





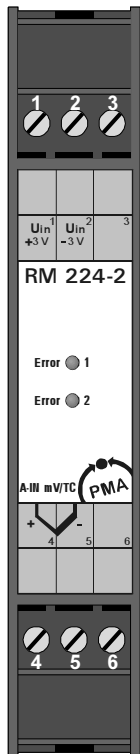




Analog Input Module RM 224-2

Safety Instructions

<p> ESD !</p> <ul style="list-style-type: none"> contains electrostatically sensitive components Original packing protects against electrostatic discharge (ESD) Transporting only in the original packing during mounting rules for protection against ESD must be followed 	<p> Connections</p> <ul style="list-style-type: none"> Wiring must conform to local standards (e.g. VDE 0100 in Germany) ! Input leads must be kept separate from signal and mains leads ! The protective earth must be connected to the relevant terminal (in the instrument carrier) ! The cable screening must be connected to the terminal for grounded measurement ! Usage of twisted and screened input leads prevent stray electric interference ! Connections must be made according to the connecting diagrams ! 	<p> Maintenance / Repair</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>Fuse tripped:</p> <ul style="list-style-type: none"> Cause must be determined and removed ! Only fuses of the same type and current rating as the original fuse must be used. Using repaired fuses or short-circuiting the fuse socket is inadmissible !
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Pin Assignment



Pin	Assignment	
1	$U_{in} +3 V$	Input 1
2	$U_{in} -3 V$	
3	NC	
4		Input 2
5		
6	NC	
Art.-No.	9407-738-22421	

Technical Data RM 224-2

Application:	2 galvanically isolated inputs e. g. for measuring combustion gas
Resolution:	16 bit / successive approximation
Channel 1:	<p>analog input measuring range -3000 mV ... +3000 mV without sensor excitation, wires for sensors should be of screened type input impedance: ca. 200 MΩ differential error with 100 kΩ sensor output resistance linearity \leq 0.05% of span temperature \leq 0.05% of span (0 ... 50°C) error with 1 MΩ sensor output resistance linearity \leq 0.5% of span temperature \leq 0.4% of span (0 ... 50°C)</p>

Channel 2: **Thermocouples** Type J, K, L, E, T, S, R, B, N, W, span -9.835 ... +76.357 mV

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

1) ratings valid above 400°C 2) W5Re/W26Re
unit°C, °F, K selectable via software / number of post decimal places = 1

Cold junction compensation: additional error \leq 0.15% of span

Linearity: Linearity error negligible

Temperature influence: \leq 0.05% / 10 K (0 ... 50°C) of actual span

Input resistance: ca. 1 M Ω differential

Sensor current: ca. 0.5 μ A (sensor breakage detection)

Over-/underflow of measuring range: Alarm message if value overflows 160 digits

Configuration: The used type of thermocouple is selected via the fieldbus.

Overload protection: Overvoltage protection with varistors (5 V / 0.4 J)

Filter:

- Analog: Low-pass, $f_{\text{cut-off}} < 10$ Hz
- Digital: Low-pass of 1st order (adjustable averaging process)

Supply voltage: The module is supplied of the bus coupler via the bus plane.

Power dissipation: max. 1400 mW

Cycle times: The scanning time per channel is 50 ms. A filtering of the input values is adjustable via the fieldbus.

LED displays: 2 LEDs indicate error states for each channel directly at the module.

Galvanic isolation: 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.

Ambient temperature:

- Operation: 0 ... +50 °C
- Storage: -20 ... +70 °C

Climatic application class: KUF DIN 40040 (\leq 75% rel. humidity, no condensation)

Shock sensitivity: DIN 40046 IEC68-2-69

EMC (channel 2):

- DIN EN 50081 Part 2 ● DIN EN 50082 Part 2 ● DIN EN 61326 Part 1
- HF-influence \leq 0.1%

Electrical connection: Screw-/plug-in terminal blocks, line cross-section max. 2.5 mm²

Class of protection: IP 20, of the fully equipped device

Dimensions: 99 x 17.5 x 114.5 mm (h x w x d)

Weight: 68 g

Housing: Material Polyamid PA 6.6, combustibility class V0 according to UL 94

Assembly: plugged-in and locked in from the front of base module

Usage position: Vertical



Subject to technical alterations !