

# Thermocouple measuring transducer - MINI MCR-2-TC-UI-PT - 2905249

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Configurable temperature transducer with plug-in connection technology for connecting thermocouples. Configurable via DIP switch or software. Push-in connection technology, standard configuration

## Product Description

Configurable, 3-way isolated temperature transducer with plug-in connection technology. The device is suitable for the connection of thermocouples. The measured values are converted into a linear and freely adjustable 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 and NFC communication.



## Key Commercial Data

Packing unit	1 STK
GTIN	 4 046356 937313
GTIN	4046356937313
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
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### Dimensions

Width	6.2 mm
Height	110.5 mm
Depth	120.5 mm

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## Technical data

### Ambient conditions

Ambient temperature (operation)	-40 °C ... 70 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Degree of protection	IP20

### Input data

Configurable/programmable	Yes
Sensor types that can be used (TC)	B, C, 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 ... 5 V (via DIP switch)
	1 V ... 5 V (via DIP switch)
	0 V ... 10 V (via DIP switch)
	10 V ... 0 V (via DIP switch)
	0 V ... 10.5 V (Can be set via software)
Current output signal	0 mA ... 20 mA (via DIP switch)
	4 mA ... 20 mA (via DIP switch)
	20 mA ... 0 mA (via DIP switch)
	20 mA ... 4 mA (via DIP switch)
	0 mA ... 21 mA (Can be set via software)
Max. output voltage	approx. 12.3 V
Max. output current	24.6 mA
Short-circuit current	< 31.5 mA
Load/output load voltage output	≥ 10 kΩ
Load/output load current output	≤ 600 Ω (at 20 mA)
Ripple	< 10 mV <sub>rms</sub>
	< 10 mV <sub>rms</sub> (at 600 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	32.7 mA (24 V DC)
	66.8 mA (12 V DC)
Power consumption	≤ 850 mW (at I <sub>OUT</sub> = 20 mA, 9.6 V DC, 600 Ω load)

### Connection data

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## Technical data

### Connection data

Connection method	Push-in connection
Single conductor/terminal point, solid, with ferrule, min.	0.14 mm <sup>2</sup>
Single conductor/terminal point, solid, with ferrule, max.	2.5 mm <sup>2</sup>
Single conductor/terminal point, solid, without ferrule, min.	0.14 mm <sup>2</sup>
Single conductor/terminal point, solid, without ferrule, max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.14 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Min. AWG conductor cross section, flexible	24
Max. AWG conductor cross section, flexible	12
Stripping length	10 mm

### General

Transmission error thermocouples	0.1% * 600 K / set measuring range; 0.1% > 600 K (C, 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	≤ 0.01 %/K
Typical cold point errors	2 K (2 K + (0,2 K * ΔT))
Protective circuit	Transient protection
Electrical isolation	Reinforced insulation in accordance with IEC 61010-1
Overvoltage category	II
Degree of pollution	2
Rated insulation voltage	300 V (effective)
Test voltage, input/output/supply	3 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.
Housing material	PBT
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 T6

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## Technical data

### General

	Class I, Zone 2, Group IIC T6
Certificate of classification	DNV GL 14445-15HH

### EMC data

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	0.06 %
Designation	Fast transients (burst)
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	0.05 %

### 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	Reinforced insulation in accordance with IEC 61010-1
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 T6
	Class I, Zone 2, Group IIC T6

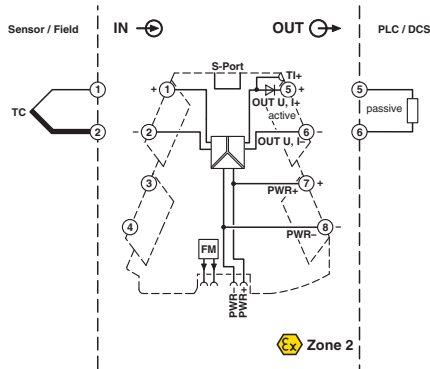
### Environmental Product Compliance

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

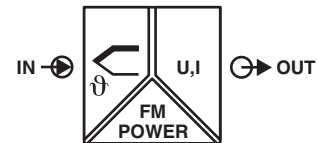
## Drawings

# Thermocouple measuring transducer - MINI MCR-2-TC-UI-PT - 2905249

Block diagram



Pictogram



## Classifications

### eCl@ss

eCl@ss 5.1	27210120
eCl@ss 6.0	27210120
eCl@ss 8.0	27200206
eCl@ss 9.0	27210129

### ETIM

ETIM 4.0	EC002653
ETIM 5.0	EC001446
ETIM 6.0	EC002568

### UNSPSC

UNSPSC 13.2	41112105
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## Approvals

### Approvals

Approvals

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





Ex Approvals

ATEX / UL Listed / cUL Listed / cULus Listed

# Thermocouple measuring transducer - MINI MCR-2-TC-UI-PT - 2905249

## Approvals

### Approval details

UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
EAC			EAC-Zulassung
GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	14445-15 HH
cULus Listed	