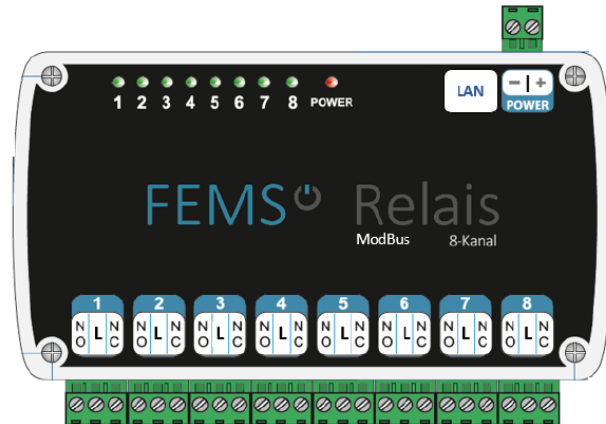




Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board

Version:2026.07.1

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1. Introduction

1. Introduction

1.1. Legal provisions

The information provided in these documents is property of FENECON GmbH. Publication, in whole or in part, requires the written consent of FENECON GmbH.

Subject to changes and printing errors!

1.2. Qualification of the installer

A qualified installer is a person who has the following experience and training:

- Setting up, switching on, switching off, disconnecting, earthing, short-circuiting and repairing circuits and devices
- Standard maintenance and use of protective devices in accordance with current safety standards
- First aid/emergency care
- Current knowledge of local regulations, standards and guidelines

Before reading the manual, you should familiarize yourself with the different types of safety warnings. You should also familiarize yourself with the importance of the safety warnings.



If the devices are not connected in accordance with the standard, this change must be reported to FENECON Service (+49 (0) 9903 6280 0; service@fenecon.de). The configuration can then be modified to meet your requirements.



Follow the instructions for the respective device!

2. Product description

2.1. Scope of delivery

After you receive the shipment, please check to make sure all components are included. Inspect the scope of delivery for damage. If anything is missing or damaged, please contact the supplier immediately. The following components are included in the shipment:

- Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board
- DIN rail power supply unit (12 V / 1.25 A)
- Installation instructions — Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board

2.2. Prerequisites

For the use of the Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board is required:

- FENECON Energy Management System (FEMS)

FEMS is being developed as an open-source project under the name "OpenEMS" in collaboration with many other companies and institutions within the "OpenEMS Association e.V." More information:

FEMS App: <https://www.fenecon.com/fems-apps/>

OpenEMS: <https://www.openems.io>

FEMS is a component of the integrated FENECON energy storage systems and other product combinations consisting of battery inverters and batteries. For more information, visit <https://fenecon.com/>.

3. Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board

3.1. Technical data

Logical control	Modbus/TCP via network
Power supply	9-24 VDC/1 A
Function	8 relays, each of which can be used as a normally closed or normally open contact.
Maximum switching capacities	• 12 VDC/15 A • 24 VDC/15 A • 125 VAC/15 A • 250 VAC/10 A
Assembly	DIN rail

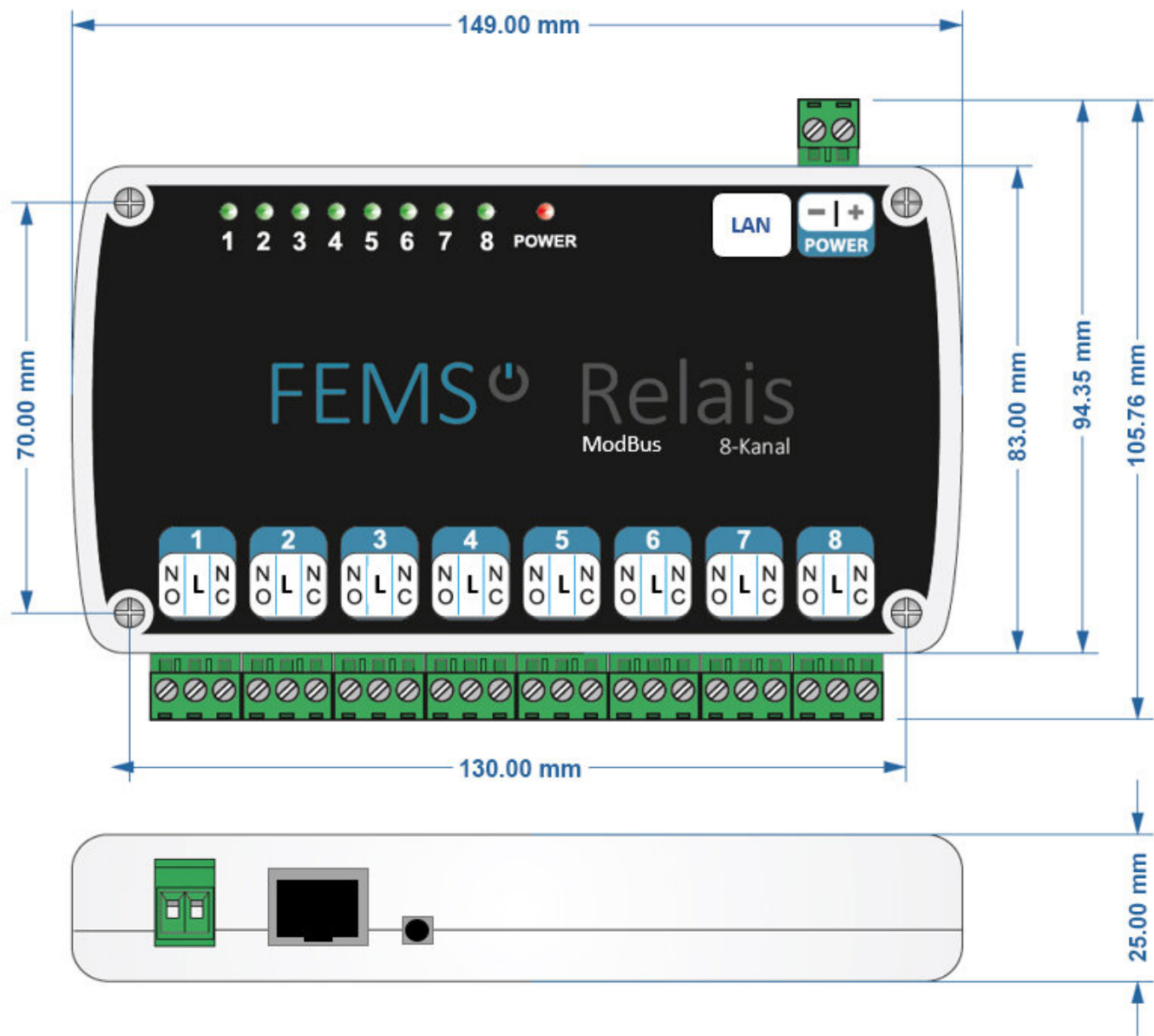


Image 1. Dimensions — Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board

3.1. Technical data

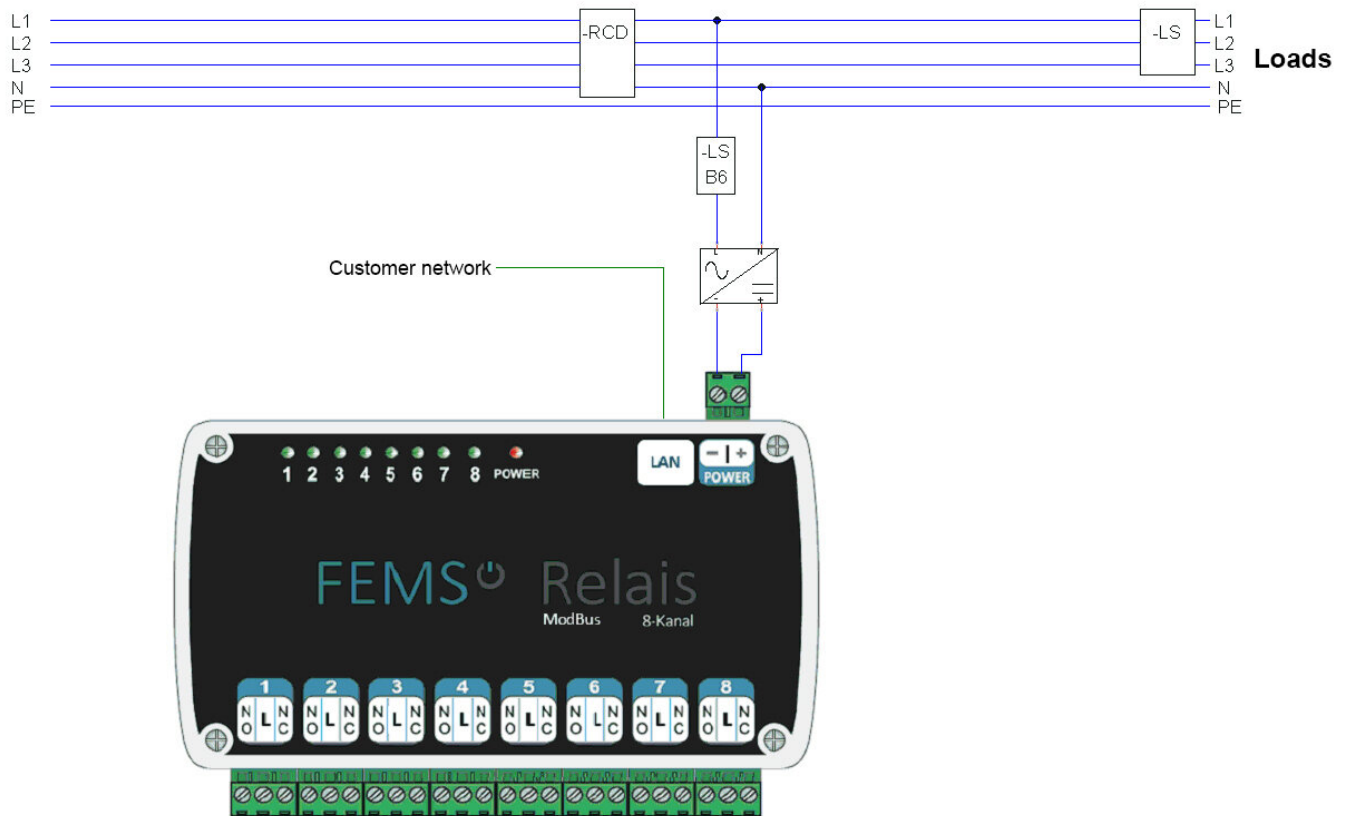


Image 2. Overview — Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board

3.2. Standard assignment and connection: Combined heat and power plant (CHP)

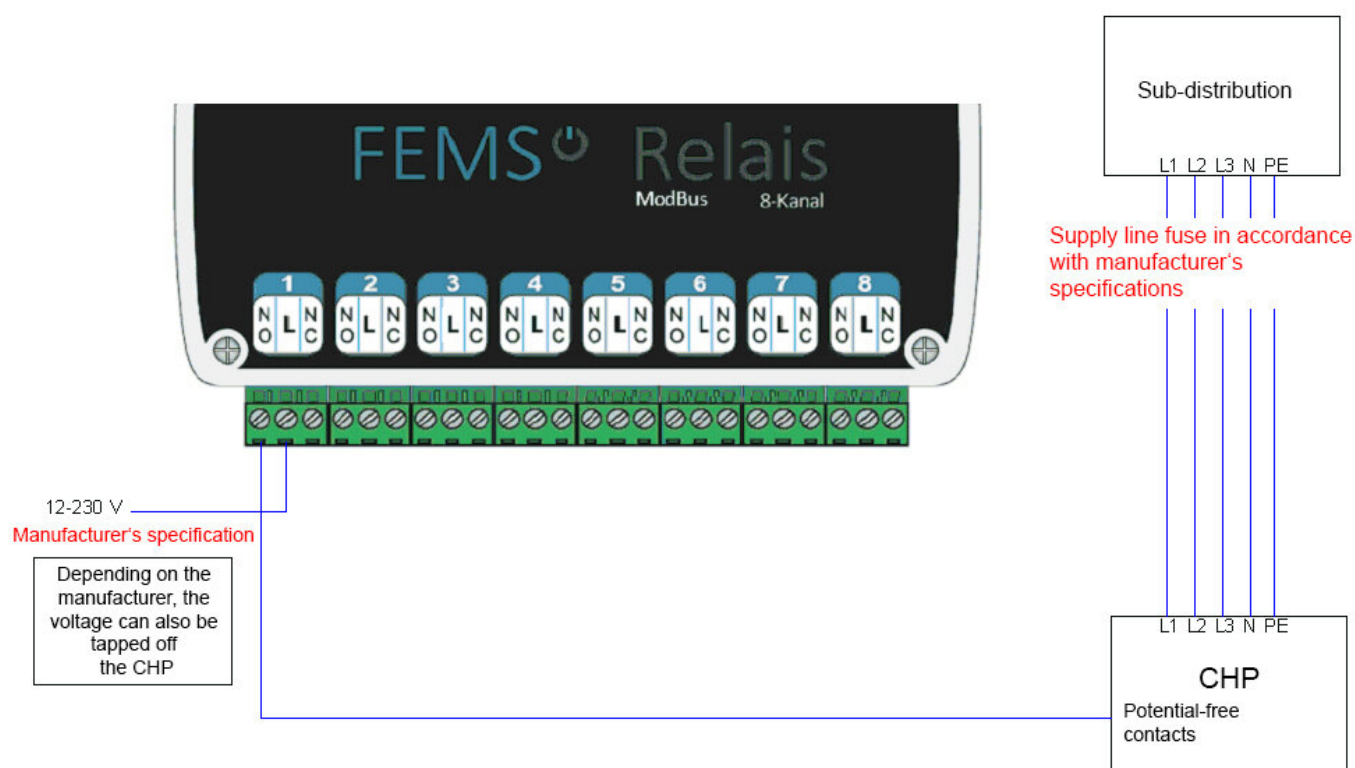


Image 3. Overview — Connection: CHP



The CHP unit must be connected to channel 1 by default.

3.3. Standard configuration and connection: SG-Ready heat pump

3.4. Standard assignment and connection: Heating element 6 kW

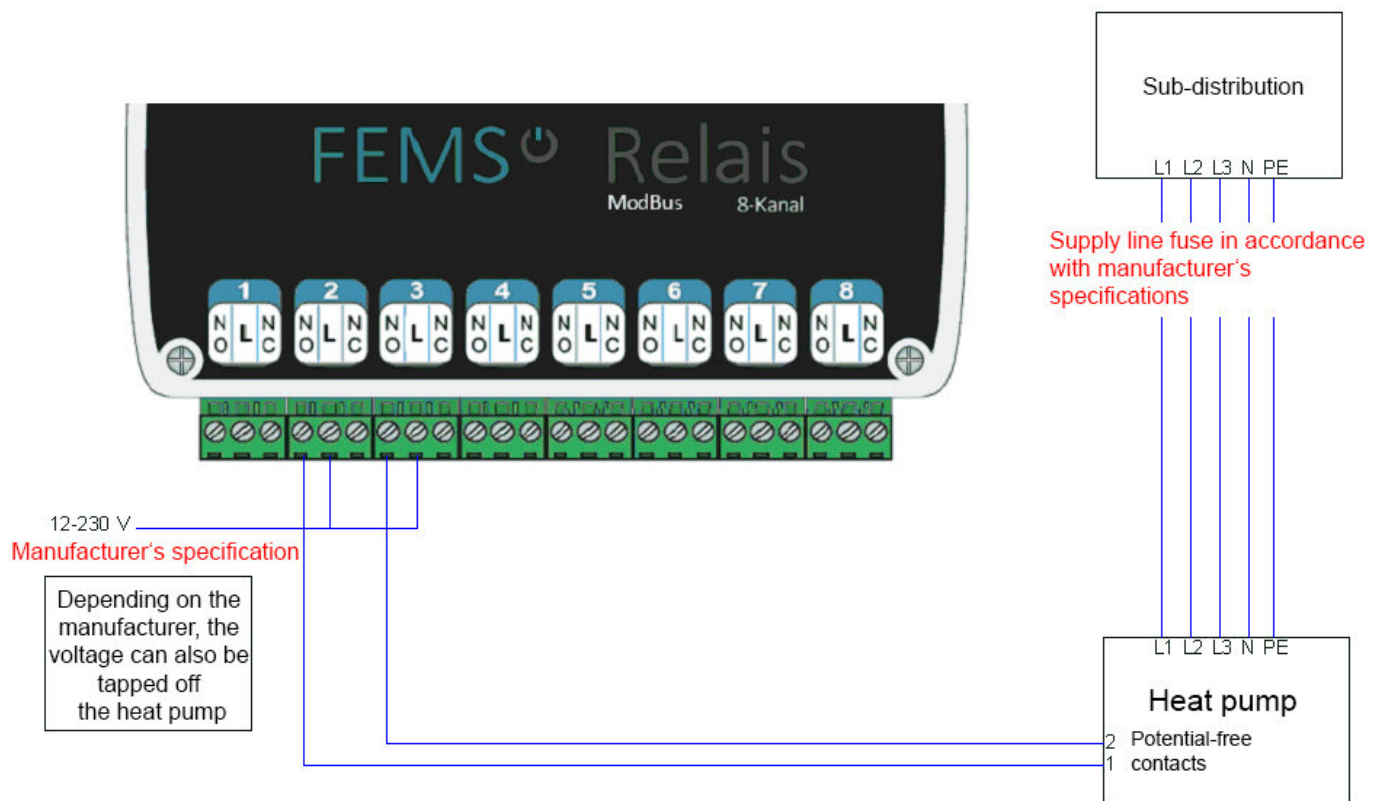


Image 4. Overview — Connection: SG-Ready heat pump



The heat pump must be connected to channels 2 and 3 as standard.

3.4. Standard assignment and connection: Heating element 6 kW

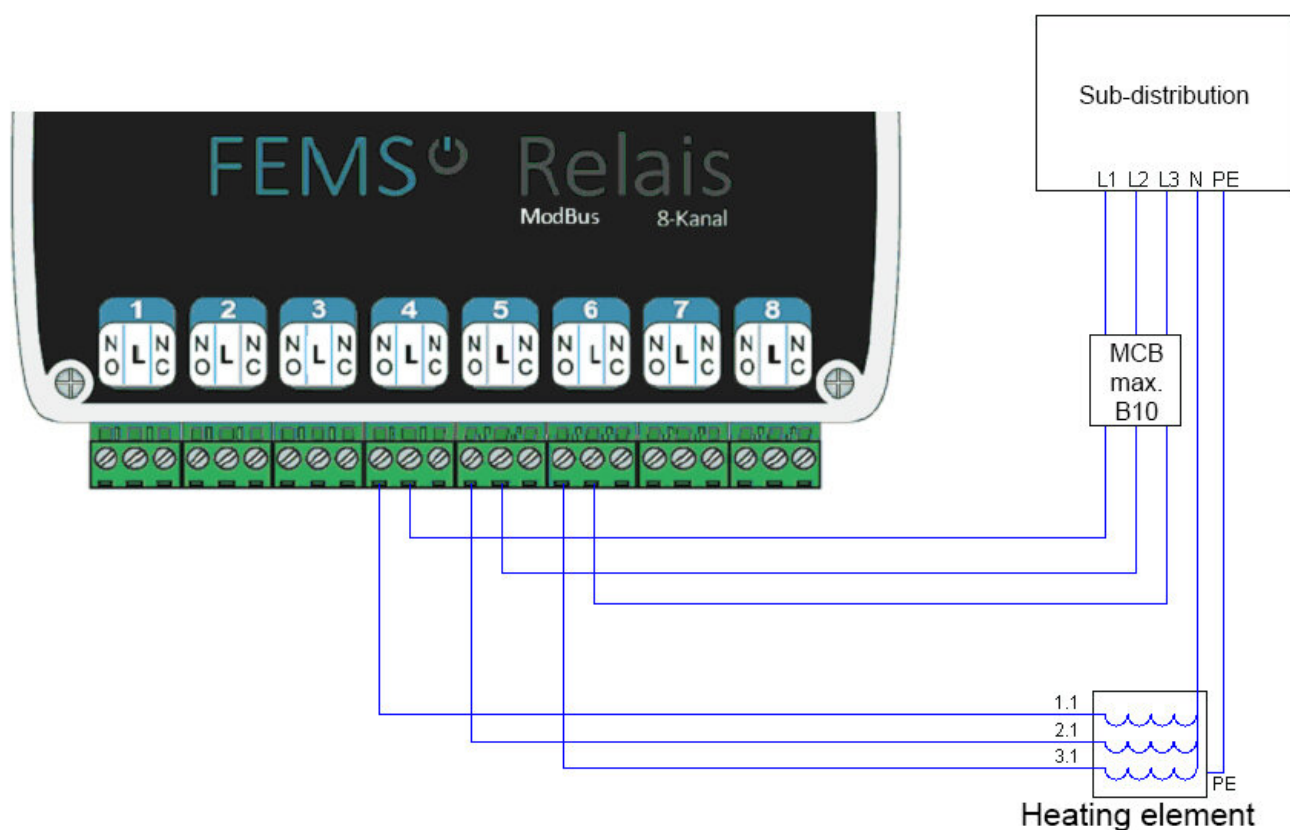


Image 5. Overview — Connection: Heating element 6 kW

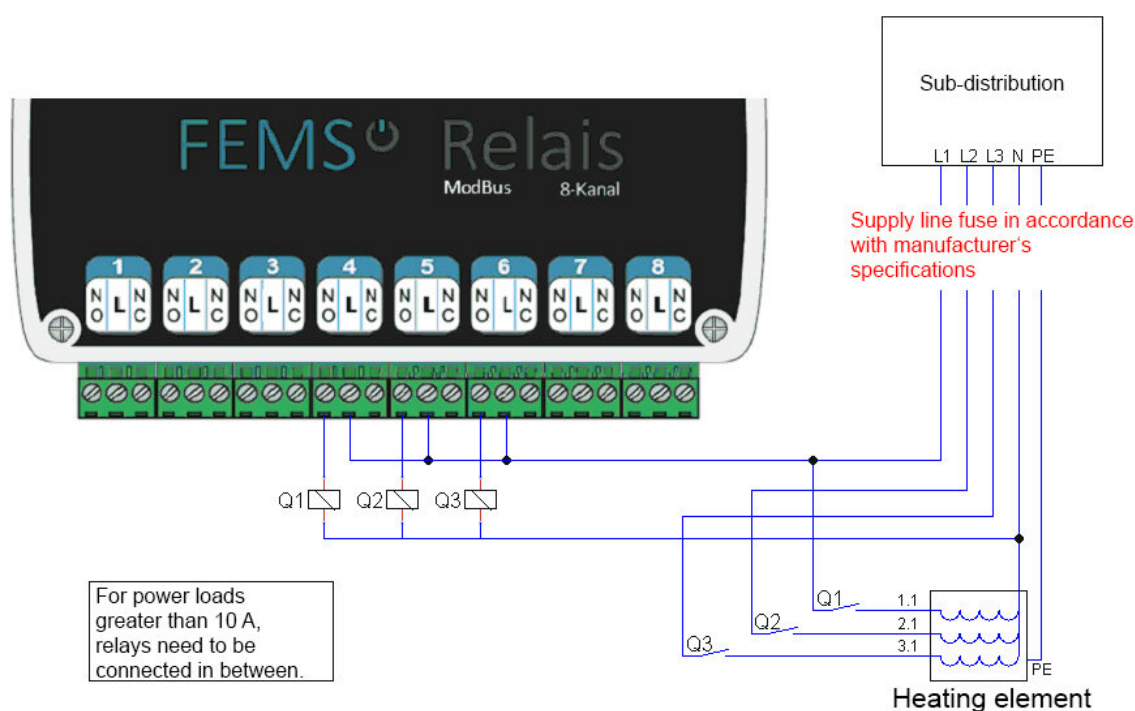


Image 6. Overview — Connection: Heating element > 10 A



By default, the heating element should be connected to channels 4, 5, and 6.

3.5. Standard assignment and connection: Consumer load for Threshold value control

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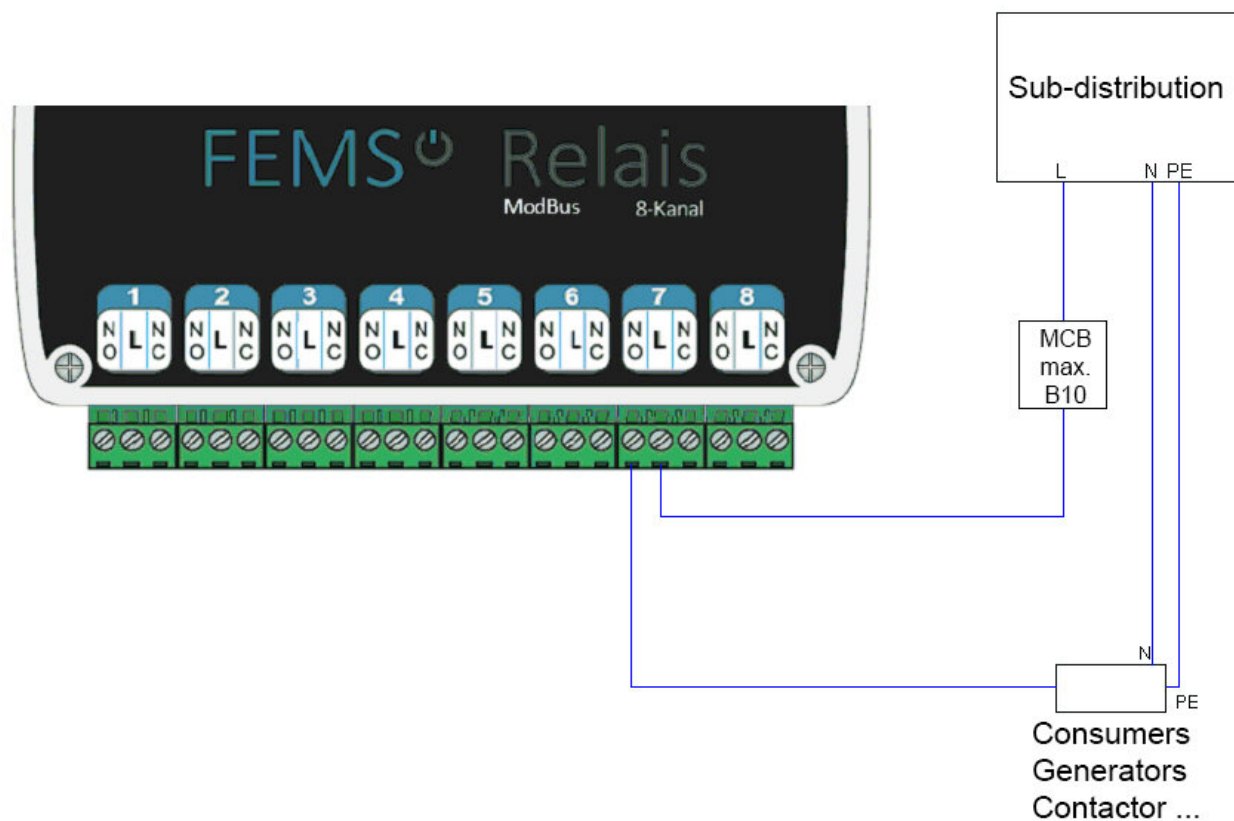


Image 7. Overview — Connection overview: Consumer loads for Threshold value control

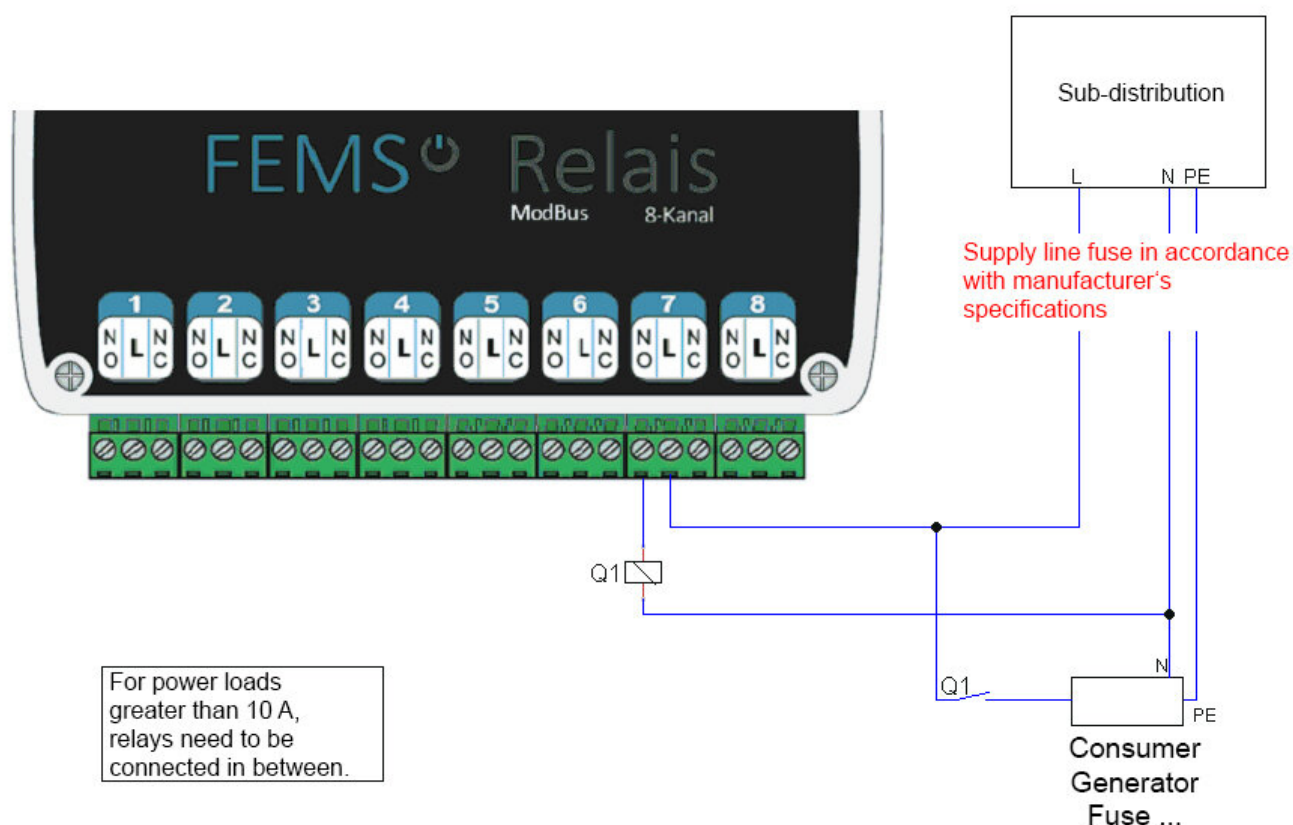


Image 8. Overview — Connection overview: Consumer loads for Threshold value control > 10 A



The sensor for the Threshold Control must be connected to channel 7 by default.

3.6. Standard assignment and connection: Consumer load for manual relay control

3.6. Standard assignment and connection: Consumer load for manual relay control

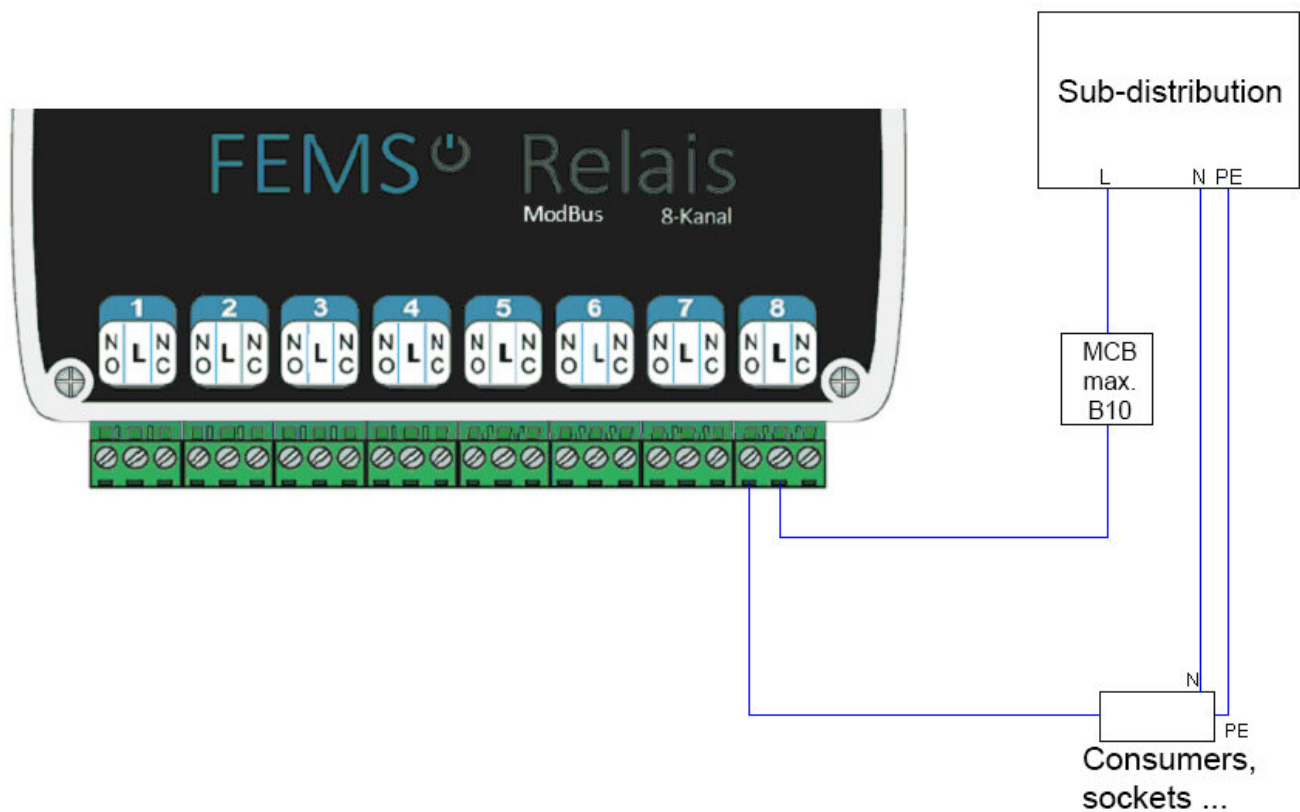


Image 9. Overview — Connection overview: Consumer loads for manual relay control

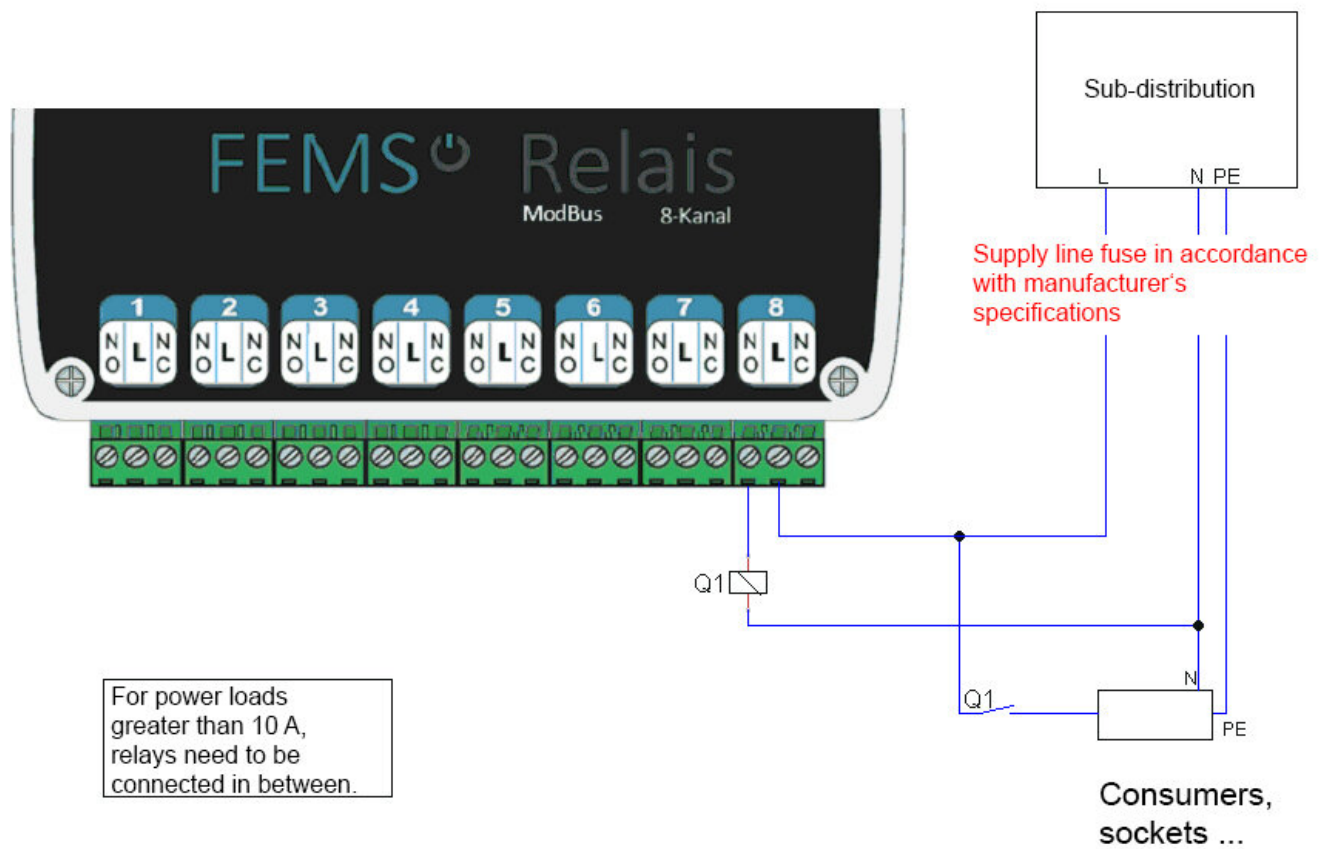


Image 10. Overview — Connection overview: Consumer loads for manual relay control > 10 A



The consumer load for the manual relay control must be connected to channel 8 by default.



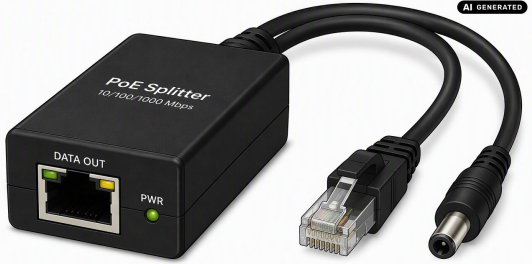
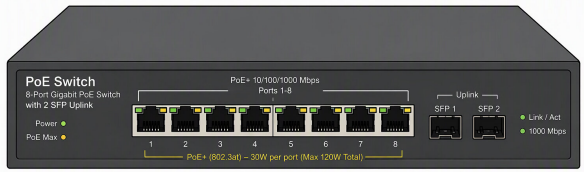
After installing the relay board hardware, you'll need to install the corresponding app from the FEMS App Center.

3.7. Power over Ethernet (PoE) Operation

Instead of using the included DIN-rail power supply (12 V/1.25 A), the relay board can also be powered via PoE (Power over Ethernet).

This requires an **IEEE-compliant, active PoE splitter or PoE switch** that supplies 12 V/1 A or 12 V/2 A. The PoE splitter or switch is connected between the relay board and the network switch.

3.7. Power over Ethernet (PoE) Operation

PoE splitter	PoE switch
	



Using a passive PoE splitter or switch may cause damage to the relay board. Please use only an active PoE splitter or switch.

4. Installing the app

Instructions on how to proceed can be found [here](#).

The following window appears during the app installation:

FEMS TCP

FEMS R

Image 11. Installing the relay board app



- The IP address of the relay board should not be changed.
- If it is absolutely necessary to change the IP address, it must also be changed on the relay board itself ([see below](#)).

To complete the installation of the relay board app, click on **Confirm** twice.

4.1. Changing the relay board's static IP address

1. Configure a laptop with the static IP address **192.168.1.1**.
2. Connect the laptop to the relay board using an Ethernet cable.
3. Use the command **ping 192.168.1.199** to check whether the relay board is reachable.
4. Open your browser and enter the URL **http://192.168.1.199**.
5. A window will then appear where you can enter the new network configuration for your own network.

5. Contact us

5. Contact us

For support, please contact:

FENECON GmbH
Gewerbepark 6
94547 Iggensbach

Phone — Service: +49 (0) 9903 6280 0

E-mail — Service: service@fenecon.de

6. Directories

6.1. List of illustrations

[Image 1](#). Dimensions — Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board

[Image 2](#). Overview — Installation and Configuration Manual — FEMS TCP 8-Channel Relay Board

[Image 3](#). Overview — Connection: CHP

[Image 4](#). Overview — Connection: SG-Ready heat pump

[Image 5](#). Overview — Connection: Heating element 6 kW

[Image 6](#). Overview — Connection: Heating element > 10 A

[Image 7](#). Overview — Connection overview: Consumer loads for Threshold value control

[Image 8](#). Overview — Connection overview: Consumer loads for Threshold value control > 10 A

[Image 9](#). Overview — Connection overview: Consumer loads for manual relay control

[Image 10](#). Overview — Connection overview: Consumer loads for manual relay control > 10 A

[Image 11](#). Installing the relay board app