

Resistance thermometer measuring transducer - MINI MCR-2-RTD-UI - 2902049

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Configurable temperature transducer with plug-in connection technology for connecting 2, 3, and 4-conductor resistance thermometers and resistance-type sensors. Configurable via DIP switch or software. Screw connection technology, standard configuration

Product Description

Configurable, 3-way isolated temperature transducer with plug-in connection technology. The device is suitable for the connection of resistance thermometers and remote resistance-type sensors with 2, 3, and 4-conductor connection technology. The measured values are converted into a linear and freely adjustable current or voltage signal. You can configure the device using one of the free software solutions. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). The measuring transducer supports fault monitoring and NFC communication.



Key Commercial Data

| | |
|--------------------------------------|---|
| Packing unit | 1 pc |
| GTIN |  4 046356 649759 |
| GTIN | 4046356649759 |
| Weight per Piece (excluding packing) | 110.000 g |
| Custom tariff number | 85437090 |
| Country of origin | Germany |
| Sales Key | CK1421 |

Technical data

Note

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

Dimensions

| | |
|--------|-----------|
| Width | 6.2 mm |
| Height | 109.81 mm |
| Depth | 119.2 mm |

Ambient conditions

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Ambient conditions

| | |
|---|---|
| Ambient temperature (operation) | -40 °C ... 70 °C |
| Ambient temperature (storage/transport) | -40 °C ... 85 °C |
| Permissible humidity (operation) | 5 % ... 95 % (non-condensing) |
| Degree of protection | IP20 (not assessed by UL) |
| Noise immunity | EN 61000-6-2 When being exposed to interference, there may be minimal deviations. |

Input data

| | |
|-------------------------------------|--|
| Configurable/programmable | Yes |
| Sensor types (RTD) that can be used | Pt, Ni, Cu sensors |
| Linear resistance measuring range | 0 Ω ... 4000 Ω (Minimum measuring span: 10% of the selected measuring range) |
| Sensor input current | approx. 200 μA |
| Temperature measuring range | -200 °C ... 850 °C (Range depends on sensor type, range can be set freely via software or in increments from -150°C to 850°C via DIP switches) |
| Connection technology | 2-, 3-, 4-conductor |

Output data

| | |
|---------------------------------|--|
| Number of outputs | 1 |
| Configurable/programmable | Yes |
| Voltage output signal | 0 V ... 5 V (via DIP switch) |
| | 1 V ... 5 V (via DIP switch) |
| | 0 V ... 10 V (via DIP switch) |
| | 10 V ... 0 V (via DIP switch) |
| | 0 V ... 10.5 V (can be set via software) |
| Current output signal | 0 mA ... 20 mA (via DIP switch) |
| | 4 mA ... 20 mA (via DIP switch) |
| | 20 mA ... 0 mA (via DIP switch) |
| | 20 mA ... 4 mA (via DIP switch) |
| | 0 mA ... 21 mA (can be set via software) |
| Max. output voltage | approx. 12.3 V |
| Max. output current | 24.6 mA |
| Short-circuit current | < 31.5 mA |
| Load/output load voltage output | ≥ 10 kΩ |
| Load/output load current output | ≤ 600 Ω (at 20 mA) |
| Ripple | < 10 mV _{rms} |
| | < 10 mV _{rms} (at 600 Ω) |

Power supply

| | |
|----------------------|--|
| Supply voltage range | 9.6 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 |
|----------------------|--|

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Power supply

| | |
|-----------------------------|---|
| | supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715)) |
| Typical current consumption | 32 mA (24 V DC) |
| | 63 mA (12 V DC) |
| Power consumption | ≤ 850 mW (at I _{OUT} = 20 mA, 9.6 V DC, 600 Ω load) |

Connection data

| | |
|----------------------------------|--|
| Connection method | Screw connection |
| Stripping length | 10 mm |
| Screw thread | M3 |
| Conductor cross section solid | 0.2 mm ² ... 1.5 mm ² (with ferrule) |
| | 0.14 mm ² ... 2.5 mm ² (without ferrule) |
| Conductor cross section flexible | 0.14 mm ² ... 2.5 mm ² |
| Conductor cross section AWG | 24 ... 12 (flexible) |
| Torque | 0.5 Nm ... 0.6 Nm |

General

| | |
|--|--|
| Transmission error resistance thermometer | 0.1 % * 350 K / set measuring range; 0.1 % > 350 K (Pt/Ni) |
| | 0.3 % * 200 K / set measuring range; 0.3 % > 200 K (Cu) |
| Transmission error resistance-type sensor | 2 Ω |
| Maximum temperature coefficient | 0.01 %/K |
| Protective circuit | Transient protection |
| Electrical isolation | Reinforced insulation in accordance with IEC 61010-1 |
| Overvoltage category | II |
| Degree of pollution | 2 |
| Rated insulation voltage | 300 V (effective) |
| Test voltage, input/output/supply | 3 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. |
| 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. |
| 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 |

EMC data

| | |
|-----------------------|--------------------------|
| Designation | Electromagnetic RF field |
| Standards/regulations | EN 61000-4-3 |

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EMC data

| | |
|--|-------------------------|
| Typical deviation from the measuring range final value | 0.06 % |
| Designation | Fast transients (burst) |
| Standards/regulations | EN 61000-4-4 |
| Typical deviation from the measuring range final value | 0.1 % |
| Designation | Conducted interferences |
| Standards/regulations | EN 61000-4-6 |
| Typical deviation from the measuring range final value | 0.07 % |

Standards and Regulations

| | |
|-------------------------------|--|
| Electromagnetic compatibility | Conformance with EMC directive |
| Noise emission | EN 61000-6-4 |
| 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 | Reinforced insulation in accordance with IEC 61010-1 |
| Conformance | CE-compliant |
| ATEX | # II 3 G Ex nA IIC T4 Gc X |
| UL, USA/Canada | UL 508 Listed |
| | Class I, Div. 2, Groups A, B, C, D T6 |
| | Class I, Zone 2, Group IIC T6 |

Conformance/approvals

| | |
|----------------|---------------------------------------|
| Designation | CE |
| Identification | CE-compliant |
| Designation | ATEX |
| Identification | # II 3 G Ex nA IIC T4 Gc X |
| Designation | UL, USA/Canada |
| Identification | UL 508 Listed |
| | Class I, Div. 2, Groups A, B, C, D T6 |
| | Class I, Zone 2, Group IIC T6 |
| Designation | Shipbuilding approval |
| Identification | C, EMC2 |
| Certificate | DNV GL 14445-15HH |

Environmental Product Compliance

| | |
|------------|--|
| REACH SVHC | Lead 7439-92-1 |
| China RoHS | Environmentally Friendly Use Period = 50 years |

<https://www.phoenixcontact.com/gb/products/2902049>



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Environmental Product Compliance

| | |
|--|---|
| | For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration" |
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