

# MACX MCR-EX-T-UI-UP

Order No.: 2865654



Freely programmable Ex-i 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



Commercial data	
EAN	4  046356 296670
Pack	1
Customs tariff	85437090
Product key	09724
Country of Origin	DE
Catalog page information	Page 452 (IF-2011)

### Product notes

WEEE/RoHS-compliant since: 08/04/2011



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### 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

Input signal range	0 Ω ... 50 kΩ
Potentiometer resistance range	0 Ω ... 50 kΩ
Input signal range	-1000 mV ... 1000 mV

#### Output data

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 (at 20 mA)
Behavior in the event of a sensor error	According to NE 43 or freely configurable
Output name	Switching output
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)
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	< 50 mA (24 V DC)
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 stranded min.	0.2 mm <sup>2</sup>
Conductor cross section stranded max.	2.5 mm <sup>2</sup>
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil 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

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**General data**

Maximum transmission error	0.1 % (E.g., at PT 100, 200 K min. span)
Maximum temperature coefficient	0.01 %/K
Ambient temperature (operation)	-20 °C ... 65 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	Typ. 5 % ... 95 % (no condensation)
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)
Width	17.5 mm
Height	99 mm
Depth	114.5 mm
Inflammability class according to UL 94	V0
Pollution degree	2
Surge voltage category	II
Shock	15g, according to IEC 60068-2-27
Vibration (operation)	5 g, in accordance with IEC 60068-2-6
Housing material	PA 66-FR
Degree of protection	IP20
Color	green
Electrical isolation	4-way, between input/output/power supply/switching output
Electrical isolation input / output	375 V (Peak value in accordance with EN 60079-11)
Electrical isolation input / supply	375 V (Peak value in accordance with EN 60079-11)
Electrical isolation of input/switching output	375 V (Peak value in accordance with EN 60079-11)
Electrical isolation output / supply	300 V <sub>rms</sub> (Rated insulation voltage, surge voltage category II; pollution degree 2, safe isolation as per EN 61010, EN 50178)
Conformance	CE-compliant
ATEX	Ex II (1) G [Ex ia] IIC Ex II (1) D [Ex iaD]
IECEx	Ex II 3 G Ex nAC ic IIC / IIB / IIA T4 X [Ex ia] IIC; [Ex iaD]; Ex nAC IIC T4 X
Functional safety (SIL)	SIL 2

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**Safety data**

Max. voltage $U_o$	6 V
Max. current $I_o$	7.4 mA
Max. power $P_o$	11 mW
Gas group	II C
Max. external inductivity $L_o$	100 mH
Max. external capacity $C_o$	1.3 $\mu$ F
Max. capacitance $C_i$	44 nF
Gas group	II C
Max. external inductivity $L_o$	10 mH
Max. external capacity $C_o$	1.7 $\mu$ F
Max. capacitance $C_i$	44 nF
Gas group	II C
Max. external inductivity $L_o$	1 mH
Max. external capacity $C_o$	2.6 $\mu$ F
Max. capacitance $C_i$	44 nF
Gas group	II B
Max. external inductivity $L_o$	110 mH
Max. external capacity $C_o$	6.8 $\mu$ F
Max. capacitance $C_i$	44 nF
Gas group	II B
Max. external inductivity $L_o$	10 mH
Max. external capacity $C_o$	9.2 $\mu$ F
Max. capacitance $C_i$	44 nF
Gas group	II B
Max. external inductivity $L_o$	1 mH
Max. external capacity $C_o$	15 $\mu$ F
Max. capacitance $C_i$	44 nF
Safety-related maximum voltage $U_m$	253 V AC (125 V DC)

**Certificates**

Certification Ex: IECEx

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## Drawings

### Block diagram

