Digalox® DPM72-MPP/MPPA/MPPV-DIN

Instruction manual (Rev-2024-05)

Analogue signal measuring instrument for DIN rail

Package contents: Digalox® DPM72, 5 jumpers, 2 instruction manuals (EN + DE)

1. Safety instructions

- Read instruction manual carefully before operating the device! Keep for later reference.
- Mounting and installation must be carried out by suitably qualified and competent persons only.
- **When working on the device hazardous voltages must not be connected to the device! The terminals J1-J12 are not isolated from the measuring circuit.**
- **The device must not be used as the only protective device or protective shutdown.**
- The device is not intended to protect persons or facilities against harm. Specific devices must be used to guarantee safety (protection relays, cut-off switches, etc.).
- When connecting switches to the terminals J1-J8, only switches must be used whose isolation voltage is at least twice the maximum occurring measurement voltage. For example, when measuring 30 V DC switches must be isolated for at least 60 V.
- Do not open the housing!
- Do not use the device in the presence of explosive or flammable substances!
- All cables carrying hazardous voltages must be secured with external separators.

2. Meaning of symbols

General warning sign
(Attention, observe the documentation!)

Warning of an electrical hazard

3. Intended use

- Measurement of current, voltage, power and frequency in the specified measuring ranges.
- Indoor use non condensing, non corrosive.
- Mounting on DIN rail or screwing on.
- Failure to comply with these instructions will void all guarantee and warranty.
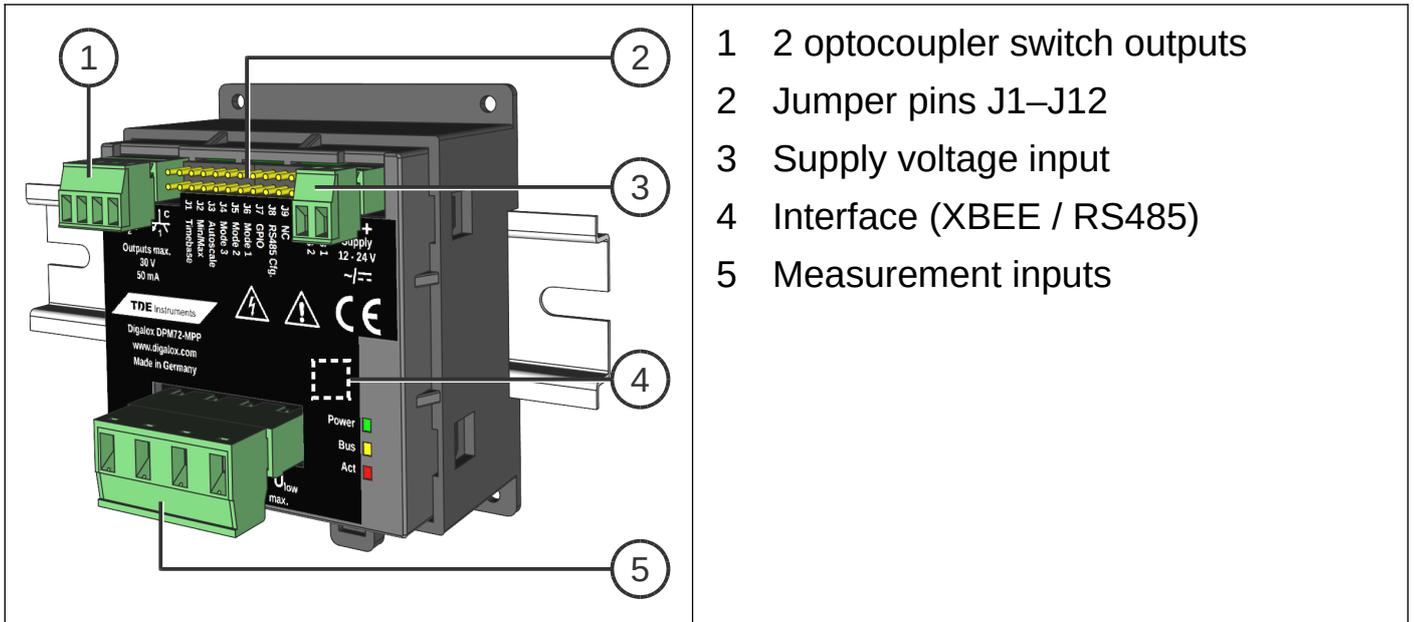
4. Description

Depending on type the measurement modes analogue signal (2×) 0/2 to 10 V and/or (2×) 0/4 to 20 mA AC/DC are supported. As individually adjustable threshold values are reached, two galvanically isolated alarm outputs enable the device to perform switch-on or switch-off operations.

Using the configuration software "Digalox® Manager" the device can be configured, e.g. thresholds for alarm output, hysteresis, and more.

Depending on the model, measured values can be transmitted via XBEE radio technology or RS485 Modbus interface. In addition, the device features a counting function with data retention. This enables operating-hours-counters or time-counters for exceeding and falling below threshold values, as well as single pulse counting (MPP) or double pulse counting (MPPV). The device can be mounted on DIN rails as well as on other backgrounds through corresponding holes in the housing.

In the "Downloads" area of **www.digalox.com** you can find the latest version of the instruction manual and the software "Digalox® Manager".

5. Product overview

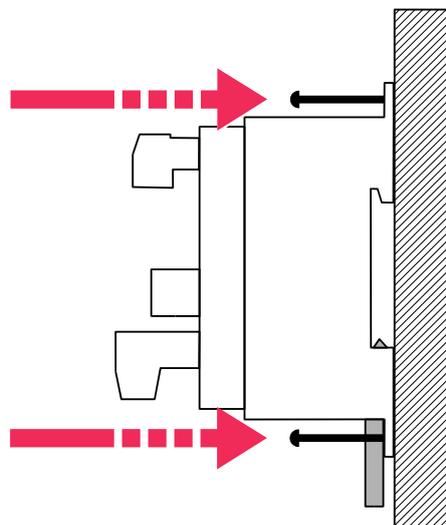|	
1	2 optocoupler switch outputs
2	Jumper pins J1–J12
3	Supply voltage input
4	Interface (XBEE / RS485)
5	Measurement inputs

6. Mounting

Hook the device into the top-hat rail from above and then press it at the bottom until the latch engages.
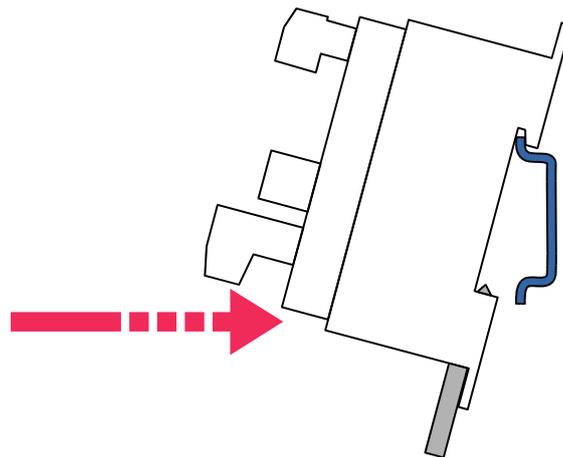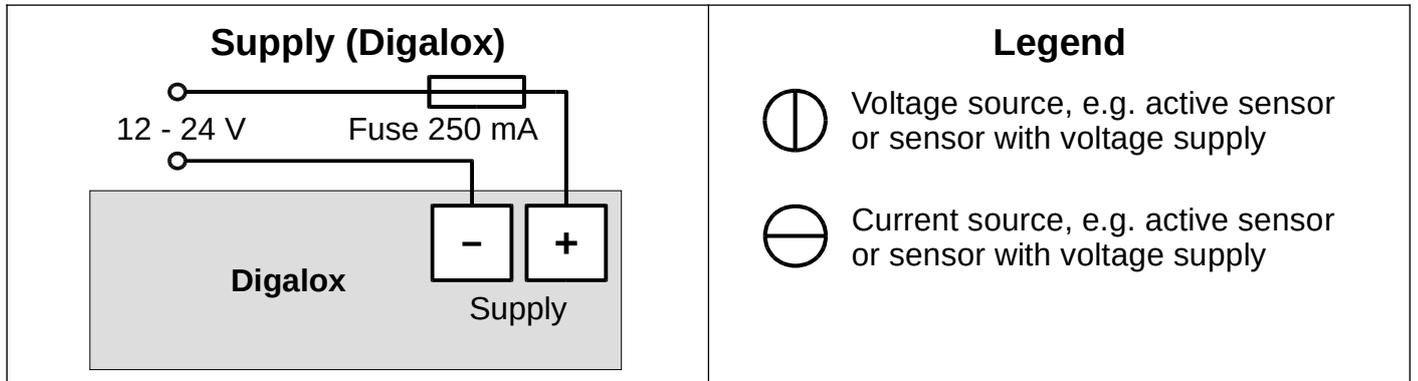

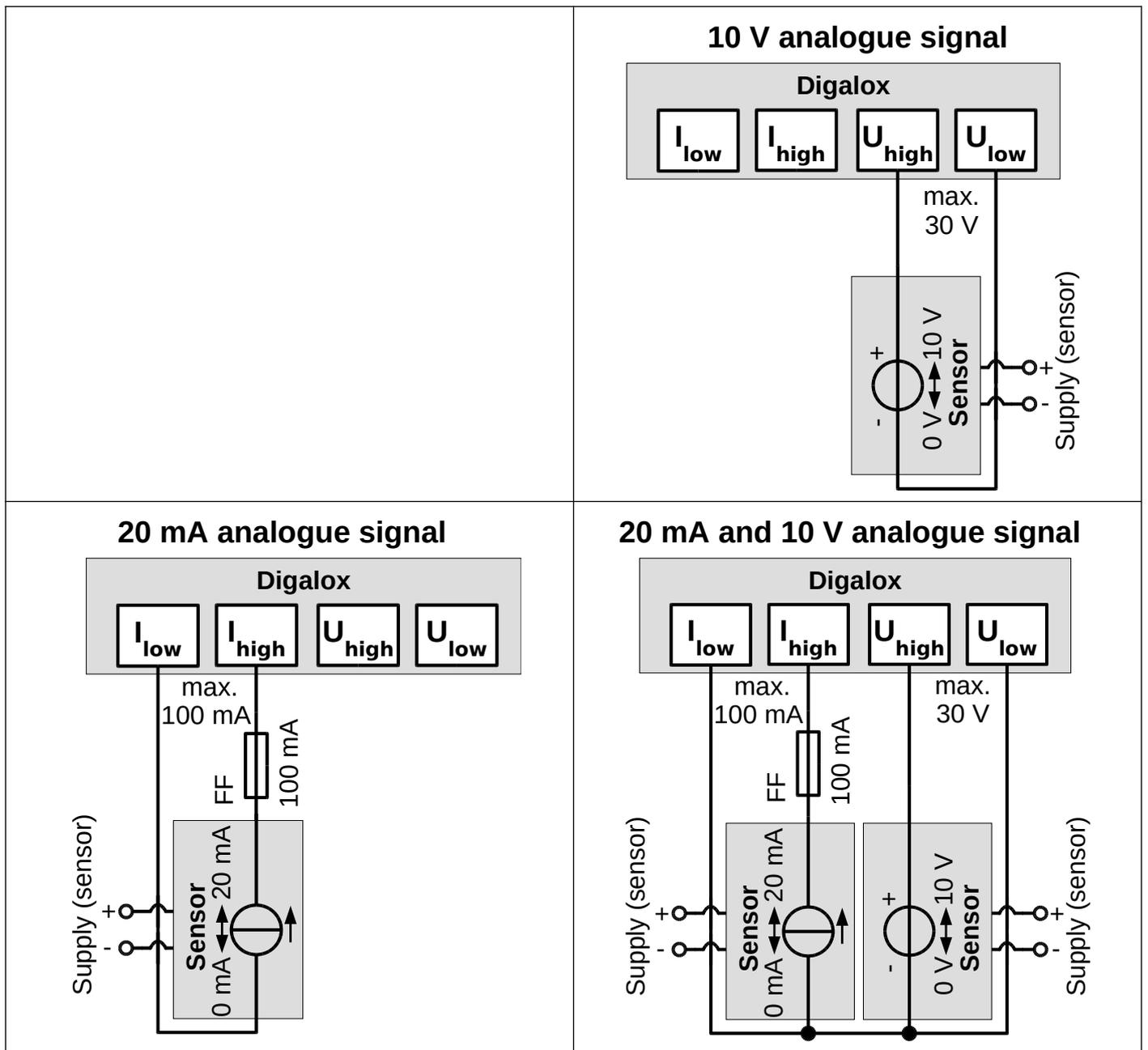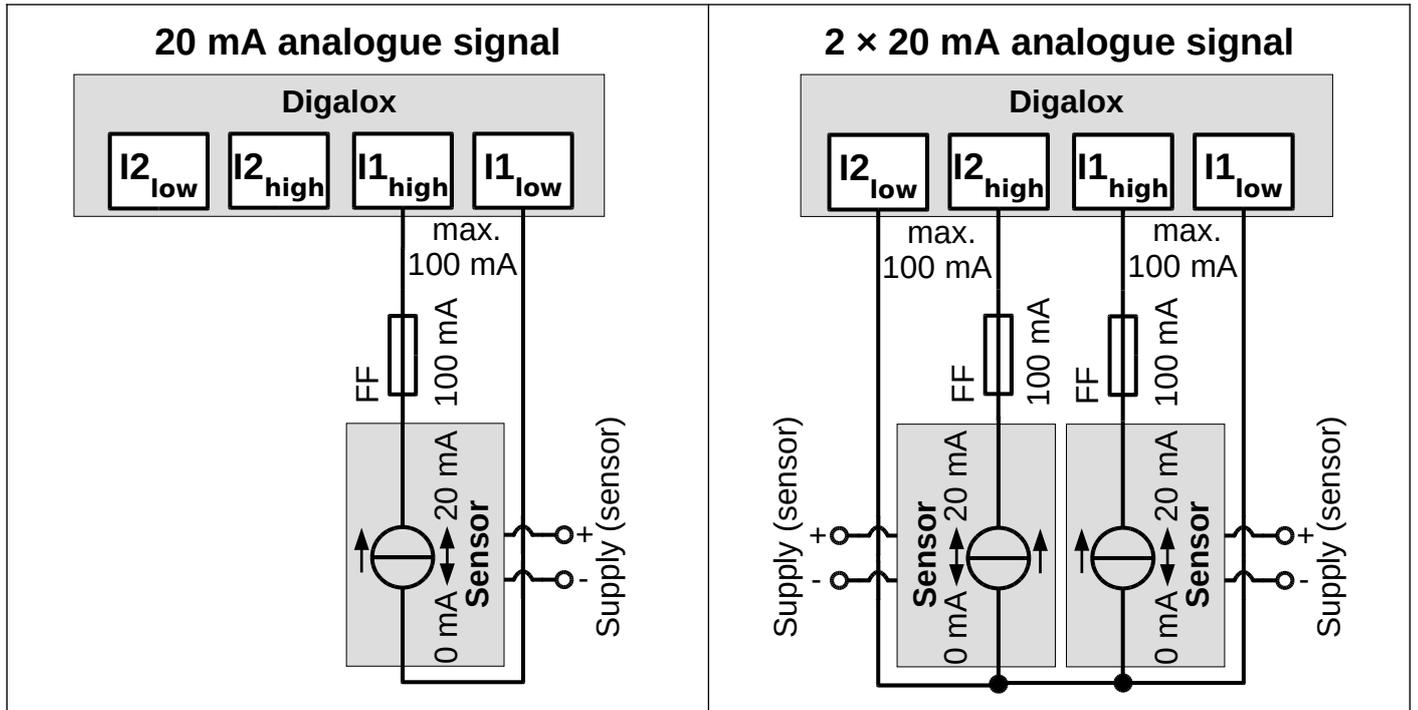Alternatively, attach the device with 4 screws.

7. Electrical connections

⚠️ **WARNING: The device may only be operated in one of the connection options shown! Use an ultra-fast-acting fuse (FF) at the current measurement input.**

Supply (Digalox)	Legend
12 - 24 V, Fuse 250 mA, Digalox, Supply (−/+)	⊕ Voltage source, e.g. active sensor or sensor with voltage supply ⊖ Current source, e.g. active sensor or sensor with voltage supply

DPM72-MPP

10 V analogue signal

Digalox

I_{low} I_{high} U_{high} U_{low}

max. 30 V

Sensor 0 V 10 V

Supply (sensor) +/−

20 mA analogue signal

Digalox

I_{low} I_{high} U_{high} U_{low}

max. 100 mA

FF 100 mA

Supply (sensor) +/−

Sensor 0 mA 20 mA

20 mA and 10 V analogue signal

Digalox

I_{low} I_{high} U_{high} U_{low}

max. 100 mA   max. 30 V

FF 100 mA

Supply (sensor) +/−

Sensor 0 mA 20 mA

Sensor 0 V 10 V

Supply (sensor) +/−

DPM72-MPPA

20 mA analogue signal

Digalox

I2 low	I2 high	I1 high	I1 low

max. 100 mA

FF 100 mA

Sensor 0 mA — 20 mA

Supply (sensor) + −

2 × 20 mA analogue signal

Digalox

I2 low	I2 high	I1 high	I1 low

max. 100 mA   max. 100 mA

FF 100 mA   FF 100 mA

Supply (sensor) + −

Sensor 0 mA — 20 mA

Sensor 20 mA — 0 mA

Supply (sensor) + −

DPM72-MPPV

10 V analogue signal

Digalox

U2 low	U2 high	U1 high	U1 low

max. 30 V

Sensor 0 V — 10 V + −

Supply (sensor) + −

2 × 10 V analogue signal

Digalox

U2 low	U2 high	U1 high	U1 low

max. 30 V   max. 30 V

Supply (sensor) + −

Sensor 0 V — 10 V + −

Sensor 0 V — 10 V + −

Supply (sensor) + −

## 8. Configuration

Connect the device to a computer:

XBEE: Insert the XBEE stick into the computer. The device driver is installed automatically if the computer is connected to the Internet. In order to reset the XBEE settings, short-circuit terminal J8.

RS485: Short-circuit terminal J8. Disconnect the device from the Modbus network and connect it to the computer using an RS485 USB adapter. After completing the configuration, open J8 again.

Start the "Digalox® Manager" software and connect it to the device. Settings can then be made on the various tabs and saved in the device.
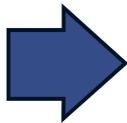
> **After restart, the first four display values are provided or the one selected via connections J4-J6 and the three following display values.**

9. Maintenance

Periodically check all external cable connections.

10. Cleaning

Observe the safety instructions before cleaning the device. Clean the device with a dry lint-free soft cloth. Do not use solvents.

11. Specification

	DPM72-MPPA	DPM72-MPP	DPM72-MPPV
Supply	12 - 24 V AC/DC ±10% (50/60 Hz ±10%), galvanically isolated		
Required external fuse for supply	250 mA, fast (F)		
Power consumption	Max. 1.2 W		
Measuring range voltage	–	±30 V DC, 20 V AC, 10 - 500 Hz	
Accuracy voltage	–	±0.5 % true RMS	
Internal resistance voltage	–	102 kΩ	
Measuring range ampere	20 mA AC/DC (max. 100 mA), 10 - 500 Hz		–
Accuracy ampere	±0.5 % true RMS		–
Internal resistance ampere	6.2 Ω		–
Required external fuse for ampere	For rated current, ultrafast (FF)		–
Measuring range frequency	10 - 1000 Hz		
Accuracy frequency	±0.1 Hz		
Measuring value update	5 Hz (32 kHz sampling rate)		
Alarm outputs	2 optocoupler outputs max. 30 V DC, 50 mA		
Connections (measuring inputs) - Wire gauge - Wire strip length - Pitch	0.2 - 3.3 mm² (24 to 12 AWG) 7 - 8 mm 7.62 mm		
Connections (supply, alarm outputs and RS485) - Wire gauge - Wire strip length - Pitch	0.13 - 1.3 mm² (26 to 16 AWG) 6 - 7 mm 3.5 mm		
Operating temperature	0 °C to +50 °C		
Storage temperature	-20 °C to +70 °C		
Operating altitude	0 to 2000 m above sea level		
IP code	IP00		
Dimensions	67.5 mm × 93.5 mm × 61.2 mm		
Depth	61.2 mm (with plugs, cable outlet at the front) 78.7 mm (with antenna)		
Net weight	106 g		

12. Dimensions [mm]

RS485

XBEE
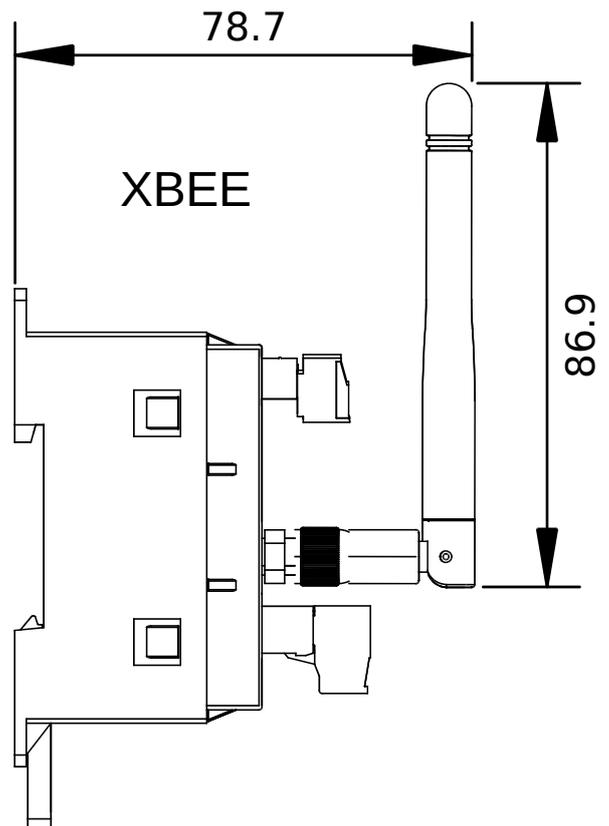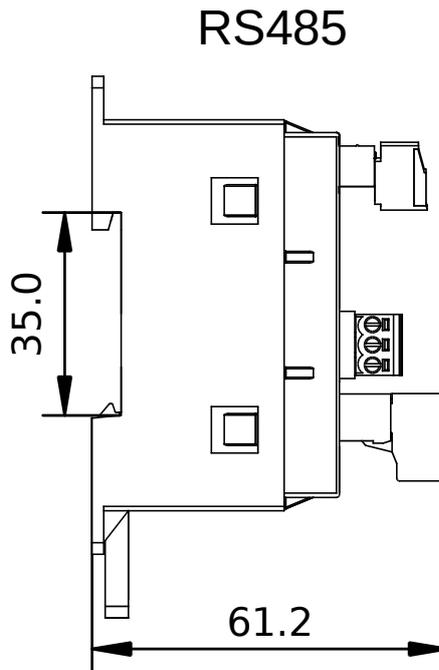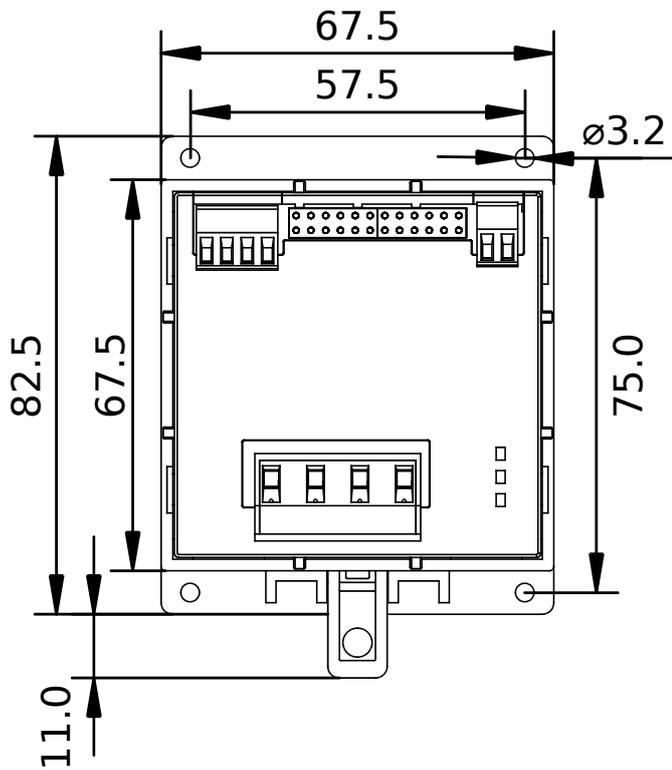
13. Contact information

TDE Instruments GmbH, Gewerbestraße 8, D-71144 Steinenbronn
Phone: +49 7157 20801, Technical support: +49 351 84127746
E-mail: info@tde-instruments.de
Internet: www.tde-instruments.de, www.digalox.com