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# Resistance thermometer measuring transducer - MINI MCR-SL-PT100-UI-SP-NC - 2864286

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MCR temperature transducer for Pt 100 temperature sensors, configured via DIP switch, with spring-cage connection, not pre-configured

## Product Description

The 6.2 mm wide MINI MCR-SL-PT100-UI... is a configurable 3-way isolated temperature measuring transducer. It is suitable for the connection of Pt 100 resistance thermometers according to IEC 60751 in 2, 3 and 4-wire connection methods.

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

The DIP switches are accessible on the side of the housing and allow the following parameters to be configured:

- Connection method
- Temperature range to be measured
- Output signal as well
- Fault evaluation type


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.

## Why buy this product

- Power supply possible via the foot element (TBUS)
- For 2, 3 or 4-wire Pt 100 sensors according to IEC 60751
- Error indication via diagnostic LED and analog signal
- Temperature measuring range of -150°C to +850°C
- Input and output signals can be configured via DIP switches
- 3-way isolation
- Pt 100 signals to create standard signals
- Highly-compact temperature transducer for electrical isolation, conversion, amplification, and filtering of



## Key Commercial Data

|              |   |
|--------------|---|
| Packing unit | 1 STK   |
| GTIN         | <br>4 017918 974824 |
| GTIN         | 4017918974824   |

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## Technical data

### Note

|                         |   |
|-------------------------|---|
| Utilization restriction | EMC: class A product, see manufacturer's declaration in the download area |
|-------------------------|---|

### Dimensions

|        |          |
|--------|----------|
| Width  | 6.2 mm   |
| Height | 93.1 mm  |
| Depth  | 102.5 mm |

### Ambient conditions

|   |                  |
|---|------------------|
| Ambient temperature (operation)         | -20 °C ... 65 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |

### Input data

|                                     |                             |
|-------------------------------------|-----------------------------|
| Configurable/programmable           | Yes                         |
| Sensor types (RTD) that can be used | Pt 100 (IEC 60751/EN 60751) |
| Sensor input current                | 1 mA (constant)             |
| Connection technology               | 2, 3, 4-wire                |

### Output data

|                                 |                                  |
|---------------------------------|----------------------------------|
| Number of outputs               | 1                                |
| Configurable/programmable       | Yes, unconfigured                |
| Voltage output signal           | 0 V ... 10 V                     |
|                                 | 10 V ... 0 V                     |
|                                 | 0 V ... 5 V                      |
|                                 | 1 V ... 5 V                      |
| Current output signal           | 0 mA ... 20 mA                   |
|                                 | 20 mA ... 0 mA                   |
|                                 | 20 mA ... 4 mA                   |
|                                 | 4 mA ... 20 mA                   |
| Max. output voltage             | approx. 12.5 V                   |
| Max. output current             | 23 mA                            |
| Short-circuit current           | approx. 10 mA                    |
| Load/output load voltage output | ≥ 10 kΩ                          |
| Load/output load current output | < 500 Ω (at 20 mA)               |
| Ripple                          | < 20 mV <sub>PP</sub> (at 500 Ω) |
|                                 | < 20 mV <sub>PP</sub> (at 500 Ω) |

### Power supply

|                        |   |
|------------------------|---|
| Nominal supply voltage | 24 V DC   |
| Supply voltage range   | 19.2 V DC ... 30 V DC (The DIN rail bus connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, Order No. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715)) |



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## Technical data

### Power supply

|                          |                      |
|--------------------------|----------------------|
| Max. current consumption | < 21 mA (at 24 V DC) |
| Power consumption        | < 500 mW             |

### Connection data

|                                       |                        |
|---------------------------------------|------------------------|
| Connection method                     | Spring-cage connection |
| Conductor cross section solid min.    | 0.2 mm <sup>2</sup>    |
| Conductor cross section solid max.    | 2.5 mm <sup>2</sup>    |
| Conductor cross section AWG min.      | 24                     |
| Conductor cross section AWG max.      | 12                     |
| Conductor cross section flexible min. | 0.2 mm <sup>2</sup>    |
| Conductor cross section flexible max. | 2.5 mm <sup>2</sup>    |
| Stripping length                      | 8 mm                   |

### General

|  |  |
|--|--|
| No. of channels  | 1  |
| Transmission error in the set measuring range          | $((100 \text{ K} / \text{set measurement range [K]} + 0.1)\%$  |
| Transmission error in the full measuring range         | $\leq 0,2 \%$  |
| Maximum temperature coefficient                        | $< 0.02 \%/K$  |
| Protective circuit                                     | Transient protection   |
| Electrical isolation                                   | Basic insulation according to EN 61010   |
| Overvoltage category                                   | II   |
| Degree of pollution                                    | 2  |
| Rated insulation voltage                               | 50 V AC/DC   |
| Test voltage, input/output/supply                      | 1.5 kV (50 Hz, 1 min.)   |
| Electromagnetic compatibility                          | Conformance with EMC directive   |
| Noise emission   | EN 61000-6-4   |
| Noise immunity   | EN 61000-6-2 When being exposed to interference, there may be minimal deviations.  |
| Color  | green  |
| Housing material                                       | PBT  |
| Mounting position                                      | any  |
| Assembly instructions                                  | The T connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715. |
| Conformance  | CE-compliant   |
| ATEX   | # II 3 G Ex nA IIC T4 Gc X   |
| UL, USA/Canada   | UL 508 Recognized  |
|  | Class I, Div. 2, Groups A, B, C, D T5  |
| GL   | GL EMC 2 D   |
| 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  |

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## Technical data

### EMC data

|  |                          |
|--|--------------------------|
| Designation  | Electromagnetic RF field |
| Standards/regulations                                  | EN 61000-4-3             |
| Typical deviation from the measuring range final value | 10 %                     |
| Designation  | Fast transients (burst)  |
| Standards/regulations                                  | EN 61000-4-4             |
| Typical deviation from the measuring range final value | 10 %                     |
| Designation  | Conducted interferences  |
| Standards/regulations                                  | EN 61000-4-6             |
| Typical deviation from the measuring range final value | 10 %                     |

### Standards and Regulations

|  |  |
|--|--|
| Electromagnetic compatibility                          | Conformance with EMC directive         |
| Noise emission   | EN 61000-6-4                           |
| Connection in acc. with standard                       | CUL                                    |
| Standards/regulations                                  | EN 61000-4-2                           |
| Designation  | Electromagnetic RF field               |
| Standards/regulations                                  | EN 61000-4-3                           |
|  | EN 61000-4-4                           |
|  | EN 61000-4-5                           |
| Designation  | Conducted interferences                |
| Standards/regulations                                  | EN 61000-4-6                           |
| Electrical isolation                                   | Basic insulation according to EN 61010 |
| Conformance  | CE-compliant                           |
| ATEX   | # II 3 G Ex nA IIC T4 Gc X             |
| UL, USA/Canada   | UL 508 Recognized                      |
|  | Class I, Div. 2, Groups A, B, C, D T5  |
| GL   | GL EMC 2 D                             |
| Fire protection for rail vehicles (DIN EN 45545-2) R22 | HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2    |
| Fire protection for rail vehicles (DIN EN 45545-2) R23 | HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2    |
| Fire protection for rail vehicles (DIN EN 45545-2) R24 | HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2    |
| Fire protection for rail vehicles (DIN EN 45545-2) R26 | HL 1 - HL 2 HL 1 - HL 2 HL 1 - HL 2    |

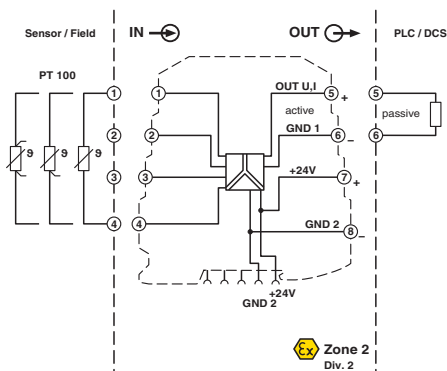
### Environmental Product Compliance

|            |   |
|------------|---|
| China RoHS | Environmentally Friendly Use Period = 50  |
|            | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |

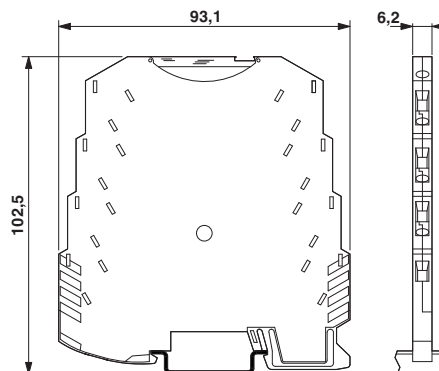
## Drawings

# Resistance thermometer measuring transducer - MINI MCR-SL-PT100-UI-SP-NC - 2864286

Block diagram



Dimensional drawing



## Approvals

### Approvals

### Approvals

UL Recognized / cUL Recognized / GL / cULus Recognized

### Ex Approvals

UL Listed / cUL Listed / EAC Ex / ATEX / cULus Listed

### Approval details

|                  |  |   |               |
|------------------|--|---|---------------|
| UL Recognized    |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 238705 |
| cUL Recognized   |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> | FILE E 238705 |
| GL               |  | <a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>   | 24917-05 HH   |
| cULus Recognized |  | <a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a> |               |

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