 |
| ECLASS-13.0 | 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/in/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/in/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-SL-UI-REL - Limit value switches

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<https://www.phoenixcontact.com/in/products/2864480>



## MINI MCR-SL-PTB - Power terminal block

2864134

<https://www.phoenixcontact.com/in/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/in/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

## MINI MCR-SL-UI-REL - Limit value switches

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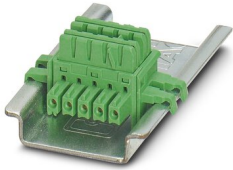
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## ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - DIN rail bus connectors

2869728

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



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

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## MINI MCR DKL - Transparent cover

2308111

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

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



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