

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	8			
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 ohm
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

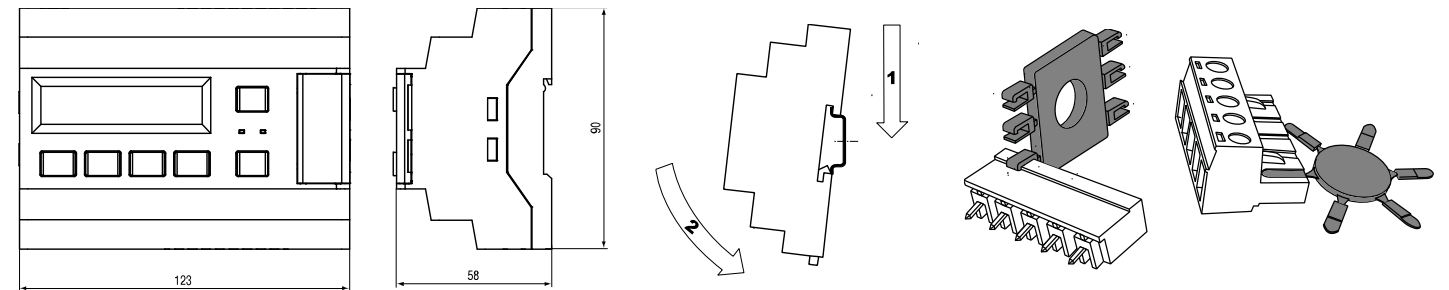


Fig. 1 Dimensions

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

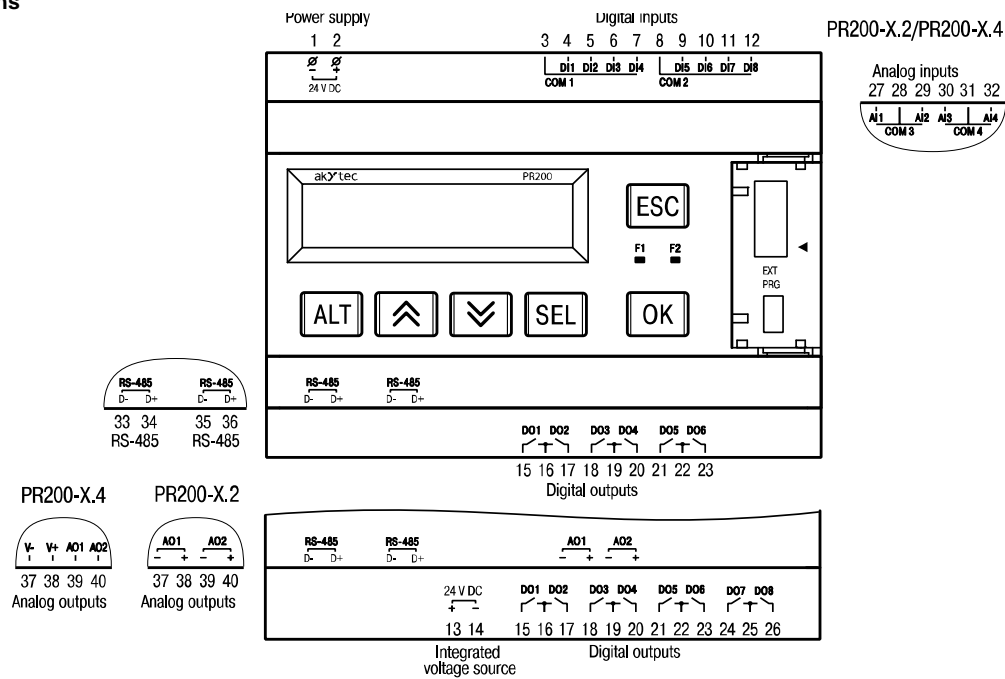


Fig. 4 Terminal blocks

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

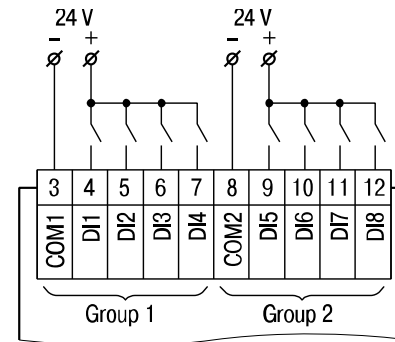
* Depending on the device modification (PR200-230 or PR200-24)

Table 7 Terminal assignment

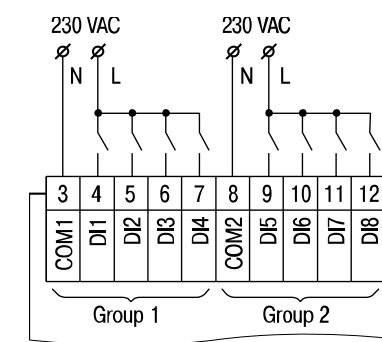
only PR200-230(24).2.2			only PR200-230(24).4.2		
No	Designation	Function	No	Designation	Function
37	AO1-	Analog output AO1 (4-20 mA)	37	V-	Auxiliary voltage -24 VDC
38	AO1+		38	V+	Auxiliary voltage +24 VDC

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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)



a



b

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

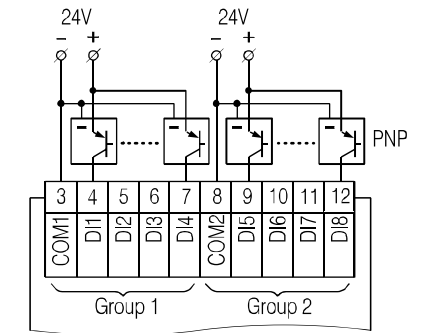
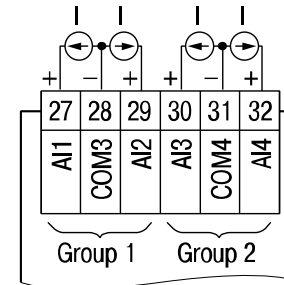
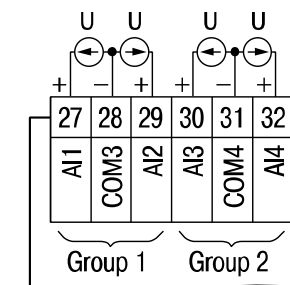


Fig. 6 Connecting 3-wire sensors with PNP transistor outputs

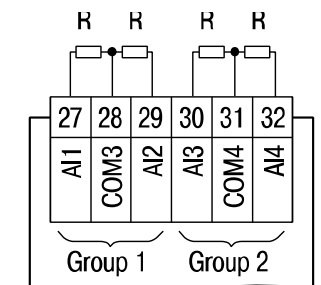
NOTICE Supply voltage for outputs may not exceed 30 V.



a



b



c

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.

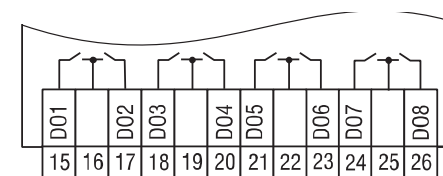


Fig. 8 Relay outputs

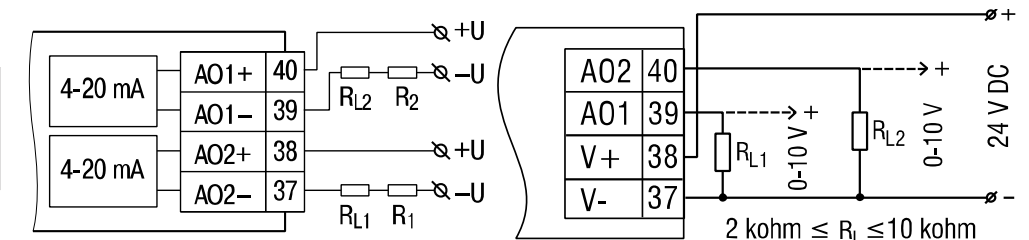


Fig. 9 Wiring of analog outputs: a) 4-20 mA (PR200-X.2), b) 0-10 V (PR200-X.4)

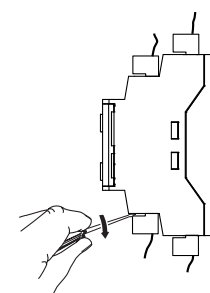


Fig. 10 Disconnecting terminal blocks

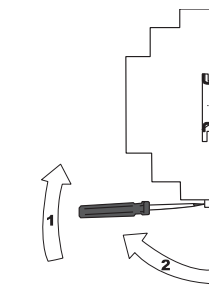


Fig. 11 Removing PR200 from the DIN rail

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.