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 specification

Device		PRM-230.3	PRM-24.1
Power supply		230 (90…264) V AC; 50 (47…63) Hz	24 (19 … 30) V DC
Power consumption, max.		8 VA	4 W
Galvanic isolation		2300 V	510 V
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		approx. 250 g	

Table 2 Analog inputs

Input signal		see *Table 4*
ADC resolution		16 bit
Accuracy	RTD	0.25 %
	TC	0.5 %
	I / U signals	0.25 %
Temperature influence		0.5 % / 10 °C
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

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

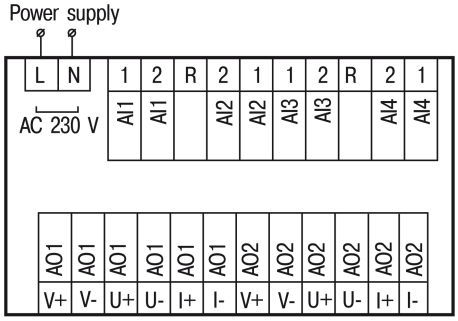

Fig. 1 – Terminal blocks

Table 4 Sensors and input signals

Sensor or input signal	Measurement range	Accuracy
Resistive signals		
0 … 3950 Ω	0…100%	±0.25
Standard I / U signals		
0-1 V	0…100 %	±0.25 %
–50-50 mV	0…100 %	
0-5 mA	0…100 %	
0-20 mA	0…100 %	
4-20 mA	0…100 %	
RT according to IEC 60751:2008		
Pt50 (α=0.00385 °C^{-1})	–200…+850 °C	±0.25 %
Pt100 (α=0.00385 °C^{-1})	–200…+850 °C	
Pt500 (α=0.00385 °C^{-1})	–200…+850 °C	
Pt1000 (α=0.00385 °C^{-1})	–200…+850 °C	
RT according to GOST 6651-2009 and 6551–94		
50P (α=0.00391 °C^{-1})	–240…+1100 °C	±0.25 %
50M (α=0.00428 °C^{-1})	–200…+200 °C	
Cu50 (α=0.00426 °C^{-1})	–50…+200 °C	
100P (α=0.00391 °C^{-1})	–240…+1100 °C	
100M (α=0.00428 °C^{-1})	–200…+200 °C	
Cu100 (α=0.00426 °C^{-1})	–50…+200 °C	
Ni100 (α=0.00617 °C^{-1}))	–60…+180 °C	
500P (α=0.00391 °C^{-1})	–240…+1100 °C	
500M (α=0.00428 °C^{-1})	–200…+200 °C	
Cu500 (α=0.00426 °C^{-1})	–50…+200 °C	
Ni500 (α=0.00617 °C^{-1})	–60…+180 °C	
1000P (α=0.00391 °C^{-1})	–240…+1100 °C	
1000M (α=0.00428 °C^{-1})	–200…+200 °C	
Cu1000 (α=0.00426 °C^{-1})	–50…+200 °C	
Ni1000 (α=0.00617 °C^{-1})	–60…+180 °C	
TC according to IEC 60584-1:20131		
J	–200…+1200 °C	±0.5 %
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	
TC according to GOST 8.585		
L	–200…+800 °C	±0.5 %
A-2	0…+1800 °C	
A-3	0…+1800 °C	

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	-25…+55°C
Relative humidity	up to 80% (at +35°C, 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

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4. RTD wiring

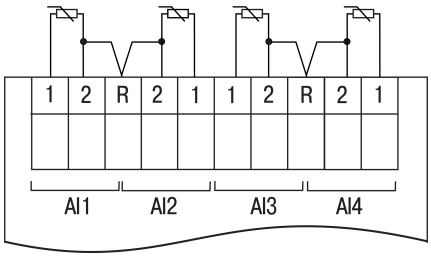


Fig. 2 – Resistance thermometer wiring

5. TC wiring

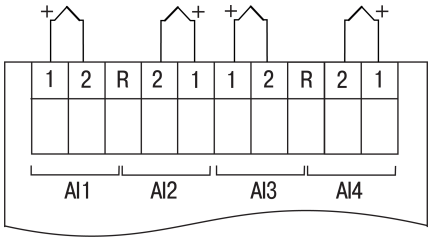


Fig. 3 – Thermocouple wiring

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

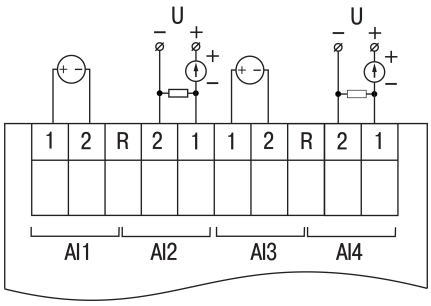


Fig. 4 – I/U sensors wiring

7. Resistance sensor wiring

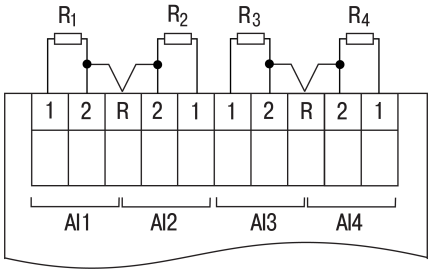


Fig. 5 – Resistance sensor wiring

8. Output wiring

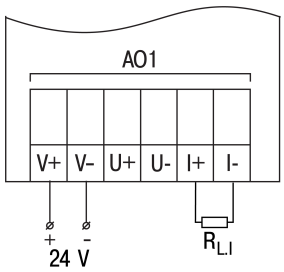


Fig. 6 – Current output wiring

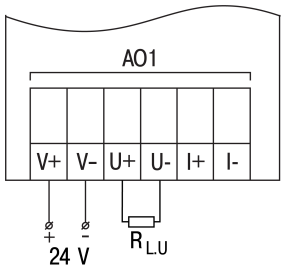


Fig. 7 – Voltage output wiring

9. Dimensions

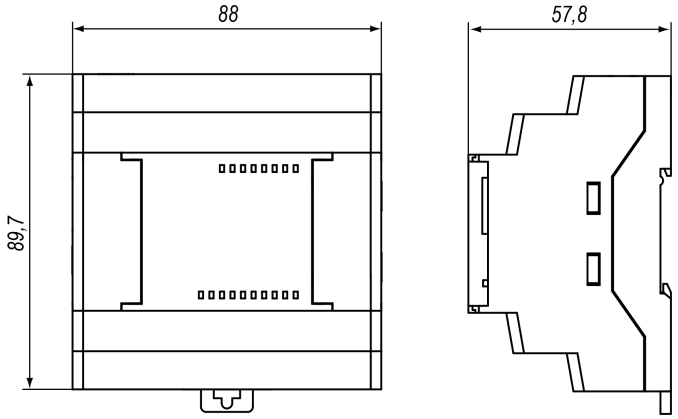
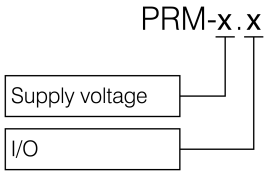


Fig. 8 – Dimensions

10. Scope of delivery

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

11. Ordering information



Supply voltage	230	230 (90…264) V AC
	24	24 (19…30) V DC
I / O	1	8 DI, 8 DO
	2	4 AI, 4 DO
	3	4 AI, 2 AO

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