☰SAUTER

0440210014

P100020316

I/O-Extension module
for EQJW246F003

Firmwareversion 1.2

CE

Note on these mounting and operating instructions

These mounting and operating instructions assist you in mounting and operating the device safely. The instructions are binding for handling SAUTER devices.

A manual with further information can be found at www.sauter-controls.com

➔ For the safe and proper use of these instructions, read them carefully and keep them for later reference.

Definition of signal words

⚠ DANGER

Hazardous situations which, if not avoided, will result in death or serious injury

⚠ WARNING

Hazardous situations which, if not avoided, could result in death or serious injury

❶ NOTICE

Property damage message or malfunction

ⅈ Note

Additional information

☼ Tip

Recommended action

Contents

1 Warranty

We are constantly developing our products and therefore, reserve the right to change the product at any time without notice.

We do not assume any liability for the accuracy or completeness of this document. Moreover, we do not guarantee that the buyer can use the product for an intended purpose. Claims of the purchaser, in particular claims for damages including loss of profit or other financial losses are excluded. are excluded. This shall not apply if the cause of damage is based on intent or gross negligence. If an essential contractual obligation is negligently breached, our liability is limited to the foreseeable damage.

2 Safety instructions

The device must be mounted, started up or operated only by trained and experienced personnel familiar with the product. Proper shipping and storage are assumed.

The device has been designed for use in electrical power systems. For wiring and maintenance, you are required to observe the relevant safety regulations.

This quick guide is intended to provide the necessary information for installing and starting up the device.

3 Application

The I/O expansion module is used to expand heating controllers EQJW246F003 from firmware version V2.50 by one control circuit.

The device receives operation and configuration settings from the controller over the device bus. It analyses the data from sensors connected to the analog inputs and performs control tasks based on the measured variable, control parameter and set point. The control signal is issued at the relay outputs and passed onto the controllers over device bus. For servicing purposes, it receives information on hardware and software versions for indication in the extended operating level.

If the I/O expansion module is switched on, there is no control and therefore no output of a control signal no output of a control signal until the heating controller EQJW246F003 controller has provided the corresponding operating and confi guration settings via the device bus. bus.
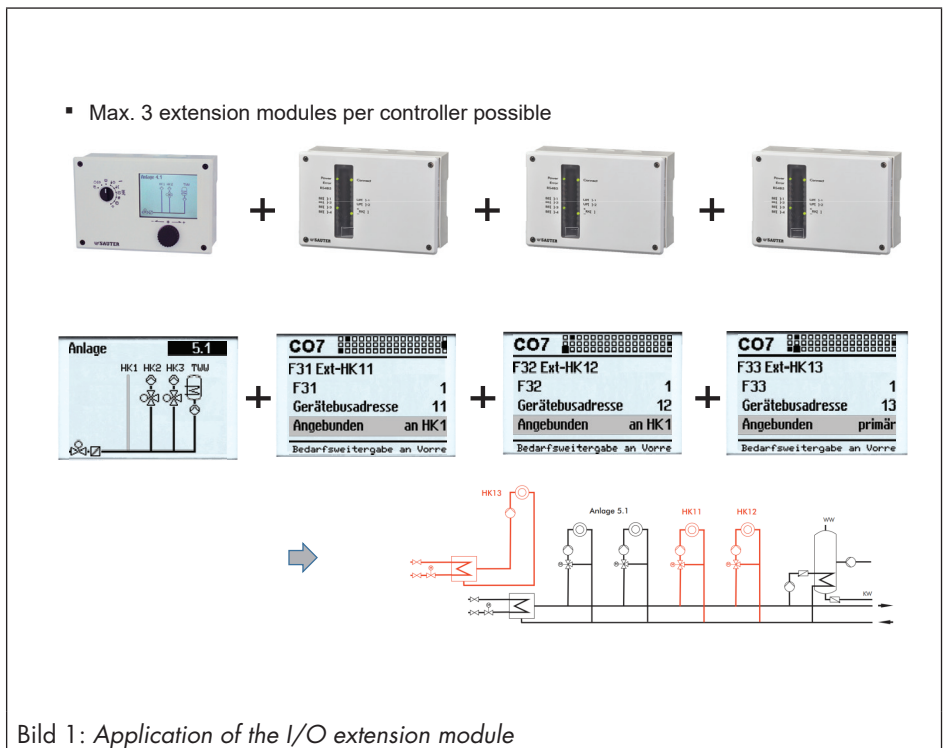

- Max. 3 extension modules per controller possible

Bild 1: *Application of the I/O extension module*

4 Installation

The I/O expansion module is ready for operation with the factory settings. Settings only need to be changed on the device if several modules are to be operated on one or more controllers connected via the device bus EQJW246F003 are to be operated.

If several I/O expansion modules are used, the associated control circuit can be labelled can be labelled on the front of the respective device with the enclosed number stickers for better identification.

DIL switches

Two DIL switches are used to set the device bus address of the I/O expansion module. A third DIL switch allows the activation of the bus termination for the device bus when the I/O expansion module is the last device at the end of the device bus network. All changes to the DIL switches come immediately into effect while the device is in operation.
The DIL switches are located on the bottom of the electronics housing next to the LAN port for function analysis and firmware updates.

Table 1: *Switch positions*

Item	Designation	ON	OFF
1	RS-485 bus termination	Active	Not active
2	Reserved		
3	Device bus address	Sets one of four device bus addresses. In the delivered state, the device bus address is adjustable between 11 and 14.	
4			

DIL no.		Device bus address
3	4	
OFF	OFF	11
OFF	ON	12
ON	OFF	13
ON	ON	14
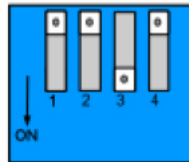
4.1 Mounting

Dimensions in mm (W x H x D): 144 x 98 x 54

The controller consists of the electronics housing and the base with the terminals. The device is suitable for panel, wall and rail mounting (see Fig. 2).

Panel mounting

1. Undo the two screws (1).
2. Pull apart the electronics housing and the base.
3. Make panel cut-out with the dimensions 138 x 92 mm (W x H).
4. Push the housing through the panel cut-out.
5. Tighten the two screws (2) to clamp the controller housing against the panel.
6. Perform electric wiring on the base as described in section 4.2.
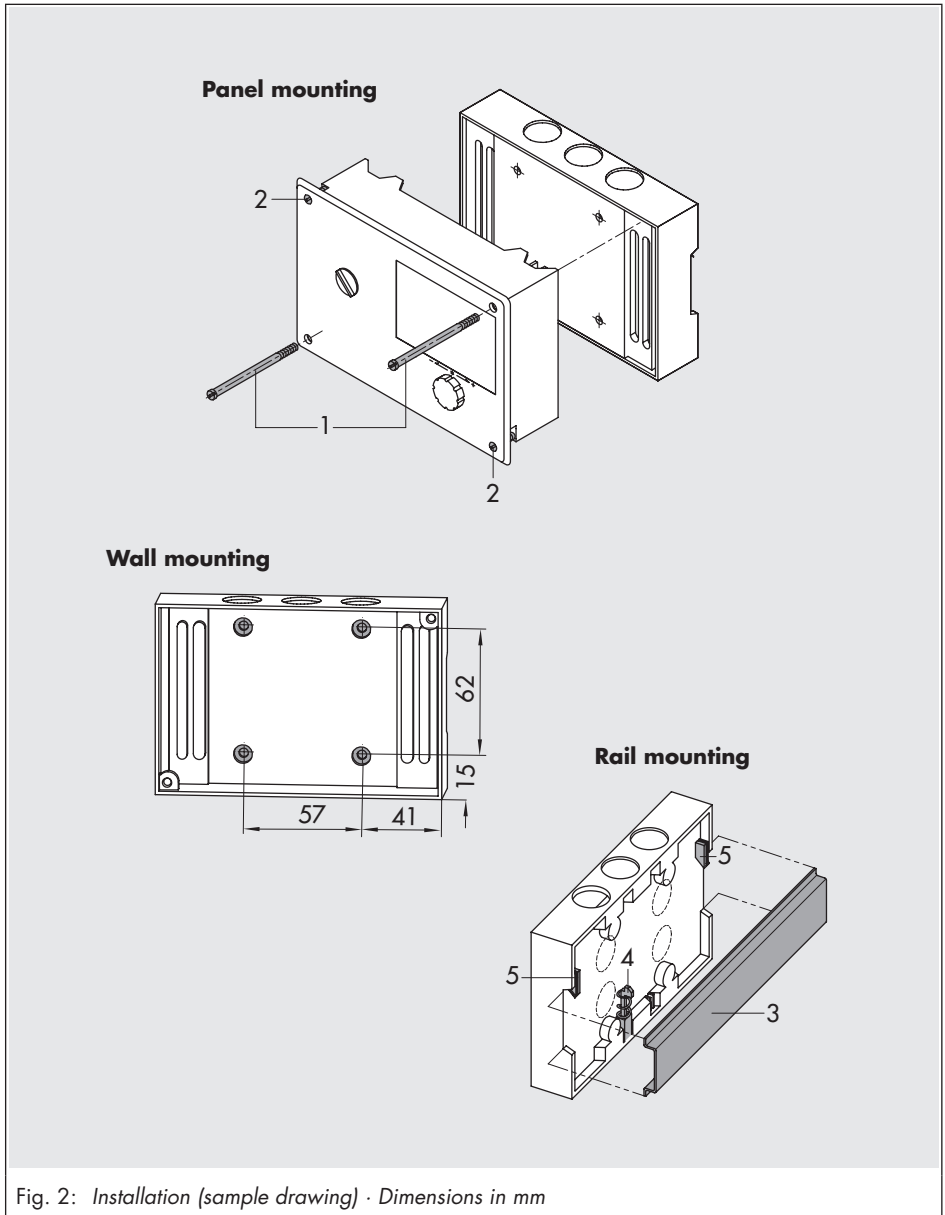7. Place on the electronics housing.
8. Tighten the two screws (1).

Wall mounting

1. Undo the two screws (1).
2. Pull apart the electronics housing and the base.
3. If necessary, drill holes with the specified dimensions in the appropriate places. Fasten the base with four screws.
4. Perform electric wiring on the base as described in section 4.2.
5. Place on the electronics housing.
6. Tighten the two screws (1).

Installation

Rail mounting
1. Fasten the spring-loaded hook (5) at the bottom of the top hat rail (3).
2. Slightly push the I/O expansion module upwards and pull the top hook (5) over the top hat rail.
3. Undo the two screws (1).
4. Pull apart the electronics housing and the base.
5. Perform electric wiring on the base as described in section 4.2.
6. Place on the electronics housing.
7. Tighten the two screws (1).

Panel mounting

2

1

2

Wall mounting

62

15

57   41

Rail mounting

5

5   4

3

Fig. 2: *Installation (sample drawing) · Dimensions in mm*

4.2 Electrical connection

⚠ **DANGER**

Risk of fatal injury due to electric shock.
– *For electrical installation, you are required to observe the relevant electrotechnical regulations of the country of use as well as the regulations of the local power suppliers. Therefore, such work must be performed by trained and experienced personnel.*
– *The terminal 28 allows the integration of safety equipment which have a direct influence on electric actuators. If this is not the case, connect a jumper from terminal 22 to terminal 28.*
➜ *Do not connect ELV cables (according to VDE 0100) to these terminals.*
➜ *Disconnect the voltage supply from the controller and protect it against unintentional reconnection before performing any work on the terminals.*

ℹ **Note**

The electric actuators and pumps are not automatically supplied with a voltage by the I/O expansion module. They can be connected over terminals 23 and 28 to an external voltage supply. If this is not the case, connect a jumper from terminal 22 to terminals 23 and 28.

A wiring diagram is affixed to the back of the electronics housing. It shows the assignment of the terminals on the back panel.

⚠ **DANGER**

Risk of fatal injury as a result of failing to observe the permissible touch voltage.
Separation of the circuits is absolutely essential when SELV equipment is connected to terminals 23 and 28 as this equipment has a different intended use of the supply voltage than specified in the technical data (230 V AC).
The creepage and clearance present in the base and I/O expansion module do not guarantee the required dielectric strength and the safe separation of the 230 V supply voltage and the other circuits.
➜ *Take appropriate safety precautions (e.g. by using coupling relays for the control of electric actuators operated with 24 V or for ELV fault signaling contacts).*
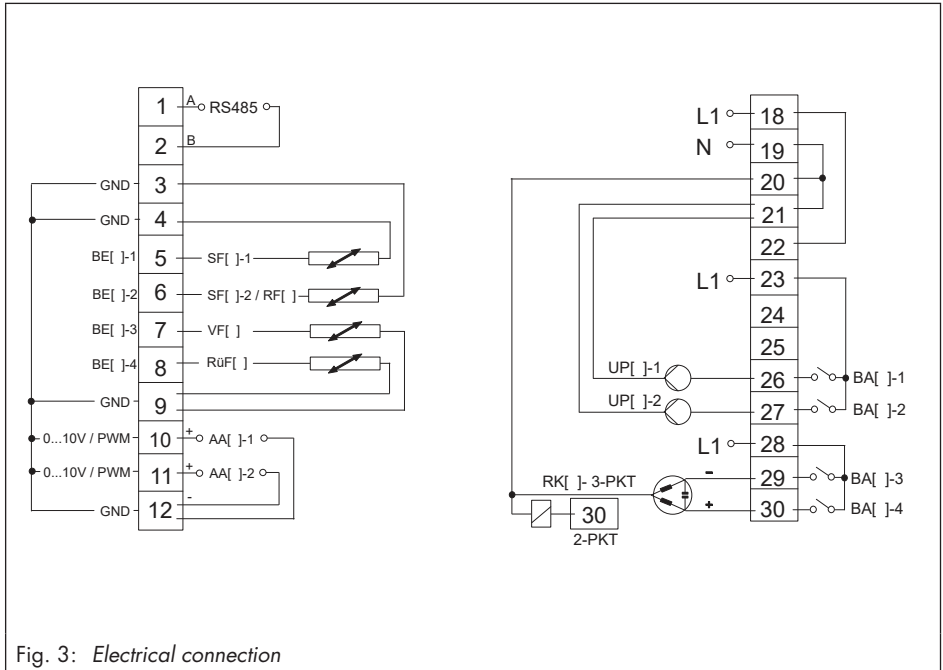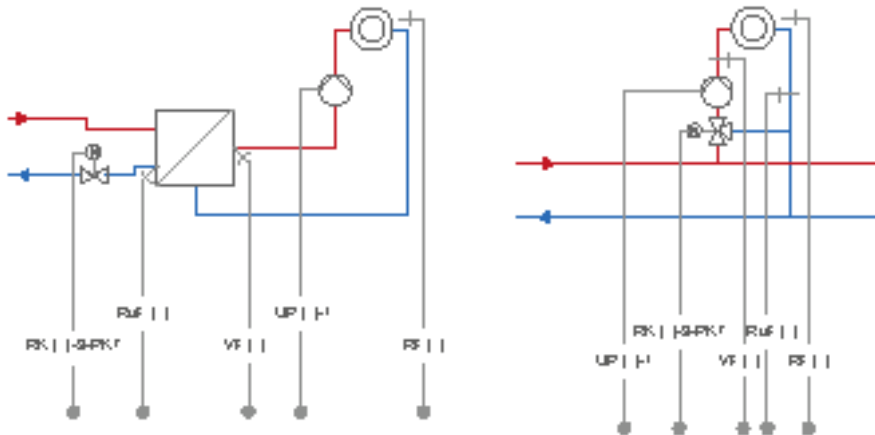➜ *Only connect 230 V equipment.*

Fig. 3: *Electrical connection*

HC [   ]

5 LEDs

Location and meaning

The I/O expansion module has the following LEDs to indicate various states of the device. The operating states of the device are indicated by LEDs during start-up and servicing.

Green:	Device functioning properly
Red:	Error
Blinking:	Functions according to Table 2

Power
Error
RS485

BE[ ]-1
BE[ ]-2
BE[ ]-3
BE[ ]-4

Connect

UP[ ]-1
UP[ ]-2
+
RK[ ]
−
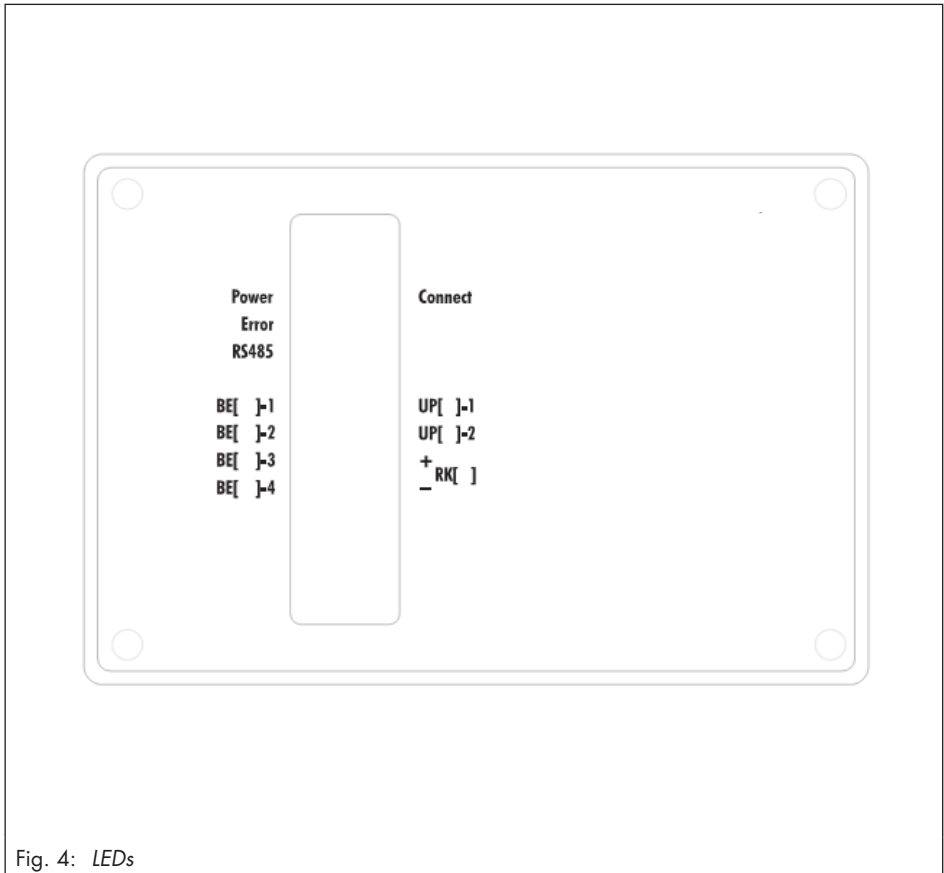
Fig. 4: *LEDs*

Table 2: *Meaning of the LEDs*

LED name	LED state	Meaning
Power (green)	ON	Device is switched on
	OFF	Device is switched off
	Blinks 1s/1s	Boot loader: waiting for update
	Blinks quickly	Boot loader: communication during update
	Blinks very quickly	Boot loader: firmware programming
Error (red)	Blinking	Communication error RS-485
	OFF	No error
Connect (green)	First ON, then blinking	Connection over the device bus is established
Connect (blue)	ON	Device is connected to voltage supply and starts
RS-485	Blinking	One green and one red LED to indicate communication on the interface. The red LED indicates data are being sent by the TROVIS I/O module and the green LED indicates that data are being received.
UP, RK (green)	ON	Relay contacts (BO) in closed state
	OFF	Relay contacts (BO) in open state
BE (green)	ON	External contact in closed state
	OFF	External contact in open state

6 Technical data

Inputs	4x Pt1000, PTC or Ni1000 sensor inputs, alternatively configurable for binary alarms
Outputs	1x three-step signal: rating max. 250 V AC, 2 A alternatively 1x on/off signal: rating max. 250 V AC, 2 A 2x pump output: rating max. 250 V AC, 2 A All outputs are relay outputs with varistor suppression, 2x 0 to 10 V or PWM signal, configurable, to issue a control signal or for pump speed control
Interfaces	RS-485 device bus interface for communication with EQJW246F003 (polarity independent)
Supply voltage	85 to 250 V, 48 to 62 Hz, max. 6.6 VA
Ambient temperature	0 to 50 °C (operation), −10 to +60 °C (storage and transport)
Degree of protection	IP40 according to EN 60529
Class of protection	II according to EN 60730
Degree of contamination	2 according to EN 61010-1
Overvoltage category	II according to EN 60730
Noise immunity	According to EN 61000-6-1
Noise emission	According to EN 61000-6-3
Weight	Approx. 0.5 kg
Conformity	$CE \cdot$ EHC

7 Disposal

Advice and questions

For advice or questions about heating and district heating controllers, please get in touch with your contact at the relevant SAUTER branch. You can find the addresses of the branches at

www.sauter-cumulus.de

Necessary details

In the event of queries and for fault diagnosis, provide the following information:

– Model number
– Firmware version
– Serial number

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