

MCR-FL-T-LP-I - Temperature measuring transducer



2864561

<https://www.phoenixcontact.com/us/products/2864561>

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MCR temperature measuring transducer: programmable, loop-powered, for resistance thermometers, thermocouples, resistance-type sensors and voltage sensors.

Your advantages

- Freely programmable via MCR/PI-CONF-WIN
- Two-wire transmitter for resistance thermometers, thermocouples, resistance-type sensors, and voltage sensors

Commercial data

Item number	2864561
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C401
Product key	DK1143
GTIN	4017918899820
Weight per piece (including packing)	103.6 g
Weight per piece (excluding packing)	103.6 g
Customs tariff number	85437090
Country of origin	DE

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Technical data

Product properties

Product type	Temperature transmitter
Configuration	Using MCR-PI-CONF-WIN configuration software package

System properties

Functionality

Configuration	Using MCR-PI-CONF-WIN configuration software package
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Electrical properties

Switch-on delay	4 s
Maximum power dissipation for nominal condition	122.5 mW
Test voltage input/output	2 kV AC (50 Hz, 60 s)
Step response (10-90%)	< 2 s
Transmission error voltage sensor	±20 µV (-10 mV ... 100 mV)
Transmission error thermocouples	typ. 0.5 K (K, J, T, E, L, U), 1.0 K (N, C, D), 2.0 K (S, B, R)
Transmission error resistance-type sensor	±0.1 Ω (10 ... 400 Ω), ±1.5 Ω (10 ... 2000 Ω)
Transmission error resistance thermometer	0.2 K (Pt 100, Ni 100), 0.5 K (Pt 500, Ni 500), 0.3 K (Pt 1000, Ni 1000)

Supply

Designation	Loop-powered
Supply voltage range	12 V DC ... 35 V DC
Max. current consumption	< 3.5 mA

Input data

Signal

Number of inputs	1
Input signal	Temperature

Measurement

Configurable/programmable	Yes, programmable
Sensor types (RTD) that can be used	Pt, Ni (100, 500, 1000); min. measurement range 10 K
Sensor types that can be used (TC)	B, C, D, E, J, K, L, N, R, S, T, U; minimum measurement range 50 K/500 K
Temperature measuring range: Pt 100	-200 °C ... 850 °C (freely adjustable)
Temperature measuring range: Pt 500	-200 °C ... 250 °C (freely adjustable)
Temperature measuring range: Pt 1000	-200 °C ... 250 °C (freely adjustable)
Temperature measuring range: Ni 100	-60 °C ... 250 °C (freely adjustable)
Temperature measuring range: Ni 500	-60 °C ... 150 °C (freely adjustable)
Temperature measuring range: Ni 1000	-60 °C ... 150 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ B	0 °C ... 1820 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ C	0 °C ... 2320 °C (freely adjustable)

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Temperature measuring range: Thermoelement Typ D	0 °C ... 2495 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ E	-270 °C ... 1000 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ J	-210 °C ... 1200 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ K	-270 °C ... 1372 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ L	-200 °C ... 900 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ N	-270 °C ... 1300 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ R	-50 °C ... 1760 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ S	-50 °C ... 1760 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ T	-270 °C ... 400 °C (freely adjustable)
Temperature measuring range: Thermoelement Typ U	-200 °C ... 600 °C (freely adjustable)
Linear resistance measuring range	Resistance-type sensor from 10 Ω to 400 Ω and from 10 Ω to 2000 Ω; minimum measurement range 10 Ω/100 Ω
Linear mV signal range	-10 mV ... 100 mV (min. measurement range 5 mV)
Connection technology	2-, 3-, 4-conductor

Output data

Frequency:

Configurable/programmable	no
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Signal: Current output

Number of outputs	1
Configurable/programmable	Yes
Current output signal	4 mA ... 20 mA 20 mA ... 4 mA
Output current with wire break	≤ 3.6 mA or ≥ 21 mA (adjustable)
Output current with short-circuit	≤ 3.6 mA or ≥ 21 mA (adjustable, not for thermocouples)
Output current range with overrange/underrange	≤ 20.5 mA / ≥ 3.8 mA (linear increase/decrease)
Output current limit	≤ 23 mA
Load/output load current output	max (V _{supply} -12 V) / 0.023 A (current output)

Connection data

Connection method	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

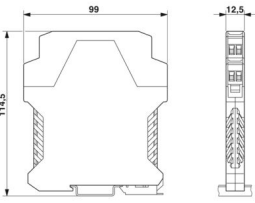
Dimensions

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Dimensional drawing	
Width	12.5 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)	-40 °C ... 85 °C

Approvals

CE

Certificate	CE-compliant
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UL, USA/Canada

Identification	Class I, Div. 2, Groups A, B, C, D
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EMC data

Noise immunity	EN 61326-1 (IEC 61326) and NAMUR NE 21
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Noise emission

Standards/regulations	EN 61326-1 (IEC 61326) and NAMUR NE 21
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Mounting

Mounting type	DIN rail mounting
Mounting position	any

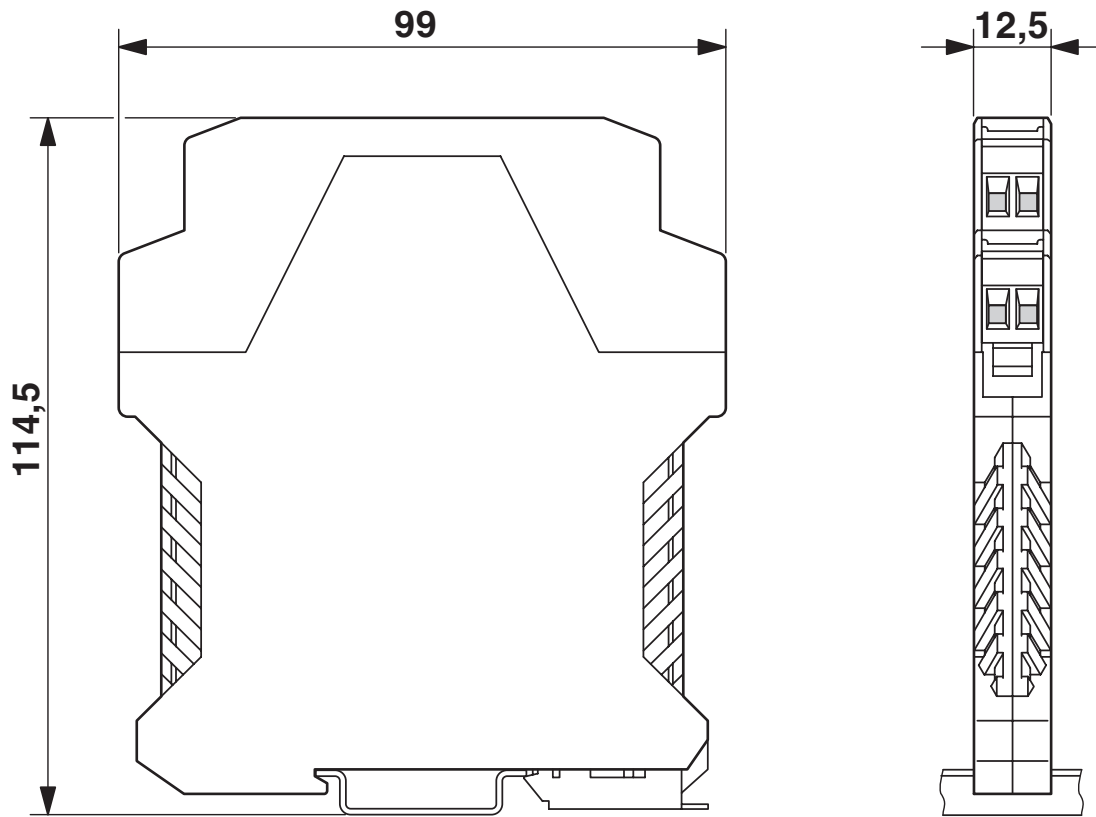
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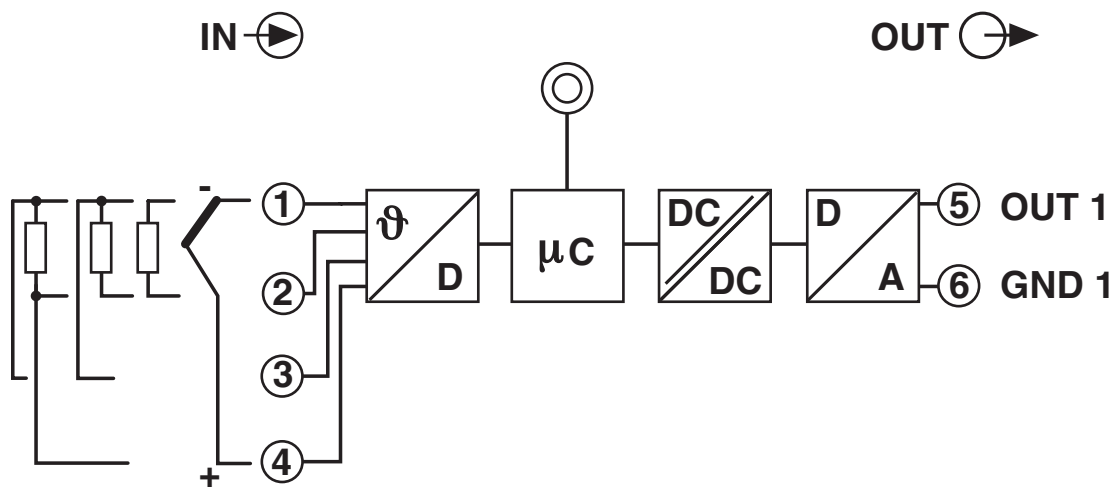
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Drawings

Dimensional drawing



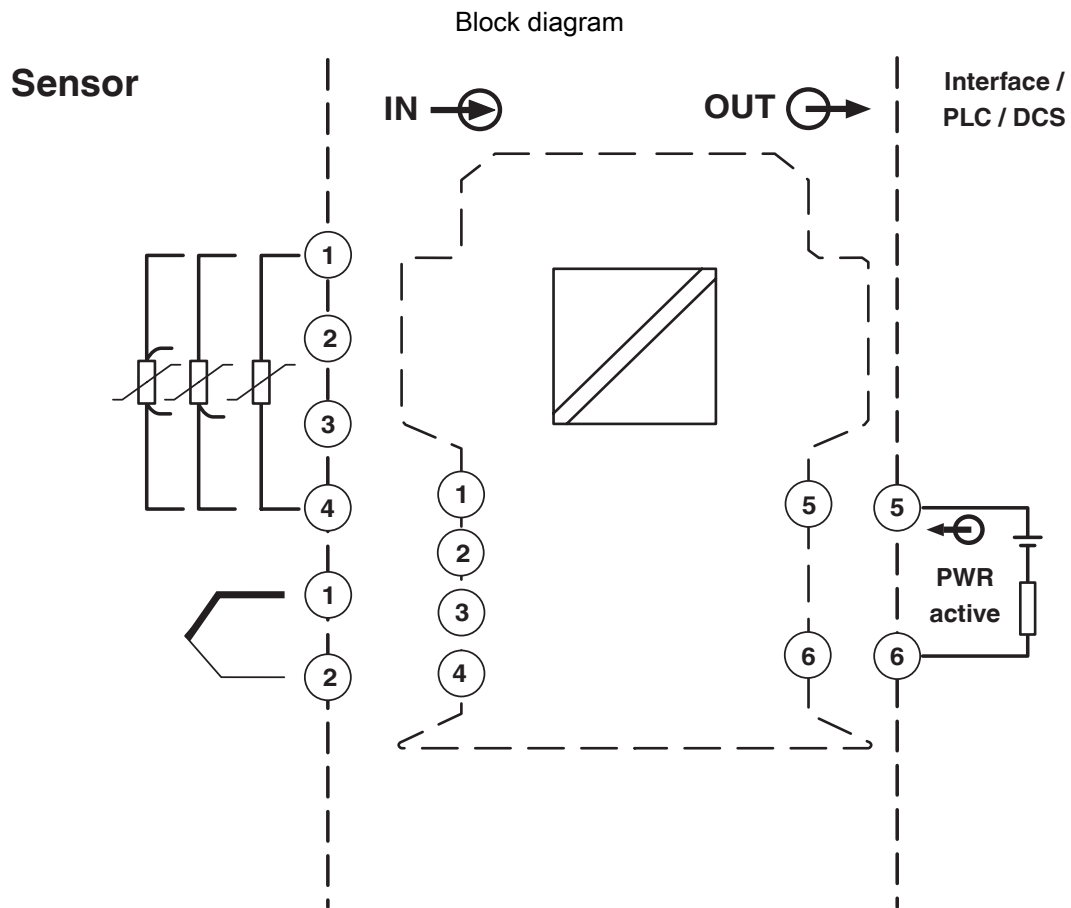
Circuit diagram



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Block diagram MCR-FL-T-LP-I

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Classifications

UNSPSC

UNSPSC 21.0	41112105
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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