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

2902849

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Configurable temperature transducer for the connection of 2, 3, and 4-conductor resistance thermometers and resistance-type sensors. Can be configured via DIP switches or, with extended functionality, using the software. Screw connection, standard configuration.

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	2902849
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	C403
Product key	DK1135
GTIN	4046356689205
Weight per piece (including packing)	117.5 g
Weight per piece (excluding packing)	93.7 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
Configuration	DIP switches
	Software

Insulation characteristics

Overvoltage category	II
Pollution degree	2

System properties

Functionality

Configuration	DIP switches
	Software

Electrical properties

Electrical isolation	3-way isolation
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)

Electrical isolation Input/output/power supply

Rated insulation voltage	50 V AC/DC
Test voltage	1.5 kV AC (50 Hz, 60 s)
Insulation	Basic insulation in accordance with IEC/EN 61010

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_{OUT} = 20 mA, 9.6 V DC, load 500 Ω)

Input data

Signal

Number of inputs	1

Measurement

Number of inputs	1
Configurable/programmable	Yes
Sensor types (RTD) that can be used	Pt, Ni, Cu sensors
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
Sensor input current	approx. 200 µA
Max. permissible overall conductor resistance	≤ 25 Ω (Per cable)
Linear resistance measuring range	0 Ω ... 4000 Ω (Minimum measuring span: 10% of the selected measuring range)
Connection technology	2-, 3-, 4-conductor

Output data

Signal: Voltage/current

Number of outputs	1
Configurable/programmable	Yes
Voltage output signal	0 V ... 5 V
	1 V ... 5 V
	0 V ... 10 V
	10 V ... 0 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 kΩ
Load/output load current output	500 Ω (at 20 mA)
Ripple	< 20 mV_{PP}
	< 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

Interfaces

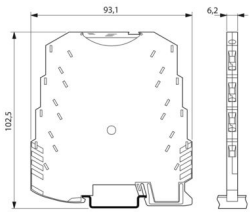
Data: IFS interface

Connection method	S-PORT

Signaling

Status display	LED (red)

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

Shipbuilding approval

Certificate	DNV GL TAA00002R0

Shipbuilding data

Temperature	B
Humidity	B
Vibration	B
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

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 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

Conducted interference

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

Standards and regulations

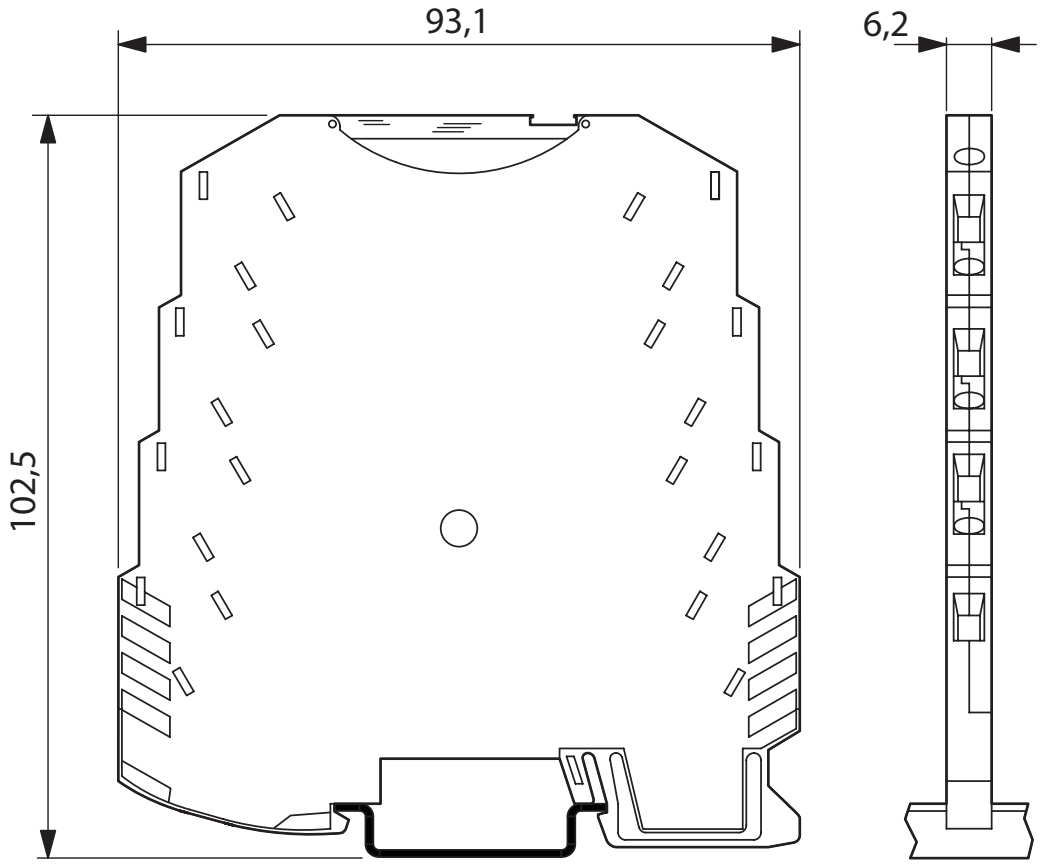
Electrical isolation	3-way isolation

Mounting

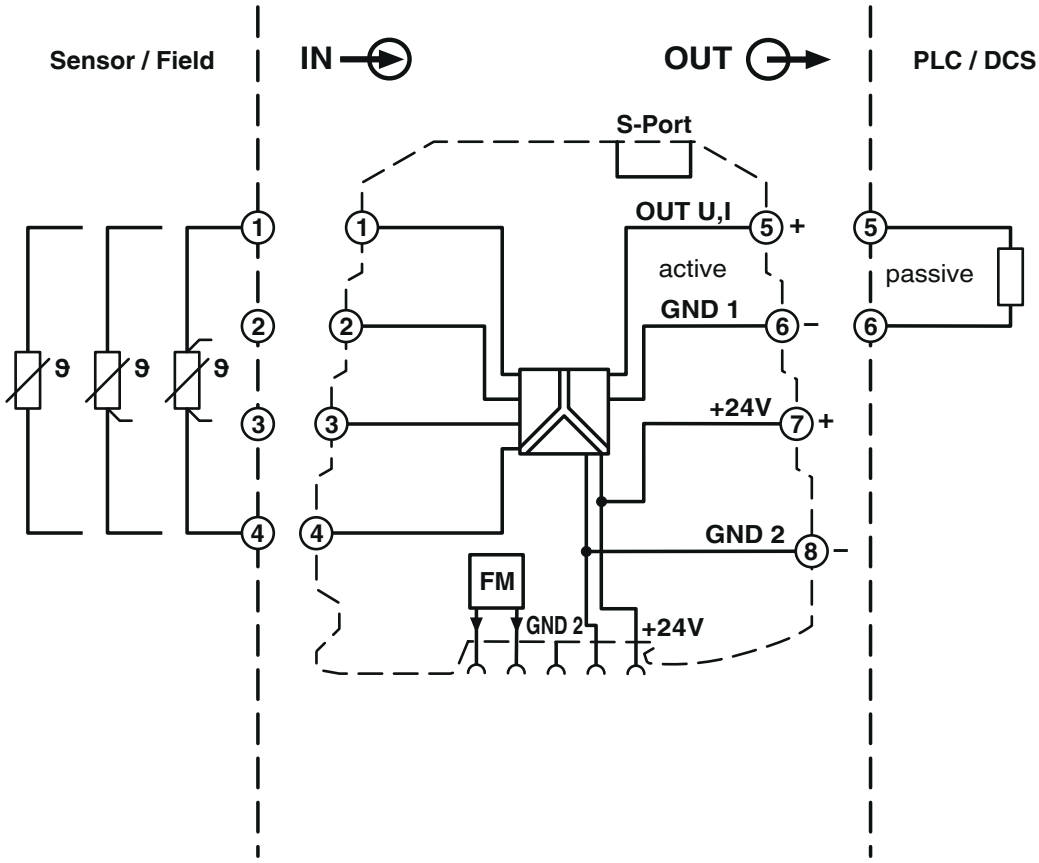
Mounting type	DIN rail mounting
Assembly note	The DIN rail connector can be used for bridging the supply voltage. It can be snapped onto a 35 mm EN 60715 DIN rail.
Mounting position	any

Drawings

Dimensional drawing



Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/us/products/2902849

DNV GL
Approval ID: TAA00002R0

UL Listed
Approval ID: E238705

cUL Listed
Approval ID: E238705

cUL Listed
Approval ID: E199827

UL Listed
Approval ID: FILE E 199827

Classifications

ECLASS

ECLASS-13.0	27210129
ECLASS-15.0	27210129

ETIM

ETIM 9.0	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)
	2,2',6,6'-tetrabromo-4,4'-isopropylidenediphenol(CAS: 79-94-7)
SCIP	65794f43-9cb2-4898-a2fa-fe96874aafab

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