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

RoHS

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 689250
GTIN	4046356689250
Weight per Piece (excluding packing)	90.900 g
Custom tariff number	85437090
Country of origin	Germany
Note	Made to Order (non-returnable)

Technical data

Note

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

Dimensions

Width	6.2 mm
Height	93.1 mm
Depth	102.5 mm

Ambient conditions

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Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Degree of protection	IP20
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.

Input data

Configurable/programmable	Yes
Sensor types (RTD) that can be used	Pt, Ni, Cu sensors: 2, 3, 4-wire
Linear resistance measuring range	0 Ω ... 4000 Ω (Minimum measuring span: 10% of the selected measuring range)
Sensor input current	approx. 200 µA
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)
Connection technology	2, 3, 4-wire

Output data

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
Current output signal	0 mA ... 20 mA
	4 mA ... 20 mA
	20 mA ... 0 mA
	20 mA ... 4 mA
Max. output voltage	approx. 12.3 V
Max. output current	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)

Power supply

Supply voltage range	9.6 V DC ... 30 V DC (The DIN rail bus connector (ME 6,2 TBUS-2 1,5/5-ST-3,81 GN, Order No. 2869728) can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to 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)

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Connection data

Connection method	Spring-cage connection
Stripping length	8 mm
Conductor cross section solid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 12

General

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)
Transmission error resistance-type sensor	2 Ω
Maximum temperature coefficient	0.01 %/K
Status display	LED red
Protective circuit	Transient protection
Electrical isolation	Basic insulation according to EN 61010
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	50 V AC/DC
Test voltage, input/output/supply	1.5 kV (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Color	green
Mounting position	any
Assembly instructions	The T connector can be used to bridge the supply voltage. It can be snapped onto a 35 mm DIN rail according to EN 60715.
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC
Certificate of classification	DNV GL 14085-15HH
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

EMC data

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

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Technical data

EMC data

Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	0.1 %
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	0.02 %

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Noise emission	EN 61000-6-4
Standards/regulations	EN 61000-4-2
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
	EN 61000-4-5
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Electrical isolation	Basic insulation according to EN 61010
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC

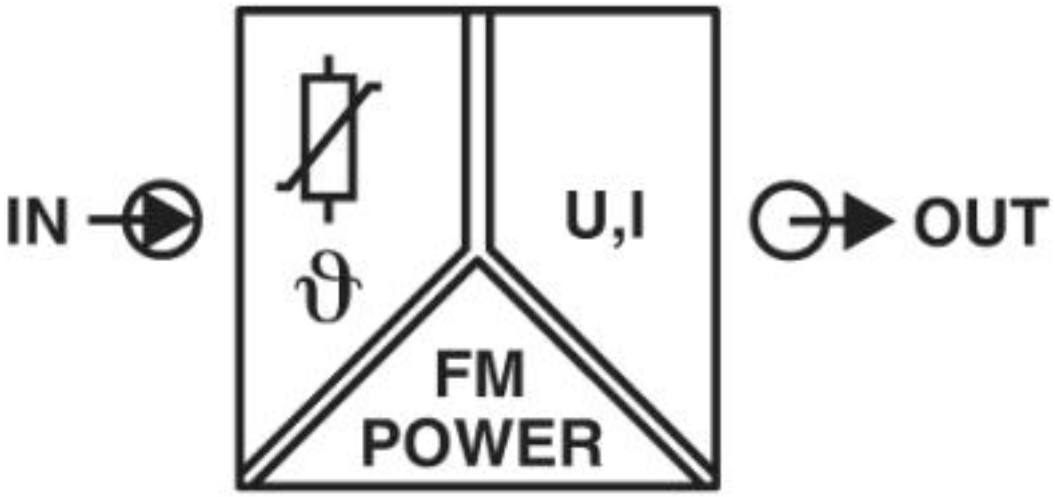
Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration”

Drawings

Resistance thermometer measuring transducer - MINI MCR-RTD-UI-SP-NC - 2902850

Pictogram



Classifications

eCl@ss

eCl@ss 4.0	27200200
eCl@ss 4.1	27200200
eCl@ss 5.0	27200200
eCl@ss 5.1	27200200
eCl@ss 6.0	27200200
eCl@ss 7.0	27200206
eCl@ss 8.0	27200206
eCl@ss 9.0	27210129

ETIM

ETIM 2.0	EC001446
ETIM 3.0	EC001446
ETIM 4.0	EC001446
ETIM 5.0	EC001446
ETIM 6.0	EC002919
ETIM 7.0	EC002919

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	41112105
UNSPSC 19.0	41112105

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Approvals

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GL / UL Listed / cUL Listed / EAC / cULus Listed

Ex Approvals

ATEX / UL Listed / cUL Listed / cULus Listed

Approval details

GL	https://approvalfinder.dnvgl.com/	14085-15 HH
UL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
cUL Listed	http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
EAC		RU C-DE.A*30.B.01082
cULus Listed		

Accessories

Accessories

DIN rail connector

DIN rail bus connectors - ME 6,2 TBUS-2 1,5/5-ST-3,81 GN - 2869728

DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

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Accessories

Evaluation unit

Monitoring module - MINI MCR-SL-FM-RC-NC - 2902961

The fault monitoring module is used to evaluate and report group errors from the fault monitoring system and to monitor the supply voltages. The error is reported via an N/O contact. Screw connection, standard configuration.

Monitoring module - MINI MCR-SL-FM-RC-SP-NC - 2902962

The fault monitoring module is used to evaluate and report group errors from the fault monitoring system and monitor supply voltages. Spring-cage connection, standard configuration. Replacement part: 2904508 MINI MCR-2-FM-RC-PT.

Marking material

Transparent cover - MINI MCR DKL - 2308111

Fold up transparent cover for MINI MCR modules with additional labeling option using insert strips and flat Zack marker strip 6.2 mm

Marking label - MINI MCR-DKL-LABEL - 2810272

Label for extended marking of MINI MCR modules in connection with the MINI MCR-DKL

Multiplexer

Multiplexer - MINI MCR-SL-MUX-V8-FLK 16 - 2811815

MINI analog multiplexer, generates one analog output from 8 analog input signals, for MINI analog module with screw connection.

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Accessories

Power module

Power terminal block - MINI MCR-SL-PTB-FM - 2902958

The MINI MCR-SL-PTB-FM(-SP) power terminal block is used to supply the supply voltage to the DIN rail connector. The FM power terminal block offers the additional function of monitoring in combination with the fault monitoring module. Screw connection.

Power terminal block - MINI MCR-SL-PTB-FM-SP - 2902959

The MINI MCR-SL-PTB-FM(-SP) feed-in terminal is used to feed in the supply voltage to the DIN rail connector. The FM feed-in terminal offers an additional function: monitoring. Spring-cage connection. Replacement part: 2902067 MINI MCR-2-PTB-PT.

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983

Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Programming adapter

Programming adapter - IFS-USB-PROG-ADAPTER - 2811271

Programming adapter with USB interface, for programming with software. The USB driver is included in the software solutions for the products to be programmed, such as measuring transducers or motor managers.

Adapter - IFS-BT-PROG-ADAPTER - 2905872

Bluetooth adapter with micro USB and S-PORT interface for wireless communication with the MINI Analog, MINI Analog Pro, MACX Analog, INTERFACE system gateways, and PLC logic device series.

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Accessories