# ΕN





## Control unit for gas-powered sauna heaters



Installation Instructions for retailers

## **Made in Germany**

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## Documentation

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## **Original installation instructions DE**

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## Characters, symbols and illustrations

- ① Additional information about an operating step
- Cross-reference to a page
- Read instructions
- ☑ Result of a step
- Table title
- $\leq \geq$  Less than or equal to, greater than or equal to



## **Revision history**

Date	Version	Description
22 July 2024	01.40	New logo, general amendments
30 Aug. 2023	01.30	Technical data amended; switch to DIN A5, UKCA added
10 Dec. 2021	01.20	Installation chapter: legends amended
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## 1 General safety instructions

## 1.1 Installation and maintenance



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

product.

## 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 installation. This risk remains also after completion of the installation work.

- The electrical installation of the heater, relay boxes and other electrical systems or equipment with a fixed mains connection must only be performed by a trained electrician from an authorised electrical company.
- The gas installation and exhaust gas routing must be performed only by a trained technician from an authorised company.
- Ensure compliance with the applicable regional standards and regulations for electrical installation and gas installation.
- The system must be completely disconnected from the mains supply before commencing installation and repair work.
- The housing cover must only be removed by a trained specialist.

## Risk of injury or fire

An explosion can occur if the integrated battery in the control panel is not replaced correctly. This can result in injuries and fire.

The integrated battery must only be replaced by qualified personnel.

## Fire hazard from overheating

Insufficient ventilation can lead to device overheating and fire.

- Do not install control panels, relay boxes and modules in enclosed cabinets or wood panelling.
- Install only gas-powered heaters that are designed and installed in such a way that they do not pose a fire hazard when the unit is operated as intended.
- Observe the gas-powered heater manufacturer's safety and installation instructions.
- Observe the sauna cabin manufacturer's safety and installation instructions.

## Damage to the unit

Corrosive or heavy saline atmospheres damage the contacts in the control panel, in the relay box and on the sensors.

The control panel, relay box and sensors should not be installed in a corrosive or heavy saline atmosphere.

## Damage due to incorrect mounting location

The control unit is not suitable for outdoor use.

- The unit should be operated inside buildings only. It should not be exposed to harmful environmental conditions. Harmful environmental conditions include, for example: humidity, moisture, possible formation of condensation or weather that promotes corrosion, as well as other weather conditions.
- Similarly, excessive cold and extreme exposure to sunlight must be prevented.
- Protect the unit accordingly if there is an increased risk of mechanical damage.

## 1.2 Operator instruction

The operator of the sauna cabin must be instructed in the general safety instructions during commissioning. The operator must be given a copy of the operating instructions.

The operator must make the end user aware of safety instructions that are relevant to the end user. The operator must be familiar with the settings for the heating period and understand how it is controlled.

## **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 remains also after work is completed.

- The housing covers for the burner, fan, and control unit must be removed only by trained technicians.
- Repairs and maintenance may be completed only by trained technicians.
- The system must be disconnected and removed entirely from the mains supply before commencing repair work.
- ▶ Use only original spare parts from the manufacturer.

## Fire hazard



Objects placed on the sauna heater can ignite and cause fires.

- Attach the heater guard rail.
- ► Do not place objects on the heater.
- ▶ Fill the rock store as directed.
- ► Inspect the sauna cabin prior to each switching.
- If you switch on the heater using pre-set timers or remotely, attach a protective cover to the heater or install a suitable safety system.

## Service and maintenance

There is a risk to health and risk of fire if service and maintenance work is not performed in a professional manner.

Service and maintenance work must be performed only by:

- ► KUSATEK customer service
- ► Technicians who have been trained by KUSATEK
- Other trained technicians if technicians trained by KUSATEK do not service the area in which the installation site of the sauna heater is located.

## Health risks

Spending time in a sauna cabin can lead to serious health risks or even death for persons with health impairments.

 Persons with health impairments who spend time in a sauna must consult a doctor before entering a sauna.

#### **Damage to health**

Excessive time spent in a heated sauna cabin can lead to overheating of the body and hyperthermia, which may cause serious health problems and even death. Hyperthermia occurs when the core temperature of the body exceeds the norm by a few degrees. Symptoms of hyperthermia include fever, dizziness, lethargy, sleepiness, and fainting. Side effects of hyperthermia include perception disorders, inability to recognize the need to leave the room, inability to identify imminent danger, harm to the foetus in the case of pregnant women, inability to physically leave the room and unconsciousness.

Alcohol, drugs, and medications increase the risk of hyperthermia.

- Do not exceed the maximum recommended time in the sauna.
- Leave the sauna cabin if your body responds abnormally to the heat or if you do not feel well.
- Avoid alcohol, drugs, and medications when you are using the sauna.
- Floor heating in the sauna cabin results in additional warming of the legs and can lead to health risks.

#### Equipment damage due to overuse

Excessive humidity in commercial sauna cabins can lead to property damage.

- If the sauna cabin is used commercially, the heating time must be set so that it 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 physical, mental or sensory abilities must be supervised to ensure that they do not play with the unit.
- Children under 8 years of age should not operate the sauna cabin.
- The settings for the heating period may only be changed by children 8 years of age or older if they are supervised by an adult.
- The sauna cabin must only be used by persons with reduced mental capacity, or limited physical or sensory abilities under supervision or if they have been previously instructed in its use and understand the risks.
- Children and persons who have not received proper instruction must not clean or service the system.

## 1.3 Safety levels

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

#### 

#### Warning

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

## 

#### 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.

## 1.4 Standards and regulations

For an overview of the standards that were observed during design and construction of the sauna heater, please refer to the individual product's technical data sheet that can be downloaded from www.eos-sauna.com. Local regulations also apply to the installation and operation of heating, sauna, and steam room systems.



## 2 Identification

KUSATEK K-Tec is an electronic sauna control unit for operating gas-powered sauna heaters in sauna cabins. The unit consists of a relay box, a control panel, a temperature sensor and connecting cables. Additional modules/devices can be connected to the relay box for total control of a sauna cabin, for example, lighting, fan and additional sensors.

## 2.1 Nameplate

The nameplate is attached to the underside of the housing floor.



## 2.2 Scope of delivery

The following components are included in the scope of delivery:



- A Relay box with 2-piece front cover
- **B** 5 bushings
- C 3 wood screws 5 x 25 mm
- **D** 5 m connecting cable with RJ14/ RJ10 modular plug for control panel
- **E** Removal tool for front panel
- **F** Control panel with housing for mounting in the wall or mounting on the wall
- **G** Temperature sensor with safety temperature limiter, including 5 m connecting cable with RJ10 plug, housing, circuit board, 2 screws 4x40 mm
- H Installation and operating instructions
- \* STB = Safety temperature limiter

## 2.3 Technical data

Ambient temperature during operation	-10°C to +40°C
Storage temperature	-20°C to +60°C
Housing, control panel	Plastic
Relay box dimensions (H x W x D)	240 x 230 x 70mm
Weight	Approx. 1.5 kg
Outputs/inputs Relay box	3 x RJ10 jack for sensor connection 4 x RJ14 jack for control panel and add-on modules
Power supply	230V 1N ~ 50Hz
Switching output	Max. 3.5 kW
Circuits	5 separate circuits with total output of 3.5 kW $$
Temperature control	Measured room temperature: 30–125°C
Connection for lighting	Min. 5 W (20 mA), max. 250 W
Connection for lighting Connection for air supply and exhaust fan (heater):	Min. 5 W (20 mA), max. 250 W 230V 1N ~ 50Hz, single-stage
Connection for lighting Connection for air supply and exhaust fan (heater): Connection for cabin fan:	Min. 5 W (20 mA), max. 250 W 230V 1N ~ 50Hz, single-stage 230V 1N ~ 50Hz, single-stage, max. 100 W
Connection for lighting Connection for air supply and exhaust fan (heater): Connection for cabin fan: Sensor system	Min. 5 W (20 mA), max. 250 W 230 V 1N ~ 50 Hz, single-stage 230 V 1N ~ 50 Hz, single-stage, max. 100 W Room temperature sensor, analogue or digital
Connection for lighting Connection for air supply and exhaust fan (heater): Connection for cabin fan: Sensor system Heating period limitation	Min. 5 W (20 mA), max. 250 W 230 V 1N ~ 50 Hz, single-stage 230 V 1N ~ 50 Hz, single-stage, max. 100 W Room temperature sensor, analogue or digital Up to 6 hrs/12 hrs/18 hrs/infinite
Connection for lighting Connection for air supply and exhaust fan (heater): Connection for cabin fan: Sensor system Heating period limitation Control panel	Min. 5 W (20 mA), max. 250 W 230 V 1N ~ 50 Hz, single-stage 230 V 1N ~ 50 Hz, single-stage, max. 100 W Room temperature sensor, analogue or digital Up to 6 hrs/12 hrs/18 hrs/infinite
Connection for lighting Connection for air supply and exhaust fan (heater): Connection for cabin fan: Sensor system Heating period limitation Control panel Control panel dimensions (W x H x D)	Min. 5 W (20 mA), max. 250 W 230 V 1N ~ 50 Hz, single-stage 230 V 1N ~ 50 Hz, single-stage, max. 100 W Room temperature sensor, analogue or digital Up to 6 hrs/12 hrs/18 hrs/infinite K-Tec 127 x 130 x 25 mm, mounting depth approx.
Connection for lighting Connection for air supply and exhaust fan (heater): Connection for cabin fan: Sensor system Heating period limitation Control panel Control panel dimensions (W x H x D) Display	Min. 5 W (20 mA), max. 250 W         230V 1N ~ 50Hz, single-stage         230V 1N ~ 50Hz, single-stage, max. 100 W         Room temperature sensor, analogue or digital         Up to 6 hrs/12 hrs/18 hrs/infinite         K-Tec         127 x 130 x 25 mm, mounting depth approx.         20 mm         TFT colour display 55 x 74 mm (3.5″ diagonal)
Connection for lighting Connection for air supply and exhaust fan (heater): Connection for cabin fan: Sensor system Heating period limitation Control panel Control panel dimensions (W x H x D) Display Control panel outputs/inputs	Min. 5 W (20 mA), max. 250 W 230 V 1N ~ 50 Hz, single-stage 230 V 1N ~ 50 Hz, single-stage, max. 100 W Room temperature sensor, analogue or digital Up to 6 hrs/12 hrs/18 hrs/infinite K-Tec 127 x 130 x 25 mm, mounting depth approx. 20 mm TFT colour display 55 x 74 mm (3.5″ diagonal) 1 x RJ10 jack for relay box 1 x connection for memory card (microSD memory card reader)

## 2.4 Accessories (optional)

Accessories	ltem no.
10 m connecting cable for sauna bus (RJ12/RJ12)	94.5861
25 m connecting cable for sauna bus (RJ12/RJ12)	94.4647
50 m connecting cable for sauna bus (RJ12/RJ12)	94.4648
20 m connecting cable for temperature sensor	94.6281
50 m connecting cable for temperature sensor	94.6282
10 m connecting cable for control panel (RJ10/RJ14)	94.6802
25 m connecting cable for control panel (RJ10/RJ14)	94.6285
50 m connecting cable for control panel (RJ10/RJ14)	94.6968
100 m connecting cable for control panel (RJ10/RJ14)	94.6969
Set SBM ECO push button	94.6980
SBM-WCI-01 web app module	94.5987
SBM-S BT sound module	94.5920, 94.5921
SBM-HOT set	94.6800
SBM-GLT-MOD HOME Modbus module	94.7077
SBM-GLT-KNX HOME KNX module	94.7078
SBM-FL75/150 coloured light module	94.5996, 94.6007
SBM remote start	94.5782
Emergency stop button	945777, 945779
Modular distributor RJ12 for connecting cable for control panel and sauna bus	2001.5298
Infrared receiver for coloured light module and sound module	94.6810
Humidity sensor	94.5726
Digital temperature sensor for bench heating	94.6617
Bench sensor	94.5725

## 2.5 Functions and applications

KUSATEK K-Tec is used to control gas-powered heaters in sauna cabins and various extra functions, such as:

- Up to 8 burners and the corresponding fans
- Evaluating burner malfunctions (up to 4 inputs)
- Vaporiser or automatic water splash for humidification
- HOT function
- AquaDisp or WDT automatic water splash
- Heater, bench, and humidity sensor
- Cabin fan

## **Burners and fans**

The output at each terminal may not exceed a 0.5 kW AC3 load. If more than 0.5 kW is required, a contactor must be connected during installation. To connect more than one line per circuit, the corresponding lines must have an identical line cross-section. You must connect the lines in the onsite plug-in modules that are separate from the relay box.

See 🗃 Example – plug-in module (optional), 🗅 EN-60

- Air supply fan The air supply fans must be single-stage.
- Exhaust gas fans

The connected exhaust gas fans automatically run for 10 minutes once the device shuts off.

Evaluating a burner fault

The line for the burner fault can be connected to the HV-IN terminal. If there are multiple burners, it can also function as a manifold. Alternately, the IO-EXT-HV module can be used. If 4 burners are connected, each burner is assigned its own fault input so burner faults can be assigned to the corresponding burner.

If more than 4 burners are connected, two fault lines must be assigned to one fault input.

#### Temperature sensor, emergency button and other functions

Each cabin must have sensors for monitoring the temperature. They may be analogue or digital sensors. The KTY 11/5 TO-92 Mini is the only analogue temperature sensor that may be used.

- Temperature sensor
   Each cabin must have one temperature sensor. It may be an analogue or digital sensor.
- Bench sensor

A bench sensor may also be connected. It may be an analogue or digital sensor.

- Humidity sensor
   A digital humidity sensor may also be connected. A humidity sensor should be connected if a vaporiser is connected.
- Emergency button and manifold fault An emergency button, whose signal is emitted via an output, may be connected. Fault messages may also be issued via this output.
- Mains supply and low voltage The circuit board has switch contacts for mains supply (HV) and low voltage (LV). You can configure their use for emergency functions or the manifold fault line.

## Plug-in modules (optional)

A plug-in module can be added to the circuit board of the relay box. It enhances the functions of the K-Tec control panel.

LV module

Four inputs and four outputs for various cabin statuses and connections to a PLC.

## Vaporiser

The following vaporisers can be connected:

- SteamRock Basic steam generator (has one status output)
- SteamAttrac steam generator (has one status output)
- WDT automatic water splash (has one HOT function)
- Vaporiser without status output

If a vaporiser with status output or a WDT automatic water splash is connected, the burner faults must be connected to the IO-EXT-HV module. The vaporiser's status output or the connection for the HOT request is connected to the HV-IN terminal and evaluated by the electronics.

## 2.6 Relay box

## Housing



- A Housing cover top piece
- **B** Housing
- **C** Retaining screws for top piece
- **D** Unit switch
- **E** Retaining screws for bottom piece
- F Housing cover bottom piece

## **Unit switch**

The relay box is equipped with an on/off switch on the left side.



Position I:

Relay box is switched on (factory setting).

The relay box is ready for operation in standby mode.

#### Position 0:

Relay box is completely switched off. Parts of the circuit board are still energised.

#### Position II:

Cabin lighting is switched on, relay box is switched off. Position for maintenance and cleaning.

#### **Internal view**



- **A** Top mounting hole
- B Housing cover fixtures top piece
- C Unit switch
- **D** Circuit board

- **E** Housing cover fixtures bottom piece
- **F** Lower mounting holes
- **G** Feed-throughs for cables with mains voltage
- **H** Feed-throughs for cables with low voltage

The cables for mains supply and low voltage can be routed through the holes on the back side or base of the housing.

Holes can be punched out at the predetermined points where needed.

For more information on the circuit board, see

4.3 Circuit board assignment, 🗅 EN-51

## 2.7 Control panel



- A Housing for mounting in the wall
- B Front panel with display
- **C** Slot at base for removal tool
- **D** Opening for sauna bus connection
- **E** Housing for mounting on the wall

🖾 Control panel

The control panel is available in two models:

- Model for mounting in the wall (A): The housing is mounted in the wall.
- Model for mounting on the wall (E): The housing is mounted on the wall.

The connecting cable for the relay box is fed through the back of the housing. The circuit board is affixed to the front panel.

## 2.8 Intended use

KUSATEK K-Tec is designed to operate sauna cabins with gas-powered heaters. The unit must be mounted on a wall.

KUSATEK K-Tec is suitable for use with private or commercial cabins.

The control unit is not suitable for outdoor use.



It must be operated only inside buildings and may not be exposed to environmental conditions such as extreme humidity and moisture or the possible formation of condensation or corrosive substances in the ambient air, as well as other

weather conditions. Similarly, excessive cold and extreme exposure to sunlight must be prevented. Protect the unit accordingly if there is an increased risk of mechanical damage.

Any use beyond this is considered improper use. Proper use also includes compliance with operating, maintenance and servicing requirements.

## **Foreseeable misuse**

The following are considered instances of foreseeable misuse:

- The control and sensor cable plugs are plugged in incorrectly.
- The unit is operated without knowledge of or compliance with the safety instructions.
- Operating, service and maintenance requirements are not observed.
- The unit is operated by children under 8 years of age.
- The unit is operated by children 8 years of age or older, or persons with reduced mental capacity who have not been thoroughly instructed in its use.

The manufacturer is not liable for unauthorised modifications made to the equipment and damages resulting from these modifications. The person modifying the equipment alone shall bear the associated risk.

## 3 Installation

## 3.1 Power supply and data lines

All lines should be routed before installing the control unit. The connections can be plugged in after installation, since the control unit's front panel can be removed.

## NOTICE

## **Electronics malfunctions**

Routing data and power supply lines together can lead to electronics malfunctions because, e.g. because the sensor will not be detected.

- Do not route sensor and sauna bus lines together with power supply lines.
- Route separate cable ducts.

Data lines must be routed and connected in such a way that they are not openly accessible. They should be routed between the insulation and the outer wall of the cabin. Cabin insulation must be installed in such a way that the temperature in the area in which cables are routed cannot exceed 75°C.

If the data lines are installed outside on the wall, they must be protected by a cable duct.

## Line routing

The individual component lines to the relay box may not exceed 50 m in length.

The relay box contains 5 circuits:

- BRNR: Air supply fan
- EXH: Exhaust gas fan
- CAB: Cabin fan
- VAP: Vaporiser

To connect more than one line per circuit, you must terminate the corresponding lines in the on-site plug-in modules outside the relay box. See Ream Example – plug-in module (optional), D EN-60 To switch more than 0.5 kW AC3 power to a circuit, you must also connect additional contactors inline.

## Extending the control panel's control line

For longer connections, special RJ10/RJ14 connecting cables with lengths of 10 m, 25 m, 50 m and 100 m are available as an option. Alternately, the supplied (as standard) 5 m line can also be extended with an RJ12/RJ12 coupling and an RJ12/RJ12 extension cord. The extensions and couplings are available as options.

See 2.4 Accessories (optional), 🗅 EN-16

## 3.2 Installation work inside the cabin

At minimum, the cabin lighting and a temperature sensor with safety temperature limiter must be installed inside the cabin. Additional connections are possible, depending on the amenities, e.g. coloured lights and audio systems as optional add-on modules.



- A Cabin fan
- B Light

📾 Example – cabin

**C** Temperature sensor with safety temperature limiter

## 3.2.1 Installing the cabin fan

The position of the cabin fan may vary, e.g. the height at which it is mounted, depending on the layout of the cabin and its relevant components.

The cabin fan in the ceiling should be installed as close to the temperature sensor as possible, to ensure that the rising air can cool the sensor faster.

## 3.2.2 Installing the temperature sensor

The temperature/humidity in the sauna cabin is set via the control unit. The set values are checked by the sensor. The heater sensor controls the temperature in the sauna cabin. The heater sensor has a safety temperature limiter, which ensures that the temperature does not exceed the permitted temperature.

Hardware + tools:

- Temperature sensor and connecting cables
- Drill used to drill a hole in the cabin ceiling
- Screwdriver
- Taut wire, as needed



- **A** Cabin ceiling
- **B** Temperature sensor housing
- **C** RJ10 plug for relay box
- **D** Safety temperature limiter
- Installation diagram

#### Installing the temperature sensor in the cabin

- 1 Determine a suitable location for the installation.
  - The temperature sensor must be installed where expected temperatures are the highest.
- 2 Drill a hole in the cabin ceiling for the cable.
- 3 NOTICE Do not pull at the plug when routing the control line(s). Doing so could damage the line. Attach the taut wire only to the cable. Route the sensor cable through the hole.

4 Open the temperature sensor's housing and connect the cable.



A Safety temperature limiter, white lines



- **B** White (sensor bus)
- **C** Green (sensor bus)
- **D** Brown (sensor bus)
- 📾 Connector pins for sensor bus
- **5** Screw the sensor housing to the cabin ceiling and place the housing cover in position.

## 3.2.3 Installing cabin lighting

Lighting can be installed anywhere, however not near rising hot air. Cabin lighting is not included in the scope of delivery. Observe the separate installation instructions for lighting.

Observe the requirements for light sources in the Technical data chapter: 2.3 Technical data,  $\Box$  EN-15.

#### NOTICE

#### Material damage

Lighting and the control system could become damaged if incorrect light sources are installed. In this case, the warranty becomes void.

- ► The inrush current of the light source must not exceed 20 A.
- ► Do not install lighting in the emitting range of the heater.
- The lighting must conform to protection class IPX4 (splashproof) and be resistant to ambient temperatures.

## 3.3 Relay box

The relay box must only be mounted outside of the cabin and in dry areas only. Observe the following guidelines.

## 3.3.1 Requirements

## 

## 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 remains also after completion of the installation work.

- Do not install the relay box in enclosed cabinets or wood panelling.
- Mount the relay box in a dry environment only.



Proper and improper relay box installation

Recommended installation locations are:

- Outer wall of the cabin
- Plant room

If empty conduits for electrical installations are already present, this dictates the position of the relay box.

All lines should be routed before installing the relay box. Data lines must be routed and connected in such a way that they are not openly accessible.

## **Measurements for installation**



Back of relay box



Main Installation diagram

## Line routing



A Insulation

B Inner wall of the cabin

**C** Outer wall of the cabin

D Connecting lines

Diagram – routing of data and control line(s)

The power supply, S-Bus and sensor lines can be routed to the relay box as follows:

- The lines can be routed along the outer wall of the cabin. They are then
  passed into the housing from below. If they are not routed through a
  cable conduit or a duct, they must be secured so they cannot be pulled
  out.
- The cables can be routed between the insulation and the outer wall of the cabin. They are then passed into the housing from the rear.

In both cases, the cabin insulation must be installed in such a way that the temperature in the area in which cables are routed cannot exceed 75°C.

## 3.3.2 Installing the relay box

Necessary steps:

- Preparing for installation, D EN-33
- Removing the housing cover, 
  EN-33
- ▶ Installing the relay box, □ EN-35

Tools + hardware

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

#### Preparing for installation

- 1 Determine a suitable location for the installation.
- 2 Route the lines.

#### Removing the housing cover

1 Unscrew the 6 screws for both parts of the housing.



- 2 Remove both halves of the cover.
  - If you have already routed all data lines, you can set the dip switches on the circuit board after you install the relay box.

3 Open the feed-throughs for the lines on the bottom of the relay box.



- A Lines with mains voltage, e.g. mains supply line, heat
- **B** Lines with low voltage, e.g. sensor line, S-Bus (sauna bus)
- ① Either from below or from the rear.
- 4 Insert supplied rubber grommets into the openings of the lower part of the housing.

#### Installing the relay box

**1** Drill holes as required.



- ① Allow the screw to protrude approx. 3 mm so you can hook in the relay box.
- 2 Insert anchors into the drill holes if necessary.
- 3 Route the connecting cables through the openings.



- A Lines with mains voltage, e.g. mains supply line, heat
- **B** Lines with low voltage, e.g. sensor line, S-Bus (sauna bus)
- ① Either from below or from the rear.

4 Hook the bottom of the relay box to the upper screw using the upper mounting hole.



5 Screw the bottom of the relay box into the two lower mounting holes.



- ① Once you have completed all installation work, you can connect the consumers and plug in the lines.
- ① 4.4.1 ADDRESS dip switch, <sup>1</sup> EN-52
  - 4.7 Connecting the mains supply and consumer,  $\Box$  EN-59
  - 4.8 Connecting data lines, 🗅 EN-63
# 3.4 Control panel

The housing for the control panel is available in two versions: for mounting in the wall or for mounting on the wall. Both versions are designed for a mounting location on the outer wall of the cabin.

If empty conduits for electrical installations are already present, this dictates the position of the control panel.

# 3.4.1 Requirements

The cabin wall must be designed in such a way that the temperature in the area in which cables are routed cannot exceed 75°C.

# Line routing



Base Guide for data and control line(s)

The following guidelines apply depending on the cabin wall:

- Mounting in the wall insulation: The control line must only be routed between the insulation and the outer wall of the cabin.
- Mounting in the wall solid logs: The control line is routed between the inner wall and outer wall of the cabin.
- Mounting on the wall solid logs: The control line is routed along the outer wall of the cabin.

## Mounting location for control panel

The control panel is mounted outside of the cabin. Preferably, it should be mounted on the hinge-side of the door (not the opening side). This prevents hot air from reaching the control panel when the cabin is in use, which, in the event of unfavourable ambient temperatures in the anteroom, could cause condensation to form on/in the control panel. The following distances are recommendations:



Dimensions at the mounting location

# 3.4.2 Mounting the housing

The control line that leads to the relay box is connected to the control panel. The control line is fed through the opening in the housing. Therefore, it must be installed once the wall cut-out has been made.

Tools required:

- Saw for cutting the wall (only when mounting in the wall)
- Phillips screwdriver
- Removal tool to loosen the front panel (included in the scope of delivery)
- Taut wire, as needed
- Wooden screws (included in the scope of delivery):
   4 screws for housing mounted in the wall with a wall thickness of
   > 30 mm
  - 3 screws for housing mounted on the wall

Necessary steps:

- ▶ Removing the front panel from the housing, □ EN-40
- ▶ Mounting the housing in the wall, □ EN-41
- ▶ Mounting the housing on the wall, □ EN-44

#### Removing the front panel from the housing

 NOTICE Do not drop the control panel. Remove the protective film from the panel after mounting is completed. Insert the removal tool in the slot at the base of the housing.



- If you are mounting the housing on the wall, loosen the front panel in the same way.
- **2** Carefully loosen the front panel using a consistent amount of force. Remove it by hand.

#### Mounting the housing in the wall

- 1 Determine a suitable location for the installation.
- 2 Prepare a wall cut-out:



- Biagram for installing housing mounted in the wall
- ① The housing can be fixed in a wall with a thickness of 15 to 30 mm with the integrated clips. The cut-out may not be larger than this or the clips will not be able to hold the unit. See ∞ Diagram: Installation depending on wall thickness, □ EN-43.

**3** NOTICE Do not pull at the plug when routing the control line. Doing so could damage the line. Attach the taut wire only to the cable. Do not pull the line too taught so that you can easily remove the control panel at a later time.

Route the control line from the relay box to the control panel.

- The smaller RJ10 plug on the connecting cable must be routed to the control panel.
- 4 After routing, pull the control line through the opening in the housing.



- ① Do not pull the control line too taught so that you can easily remove the front panel at a later time.
- **5** Set the housing in the prepared wall cut-out.
  - (i) Observe the sticker on the housing (oben/up).
  - ① When fixing the unit to the wall, ensure that the bottom of the unit is aligned properly. The side with the slot for the removal tool must be facing downwards.

6 Insert the housing in the wall cut-out. Depending on the wall thickness, the control panel housing mounted in the wall must be installed in different ways:



A Installation if wall thickness is 15– 30 mm **B** Installation if wall thickness is > 30 mm

- Diagram: Installation depending on wall thickness
- **a)** Wall thickness 15–30 mm: Loosen the screws at the clips and rotate the clips 90° outward. Tighten the screws again.
- **b)** Wall thickness > 30 mm: Remove the clips completely and tighten the housing with wooden screws.
- ① The housing must sit firmly in the wall cut-out.

#### Mounting the housing on the wall

- 1 Determine a suitable location for the installation.
- 2 Drill one (1) hole above and two (2) holes below.



- Diagram for installing housing mounted on the wall
- **3** Tighten the upper screw.
  - ① Allow the screw to protrude approx. 3 mm so you can hook in the housing.
- 4 Hook the housing into the upper screw using the upper mounting hole.
- 5 Route the control line from the relay box to the control panel.

**6** After routing, pull the control line through the opening in the housing.



- ① Do not pull the control line too taught so that you can easily remove the front panel at a later time.
- 7 Securely tighten the housing using the two lower mounting holes.① The housing must sit firmly on the wall.

# 3.4.3 Mounting the control panel

The control line (S-Bus) that leads to the relay box is connected to the control panel.

Necessary steps:

- Connecting the S-Bus, 🗅 EN-45
- Fixing the front panel, 🗅 EN-46

### Connecting the S-Bus

1 Insert the control line with the RJ10 plug into the circuit board.



The control line's RJ10 plug is inserted into the circuit board on the control panel. The RJ14 plug is inserted into the relay box.

#### Fixing the front panel

Place the front panel directly in front of the bottom piece.
 Ensure that it is aligned properly.



- If you are mounting the housing in the wall, fix the front panel in the same way.
- Press the front panel carefully with a consistent amount of pressure into the housing until it audibly snaps into place.
  The front panel must sit firmly on the housing.
- **3** Remove the foil from the display.
  - ③ For commissioning information, see

5.2 Setup during commissioning or after a reset, 🗅 EN-71

# 4 Electrical installation

# 4.1 General instructions for electrical installation

Ensure that electrical installation is performed in compliance with the standards and legal norms valid in your country.

If a residual current device (RCD) is installed, ensure that there are no units not belonging to the sauna system which are fused via this RCD.

If the sauna heater has not been used for an extended period of time, the heater may draw moisture from the ambient air, which, in rare cases, could lead to the RCD to be tripped. This is a physical process and not a fault on the part of the manufacturer.

In this case, the heater must be heated by a technician under supervision which will bypass the RCD function. Once the moisture has escaped from the heating elements after approx. 10 minutes, the RCD can be integrated again in the electric circuit.

If the sauna heater will not be used for an extended period of time, we recommend that you switch on the heater every 6 weeks so that the heating elements do not accumulate moisture. If, during switching, the RCD is triggered, the electrical installation must be checked again.

The electrician is responsible for properly connecting the heaters; thus, the manufacturer does not assume liability.

You can connect a max. of 8 burners to the relay box. This requires that the relevant air supply fans, exhaust air fans and sensors are connected. Cabin fans and vaporisers are optional.

The following vaporisers are permitted for connection to the relay box:

- SteamRock Basic steam generator
- SteamAttrac steam generator
- WDT automatic water splash
- Vaporiser without status output

# **Recommended installation sequence**

- Install the temperature sensor, lighting, etc. in the cabin.
- Mount the control panel.
- Connect the consumer(s).
- Set the dip switch for unit configuration.
- Connect the emergency button.
- Set the jumpers.
- Install plug-in modules, if necessary.
- Connect the power supply.
- Switch on the relay box.
- Make settings for setup at the control panel.

# 4.2 Installation examples

The cross-section of the lines at each terminal must be identical. The output at each terminal may not exceed a 0.5 kW AC3 load. If more than 0.5 kW is required, a contactor must be connected during installation.

## **Standard installation**

In a standard installation scenario, the lighting, sensor, control panel, burner, single-stage air supply fan and exhaust air fan, as well as a cabin fan if needed, are connected to the relay box.





- A Cabin lighting
- **B** Relay box
- C Room sensor
- **D** Control panel
- **E** Add-on modules (optional)
- F Cabin fan
- G Exhaust air fan (heater)
- H Burner fault
- I Air supply fan (heater)
- J Mains supply connection
- 🐵 Standard installation, single-stage burner

Coloured light and audio systems, for example, are considered add-on modules. All connected modules and burners are controlled via the control panel.

# **Advanced installation**

A maximum of 8 burners may be connected to the relay box in an advanced installation. This requires that the relevant air supply fans, exhaust air fans and the temperature sensor are connected. A permitted vaporiser may also be connected. This figure shows a burner with air supply fans.



230 V 1 N ~ 50 Hz

- A Cabin light
- B Relay box
- C Room sensor
- **D** Control panel
- E Add-on modules (optional)
- F Permitted vaporiser (optional)
- Advanced installation with vaporiser

- G Cabin fan
- H Exhaust air fan
- I Burner fault
- J Burner and air supply fan
- K Mains supply connection
- L Contactor

If more than two burners with the appropriate air supply fan (**J**) are connected, the lines must be connected to a plug-in module separate from the relay box during installation.

The burner faults must be connected to the IO-EXT-HV (I) module, if a vaporiser (**F**) with status output or a WDT automatic water splash is connected.

# 4.3 Circuit board assignment

The sauna bus and sensor bus plugs are connected to the relay box circuit board. The burners, air supply fans, exhaust air fans, cabin fans, vaporisers and the cabin light must be connected via terminals.



- A Internal power supply unit
- B IO-EXT-HV module
- C Settings for device configuration 4.4.1 ADDRESS dip switch, □ EN-52
- D IO-EXT-LV module

- E Inputs for data lines
- **F** Jumper and low-voltage potentialfree contacts
- G Safety temperature limiter
- **H** High-voltage potential-free contact and mains supply output
- I Consumer terminals

📾 Relay box circuit board

# 4.4 Dip switch

# 4.4.1 ADDRESS dip switch

The ADDRESS dip switch must be set as follows so that the relay box can be used:

# Configuration as relay box

Addressing
ADDRESS
ON
Dip switch 1, 3, $4 = ON$

# 4.4.2 CONFIG dip switch

The sauna settings are specified by the CONFIG dip switch.

KTY-k	CONFIG	ADDRESS
	1 1	

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	Description	Operating mode
OFF	OFF				No vaporiser connected	Finnish only
ON	OFF				SteamRock Basic or Stea- mAttrac connected, status line from steam gen- erator to HV-IN, burner fault at E1-4 from IO- HV	Finnish/Bi-O
OFF	ON				WDT automatic water splash connected, HOT signalling to HV-IN, burner fault at E1-4 from IO- HV	Finnish only

# 

DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	Description	Operating mode
ON	ON				Vaporiser without status output connected	Finnish/Bi-O
		OFF			PFC-LV = emergency button, PFC-HV = manifold fault line	-
		ON			PFC-LV = manifold fault line, PFC-HV = emergency button	-
			ON	ON	Heating period limitation 24/7	-
			OFF	OFF	Heating period limitation 18 hours	-
			OFF	ON	Heating period limitation 12 hours	-
			ON	OFF	Heating period limitation 6 hours	-

### Example



- A SteamRock Basic or SteamAttrac is connected.
- The manifold fault line is connected at the potential-free contact with low-voltage (PFC-LV terminal) and the emergency button is connected at the potential-free contact with mains supply (PFC-HV terminal).
- The heating period is limited to 6 hours.

# 4.5 Connection diagram

# **Mains connection**

The relay box is connected with a mains lead to the 230 V supply and fused separately with 16 A. A 16 A cut-out with at least K characteristic must be used for fuse protection.

# Example – connection diagram with vaporiser and IO-EXT-HV



A Emergency button/manifold fault line (PFC) Potential-free contact (PFC), emergency button

Analogue heater sensor (optional) Analogue bench sensor (optional)



Cabin lighting



B VaporiserC Cabin fan

- D Exhaust gas fan
- E Burner fan
- F Burner

Temperature sensor with safety temperature limiter

#### **Connection specifications**

To connect more than one electrical component per terminal, the lines must be connected by the operator in a plug-in module separate from the relay box. See  $\boxtimes$  Example – plug-in module (optional),  $\square$  EN-60. The cross-section of the lines must be identical.

The lines from the individual components to the relay box must be connected as shown in the circuit diagram.

# 4.6 IO-EXT-HV module

The IO-EXT-HV module is mounted by the factory on the circuit board of the relay box. It has four inputs and four outputs. Burner faults can be detected via the inputs. Various status displays can be connected via the outputs.

You must use the IO-EXT-HV module for burner fault messages in the following cases:

- If you want to evaluate the fault messages from multiple burners individually.
- If the HV-IN terminal is occupied by the status output of a vaporiser.



- **C** Inputs for burner faults
- Connection diagram for IO-EXT-HV circuit board

# 4.6.1 Input and output assignments

The E1–E4 (**C**) inputs can be connected to NO contacts for 250V AC that switch if there is a burner fault after the mains lead L' is connected. They switch to the shared COM connection (**B**).

Outputs A1–A4 (**D**) are relay contacts that may be supplied with a load of 250VAC 1 A. They switch to the shared COM connection (**B**).

The COM connections can be connected to N' or L' on the circuit board of the relay box, as required.

Connection	Function
E1	Burner 1 fault
E2	Burner 2 fault
E3	Burner 3 fault
E4	Burner 4 fault
COM (E1–E4)	Connection to N' on the circuit board of the relay box
A1	ECO is active (status light)
A2	PFC functions (see K-Tec operating instructions)
A3	Cabin is heated (status light)
A4	Start AquaDisp (back wall water splash)
COM (A1–A4)	Connection to L' on the circuit board of the relay box

### 4.6.2 Connecting a module

#### Connecting IO-EXT-HV

- 1 WARNING! Ensure that the relay box is current-free. Open the housing as needed.
  - (i)  $\blacktriangleright$  Removing the housing cover,  $\Box$  EN-33

2 Connect the first line for the light sources to outputs A1–A3 (A).



- **B** COM connection outputs
- C Inputs
- IO-EXT-HV circuit board
- **E** Mains supply IO-EXT-HV (COM connections)
- **3** Connect the second line for the light sources to N on the HV-EXT (**E**) terminal.
- 4 Connect COM connection (B) to L' on the HV-EXT (E) terminal.
- **5** Connect the lines of the burner faults to the inputs (**C**).
- 6 Connect the COM connection (D) to N' on the HV-EXT (E) terminal.

# 4.7 Connecting the mains supply and consumer

#### 



#### **Risk of electric shock**

A faulty electrical connection poses the risk of an electric shock. This risk remains also after completion of the installation work.

• Disconnect the system entirely from the mains

supply.

- If retrofitting is required, the housing must only be opened by trained personnel.
- Electrical installation must only be carried out by a qualified and licensed electrician.
- The unit must be connected to the power supply according to the circuit diagram and the terminal scheme.

The output at terminals BRNR, BRN, EXH, CAB and VAP may not exceed a load of 0.5 kW AC3. If more than 0.5 kW is required, a contactor must be connected during installation.



- **A** Cabin lighting
- **B** Mains supply connection
- **C** Burner with burner fan
- D
- E Exhaust air fan

- F Cabin fan
- **G** Vaporiser
- **H** Burner fault / vaporiser status / HOT signal from automatic water splash
- IO-EXT-HV module supply
- Mains supply and consumer circuit board

Terminals **C**, **D**, **E**, **F** and **G** may be assigned to up to two lines with identical cross-sections. To connect more than one device per terminal, you must connect all lines to a plug-in module outside the relay box.



📾 Example – plug-in module (optional)

### 4.7.1 Connecting lighting and mains supply

The relay box is connected with a mains lead to the 230 V supply and fused separately with 16 A. A 16 A cut-out with at least K characteristic must be used for fuse protection.

#### Connecting cabin lighting and mains supply

- 1 Connect the cabin lighting to terminal **A**.
- 2 Connect the mains supply connection to the mains (**B**) terminal. See 
  → Mains supply and consumer circuit board, 
  □ EN-59

#### 4.7.2 Connecting the burners

You can connect up to 8 burners. The air supply fan can run in parallel to the burner and is connected at the same time as the burner for this reason.

# To connect the burner (without vaporiser with status output or WDT automatic water splash)

- 1 Connect the burner to the BRNR terminal (C).
  ① Use a plug-in module if more than one burner is connected.
- 2 Connect the line for the burner fault to:
  - a) the HV-IN terminal (H).
     The HV-IN terminal can then be used as a manifold for all connected burners.
  - **b)** one IO-EXT-HV module input (E1 to E4).

# To connect the burner (with vaporiser with status output or WDT automatic water splash)

- 1 Connect the burner to the BRNR terminal (C).
  ① Use a plug-in module if more than one burner is connected.
- **2** Connect the line for the burner fault to one IO-EXT-HV module input (E1 to E4).

## 4.7.3 Connecting the air supply fan

You can connect single-phase air supply fans only.

#### • Connecting the air supply fan

- Connect the air supply fan with the burner to the BRNR (C) terminal.
   You must use contactors if the output is more than 0.5 kW AC3.
- **2** Connect the neutral conductor for the air supply fan to the respective terminal.

# 4.7.4 Connecting the exhaust gas fan and cabin fan

The exhaust gas fan runs for another 10 minutes once the burner is switched off.

### Connecting the fans

- 1 Connect the exhaust gas fan to the EXH terminal (E).
- Connect the cabin fan to the CAB terminal (F).
   See 

   Mains supply and consumer circuit board, 
   <sup>□</sup> EN-59

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## 4.7.5 Connecting the vaporiser

You can connect one of the following vaporisers:

- SteamRock Basic steam generator
- SteamAttrac steam generator
- WDT automatic water splash
- Vaporiser without status output

If you connect a vaporiser with status output or a WDT automatic water splash, you must use the IO-EXT-HV module for the burner fault line.

#### Connecting the vaporiser

- Connect the vaporiser to the VAP terminal (G).
   See 
   Mains supply and consumer circuit board, 
   EN-59
   EN-59
- 2 Connect the status output:
  - a) When connecting SteamRock Basic or SteamAttrac: Connect the status output to the HV-IN terminal (**H**).
  - b) When connecting a WDT automatic water splash:
     Connect the potential-free contact for the HOT function (WDT: SL8-NO) to the HV-IN terminal (H) and WDT SL8-C to the mains supply N' (I).
  - c) When connecting a vaporiser without status output: Terminal not assigned. The terminal can be used as a manifold for the burner faults.
  - If the status output or HOT function is connected, the IO-EXT-HV module must be used for the burner fault.
     See 4.7.2 Connecting the burners, 
     <sup>D</sup> EN-60

**3** Configure vaporiser with CONFIG dip switch 1 and 2.



DIP 1	DIP 2	Description
OFF	OFF	No vaporiser
ON	OFF	SteamRock Basic or SteamAttrac
OFF	ON	WDT automatic water splash
ON	ON	Vaporiser without status output

The CONFIG dip switch is on the main circuit board, see 4.3 Circuit board assignment, 
EN-51

## 4.8 Connecting data lines

#### Connecting data lines

- 1 WARNING! Ensure that the relay box is current-free. Open the housing as needed.
  - ③ ► Removing the housing cover, □ EN-33

**EN-64** 

- A RJ10 plug for sensor line
- **B** RJ14 plug from control panel
- **C** Analogue sensor connection
- D Safety temperature limiter
- E Temperature sensor
- 2 Plug the sensor line from the temperature sensor (E) into the free jack RJ10 (SENSOR) (A).
- **3** Connect the safety temperature limiter to the STB terminal (**D**).
  - ① The connected sensor is automatically recognised and configured by the control panel.
  - ① Connect shielding of the line to ground if necessary.
- 4 Plug in any other optional sensors to a free RJ10 jack (A). The sensors can be either analogue KTY sensors or digital sensors.
  - ① Analogue heater and bench sensors in the sauna cabin can be connected to the terminals for analogue temperature sensors (C).
- 5 Plug the S-Bus line RJ10/RJ14 from the control panel into the free jack RJ14 (S-Bus) (B).



- 6 Plug any other optional devices into a free RJ14 S-Bus jack (B).
  - **a)** ECO button for manual control of the ECO function.
  - **b)** HOT button for WDT automatic water splash for manually starting the HOT function.
  - c) Remote starter.

### 4.9 Connecting the emergency button

An emergency button or emergency switch can be connected to the relay box. Pushing the emergency button switches off the burners of the gaspowered heaters in the sauna cabin. A message appears on the control panel.

Pushing the emergency button triggers two signals to be emitted via two outputs: manifold fault and emergency signal output.

Excerpt from regulations issued by the German Sauna Association (Deutscher Sauna-Bund e.V.):

"The signal must be displayed visually or emitted acoustically in a room that is continuously occupied by trained sauna system personnel."

The emergency button must be a potential-free contact that responds as an NO contact. The emergency button can be connected directly to the relay box.

To do so, make the following settings:

- Emergency signal output to low voltage (LV) and manifold fault to mains supply (HV). See ► To assign the emergency signal output and manifold fault line to PFC-HV and PFC-LV, □ EN-66
- Emergency signal output to mains supply (HV) and manifold fault to low voltage (LV). See ► To assign the emergency signal output and manifold fault line to PFC-HV and PFC-LV, □ EN-66

Configure the emergency input as a potential-free contact (C).
 See ► To connect the emergency button, 
 <sup>1</sup> EN-67



- A NO relay contact HV
- B Jumper 1
- **C** Potential-free contact
- 📾 Low voltage input and output
- **D** NC or NO relay contact
- E Jumper 2

#### To assign the emergency signal output and manifold fault line to PFC-HV and PFC-LV

Set CONFIG dip switch 3 to determine if terminals (A) and (D) are configured to be the manifold fault line or emergency signal output.
 Terminal A always switches as NO.



DIP 3	Description
OFF	PFC-LV = emergency button, PFC-HV = manifold fault line
ON	PFC-LV = manifold fault line, PFC-HV = emergency button

The CONFIG dip switch is on the main circuit board, see 4.3 Circuit board assignment, 
EN-51

- 2 Set jumper 2 (E).
  - (i) Controls the potential-free contact PFC-LV (D).
  - **a)** NO: PFC-LV is configured as NO.
  - **b)** NC: PFC-LV is configured as NC.



#### To connect the emergency button

- 1 Connect emergency button.
- 2 Set jumper 1 (B) to configure the low-voltage input INP-LV (C).
  - a) CONT: INP-LV (C) as potential-free contact.

Potential-free contact

$\bigcirc \bigcirc$	
CONT	VOLT

# 4.10 Defining the heating period limitation

For private use, the heating period is limited to 6 hours.

For commercial use, the heating period can be set to 6 hours, 12 hours,

18 hours or infinite. For commercial use, a weekly schedule can be defined. The heating period is set via CONFIG dip switches 4 and 5.



DIP 4	DIP 5	Description
ON	ON	Heating period limitation 24/7
OFF	OFF	Heating period limitation 18 hours
OFF	ON	Heating period limitation 12 hours
ON	OFF	Heating period limitation 6 hours

## 4.11 Closing the relay box

The following work (at minimum) must be completed before you close the housing:

- 4.4.1 ADDRESS dip switch, 🗅 EN-52
- 4.7 Connecting the mains supply and consumer, 🗅 EN-59
- 4.8 Connecting data lines, D EN-63

#### ► To remount the housing cover

- 1 Put the upper and lower cover halves in place.
- 2 Screw in the 6 screws.



# 5 Commissioning

In order to commission the sauna cabin with the installed burners and the optional, permitted vaporisers, the sauna cabin must be switched on at the control panel. If the display is blank, the relay box might be switched off.

A switch is located on the left side of the relay box.



Position I: Relay box is switched on (factory setting). The relay box is ready for operation in standby mode.



Position 0: Relay box is completely switched off. Parts of the circuit board are still energised.

Position II:

Cabin lighting is switched on, relay box is switched off. Position for maintenance and cleaning.

# 5.1 Operation basics

All cabin settings are made at the control panel.

All functions must be configured to commission the system.

Add-on modules or accessories are detected after the unit is switched on again and their corresponding icons appear in the sub-menus.



- A Front panel
- **B** Selected function
- **C** Function icons
- **D** Status bar
- 🗠 Control panel

- E Jog dial
- F Switch cabin lighting on/off
- G Switch on/off
- The following controls are used to operate the unit:



On/off Close sub-menu (only if heating is switched off)



Light on/off



Jog dial: Turn = select functions or input value

Jog dial: Press = confirm functions and settings.

- Selected icons are displayed inside a white frame. Once the selection is confirmed, the frame turns green and the display now shows the selected function.
- When a value is entered, a line appears under the active place value. Confirmed values are displayed in green.

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- Settings that have not been saved are lost.
- Date and time are saved if the built-in battery is in working order. All other settings are saved permanently.

# 5.2 Setup during commissioning or after a reset

Activate the CONFIG dip switch prior to commissioning; see 4.4.1 ADDRESS dip switch,  $\Box$  EN-52.

The basic settings must be defined to commission the unit. The program guides you through the required steps.

### Defining the basic settings

- 1 Select a language and confirm.
- **2** Set the time and confirm.
- **3** Set the date and confirm.
- 4 Select the type of use and confirm:
  - a) 유 Private use
  - **b)** ନନ୍ଦ୍ର Commercial use
  - ⑦ Specific safety regulations apply to this setting. See 1.2 Operator instruction, □ EN-8
- **5** Specify and confirm the safety system.
  - ① European Union/CENELEC must be selected if the system is installed in countries under the jurisdiction of the CENELEC.

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- **6** Specify and confirm whether the system will be operated with a safety system.
  - ① A safety system must be present to set up one-time and recurring heating periods, as well as the remote start function.
  - If no safety system is present, a message is displayed. Confirm the message.

 $\boxdot$  If coloured light or Home is connected, you are offered the option to configure it as well.

Once sauna cabin setup is complete, one of the standby screens is displayed.



- A Without vaporiser or with WDT automatic water splash
- **C** With vaporiser and humidity sensor
- **B** With vaporiser but without humidity sensor
- Standby screens
### 5.3 Setting up the vaporiser

The control unit may be set up only after the vaporiser has been prepared for operation.

- Control and data lines are connected u Connecting data lines, 
  <sup>1</sup> EN-63
- CONFIG dip switches 1 and 2 are active 4.4.1 ADDRESS dip switch, 
  <sup>1</sup> EN-52
- Water supply and drain outlet are connected
- Steam pipe is connected
- Housing cover is in place

### Preparing the vaporiser

- 1 Open the water supply at the shut-off valve.
- 2 Plug in the CeKon plug and set the RCD device on the cabinet to I (ON).① Observe the installation and operation instructions for the vaporiser.

# 5.4 Adjusting the switching hysteresis

In the service settings, you can also set a temperature range within which the burners are switched on and off. It applies to all connected burners. Example –  $46^{\circ}$ C target temperature and hysteresis 4 K: The burners are switched on at  $42^{\circ}$ C and switched off at  $50^{\circ}$ C.

### To adjust the switching hysteresis

1 Select and press and hold the jog dial until the code entry is displayed.



**2** CAUTION! Only trained personnel may change settings at the service level.

Enter code **5349** and confirm.

- Increase or decrease the numbers and confirm by pressing Enter. Confirmed numbers appear green.
- **3** Select and confirm.





- 4 Set the value and confirm.
  - The setting range is between 1 and 10K. The value is set to 5K by the factory.

 $\boxdot$  The value is saved and the display returns to the selection screen for advanced settings.

### 5.5 HOME function

When the building management system and the Modbus home module are connected, you must define the transfer protocol. KNX and Modbus have different protocols.

# ► To make settings for communication with KNX

1 Select and press and hold the jog dial until the code entry is displayed.



**2** CAUTION! Only trained personnel may change settings at the service level.

Enter code **5349** and confirm.

 Increase or decrease the numbers and confirm by pressing Enter. Confirmed numbers appear green.



: Select and confirm.



4 Select and confirm.



#### 5 Confirm your entry with



#### ► To make settings for communication with Modbus

1 Select and press and hold the jog dial until the code entry is displayed.





**2** CAUTION! Only trained personnel may change settings at the service level.

Enter code 5349 and confirm.

 Increase or decrease the numbers and confirm by pressing Enter. Confirmed numbers appear green.

- ដ : Select and confirm. 3 Home Home Mod KNX ° bus Modbus ſIJ 11:51 11:51 Mod bus : Select and confirm. 4 5 Confirm your entry with Code activate
- 6 Select and confirm additional Modbus parameters:

09:11

Parameters	Values
Address	1 to 247
Baud rate	1200
	2400
	4800
	9600
	19200
	38400
	57600
	115200

KUSAT

Parameters	Values
Parity	NONE EVEN PARITY ODD PARITY
Stop bits	ONE TWO



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

# 5.6 Troubleshooting

Error messages and icons on the control panel indicate operating statuses and fault conditions.

Error	Reason	Solution
Control panel display is blank.	No power supply.	Switch on the relay box.
		Check the relay box's mains connection.
		Check fuses.
Communication error	Sauna bus not plugged in.	Check data line and con- nections.
	ADDR dip switch set incorrectly	Set ADDR dip switch cor- rectly (OFF/ON/OFF/OFF/ ON).
Thermo-fuse tripped.	Temperature too high.	Check cause of excess temperature. Replace fuse.
Unknown error.		Restart unit. Contact technical sup- port.

# 6 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 spare 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 error.
- 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.
- Only original spare 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, shall apply in addition to the foregoing terms and conditions of service.



# 7 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 unit can be completely separated for disposal and recycled. The following materials are used in the packaging:

- Used paper/cardboard
- Plastic foil

### **Electrical components**

Dispose of electrical components and circuit boards as electronic waste.

#### **Metal parts**

Dispose of metal parts at scrap metal recycling sites.



#### Service address

EOS Saunatechnik GmbH		
Schneiderstriesch 1		
35759 Driedorf, Germany		
Tel.	+49 2775 57765-12	
Fax	+49 2775 82-431	
Email	info@kusatek.de	
Web	www.kusatek.de	

Store this address with the 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: