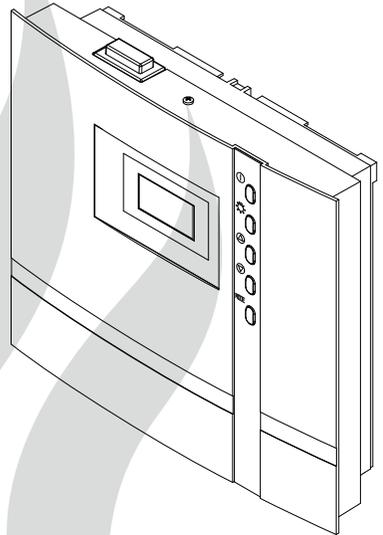


EOS Econ D2

sauna control unit



EN Installation and operating instruction

Made in Germany

CE IPx4 **EAC** **UK** **CA**

Firmware R4.35

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Technical changes reserved



English

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General safety instructions

Safety levels

Safety instructions and important operating instructions are classified. 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.

Mounting and electrical installation



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

Risk to life and limb and risk of fire

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

- The electrical installation of the relay box and other electrical systems or equipment with a fixed mains connection must only be performed by a trained electrician from an authorised electrical company.
- Observe the stipulations in VDE 0100 part 703 or the applicable local legal requirements.
- 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 specialist.

Fire hazard from overheating

Insufficient ventilation can lead to device overheating and fire. Flammable parts inside sauna must not exceed a temperature of 140°C when the unit is operated as intended or in the event of a malfunction.

- Do not install control panels, relay boxes and modules in enclosed cabinets or wood panelling.
- Observe the sauna heater manufacturer's safety and installation instructions.
- Observe the cabin manufacturer's safety and installation instructions.
- Touchable glass surfaces on the outside of the cabins must not reach more than 76°C. Otherwise provide proper protection.

Damage to the unit

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

- The control panel 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!

- It may 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.

Operator instruction

The operator of the infrared or sauna cabin must be instructed on 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.

Risk of electric shock

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

- The housing covers may only be removed by a specialist.
- Repairs and installations may 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 sauna heaters can ignite and cause fire.

- Do not place objects on the sauna heater.
- If you switch on the sauna heater using a pre-set timer or a remote control, use a cover protection system for the heater or install a suitable safety device.
- Inspect the cabin prior to switching it on.
- When using control units with a remote control option (see EN 60335-1), protection from switching on a covered sauna heater is required.

Risk of burns and chemical burns

Touching hot parts may lead to skin burns.

- The operator must be familiar with the unit's hot parts and be able to identify them.
- The operator must be familiar with the settings for the heating time and understand how to adjust it.

Health risks

Spending time in an infrared or 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 an infrared or sauna cabin.

Equipment damage due to overuse

The uninterrupted operation time of the sauna cabin(s) 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 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 may not operate the sauna cabin.
- The settings for the heating time may only be carried out 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 may not clean or service the system.

Standards and regulations

For an overview of the standards that were observed during design and construction of the sauna heaters, 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.

Identification

The Econ D2 control unit consists of a main unit, a temperature sensor with connecting cables and small accessories, and is used to operate a sauna cabin.

Additional devices can be connected to the control unit for control of a sauna cabin, for example, lighting and power extension devices.

Identification of the units

The nameplate is attached to the underside of the base of the relay box housing.



- A. Name
- B. Model
- C. Item number
- D. Operating voltage
- E. Country of origin
- F. Manufacturer
- G. Production date
- H. Serial number

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 under the age of 8 years or by children above the age of 8 years and persons with reduced mental capacity without being thoroughly instructed in its use or supervised.

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.

Read the General Safety Instructions.

Scope of delivery

Delivery contains the following items:

1. Control unit Econ D2
2. Temperature sensor kit, comprising
 - Sensor housing (a)
 - Board with temperature sensor KTY and safety temperature limiter (b)
 - 2 mounting screws 4 x 40 mm (c)
 - Sensor line 2 m, red (d)
 - Line for safety temperature limiter 2 m, white
3. Plastic bag with 3 mounting screws 4 x 25 mm.
4. 5 rubber cable glands
5. Spare safety temperature limiter
6. 1 installation and operation manual



Technical data

Voltage (power supply)	400 V 3N ~ 50 Hz
Switch output	max. 9 kW resistive load (AC1 mode). Can be expanded to 36 kW via the connection of power switching devices
Fuse	3 x 16 A
Heating time limit:	6 h, 12 h
Display	LCD display 65 x 37 mm, graphic
Dimensions (HxWxD)	220 x 250 x 67 mm
Protection type	IPx4 acc. to EN 60529 splashwater protection
Temperature control range	30 to 115 °C
Sensor system (temperature)	KTY-sensor with safety temperature limiter 139 °C
Control characteristic	Two-point control with fixed hysteresis of 3K. For control via the stove sensor offset of 7K to compensate the higher temperatures directly below the cabin ceiling
Light	max. 100 W
Ambient temperatures	-10 °C to +40 °C
Storage temperature	-20 °C to +70 °C
Temperature display stove sensor	Current value on the stove sensor minus 7K to compensate the higher temperatures directly below the cabin ceiling

Intended use

In conjunction with a suitable sauna heater, the Econ D2 control unit is intended to be used only to heat sauna cabins. It is suitable for residential and commercial sauna cabins. Any further use is deemed not to be in accordance with the intended purpose!

The intended use also includes compliance with the usual operating, maintenance and servicing conditions.

The control unit is intended only for mounting on the wall.

Important note!



The control unit is not suitable for outdoor use!

It must only be used inside buildings and may not be exposed to environmental conditions such as extreme humidity or moisture with possible condensate formation or corrosive substances in the ambient air and other weathering. Excessive exposure to cold and intense solar radiation should be avoided as well. If there is an increased risk of mechanical damage, the control unit must be protected accordingly.

Installation

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

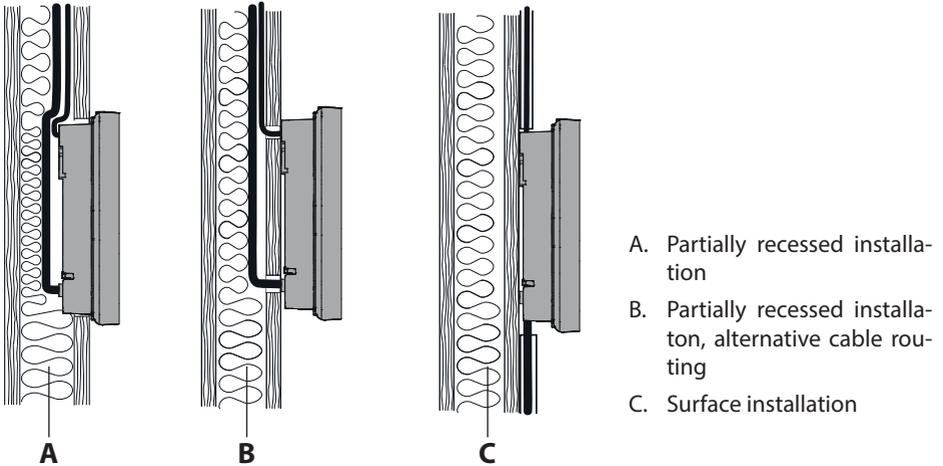
Electronics malfunctions

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 conduits.

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 65°C.

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



Installation site

The control unit may be mounted only outside of the sauna cabin. Recommended places are:

- Outer wall of the cabin, but insider of the building
- Plant room or a comparable place, in order to suit the local installation situation.

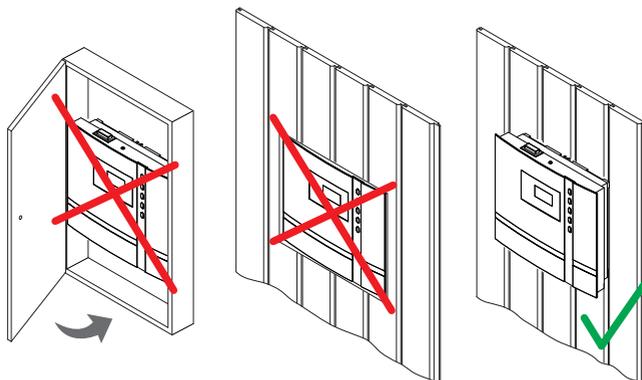
If empty conduits for electrical installations are already present, this dictates the position of the relay box.

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 also applies following completion of the installation work.

- Do not install relay boxes in enclosed cabinets or wood panelling.



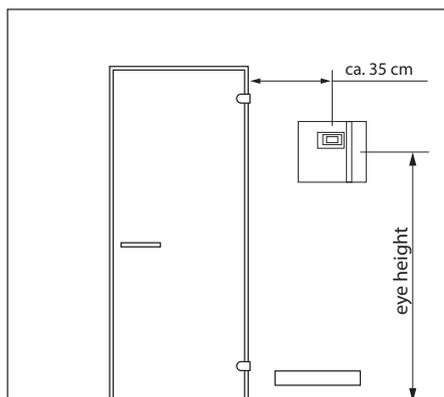
Site requirements

- Ambient temperature during operation -10°C to 35°C
- Relative air humidity during operation 30% to 75%
- Ambient air may not be corrosive or have high salt content
- Storage temperature -20°C to $+60^{\circ}\text{C}$
- Stable wall able to carry unit's weight (by recessed installation min. available 35 mm depth)
- Power supply 400 V 3N ~ 50 Hz nearby
- All cable lines and connections must be accessible for servicing.

Installing the control unit

The following work must be completed before you mount the control unit:

- Determine the mounting site, see „Installation Site“.
- Route the lines to control unit.



Mounting on the cabin wall

Fig. 1

Damage due to steam and humidity

Condensation can form when the door is opened, which can fog over the display. This can lead to the formation of condensation in the control unit and malfunctions.

- Mount the control unit outside of the area in which the humid warm air mixture can spread.
- Mount the control unit on the hinge side of the door.

► Tools required:

- Saw for cutting the wall (only for recessed installation in the wall).
- Screw driver.
- Taut wire, as needed.
- Wooden screws (included in the scope of delivery): 3 pcs when mounting on the wall

► Removing the front cover

- Remove the front cover from the housing.
 1. Unscrew the screw on the top of the housing.
 2. Swivel the front cover and remove it downward.

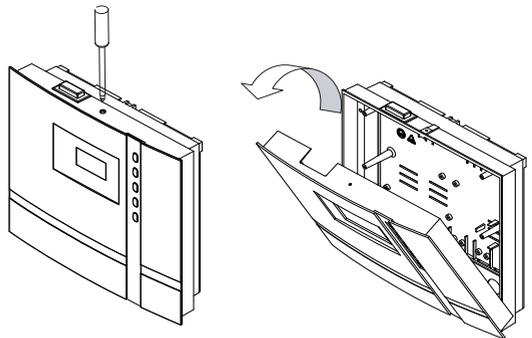


Fig. 2

► Preparing the air inlets

- Determine the line openings in the housing.
 - A. Openings for mains, heater, light lines
 - B. Opening for sensor and limiter fuse
- Break the plates from out of the openings.
- Insert the bushings.

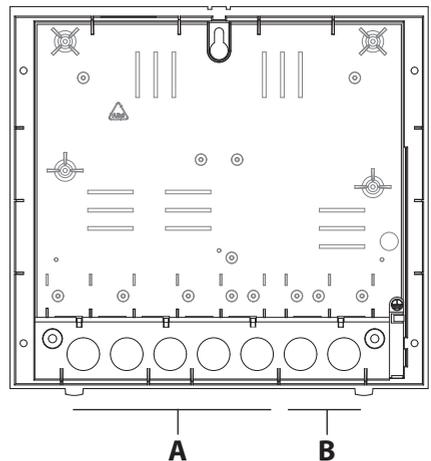


Fig. 3

Mounting the unit on the wall

1. Drill one (1) hole above and two (2) holes with $\varnothing 3$ mm in the wall as shown.
2. Screw in the upper screw.
3. Allow the screw to protrude approx. 3 mm so you can later hook in the housing.

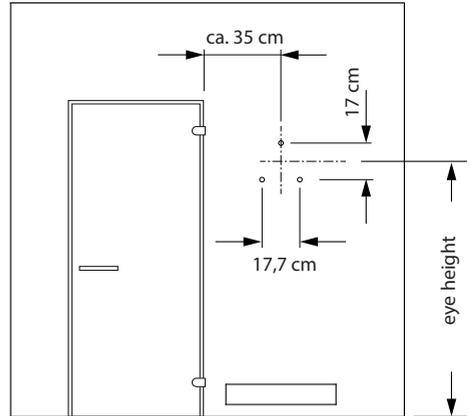
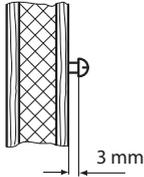


Fig. 4

4. Pull the lines through the openings into the unit housing.
5. Mount the housing on the wall::
 - a) Hook the housing into the upper screw using the upper mounting-hole (A).
 - b) Securely tighten the housing in the two lower holes (B).
6. Connect the lines (see "Electric Installation").

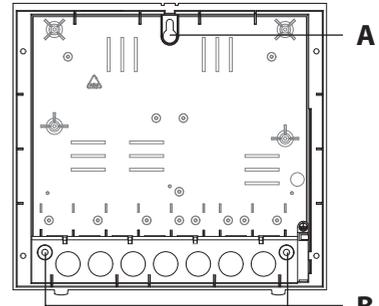


Fig. 5

Semi-recessed mounting

1. Prepare a wall cut-out:
Height x Width: 210 x 200 mm, Installation depth: min. 35 mm.
2. Pull the lines through the openings into the unit housing.
3. Fit the housing into the cut-out and fasten it with 4 screws (C) to the wall.
4. Connect the lines (see "Electric Installation").

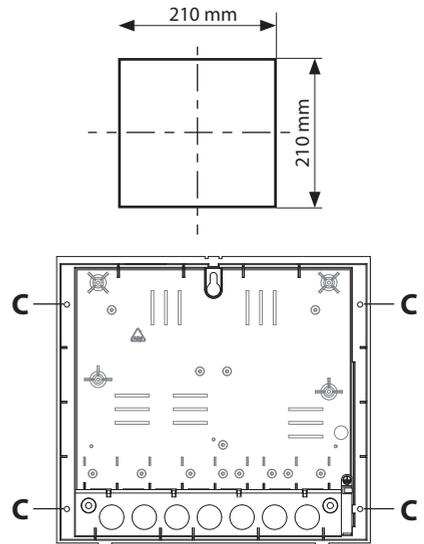


Fig. 6

Connecting the sensor cables

You should not install sensor and power supply lines together, or lead them through the same feedthrough. This can lead to interferences in the electronics, such as "fluttering" in the relays. If it is necessary to lay the cables down together, or if the line is longer than 3m, use a shielded sensor cable (4 x 0.5 mm²).

Connect the shielding to ground in the control unit.

Please observe that the following dimensions relate to the values stipulated during the unit inspection acc. EN 60335-2-53. The heater sensor must always be installed at the point where the highest temperatures are to be expected. Illust. 7-9 give you an overview of the mounting point of the sensor.

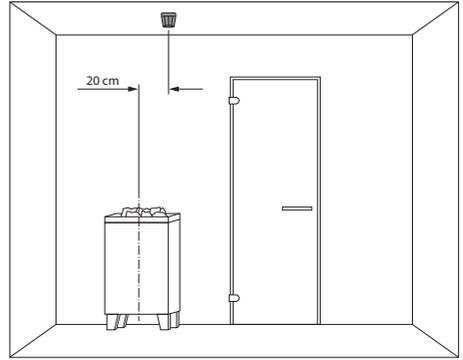


Fig. 9

2. Drill a hole to lead the cable through, preferably through the middle of one of the wooden boards.
3. Lead the sensor cable through the drilled hole and attach it to the sensor line according to Illust. 10.
4. The cables for the limiter (white) and the temperature sensor (red) are connected to the sensor circuit board acc. Fig. 10. Engage the sensor board into the casing.



Installation of the main sensor

1. Mount the oven sensor in cabins up to 2 x 2m according to fig. 7 and 9, in larger cabins according to fig. 8 and 9.

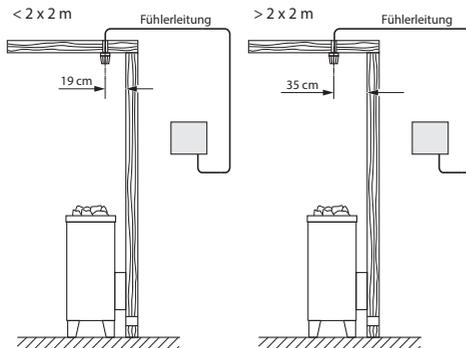
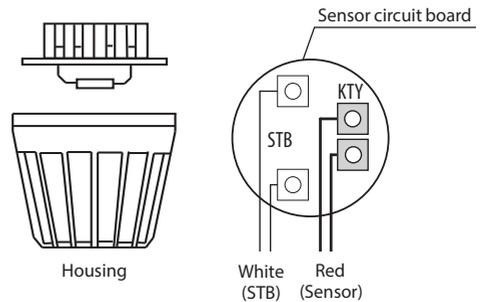


Fig. 7

Fig. 8



5. Lead the sensor cables through the right cable intake into the control unit. Install the sensor cables inside the control unit as shown in Fig. 11. Connect the sensor cables as shown in Fig. 12. In order to do this, pull the plug **X2** from the circuit board and plug it back in after the connection.

Fig. 10

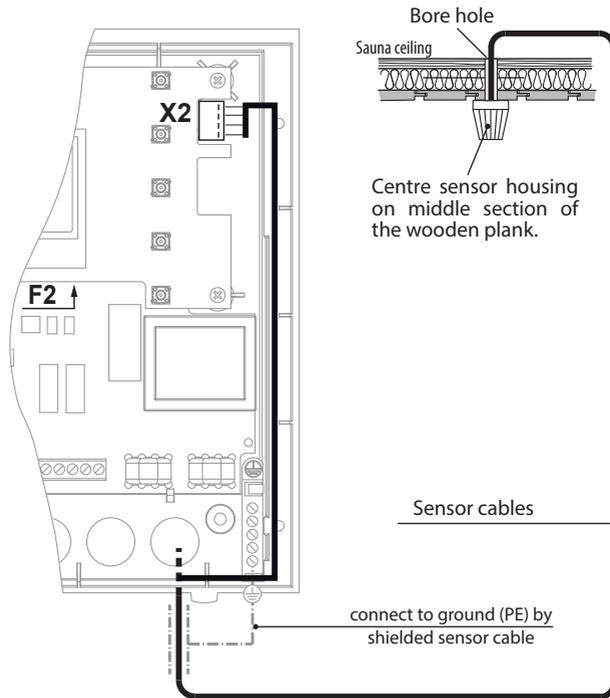


Fig. 11

Notice

Equipment damage due to incorrect connection.

Mixing up the connection on X2 connection can cause the fuse F2 to blow and damage the control (for replacement please refer to the chapter „Device fuses“)

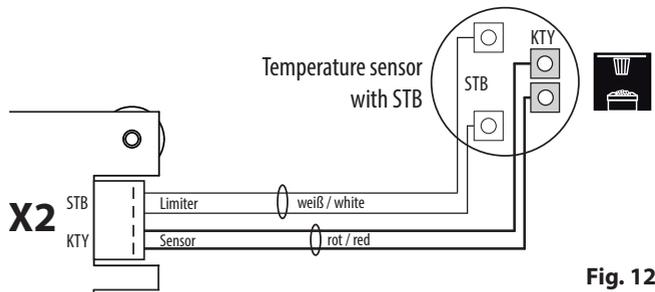
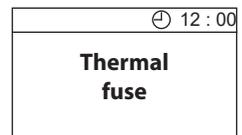


Fig. 12

6. After completed installation and before commissioning of the control unit the line for overheating protection fuse must be checked for proper functionality. For this disconnect one of the white cable wires at X2 connector. The respective error message appears in the display. Re-connect the wire.



Electrical installation

This chapter describes how to connect the relay box's circuit board lines.
For information on setup of the control panel, see chapter Commissioning

Recommended installation sequence

Before commencing installation, ensure that the control unit and the temperature sensor are mounted. Furthermore, all cabin work must be complete: sauna heater, light, etc.

Complete installation in the following sequence:

- Plug the S-Bus and sensor lines into the relay box.
- Connect the consumer lines (sauna heater, light, fan, etc.) to the relay box.
- Establish connection to the power supply.
- In a multi-cabin installation: Program the cabin address.
- Switch on the relay box and control panel.
- Configure additional settings at the control panel, e.g. target temperature.

Connections

As a rule, only a fixed connection may be connected to the mains supply, whereby a configuration is provided that makes it possible to separate the system from the mains supply with a contact opening width of at least 3 mm (all poles).

All electrical installations and all connecting lines that are installed inside a cabin must be suitable for installation in a sauna or IR cabin (IPx4).

The relay box is connected with a live current of 400 V 3 N ~ 50 Hz and fused separately with 3 x 16 A. A 16 A cut-out with at least K characteristic must be used for fuse protection.

WARNING

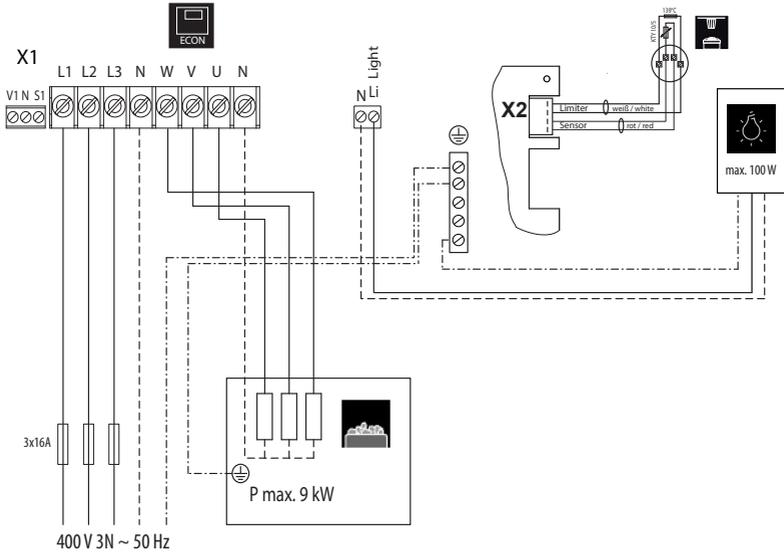


Risk of electric shock

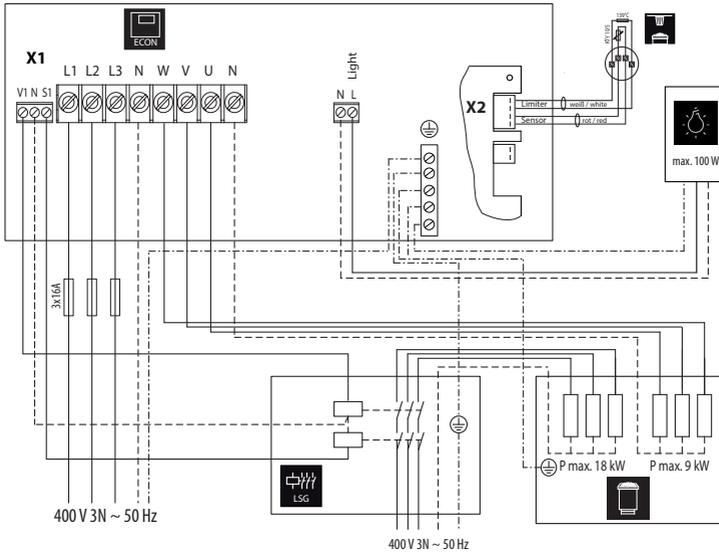
A faulty electrical connection poses the risk of an electric shock. This risk also applies following completion of the installation work.

- 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

Connection diagram for sauna heaters up to 9 kW



Connection diagram for sauna heaters above 9 kW



Connecting the sensor cables

Required tools: Flathead screwdriver

Attention! Ensure that the control unit has no power.

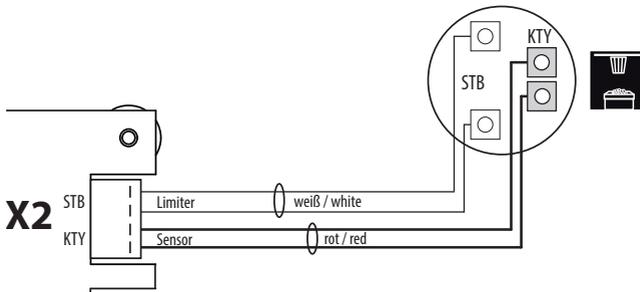
The cable is connected to the X2 connector, that can be removed from the circuit board. This plug should be removed so that the cables can be connected easily and safely. When the cable is connected, the connector is plugged back onto the circuit board.

► Connecting the lines for the sensor and protective temperature limiter

1. Connect the red cable for the temperature sensor from the heater sensor to the 2 „KTY“ terminals.
2. Connect the white cable for the safety temperature limiter from the heater sensor to the 2 **STB** terminals on the lower main circuit board.

Caution! Do not overtighten the clamps, do not apply excessive force..

See also chapter „Temperature sensor, pages 14-15.



NOTICE

Equipment damage due to improper installation

Connect the safety temperature limiter (STB) as instructed in the manual.

- Only connect the safety temperature limiter (STB) to the „STB“ terminals on the main board. The control unit may be damaged if the STB and sensor lines are interchanged..
- Always connect the safety temperature limiter (STB) as an isolated contact.
- If the installation uses multiple sauna heaters, multiple safety temperature limiters may be required. Observe the separate EOS instructions.

Connecting the consumer lines

WARNING



Risk of electric shock

There is a risk of electric shock when connecting the cables if the control unit is connected to the power supply.

- Ensure that the control unit has no power.
-

Required tools: Flathead screwdriver

► Connecting the sauna heater

- Connect the cable from the sauna heater to the four terminals (oven) W, V, U, N and PE.
- Always connect the neutral conductor N of the sauna heater as well, because in humidity mode, one phase is rerouted from the sauna heater to the vaporiser. This results in an asymmetrical heating load and power flows through the neutral conductor.
- The switching output of the control unit for the sauna heater has a max. of 9 kW resistive load. It can be expanded as needed by an optional output controller (LSG) so that it is possible to connect sauna heaters with an output greater than 9 kW.

► Connecting the cabin light

- Connect the cable of the sauna lighting to the two terminals LN and LL.
- Pay attention to the maximum power of the lighting (100 W), see technical data.

► Connecting the mains lead

- Connect the cable for the mains connection to the four terminals (MAINS) L1, L2, L3, N and PE.
- The control unit is connected with a live current of 400 V 3 N ~ 50 Hz and fused separately with 3 x 16 A. A 16 A cut-out with at least K characteristic must be used for fuse protection.
- As a rule, only a fixed connection may be connected to the mains supply, whereby a configuration is provided that makes it possible to separate the system from the mains supply with a contact opening width of at least 3 mm (all poles).

Closing the housing

- After all consumers and mains supply have been connected, close the housing.
- To do this, mount the front cover back on the housing. Make sure that the cover snaps into place at the bottom.
- Secure the front cover at the top with the screw.

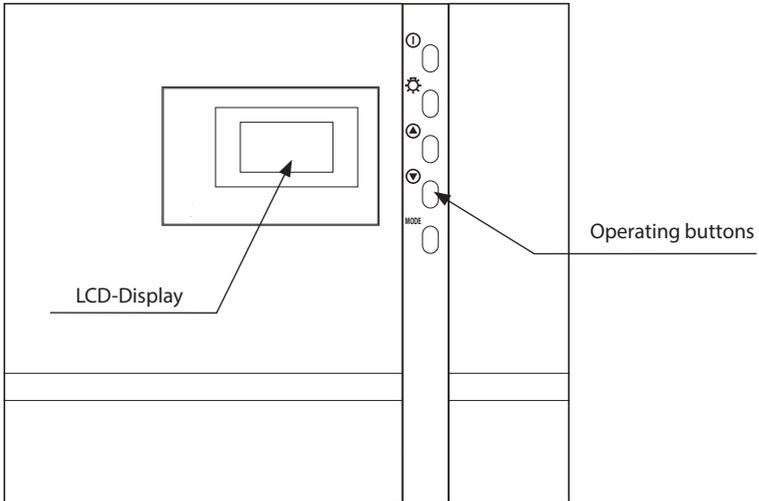
Operation

Once the system has been installed with all components and all covers have been fixed, you can put the control unit into operation.

Please read the following information to get yourself familiar with the functions and capabilities of your sauna control unit.

General information

The user interface



Operating buttons



= on / off (stand-by)



= cabin lighting



= next function / increase value (up)



= next function / decrease value (down)

MODE = programming mode / save setting

Default display Stand-by

is shown if the system is in Stand-by mode.

The system also returns to this screen from other menu items, if there is no activity for >15 seconds.

P1 12:00	
Temperature	90°C
Auto-stop	5 : 59
Start time	- : - :

Default display in operation

is displayed if the system is operational. The system also returns to this screen from other menu items, if there is no activity for >15 seconds.

12:15	
Temperature	30°C 
Auto-stop	5 : 59
Start time	- : - :

Illustration of the heating performance:

During the heating phase the bars behind the temperature display fill continuously.

Once the target temperature has been reached, these bars are displayed as filled.



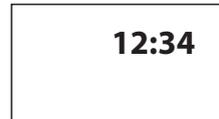
Energy-saving display

If the unit is not used, it will switch into energy-saving mode.

A moving time is shown after 5 minutes, similar to a PC screensaver. The back light for the display is switched off after an additional 15 minutes.

You can return to the basic standby screen by pressing any button.

To start heating press the On/Off button for >3 seconds.



Symbol description



P1 ⌚ 12:00

The following is shown in the top area of the display:

	<p>Light-Symbol</p>	<ul style="list-style-type: none"> • Light switches on automatically when heating is switched on • Light stays on 30 min. after the heating stops • Manual light switching is possible at any time
	<p>Clock-Symbol</p>	<ul style="list-style-type: none"> • Time indication
<p>12 : 00</p>	<p>Time</p>	<ul style="list-style-type: none"> • Displays the time of day
	<p>Operation lock</p>	  <ul style="list-style-type: none"> • Locks all buttons but still allows to switch off heating if the sauna is currently running. • Light still can be switched on and off
	<p>Timer active</p>	<p>Functions only if the availability of a fire protection system has been confirmed (setup - "safety" option has been checked as available).</p> <ul style="list-style-type: none"> • If shown continuously on - single event timer activated • If flashing - recurring switching timer activated
<p>P1</p>	<p>User profiles P1-P4</p>	 <p>3 sec.</p> <ul style="list-style-type: none"> • Four user profiles P1-P4 with pre-set popular climate conditions • Every profile can be changed
	<p>Holiday home mode Holiday park mode</p>	<ul style="list-style-type: none"> • Holiday home mode =symbol static, restricted access mode • Holiday park mode =symbol flashing, restricted access, only on/off possible

Operation principle

For settings press shortly the **MODE** button.

The first parameter (temperature) will be selected and shown inverted.

Use the ▲ or ▼ buttons to navigate to the required parameter which you would like to adjust.

☀ P1 ⌚ 12:00	
Temperature	90°C
Auto-Stop	5:59
Start time	--:--

Parameter values that flash on the display can be changed and are shown in this manual as displayed.



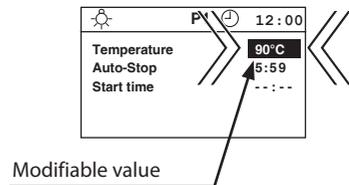
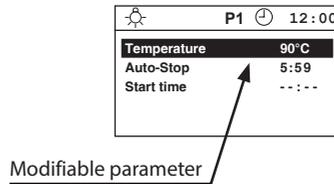
Press the **MODE** button again shortly to start the adjustment for the selected parameter.

The background of the value of the selected parameter will be flashing.

Now you can adjust this value using the ▲ or ▼ buttons.

All settings made in the standby mode should be confirmed by pressing **MODE** for >3 secs and are then saved in the current profile.

The parameter stops flashing and the new value becomes valid until it is changed again.

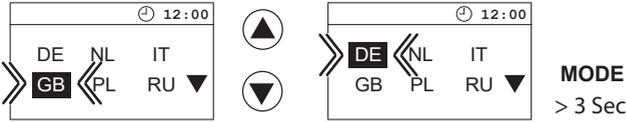


If no button is pressed for >15 secs, the device returns to the standard screen. Any changes made will not be saved.

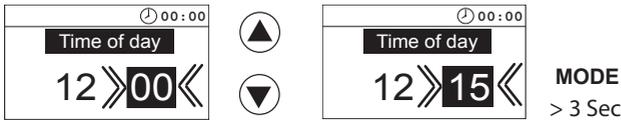
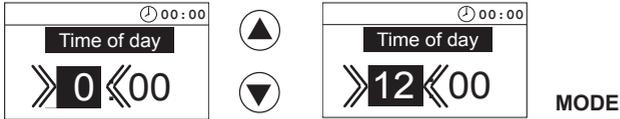
☀ P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

Initial commissioning

Set language (DE, GB, IT, NL, PL, RU, FR, SE, ES, CZ, FI, SLO)



Set time of day (0:00 bis 23:59)



Set Life-Guard function



Enable or disable Life-Guard

Select and confirm one of the following:

- disable, or - enable.

Safety



Is a safety system as per EN-Norm 60335 for remote & automatic operation available?

Select and confirm one of the following:

- no, not available, or - yes, available.

Attention, make sure to observe the General Safety Precautions section, page 5!

Switching your sauna on in a dry (Finnish) mode

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--


 > 3 sec

⌚ 12:15	
Temperature	30°C 
Auto-stop	5:59
Start time	--:--

Switching your sauna off (dry sauna mode)

⌚ 12:15	
Temperature	30°C 
Auto-stop	5:59
Start time	--:--

Auto-Stop-Zeit


P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

Temperature query (only when heating is on, not in stand-by or during sauna-dry mode.)



> 3 Sec = displays current temperature

Finnish

P1 ⌚ 12:00	
115°C	

> 3 sec


Reading from the main sensor

Individual Settings

The following are options for adapting the control systems to your individual needs. The parameters can be adjusted both in standby or in operation mode and the changes are then saved in the device. Changes made in operation mode will apply immediately once saved.

Cabin temperature Setting range: Dry sauna operation 30 - 115°C

In Stand-by

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--



P1 ⌚ 12:00	
Temperature	85°C
Auto-stop	5:59
Start time	--:--

MODE > 3 sec.

P1 ⌚ 12:00	
Temperature	85°C
Auto-stop	5:59
Start time	--:--

15 Sek. / ⏻ > 3 sec.

⌚ 12:00	
Temperature	85°C
Auto-stop	5:59
Start time	--:--

⌚ 12:15	
Temperature	85°C
Auto-stop	5:59
Start time	--:--

In operation

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--



P1 ⌚ 12:00	
Temperature	85°C
Auto-stop	5:59
Start time	--:--

MODE > 3 sec.

P1 ⌚ 12:00	
Temperature	85°C
Auto-stop	5:59
Start time	--:--

15 sec.

⌚ 12:15	
Temperature	85°C
Auto-stop	5:59
Start time	--:--

Auto-stop / heat-up time limitation

Auto-Stop defines the heating time limitation. The sauna unit automatically turns off once this time has expired.

Depending on the configuration of the control unit, a time between 0:30 to 6:00, 0:30 to 12:00 hours can be set. This setting is valid for all user profiles P1-P4.

Attention! The allowed time for private operations is 6 hours.

In Stand-by

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--



P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	5:--



P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	3:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	3:59
Start time	--:59



In operation

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--



P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	3:59
Start time	5:--



P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	3:59
Start time	3:--

MODE

P1 ⌚ 12:00	
Temperature	90°C
Auto-stop	3:59
Start time	--:59



P1 12:00	
Temperature	90°C
Auto-stop	3:59
Start time	--:30

MODE > 3 sec.

P1 12:00	
Temperature	90°C
Auto-stop	3:30
Start time	--:--

15 sec. /  > 3 sec.

P1 12:00	
Temperature	90°C
Auto-stop	3:30
Start-time	--:30

MODE > 3 sec.

P1 12:00	
Temperature	90°C
Auto-stop	3:30
Start-time	--:--

15 sec. / 

P1 12:00	
Temperature	90°C
Auto-stop	3:30
Start time	--:--

P1 12:00	
Temperature	90°C 
Auto-stop	3:29
Start-time	--:--

P1 12:00	
Temperature	90°C 
Auto-stop	3:29
Start-time	--:--

P1 12:00	
Temperature	90°C
Auto-stop	3:30
Start time	--:--



Cabin lighting

Every time that the sauna system is activated, the cabin lighting is automatically switched on. The  symbol is shown at the top left of the display. If the sauna system is switched off, the cabin lighting is also switched off after a delay of 30 minutes.

Regardless of the operational state of the sauna system, the cabin lighting can be switched on or off at any time via the  button.

P1 12:00	
Temperature	90°C 
Auto-stop	5:59
Start-time	--:--

Preselection time

The switching time preselection function is a timer which allows you to automatically switch your sauna up to 24 h in advance or enable recurring automatic switching. Note: by disabled Safety the time pre-selection will be shown but cannot be programmed.

Single-even switching: Set start time up to 24 h in advance and press On/Off button shortly. A bell symbol will appear on screen.

Recurring switching: Set start time and press On/Off button >5 sec until the bell symbol on screen flashes.



Always make sure that there are no objects on the sauna unit before the heating process begins. Risk of fire!

Please note that the cabin requires some around 1 h to heat up. If, for example, you wish to start with your sauna bath at 18:00, we recommend to select 17:00 as your preselection time.

If you wish to start sauna manually set the "Start time" to "--:--". Note if "00:00" is entered, the sauna will start at 00:00! No manual switching is possible if the Start Time is set to any value.

In Stand-by

	P1	🕒	12:00
Temperature	90°C		
Auto-stop	5:59		
Start time	--:--		

MODE

	P1	🕒	12:00
Temperature	90°C		
Auto-stop	5:59		
Start time	--:--		



	P1	🕒	12:00
Temperature	90°C		
Auto-stop	5:59		
Start time	--:--		

MODE

	P1	🕒	12:15
Temperature	90°C		
Auto-stop	5:59		
Start time	--:--		



	P1	🕒	12:15
Temperature	90°C		
Auto-stop	5:59		
Start time	--:--		

MODE

In operation

	P1	🕒	12:00
Temperature	90°C		
Auto-stop	5:59		
Start-time	--:--		

MODE

	P1	🕒	12:00
Temperature	90°C		
Auto-stop	5:59		
Start-time	--:--		



	P1	🕒	12:00
Temperature	90°C		
Auto-stop	5:59		
Start-time	--:--		

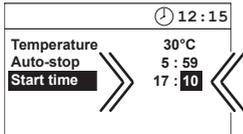
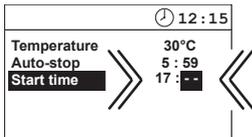
MODE

	P1	🕒	12:15
Temperature	90°C		
Auto-stop	5:59		
Start-time	--:--		

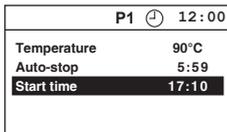


	P1	🕒	12:15
Temperature	90°C		
Auto-stop	5:59		
Start-time	--:--		

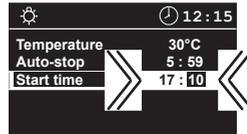
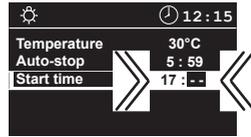
MODE



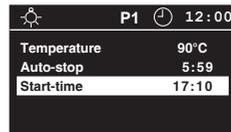
MODE > 3 sec.



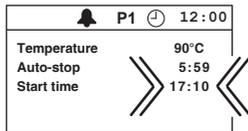
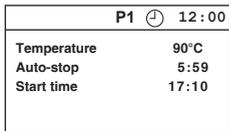
15 sec. /



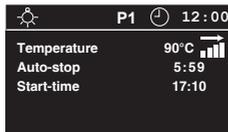
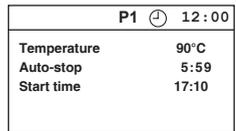
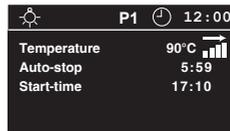
MODE > 3 sec.



15 sec. /

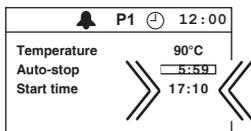


At the selected time

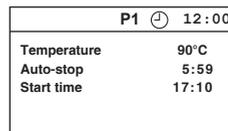
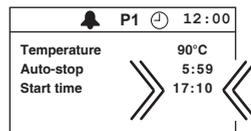
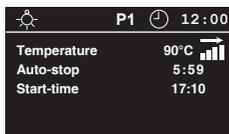


Deactivate the time preselection

Activate the time preselection



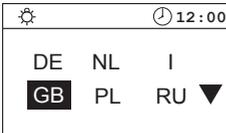
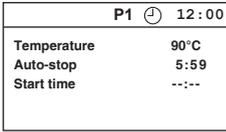
Zur vorgewählten Zeit



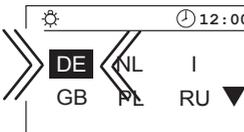
If the sauna unit is to be used without preselection time, "--:--" must be entered in the display under preselection time.

Advanced settings

Change language



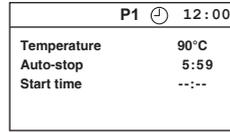
MODE



MODE > 3 sec



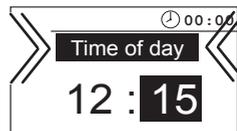
Change time



MODE



MODE



MODE > 3 sec

Switching between °C and °F

You can select between °C or °F display if you switch the controller off and then switch it on again while holding the button  pressed.

P1  12:00	
Temperature	50°C
Auto-stop	5:59
Start time	--:--



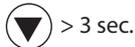
P1  12:00	
Temperature	122°F
Auto-stop	5:59
Start time	--:--

Switching user profiles (P1-P4)

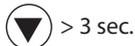
You can select between user profiles by pressing the  button for > 3 sec.



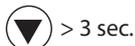
P1  12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--



P2  12:00	
Temperature	40°C
Auto-stop	5:59
Start time	--:--



P3  12:00	
Temperature	75°C
Auto-stop	5:59
Start time	--:--



P4  12:00	
Temperature	60°C
Auto-stop	5:59
Start time	--:--

The 4 changeable cabin configurations (P1-P4) allow different settings of temperature in dry mode.

The heating time limitation and the start-time is the same for all.

Factory setting:

P1 target temperature dry (Finnish): 90°C

P2 target temperature dry (Finnish): 40°C

P3 target temperature dry (Finnish): 75°C

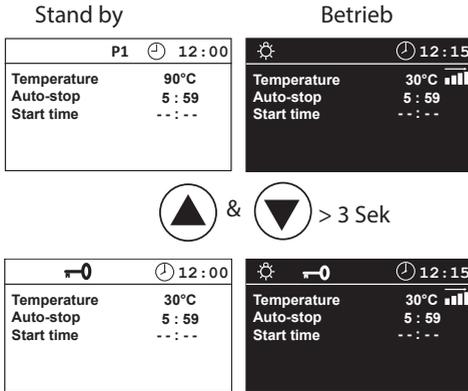
P4 target temperature dry (Finnish): 60°C

The programs P1-P4 can be individually adapted as described in settings: temperature and humidity.

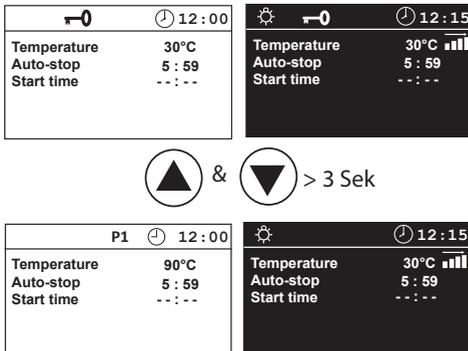
Activate / deactivate the child lock

If the child lock is activated (the key symbol is visible in the top section of the display) only the cabin lighting can be switched. All other buttons are without function. The child lock can be activated / deactivated in Stand-by as well as in operation. The unit can still be switched off when in operation.

Activate



Deactivate



Activate / deactivate the Safety

(only with existing safety system)

If Safety is not activated, neither the one-time preselection time, nor the daily preselection time functions (displayed, but not adjustable).

The control can be switched off via ON / OFF switch.

Activate



Deactivate



Activate / deactivate the Life - Guard

Life - Guard is a settable relatively short time, e.g. 20 minutes, after which the sauna unit is switched off, except for the cabin lighting. After this time has expired the unit can be switched on again by pushing the **MODE**-button for the set time.

Activate

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

MODE & 

12:15	
Time of day	
12:15	



12:15	
Life - Guard	<input type="checkbox"/>

MODE

12:15	
Life - Guard	<input type="checkbox"/>



12:15	
Life - Guard	<input checked="" type="checkbox"/>

MODE > 3 Sek

12:00	
Temperature	30°C
Auto-stop	5:59
Start time	--:--
Life - Guard	20 min

Life Guard activated

Deactivate

12:00	
Temperature	30°C
Auto-stop	5:59
Start time	--:--
Life - Guard	20 min

MODE & 

12:15	
Time of day	
12:15	



12:15	
Life - Guard	<input checked="" type="checkbox"/>

MODE

12:15	
Life - Guard	<input checked="" type="checkbox"/>



12:15	
Life - Guard	<input type="checkbox"/>

MODE > 3 Sek

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--

Life Guard deactivated

Life-Guard

Here you can set a short period of time after which the sauna will be automatically switched off (interrupted) and may be immediately restarted for the same period of time by pressing the **MODE** button.

For example, set up 15 minutes.

If you do not press the button again after 15 minutes, the sauna heater will switch off. After completed confirmation, it will run again for 15 minutes, etc.

The setting of the „Life-Guard“ time may be made only in stand-by mode. The „Life-Guard“ function must be activated in the basic set-up menu and shown on the display.

In stand-by

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	20 min

MODE

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	15 min

15 sec /  > 3 sec

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	15 min

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	15 min

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start-time	--:--
Life - Guard	15 min



P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	20 min

MODE

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	20 min

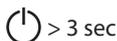


P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	15 min

MODE

Switching on the sauna unit with Life - Guard

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	20 min



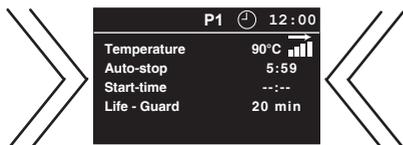
P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start-time	--:--
Life - Guard	20 min

The sauna heater will now heat normal, without „Life - Guard“-time. To activate the function „Life - Guard“.

MODE

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start-time	--:--
Life - Guard	20 min

After the „Life - Guard“ - time has expired, the sauna heater is switched off and the entire display blinks.



Restart

MODE

P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start-time	--:--
Life - Guard	20 min

or switch off the system



P1 12:00	
Temperature	90°C
Auto-stop	5:59
Start time	--:--
Life - Guard	20 min

Note:

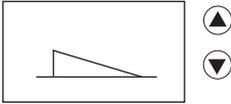
In the Life-Guard mode, no changes can be made to the temperature if the device is operational (active heating).



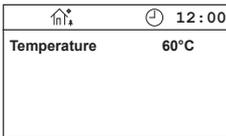
Holiday home mode

The holiday home mode allows the control system to be blocked so that only the most essential functions are visible and can be set. The menu language must be selected every time before use.

The holiday home mode is activated and deactivated by keeping the keys Up+Down pressed whilst activating the system via the Switch-Off.

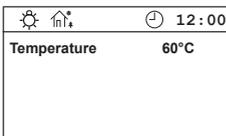


This setting is saved permanently. When the holiday home mode is active, a house symbol is permanently visible in the display.



The control system functions as follows in the holiday home mode:

- The language is queried every time the control system is activated or when the system returns from the energy saving mode
- The pre-select time, life-guard, auto-stop and child lock are not available
- The configuration menu with the time, language, fan setting and life-guard is not available
- Only the temperature can be set, and the light activated



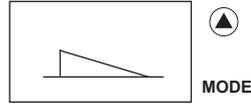
Holiday park mode

Symbol flashes

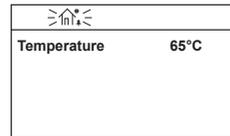
In the holiday park mode, all functions are deactivated apart from Sauna and Light (On/Off).

None of the settings, such as language, temperature, auto-stop, are available.

The holiday park mode is activated and deactivated by keeping the keys Up+Mode pressed whilst activating the system via the Switch-Off.

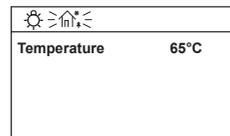


This setting is saved permanently. The house symbol in the display flashes when the holiday park mode is active.



The control system functions as follows in the holiday park mode:

- All values must be set before the holiday park mode is activated
- The pre-select time, life-guard, auto-stop, child lock and holiday home mode are not available
- The configuration menu with the time, language, fan setting, light setting and life-guard is not available
- The temperature cannot be set
- Only the Sauna On/Off can be set, and the light activated



Heating time limitation

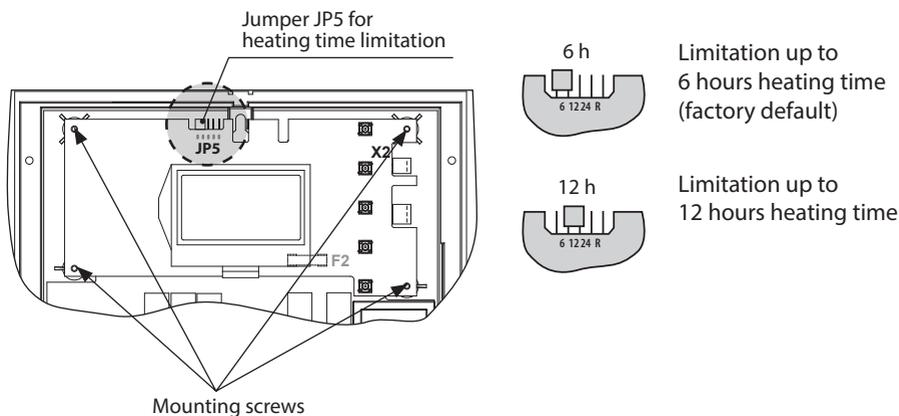
The maximal heating time may be set with a jumper on the display printed circuit board to 6 or 12 hours or to unlimited operation time. The jumper is located at the top edge of the board as shown below. To set the jumper you will need to use tweezers or fine pliers. Alternatively you may also take the board out of the housing by removing four mounting screws.

Notice for sauna: Heating time above 6 h is only permitted for certain commercial sauna cabins and may be restricted by the local legal regulations.

Once the maximal heating time has been set the user will be able to select the heating time up to the defined limitation.

 Such work may be carried out exclusively by an expert. Prior to any kind of work disconnect the control unit from the power supply on all phases. (Switch off main switch, or trip the ground circuit breaker). **Risk of electric shock!**

Loosen the four screws on the opened unit that hold the circuit board.



Attention!

Make sure to disconnect the control from power before changing the heating power limitation. Setting the heating time limitation without disconnecting the power may damage the electronic.

Device fuses

The control unit is fitted with two protective fuses which are mounted on the main relay board of the unit. These fuses protect the electronics on the board and the light and fan outputs.

Notice: fuses do not mean absolute protection, in an unlikely case of a power surge or a short circuit with particularly fast voltage increase the electronic components may be still be affected.

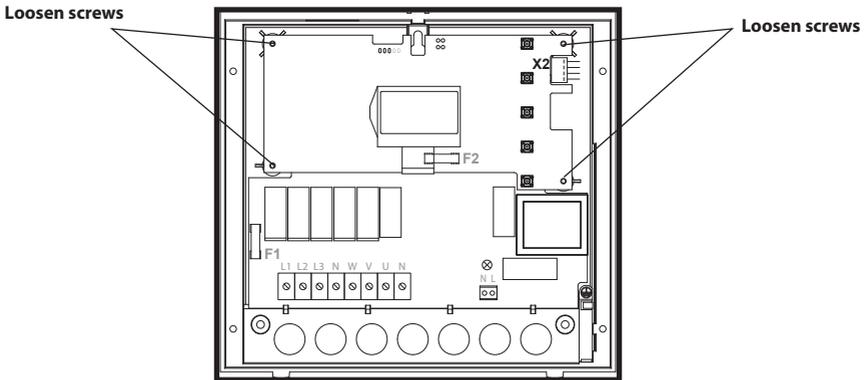
Unit fuses

F1 = T 2A H 250V Fuse electronics primary and light (*fan, if available)

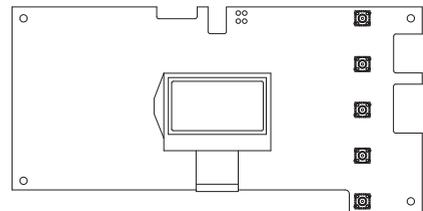
F2 = T 315 mA L 250V Fuse of the electronics secondary

! Only allow a specialist to carry out this work. Before working on the open control unit, disconnect all poles from the mains. (Switch off the master switch, or trigger the FI switch). **Risk of an electrical shock!**

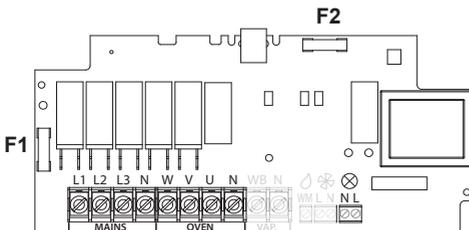
Loosen the four screws on the opened unit that hold the circuit board.



Display PCB



Relais PCB*

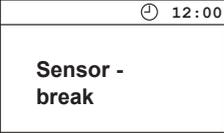
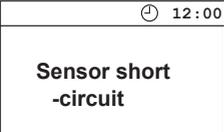
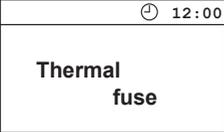


*) specific layout of the board and its components may vary slightly from model to model.

Error messages

The control unit continuously monitors the sensor for short circuits and interruptions.

The error messages appear as follows:

Display	Cause	Remedy
 <p>⌚ 12:00</p> <p>Sensor - break</p>	<p>= interrupted room sensor circuit The temperature sensor (KTY) is faulty, or the line to the temperature sensor is interrupted.</p>	<p>Arrange for a specialist to check the lines and KTY. KTY at 20°C approx. 1.9 kΩ replace if necessary.</p>
 <p>⌚ 12:00</p> <p>Sensor short -circuit</p>	<p>= short-circuit in the room sensor circuit temperature sensor (KTY) is faulty, or the line to the temperature sensor has a short circuit.</p>	<p>Arrange for a specialist to check the lines and KTY.</p>
 <p>⌚ 12:00</p> <p>Thermal fuse</p>	<p>= interrupted limiter circuit The temperature fuse (139°C) has triggered or the line to the temperature fuse is interrupted.</p>	<p>Arrange for a specialist to check the lines and temperature fuse.</p>

The device „Switch-off“ switch

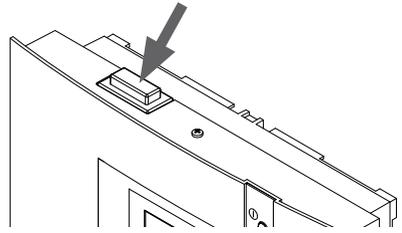
The control unit is equipped with a “Switch-off” rocker switch.

You will find this switch on the top side of the housing by Econ series control units.

This switch allows to switch the control unit to the standby mode (notice the heating will not start), to switch the control unit completely off (disconnect from power) or to switch the control unit off but to leave the light switched on.

Notice: if you leave the Econ control units switched off for more than 24 h the time setting will be lost. Other settings will be saved. You will have to repeat setup and re-confirm the settings.

Switch-off rocker



Note!

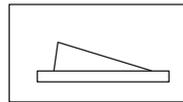
When switching the switch-off rocker from Pos. I to Pos. II, you will be at the intermediate position 0 for approx. 1s.



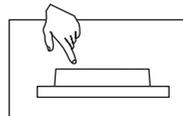
Attention! Parts of the printed circuit board will still remain energized in the switched off condition! Risk of electric shock!

Switch setting 0

Press the switch on the lower side of the rocker to the first latch (**switch setting 0**). The switch will be in the middle position. The unit is now completely switched off (disconnected).



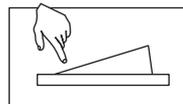
Device switched on.
(default Position I)



Device switched off
(completely);
Position 0.

Switch setting II

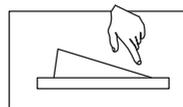
To turn the light on in the cabin while the unit is still disconnected (for maintenance and cleaning) push the left side of the rocker to the second latch (**switch setting II**).



Light enabled;
Device switched off.
Position II.

Switch setting I

To make the unit ready for operation, switch back to the initial position (**switch setting I**). The unit will return to stand-by mode.



Device switched on.
Position I.

Reset control to factory settings:

Restart control via the switch-off rocker and keep the buttons **MODE**, ,  pressed. After the appearance of the picture, press the keys **MODE**,  for > 3 sec.

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Recycling

Devices or lighting elements that will not be used any longer have to be handed in at a recycling station according to regulation 2012/19/EU. Do not dispose it with the normal household waste.



Service Address:

EOS Saunatechnik GmbH
Schneiderstriesch 1

35759 Driedorf, Germany

Tel: +49 (0)2775 82-514

Fax: +49 (0)2775 82-431

servicecenter@eos-sauna.de

www.eos-sauna.de

Please retain this address together with the installation guide for further references.

To help us answer your questions quickly and competently please provide the information printed on the type shield including the model, item no. and serial no., in all inquiries.

Equipment commissioning date:

Stamp and signature of the authorized electrician:

General Terms and Conditions of Service

I. Scope

Unless otherwise agreed in writing in a specific case, these terms and conditions of service shall apply to service operations, including examining and repairing complaints. All our existing or future legal relationships shall be governed solely by the following terms and conditions of service. Our recognition of any conflicting terms and conditions of the Ordering Party shall be conditional upon our having given our express written consent to their applicability. We hereby expressly object to any terms and conditions of the Ordering Party contained in its General Terms and Conditions of Business or order confirmation. If order confirmations or deliveries are accepted without reservation, this shall not be deemed to constitute recognition of such terms and conditions. Any ancillary agreements or amendments must be confirmed in writing.

II. Costs

The Ordering Party shall bear the following costs in connection with the service operation:

- De-installation/installation and electrical works (connection / disconnection).
- Transportation, postage and packaging.
- Function testing and troubleshooting including inspection and repair costs.

There shall be no third-party billing.

III. Obligations / Ordering Party's cooperation

The Ordering Party shall provide free-of-charge assistance to the manufacturer in carrying out the service operation.

In the case of a warranty claim the manufacturer shall provide the required replacement parts to the Ordering Party free of charge.

IV. Service visit by the manufacturer

In the event that it is essential that a manufacturer employ carry out the service operation on site, this must be agreed in advance. Where the main reason for the service call is not the fault of the manufacturer, any costs incurred shall be recharged to the Ordering Party after the service visit and shall be paid as per agreed payment terms.

V. Liability

The manufacturer shall assume liability in accordance with the currently applicable statutory regulations. The packaging for all of our products is designed for the shipping of individually packed goods (pallet). We expressly

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

VI. Manufacturer's Guarantee

The manufacturer's guarantee shall apply only in the event that installation, operation and maintenance have been carried out in accordance with the manufacturer's specifications contained in the installation instructions and instructions for use.

- The guarantee period shall commence from the date on which proof of purchase is provided and shall be limited, in principle, to 24 months.
- Guarantee services shall be performed only if the original proof of purchase relating to the equipment can be presented.
- Any and all guarantee claims shall become void if modifications are made to the equipment without the manufacturer's express consent.
- Any guarantee claim shall likewise become void in the case of defects that arise due to repairs or interventions made by unauthorized persons or due to improper use.
- In the case of guarantee claims, the serial and article numbers must be indicated together with the product name and a meaningful description of the fault.
- This guarantee shall cover defective equipment parts, with the exception of usual wear parts. Wear parts are, among others, lamps, glass parts, heating elements and sauna stones.
- Only original replacement parts may be used within the warranty.
- Service visits by outside companies shall require a written order to be issued by our service department.
- The equipment in question shall be sent to our service department by the Ordering Party and at its expense.
- Electrical installation and connection works in the event of service or replacement shall be carried out at the Customer's expense and shall not be borne by the manufacturer.

Complaints in respect of our products shall be reported to the responsible authorized dealer and shall be exclusively handled via the latter.

The manufacturers General Terms and Conditions of Business, which can be found at www.eos-sauna.com/agb, shall apply in addition to the foregoing terms and conditions of service.

As of 08/2018