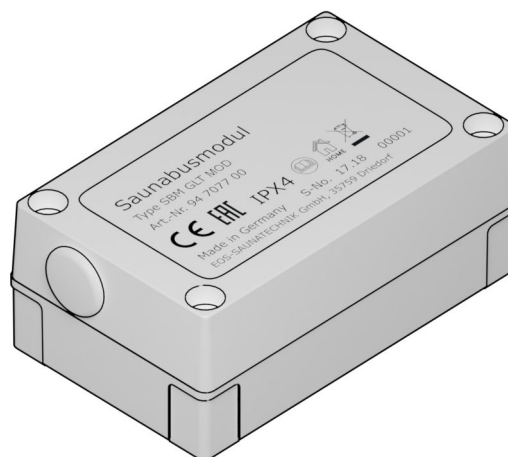


# SBM-GLT-MOD

Modbus Home module for  
building management systems



Installation and operating instructions

**Made in Germany**



Druck-Nr.: 2902 5022  
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# Documentation

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## Original installation instructions EN







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## Characters, symbols and illustrations

-  Additional information about an operating step
-  Cross-reference to a page
-  Read instructions
-  Result of a step
-  Table title
-  Title of figure

## Revision history

Date	Version	Description
17.04.2019	01.10	Programming of cabin address changed
1 Feb. 2019	01.00	First version

# Contents

<b>Documentation</b> .....	2
<b>1 General safety instructions</b> .....	4
1.1 Safety levels.....	4
1.2 Mounting and electrical installation .....	5
1.3 Operator instruction .....	5
1.4 Standards and regulations .....	7
<b>2 Identification</b> .....	8
2.1 Unit specifications .....	8
2.2 Intended use.....	9
<b>3 Description of the unit</b> .....	10
3.1 Housing .....	11
3.2 Modbus connection.....	11
3.3 Modbus protocol.....	12
3.3.1 Function codes .....	12
3.3.2 Registers.....	12
3.4 Sample installations .....	14
3.5 Circuit boards .....	15
<b>4 Mounting and electrical installation</b> .....	16
4.1 Mounting the Modbus Home module .....	16
4.2 Connecting the Modbus Home module with the S-Bus.....	18
4.2.1 Connecting the S-Bus cable to the relay box or module	19
4.3 Configuring addresses for multi-cabin installations .....	21
4.4 Parameters and values .....	22
4.5 Emotec, EmoStyle, EmoStyle i, Emotec IR, InfraStyle, InfraStyle i data communication .....	22
4.6 EmoTouch 3 data communication .....	27
<b>5 General terms and conditions of service</b> .....	28
<b>6 Disposal</b> .....	31

# 1

## General safety instructions

### 1.1 Safety levels

Safety instructions and important operating instructions are classified according to ANSI Z535.6. Please familiarise yourself with the following terms and symbols:

#### **DANGER**

##### **Danger**

Indicates a hazardous situation which, if not avoided, will result in death.

#### **WARNING**

##### **Warning**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

#### **CAUTION**

##### **Caution**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

#### **NOTICE**

##### **Notice**

Indicates a hazardous situation which, if not avoided, will result in damage to the unit.

## 1.2 Mounting and electrical installation



These installation instructions are intended for qualified personnel familiar with the laws and regulations applicable to electrical installations at the installation site. Observe the following general safety instructions during mounting, configuration and commissioning of the product.

Refer also to the installation instructions for the units to which you connect the SBM-GLT-MOD. See also:

2.2 Intended use, [9](#)

### **Risk to life and limb and risk of fire**

Risk to life and limb from electric shock and fire in the event of improper or faulty electrical connection. This risk also applies following completion of the installation work.

- ▶ The electrical installation of the relay box and other electrical systems or equipment with a fixed mains connection must only be performed by a trained electrician from an authorised electrical company.
- ▶ Observe the stipulations in VDE 0100 part 701.
- ▶ The system must be disconnected and removed entirely from the mains supply before commencing installation and repair work.
- ▶ The housing cover must only be removed by a specialist.
- ▶ Do not install control units, relay boxes and modules in enclosed cabinets or wood panelling.

## 1.3 Operator instruction

During commissioning, the operator of the sauna cabin, infrared cabin or steam room must be instructed in relation to the following general safety instructions: The operator must be given a copy of the instructions for use.

### **Risk of electric shock**

A risk to life and limb from electric shock and fire arises in the event of improper repair work. This risk also applies after work is completed.

- ▶ The housing cover must only be removed by a specialist.
- ▶ Repairs and installations must only be performed by a trained specialist.
- ▶ The system must be disconnected and removed entirely from the mains supply before commencing repair work.
- ▶ Use only original spare parts from the manufacturer.

## General safety instructions

- Risk of burns and chemical burns** Touching hot parts may lead to skin burns and chemical burns of the skin.
- ▶ The operator must be familiar with the unit's hot parts and be able to identify them.
  - ▶ The operator must be familiar with the settings for the heating period and understand how it is controlled.
- Health risks** Spending time in a sauna cabin, infrared cabin or steam room can lead to serious health risks or even death for persons with health impairments.
- ▶ Persons with health impairments must consult a doctor before using a sauna cabin, infrared cabin or steam room.
- Equipment damage due to overuse** Excessive humidity in commercial sauna cabins, infrared cabins or steam rooms can lead to property damage.
- ▶ In a commercial sauna cabin, infrared cabin or steam room, the heating period must be set so that the heating switches off automatically after a specific period of time.
  - ▶ If the heating does not switch off automatically after a defined heating period, cabin use must be supervised at all times.
  - ▶ Inspect the cabin before each use.
- Operation by children or persons with reduced mental capacity** Children and persons with reduced mental capacity can be a risk.
- ▶ Children must be supervised to ensure they do not play with the unit.
  - ▶ Operation of a sauna cabin, infrared cabin or steam room must not be started by children under 8 years of age.
  - ▶ The settings for the heating period must only be used by children under 8 years of age if they are supervised by an adult.
  - ▶ Operation of a sauna cabin, infrared cabin or steam room must not be started by persons with reduced mental capacity or limited physical or sensory abilities unless they are supervised or unless they have already been instructed in its use and understand the risks.
  - ▶ Children and persons who have not received proper instruction must not clean or service the system.

## 1.4 Standards and regulations

The following standards, in their currently applicable versions, were observed during design and construction.

Local regulations also apply to the installation and operation of heating, sauna, and steam room systems.

Standard	Title
DIN EN 60335-1	Household and similar electrical appliances – Part 1: General requirements
DIN EN 60335-2-30	Household and similar electrical appliances – safety – Part 2-30: Particular requirements for room heaters
DIN EN 60335-2-53	Household and similar electrical appliances – safety – Part 2-53: Particular requirements for sauna heating appliances and infrared cabins
DIN EN 60335-2-96	Household and similar electrical appliances – safety – Part 2-96: Particular requirements for heating equipment
DIN EN 55014-1	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission
DIN EN 55014-2	Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 2: Immunity

## 2

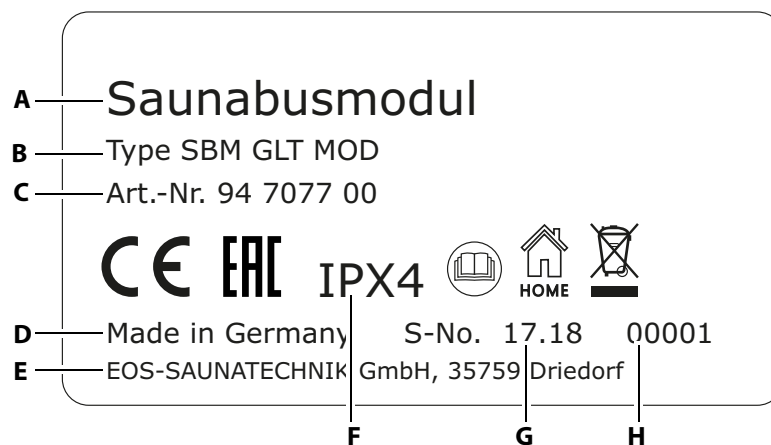
## Identification

The Modbus sauna bus module for building management systems (SBM-GLT-MOD – also referred to as the Modbus Home module) is used to connect sauna cabins, infrared cabins and steam rooms to a building management system.

### 2.1 Unit specifications

#### Nameplate

The nameplate is attached to the front of the upper part of the housing.



<b>A</b> Name	<b>E</b> Manufacturer
<b>B</b> Model	<b>F</b> Protection class
<b>C</b> Item number	<b>G</b> Manufacturing date
<b>D</b> Country of origin	<b>H</b> Serial number

 Nameplate (example)

#### Requirements for operation and storage

The Modbus Home module must only be mounted outside of sauna cabins, infrared cabins and steam rooms. The mounting location must fulfil the following climate conditions:

- Ambient temperature during operation -10°C to 40°C
- Storage temperature -20°C to 60°C



## 2.2 Intended use

The Modbus Home module is intended to be connected to a building management system. It serves to remotely control selected functions in sauna cabins, infrared cabins and steam rooms.

The following control panels support this control:

- Emotec, Emotec IR (software release R. 3.45 or higher)
- EmoStyle, InfraStyle (software release R. 3.45 or higher)
- EmoStyle i, InfraStyle i (software release R. 3.45 or higher)
- EmoTouch 3 (also SteamRock Premium, software version V. 2.07 or higher)

Check the software version of your control panel. Perform an update if necessary.

### Foreseeable misuse

The following are considered instances of foreseeable misuse:

- The connecting cables are connected incorrectly.
- The cabin addresses are programmed incorrectly.
- The unit is operated after technical or other modifications are made to the relay box.
- The unit is operated by children or persons with reduced mental capacity or by persons who have not been thoroughly instructed in its use.

## Description of the unit

# 3

### Description of the unit

The Modbus Home module allows you to monitor and control cabin-control functions using a building management system. This enables monitoring of individual cabins or a complete multi-cabin installation.

In a multi-cabin installation, a Modbus Home module is connected for each cabin.

The Modbus Home module transfers data between the sauna bus and the Modbus in both directions. Its use is configured using the building management system.

#### Scope of delivery

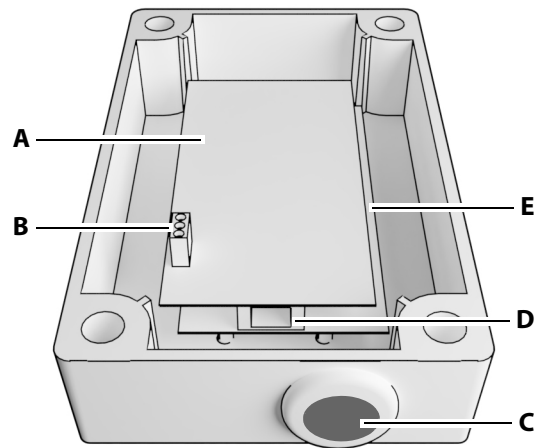
The SBM-GLT-MOD is encased in a plastic housing. The housing completely encloses the circuit board and the electronics.

The following components are included in the scope of delivery:


- SBM-GLT-MOD
- Wood screws 4 x 25 mm
- 4 anchors
- S-Bus cable 10 m, with 2 RJ12 plugs

## 3.1 Housing

Two circuit boards are used to establish a connection from the sauna bus to the Modbus. The plastic housing completely encloses the circuit boards. Power is supplied via the bus line.



- A** Modbus circuit board
- B** Terminals for Modbus lines
- C** Cable feed opening
- D** S-Bus connection (sauna bus)
- E** S-Bus circuit board (bottom)

 Upper piece of Modbus Home module housing

## 3.2 Modbus connection

The terminals for the Modbus lines are to be used as follows:

Connection	Modbus	EIA/TIA-485
-	D0	A
+	D1	B
C	Common	C

## Description of the unit

### 3.3 Modbus protocol

Modbus communication is based on the master/slave architecture. This is an open protocol and is considered an industry standard. The Modbus-RTU operating mode is supported during data transfer from the Modbus Home module.

Each unit in the network must have its own address but all units must have the same serial parameters for baud rate, stop bits and parity.

#### 3.3.1 Function codes

The following function codes are available for communication:

Code	Register address	Description
03	Read register	This function code is used to read the contents of a connected block of registers.
06	Write one register	This function code is used to write a single register.
16	Write several registers	This function code is used to write a block of registers.

#### 3.3.2 Registers

The registers begin with the address 0 (40001). Each register is a 16-bit integer.

##### Read-only parameters:

Name	Address	Description	Values
Model	0	Unit model type	Home module = 0x70
Version	1	Firmware version	100 to 255
Status 1	2	Current unit status	Light on: Bit 0 = 1 Sauna on: Bit 1 = 1 Vaporiser tank on: Bit 2 = 1 PFC on: Bit 3 = 1
Light	3	Current sauna light setting in %.	0 to 100
Temperature	4	Current temperature in °C	30 to 115
Humidity	5	Current humidity in %	0 to 100
	6 to 99	Reserve	

These parameters are read-only.

## Read/write parameters:

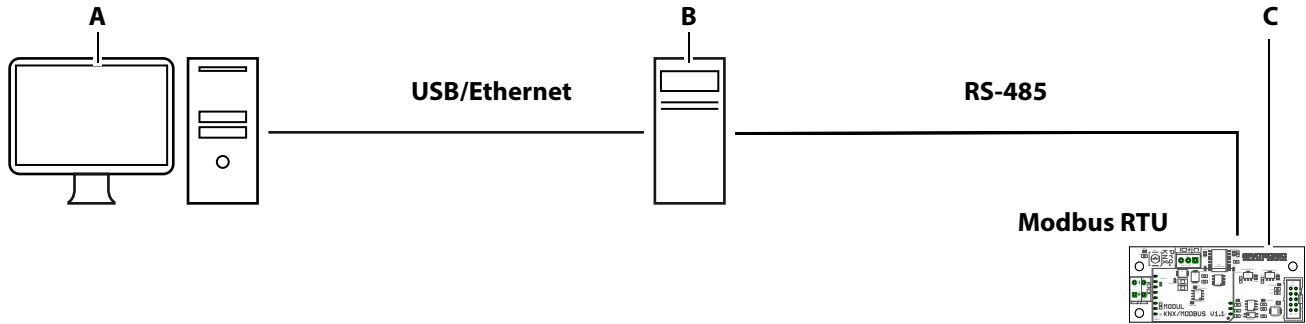
Name	Address	Description	Values
Light	100	Light on/off	Off = 0, on = 1
Sauna	101	Sauna on/off	Off = 0, on = 1
Vaporiser tank	102	Vaporiser tank on/off	Off = 0, on = 1
PFC	103	Potential-free contact on/off	Off = 0, on = 1
	104 to 149	Reserve	
Light setpoint	150	Cabin light setpoint in %	0 to 100
Temperature setpoint	151	Temperature setpoint in °C	30 to 115
Humidity setpoint	152	Humidity setpoint in %	0 to 100

These parameters offer read and write access.

# Description of the unit

## 3.4 Sample installations

In a standard installation, all functions can be operated using PC software.



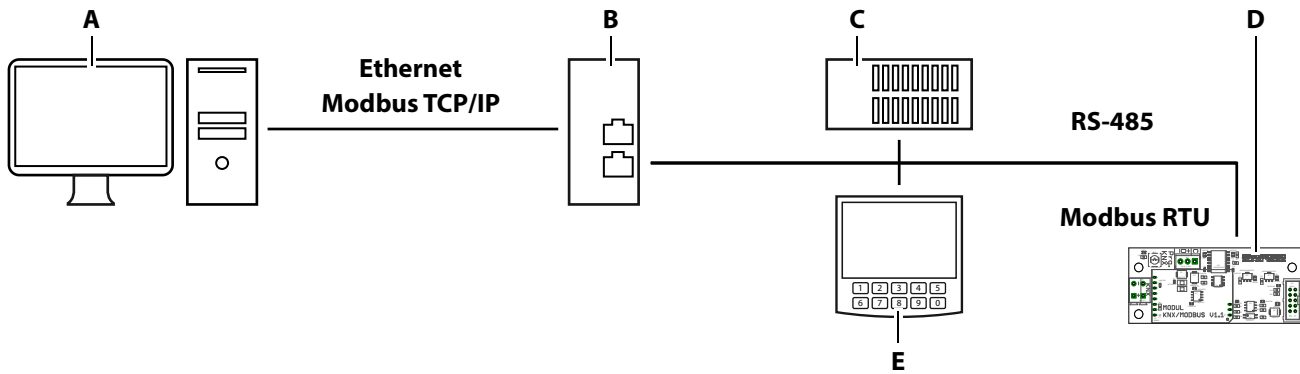
**A** Building management system

**B** Converter

**C** Circuit board/Modbus Home module

☒ Installation with monitoring and switch functions

In an advanced installation, the data can be transferred to an app via a gateway and the activated functions can then be operated using the app.



**A** Building management system

**C** PLC (programmable logic controller)

**E** HMI (human machine interface)

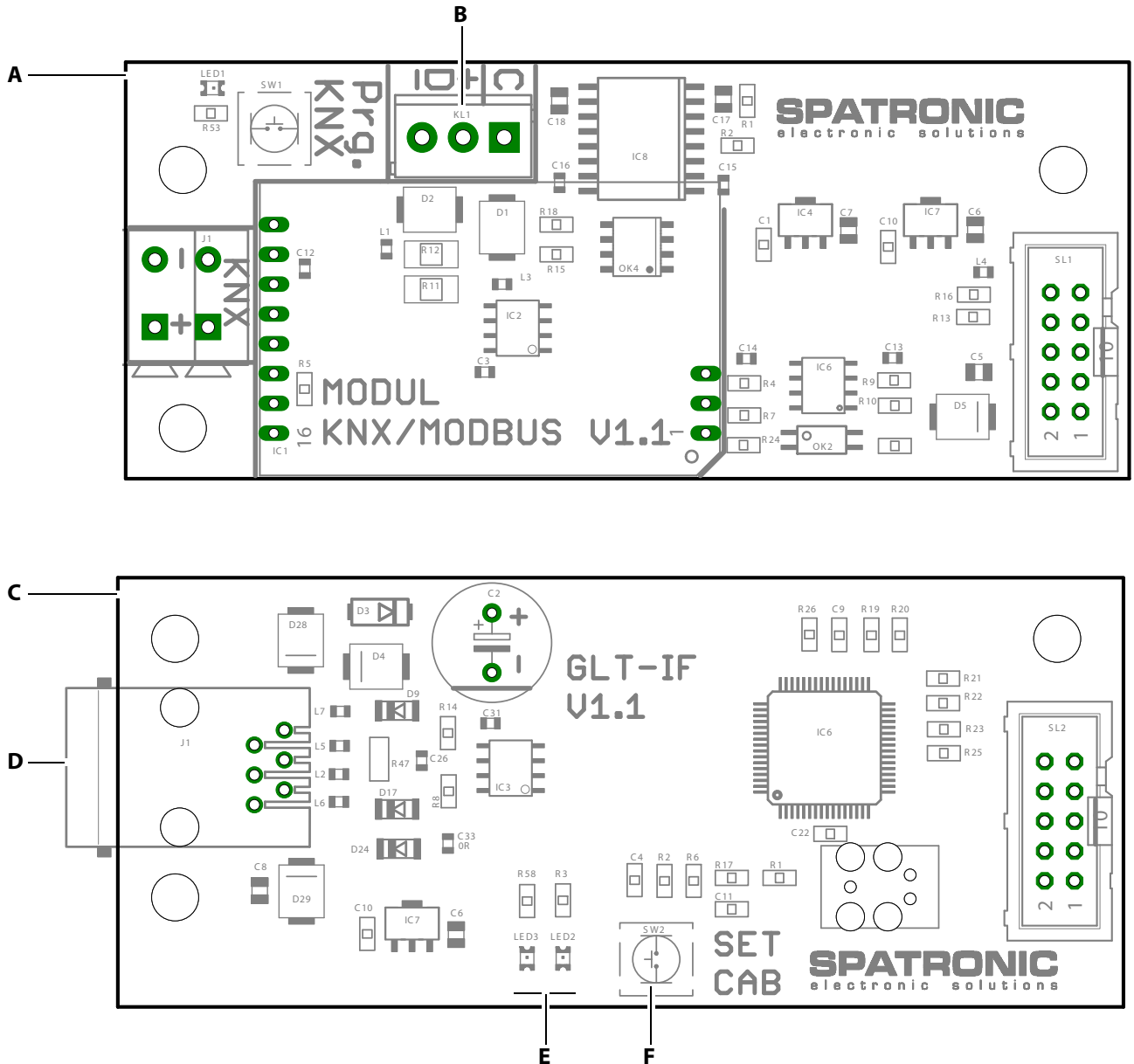
**B** Modbus gateway

**D** Circuit board/Modbus Home module

☒ Installation with monitoring and switch functions

## 3.5 Circuit boards

The housing contains two combined circuit boards. The upper circuit board establishes a connection to the building management system, while the lower circuit board is used for sauna control.



- A** Upper circuit board for Modbus bus connection
  - B** Terminals for Modbus bus
  - C** Lower circuit board for S-Bus connection
  - D** S-Bus connection
  - E** LEDs for S-Bus status display
  - F** Programming button for S-Bus cabin address
- ☒ Circuit boards in the Modbus Home module

# Mounting and electrical installation

# 4

## Mounting and electrical installation

This chapter describes how to mount and wire the SBM-GLT-MOD.

### NOTICE

#### Equipment damage

Corrosive environments or environments with high levels of saline in the air could damage lines and circuit boards.

- ▶ Only use the Modbus Home module in a non-corrosive environment.

### 4.1 Mounting the Modbus Home module

Tools + hardware

- Drill
- Wood screws 4 x 25 mm
- Mounting on a fixed wall: Screws 4 x 25 mm and suitable anchors

The Modbus Home module is mounted on the outer wall of the cabin or in the utility room. The maximum cable length between the relay box and the Modbus Home module is 10 m.

#### ▶ Mounting the housing

- 1 Drill 2 holes at the top and another 2 at the bottom of the wall.  
① The housing can be mounted either vertically or horizontally.

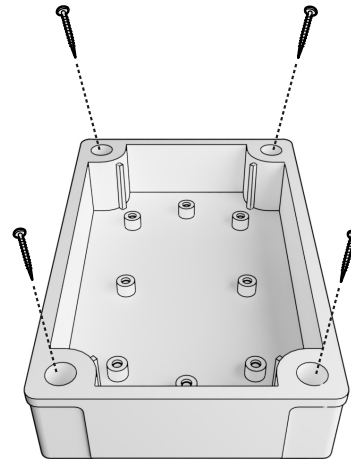
Horizontal distance between drill holes: 63.5 mm


Vertical distance between drill holes: 113.5 mm

- 2 Use anchors if necessary.
- 3 Loosen the housing screws on the cover.



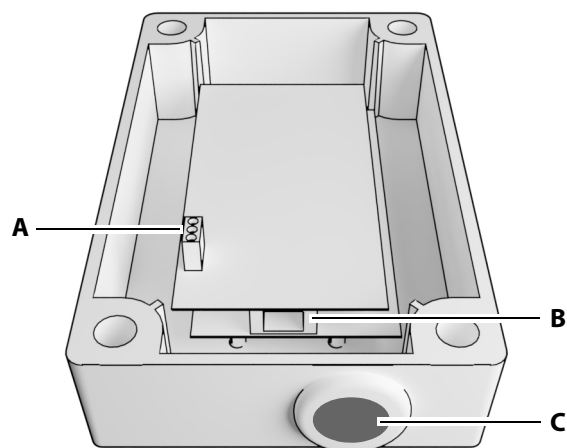
- 4 Attach the bottom piece to the mounting location using the screws provided.




 Bottom piece of Modbus Home module housing

## ► Wiring the connections

- 1 Feed the connection cable through the opening on the top piece of the housing.



**A** Terminal block for Modbus lines      **C** Cable feed opening  
**B** RJ12 jack for sauna bus line

 Upper piece of Modbus Home module housing

- 2 Plug the S-Bus line into the RJ12 jack.
- 3 Connect the Modbus lines to the terminal block.
  - ① Carefully pull back any excess cable length or place it in a loop in the bottom piece of the housing.

## Mounting and electrical installation

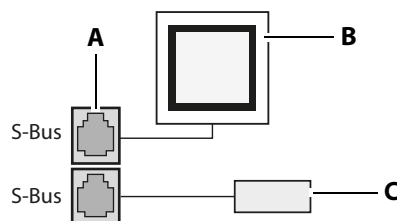
- 4 Configure the S-Bus address if necessary. See:
  - 4.3 Configuring addresses for multi-cabin installations, [21](#)
- 5 Switch on and select configuration parameters for the Modbus. See:
  - 4.5 Emotec, EmoStyle, EmoStyle i, Emotec IR, InfraStyle, InfraStyle i data communication, [22](#)
  - 4.6 EmoTouch 3 data communication, [27](#)
- 6 When all settings have been completed, place the top piece of the housing on top and attach it using the 4 housing screws.

### 4.2 Connecting the Modbus Home module with the S-Bus

On the circuit board of the relay box or add-on module, you will find 2 connection jacks for the S-Bus lines. Four connection jacks are provided with the SteamRock Premium.

#### Sample installations:

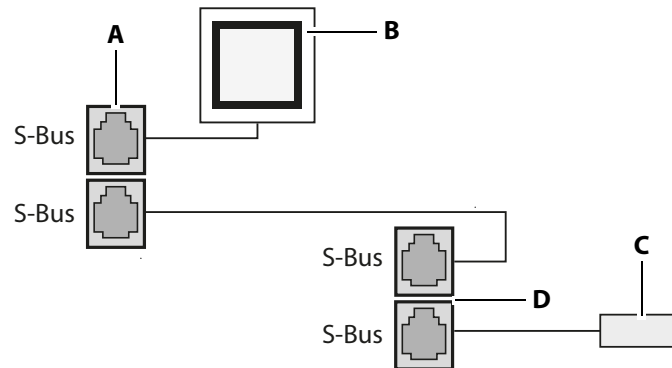
- In a standard installation, the control panel and the Modbus Home module are plugged into the relay box.



- A** S-Bus connection jacks on relay box    **C** Modbus Home module  
**B** Control panel

 Standard installation

- In the advanced installation, the control panel and the add-on module are connected to the relay box. The Modbus Home module is connected to the add-on module.



- A** S-Bus connection jacks on relay box
- B** Control panel
- C** Modbus Home module
- D** Add-on module circuit board

 Advanced installation

- In the case of a multi-cabin installation with the EmoTouch 3 control panel, the Modbus Home module must be installed in the same S-Bus segment as the relay box that is to be controlled. It may also be necessary to use an S-Bus plug-in module. The S-Bus address of the cabin to be controlled must be configured in the Modbus Home module.

## 4.2.1 Connecting the S-Bus cable to the relay box or module

The operation of sauna cabins, infrared cabins and steam rooms is regulated by means of relay boxes, which are in turn controlled via control panels. The jacks for the S-Bus connections are located on the circuit boards of these relay boxes.

See also 2.2 Intended use,  9.

### NOTICE

#### Incorrect data transfer due to incorrect installation

The software does not recognise the Modbus Home module. Data is transferred incorrectly.

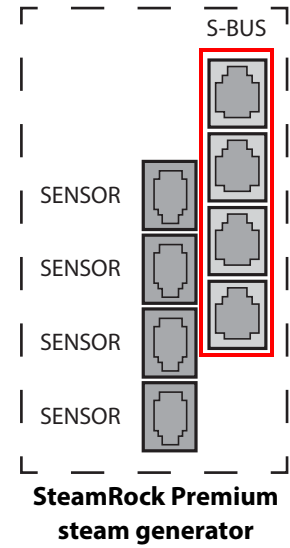
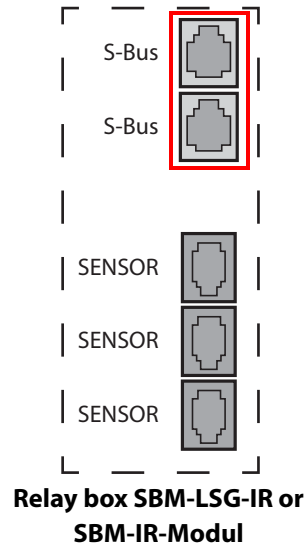
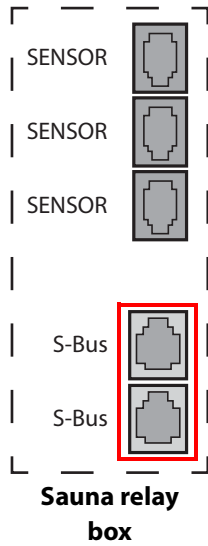
- ▶ Only plug S-Bus cables into S-Bus jacks on the circuit board.
- ▶ Only connect one Modbus Home module per cabin.

#### ▶ Connecting the S-Bus

- 1 **DANGER!** Ensure that there is no voltage present on the circuit board. Disconnect the relay box/circuit board entirely from the mains supply.
- 2 Remove the housing cover of the relay box.

## Mounting and electrical installation

**3** Plug the plug into an S-Bus jack on the circuit board.



☒ Circuit board sections for S-Bus jacks

**4** Replace the housing cover on the relay box and switch the power supply back on.

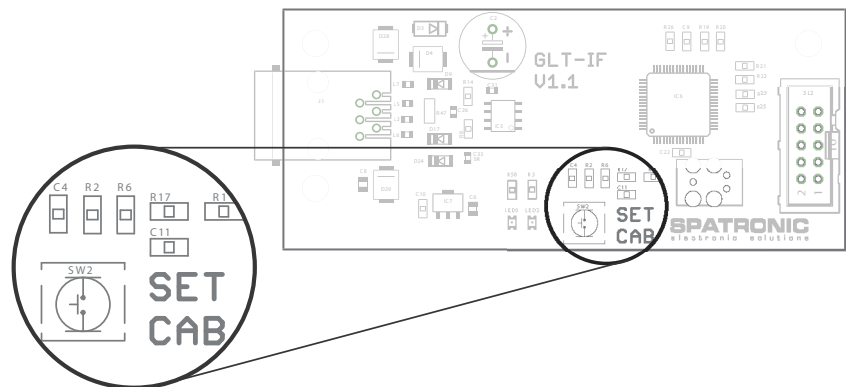
## 4.3 Configuring addresses for multi-cabin installations

You only need to configure S-Bus addresses in a multi-cabin installation with an EmoTouch 3 control panel. The S-Bus address of the cabin you want to control must be configured in the Modbus Home module for this purpose.

The Emotec, EmoStyle, EmoStyle i, Emotec IR, InfraStyle and InfraStyle i always require the cabin address 1.

### ► Programming the address

- 1 Keep the programming button pressed for approx. 5-6 seconds until the red LED lights up.
  - ① Programming mode is then active. The green LED light goes off.



- 2 Press firmly the programming button.
- 3 Wait for the green LED to flash in response and count the number of flashes.
  - The green LED will flash 1 to 8 times as per new cabin address. For instance it will flash twice if the new cabin address is 2
- 4 Repeat steps 2 and 3 until you have set the required cabin address.
  - ① Please note that the address increases by one each time you press the programming button. After address 8 the counting starts again with address 1.
  - If the button is not pressed for approx. 15 seconds, programming mode ends. The red LED goes off and the green LED starts flashing. The new address is saved.
- 5 To ensure that the address has been configured successfully, check that the HOME icon is displayed on the control panel.
- 6 If the HOME icon is not displayed, repeat the programming steps.

## Mounting and electrical installation

### 4.4 Parameters and values


You can set the following parameters and values in each connected control panel:

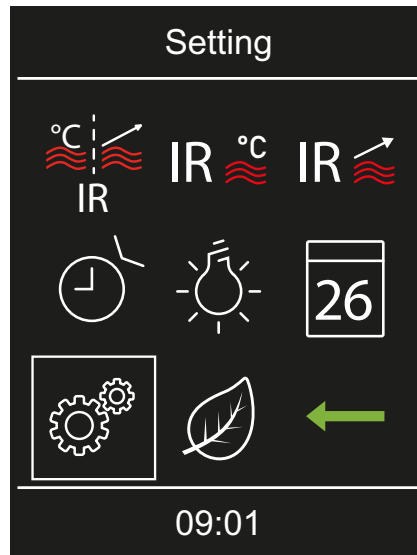
Parameters	Values
Address	1 to 247
Baud rate	1200 2400 4800 9600 19200 38400 57600 115200
Parity	NONE EVEN PARITY ODD PARITY
Stop bits	ONE TWO

### 4.5 Emotec, EmoStyle, EmoStyle i, Emotec IR, InfraStyle, InfraStyle i data communication

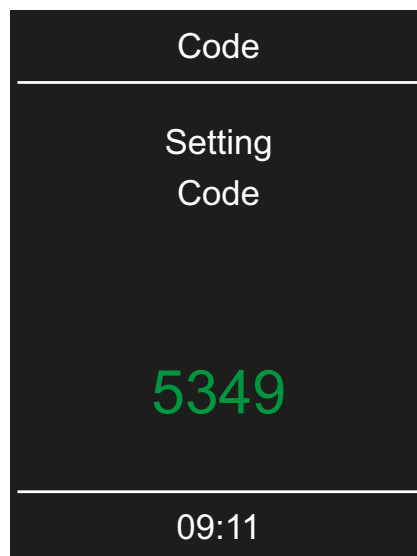
When the building management system and the Modbus Home module are connected, you must define the transfer protocol. Familiarity with the general operating functions of the individual connected control panel is assumed.

#### ► Configuring the transfer protocol

- 1  : Select and confirm by pressing and holding until the code entry is displayed.
  - a) Emotec: Press and hold the jog dial.
  - b) InfraStyle, InfraStyle i: Press and hold the Enter icon.



2 Enter code **5349** and confirm.



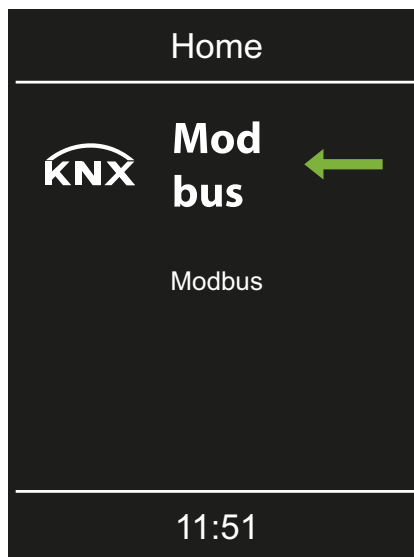
① Increase or decrease the individual numbers and confirm. Confirmed numbers appear green.

## Mounting and electrical installation


- 3  : Select and confirm.



- 4  : Select and confirm.



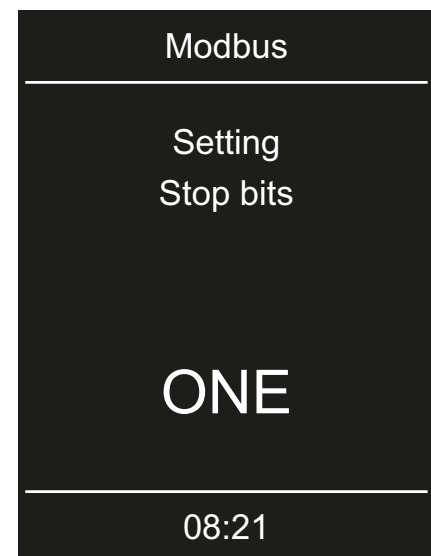
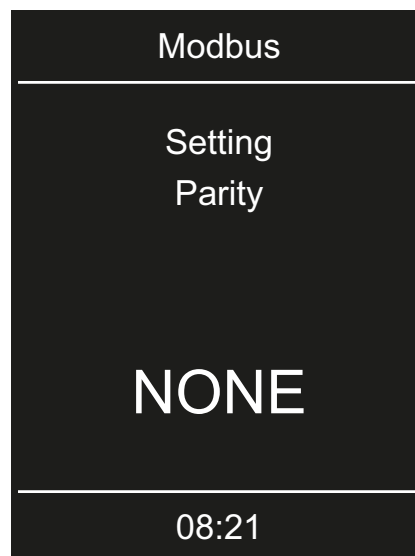
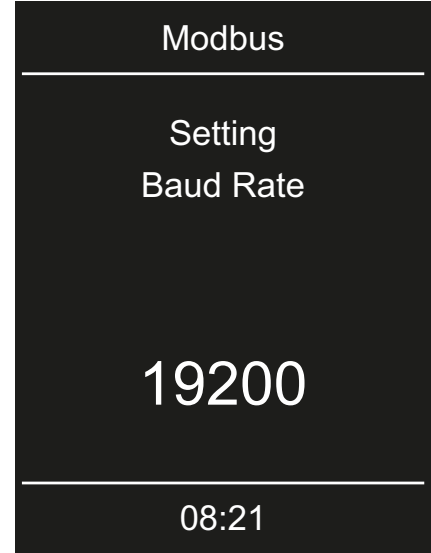
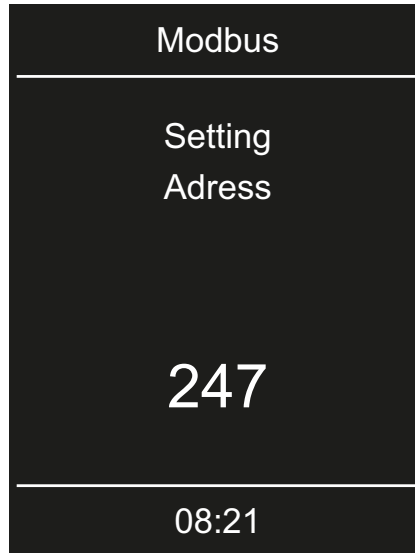


5 Confirm your entry with  .



## Mounting and electrical installation

### 6 Select and confirm additional Modbus parameters:





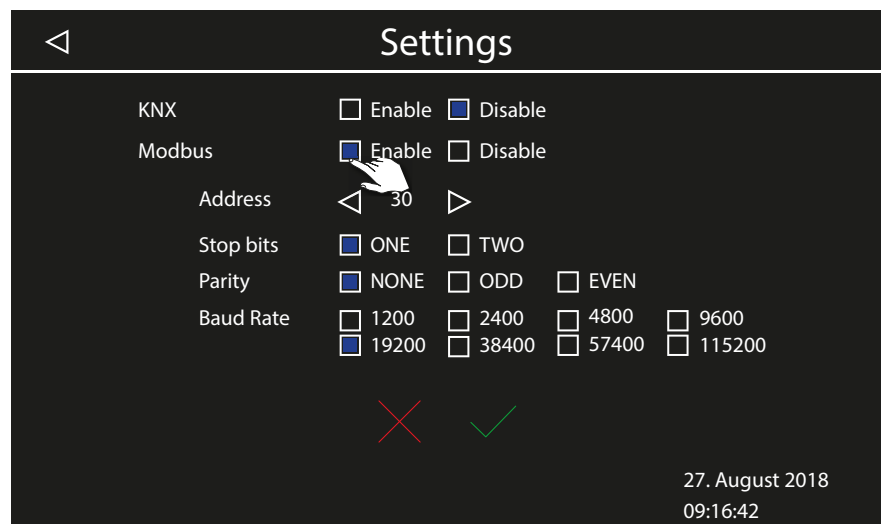
① After you confirm the final value, all set values are applied. The selection HOME is shown again on the display.


## 4.6 EmoTouch 3 data communication

When the building management system and the Modbus Home module are connected, you must define the transfer protocol. Familiarity with the general operating functions is assumed.

### ► Configuring the transfer protocol

- 1 Select the cabin.
- 2 Tap and hold  for 3 seconds.
- 3 Enter code **5349** and confirm.
- 4 Tap  twice.
- 5 Select the Modbus Enable check box.



- 6 Select configuration parameters for the Modbus: address, stop bits, parity, baud rate.
- 7 Confirm your setting with  .

# 5

## General terms and conditions of service

(T&C, Dated 08-2018)

### I. Scope

Unless otherwise agreed in writing for specific instances, these terms and conditions of service shall apply to service operations, including reviewing and remedying complaints. All our existing or future legal relationships shall be governed solely by the following terms and conditions of service. We do not recognise any of the customer's conflicting terms and conditions unless we have given our express written consent to their applicability.

We hereby expressly object to any of the customer's terms and conditions included in the customer's General Terms and Conditions of Business or order confirmation. Unconditional acceptance of order acknowledgments or deliveries shall not be construed as any form of acknowledgment of such terms and conditions. Ancillary agreements or amendments must be confirmed in writing.

### II. Costs

The customer shall bear the following costs in connection with services rendered:

- Mounting/dismantling and electrical (de-)installation
- Transportation, postage and packaging
- Function testing and troubleshooting, including inspection and repair costs

There shall be no third-party billing.

### III. Performance and cooperation obligations

The customer shall provide assistance free of charge to the manufacturer in rendering services.

In the case of a warranty claim, the manufacturer shall provide replacement parts necessary for servicing free of charge.

## **IV. Service visit by the manufacturer**

Services rendered on site by an employee of the manufacturer must be agreed in advance.

If the main reason for the service visit is not the fault of the manufacturer, any costs incurred shall be charged to the customer after the service visit and must be paid by the customer in full within the agreed payment term.

## **V. Liability**

The manufacturer shall assume liability in accordance with the currently applicable statutory regulations. All our products are packaged in such a way that the individually packed goods (pallets) can be shipped.

We wish to point out that our packaging is not suitable for individual shipments via parcel post. The manufacturer shall accept no liability for damages incurred as a result of improper packaging in an individual shipment.

## **VI. Manufacturer's warranty**

The manufacturer's warranty shall apply only if installation, operation and maintenance have been carried out in full accordance with the manufacturer's specifications in the installation and operating instructions.

- The warranty period shall commence from the date on which proof of purchase is provided and shall be limited, in all cases, to 24 months.
- Warranty services shall be performed only if proof of purchase of the equipment can be presented.
- Any and all warranty claims shall become void if modifications are made to the equipment without the manufacturer's express consent.
- Any warranty claim shall likewise become void in the case of defects that arise due to repairs or interventions made by unauthorised persons or due to improper use.
- In the case of warranty claims, the serial and article numbers must be provided, together with the unit designation and a meaningful description of the fault.
- This warranty shall cover defective equipment parts, with the exception of normal wear parts. Wear parts shall include, for example, light sources, glass elements, tubular heating elements and sauna heater stones.

## General terms and conditions of service

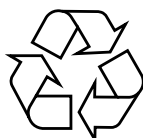
- Only original replacement parts may be used within the warranty period.
- Service visits made by third parties shall require a written order issued by our service department.
- The equipment in question shall be sent to our service department by the customer at the customer's own expense.
- Electrical assembly and installation work, including service visits and parts replacements, shall be carried out at the customer's expense; costs shall not be borne by the manufacturer.

Complaints in respect of our products shall be reported to the responsible distributor and shall be handled exclusively by said distributor.

The manufacturer's General Terms and Conditions of Business, in the version available at [www.eos-sauna.com/agb](http://www.eos-sauna.com/agb), shall apply in addition to the foregoing terms and conditions of service.

# 6

## Disposal



Electrical devices that are no longer needed must be recycled at a recycling station as per EU guideline 2012/19/EU or as per the Electrical and Electronic Equipment Act (ElektroG).

Observe local provisions, laws, regulations, standards and directives when disposing of the unit.



Do not dispose of the unit with household waste.



### Packaging

The packaging of the Modbus Home module can be completely separated for disposal and recycled. The following materials are used in the packaging:

- Used paper/cardboard
- Plastic foil

### Electronic waste

Electronic waste must be disposed of at the designated local collection point for electronic waste.

**Service address**

EOS Saunatechnik GmbH  
Schneiderstriesch 1  
35759 Driedorf, Germany

Tel.                   +49 2775 82-0  
Fax                    +49 2775 82-431  
Web                   www.eos-sauna.com

Store this address with the Installation and operating instructions in a safe place.

Please always provide us with nameplate data, such as model, item number and serial number so we can provide fast and efficient support.

**Date of sale**

**Stamp/retailer signature:**