



**Automatización Eléctrica**  
Especialistas en Automatización

At the end of this document you will find links to products related to this catalog. You can go directly to our shop by clicking HERE. [HERE](#)

# Temperature measuring transducer - MACX PL-EX-T-UIREL-UP - 2904910

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)



Programmable temperature transducer with analog output and 3 limit value relays, intrinsically safe signal inputs, resistance thermometer in 2-, 3-, or 4-wire technology, thermocouples, electrical isolation, wide-range power supply, screw connection, PLd



## Key Commercial Data

Packing unit	1 STK
GTIN	4 046356 899789

## Technical data

### Note

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

### Dimensions

Width	35 mm
Height	99 mm
Depth	114.5 mm

### Ambient conditions

Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Maximum altitude	≤ 2000 m
Permissible humidity (operation)	typ. 5 % ... 95 % (non-condensing)
Noise immunity	EN 61000-6-2 When being exposed to interference, there may be minimal deviations.
Shock	15g, according to IEC 60068-2-27
Vibration (operation)	5g, accordance to IEC 60068-2-6
Degree of protection	IP20

# Temperature measuring transducer - MACX PL-EX-T-UIREL-UP - 2904910

## Technical data

### Input data

Sensor types (RTD) that can be used	Pt, Ni, Cu sensors: 2, 3, 4-wire
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
Input signal range	0 Ω ... 50 kΩ
Potentiometer resistance range	0 Ω ... 50 kΩ
Input signal range	-1000 mV ... 1000 mV

### Output data

Current output signal	4 mA ... 20 mA
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
Output name	Relay output
Output description	1 SIL/PL
Contact type	2 PDT
Contact material	AgSnO <sub>2</sub> , 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)
Mechanical service life	1 x 10 <sup>5</sup> cycles

### Power supply

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

### Connection data

Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Stripping length	7 mm
Screw thread	M3
Connection method	Screw connection
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

### General

# Temperature measuring transducer - MACX PL-EX-T-UIREL-UP - 2904910

## Technical data

### General

Maximum transmission error	0.1 % (e.g. for Pt 100, 300 K span, 4 ... 20 mA)
Maximum temperature coefficient	0.01 %/K
Step response (0–99%)	typ. 1000 ms (With SIL)
	typ. 700 ms (Without SIL)
Status display	Green LED (supply voltage, PWR)
	Red LED, flashing (line, sensor error, ERR)
	Red LED (module error, ERR)
	Yellow LED (switching output)
Flammability rating according to UL 94	V0
Degree of pollution	2
Overvoltage category	II
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Housing material	PA 66-FR
Color	yellow
Designation	Input/output/power supply
Electrical isolation	2.5 kV (50 Hz, 1 min., test voltage)
Designation	Input/output
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Designation	Input/power supply
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Designation	Input/switching output
Electrical isolation	375 V (Peak value in accordance with EN 60079-11)
Designation	Output/supply
Electrical isolation	300 V <sub>rms</sub> (Rated insulation voltage (overvoltage category II; degree of pollution 2, safe isolation as per EN 61010-1))
Conformance	CE-compliant
ATEX	# 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
IECEX	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA nC ic IIC T4 Gc X
UL, USA / Canada	UL 508 Listed
Functional Safety (SIL)	SIL 2

### 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

# Temperature measuring transducer - MACX PL-EX-T-UIREL-UP - 2904910

## Technical data

### Safety data

Max. output power P <sub>o</sub>	11 mW
Group	IIC
Max. external inductivity L <sub>o</sub>	100 mH
Max. external capacity C <sub>o</sub>	1.3 µF
Group	IIC
Max. external inductivity L <sub>o</sub>	10 mH
Max. external capacity C <sub>o</sub>	1.7 µF
Group	IIC
Max. external inductivity L <sub>o</sub>	1 mH
Max. external capacity C <sub>o</sub>	2.6 µF
Group	IIC
Max. external inductivity L <sub>o</sub>	0 mH
Max. external capacity C <sub>o</sub>	10 µF
Group	IIB
Max. external inductivity L <sub>o</sub>	100 mH
Max. external capacity C <sub>o</sub>	6.8 µF
Group	IIB
Max. external inductivity L <sub>o</sub>	10 mH
Max. external capacity C <sub>o</sub>	9.2 µF
Safety-related maximum voltage U <sub>m</sub>	253 V AC/DC

### EMC data

Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
Typical deviation from the measuring range final value	2 %
Designation	Fast transients (burst)
Standards/regulations	EN 61000-4-4
Typical deviation from the measuring range final value	2 %
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6
Typical deviation from the measuring range final value	2 %

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC
Shock	15g, according to IEC 60068-2-27
Designation	Electromagnetic RF field
Standards/regulations	EN 61000-4-3
	EN 61000-4-4
Designation	Conducted interferences
Standards/regulations	EN 61000-4-6

# Temperature measuring transducer - MACX PL-EX-T-UIREL-UP - 2904910

## Technical data

### Standards and Regulations

Electrical isolation	4-way, between input/output/power supply/switching output
Flammability rating according to UL 94	V0
Vibration (operation)	5g, accordance to IEC 60068-2-6
Conformance	CE-compliant
ATEX	# 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
IECEX	[Ex ia Ga] IIC
	[Ex ia Da] IIIC
	Ex nA nC ic IIC T4 Gc X
UL, USA / Canada	UL 508 Listed
Group	IIC
	IIC
	IIC
	IIC
	IIB
	IIB

## Classifications

### eCl@ss

eCl@ss 5.1	27200206
eCl@ss 6.0	27210120
eCl@ss 8.0	27371503

### ETIM

ETIM 4.0	EC002653
ETIM 5.0	EC002568

## Approvals

### Approvals

#### Approvals

UL Listed / cUL Listed / GL / Functional Safety / cULus Listed

#### Ex Approvals

IECEX / ATEX / UL Listed / cUL Listed / EAC Ex / cULus Listed

# Temperature measuring transducer - MACX PL-EX-T-UIREL-UP - 2904910

## Approvals

Approvals submitted

### Approval details

UL Listed

cUL Listed

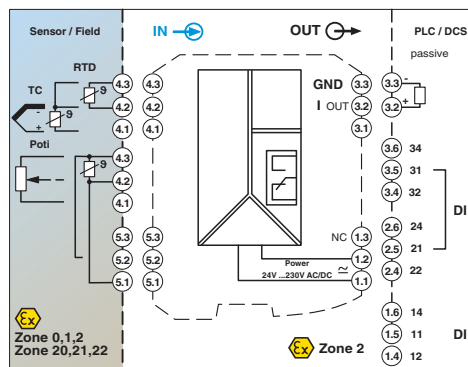
GL

Functional Safety

cULus Listed

## Drawings

Block diagram



Phoenix Contact 2016 © - all rights reserved  
<http://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG  
Flachmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>





Below is a list of articles with direct links to our shop Electric Automation Network where you can see:

- Quote per purchase volume in real time.
- Online documentation and datasheets of all products.
- Estimated delivery time enquiry in real time.
- Logistics systems for the shipment of materials almost anywhere in the world.
- Purchasing management, order record and tracking of shipments.

To access the product, [click on the green button.](#)

Product	Code	Reference	Product link
Programmable temperature transducer with analog output and 3 limit value relays, intrinsically safe signal inputs, resistance thermometer in 2-, 3-, or 4-wire technology, thermocouples, electrical isolation, wide-range power supply, screw connection, PLd	2904910	MACX PL-EX-T-UIREL-UP	<a href="#">Buy on EAN</a>