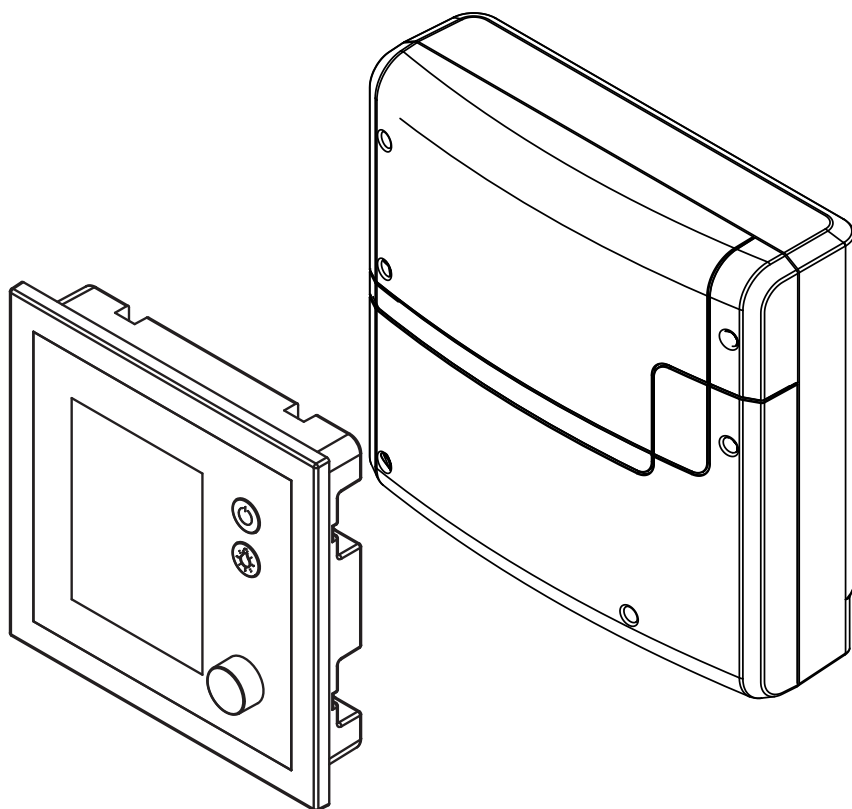


K-Tec

Control for gas-powered sauna heaters



Installation Instructions for retailers

Made in Germany

Documentation

Manufacturer

| | |
|-------------------------|-------------------|
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Original installation and operating 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
- $\leq \geq$ Less than or equal to, greater than or equal to

Revision history

| Date | Version | Description |
|--------------|---------|--|
| 30 Aug. 2023 | 01.30 | Technical data amended; switch to DIN A5, UKCA added |
| 10 Dec. 2021 | 01.20 | Installation chapter: legends amended |
| 15 June 2021 | 01.10 | Scope of delivery amended. |
| 1 Apr. 2021 | 01.00 | First version |

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1 General safety instructions

1.1 Installation and maintenance



These operating 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. Please observe also the installation and operating instructions for the gas-powered sauna heater.

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 electrical connection. This risk remains also after completion of the installation work.

- ▶ The electrical installation of the gas-powered sauna heater and other electrical systems or equipment with a fixed mains connection may be performed only by a trained electrician from an authorised electrical company.
- ▶ Ensure compliance with the applicable 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.

Fire hazard from overheating

Insufficient ventilation can lead to device overheating and fire.

- ▶ Install air inlets and outlets in the cabin.
- ▶ 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.

Damage due to incorrect mounting location

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.

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

Fire hazard



Objects placed on the gas-powered sauna heaters can easily be ignited and cause fires.

- ▶ Do not place objects on the gas-powered sauna heater.
- ▶ Fill rock stores with stones as directed.
- ▶ Inspect the sauna cabin prior to each commissioning.
- ▶ If you switch on the gas-powered sauna heater using pre-set timers or a remote control, attach a protective cover to the heater or install a suitable safety system.

Risk of burns from hot unit

During operation, the sauna heater may become hot and, if touched, could cause burns.

- ▶ Maintain a safe distance.

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.

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 period 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.

Operating the unit

The gas-powered sauna heater may be operated by persons who have been instructed in the safe use of the unit and understand the risks it poses. Children must not play with the gas-powered sauna heater.

- ▶ Children must be supervised to ensure they do not play with the gas-powered sauna heater.
- ▶ Ensure that children and unauthorised persons do not have access to the plant room.

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 gas-powered sauna heater is located.

Damage to health

Excessive time spent in a heated sauna cabin can lead to overheating of the body (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, 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.

Operation by children or persons with reduced mental capacity

Children and persons with reduced mental capacity can put themselves at risk.

- ▶ Children must be supervised to ensure 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 must only be changed by children under 8 years of age 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

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.

1.4 Standards and regulations

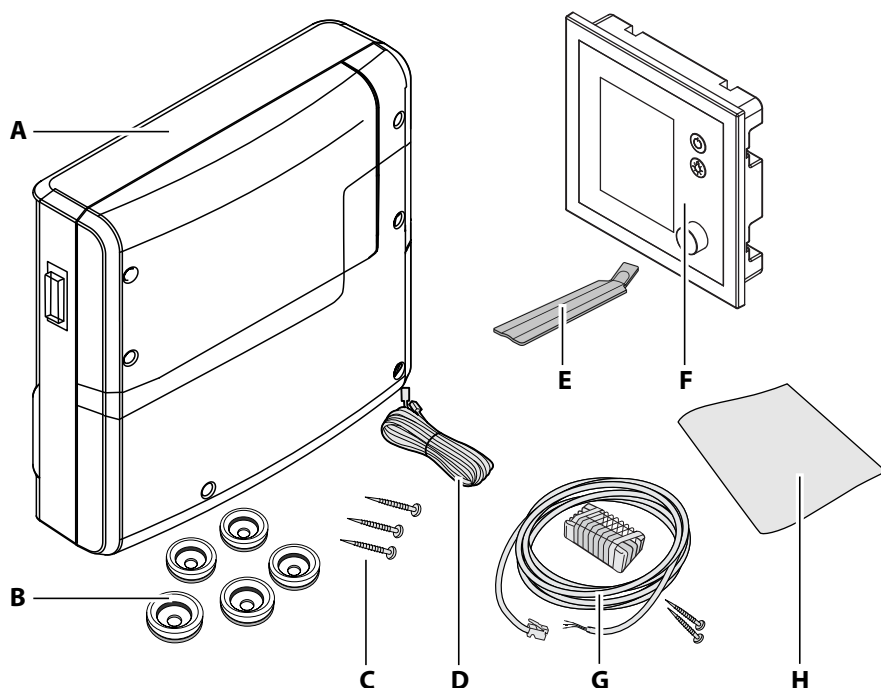
For an overview of the standards that were observed during design and construction of the sauna heater, please refer to the individual product's technical data sheet that can be downloaded from www.eos-sauna.com.

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 Scope of delivery

The following components are included in the scope of delivery:



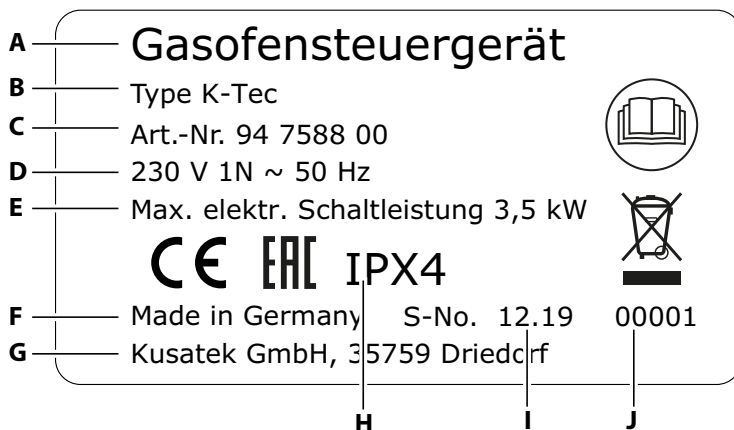
- A** Relay box with 2-piece front cover
- B** 5 bushings
- C** 3 wood screws 5 x 25 mm
- D** 5 m connecting cable with RJ14/ RJ10 modular plug for control panel
- E** Removal tool for front panel
- F** Control panel with housing for mounting in the wall or mounting on the wall
- G** Temperature sensor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

Accessories (optional)

| Accessories | Item 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 |

2.2 Nameplate

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



- | | |
|---|-----------------------------|
| A Name | F Country of origin |
| B Model | G Manufacturer |
| C Item number | H Protection class |
| D Mains supply | I Manufacturing date |
| E Max. electrical switching output | J Serial number |

Nameplate (example)

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 70 mm |
| Control panel dimensions (W x H x D) | 127 x 130 x 25 mm, mounting depth approx. 20 mm |
| Weight | Approx. 1.5 kg |



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

2.4 Functions and applications

The 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 on-site plug-in modules that are separate from the K-Tec power extension unit. See  Example – plug-in module (optional),  EN-61

- 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. Alternatively, 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

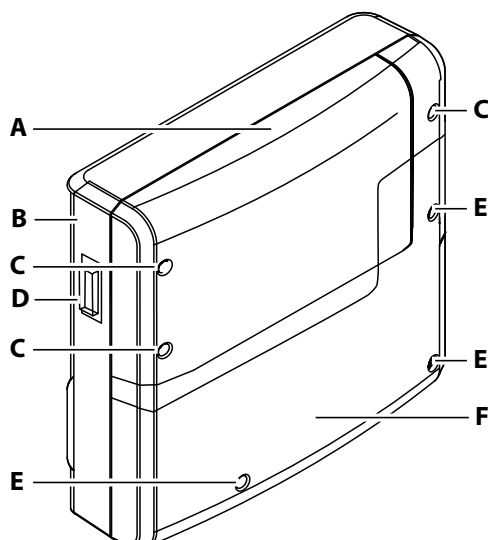
The following vaporisers can be connected:

- 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.

2.5 Relay box

Housing



- | | |
|---|--|
| A Housing cover – top piece | D Unit switch |
| B Housing | E Retaining screws for bottom piece |
| C Retaining screws for top 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.

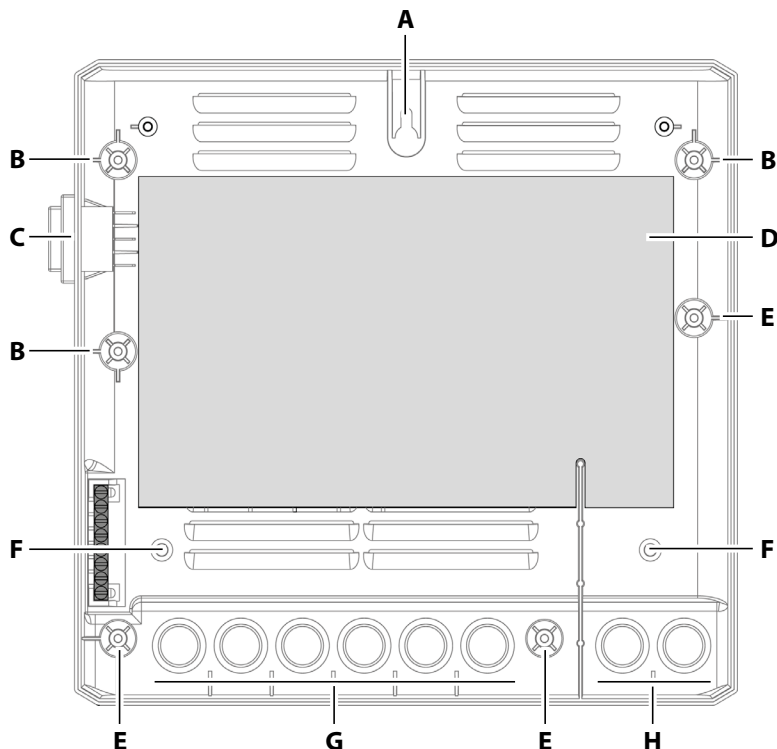


Position II:

Cabin lighting is switched on, relay box is switched off.

Position for maintenance and cleaning.

Internal view



- | | |
|--|--|
| A Top mounting hole | F Lower mounting holes |
| B Housing cover fixtures – top piece | G Feed-throughs for cables with mains voltage |
| C Unit switch | H Feed-throughs for cables with low voltage |
| D Circuit board | |
| E Housing cover fixtures – bottom piece | |

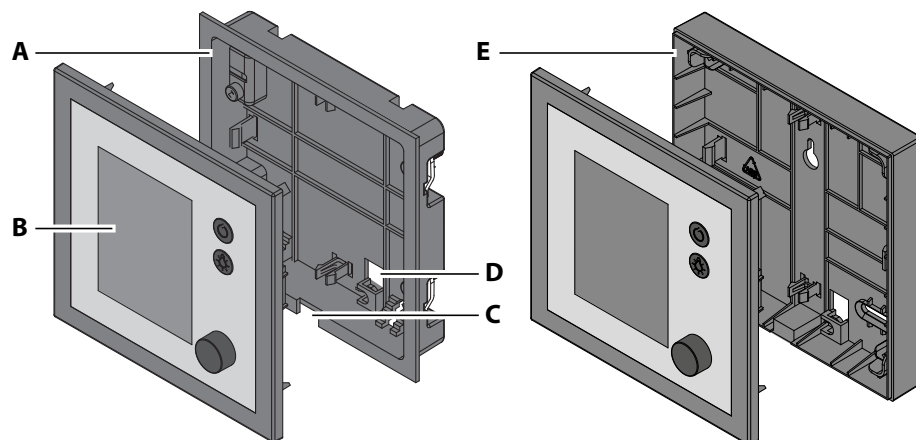
The cables for mains supply and low voltage can be routed through the holes on the back side or base of the housing.

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

For more information on the circuit board, see

4.2 Circuit board assignment,  EN-51

2.6 Control panel



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

 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.

2.7 Intended use

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

The 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.

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 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.

 1 General safety instructions,  EN-6

3 Installation

This chapter describes how to install the relay box and the control panel. All data and power supply lines must be laid prior to installing the device on the cabin wall.

NOTICE

Damage due to incorrect mounting location

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.

3.1 Power supply and data lines

All electrical installations and all connecting lines laid inside the cabin must be suitable for a temperature of at least 170°C.

All lines must be routed in such a way that they are well-protected, e.g. in a cable duct.

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.



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 K-Tec power extension unit.

See  Example – plug-in module (optional),  EN-61

To switch more than 0.5 kW AC3 power to a circuit, you must also connect additional contactors inline.


The control line must only 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.

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.

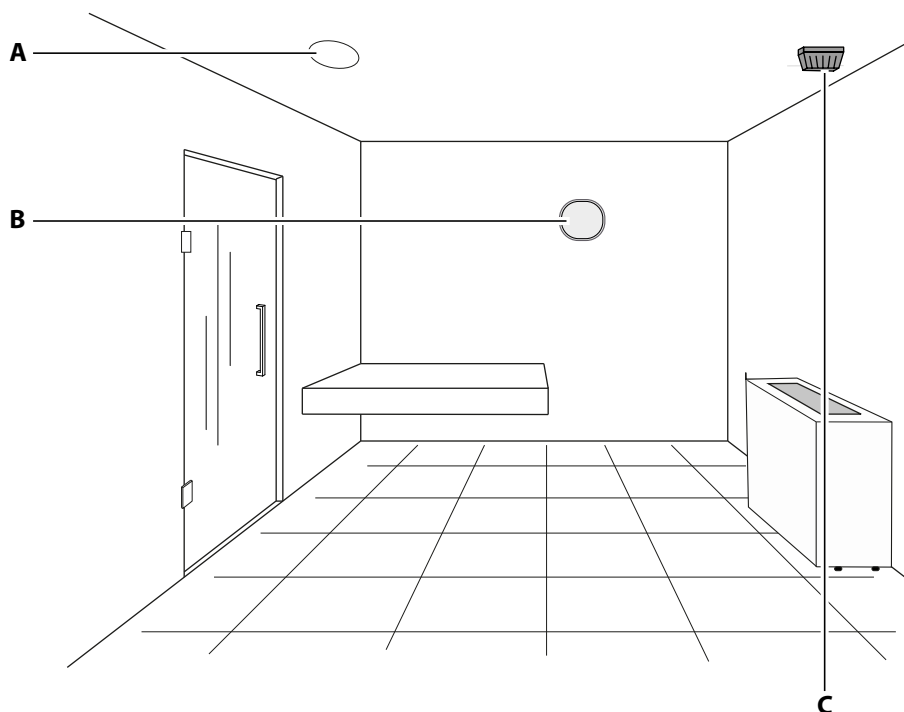
Alternately, the supplied (as standard) 5 m line can also be extended with an RJ12/RJ12 coupling and an RJ12/RJ12 extension cord.

The extensions and couplings are available as options.

See Accessories (optional),  EN-13

3.2 Installation work inside the cabin

At minimum, the cabin lighting, the safety temperature limiter and a temperature sensor 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

C Temperature sensor with safety temperature limiter

 Example – cabin



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 and safety temperature limiter

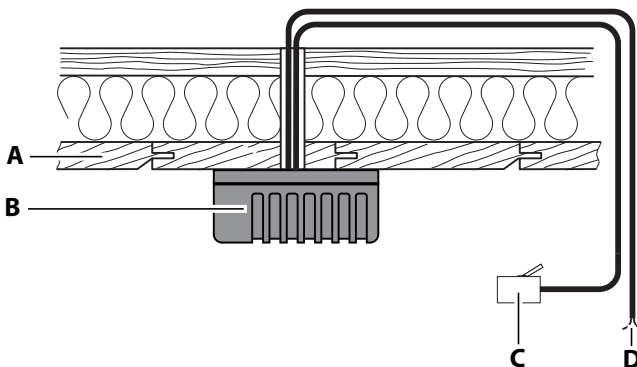
The temperature sensor must be installed where expected temperatures are the highest. The temperature sensor is connected to the relay box via the RJ10 plug.

The safety temperature limiter should be installed inside the housing of the temperature sensor and connected to the relay box. It monitors the temperature in the sauna cabin.

See  Circuit board assignment,  EN-51.

Hardware + tools:

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



A Cabin ceiling

B Temperature sensor housing

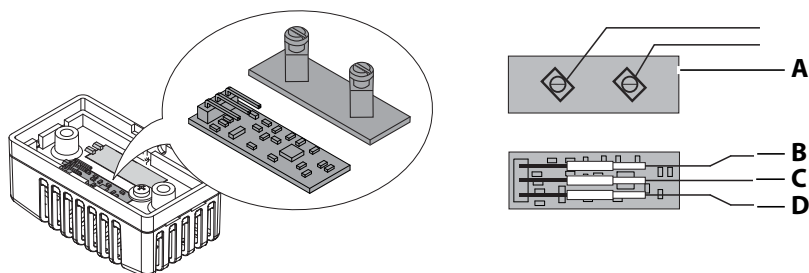
C RJ10 plug for relay box

D Safety temperature limiter

 Installation diagram

► Installing the temperature sensor in the cabin

- 1 Determine a suitable location for the installation.
 - ① 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 to the cabin ceiling and close the housing.

📖 Connecting the sensor line:

🔌 Connecting data lines, 📄 EN-64

3.2.3 Installing cabin lighting

Lighting can be installed anywhere, however not near rising hot air. On the relay box, the light output is switched with a relay.

Cabin lighting is not included in the scope of delivery. Observe the separate installation instructions for lighting.


Light source requirements:


- Minimal output 5 W
- Maximum output 250 W

NOTICE**Material damage**

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

- The lighting must conform to protection class IPx4 (splash-proof) and be resistant to ambient temperatures.

 Connecting the cabin lighting:

4.6.1 Connecting lighting and mains supply,  EN-61

3.3 Relay box

The K-Tec power extension unit must be installed only outside of the cabin, and not in places where it is exposed to weather or conditions that promote corrosion. Observe the following guidelines.

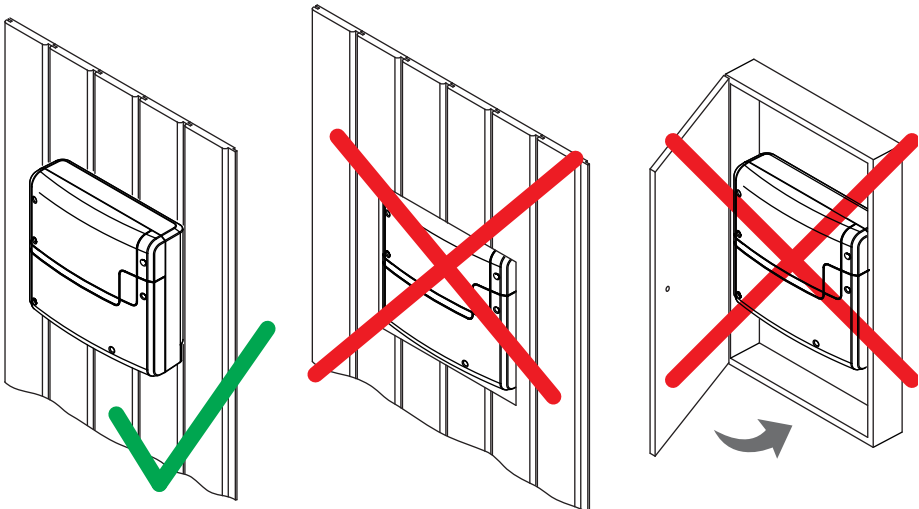
3.3.1 Requirements


WARNING

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 K-Tec power extension unit in enclosed cabinets or wood panelling.



 Proper and improper K-Tec power extension unit 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 K-Tec power extension unit.

All lines should be routed before installing the K-Tec power extension unit. Connections can be established later. Data lines must be routed and connected in such a way that they are not openly accessible.

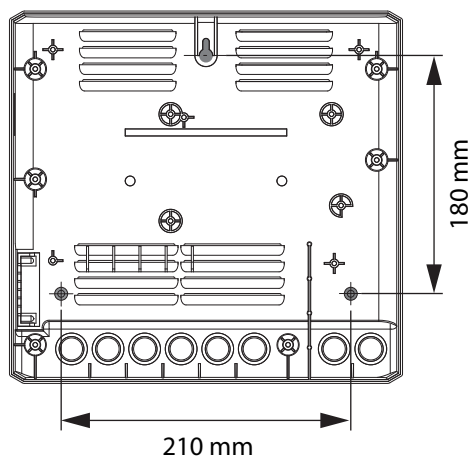
NOTICE


Electronics malfunctions

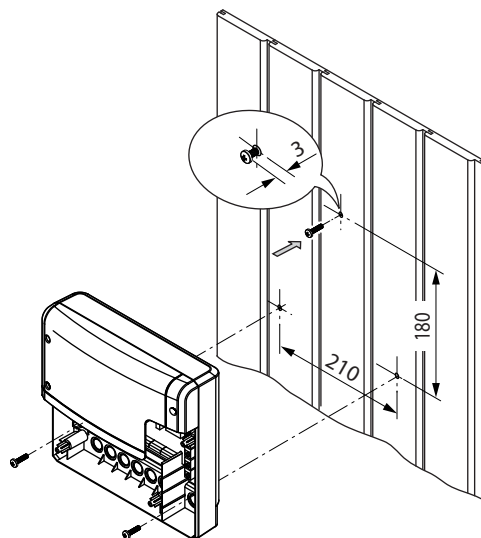
Routing data and power supply lines together can lead to electronics malfunctions because, e.g. because the sensor will not be detected.

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

Measurements for installation

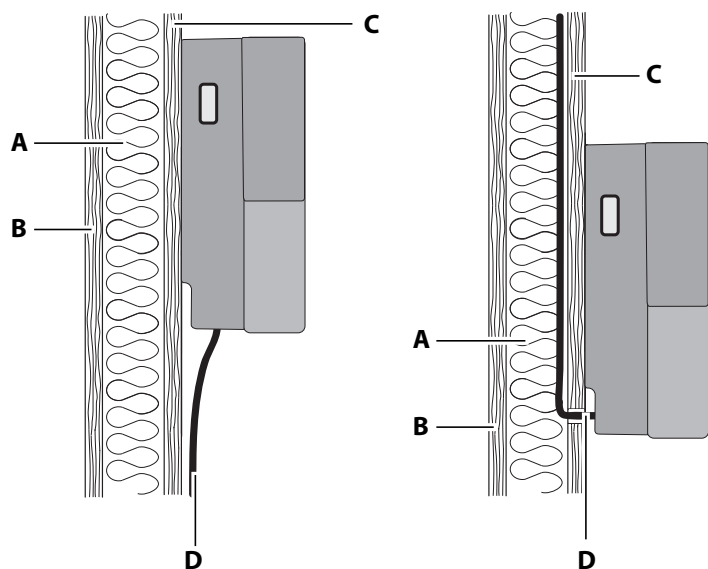


 Rear side of K-Tec power extension unit



 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 K-Tec power extension unit 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 65°C.

3.3.2 Installing the relay box

Necessary steps:

- ▶ Preparing for installation,  EN-32
- ▶ Removing the housing cover,  EN-33
- ▶ Installing the relay box,  EN-35

Tools + hardware

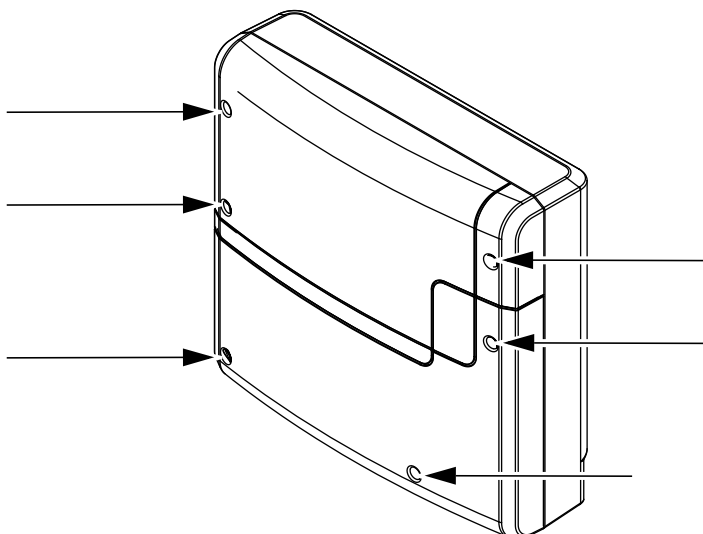
- Drill
- Wood screws 4 x 25 mm
- Mounting on a fixed wall: Screws 4 x 25 mm and corresponding anchors

▶ Preparing for installation

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

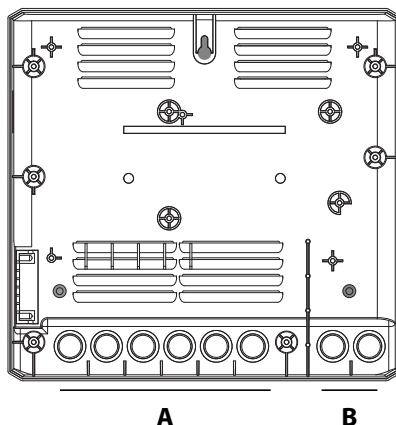
► Removing the housing cover

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



- 2 Remove both halves of the cover.
 - ① 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 K-Tec power extension unit.



A Lines with mains voltage, e.g. mains supply line, heat

B Lines with low voltage, e.g. sensor line, S-Bus (sauna bus)

ⓘ Either from below or from the rear.

- 4** Insert supplied rubber grommets into the openings of the lower part of the housing.

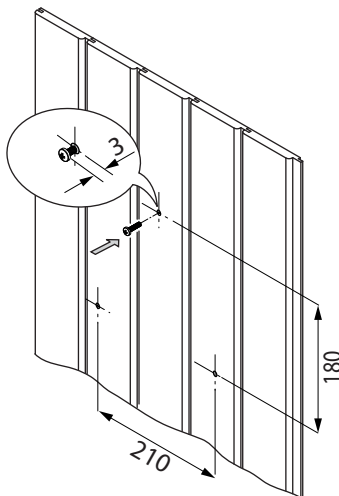
► Installing the relay box

- 1 Drill one (1) hole above and two (2) holes below.

Horizontal distance between drill holes: 210 mm

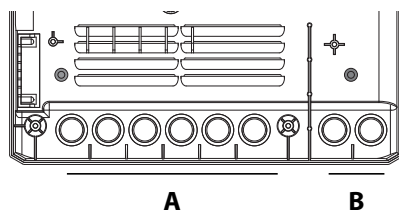
Vertical distance between drill holes: 180 mm

- 2 Insert the anchors as needed and screw in the top screw.



- ① Allow the screw to protrude approx. 3 mm so you can hook on the K-Tec power extension unit.

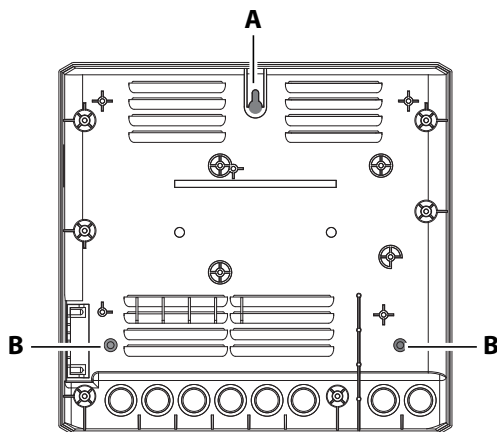
- 3 Route the connecting cables through the openings.



- 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.

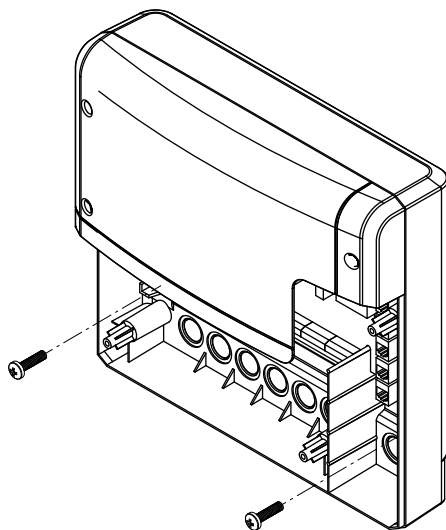
- 4 Hook the bottom of the K-Tec power extension unit to the upper screw using the upper mounting hole.



A Top mounting hole

B Lower mounting holes

- 5 Screw the bottom of the K-Tec power extension unit 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 4.3.1 ADDRESS dip switch, [EN-52](#)

4.6 Connecting the mains supply and consumer, [EN-60](#)

4.7 Connecting data lines, [EN-64](#)

3.4 Control panel

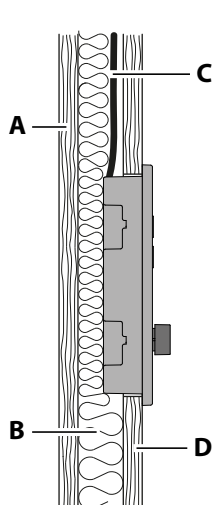
The housing for the control panel is available in two versions: for mounting in the wall or for mounting on the wall. Both versions are designed for a mounting location on the outer wall of the cabin.

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

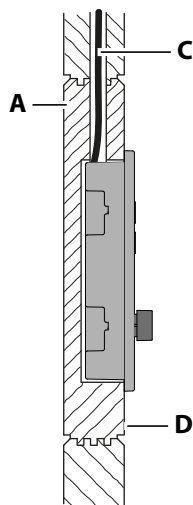
3.4.1 Requirements

The cabin wall must be designed in such a way that the temperature in the area in which cables are routed cannot exceed 65°C.

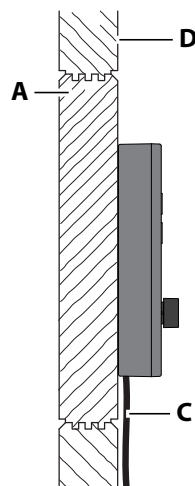
Line routing



Mounting in the wall
for cabin walls with
insulation



Mounting in the wall
for cabin walls made of
solid logs




Mounting on the wall
for cabin walls made of
solid logs

A Inner wall of the cabin

B Insulation

C Control line

D Outer wall of the cabin

 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.

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.

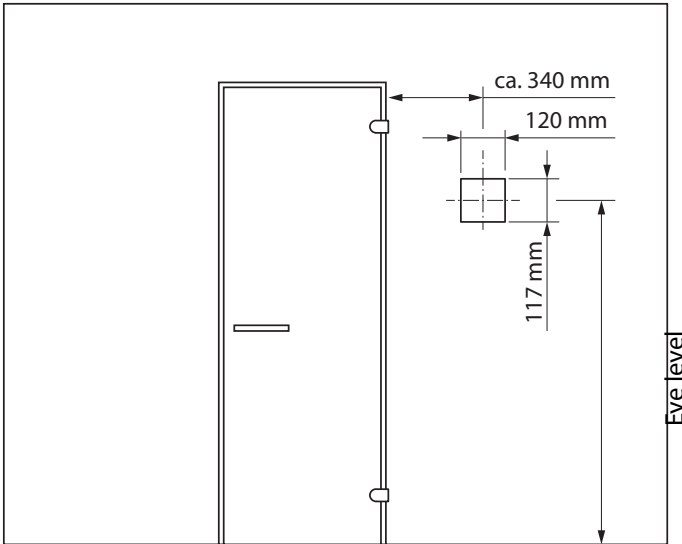
The extensions and couplings are available as options.


See Accessories (optional),  EN-13

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 ante-room, could cause condensation to form on/in the control panel.

The following distances are recommendations:



 Dimensions at the mounting location

| | |
|---|---|
| Distance from the cabin door | Min. 340 mm on the hinge side |
| Height of the middle of the display | Eye level |
| Wall cut-out (only if control panel is mounted in the wall) | Height approx. 117 mm Width approx. 120 mm |
| Mounting depth | Min. 20 mm |




3.4.2 Mounting the housing

The control line that leads to the K-Tec power extension unit 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:

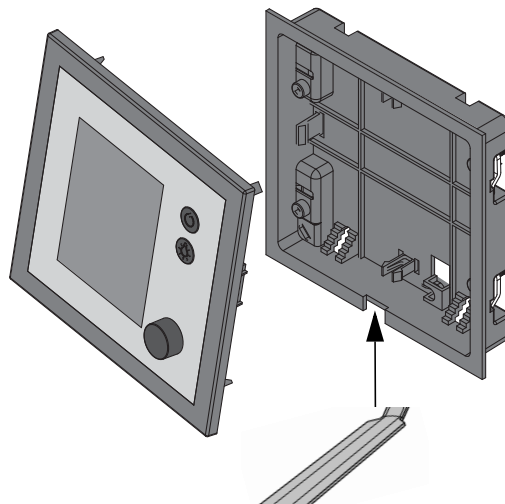
- Saw for cutting the wall (only when mounting in the wall)
- Phillips screwdriver
- Removal tool to loosen the front panel (included in the scope of delivery)
- Taut wire, as needed
- Wooden screws (included in the scope of delivery):
 - 4 screws for housing mounted in the wall with a wall thickness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

Necessary steps:

- ▶ Removing the front panel from the housing,  EN-41
- ▶ Mounting the housing in the wall,  EN-42
- ▶ Mounting the housing on the wall,  EN-45

► Removing the front panel from the housing

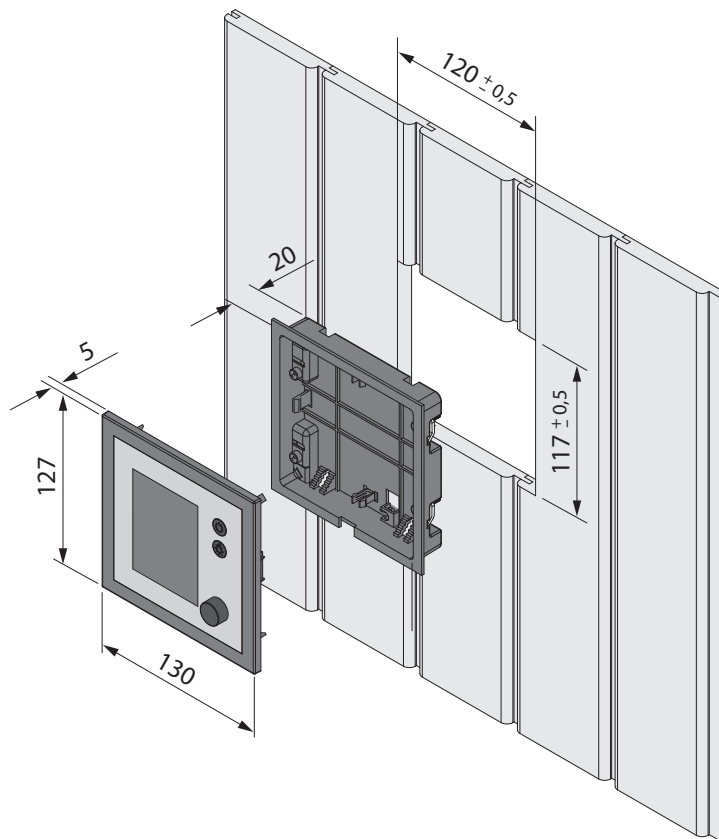
- 1 **NOTICE** Do not drop the control panel. Remove the protective film from the panel after mounting is completed.
Insert the removal tool in the slot at the base of the housing.




- ① 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:



 Diagram for installing housing mounted in the wall

Height x width = 117 x 120 mm

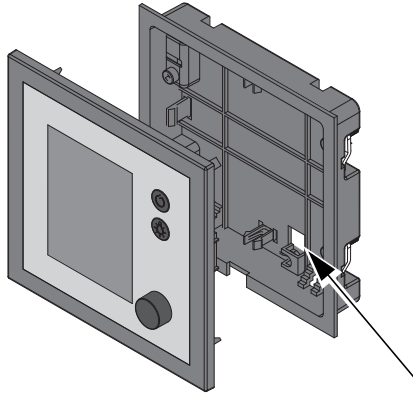
Height from floor: approx. 1500 mm. The mid-point of the control panel should be at eye level.

- 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-44.

- 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 taut 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.

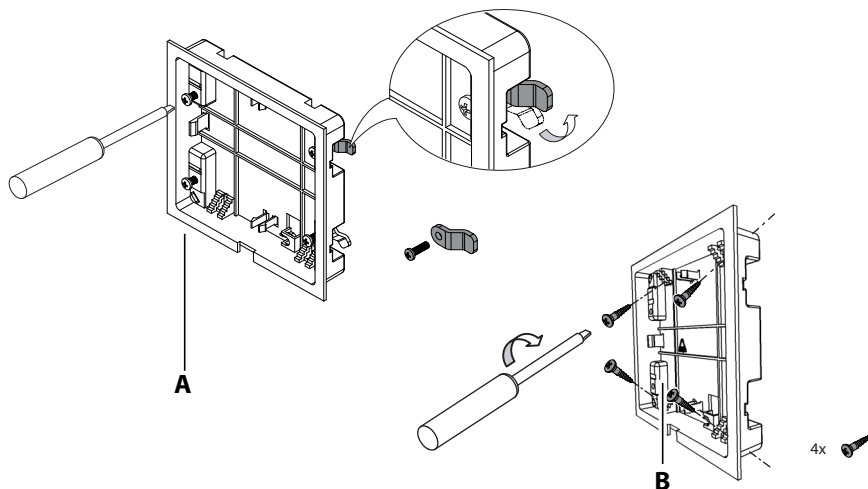
- ① The smaller RJ10 plug on the connecting cable must be routed to the control panel.
- 4** After routing, pull the control line through the opening in the housing.



- ① Do not pull the control line too taut so that you can easily remove the front panel at a later time.
- 5** Set the housing in the prepared wall cut-out.
- ① 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.
- i** 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.

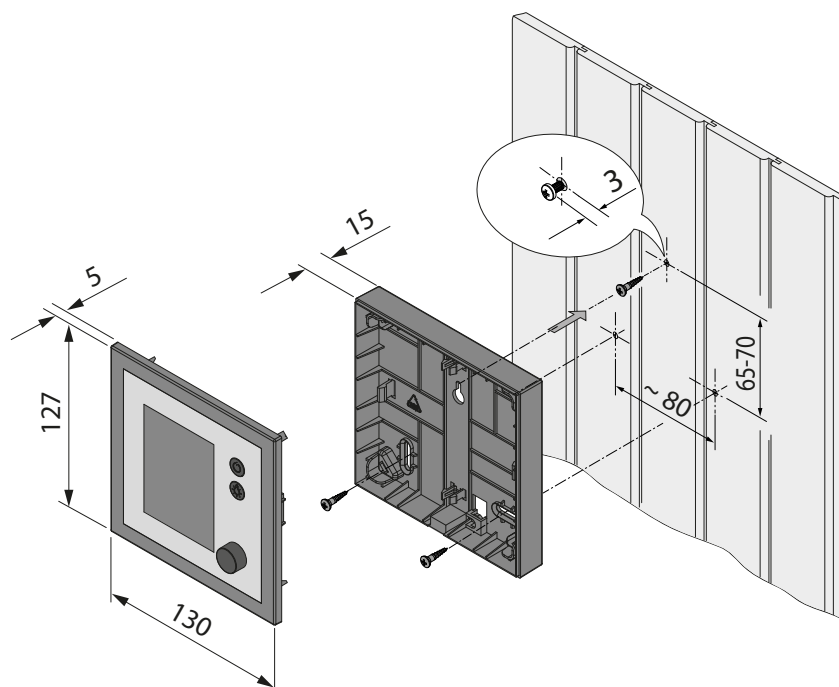


Diagram for installing housing mounted on the wall

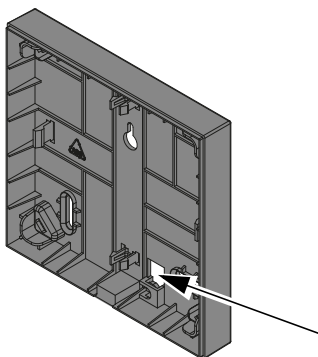
Horizontal distance between drill holes: 80 mm

Vertical distance between drill holes: 65–70 mm

Height from floor: approx. 1500 mm. The mid-point of the control panel should be at eye level.

- 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.



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

3.4.3 Mounting the control panel

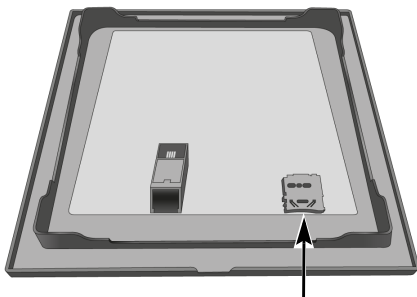
The control line (S-Bus) that leads to the relay box is connected to the control panel.

Necessary steps:

- ▶ Connecting the S-Bus, □ EN-46
- ▶ Fixing the front panel, □ EN-47

▶ Connecting the S-Bus

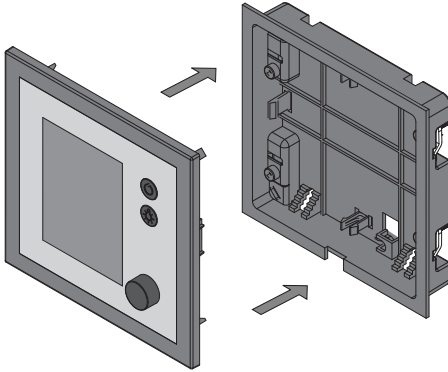
- 1 Insert the control line with the RJ10 plug into the circuit board.



- ⓘ 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

- 1 Place the front panel directly in front of the bottom piece.
 - ① Ensure that it is aligned properly.



- ① If you are mounting the housing in the wall, fix the front panel in the same way.
- 2 Press the front panel carefully with a consistent amount of pressure into the housing until it audibly snaps into place.
 - ① The front panel must sit firmly on the housing.
- 3 Remove the foil from the display.
 - ① For commissioning information, see 5.2 Setup during commissioning or after a reset, [EN-71](#)

4 Electrical installation

This chapter describes how to connect lines to the device's circuit board. For information on setup of the control panel, see chapter 5 Commissioning,  EN-69.

You can connect a max. of 8 burners to the K-Tec power extension unit. 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 K-Tec power extension unit:

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

Recommended installation sequence

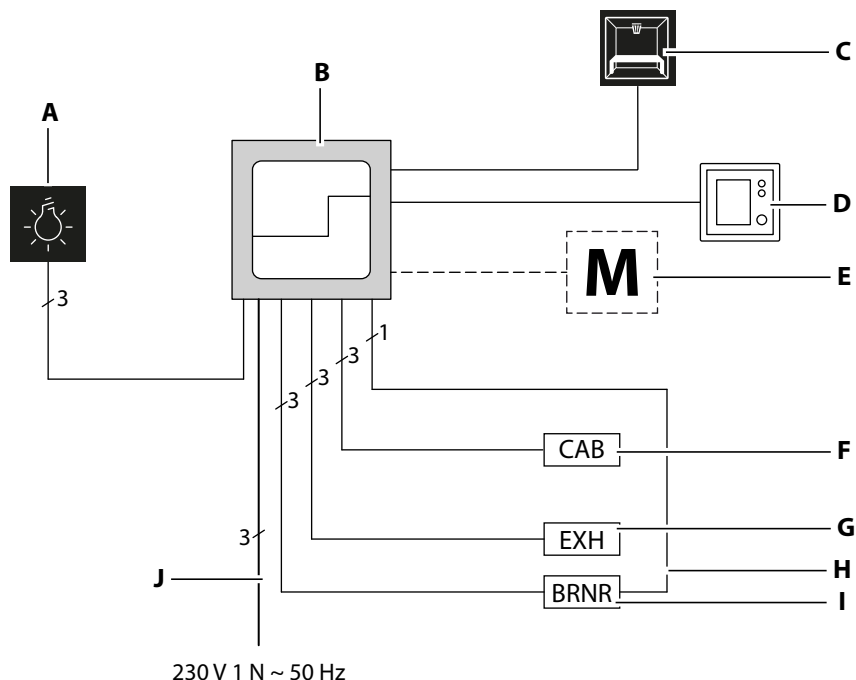
- Install the temperature sensor, lighting, etc. in the cabin.
- Mount the control panel.
- Connect the consumer(s).
- Set the dip switch for unit configuration.
- Connect the emergency button.
- Set the jumpers.
- Install plug-in modules, if necessary.
- Connect the power supply.
- Switch on the relay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

4.1 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.



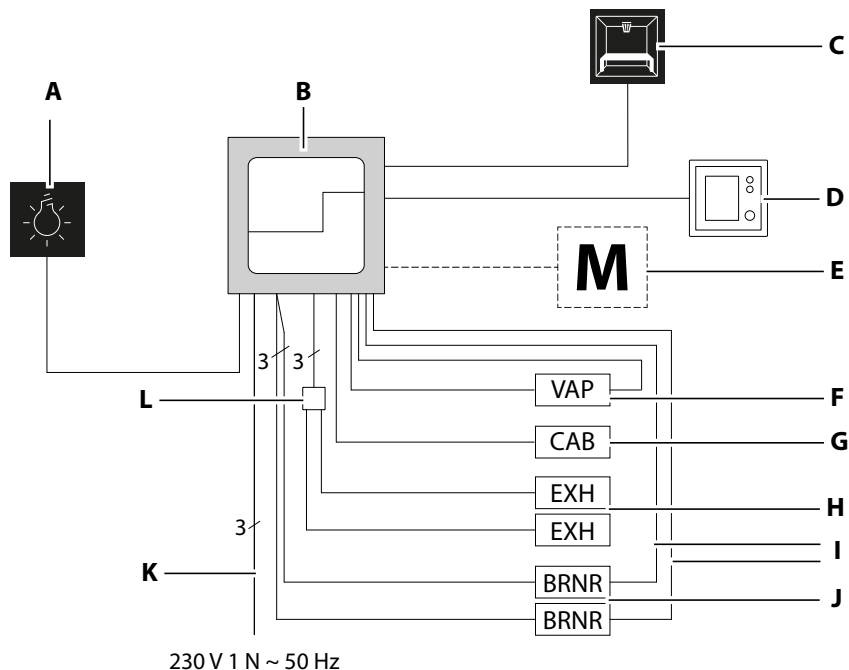
- | | |
|-------------------------------------|-----------------------------------|
| A Cabin lighting | F Cabin fan |
| B K-Tec power extension unit | G Exhaust air fan (heater) |
| C Room sensor | H Burner fault |
| D Control panel | I Air supply fan (heater) |
| E Add-on modules (optional) | J Mains 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 K-Tec power extension unit 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.



- | | |
|---|------------------------------------|
| A Cabin light | G Cabin fan |
| B K-Tec power extension unit | H Exhaust air fan |
| C Room sensor | I Burner fault |
| D Control panel | J Burner and air supply fan |
| E Add-on modules (optional) | K Mains supply connection |
| F Permitted vaporiser (optional) | L Contactor |



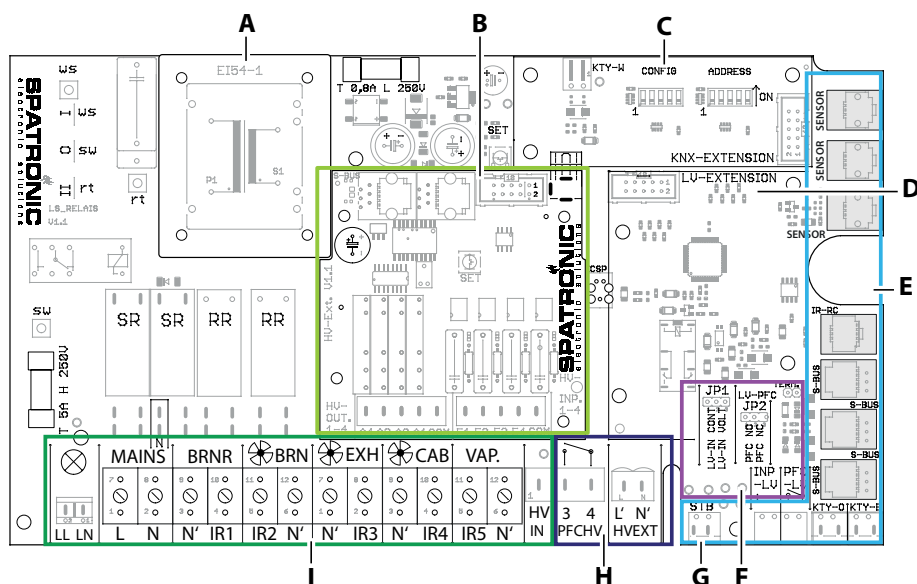
Advanced installation with vaporiser



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 K-Tec power extension unit 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.

4.2 Circuit board assignment

The sauna bus and sensor bus plugs are connected to the circuit board of the K-Tec power extension unit. The burners, air supply fans, exhaust air fans, cabin fans, vaporisers and the cabin light must be connected via terminals.



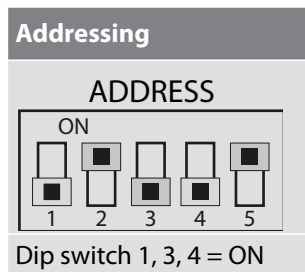
- | | |
|---|--|
| A Internal power supply unit | F Jumper and low-voltage potential-free contacts |
| B IO-EXT-HV module | G Safety temperature limiter |
| C Settings for device configuration 4.3.1 ADDRESS dip switch,  EN-52 | H High-voltage potential-free contact and mains supply output |
| D IO-EXT-LV module | I Consumer terminals |
| E Inputs for data lines | |
|  K-Tec power extension unit circuit board | |

4.3 Dip switch

4.3.1 ADDRESS dip switch

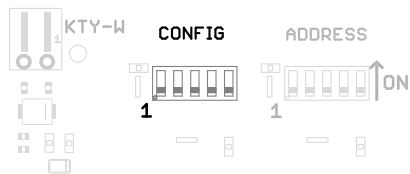
The ADDRESS dip switch must be set as follows so that the K-Tec power extension unit can be used:

Configuration as K-Tec power extension unit



4.3.2 CONFIG dip switch

The sauna settings are specified by the CONFIG dip switch.

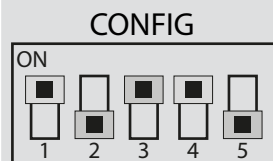


| DIP 1 | DIP 2 | DIP 3 | DIP 4 | DIP 5 | Description | Operating mode |
|-------|-------|-------|-------|-------|--|----------------|
| OFF | OFF | | | | No vaporiser connected | Finnish only |
| ON | OFF | | | | SteamRock Basic or SteamAttrac connected, status line from steam generator to HV-IN, burner fault at E1-4 from IO-HV | Finnish/Bi-O |

| DIP 1 | DIP 2 | DIP 3 | DIP 4 | DIP 5 | Description | Operating mode |
|-------|-------|-------|-------|-------|--|----------------|
| OFF | ON | | | | WDT automatic water splash connected, HOT signalling to HV-IN, burner fault at E1-4 from IO-HV | Finnish only |
| 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

Configuration



Dip switch 1, 3, 4 = ON

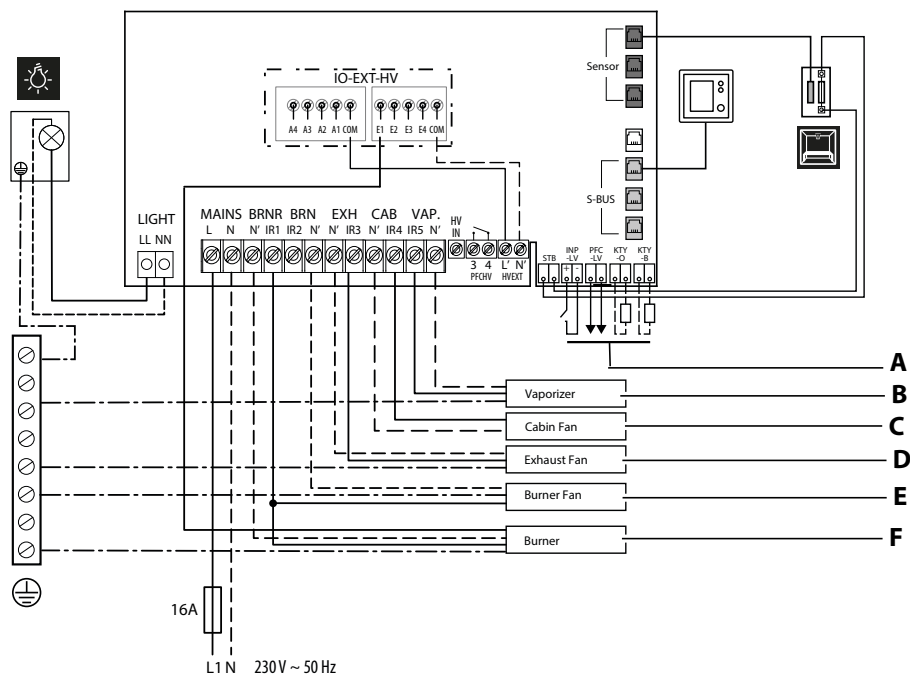
- A SteamRock Basic or SteamAttrac is connected.
- The manifold fault line is connected at the potential-free contact with low-voltage (PFC-LV terminal) and the emergency button is connected at the potential-free contact with mains supply (PFC-HV terminal).
- The heating period is limited to 6 hours.

4.4 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)

- B** Vaporiser
C Cabin fan
D Exhaust gas fan
E Burner fan
F Burner





Cabin lighting



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 K-Tec power extension unit. See  Example – plug-in module (optional),  EN-61. The cross-section of the lines must be identical.

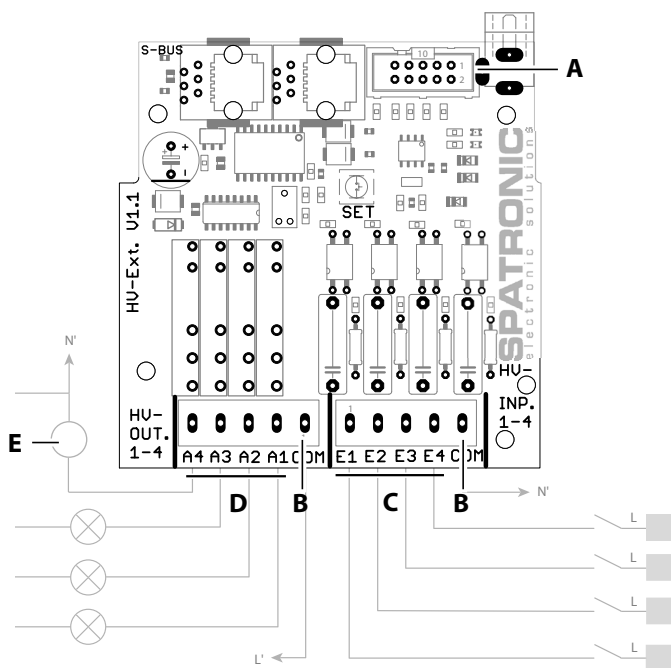
The lines from the individual components to the relay box must be connected as shown in the circuit diagram.

4.5 IO-EXT-HV module

The IO-EXT-HV module is mounted by the factory on the circuit board of the K-Tec power extension unit. 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.



- | | |
|--|-------------------|
| A Connection to circuit board | D Outputs |
| B COM connection to circuit board | E AquaDisp |
| C Inputs for burner faults | |

 Connection diagram for IO-EXT-HV circuit board

4.5.1 Input and output assignments

The E1–E4 (C) inputs can be connected to NO contacts for 250 V 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 250 VAC 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 K-Tec power extension unit, as required.

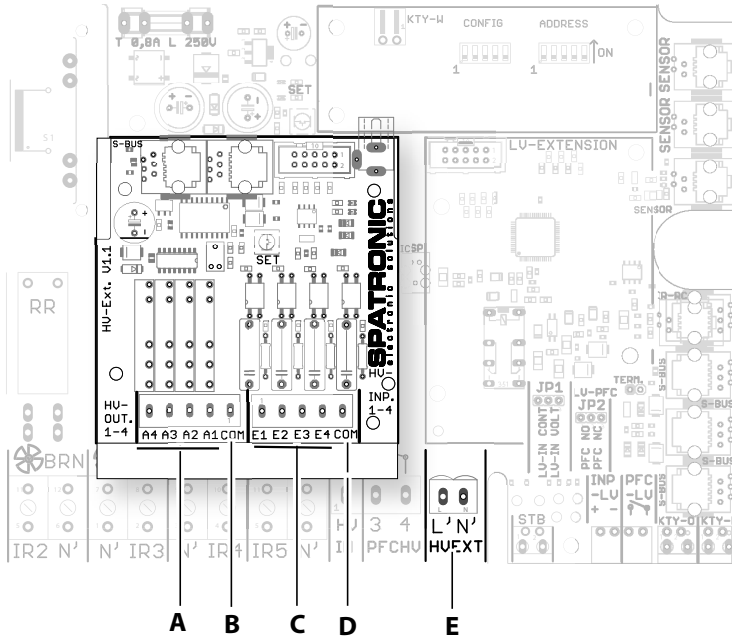
| Connection | Function |
|-------------|---|
| E1 | Burner 1 fault |
| E2 | Burner 2 fault |
| E3 | Burner 3 fault |
| E4 | Burner 4 fault |
| COM (E1–E4) | Connection to N' on the circuit board of the K-Tec power extension unit |
| A1 | ECO is active (status light) |
| A2 | PFC functions (see K-Tec 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 K-Tec power extension unit |


4.5.2 Connecting a module

► Connecting IO-EXT-HV

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

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



- A** Outputs
B COM connection outputs
C Inputs
D COM connection inputs
E Mains supply IO-EXT-HV (COM connections)
 IO-EXT-HV circuit board

- 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.

4.6 Connecting the mains supply and consumer

WARNING

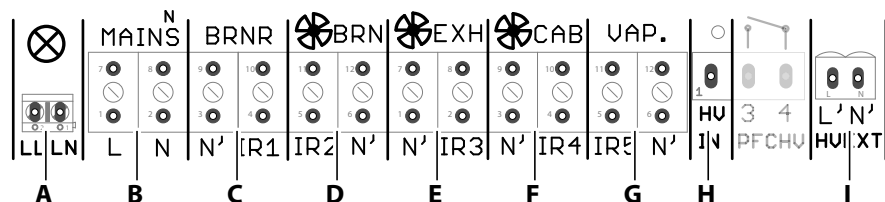


Risk of electric shock

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

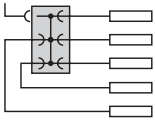
G Vaporiser


H Burner fault / vaporiser status / HOT signal from automatic water splash

I 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)

4.6.1 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-60

4.6.2 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).

4.6.3 Connecting the air supply fan

You can connect single-phase air supply fans only.



► Connecting the air supply fan

- 1 Connect the air supply fan with the burner to the BRNR (C) terminal.
① 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.

4.6.4 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).
- 2 Connect the cabin fan to the CAB terminal (F).
See  Mains supply and consumer circuit board,  EN-60




4.6.5 Connecting the vaporiser

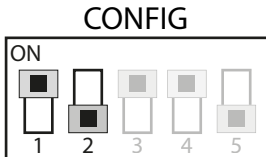
You can connect one of the following vaporisers:

- 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

- 1 Connect the vaporiser to the VAP terminal (**G**).
See  Mains supply and consumer circuit board,  EN-60
- 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.
- ① If the status output or HOT function is connected, the IO-EXT-HV module must be used for the burner fault.
See 4.6.2 Connecting the burners,  EN-61
- 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 |

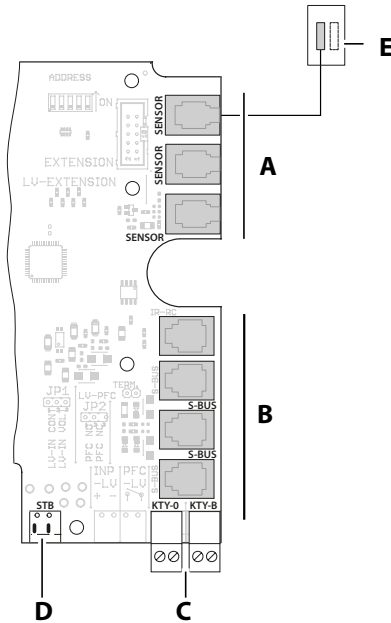
- ① The CONFIG dip switch is on the main circuit board, see 4.2 Circuit board assignment,  EN-51

4.7 Connecting data lines

► Connecting data lines

- 1 WARNING!** Ensure that the relay box is current-free.
Open the housing as needed.

➤ Removing the housing cover,  EN-33



- A** RJ10 plug for sensor line **D** Safety temperature limiter
B RJ14 plug from control panel **E** Temperature sensor
C Analogue sensor connection

- 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)**.
 - ❶ The connected sensor is automatically recognised and configured by the control panel.
 - ❶ 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.

4.8 Connecting the emergency button

An emergency button or emergency switch can be connected to the K-Tec power extension unit. Pushing the emergency button switches off the burners of the gas-powered 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 K-Tec power extension unit.

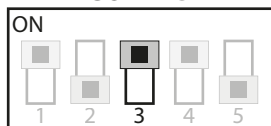
To do so, make the following settings:

- 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


-

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

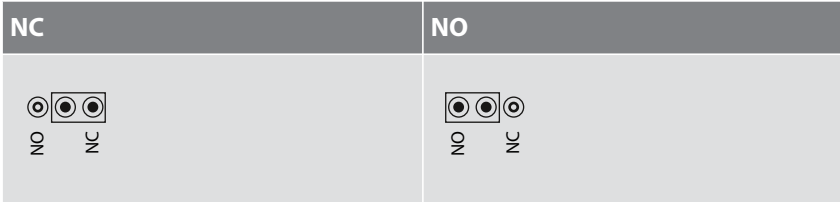
- ## CONFIG



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

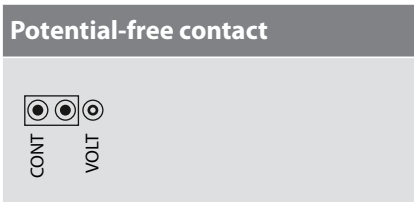
- ① The CONFIG dip switch is on the main circuit board, see 4.2 Circuit board assignment,  EN-51

- 2 Set jumper 2 (E).
 - ① 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

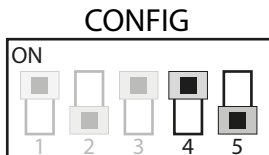
- 1 Connect emergency button.
- 2 Set jumper 1 (B) to configure the low-voltage input INP-LV (C).
 - a) CONT: INP-LV (C) as potential-free contact.



4.9 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 |

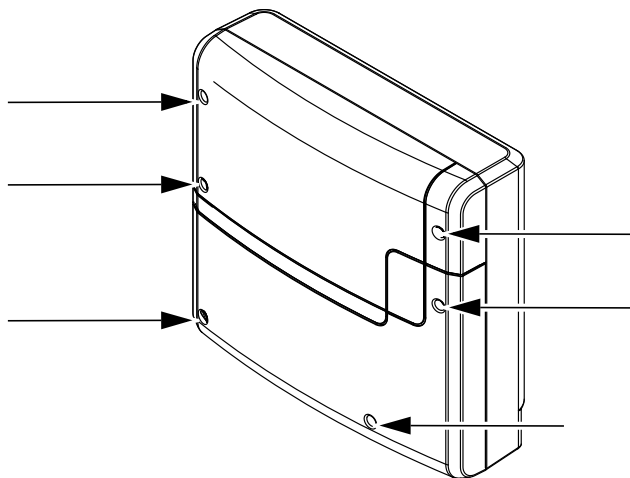
4.10 Closing the relay box

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

- 4.3.1 ADDRESS dip switch, [EN-52](#)
- 4.6 Connecting the mains supply and consumer, [EN-60](#)
- 4.7 Connecting data lines, [EN-64](#)

► 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. An on/off switch is located on the left side of the relay box.



Position I:

Relay box is switched on (factory setting).

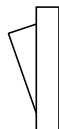
The relay box is ready for operation in standby mode.



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.

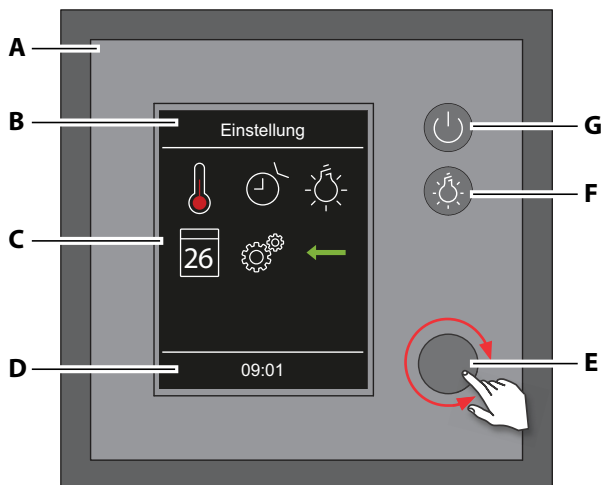
Position for maintenance and cleaning.

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

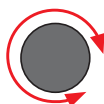
G Switch on/off

The following controls are used to operate the unit:



On/off

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



Jog dial:

Turn = select functions or input value



Light on/off



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.

The home screen (standby) appears after the jog dial has not been touched for 15 seconds.




- 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 4.3.1 ADDRESS dip switch,  EN-52.

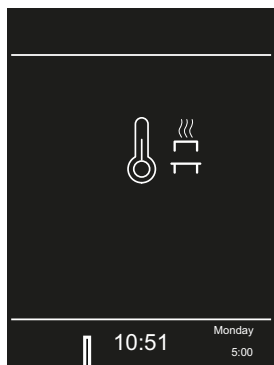
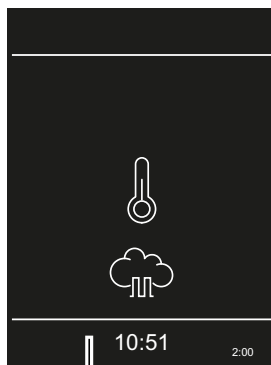
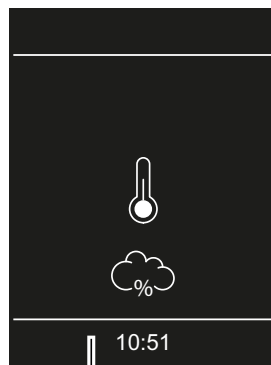
The basic settings must be defined to commission the unit. The program guides you through the required steps.

► 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)  Private use
 - b)  Commercial use
- ❶ Specific safety regulations apply to this setting. See 1.2 Operator instruction,  EN-7
- 5 Specify and confirm the safety system.
 - ❶ European Union/CENELEC must be selected if the system is installed in countries under the jurisdiction of the CENELEC.

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

- 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,  EN-64
- CONFIG dip switches 1 and 2 are active
 - 4.3.1 ADDRESS dip switch,  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.

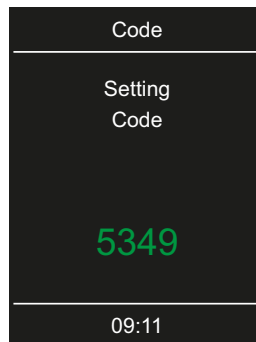
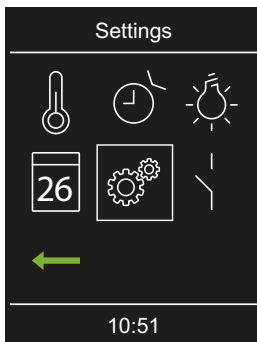
5.4 Adjusting the switching hysteresis

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°C target temperature and hysteresis 4 K: The burners are switched on at 42°C and switched off at 50°C.

► To adjust the switching hysteresis

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

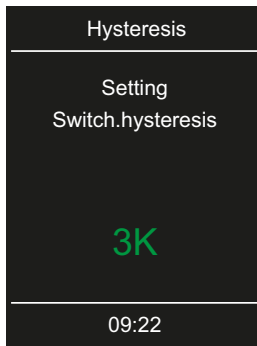
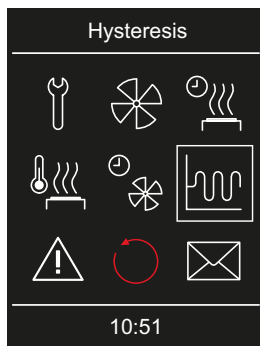


- 2 CAUTION!** Only trained personnel may change settings at the service level.

Enter code **5349** and confirm.

- ① Increase or decrease the numbers and confirm by pressing Enter.
Confirmed numbers appear green.

- 3**  : Select and confirm.




- 4** Set the value and confirm.

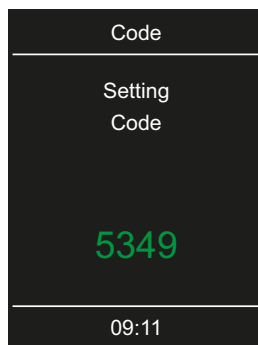
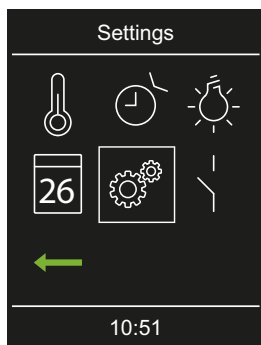
- ① The setting range is between 1 K and 10 K. The value is set to 5 K by the factory.
- ☒ The value is saved and the display returns to the selection screen for advanced settings.

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.

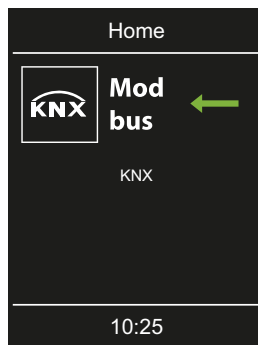


- 2 **CAUTION!** Only trained personnel may change settings at the service level.


Enter code **5349** and confirm.

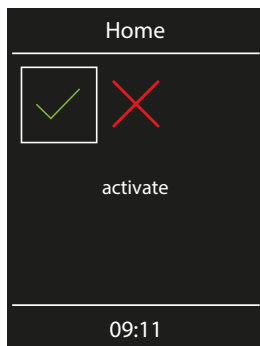
- ① Increase or decrease the numbers and confirm by pressing Enter.
Confirmed numbers appear green.

- 3  : Select and confirm.




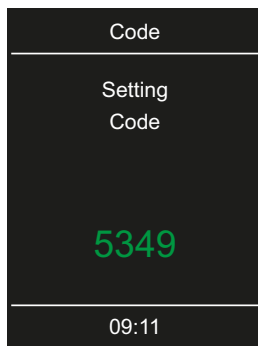
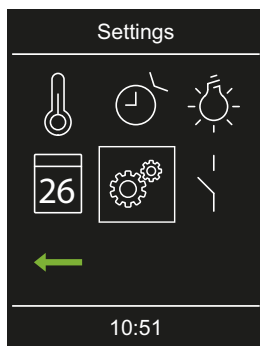
- 4  : Select and confirm.

- 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.

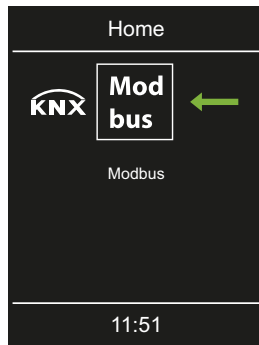
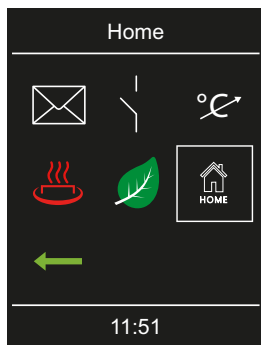




- 2 CAUTION! Only trained personnel may change settings at the service level.

Enter code **5349** and confirm.

- ① Increase or decrease the numbers and confirm by pressing Enter.
Confirmed numbers appear green.

- 3  : Select and confirm.



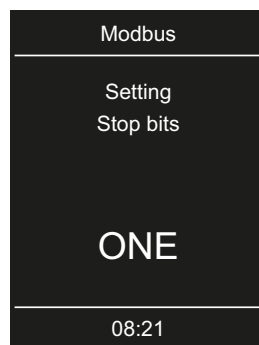
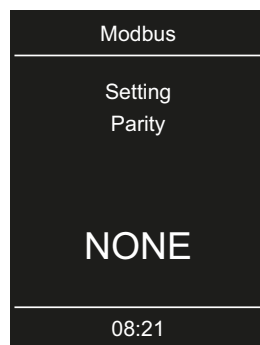
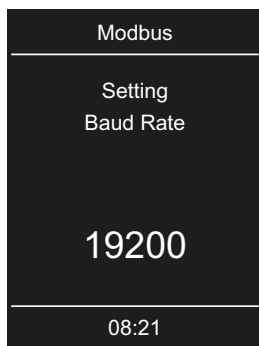
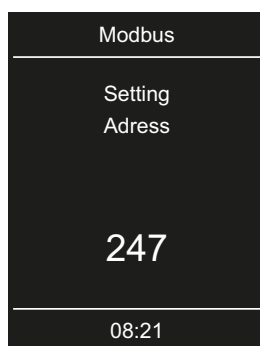
- 4  : Select and confirm.
- 5 Confirm your entry with .



- 6 Select and confirm additional Modbus parameters:

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

| 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 connections. |
| | ADDR dip switch set incorrectly | Set ADDR dip switch correctly (OFF/ON/OFF/OFF/ON). |
| Thermo-fuse tripped. | Temperature too high. | Check cause of excess temperature. Replace fuse. |
| Unknown error. | | Restart unit. Contact technical support. |

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.

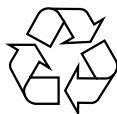
- The warranty period shall commence from the date on which proof of purchase is provided and shall be limited, in all cases, to 24 months.
- Warranty services shall be performed only if proof of purchase of the equipment can be presented.
- Any and all warranty claims shall become void if modifications 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
- Particle board
- Plastic film and protective film for the housing cover

Electronic waste

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

Additional disposal instructions for commercial users (DE only)

You can find further disposal instructions under www.eos-sauna.com/recycling



Service address

Kusatek GmbH

Schneiderstriesch 1

35759 Driedorf, Germany

Tel. +49 2775 82-514

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: