

MACX PL-EX-T-UIREL-UP-SP - Temperature measuring transducer



2904912

<https://www.phoenixcontact.com/us/products/2904912>

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Programmable temperature transducer with analog output and 3 limit value relays, intrinsically safe signal inputs, resistance thermometer in 2-, 3-, or 4-conductor technology, thermocouples, spring-cage connection, PLd. Replacement part: 2924799 MACX MCR-EX-T-UIREL-UP-SP.

Commercial data

Item number	2904912
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C430
Product key	DK1215
GTIN	4046356899666
Weight per piece (including packing)	310.56 g
Weight per piece (excluding packing)	180 g
Customs tariff number	85437090
Country of origin	DE

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Technical data

Product properties

Product type	Temperature transmitter
Insulation characteristics	
Overvoltage category	II
Pollution degree	2

Electrical properties

Electrical isolation	4-way, between input/output/power supply/switching output
Step response (0–99%)	1000 ms (With SIL)
	700 ms (Without SIL)
Maximum temperature coefficient	0.01 %/K
Maximum transmission error	0.1 % (e.g. for Pt 100, 300 K span, 4 ... 20 mA)

Electrical isolation Input/output/power supply

Test voltage	2.5 kV AC (50 Hz, 60 s)
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Electrical isolation Input/output

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)
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Electrical isolation Input/power supply

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)
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Electrical isolation Input/switching output

Electrical isolation	375 V (Peak value in accordance with IEC/EN 60079-11)
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Electrical isolation Output/supply

Rated insulation voltage	300 V _{rms}
Insulation	Safe isolation in accordance with IEC/EN 61010-1

Supply

Supply voltage range	24 V ... 230 V AC/DC (-20 % ... +10 %, 50 Hz ... 60 Hz)
Typical current consumption	< 100 mA (24 V DC)
Power consumption	< 2.4 W

Input data

Signal

Input signal	Temperature
	Resistor
	Voltage

Measurement

Sensor types (RTD) that can be used	Pt, Ni, Cu sensors: 2, 3, 4-wire
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Sensor types that can be used (TC)	B, E, J, K, N, R, S, T, L, U, CA, DA, A1G, A2G, A3G, MG, LG
Temperature measuring range	-200 °C ... 850 °C
Linear resistance measuring range	0 Ω ... 50 kΩ
Potentiometer resistance range	0 Ω ... 50 kΩ
Linear mV signal range	-1000 mV ... 1000 mV

Output data

Switching: Relay

Output description	1 SIL/PL
Configurable/programmable	Yes
Contact switching type	2 changeover contacts
Contact material	AgSnO ₂ , hard gold-plated
Maximum switching voltage	250 V AC (250 V DC)
Maximum inrush current	2 A (250 V AC)
	2 A (28 V DC)
	0.2 A (120 V DC)

Signal

Configurable/programmable	Yes
Current output signal	4 mA ... 20 mA (in the case of SIL; further free configuration without SIL)
Max. current output signal	22 mA
Load/output load current output	≤ 600 Ω (20 mA)
Behavior in the event of a sensor error	according to NE 43 or freely configurable

Connection data

Connection method	Push-in connection
Stripping length	8 mm
Conductor cross-section rigid	0.2 mm ² ... 1.5 mm ²
Conductor cross-section flexible	0.2 mm ² ... 1.5 mm ²
Conductor cross-section AWG	24 ... 16

Ex data

Safety data

Max. internal inductance L _i	negligible
Max. internal capacitance C _i	44 nF
Max. output voltage U _o	6 V
Max. output current I _o	7.4 mA
Max. output power P _o	11 mW
Safety-related maximum voltage U _m	253 V AC/DC
IIC: Max. external inductivity L _o / Max. external capacitance C _o	100 mH / 1.3 μF
	10 mH / 1.7 μF
	1 mH / 2.6 μF

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	0 mH / 10 μ F
IIB: Max. external inductivity L_o / Max. external capacitance C_o	100 mH / 6.8 μ F
	10 mH / 9.2 μ F
	1 mH / 15 μ F

Signaling

Status display	LED supply voltage, PWR (green)
	Red LED, flashing (line, sensor error, ERR)
	Red LED (module error, ERR)
	Yellow LED (switching output)

Dimensions

Width	35 mm
Height	99 mm
Depth	114.5 mm

Material specifications

Color	yellow (RAL 1018)
Flammability rating according to UL 94 (Housing)	V0 (Housing)
Housing material	PA 6.6-FR

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20 (not assessed by UL)
Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	\leq 2000 m
Permissible humidity (operation)	typ. 5 % ... 95 % (non-condensing)
Shock (operation)	15g (IEC 60068-2-27)
Vibration (operation)	5g (IEC 60068-2-6)

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	Ⓜ II (1) G [Ex ia Ga] IIC
	Ⓜ II (1) D [Ex ia Da] IIIC
	Ⓜ II 3 G Ex nA nC ic IIC T4 Gc X
Certificate	IBExU 10 ATEX 1044

IECEX

	[Ex ia Ga] IIC
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Identification	[Ex ia Da] IIIC
	Ex nA nC ic IIC T4 Gc X
Certificate	IECEX IBE 10.0004 X

UL, USA/Canada

Identification	UL 508 Listed
Certificate	UL C.D.-No 83104549

Shipbuilding approval

Identification	C, EMC2
Certificate	DNV GL 11 564-14HH

Safety Integrity Level (SIL, IEC 61508)

Identification	2
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Performance Level (ISO 13849)

Identification	d
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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.

Electromagnetic HF field

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	2 %

Fast transients (burst)

Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	2 %

Conducted interference

Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	2 %

Standards and regulations

Electrical isolation	4-way, between input/output/power supply/switching output
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Mounting

Mounting type	DIN rail mounting
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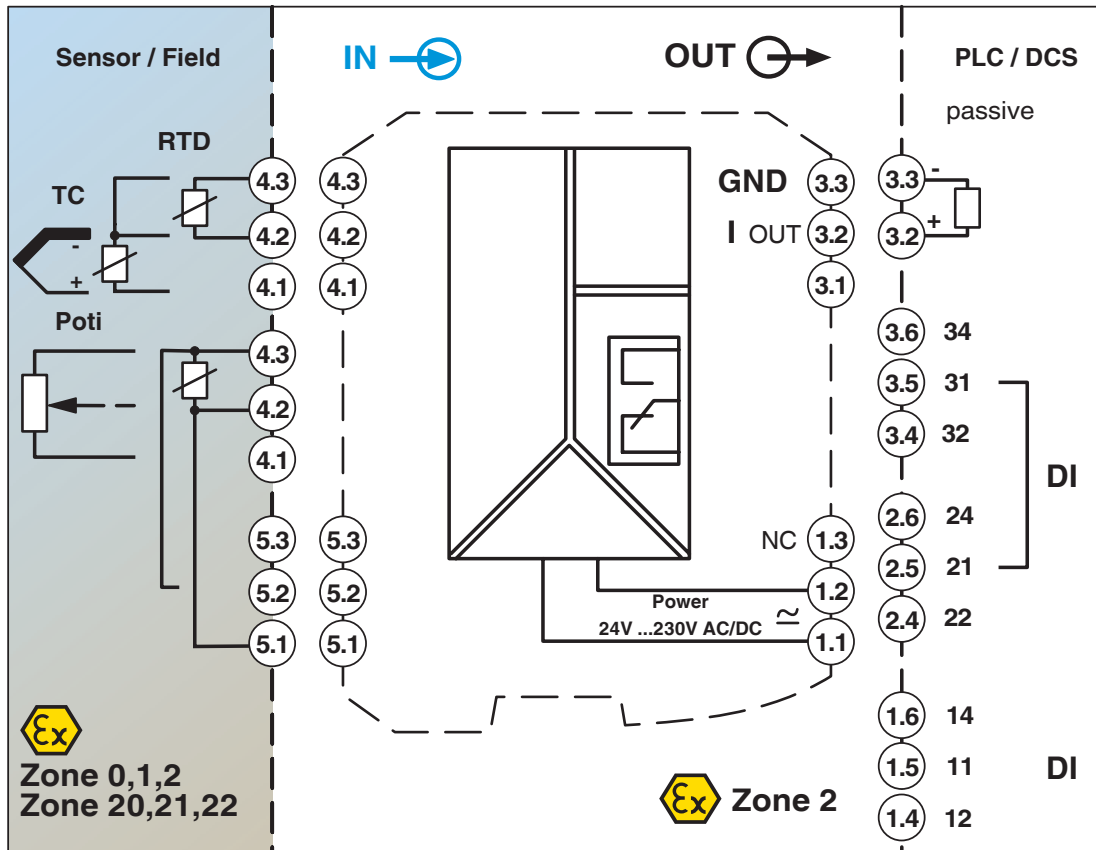


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Drawings

Block diagram



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Classifications

UNSPSC

UNSPSC 21.0	41112105
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Environmental product compliance

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.)	No substance above 0.1 wt%
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Phoenix Contact USA
586 Fulling Mill Road
Middletown, PA 17057, United States
(+717) 944-1300
info@phoenixcon.com