

MCR-T-UI-NC - Temperature measuring transducer



2814100

<https://www.phoenixcontact.com/us/products/2814100>

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The figure shows version
MCR-T-UI

MCR-T module, programmable temperature transducer, unconfigured, for thermocouple sensors and resistance temperature detectors, in 2-, 3- or 4-conductor technology

Your advantages

- Freely programmable via MCR/PI-CONF-WIN
- With transistor switching output
- Inverse output signal ranges as an option
- For resistance thermometers and thermocouples
- Measure differential temperatures

Commercial data

| | |
|--------------------------------------|--------------------------------|
| Item number | 2814100 |
| Packing unit | 1 pc |
| Note | Made to order (non-returnable) |
| Sales key | C401 |
| Product key | DK1XXX |
| GTIN | 4017918139421 |
| Weight per piece (including packing) | 140.5 g |
| Weight per piece (excluding packing) | 118.5 g |
| Customs tariff number | 85437090 |
| Country of origin | DE |

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Technical data

Product properties

| | |
|--------------|-------------------------|
| Product type | Temperature transmitter |
|--------------|-------------------------|

Electrical properties

| | |
|---|---|
| Typical cold point errors | 1.5 K |
| Cold point error, max. | ≤ 3 K |
| Maximum power dissipation for nominal condition | 1.52 W |
| Test voltage input/output | 1 kV AC (50 Hz, 60 s) |
| Test voltage input/power supply | 1 kV AC (50 Hz, 60 s) |
| Maximum temperature coefficient | ≤ 0.01 %/K |
| Temperature coefficient, typical | 0.005 %/K |
| Maximum transmission error | ≤ 0.1 % (of maximum range, ±6 mV or ±12 µA at output) |

Supply

| | |
|-----------------------------|---------------------|
| Supply voltage range | 18 V DC ... 30 V DC |
| Typical current consumption | 40 mA |
| Max. current consumption | ≤ 60 mA |

Input data

Signal

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

Measurement

| | |
|---|--|
| Configurable/programmable | Yes, unconfigured |
| Sensor types (RTD) that can be used | Pt, Ni, Cu sensors |
| Sensor types that can be used (TC) | U, T, L, J, E, K, N, S, R, B, C, W, HK |
| Temperature measuring range | Depending on sensor type used |
| Temperature measuring range | min. 20 K (RTD, excluding CU10 - 100 K) min. 50 K (TC, except type B 100 K) |
| Temperature measuring range: Pt-Sensoren (DIN / SAMA) | -200 °C ... 850 °C (freely adjustable) |
| Temperature measuring range: Ni-Sensoren (DIN / SAMA) | -60 °C ... 180 °C (freely adjustable) |
| Temperature measuring range: Cu-Sensoren (SAMA) | -70 °C ... 500 °C (freely adjustable) |
| Temperature measuring range: Ni 1000 (Landris & Gyr) | -50 °C ... 160 °C (freely adjustable) |
| Temperature measuring range: Cu 50 | -50 °C ... 200 °C (freely adjustable) |
| Temperature measuring range: Cu 53 | -50 °C ... 180 °C (freely adjustable) |
| Temperature measuring range: KTY 81-110 (Philips) | -55 °C ... 150 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ U | -200 °C ... 600 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ T | -200 °C ... 400 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ L | -200 °C ... 900 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ J | -210 °C ... 1200 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ E | -226 °C ... 1000 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ K | -200 °C ... 1372 °C (freely adjustable) |

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| | |
|---|---|
| Temperature measuring range: Thermoelement Typ N | -200 °C ... 1300 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ S | -50 °C ... 1760 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ R | -50 °C ... 1760 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ B | 500 °C ... 1820 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ C | -18 °C ... 2316 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ W | -18 °C ... 2316 °C (freely adjustable) |
| Temperature measuring range: Thermoelement Typ HK | -200 °C ... 800 °C (freely adjustable) |
| Temperature measuring range: Pt 10 | -200 °C ... 850 °C (freely adjustable) |
| Temperature measuring range: Pt 100 | -200 °C ... 850 °C (freely adjustable) |
| Temperature measuring range: Pt 500 | -200 °C ... 850 °C (freely adjustable) |
| Temperature measuring range: Pt 1000 | -200 °C ... 850 °C (freely adjustable) |
| Temperature measuring range: Ni 10 | -60 °C ... 180 °C (freely adjustable) |
| Temperature measuring range: Ni 100 | -60 °C ... 180 °C (freely adjustable) |
| Temperature measuring range: Ni 500 | -60 °C ... 180 °C (freely adjustable) |
| Temperature measuring range: Ni 1000 | -60 °C ... 180 °C (freely adjustable) |
| Sensor input current | 250 µA (Resistance thermometer) |
| Linear resistance measuring range | 0 Ω ... 8000 Ω (freely adjustable, min. measuring range 100 Ω) |
| Linear mV signal range | -20 mV ... 2400 mV (freely adjustable, minimum measuring range span of 10 mV) |
| Connection technology | 2-, 3-, 4-conductor |
| Connection method | Pluggable screw connection |
| Protective circuit | Transient protection Surge protection 30 V DC |

Output data

Frequency:

| | |
|---------------------------|----|
| Configurable/programmable | no |
|---------------------------|----|

Switching: Transistor

| | |
|-------------------------|--|
| Output description | Can carry a load of 100 mA, switches supply voltage (not protected against short-circuit); locked in case of order-specific configuration, otherwise freely programmable through MCR/PI-CONF-WIN |
| Continuous load current | 100 mA |
| Output voltage range | 18 V DC ... 30 V DC (switches supply voltage, not short-circuit resistant) |

Signal: Voltage output / current output

| | |
|---------------------------|-------------------|
| Configurable/programmable | Yes, unconfigured |
| Voltage output signal | 0 V ... 10 V |
| | 0 V ... 5 V |
| | -5 V ... 5 V |
| | -10 V ... 10 V |
| | 10 V ... 0 V |
| | 5 V ... 0 V |
| | 10 V ... -10 V |

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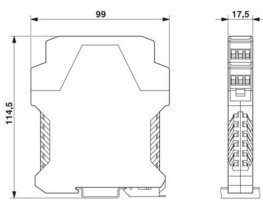
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| | |
|--|-----------------------|
| | 5 V ... -5 V |
| | 1 V ... 5 V |
| Max. voltage output signal | ± 12 V |
| Current output signal | 0 mA ... 20 mA |
| | 4 mA ... 20 mA |
| | 20 mA ... 0 mA |
| | 20 mA ... 4 mA |
| Max. current output signal | 24 mA |
| Output voltage range with wire break | -12 V ... 12 V |
| Output voltage range with overrange/underrange | -12 V ... 12 V |
| Output current range with wire break | 0 A ... 24 mA |
| Output current range with overrange/underrange | 0 A ... 24 mA |
| Load/output load voltage output | ≥ 10 kΩ |
| Load/output load current output | ≤ 500 Ω |
| Ripple | < 20 mV _{PP} |
| Protective circuit | Transient protection |
| D/A converter resolution | ± 12 bit |

Connection data

| | |
|----------------------------------|---|
| Connection method | Pluggable screw connection |
| Stripping length | 8 mm |
| Screw thread | M3 |
| Conductor cross-section rigid | 0.2 mm ² ... 2.5 mm ² |
| Conductor cross-section flexible | 0.2 mm ² ... 2.5 mm ² |
| 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

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| | |
|---------------------------------|------------------|
| Ambient temperature (operation) | -20 °C ... 65 °C |
|---------------------------------|------------------|

Approvals

CE

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

UL, USA/Canada

| | |
|----------------|---|
| Identification | Class I, Div. 2, Groups A, B, C, D or Non-Hazardous Locations |
|----------------|---|

GL

| | |
|----------------|--------|
| Identification | DNV GL |
|----------------|--------|

Mounting

| | |
|-------------------|-------------------|
| Mounting type | DIN rail mounting |
| Mounting position | any |

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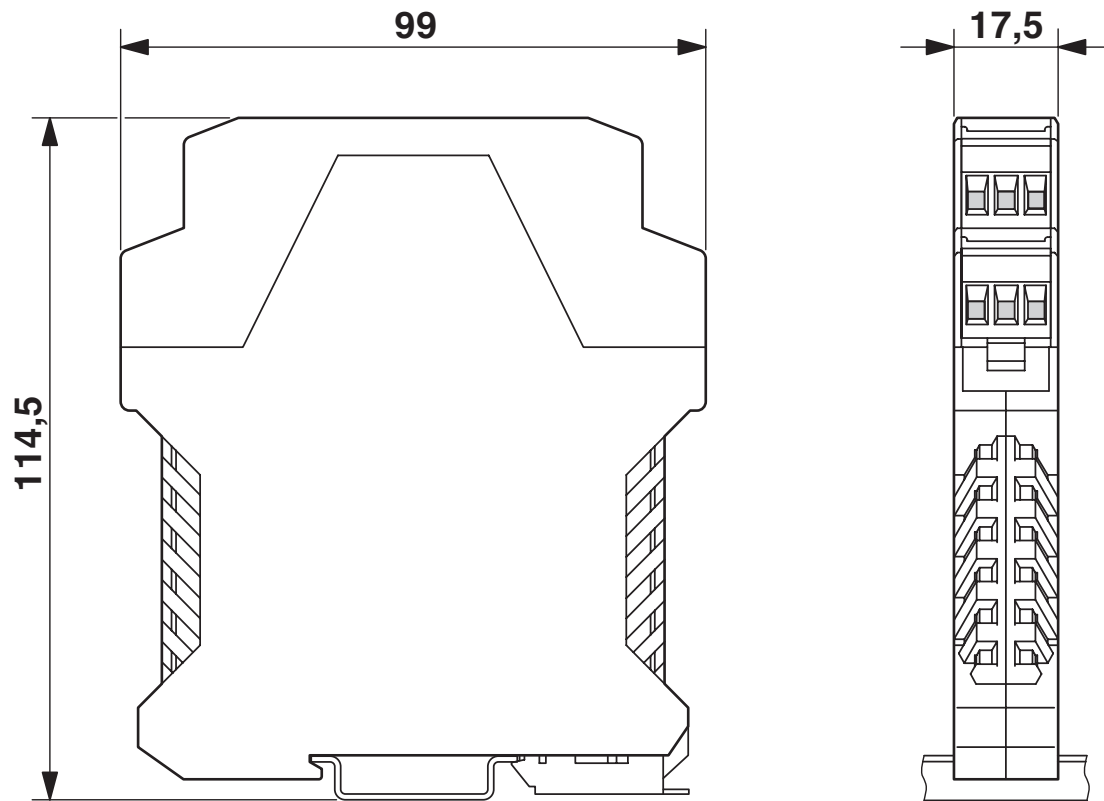
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Drawings

Dimensional drawing

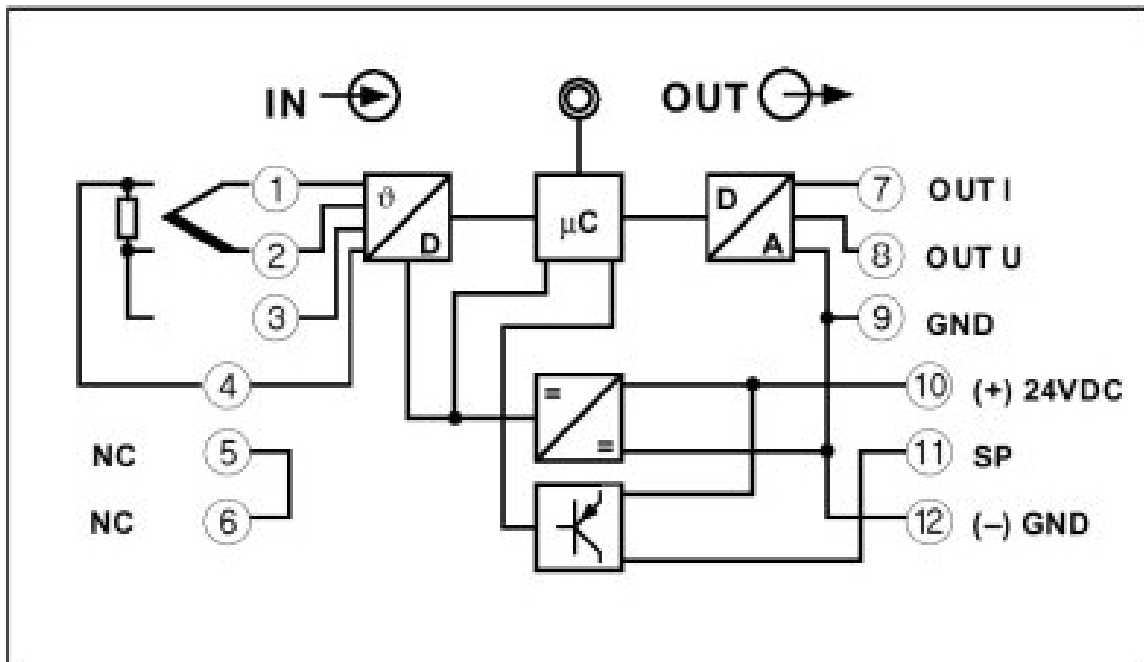


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Circuit diagram



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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.) | Hexahydromethylphthalic anhydride(CAS: n/a) |
| | Lead(CAS: 7439-92-1) |

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