

MCR-T-UI - Temperature measuring transducer



2814090

<https://www.phoenixcontact.com/us/products/2814090>

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MCR-T module, programmable temperature transducer, configured, 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	2814090
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to order (non-returnable)
Sales key	C401
Product key	CK1821
Catalog page	Page 136 (C-7-2013)
Weight per piece (including packing)	139.7 g
Weight per piece (excluding packing)	138.8 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
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Product properties

Product type	Temperature transmitter
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Electrical properties

Typical cold point errors	1.5 K
Cold point error, max.	≤ 3 K
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
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Measurement

Configurable/programmable	Yes, preconfigured
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)
Temperature measuring range	min. 50 K (TC, except type B 100 K)
Sensor type:	-200 °C ... 850 °C (freely adjustable)
	-60 °C ... 180 °C (freely adjustable)
	-70 °C ... 500 °C (freely adjustable)
	-50 °C ... 160 °C (freely adjustable)
	-50 °C ... 200 °C (freely adjustable)
	-50 °C ... 180 °C (freely adjustable)
	-55 °C ... 150 °C (freely adjustable)
	-200 °C ... 600 °C (freely adjustable)
	-200 °C ... 400 °C (freely adjustable)

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	-200 °C ... 900 °C (freely adjustable)
	-210 °C ... 1200 °C (freely adjustable)
	-226 °C ... 1000 °C (freely adjustable)
	-200 °C ... 1372 °C (freely adjustable)
	-200 °C ... 1300 °C (freely adjustable)
	-50 °C ... 1760 °C (freely adjustable)
	-50 °C ... 1760 °C (freely adjustable)
	500 °C ... 1820 °C (freely adjustable)
	-18 °C ... 2316 °C (freely adjustable)
	-18 °C ... 2316 °C (freely adjustable)
	-200 °C ... 800 °C (freely adjustable)
	-200 °C ... 850 °C (freely adjustable)
	-200 °C ... 850 °C (freely adjustable)
	-200 °C ... 850 °C (freely adjustable)
	-200 °C ... 850 °C (freely adjustable)
	-60 °C ... 180 °C (freely adjustable)
	-60 °C ... 180 °C (freely adjustable)
	-60 °C ... 180 °C (freely adjustable)
	-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

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

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

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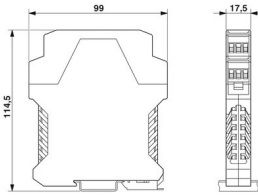
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	5 V ... 0 V
	10 V ... -10 V
	5 V ... -5 V
	1 V ... 5 V
Max. voltage output signal	± 12 V
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	20 mA ... 0 mA
	20 mA ... 4 mA
Max. current output signal	24 mA
Output voltage range with wire break	-12 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

Housing material	Polyamide PA non-reinforced
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Environmental and real-life conditions

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Ambient conditions

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

CE

Certificate	CE-compliant
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UL, USA/Canada

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

Identification	DNV GL
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Mounting

Mounting position	any
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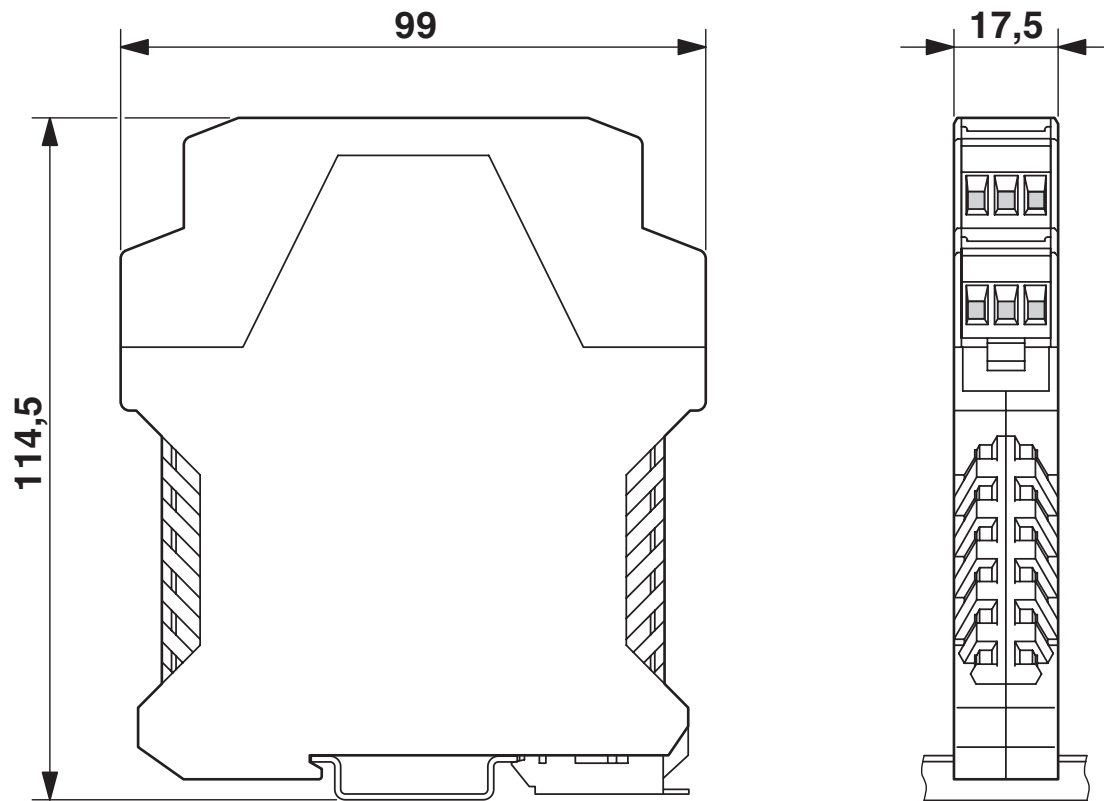
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Drawings

Dimensional drawing

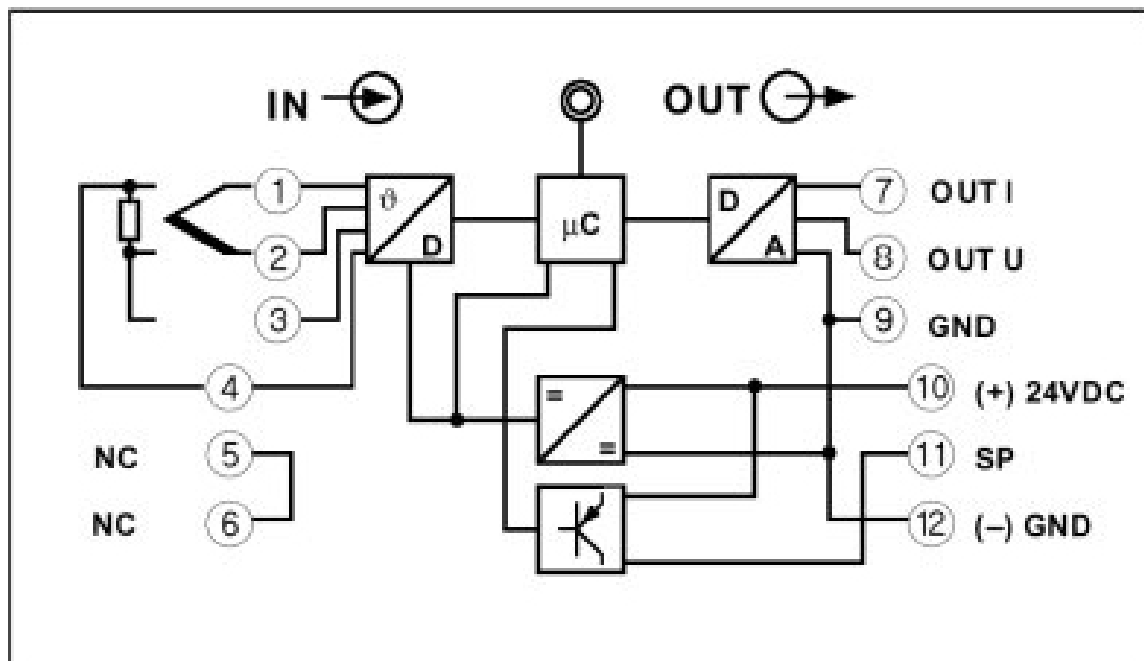


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Circuit diagram



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Classifications

ECLASS

ECLASS-11.0	27210129
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Environmental product compliance

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

MCR-TTL-RS232-E - Adapter cable

2814388

<https://www.phoenixcontact.com/us/products/2814388>

Software adapter cable (Stereo jack connector/D-SUB 25-pos.), 1.2 m length, for programming MCR-T-..., MCR-S-... and MCR-f-... modules



CM-KBL-RS232/USB - Cable

2881078

<https://www.phoenixcontact.com/us/products/2881078>

Connecting cable D-9-SUB to USB, with adapter D-9-SUB to D-25-SUB.



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