

1. Safety



**WARNING**  
Power off the module and all connected devices before installation.  
Voltage on the terminals can be dangerous!

2. Specifications

Table 1 General specifications

Device	PRM-230.3	PRM-24.3
Power supply	~230 (90...264) V AC, 50 Hz ~230 (127...373) V DC	=24 (19 ... 30) V DC
Power consumption, max.	8 VA	4 W
Galvanic isolation	2300 V	510 V
Reverse polarity protection	—	yes
Inputs	Digital	—
	Analog	4
Outputs	Digital	—
	Analog	2
Internal bus	Frequency	2.25 MHz
	Packet rate	4000 packet/s
	Number of modules, max.	2
Dimensions	88 × 90 × 58 mm	
Mounting	DIN rail (35 mm)	
Weight, max.	400 g	

Table 2 Analog inputs (AI)

Input signal	see Table 4	
ADC resolution	16 bit	
Basic error	RTD	±0.25 %
	TC	±0.5 %
	I/U signals	±0.25 %
Temperature influence per each 10 °C	0.5 of basic error	
Sampling time for one input, max.	RTD	0.8 s
	TC	0.6 s
	I/U signals	0.6 s
Analog input resistance, min.	10 kΩ	
External resistance for current measurement	45-50 Ω	
Galvanic isolation	—	

Table 3 Analog outputs (AO)

Signal types for actuator control	0-20 mA
	4-20 mA
	0-24 mA
	0-5 V
	0-10 V
DAC resolution	12 bit
Basic error	±0.5 %
Temperature influence per each 10 °C	0.25 of basic error
Galvanic isolation between outputs	510 V
Voltage supply (external, each output separately)	15-30 V DC
Output load (max.)	4-20 mA / 300 Ω
Output load (min.)	0-10 V / 1000 Ω

Table 4 Sensors and input signals

Sensor or input signal	Measurement range	Accuracy
<b>Resistive signals</b>		
0 ... 3950 Ω	0...100%	±0.25 %
<b>Direct voltage signal</b>		
-50-50 mV	0...100%	±0.25 %
<b>Standard I/U signals</b>		
0-1 V	0...100 %	±0.25 %
0-5 mA	0...100 %	
0-20 mA	0...100 %	
4-20 mA	0...100 %	
<b>RTD</b>		
Cu 50 (α = 0.00426 °C <sup>-1</sup> )*	-50...+200 °C	±0.25 %
Cu 50 (α = 0.00428 °C <sup>-1</sup> )	-180...+200 °C	
Pt 50 (α = 0.00385 °C <sup>-1</sup> )	-200...+850 °C	
Pt 50 (α = 0.00391 °C <sup>-1</sup> )	-200...+850 °C	
Cu 100 (α = 0.00426 °C <sup>-1</sup> )	-50...+200 °C	
Cu 100 (α = 0.00428 °C <sup>-1</sup> )	-180...+200 °C	
Pt 100 (α = 0.00385 °C <sup>-1</sup> )	-200...+850 °C	
Pt 100 (α = 0.00391 °C <sup>-1</sup> )	-200...+850 °C	
Ni 100 (α = 0.00617 °C <sup>-1</sup> )	-60...+180 °C	
Pt 500 (α = 0.00385 °C <sup>-1</sup> )	-200...+850 °C	
Pt 500 (α = 0.00391 °C <sup>-1</sup> )	-200...+850 °C	
Cu 500 (α = 0.00426 °C <sup>-1</sup> )	-50...+200 °C	
Cu 500 (α = 0.00428 °C <sup>-1</sup> )	-180...+200 °C	
Ni 500 (α = 0.00617 °C <sup>-1</sup> )	-60...+180 °C	
Cu 1000 (α = 0.00426 °C <sup>-1</sup> )	-50...+200 °C	
Cu 1000 (α = 0.00428 °C <sup>-1</sup> )	-180...+200 °C	
Pt 1000 (α = 0.00385 °C <sup>-1</sup> )	-200...+850 °C	
Pt 1000 (α = 0.00391 °C <sup>-1</sup> )	-200...+850 °C	
Ni 1000 (α = 0.00617 °C <sup>-1</sup> )	-60...+180 °C	
<b>TC</b>		
L	-200 ... +800 °C	±0.5 % (± 0.25 %) **
J	-200 ... +1200 °C	
N	-200 ... +1300 °C	
K	-200 ... +1360 °C	
S	-50 ... +1750 °C	
R	-50 ... +1750 °C	
T	-250 ... + 400 °C	
B	+200 ... +1800 °C	
A-1	0 ... + 2500 °C	
A-2	0 ... +1800 °C	
A-3	0 ... +1800 °C	



**NOTE**

\* Temperature coefficient of resistance (α) is determined by the

formula:  $\alpha = \frac{R_{100} - R_0}{R_0 \cdot 100 \text{ } ^\circ\text{C}}$ , where  $R_{100}$ ,  $R_0$  are RTD performance curve resistance values at 100 °C and 0 °C correspondingly. The coefficient value is rounded to the fifth significant figure.

\*\*Accuracy without cold junction correction.

3. Environmental conditions

The device is designed for natural convection cooling. It should be taken into account when choosing the installation site.

The following environment conditions must be observed:

- clean, dry and controlled environment, low dust level
- closed non-hazardous areas, free of corrosive or flammable gases

Table 5 Environmental conditions

Conditions	Permissible range
Ambient operating temperature	-20...+55°C
Storage temperature	-20...+55°C
Relative humidity	up to 80% (non-condensing)
Altitude	up to 2000 m above sea level
EMC immunity	conforms to IEC 61000-6-2
EMC emission	conforms to IEC 61000-6-4

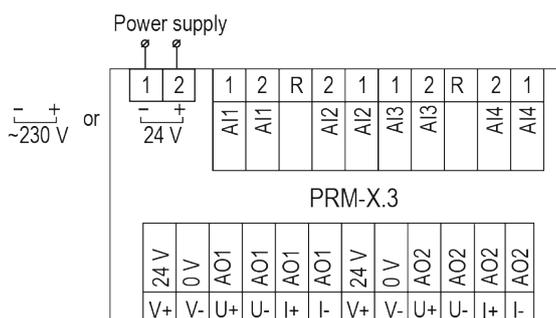


Fig. 1 – Terminal block layout

4. RTD wiring

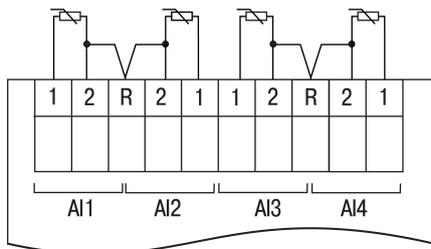


Fig. 2 – Resistance thermometer wiring

5. TC wiring

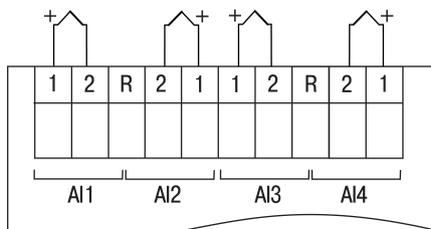


Fig. 3 – Thermocouple wiring



**NOTE**  
Cold junction compensation (CJC) is provided.  
The cold junction temperature sensor is built in next to the terminal block.



**NOTICE**  
Do not use a TC with not insulated hot junction. It can damage the module.

6. I/U sensors wiring

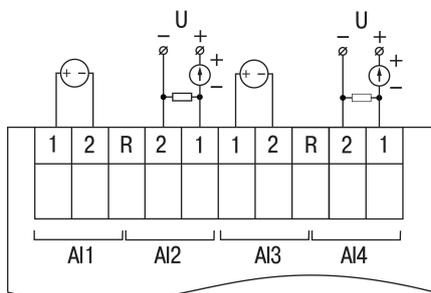


Fig. 4 – I/U sensors wiring

7. Resistance sensor wiring

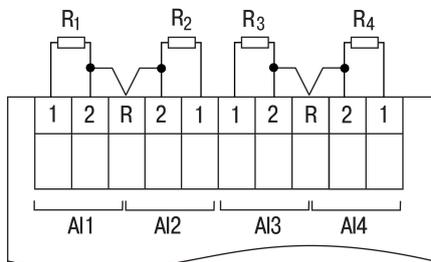


Fig. 5 – Resistance sensor wiring

8. Output wiring

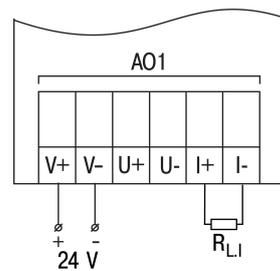


Fig. 6 – Current output wiring

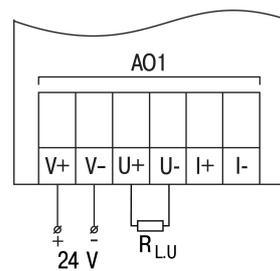


Fig. 7 – Voltage output wiring

9. Dimensions

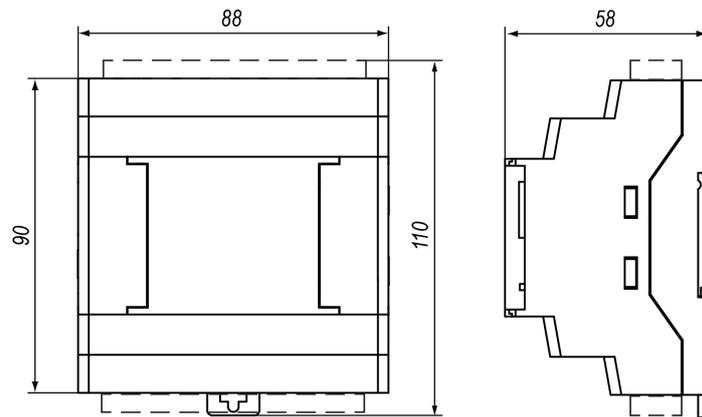
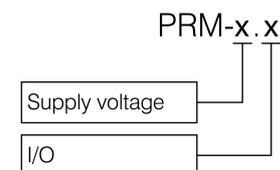


Fig. 8 – Dimensions

10. Scope of delivery

PRM	1
Short guide	1
Cable	1
Terminals blocks (set)	1

11. Ordering information



<b>Supply voltage</b>	230	230 (90...264) V AC
	24	24 (19...30) V DC
<b>I/O</b>	3	4 AI, 2 AO