

**WARNING**

Switch off the supply voltage before working on the relay or connecting or disconnecting it with other devices or PC. Switch the supply voltage on only after all works have been completed.

**CAUTION**

Observe power supply polarity when connecting the relay to 24 V DC power source. Reverse polarity may cause the relay damage.

**CAUTION**

The program loaded to the relay runs immediately after switching the relay ON or the relay reset. It is highly recommended to make sure all connections to peripheral device are safe. Otherwise make sure that all peripheral devices are disconnected from relay outputs before loading the program.

**1. Specifications**

Table 1 General specification

| Parameter                          | Value               |
|------------------------------------|---------------------|
| <b>Power supply</b>                |                     |
| Voltage range                      | 9...30 V DC         |
| Nominal supply voltage             | 24 V DC             |
| Power consumption, max.            | 8 W                 |
| <b>Digital inputs</b>              |                     |
| Number                             | 6                   |
| Nominal supply voltage             | 24 V DC             |
| Maximum permissible supply voltage | 30 V DC             |
| <b>Digital / Analog inputs</b>     |                     |
| Number                             | 6                   |
| <b>Fast digital inputs</b>         |                     |
| Number                             | 4                   |
| <b>Digital outputs</b>             |                     |
| Number                             | 8                   |
| Type                               | Relay (NO)          |
| <b>Analog outputs</b>              |                     |
| Number                             | 2                   |
| Signal type                        | 4...20 mA, 0...10 V |
| <b>General</b>                     |                     |
| Mounting                           | DIN-rail (35 mm)    |
| Dimensions                         | 123 × 90 × 58 mm    |
| IP Code                            | IP20                |
| Weight                             | approx. 600 g       |
| Average service life               | 8 years             |

**2. Operating conditions**

The device is designed for natural convection cooling that should be taken into account when choosing the installation site.

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 2 Environmental conditions

| Condition                                    | Permissible range                      |
|----------------------------------------------|----------------------------------------|
| Ambient temperature                          | -40...+55 °C                           |
| Relative humidity                            | up to 80 % (at +35 °C, non-condensing) |
| Transportation and storage temperature       | -25...+55 °C                           |
| Transportation and storage relative humidity | up to 80 %                             |
| Attitude                                     | up to 2000 m above sea level           |
| EMC immunity                                 | conforms to IEC 61000-6-2              |
| EMC emission                                 | conforms to IEC 61000-6-4              |

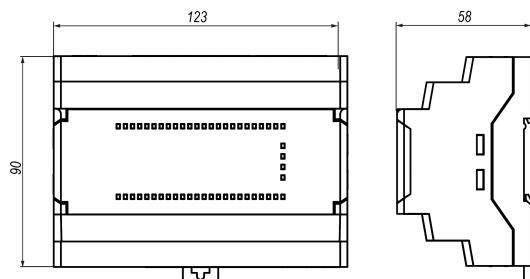
**3. Installation**

Fig. 1 – Dimensions

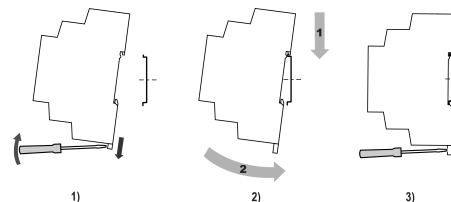


Fig. 2 – Installation

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.

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

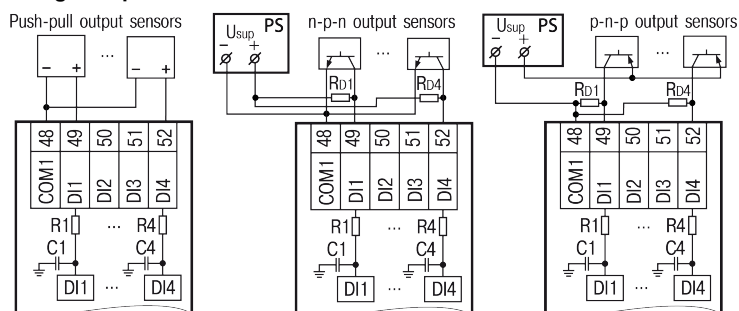
**4. Digital inputs**

Fig. 3 – Digital inputs wiring

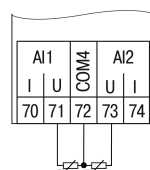
**5. Analog inputs**

Fig. 4 – RTD sensors wiring

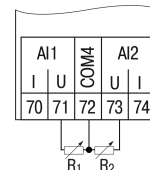


Fig. 5 – Resistance sensors wiring

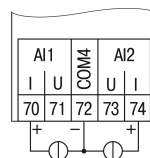


Fig. 6 – Current sensors wiring

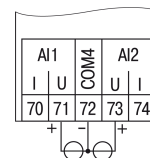


Fig. 7 – Voltage sensors wiring

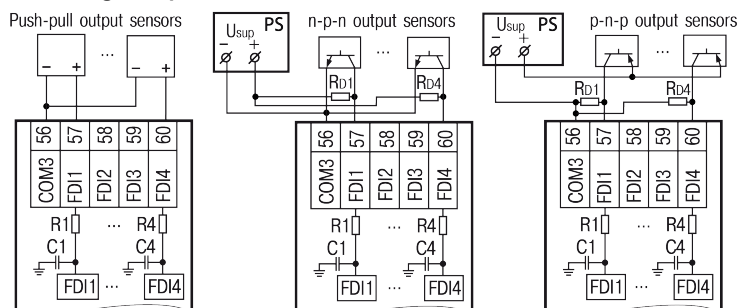
**6. Fast digital inputs**

Fig. 8 – Fast digital inputs wiring

## 7. Output wiring

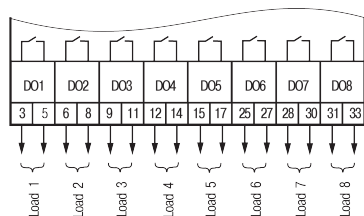


Fig. 9 – Relay outputs

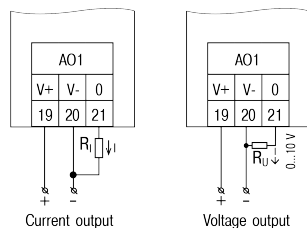


Fig. 10 – Analog outputs

## 8. Extension modules

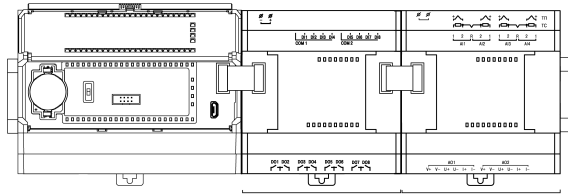


Fig. 11 – Extension modules connection

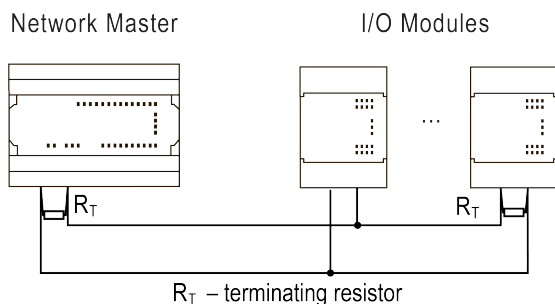
## 9. RS485 interface

Use terminating resistors if necessary.



$R_T$  - terminating resistor

Fig. 12 – PR103 as Slave



$R_T$  - terminating resistor

Fig. 13 – PR103 as Master

## 10. Ethernet interface

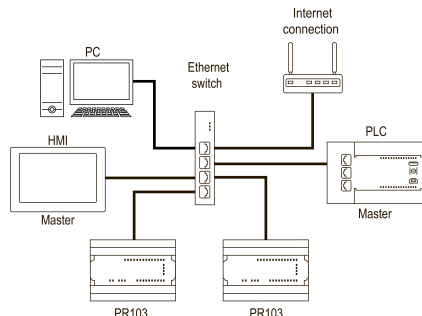


Fig. 14 – Star topology

## 11. Controls and interfaces

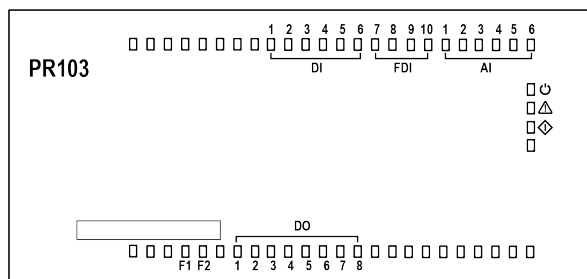


Fig. 15 – Front view

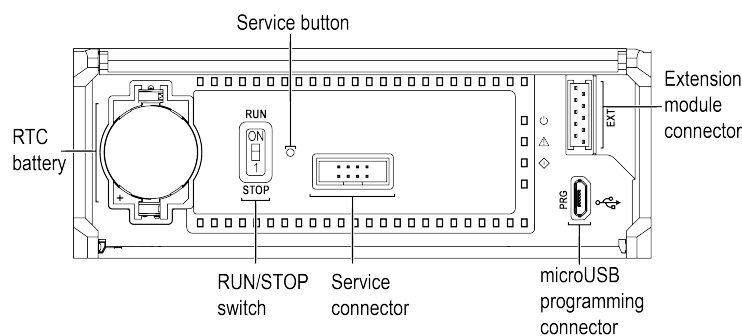


Fig. 16 – Front cover open

Table 3 Indicators

| LED         | Color | State               | Description                                                                                           |
|-------------|-------|---------------------|-------------------------------------------------------------------------------------------------------|
| ⏻           | green | ON                  | Power on — supply voltage applied to the power terminals                                              |
| ⚠           | red   | ON                  | Fatal error if ⚠ LED simultaneously flashing                                                          |
|             |       | flashing            | RTC battery discharged if ⚠ LED simultaneously flashing                                               |
| F1          | green | —                   | To be assigned by user's program                                                                      |
| F2          | red   | —                   |                                                                                                       |
| DI1...DI6   | green | ON                  | Logic HIGH on input                                                                                   |
| FDI1...FDI4 | green |                     |                                                                                                       |
| AI1...AI6   | green | ON                  | Logic HIGH on input (only when the digital input mode is set)                                         |
| DO1...DO8   | green | ON                  | Output is on                                                                                          |
| ⚠           | red   | OFF                 | The RUN/STOP switch is in the STOP position. PR103 operates in the I/O mode                           |
|             | green | flashing            |                                                                                                       |
|             | red   | OFF                 | User's program is not loaded. PR103 is not configured                                                 |
|             | green | OFF                 |                                                                                                       |
|             | red   | ON                  | No supply voltage applied to the power terminals. PR103 is powered from USB port                      |
|             | green | OFF                 |                                                                                                       |
|             | red   | ON                  | The RUN/STOP switch is in the RUN position. User's program is running                                 |
|             | green | ON                  |                                                                                                       |
|             | red   | flashing            | PR103 is not configured. RTC battery discharged if ⚠ LED simultaneously flashing.                     |
|             | green | OFF                 |                                                                                                       |
|             | red   | OFF                 | The RUN/STOP switch is in the STOP position. RTC battery discharged if ⚠ LED simultaneously flashing. |
|             | green | flashing            |                                                                                                       |
|             | red   | flashing with delay | Error if ⚠ LED is simultaneously ON.                                                                  |
|             | green | ON                  | Expecting for the start of the firmware boot                                                          |
|             | red   | flashing            | Firmware boot is in progress                                                                          |
|             | green | flashing            |                                                                                                       |



### NOTE

For more details as to operation of the device indicators please refer to the PR103 User Guide available on the homepage [www.akytec.de](http://www.akytec.de)