1. Safety

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

2. 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 1 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

3. Specifications

Table 2 General specification

Device		PRM-230.2	PRM-24.2
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	4	
	Analog	—	
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 3 Analog inputs

ADC resolution		12 bit
Sampling time, max.		1 ms
Galvanic isolation		no
Analog mode 1 (Linear input)		
Input signal		0-10 V, 4-20 mA
Input resistance for 0-10 V input		10 kΩ
Basic error		±0.5 %
Temperature influence		±0.5 % / 10 °C
Analog mode 2 (Temperature sensors)		
Input signal		see *Tab.*
Measurement range		0…300 kΩ
Least significant bit value, max.		1 °C
Basic error	0…150 kΩ	±1.0 %
	151…300 kΩ	±2.0 %
	RTD, NTC and PTC	±1.5 %
Temperature influence		±0.5 % / 10 °C
Digital mode		
Nominal input voltage		24 V DC
HIGH/LOW threshold (adjustable in ALP)		1…8 V
LOW/HIGH threshold (adjustable in ALP)		2…9 V
Input current		1…15 mA
Pulse length, min.		2 ms
Signal frequency, max.		250 Hz

Table 4 Sensors (analog mode 2)

Sensor	Measurement range
RTD	
Pt 500 (α = 0.00385 °C⁻¹)	–200…+850 °C
500P (α = 0.00391 °C⁻¹)	–200…+850 °C
Cu 500 (α = 0.00426 °C⁻¹)	–50…+200 °C
500M (α = 0.00428 °C⁻¹)	–180…+200 °C
Ni500 (α = 0.00617 °C⁻¹)	–60…+180 °C
Cu 1000 (α = 0.00426 °C⁻¹)	–50…+200 °C
1000M (α = 0.00428 °C⁻¹)	–180…+200 °C
Pt 1000 (α = 0.00385 °C⁻¹)	–200…+850 °C
1000P (α = 0.00391 °C⁻¹)	–200…+850 °C
Ni 1000 (α = 0.00617 °C⁻¹)	–60…+180 °C
Thermistors / NTC	
B57861S series, 2 kΩ, $B_{25/100}$ = 3560K	–55…+100 °C
B57861S series, 3 kΩ, $B_{25/100}$ = 3988K	–55…+145 °C
B57861S series, 5 kΩ, $B_{25/100}$ = 3988K	–35…+145 °C
B57861S series, 10 kΩ, $B_{25/100}$ = 3988K	–35…+155 °C
B57861S series, 30 kΩ, $B_{25/100}$ = 3964K	–20…+155 °C
B57861S series, 50 kΩ, $B_{25/100}$ = 3760K	–10…+155 °C
NTC 3435, 10 kΩ	–40…+105 °C
NTC 3977, 10 kΩ	–40…+125 °C
Thermistors / PTC	
KTY82-110	–55…+150 °C
KTY82-120	
KTY82-121	
KTY82-122	
KTY82-150	
KTY82-151	

Table 5 Digital outputs

Type		relay (NO)
Switching capacity	AC	5 A, 250 V AC (resistive load)
	DC	3 A, 30 V DC
Load current at 5 V DC, min.		10 mA
Service life, electrical	AC	200,000 switching cycles
	DC	100,000 switching cycles
Galvanic isolation		2830 V, individual

4. Galvanic isolation

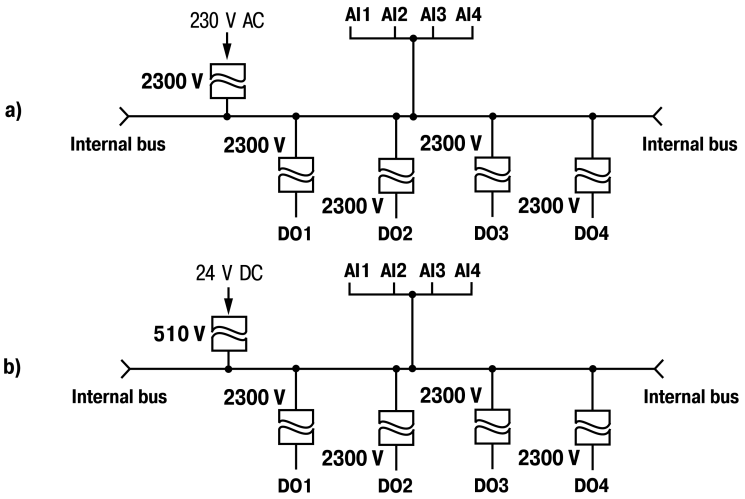

Fig. 1 – Galvanic isolation PRM-230.2 (a) and PRM-24.2 (b)

5. Terminal block layout

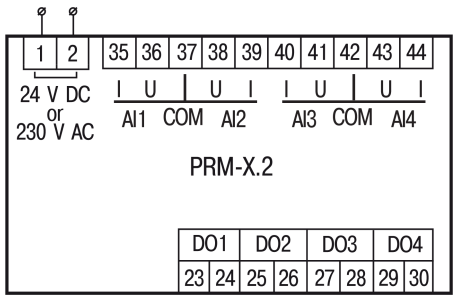

Fig. 2 – Terminal block layout

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6. Analog inputs wiring

NOTICE
Before connecting analog sensors, ensure the input signal selected in configuration corresponds to the connected one. Wrong signal can cause the device damage. The COM terminals are internally connected.

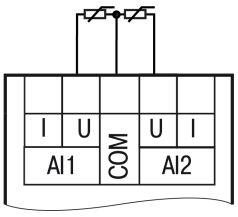


Fig. 3 – RTD wiring

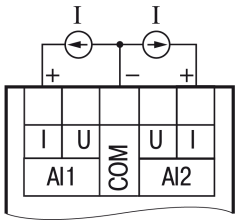


Fig. 4 – I sensor wiring

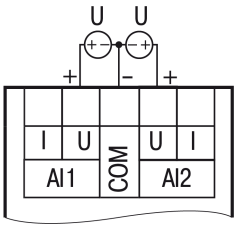


Fig. 5 – U sensor wiring

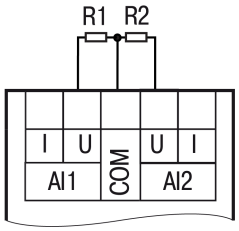


Fig. 6 – Resistance sensor wiring

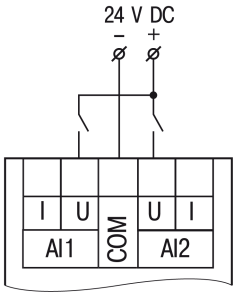


Fig. 7 – Switch contact wiring

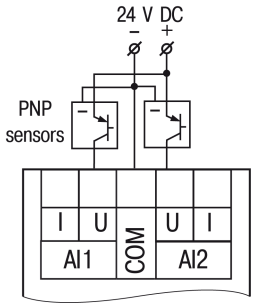


Fig. 8 – 3-wire sensor with PNP output

7. Digital output wiring

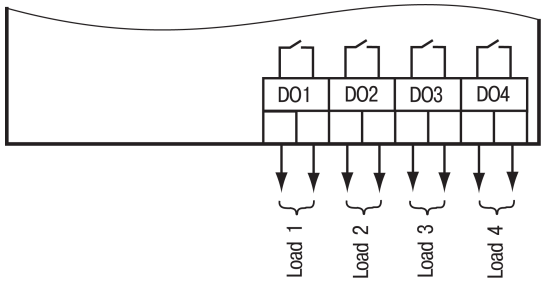


Fig. 9 – Relay output wiring

8. Internal bus

CAUTION
The device must be powered off before connecting to internal bus or I/O devices.

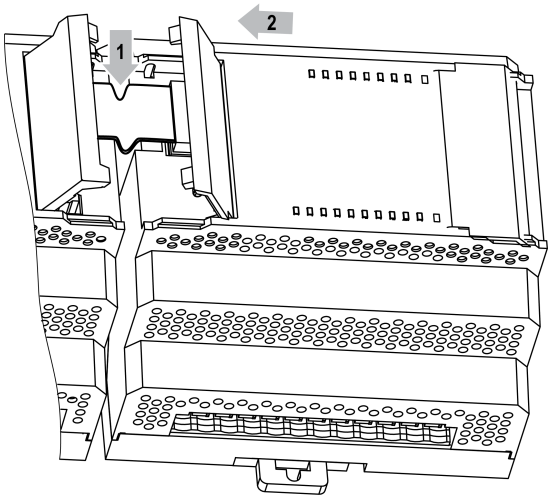


Fig. 10 – Internal bus connection

9. Dimensions

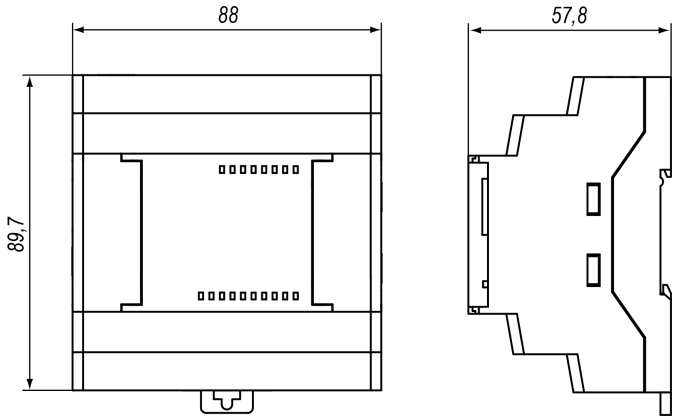
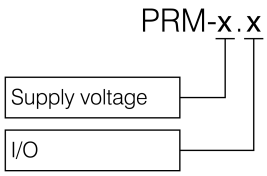


Fig. 11 – Dimensions

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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