MINI MCR-SL-PT100-LP-NC - Temperature measuring transducer

2810308

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Configurable loop-powered temperature transducer for Pt 100 temperature sensors, configured via DIP switches, with screw connection, not preconfigured

Your advantages

- 2-, 3-, 4-conductor Pt 100 sensors
- Highly-compact loop-powered temperature transducer for electrical isolation, conversion, amplification, and filtering of Pt 100 signals to create standard signals
- Does not require additional auxiliary voltage
- Error indication via diagnostic LED and analog signal
- 2-way isolation
- Input signals can be configured via DIP switches
- Supplied by an output loop
- Temperature measuring range of -150 °C ... 300 °C

Commercial data

Item number	2810308
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C403
Product key	DK1135
GTIN	4046356134668
Weight per piece (including packing)	60.1 g
Weight per piece (excluding packing)	68.4 g
Customs tariff number	85437090
Country of origin	DE

Technical data

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area

Product properties

Product type	Temperature transmitter
Product family	MINI Analog
No. of channels	1
Configuration	DIP switches

System properties

Functionality

Configuration	DIP switches

Electrical properties

Electrical isolation	2-way isolation
Electrical isolation between input and output	yes
Linearity error	< 0.05 % (for full measuring range)
Maximum power dissipation for nominal condition	< 42 mW
Step response (0–99%)	< 200 ms
Maximum temperature coefficient	< 0.02 %/K
Transmission error in the set measuring range	((90 K / set measuring range [K]) + 0.05)%
Transmission error in the full measuring range	≤ 0.25 %

Electrical isolation

Overvoltage category	II
Pollution degree	2

Electrical isolation Input/output/power supply IEC/EN 61010

Standards/regulations	IEC/EN 61010
Rated insulation voltage	30 V AC
	50 V DC
Test voltage	1.5 kV AC (50 Hz, 60 s)
Insulation	Basic insulation

Supply

Designation	Loop-powered
Supply voltage range	12 V DC ... 30 V DC
Max. current consumption	< 4.5 mA (without signal current)
Power consumption	< 150 mW (without signal current)

Input data

Signal

Number of inputs	1

Measurement

Configurable/programmable	Yes, unconfigured
Sensor types (RTD) that can be used	Pt 100 (IEC 60751/EN 60751)
Temperature measuring range	min. 50 K
Temperature measuring range: Pt 100	-150 °C ... 300 °C (configurable)
Sensor input current	1 mA (constant)
Max. permissible overall conductor resistance	10 Ω (Per cable)
Connection technology	2-, 3-, 4-conductor
Error detection limit (short-circuit)	< 30 Ω
Error detection limit (underrange)	30 Ω ≤ (start span - 2.5% span)
Error detection limit (overrange)	(end span + 2.5% span) ≤ approx. 254 Ω
Error detection limit (wire break)	> approx. 254 Ω

Output data

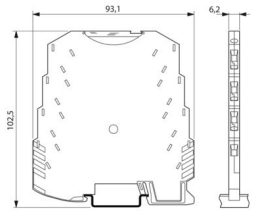
Signal: Current

Number of outputs	1
Configurable/programmable	Yes, unconfigured
Current output signal	4 mA ... 20 mA
	20 mA ... 4 mA
Max. current output signal	23 mA (output limit)
Load/output load current output	(U_{supply} - 12 V) / 22 mA
Ripple	< 20 mV_{PP} (at 500 Ω)

Connection data

Connection method	Screw connection
Stripping length	12 mm
Screw thread	M3
Conductor cross-section rigid	0.2 mm² ... 2.5 mm²
Conductor cross-section flexible	0.2 mm² ... 2.5 mm²
Conductor cross-section AWG	26 ... 12

Dimensions

Dimensional drawing	
Width	6.2 mm
Height	93.1 mm
Depth	101.2 mm

Material specifications

Color	green (RAL 6021)
Housing material	PBT
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

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 2000 m
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant

UKCA

Certificate	UKCA-compliant

UL, USA/Canada

Identification	UL 508 Recognized
	Class I, Div. 2, Groups A, B, C, D T4

EMC data

Electromagnetic compatibility	Conformance with EMC directive
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

Electrostatic discharge

Standards/regulations	EN 61000-4-2

Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.

Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the upper range value	5 %

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the upper range value	5 %

Surge current load (surge)

Standards/regulations	EN 61000-4-5

Surge current load (surge)

Comments	Criterion B

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the upper range value	5 %

Standards and regulations

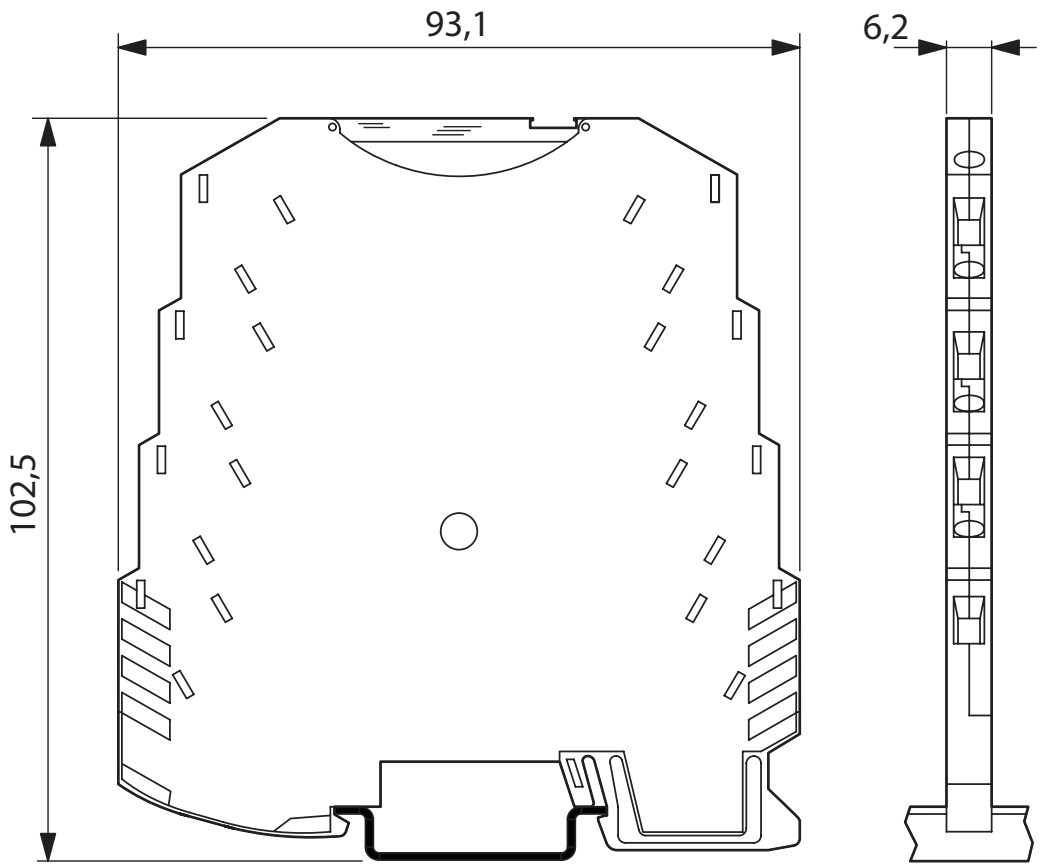
Electrical isolation	2-way isolation

Mounting

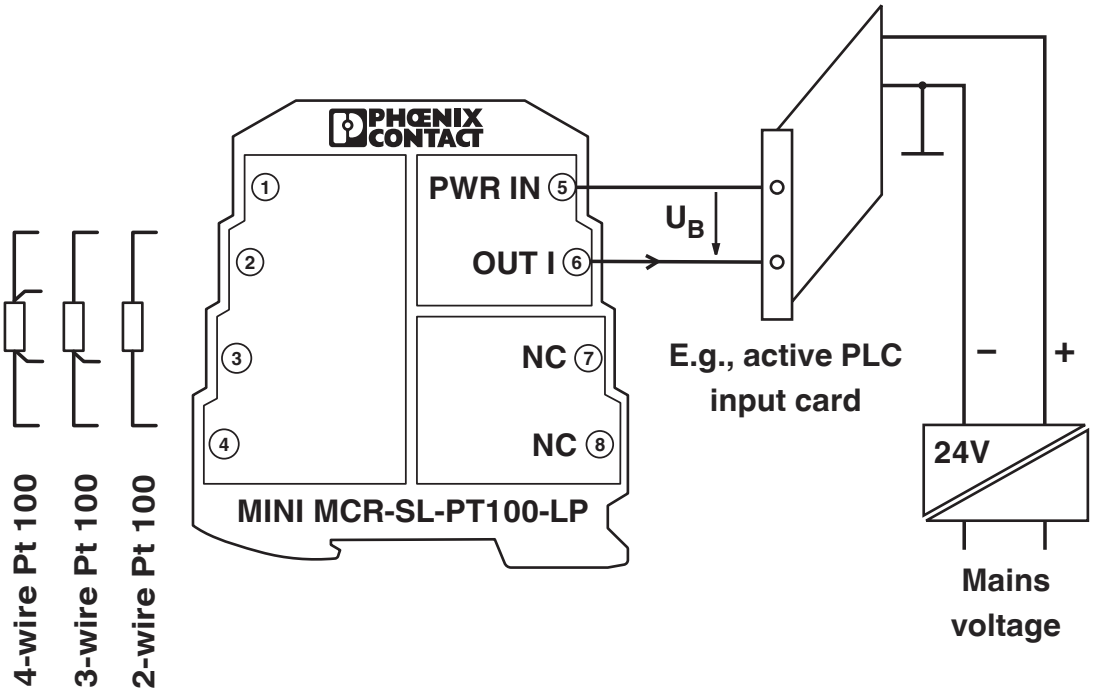
Mounting type	DIN rail mounting
Mounting position	any

Drawings

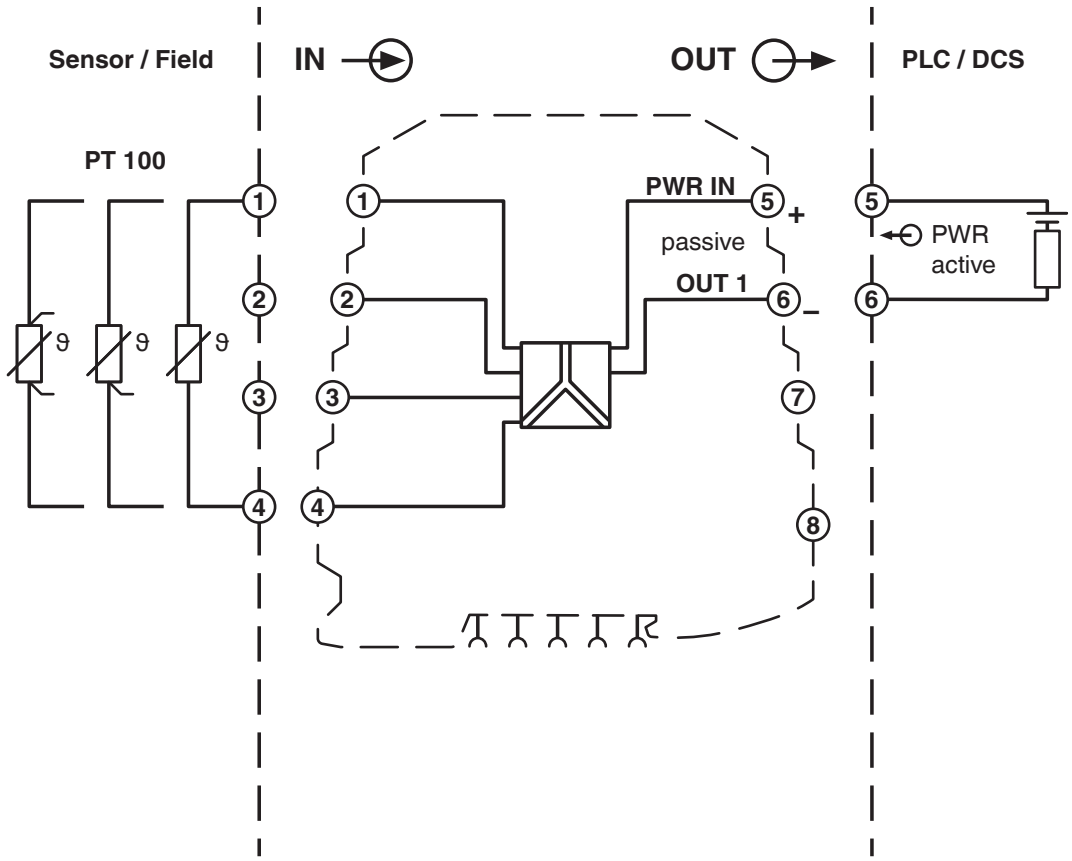
Dimensional drawing



Application drawing



Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2810308

cUL Recognized
Approval ID: E238705

UL Recognized
Approval ID: E238705

cUL Listed
Approval ID: E199827

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Classifications

ECLASS

ECLASS-13.0	27210129
ECLASS-15.0	27210129

ETIM

ETIM 10.0	EC002919

UNSPSC

UNSPSC 21.0	41112100

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.)	Lead(CAS: 7439-92-1)
SCIP	e7ecc08a-a54a-4900-8c5b-00b097a60e41

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