⚠ **WARNING**
Installation may only be performed when the relay and all connected devices are powered off.
Voltage on the terminals can be dangerous!

⚠ **CAUTION**
It is necessary to observe the polarity while connecting 24V DC power supply! Voltage reversal can damage the device.

⚠ **CAUTION**
Installation and maintenance may only be carried out by specialist personnel using the correct tools!

🛈 **NOTICE**
It is recommended to configure and program the device prior to installation and wiring.

1. Ordering information

PR200-X.X.X

| Supply voltage |
| I/O |
| Interfaces |

Supply voltage
230 – 230 (94…264) V AC
24 – 24 (19…30) V DC

I/O
1 – 8 DI, 6 DO
2 – 8 DI, 4 AI, 8 DO, 2 AO (4-20 mA)
4 – 8 DI, 4 AI, 8 DO, 2 AO (0-10 V)

Interfaces
0 – none
1 – RS485
2 – 2 × RS485

2. Specifications

Table 1   General specification

Parameter	Value			
	230.1.X	230.2/4.X	24.1.X	24.2/4.X
Power supply	230 (94…264) V AC; 50 (47…63) Hz		24 (19…30) V DC	
Power consumption	10 VA	17 VA	10 W	10 W
Galvanic isolation	2830 V		1780 V	
Integrated voltage source	—	24±3 V DC, 100 mA	—	—
Galvanic isolation	—	1780 V	—	—
IP Code	IP20			
Dimensions	123 × 108 × 58 mm			
Mounting	DIN rail (35 mm)			
Weight	approx. 600 g			

Table 2   Digital inputs

Parameter	Value	
	230.X.X	24.X.X
Input voltage	230 V AC	24 V DC
Input voltage, max.	264 V AC	30 V DC
HIGH level	159…264 V / 0.75…1.5 mA	8.5…30 V / 2…15 mA
LOW level	0…40 V / 0…0.5 mA	-3…+5 V / 0…15 mA
Pulse length, min.	50 ms	2 ms
Response time, max.	100 ms	30 ms
Galvanic isolation against other circuits	2830 V	

Table 3   Analog inputs

Parameter	Value
ADC resolution	12 bit
Analog mode	
Input signal	0-10 V, 4-20 mA, 0-4 kΩ
Input resistance (for 0-10 V)	61 kΩ
Shunt resistance (for 4-20 mA)	121 Ω
Basic error	±0.5 %
Temperature influence	±0.5 % / 10 °C
Digital mode	
HIGH/LOW threshold (adjustable in ALP)	1…8 V
LOW/HIGH threshold (adjustable in ALP)	2…9 V
Pulse length, min.	5 ms
Signal frequency, max.	100 Hz

Table 4   Digital outputs

Parameter	Value	
Type	relay (NO)	
Switching capacity	AC	5 A, 250 V AC (resistive load)
	DC	3 A, 30 V DC

Parameter	Value
Load current at 5 V DC, min.	10 mA
Service life, electrical AC	200,000 switching cycles
Service life, electrical DC	100,000 switching cycles
Galvanic isolation against other circuits	2830 V, in groups of 2
Galvanic isolation between output groups	1780 V

Table 5   Analog outputs

Parameter	Value
Output signal	4-20 mA (X.2.X), 0-10 V (X.4.X)
External voltage supply	15…30 V
Basic error, max.	±0.5%
Temperature influence	±0.05% / 10°C
Inductive load, max (for 4-20 mA)	50 µH
Signal conversion time	100 ms
DAC resolution	10 bit
Galvanic isolation against other circuit	2830 V

3. Operating conditions

The device is designed for natural convection cooling.

The following environmental conditions must be observed:
• clean, dry and controlled environment, low dust level
• closed non-hazardous areas, free of corrosive or flammable gases

Table 6   Operating conditions

| Condition	Permissible range
Ambient temperature	-20…+55 °C
Transportation and storage	
Relative humidity	up to 80 % (at +25 °C, non-condencing)
Attitude	up to 2000 m above sea level
IP code	IP20
EMC immunity	conforms to IEC 61000-6-2
EMC emission	conforms to IEC 61000-6-4

4. Installation
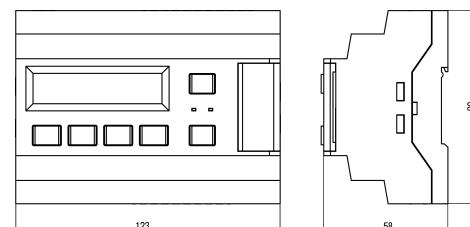

Fig. 1   – Dimensions
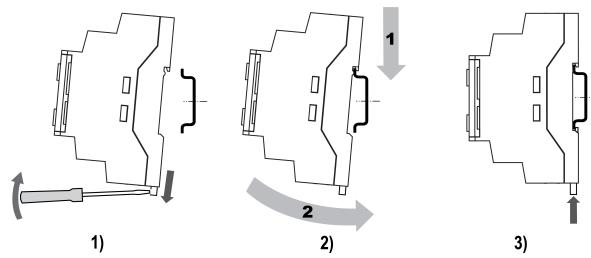
Fig. 2   – Installation

Installation:
1. Place the device on a DIN rail as shown in *Fig. 2*.
2. Press the device firmly against the DIN rail in the direction of arrow 2 until the latch locks.
3. Wire the device using the supplied terminal blocks.

Removing:
1. Take off the terminal blocks without disconnecting wires.
2. Insert a screwdriver into the eyelet of the slide interlock.
3. Loosen the slide interlock and then remove the relay from the DIN rail.

PR200 is equipped with plug-in terminal blocks which enable quick replacement of the device without disconnecting the existing wiring.

5. Analog inputs modes

1. Remove the fron cover

3. Set the jumper block according to the input signal (shown for AI1)

XP1 — Analog mode, 0-10 V

XP1 — Analog mode, 0-20 mA

XP1 — Digital mode

2. Select an input

AI1 AI2 AI3 AI4

XP1 — Analog mode, 0-4 kΩ
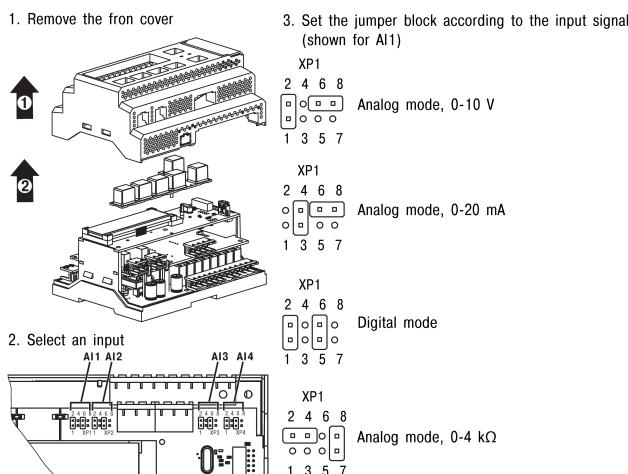
Fig. 3 – AI mode selection

6. Service modes

Run-Stop Mode
Down.Mode
False! Do not connect so!
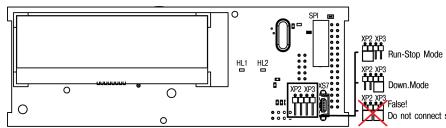
Fig. 4 – Jumpers of service modes

7. Digital inputs wiring

230 V AC
N L1   N L2

| 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| COM1 | DI1 | DI2 | DI3 | DI4 | COM2 | DI5 | DI6 | DI7 | DI8 |

Group 1   Group 2

Fig. 5 – Digital inputs wiring (230 V AC)

24 V DC   24 V DC   24 V DC   24 V DC
– +   – +   ∅ ∅   ∅ ∅

| COM1 | DI1 | DI2 | DI3 | DI4 | COM2 | DI5 | DI6 | DI7 | DI8 |
Group 1   Group 2

| COM1 | DI1 | DI2 | DI3 | DI4 | COM2 | DI5 | DI6 | DI7 | DI8 |
Group 1   Group 2
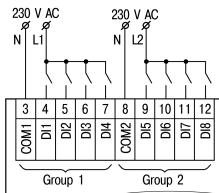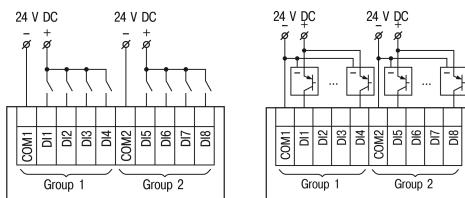
Fig. 6 – Digital inputs wiring (24 V AC)

8. Analog inputs wiring

I I I I
+ – + +

| AI1 | COM3 | AI2 | AI3 | COM4 | AI4 |
Group 1   Group 2
Current sensor

U U U U
+ – + +

| AI1 | COM3 | AI2 | AI3 | COM4 | AI4 |
Group 1   Group 2
Voltage sensor

R1 R2   R3 R4

| AI1 | COM3 | AI2 | AI3 | COM4 | AI4 |
Group 1   Group 2
Resistance sensor
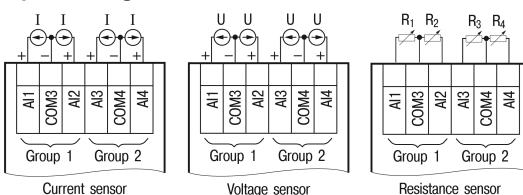
Fig. 7 – Analog inputs wiring

9. Outputs wiring

⚠ **NOTICE**
The output voltage of an external voltage source may not exceed 30 V. Higher voltage can damage the device.

| DO1 | COM | DO2 | DO3 | COM | DO4 | DO5 | COM | DO6 | DO7 | COM | DO8 |
| 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 |

Load 1 Load 2 Load 3 Load 4 Load 5 Load 6 Load 7 Load 8
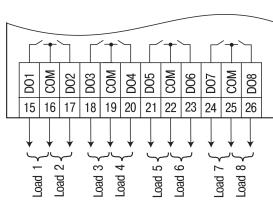
Fig. 8 – Digital output wiring

DAC 4...20 mA   DAC 4...20 mA

| AO1– | AO1+ | AO2– | AO2+ |
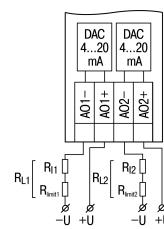
Fig. 9 – Current output wiring

DAC2 ← + AO2
DAC1 ← + AO1
V+
V-

RL1 0-10 V   RL2 0-10 V   24 V DC
2 kΩ ≤ RL ≤ 10 kΩ
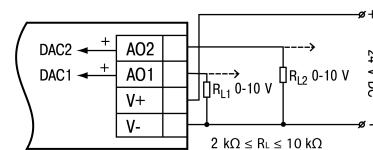
Fig. 10 – Voltage output wiring

10. Controls and indication

27.07.2023 03:53
Thursday Mode:

ESC
ALT ⌃ ⌄ SEL OK

Fig. 11 – Face plate

1. Two-line 16-digit LCD display
2. Green LED
3. Red LED
4. Extension module connector (under cover)
5. Programming connector (under cover)
6. Buttons
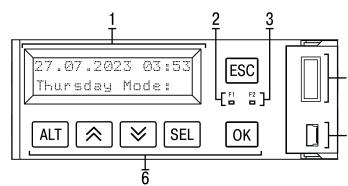
Table 7   Buttons

Button	Description
⌃ ⌄	Menu navigation / Parameter value editing
ALT	Used in combination with other buttons
SEL	Parameter selection / changed value saving
ESC	Cancel change (reset to original value) / exit edit mode
OK	Applying changes
ESC	Exit / Cancel
ALT + ⌃ or ALT + ⌄	Changing the position of the cursor / moving through the digits

11. Device menu

PR200 has a user menu and a system menu.

The user menu can be programmed in ALP using one or more display forms. To switch between two display forms, jump conditions have to be created. Jump condition can be an event of a function button or of a variable. For further details about display programming, see ALP Help.

The system menu allows you to view the most important parameters of the device and perform a quick configuration without connection to ALP. The system menu is always present in the device, even if it does not contain a user program.

The display can be used in **view** or **edit** mode. The edit mode is only for editable display elements available.

When the edit mode is activated, the last changed parameter will be displayed.

12. Time/Date settings

To set time and date using the device system menu:

1. Hold ALT button for 3 seconds to access the menu.
2. Press OK button to enter **Device** menu.
3. Use ⌄ button to reach **Clock** menu
4. Press OK button to enter **Time/Date** parameter.
5. Press SEL button to enter edit mode. The first digit starts flashing.
6. Use ⌃ and ⌄ buttons to change the value. To move between characters use ALT + ⌄ combination .
7. Press OK button to move to the next editable parameter or hold ESC button for 3 seconds to exit edit mode.

13. Still have questions?

Please feel free to check our latest materials about this product:

Product page   Full user guide   FAQs