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Thermocouple measuring transducer - MINI MCR-TC-UI-NC - 2902851

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Configurable temperature transducer for the connection of thermocouples. 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 thermocouples.
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	
GTIN	4046356689229
Weight per Piece (excluding packing)	100.000 g
Custom tariff number	85437090
Country of origin	Germany

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	101.2 mm

Ambient conditions

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Technical data

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 that can be used (TC)	B, E, J, K, N, R, S, T, L, U, A-1, A-2, A-3, M, L
Temperature measuring range	-250 °C ... 2500 °C (Range depends on sensor type, range can be set freely via software or in increments from -150°C to 1350°C via DIP switches)

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
Short-circuit current	< 31.5 mA
Load/output load voltage output	$\geq$ 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))
Max. current consumption	72 mA
Typical current consumption	< 27 mA (at 24 V DC)
Power consumption	$\leq$ 700 mW (at I$_{OUT}$ = 20 mA, 9.6 V DC, load 500 Ω)

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Technical data

Connection data

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

General

Transmission error thermocouples	0.1 % * 600 K / set measuring range; 0.1 % > 600 K (E, J, K, N, T, L, U, M Gost, L Gost)
	0.2 % * 600 K / set measuring range; 0.2 % > 600 K (B, R, S, A1, A2, A3)
	0.2% * 600 K / set measuring range; 0.2% > 600 K (E, J, K, N, T, L, U, M Gost, L Gost); Highspeed Mode
	0.4% * 600 K / set measuring range; 0.4% > 600 K (B, R, S, A1, A2, A3); Highspeed Mode
Maximum temperature coefficient	$\leq$ 0.01 %/K
Cold point error, max.	< 3 K
Typical cold point errors	< 2 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
Housing material	PBT
Mounting position	any
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	0.15 %

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Technical data

EMC data

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	0.05 %
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

Conformance/approvals

Designation	CE
Identification	CE-compliant
Designation	ATEX
Identification	# II 3 G Ex nA IIC T4 Gc X
Designation	UL, USA/Canada
Identification	UL 508 Listed
	Class I, Div. 2, Groups A, B, C, D T4
	Class I, Zone 2, Group IIC
Designation	Shipbuilding approval
Identification	D, EMC2
Certificate	DNV GL 14085-15HH

Environmental Product Compliance

REACh SVHC	Lead 7439-92-1

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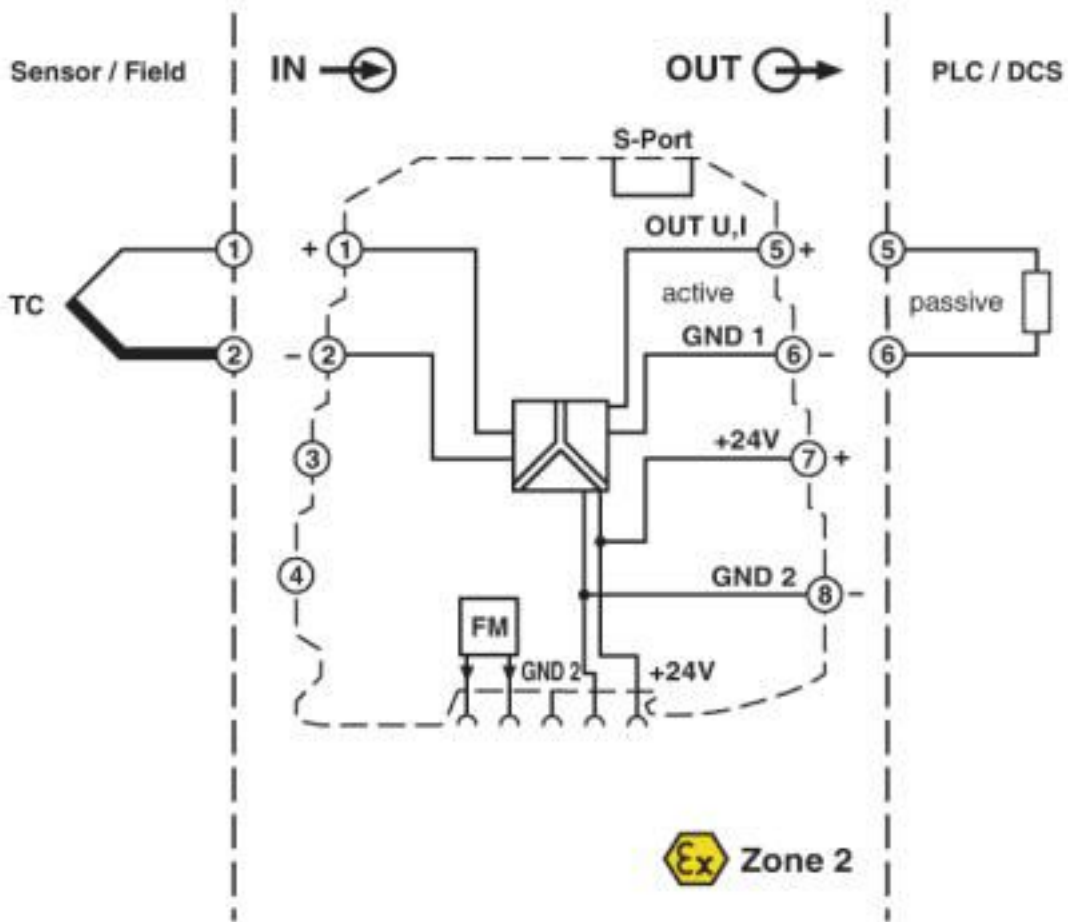
Technical data

Environmental Product Compliance

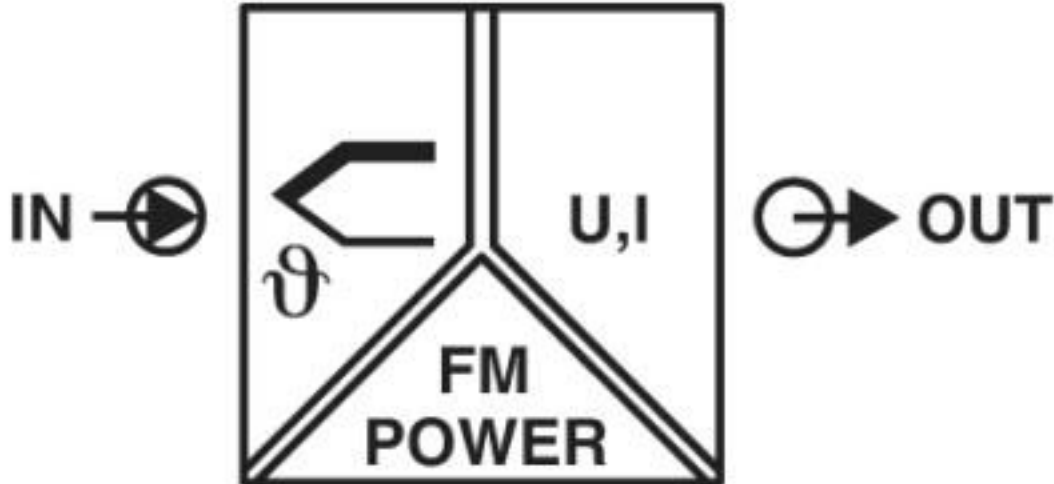| China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

Block diagram

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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

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Classifications

UNSPSC

UNSPSC 13.2	41112105
UNSPSC 18.0	41112105
UNSPSC 19.0	41112105
UNSPSC 20.0	41112105
UNSPSC 21.0	41112105

Approvals

Approvals

Approvals

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			

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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.

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

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Accessories

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.

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

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Accessories

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.

System adapter

System adapter - MINI MCR-SL-V8-FLK 16-A - 2811268

Eight MINI analog signal converters with screw connection method can be connected to a control system using a system adapter and system cabling with a minimum of wiring and very low error risk.

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