

# MCR-PT100-U-DC - Resistance thermometer measuring transducer

2810311

<https://www.phoenixcontact.com/us/products/2810311>

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The figure shows version MCR-PT100-I-DC

MCR temperature transducer, for Pt 100, 2-, 3-, 4-conductor technology; input: 0 ... 100°C, 0 ... 150°C, 0 ... 200°C, 0 ... 300°C, -50 ... +50°C, -50 ... 100°C, -50 ... 150°C, -50 ... 250°C, output signal: 0 ... 10 V, electrically isolated auxiliary power

## Your advantages

- With electrically isolated supply voltage as an option
- ZERO/SPAN adjustment
- Temperature range can be set via DIP switches
- Wire-break detection

## Commercial data

|                                      |                                |
|--------------------------------------|--------------------------------|
| Item number                          | 2810311                        |
| Packing unit                         | 1 pc                           |
| Note                                 | Made to order (non-returnable) |
| Sales key                            | C401                           |
| Product key                          | DK1XXX                         |
| Weight per piece (including packing) | 138.4 g                        |
| Weight per piece (excluding packing) | 138.4 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    | Temperature transmitter |
| No. of channels | 1                       |

### Electrical properties

|                                  |                          |
|----------------------------------|--------------------------|
| Alignment span                   | ± 5 %                    |
| Alignment zero                   | ± 5 %                    |
| Limit frequency (3 dB)           | 30 Hz                    |
| Test voltage power supply/signal | 750 V AC (50 Hz, 60 s)   |
| Step response (10-90%)           | 11 ms                    |
| Maximum temperature coefficient  | ≤ 0.02 %/K               |
| Maximum transmission error       | ≤ 0.4 % (of final value) |

#### Supply

|                          |                     |
|--------------------------|---------------------|
| Nominal supply voltage   | 24 V                |
| Supply voltage range     | 20 V DC ... 30 V DC |
| Max. current consumption | 35 mA               |

### Input data

#### Signal

|              |             |
|--------------|-------------|
| Input signal | Temperature |
|--------------|-------------|

#### Measurement

|                                     |   |
|-------------------------------------|---|
| Configurable/programmable           | Yes   |
| Sensor types (RTD) that can be used | Pt 100 (IEC 60751/EN 60751)   |
| Temperature measuring range         | 0 °C ... 300 °C (0 ... 100/150/200/300)<br>-50 °C ... 250 °C (-50 ... 50/100/150/250)   |
| Temperature measuring range: Pt 100 | -50 °C ... 50 °C (fixed setting)<br>-50 °C ... 100 °C (fixed setting)<br>-50 °C ... 150 °C (fixed setting)<br>-50 °C ... 250 °C (fixed setting)<br>0 °C ... 100 °C (fixed setting)<br>0 °C ... 150 °C (fixed setting)<br>0 °C ... 200 °C (fixed setting)<br>0 °C ... 300 °C (fixed setting) |

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|                       |                            |
|-----------------------|----------------------------|
| Sensor input current  | approx. 1 mA               |
| Connection technology | 2-, 3-, 4-conductor        |
| Connection method     | Pluggable screw connection |

## Output data

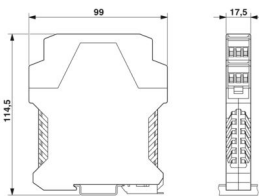
Signal: Voltage output

|                                 |              |
|---------------------------------|--------------|
| Voltage output signal           | 0 V ... 10 V |
| Max. voltage output signal      | 15 V         |
| Output voltage with wire break  | > 11 V       |
| Load/output load voltage output | ≥ 10 kΩ      |

## Connection data

|                                  |   |
|----------------------------------|---|
| Connection method                | Screw connection                            |
| Stripping length                 | 8 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      | 24 ... 14                                   |

## Dimensions

|                     |  |
|---------------------|--|
| Dimensional drawing |  |
| Width               | 17.5 mm  |
| Height              | 99 mm  |
| Depth               | 114.5 mm   |

## Material specifications

|                  |                             |
|------------------|-----------------------------|
| Color            | green (RAL 6021)            |
| Housing material | Polyamide PA non-reinforced |

## Environmental and real-life conditions

Ambient conditions

|                                 |                  |
|---------------------------------|------------------|
| Degree of protection            | IP20             |
| Ambient temperature (operation) | -20 °C ... 65 °C |

## Approvals

CE

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|             |              |
|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

UL, USA/Canada

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

## Mounting

|                   |     |
|-------------------|-----|
| Mounting position | any |
|-------------------|-----|

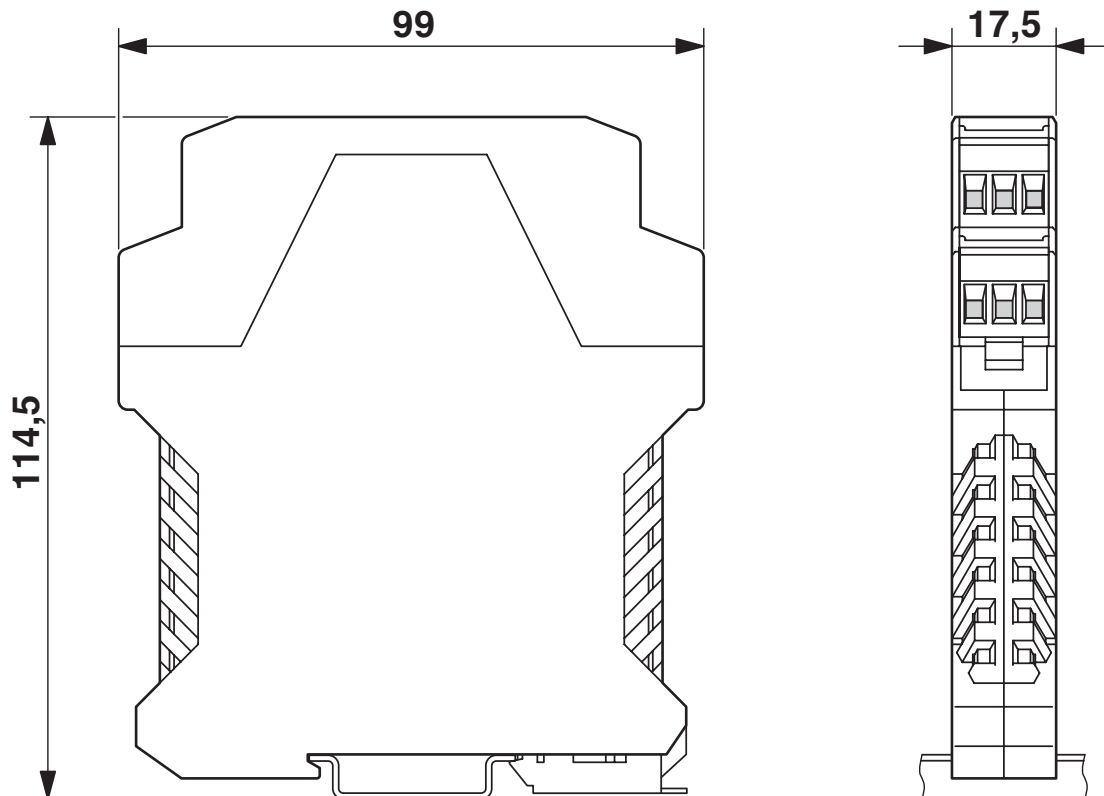
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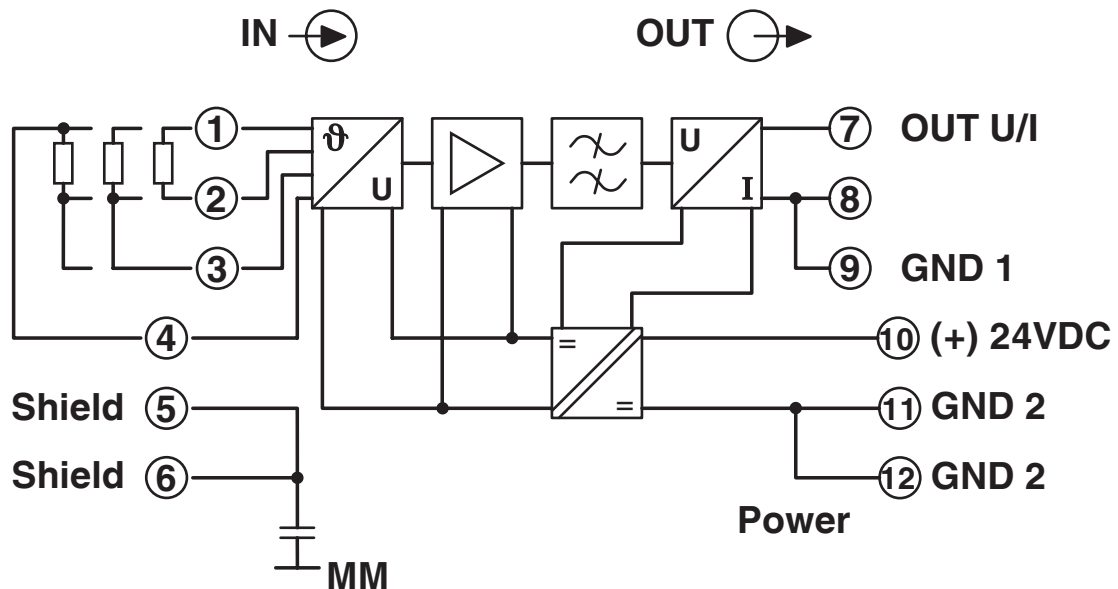
<https://www.phoenixcontact.com/us/products/2810311>

## Drawings

Dimensional drawing



Circuit diagram



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## Environmental product compliance

### 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.) | No substance above 0.1 wt% |
|-------------------------------------|----------------------------|

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