





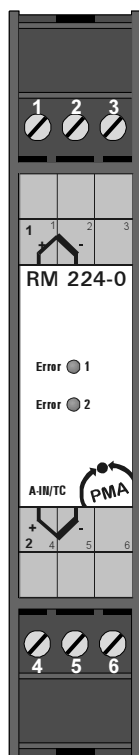






# Analog Input Module RM 224-0

## Safety Instructions

<p> <b>ESD !</b></p> <ul style="list-style-type: none"> <li>contains electrostatically sensitive components</li> <li>Original packing protects against electrostatic discharge (ESD)</li> <li>Transporting only in the original packing</li> <li>during mounting rules for protection against ESD must be followed</li> </ul>	<p> <b>Connections</b></p> <ul style="list-style-type: none"> <li>Wiring must be conform to local standards (e.g. VDE 0100 in Germany) !</li> <li>Input leads must be kept separate from signal and mains leads !</li> <li>The protective earth must be connected to the relevant terminal (in the instrument carrier) !</li> <li>The cable screening must be connected to the terminal for grounded measurement !</li> <li>Usage of twisted and screened input leads prevent stray electric interference !</li> <li>Connections must be made according to the connecting diagrams !</li> </ul>	<p> <b>Maintenance / Repair</b></p> <p>Instrument needs no particular maintenance.</p> <p> When opening the instrument live parts or terminals can be exposed. Before carrying out the instrument must be disconnected from all voltage sources. The instrument contains electrostatically sensitive components. The following work may be carried out only by trained, authorized persons.</p> <p><b>Fuse tripped:</b></p> <ul style="list-style-type: none"> <li>Cause must be determined and removed !</li> <li>Only fuses of the same type and current rating as the original fuse must be used.</li> <li>Using repaired fuses or short-circuiting the fuse socket is inadmissible !</li> </ul>
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## Pin Assignment



Pin	Assignment	
1		Input 1
2		
3	NC	
4		Input 2
5		
6	NC	
Art.-No.	9407-738-22401	

# Technical Data RM 224-0

<b>Application:</b>	2 galvanically isolated inputs for the direct connection of thermocouples (type J, K, L, E, T, S, R, B, N, W)
<b>Resolution:</b>	16 bits / successive approximation
<b>Measuring range:</b>	-9.835... +76.357 mV

Temperature ranges:	Measuring range	Resolution	Error
Thermocouple type J:	-210.0 °C ... +1200.0 °C	0.03 K	≤ 1 K
Thermocouple type K:	-2700 °C ... +1370.0 °C	0.04 K	≤ 1 K
Thermocouple type L:	-200.0 °C ... +900.0 °C	0.03 K	≤ 1 K
Thermocouple type E:	-270.0 °C ... +1000.0 °C	0.02 K	≤ 1 K
Thermocouple type T:	-270.0 °C ... +400.0 °C	0.04 K	≤ 1 K
Thermocouple type S:	-50.0 °C ... +1760.0 °C	0.13 K	≤ 2 K
Thermocouple type R:	-50.0 °C ... +1760.0 °C	0.12 K	≤ 2 K
Thermocouple type B: 1)	+25.0 °C ... +1820.0 °C	0.15 K	≤ 2 K
Thermocouple type N:	-196.0 °C ... +1299.6 °C	0.04 K	≤ 1 K
Thermocouple type W: 2)	0.0 °C ... +2299.3 °C	0.09 K	≤ 1 K

1) specification applies above 400°C 2) W5Re/W26Re

Unit °C, °F, K selectable via software / number of post decimal places = 1

<b>Cold junction compensation:</b>	additional error ≤ 0.15% of the respective measuring range
<b>Linearization:</b>	Linearity error negligible
<b>Differential input:</b>	yes
<b>Input resistance:</b>	ca. 1 MΩ
<b>Sensor current:</b>	ca. 0.5 µA (sensor breakage detection)
<b>Overflow of measuring range:</b>	Alarm message if value overflows 160 digits
<b>Overload-protection:</b>	Overload-protected by varistors (5 V/ 0.4 J)
<b>Filter:</b>	<ul style="list-style-type: none"> <li>● Analog: Low-pass, <math>f_{\text{cut-off}} &lt; 10 \text{ Hz}</math></li> <li>● Digital: Low-pass of 1st order (adjustable averaging process)</li> </ul>
<b>Configuration:</b>	The type of the used thermocouple is selected via the fieldbus.
<b>Power supply:</b>	The module is supplied with necessary voltages via the bus board.
<b>Power consumption:</b>	max. 1400 mW
<b>Cycle times:</b>	Each channel is scanned with 50 ms. Filters for the input values can be parameterized via the fieldbus.
<b>LED-Displays:</b>	Errors are indicated for each channel via 2 LEDs.
<b>Galvanic isolation:</b>	The logic-part is galvanically isolated from the inputs. Additionally, there is a galvanic isolation between the power supply and the inputs. The inputs are also galvanically isolated from each other.
<b>Ambient temperature:</b>	<ul style="list-style-type: none"> <li>● Operation: 0... +50 °C</li> <li>● Storage: -20... +70 °C</li> <li>● Effect: ≤ 0.05% / 10 K</li> </ul>
<b>Climatic Application Class:</b>	KUF DIN 40040 (≤ 75% rel. humidity, no condensation)
<b>Shock sensitivity:</b>	DIN 40046 IEC68-2-69
<b>EMC:</b>	<ul style="list-style-type: none"> <li>● DIN EN 50081 Part 2</li> <li>● DIN EN 50082 Part 2</li> <li>● HF-effect: ≤ 0.1%</li> </ul>
<b>Electrical connections:</b>	Screw-/plug-in terminal blocks, line cross-section max. 2.5 mm²
<b>Class of protection:</b>	IP 20 of the completely equipped device
<b>Dimensions:</b>	99 x 17.5 x 114.5 mm (h x w x d)
<b>Weight:</b>	68 g
<b>Housing:</b>	Material: Polyamid PA 6.6, combustibility class V0 according to UL 94
<b>Assembly:</b>	plugged-in and locked from the front of base module
<b>Usage position:</b>	vertical

Subject to technical alterations!