⚠ **WARNING**
Before working on the device, power it off as well as all connected equipment.

⚠ **WARNING**
The device must be powered off before connecting to peripheral devices or PC. Switch on the power supply only after the wiring has been completed.

⚠ **CAUTION**
The program runs after transferring it to the relay. It is recommended to transfer the program before wiring the relay.
Otherwise ensure that all peripheral devices are disconnected from relay outputs before transferring the program.

1. Specification

Table 1   General specification

Power supply		24 (9…30) V DC
Power consumption, max.		4 W
Galvanic isolation		1500 V / 1 s
Inputs	Digital	8
	Analog	4
Outputs	Digital	8
	Analog	—
Network interface		RS-485
	Protocol	Modbus-RTU, Modbus-ASCII
	Mode	Master/Slave
	Baud rate	9.6…115.2 kbit/s
	Galvanic isolation	1500 V / 1 s
Extension modules		none
Real-time clock accuracy		± 3 s/day
Dimensions (with terminal blocks)		88 × 108 × 58 mm
Mounting		DIN-rail (35 mm)
Weight		approx. 250 g

Table 2   Digital inputs

Logical 1	8.5…30 V / 2…5 mA
Logical 0	-3…+5 V / 0…15 mA
Pulse length, min.	2 ms
Response time, max.	30 ms
Galvanic isolation	in groups of 4 (1-4, 5-8)
between inputs groups	1780 V / 1 s
against other circuits	2830 V / 1 s

Table 3   Analog inputs

Galvanic isolation	no
ADC resolution	12 bit
Analog mode	
Input signal	0-10 V, 4-20 mA
Input voltage, max.	30 V
Input resistance for 0-10 V input	61 kΩ
Basic error	±0.5 %
Temperature influence	±0.5 % / 10 °C
Digital mode	
Nominal input voltage	24 V DC
Logical 1/0 switching threshold (adjustable in ALP)	2.5…10 V
Logical 0/1 switching threshold (adjustable in ALP)	3…10.5 V
Pulse length, min.	5 s
Signal frequency, max.	100 Hz

Table 4   Digital outputs

Type		relay (NO)
Galvanic isolation		individual
between outputs		1780 V
against other circuits		2830 V
Switching capacity AC		5 A, 250 V AC (resistive load)
Switching capacity DC		3 A, 30 V DC
Load current at 5 V DC, min.		10 mA
Service life, electrical	3 A, 30 V DC	100 000 switching cycles
	5 A, 250 V AC (resistive load)	200 000 switching cycles

Table 5   Programming

Software		ALP
Interface		Micro-USB
Memory	ROM	128 kB
	RAM	16 kB

Retain	1 kB
Network variables	128 Byte
Program execution cycle, min.	1 ms

2. 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

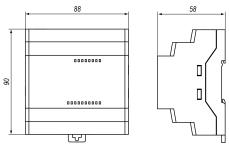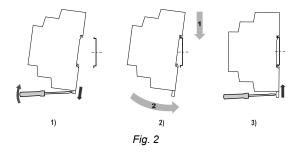| Condition	Permissible range
Operating temperature	-40…+55 °C
Relative humidity	up to 80 % (at +25 °C, non-condencing)
Attitude	up to 2000 m above sea level
Appliance class	II
IP code	IP20
EMC immunity	conforms to IEC 61000-6-2
EMC emission	conforms to IEC 61000-6-4

3. Installation

Fig. 1   Dimensions

Installation:

Fig. 2

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.

PR100 is equipped with plug-in terminal blocks which enable quick replacement of the device without disconnecting the existing wiring.
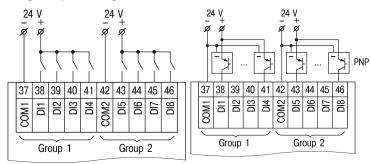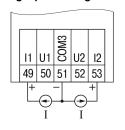
4. Digital inputs wiring

Fig. 3   Switch contacts

Fig. 4   3-wire sensors with PNP transistor outputs
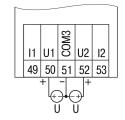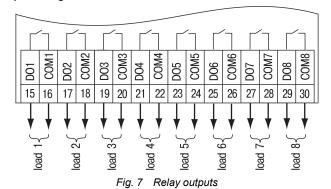
5. Analog inputs wiring

I1	U1	COM3	U2	I2
49	50	51	52	53

Fig. 5   Current signals (4-20 mA)   *Fig. 6   Voltage signals (0-10 V)*

6. Output wiring

DO1	COM1	DO2	COM2	DO3	COM3	DO4	COM4	DO5	COM5	DO6	COM6	DO7	COM7	DO8	COM8
15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Fig. 7   Relay outputs

7. Connection to PC

The programming socket is located under the cover (see *sect. 9*). To connect the device to PC, use a standard microUSB-B to USB-A cable.

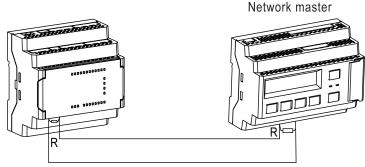## 8. RS485 interface

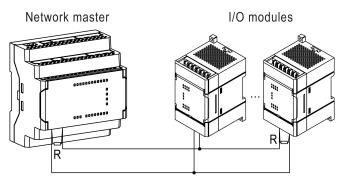Use terminating resistors if necessary.

Fig. 8   PR100 as Slave

Fig. 9   PR100 as Master

9. Controls and interfaces

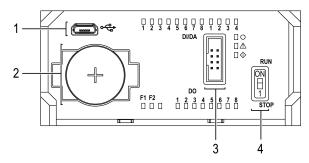*Fig. 10*

Under the front cover:
1. MicroUSB programming socket
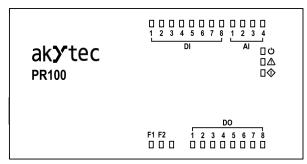2. RTC battery
3. Service interface
4. Run / Stop switch

Fig. 11   Front view

Table 7   Indication

LED	Color	State	Description
⏻	green	ON	Power on
⚠	red	ON	– program checksum error – retain memory error – system error
		flashing	Overheating
F1	green	ON	Programmable
F2	green	ON	
DI1…DI8	green	ON	Logical 1 on input
AI1…AI4	green	ON	Logical 1 on input (digital mode only)
DO1…DO8	green	ON	Output is on
◈	red	ON	24 V DC power off, powered over USB, program stopped
	green	ON	24 V DC power on, program runs
	red / green	red – ON green – fast flashing	24 V DC power on, program is being transferred to device

10. Scope of delivery

PR100	1
Short guide	1
Terminal blocks (set)	1