

Programmable relay

- ⚠ DANGER** | 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.
- ▶ NOTICE** | Installation and maintenance may only be carried out by specialist personnel using the correct tools!

Ordering information

| PR200-X.X.X | Supply voltage | I/O | Interfaces |
|-------------|---|---|---------------------------------------|
| | 230 - 230 (94...264) V AC 24 - 24 (19...30) V DC | 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) | 0 - none 1 - RS485 2 - 2x RS485 |

Specifications

Table 1 General specification

| Device | PR200-230.1 | PR200-230.2 PR200-230.4 | PR200-24.1 | PR200-24.2 PR200-24.4 |
|---------------------------|--------------------------------------|----------------------------|-------------------|--------------------------|
| Power supply | 230 (94...264) V AC; 50 (47...63) Hz | | 24 (19...30) V DC | |
| Power consumption, max | 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 | - | - |
| Inputs | 8 | | | |
| Digital | | | | |
| Analog * | - | 4 | - | 4 |
| Outputs | | | | |
| Digital (relay) | 6 | 8 | 6 | 8 |
| Analog | - | 2 | - | 2 |
| IP Code | IP20 | | | |
| Dimensions | 123 x 108 x 58 mm | | | |
| Mounting | DIN rail (35 mm) | | | |
| Weight | approx. 600 g | | | |

* Analog inputs AI1...AI4 can also be configured as digital inputs.

Table 2 Digital inputs

| Device | PR200-230.1 | PR200-230.2 PR200-230.4 | PR200-24.1 | PR200-24.2 PR200-24.4 |
|-------------------------------------|---------------------------|----------------------------|------------|--------------------------|
| Input voltage | 230 V AC | | 24 V DC | |
| Input voltage, max | 264 V AC | | 30 V DC | |
| Galvanic isolation | in groups of 4 (1-4, 5-8) | | | |
| Test voltage between input groups | 1780 V | | | |
| Test voltage against other circuits | 2830 V | | | |

Table 3 Digital outputs

| Device | PR200-230.1 | PR200-230.2 PR200-230.4 | PR200-24.1 | PR200-24.2 PR200-24.4 |
|-------------------------------------|-------------------------------------|----------------------------|------------|--------------------------|
| Type | relay (NO) | | | |
| Galvanic isolation | in groups of 2 (1-2, 3-4, 5-6, 7-8) | | | |
| Test voltage between output groups | 1780 V | | | |
| Test voltage against other circuits | 2830 V | | | |

Table 4 Analog inputs

| Device | only PR200-230(24).2, PR200-230(24).4 |
|---|---------------------------------------|
| Galvanic isolation | none |
| Mode | Analog |
| Input signal | 0-10 V, 4-20 mA, 0-4 kohm |
| Input voltage * | -36...+36 V |
| Input resistance (0-10 V) | 61 kohm |
| Input resistance (4-20 mA) | 121 ohm |
| Mode | Digital |
| Logical 1 ** | 0...10 V, adjustable |
| Logical 0 ** | 0...10 V, adjustable |
| Current at input voltage 15...30 V, max | 5 mA |

* If the voltage at one input is below -0.5 V, the accuracy for all inputs cannot be guaranteed

** Parameter can be set in ALP Property Box using the option 'Input mode' = 'digital'.

Table 5 Analog outputs

| Device | PR200-230(24).2 | PR200-230(24).4 |
|------------------------|--------------------|-------------------|
| Auxiliary voltage | 12...30 V DC | |
| Quantity | 2 | |
| Output signal | 4-20 mA | 0-10 V |
| Output load, max | 1 kohm | 2 kohm |
| Basic error, max | ±0.5% | |
| Temperature influence | ±0.05%/10 °C | |
| Inductive load, max | 50 µH | - |
| Signal conversion time | 100 ms | |
| DAC resolution | 10 bit | |
| Galvanic isolation | 2830 V, individual | 2830 V, in groups |

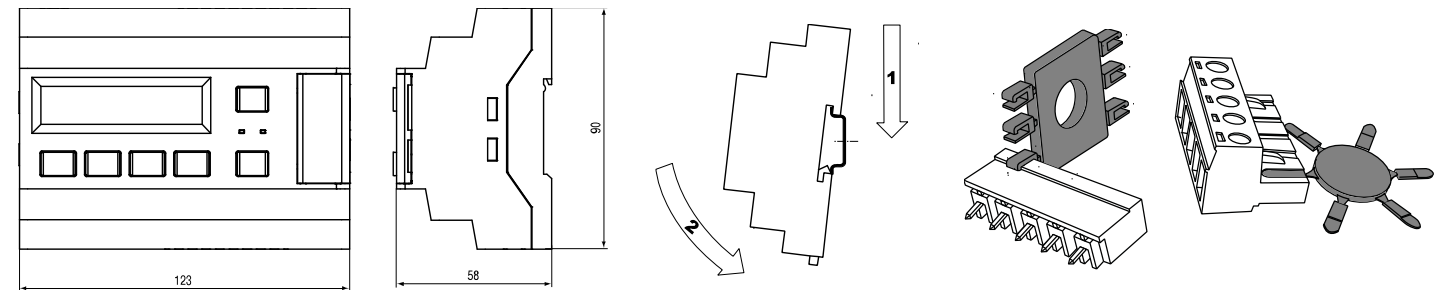


Fig. 1 Dimensions

Fig. 2

Fig. 3

Installation

- Align the upper slide of the DIN rail mounting groove with the DIN rail (arrow 1) and push it onto the rail (arrow 2).
- Wire external connections in accordance with Fig. 5-9 and tables 6-7 using plug-in terminal blocks (included).

▶ NOTICE | The device should be configured via PC before mounting and wiring.

When wiring the device the terminal blocks with the same number of contacts can be encoded using coding elements from the package to prevent swapping. If the coding tab is inserted into the recess in the header (Fig. 3a), and the coding profile is inserted into the slot on the plug (Fig. 3b), it is impossible to connect them.

⚠ WARNING | Switch on the power supply only after the wiring of the device has been completely performed.

Electrical connections

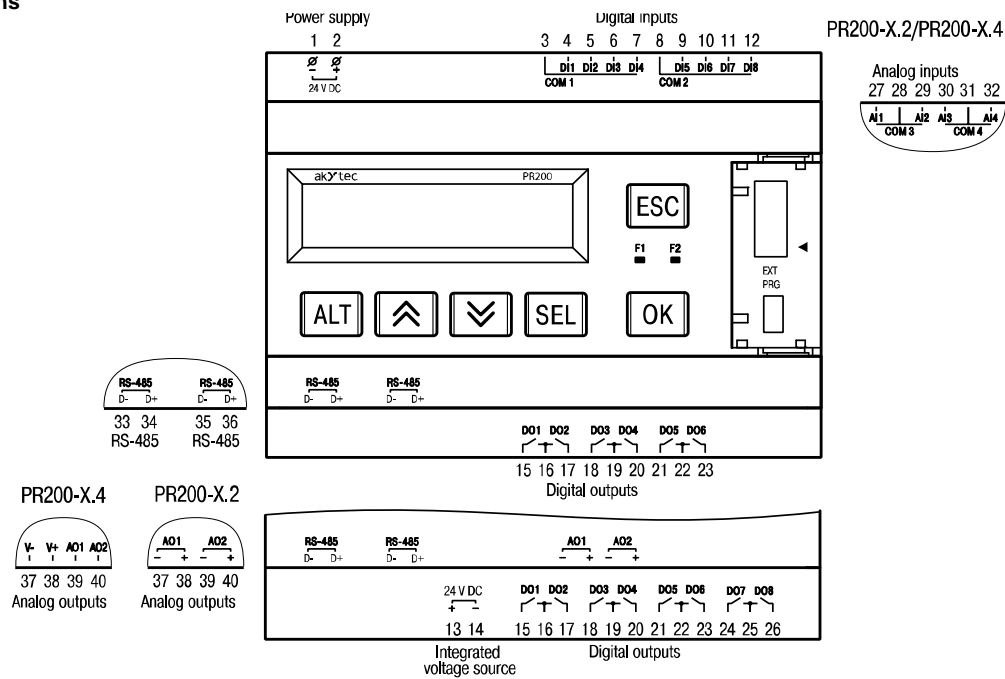


Fig. 4 Terminal blocks

Table 6 Terminal assignment

| No | Designation | Function | No | Designation | Function |
|----|--------------------|-----------------------------------|----|-------------|-----------------------------|
| 1 | AC230V L / DC24V - | Power supply AC / DC * | 21 | DO5 | Digital output DO5 |
| 2 | AC230V N / DC24V + | Power supply AC / DC * | 22 | - | Common contact DO5...DO6 |
| 3 | COM1 | Common minus pole DI1...DI4 | 23 | DO6 | Digital output DO6 |
| 4 | DI1 | Digital input DI1 | 24 | DO7 | Digital output DO7 |
| 5 | DI2 | Digital input DI2 | 25 | - | Common contact DO7...DO8 |
| 6 | DI3 | Digital input DI3 | 26 | DO8 | Digital output DO8 |
| 7 | DI4 | Digital input DI4 | 27 | AI1 | Analog input AI1 |
| 8 | COM2 | Common minus pole DI5...DI8 | 28 | COM3 | Common minus pole AI1...AI2 |
| 9 | DI5 | Digital input DI5 | 29 | AI2 | Analog input AI2 |
| 10 | DI6 | Digital input DI6 | 30 | AI3 | Analog input AI3 |
| 11 | DI7 | Digital input DI7 | 31 | COM4 | Common minus pole AI3...AI4 |
| 12 | DI8 | Digital input DI8 | 32 | AI4 | Analog input AI4 |
| 13 | OUT 24V+ | 24 V DC integrated voltage source | 33 | RS-485 D- | RS485 Port1 D- |
| 14 | OUT 24V- | 24 V DC integrated voltage source | 34 | RS-485 D+ | RS485 Port1 D+ |
| 15 | DO1 | Digital output DO1 | 35 | RS-485 D- | RS485 Port2 D- |
| 16 | - | Common contact DO1...DO2 | 36 | RS-485 D+ | RS485 Port2 D+ |
| 17 | DO2 | Digital output DO2 | 37 | AO1- / V- | see Table 7 |
| 18 | DO3 | Digital output DO3 | 38 | AO1+ / V+ | see Table 7 |
| 19 | - | Common contact DO3...DO4 | 39 | AO2- / AO1 | see Table 7 |
| 20 | DO4 | Digital output DO4 | 40 | AO2+ / AO2 | see Table 7 |

* Depending on the device modification (PR200-230 or PR200-24)

Table 7 Terminal assignment

| only PR200-230(24).2.2 | | | only PR200-230(24).4.2 | | |
|------------------------|-------------|-----------------------------|------------------------|-------------|---------------------------|
| No | Designation | Function | No | Designation | Function |
| 37 | AO1- | Analog output AO1 (4-20 mA) | 37 | V- | Auxiliary voltage -24 VDC |
| 38 | AO1+ | | 38 | V+ | Auxiliary voltage +24 VDC |

Programmable relay

| | | | | | |
|----|------|-----------------------------|----|-----|----------------------------|
| 39 | AO2- | Analog output AO2 (4-20 mA) | 39 | AO1 | Analog output AO1 (0-10 V) |
| 40 | AO2+ | | 40 | AO2 | Analog output AO2 (0-10 V) |

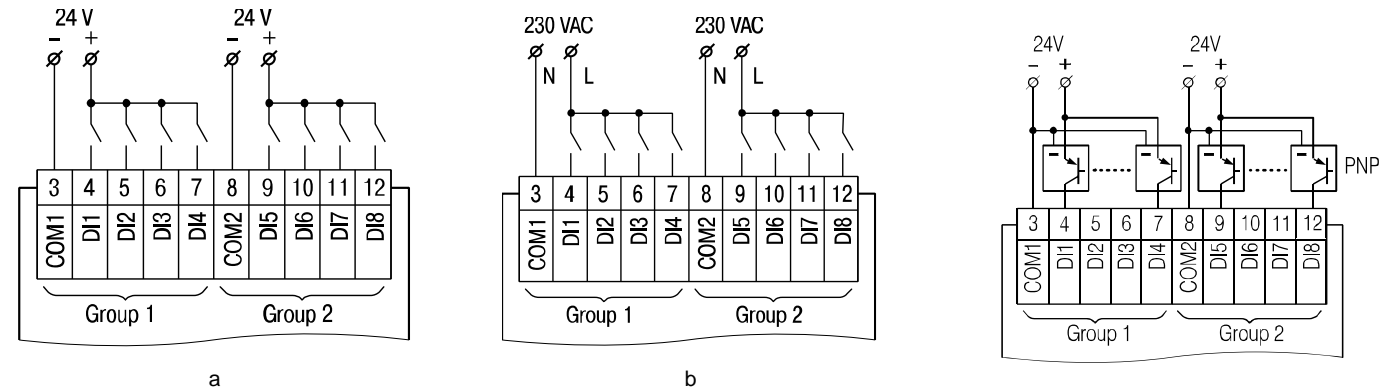


Fig. 5 Connecting switch contacts to digital inputs: a) PR200-24, b) PR200-230

Fig. 6 Connecting 3-wire sensors with PNP transistor outputs

NOTICE Supply voltage for outputs may not exceed 30 V.

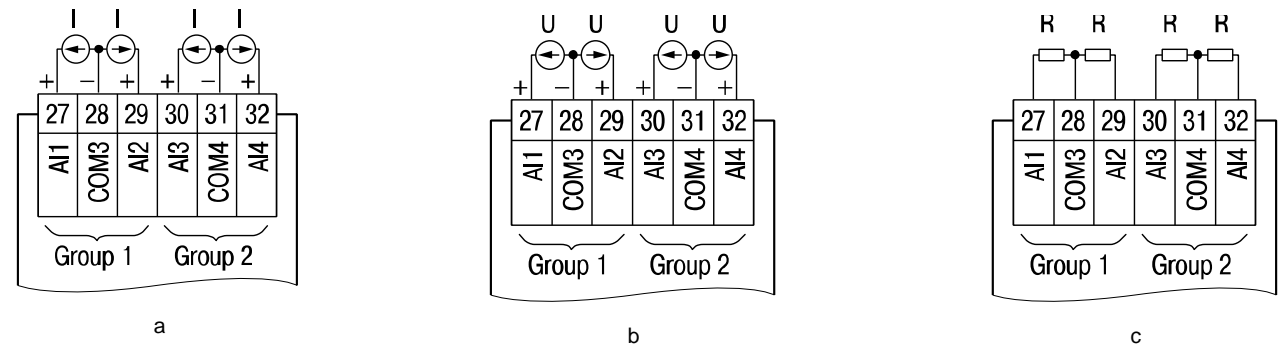


Fig. 7 Wiring of analog inputs: a) 4-20 mA, b) 0-10 V, c) resistors (up to 4000 ohm)

NOTICE Wire the terminals only when the device is powered off.

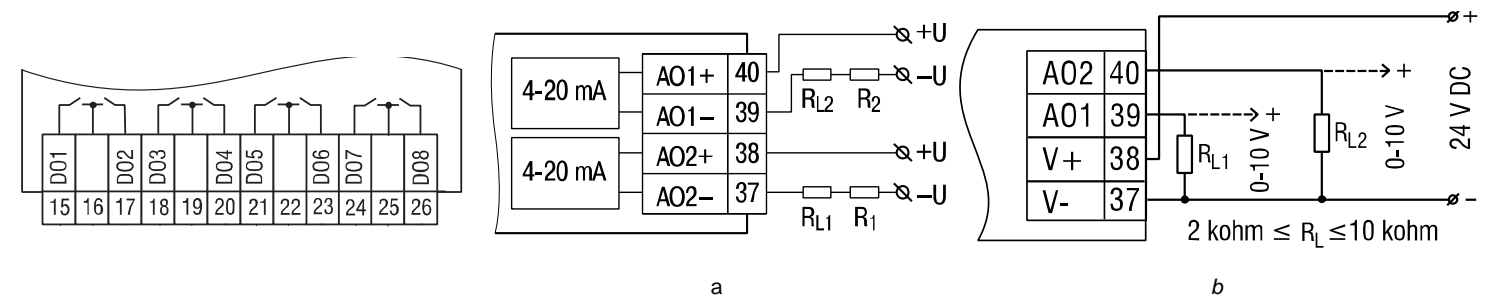


Fig. 8 Relay outputs

Fig. 9 Wiring of analog outputs: a) 4-20 mA (PR200-X.2), b) 0-10 V (PR200-X.4)

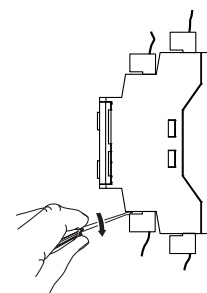


Fig. 10 Disconnecting terminal blocks

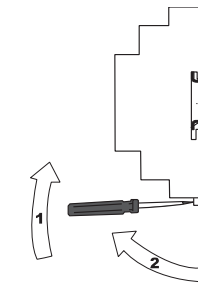


Fig. 11 Removing PR200 from the DIN rail

Removal

1. Take off the terminal blocks without disconnecting the wires (Fig. 10)
2. Insert a screwdriver into the eyelet of the slide interlock (Fig. 11)
3. Loosen the slide interlock pushing the screwdriver in the direction of the arrow 1, and then remove the relay from the DIN rail pulling the device in the direction of the arrow 2.