MACX MCR-SL-RTD-I-SP-NC - Temperature measuring transducer

2924320

https://www.phoenixcontact.com/us/products/2924320

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Temperature transducer, converts signals from resistance temperature detectors and resistors into 0/4 - 20 mA analog signals. Freely programmable, 3-way electrical isolation. Replacement item: 1050201 MACX MCR-RTD-I-SP.

Your advantages

- Power supply possible via DIN rail connector
- Installation in zone 2, protection type "n" (EN 60079-15) permitted
- Programming during operation and also voltage-free using IFS-USB-PROG-ADAPTER programming adapter
- 3-way electrical isolation
- Configuration via software (FDT/DTM): sensor type, connection technology, measuring range, measuring unit, filter, alarm signal, and output range
- Output: 0 mA ... 20 mA or 4 mA ... 20 mA
- Input for resistance thermometers and resistance-type sensors
- Status indicator for supply voltage, cable, sensor, and module errors

Commercial data

Item number	2924320
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C402
Product key	DK1115
GTIN	4046356503884
Weight per piece (including packing)	168.3 g
Weight per piece (excluding packing)	139 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Product properties

Product type	Temperature transmitter
Application	Temperature

Insulation characteristics

Overvoltage category	II
Pollution degree	2

Electrical properties

Alignment span	± 5 %
Alignment zero	± 5 %
Electrical isolation	3-way isolation
Step response (0–99%)	≤ 1100 ms (when oversampling = 10 and moving average value = 2)
Temperature coefficient, typical	0.01 %/K

Electrical isolation Input/output/power supply

Rated insulation voltage	300 V_{rms}
Test voltage	2.5 kV AC (50 Hz, 60 s)
Insulation	Safe isolation in accordance with IEC/EN 61010-1

Electrical isolation Input/output

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)

Electrical isolation Input/power supply

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)

Supply

Nominal supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (24 V DC, -20 % ... +25 %)
Max. current consumption	< 40 mA (24 V DC)
Power dissipation	< 1 W

Input data

Signal

Number of inputs	1
Input signal	Temperature
	Resistor

Measurement

Sensor types (RTD) that can be used	Pt, Ni, Cu sensors: 2, 3, 4-wire
Temperature measuring range	-200 °C ... 850 °C (Range depending on the sensor type)
Linear resistance measuring range	0 Ω ... 2000 Ω

Max. permissible overall conductor resistance	50 Ω (Per cable)
Sensor input current	200 µA ... 1 mA
Temperature measuring range	> 50 K

Output data

Switching:

Configurable/programmable	no

Signal

Output description	Current output
Number of outputs	1
Configurable/programmable	Yes
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
Load/output load current output	≤ 500 Ω
Output ripple (current)	< 50 μA_{PP}
	< 10 μA_{rms}
Behavior in the event of a sensor error	As per NE 43 or can be freely defined

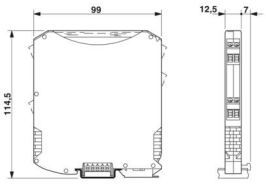
Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross-section rigid	0.2 mm² ... 1.5 mm²
Conductor cross-section flexible	0.2 mm² ... 1.5 mm²
Conductor cross-section AWG	24 ... 16

Signaling

Status display	LED supply voltage, PWR (green)
	Red LED, flashing 2.8 Hz (cable error, sensor error on input or output, ERR)
	Red LED, flashing 1.2 Hz (simulation mode, ERR)
	Red LED, permanently on (module error, ERR)

Dimensions

Dimensional drawing	
Width	12.5 mm
Height	116 mm
Depth	114.5 mm

Material specifications

Color	gray (RAL 7042)
Flammability rating according to UL 94 (Housing)	V0 (Housing)
Housing material	PA 6.6-FR

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-20 °C ... 60 °C (Any mounting position)
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
Note	and EN 61326-1

ATEX

Identification	⟨Ex⟩ II 3G Ex nA ic IIC T4 Gc X

UL, USA/Canada

Identification	UL 508 Listed
	UL 61010 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC T4

Shipbuilding approval

Certificate	GL 86 644-10HH

GL

Identification	C, EMC1

EMC data

Noise immunity	EN 61000-6-2
Note	When being exposed to interference, there may be minimal deviations.

Noise emission

Standards/regulations	EN 61000-6-4

Electromagnetic HF field

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

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

Standards and regulations

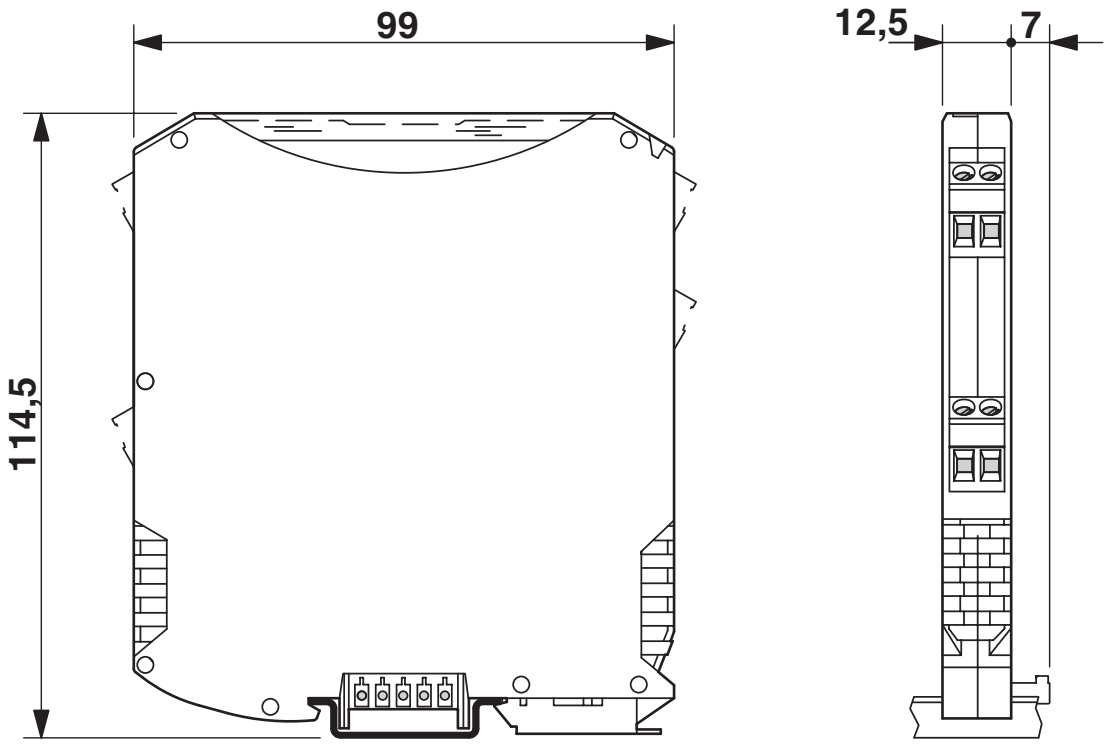
Electrical isolation	3-way isolation

Mounting

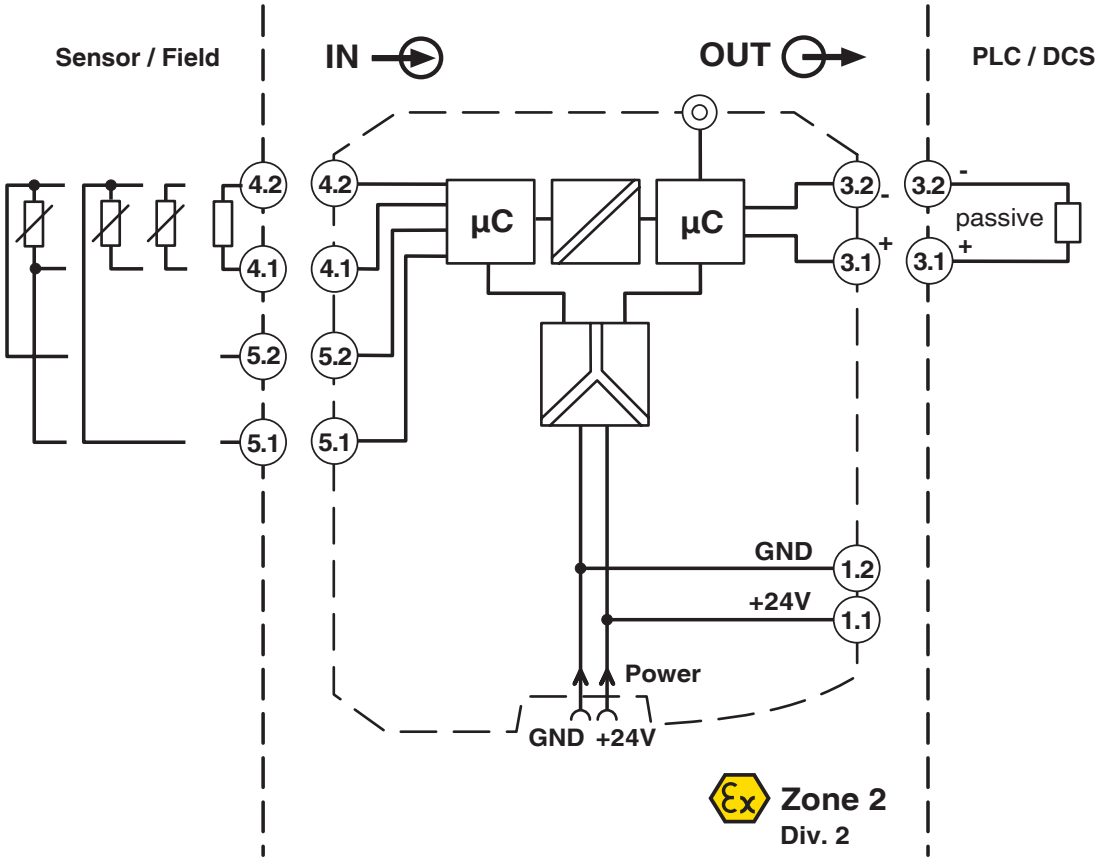
Mounting type	DIN rail mounting

Drawings

Dimensional drawing



Block diagram



Classifications

UNSPSC

UNSPSC 21.0	41112105

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	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.)	No substance above 0.1 wt%

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