

# MINI MCR-RTD-UI-SP-NC - Resistance thermometer measuring transducer



2902850

<https://www.phoenixcontact.com/us/products/2902850>

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Temperature transducer for the connection of 2, 3, and 4-conductor resistance thermometers and resistance-type sensors. Configurable via DIP switch or software. Spring-cage connection, standard configuration. Replacement part: 2902052 MINI MCR-2-RTD-UI-PT.

## Product description

The configurable temperature transducer with 3-way isolation is suitable for the connection of resistance thermometers and remote resistance-type sensors with 2, 3, and 4-conductor connection technology.

The measured values are converted into a linear current or voltage signal.

You can configure the device using one of the free software solutions. Default settings can also be made directly on the device by simply using the DIP switches (see configuration table). The measuring transducer supports fault monitoring.

## Commercial data

Item number	2902850
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C403
Product key	CK1221
Catalog page	Page 103 (C-7-2015)
GTIN	4046356689250
Weight per piece (including packing)	112.2 g
Weight per piece (excluding packing)	90.9 g
Customs tariff number	85437090
Country of origin	DE

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## Technical data

### Product properties

Product type	Temperature transmitter
Product family	MINI Analog

### Insulation characteristics

Overvoltage category	II
Pollution degree	2

### Electrical properties

Rated insulation voltage	50 V AC/DC
Electrical isolation	Basic insulation in accordance with EN 61010
Test voltage, input/output/supply	1.5 kV (50 Hz, 1 min.)
Protective circuit	Transient protection
Step response (0–99%)	200 ms (2-conductor)
	500 ms (3-conductor)
	500 ms (4-conductor)
Maximum temperature coefficient	0.01 %/K
Transmission error resistance-type sensor	2 Ω
Transmission error resistance thermometer	0.1 % * 350 K / set measuring range; 0.1 % > 350 K (Pt/Ni)
	0.3 % * 200 K / set measuring range; 0.3 % > 200 K (Cu)

### Supply

Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, item no. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail in accordance with EN 60715)
Typical current consumption	< 27 mA (at 24 V DC)
Power consumption	≤ 700 mW (at I <sub>OUT</sub> = 20 mA, 9.6 V DC, load 500 Ω)

### Input data

#### Signal

Number of inputs	1
Input signal	Temperature
	Resistor

#### Measurement

Configurable/programmable	Yes
Sensor types (RTD) that can be used	Pt, Ni, Cu sensors: 2, 3, 4-wire
Temperature measuring range	-200 °C ... 850 °C (Range depends on sensor type, range can be set freely via software or in increments from -150 °C to 850 °C via DIP switches)
Temperature measuring range	min. 50 K

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Sensor input current	approx. 200 $\mu$ A
Max. permissible overall conductor resistance	$\leq 25 \Omega$ (Per cable)
Linear resistance measuring range	0 $\Omega$ ... 4000 $\Omega$ (Minimum measuring span: 10% of the selected measuring range)
Connection technology	2-, 3-, 4-conductor

## Output data

Frequency:

Configurable/programmable	no
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Signal

Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 10 V
	10 V ... 0 V
	0 V ... 5 V
	1 V ... 5 V
Max. voltage output signal	approx. 12.3 V
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	20 mA ... 0 mA
	20 mA ... 4 mA
Max. current output signal	24.6 mA
Load/output load voltage output	10 k $\Omega$
Load/output load current output	500 $\Omega$ (at 20 mA)
Ripple	< 20 mV <sub>PP</sub>
	< 20 mV <sub>PP</sub> (at 500 $\Omega$ )

## Connection data

Connection method	Spring-cage connection
Stripping length	8 mm
Conductor cross section rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 12

## Interfaces

Data: IFS interface

Connection method	S-PORT
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## Signaling

Status display	LED red
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## Dimensions

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Dimensional drawing	
Width	6.2 mm
Height	93.1 mm
Depth	102.5 mm

## Material specifications

Color	green (RAL 6021)
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
Permissible humidity (operation)	5 % ... 95 % (non-condensing)

## Approvals

### CE

Certificate	CE-compliant
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### ATEX

Identification	⊕ II 3 G Ex nA IIC T4 Gc X
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### UL, USA/Canada

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

### Shipbuilding approval

Identification	D, EMC1
Certificate	DNV GL 14085-15HH

## EMC data

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

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Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4

## Electrostatic discharge

Standards/regulations	EN 61000-4-2
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## Electrostatic discharge

Comments	Safety measures must be taken to prevent electrostatic discharge.
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## Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	0.04 %

## Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	0.1 %

## Surge current load (surge)

Standards/regulations	EN 61000-4-5
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## Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	0.02 %

## Standards and regulations

Electrical isolation	Basic insulation in accordance with EN 61010
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## Mounting

Mounting type	DIN rail mounting
Assembly instructions	The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail.
Mounting position	any

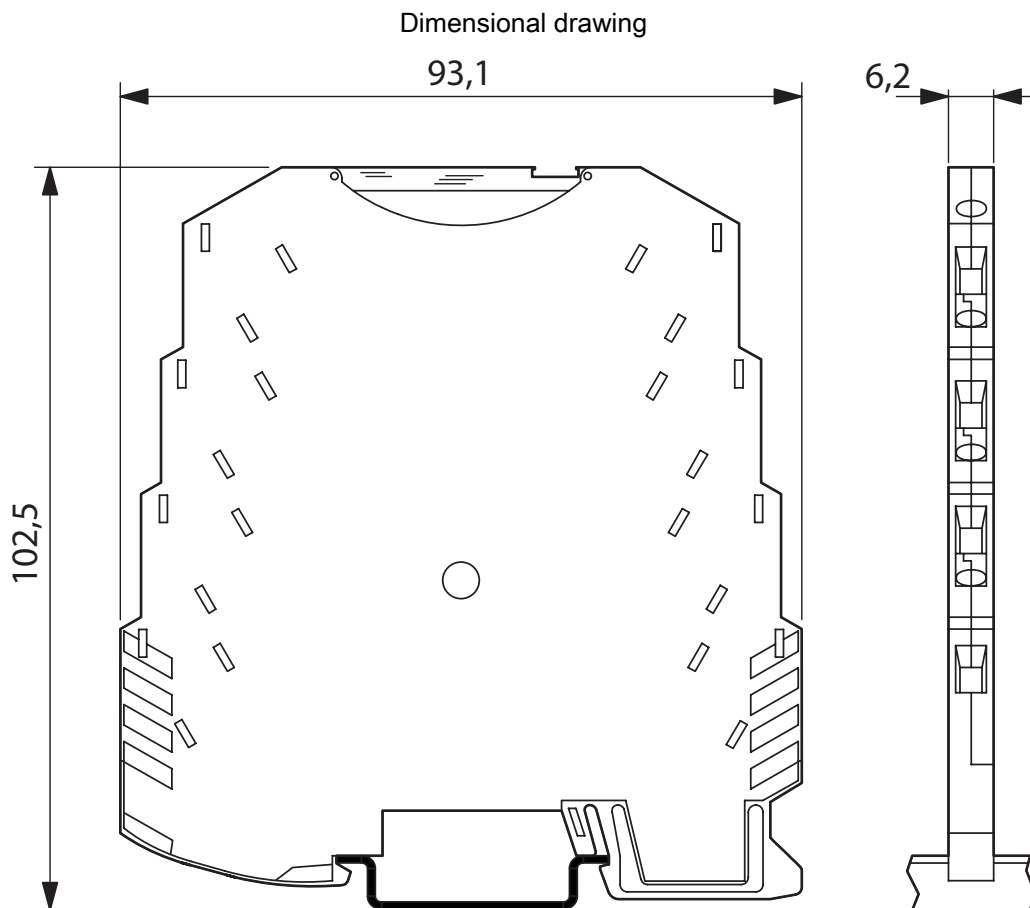
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## Drawings



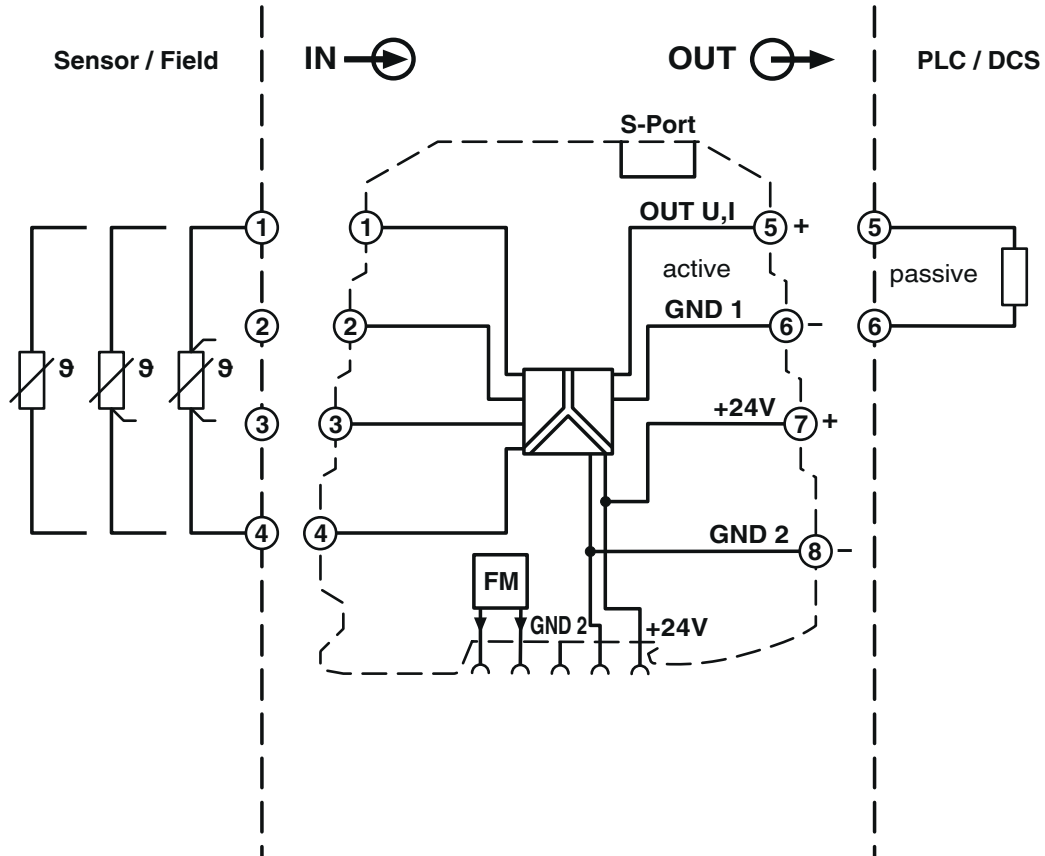
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Block diagram



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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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