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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



# Temperature measuring transducer - MACX MCR-T-UI-UP - 2811394

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Freely programmable temperature transducer with analog output and 1 limit value relay, standard configuration, resistance thermometer in 2-, 3-, or 4-wire technology, thermocouples, galvanic isolation, wide-range power supply, screw connection, SIL

## Why buy this product

- ✓ Cold junction compensation with separate plug
- ✓ Configuration via software (FDT/DTM) or IFS-OP-UNIT operator interface and display unit
- ✓ Up to SIL 2 according to EN 61508
- ✓ Installation in zone 2, protection type "n" (EN 60079-15) permitted
- ✓ Plug-in screw or spring-cage connection technology (Push-in technology)
- ✓ Relay switching output
- ✓ Programming during operation and also voltage-free using IFS-USB-PROG-ADAPTER programming adapter
- ✓ Measure differential temperatures
- ✓ Freely programmable input and output
- ✓ Input for resistance thermometers, thermocouples, resistance-type sensors, potentiometers, and mV sources
- ✓ Inverse output signal ranges as an option



## Key Commercial Data

Packing unit	1 STK
GTIN	
GTIN	4046356520294

## Technical data

### Note

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

Width	17.5 mm
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## Technical data

### Dimensions

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.

### 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	-250 °C ... 2500 °C (Range depending on the sensor type)
Input signal range	0 Ω ... 50 kΩ
Potentiometer resistance range	0 Ω ... 50 kΩ
Input signal range	-1000 mV ... 1000 mV

### Output data

Configurable/programmable	Yes
Max. voltage output signal	± 11 V
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 voltage output	≥ 10 kΩ
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
Configurable/programmable	no
Contact type	1 PDT
Contact material	AgSnO <sub>2</sub> , hard gold-plated
Maximum switching voltage	30 V AC (30 V DC)
Maximum inrush current	0.5 A (30 V AC)
	1 A (30 V DC)

### Power supply

Supply voltage range	24 V ... 230 V AC/DC (-20 %/+10 %, 50/60 Hz)
Power consumption	< 1.5 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>



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## Technical data

### Connection data

Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Stripping length	7 mm
Screw thread	M3
Connection method	Screw connection

### General

Maximum temperature coefficient	0.01 %/K
Flammability rating according to UL 94	V0
Degree of pollution	2
Overvoltage category	II
Electromagnetic compatibility	Conformance with EMC directive
Housing material	PA 6.6-FR
Color	green
Designation	Input/output/power 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))
	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)
Conformance	CE-compliant
ATEX	# II 3 G Ex nA nC ic IIC T4 Gc X
IECEX	Ex nA nC ic 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
SIL	2

### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC directive
Electrical isolation	4-way, between input/output/power supply/switching output
Flammability rating according to UL 94	V0
Conformance	CE-compliant
ATEX	# II 3 G Ex nA nC ic IIC T4 Gc X
IECEX	Ex nA nC ic 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

# Temperature measuring transducer - MACX MCR-T-UI-UP - 2811394

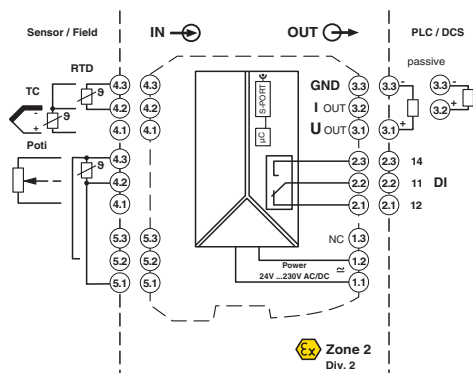
## Technical data

### Environmental Product Compliance

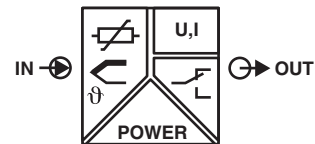
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

Block diagram



Pictogram



## Approvals

### Approvals

#### Approvals

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

#### Ex Approvals

IECEX / ATEX / UL Listed / cUL Listed / cULus Listed


### Approval details

Functional Safety	100134C P0019 C001
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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
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## Approvals

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
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GL		<a href="http://exchange.dnv.com/tari/">http://exchange.dnv.com/tari/</a>	11564-14 HH
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Functional Safety			09/11-04 R013 V1R0
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cULus Listed			
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PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstr. 8  
32825 Blomberg  
Germany  
Tel. +49 5235 300  
Fax +49 5235 3 41200  
<http://www.phoenixcontact.com>