



saunum

Saunum Sauna Control Unit **Leil**

V_25_09.1

INSTRUCTIONS FOR USE AND INSTALLATION



THE BEST SAUNA EXPERIENCE TO HAVE!



I am very glad that you have invested in the Saunum device, and I believe that our innovative technology will offer you a wonderful and extraordinary sauna experience.

I have a degree in thermal engineering and come from the Southern Estonia, where my love for saunas began. The special feature of local historic smoke saunas is the lower temperature and higher humidity level than, for example, a classic Finnish sauna. In ordinary saunas, the stone volume of the sauna heater is generally small. Such an arrangement can cause a sudden, burning hot steam and an extremely uneven temperature, where your head and shoulder level is really hot, but your feet are left cold. Such an experience can be quite unpleasant and may cause headaches and lead to body stress. However, in ancient smoke saunas and Native American saunas, the stones were first heated during the day. Then the heat stored in the stones was used to cleanse the body and create a truly enjoyable sauna experience.

Inspired by the experience of a smoke sauna, I wanted to create an innovative solution that combines the best features of an authentic sauna with modern technology; enabling a pleasantly mild and relaxing sauna experience without painfully scorching steam. For that, however, I had to solve the problem of how to achieve an even temperature, at both the head and foot levels. My development work was supported by research done alongside Tallinn University of Technology,



in which we analysed the thermal stratification and air movement in the sauna room. Saunum was born in cooperation between scientific thinking and technological innovation.

Saunum's unique patented mixing system of air layers captures the hot steam that rises under the ceiling of the sauna room, mixes it with the cooler air from the surface of the floor, and directs the milder steam back evenly. This makes for an enjoyable, unaggressive heat. You can sit in the sauna for a longer time, and enjoy a sweat and a deep cleanse without feeling tired. The stone volume of our heaters is significantly larger than other sauna heaters, which is the reason for the especially pleasant indoor climate with long and soft steam.

A moist steamy sauna, a sanarium, a therapeutic salt sauna, or a healthy aroma sauna – all of these functions are available on Saunum's devices to create a truly relaxing sauna experience. When using Himalayan salt balls in our device, salt ions that are beneficial to skin and respiratory tract evaporate and the steam circulates these into the air. Adding a sauna aroma system that blends steam and healthy aroma oil creates an even more enjoyable sauna environment.

Saunum's sauna devices are suitable for both adults and children.

Have a pleasant sauna!

Andrus Vare
The creator of Saunum



Saunum **congratulates you**
on choosing an innovative
sauna control unit!



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All users of this product must read the warnings and manual carefully before using the product! Failure to follow the instructions could result in personal injury, death, fire, and/or property damage, and the device's warranty may be voided.

The control panel is meant for controlling the sauna heater and the functions intended for the control unit set.

It is not to be used for any other purpose!

This device should not be used by children, people with reduced mobility or sick people. Children should use the device only under constant and close adult supervision.

Persons with reduced physical, sensory, or mental capabilities, or persons with a lack of experience and knowledge, should use this device only under constant and close adult supervision and only after consulting with a physician.

Before using sauna, all users should consult with a physician to ensure that they have no health conditions that would make sauna bathing unsafe, and discuss time and temperature limitations. Pregnant women should consult their physician before the use of the sauna. Excessive body temperatures have the potential to cause fetal damage during early pregnancy.

Use of drugs, medication, or alcohol before or during the sauna session may lead to dizziness or unconsciousness, resulting in injury or death. No person should use this product while under the influence of alcohol or drugs. Persons taking medications should consult with their physician to ensure that it is safe to use sauna while taking their medications. Users should place a towel between their skin and sauna bench or wall while sitting or lounging in the room. When using the sauna, be aware of the dangers associated with going to the sauna. Do not stay in the sauna room for more than 30 minutes at a time.

Prolonged exposure to steam can be harmful or fatal. Users should discontinue using



the sauna if they feel light-headed, dizzy, or experience heat exhaustion. It is prohibited to sleep inside the heated sauna. Users should take care to avoid falling asleep while using the sauna.

The electrical device should only be connected to the power and/or utilities in accordance with all laws and regulations by a licenced, professional, certified electrician.

After connecting and installing the control unit set, the installer must inform the sauna owner or operator of all operating requirements.

The requirements for use must be given by the owner or operator to everyone who uses the sauna.

All maintenance other than regular surface cleaning of the product must be performed by a trained professional.

Always disconnect the device from the power and/or utilities before carrying out any maintenance work!

- Check the control unit set for visible damage before installation and use. Do not use a damaged device or a device that has been modified from the original manufacturer's condition in any way.

- It is vital to install the device according to the instructions for installation and use. Failure to carefully follow all instructions can cause the risk of fire or short-circuit, leading to property damage, bodily injury, or death.

- No accessories that the manufacturer has not approved should be installed in this device. If suitable accessories are installed in the device, follow the accessory-specific operating and installation instructions!

- If the supply cord is damaged, it must be replaced by the manufacturers' service partner or a similarly qualified licensed, professional, certified electrician to avoid a hazard.

- Clean the control panel by using a lightly moistened cloth. Use only mild cleaning agents, never solvents or corrosive chemicals. Allow the product to dry thoroughly before operation.

- This product should not be disposed of with general household waste. When recycling your product, take it to your local collection facility or contact the place of purchase.



USING THE HEATER AND INSTRUCTIONS FOR BATHING

- Always check before heating that there are no objects on the heater or near the heaters safety distance described in the heaters manufacturers manual.
- Always check that the heater has switched off and stopped heating after the on-time period has elapsed.
- In public saunas, where the heater is used continuously for longer than the heater timer or the control unit allows for in the factory settings, the device must only be used under constant adult supervision by a person not using the sauna while performing the supervision.
- When the control unit is set to standby mode for remote control or switching, it must be ensured in advance that there are no objects in the sauna room or on the heater that do not match the safety distances specified in the heater manufacturer's instructions.
- According to the product UL standard regulating electrical sauna heaters, the control unit can be used to remotely control the heater once the heater or sauna room door is equipped with a safety switch (door sensor).
- Prolonged sauna use can damage your health or cause death.
- Do not stay in the sauna room for more than 30 continuous minutes (in a row).
- Leave the sauna room if you feel sleepy, dizzy, or weak.
- Do not dry objects or living things in the sauna.



USING THE HEATER WITH THE CONTROL PANEL

The heating elements will automatically turn off when the sauna room reaches the temperature selected on the control panel.

The control unit set will automatically turn the heating elements on and off to maintain the desired temperature.

The heater will turn off when the set time ends, the "Stop" button is pressed, or an error occurs.

CONTROL PANEL SET

- Controls the sauna temperature and the speed of the Saunum sauna climate device.
- Enables three pre-set sauna types that can be changed and update by the sauna owner.
- Enables the user to select a time for the sauna to be ready for entry and enjoyment.
- Shows notification when the sauna is ready – screen notification. Using the Saunum App, and on the mobile app.
- Languages.
- Touch screen.
- Screen lock / Child lock.
- Overheating protection.

- The desired functions can be selected from the intuitive screen, the numerical values displayed in red can be changed.
- Remote control – with the Saunum mobile app.

Devices with in-app support enabled can also be controlled and configured via a mobile phone.

The remote control of the heater can be used only when a safety door sensor has been installed (according to the product UL standard regulating electrical sauna heaters).

The heater can only be switched on remotely when the door is closed. If the circuit is open, the heater will not start.

After completing of the control unit set, the installer should give this manual to the owner of the sauna. The product owner should provide access to the manual to all persons using or operating the sauna. Please read more instructions for installation, use, and recycling in the original user manual of the control unit. Saunum reserves the right to modify this manual from time to time, and modifications will be posted to www.saunum.com. Failure to follow the instructions could result in personal injury, death, fire, and/or property damage, and the device's warranty may be voided.



CONTROL PANEL SET

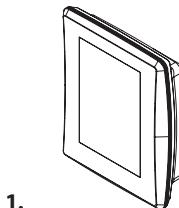
The Saunum Leil sauna control panel set consists:

- 1. control panel**
- 2. power unit**
- 3. temperature sensor**
- 4. door sensor**
- 5. temperature sensor and control panel wires**

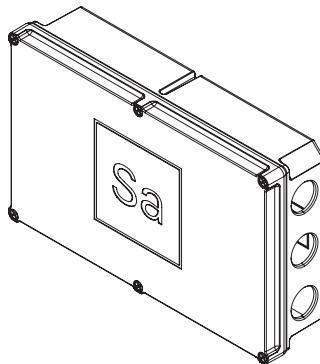
Using the Leil control panel, you can preset the desired temperature, date, and time, switch the heater on and off, and control the fan speed of the Saunum sauna climate device.

The sauna room temperature is regulated based on data measured and transmitted by the temperature sensor.

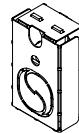
The sensor is equipped with an overheat protection feature and is located inside the temperature sensor housing (see p. 19).



1.



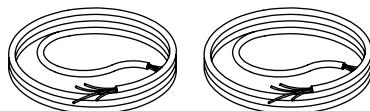
2.



3.



4.



5.



INDICATORS

	"Sauna ready" starting time		Value increase
	Temperature		Value decrease
	Sauna duration		Repeat sauna session
	Ventilator		
	Ventilator speeds		
	Light		
	Heater power kW	1. Menu	
	Glass surface volume	2. Light	
	Sauna room volume	3. Time	
	Screen lock / Child lock	4. Heater state	
	Move to next view	5. Wi-Fi connection	



TECHNICAL DATA

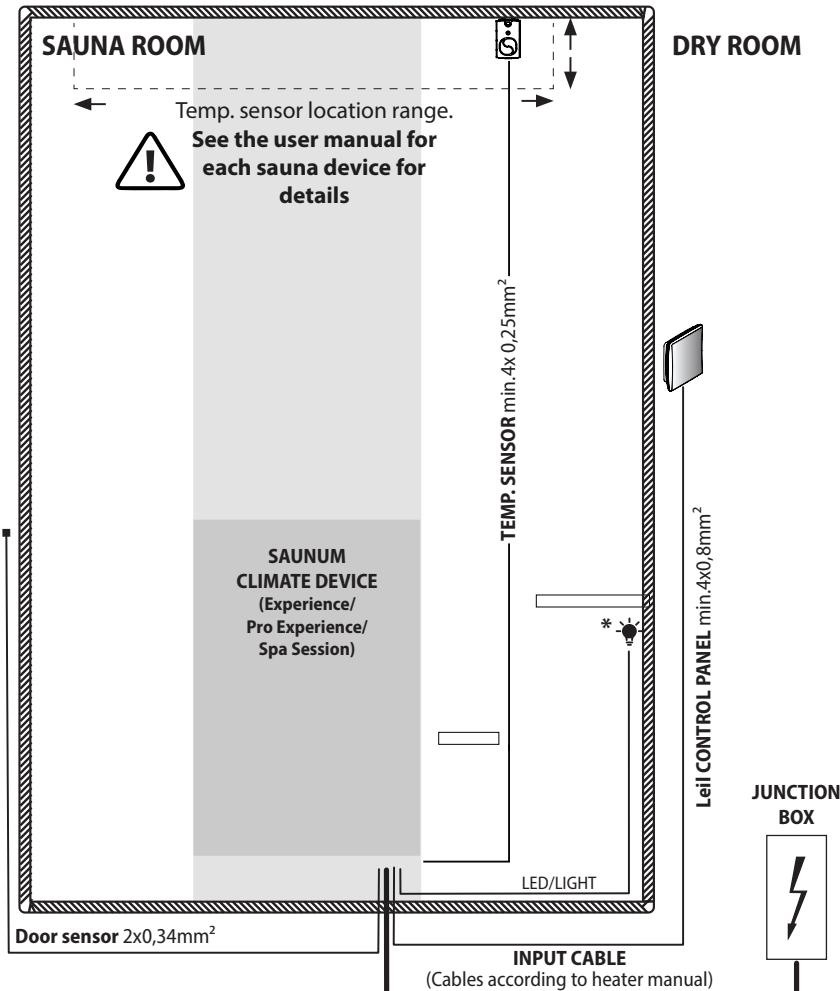
CONTROL PANEL (IP20):

- Temperature adjustment range: 40–90 °C.
- Pre-setting the schedule for the week.
- Allows you to set the heater operating time: up to 6 hours in a private sauna, up to 12 hours in a public sauna.
- For longer operating times, consult the importer/manufacturer.
- Saunum climate device fan three-speed control.
- Dimensions: 20 × 85 × 105 mm.
- Working temp. range: -30 °C to +80 °C.



POWER UNIT (IP44):

- Supply voltage: 400 V 3N~.
- Heater power rating up to 9 kW / 12 kW (16 A / 20 A).
- Dimensions: 61 × 160 × 225 mm.
- Safety device: overheat protector.



*The ability to turn on the light from the Leil control device.
Light not included.



ELECTRICAL CONNECTIONS

The connection of the power unit is shown on the diagram of electrical connections.

For more information on connecting the heater, see the heater installation and operating instructions.

If the connection and installation cables are located higher than 1,000 mm from the sauna room floor or routed inside the walls, they must be rated to withstand temperatures of at least 125 °C (e.g., SSJ-type cables). Electrical equipment installed in the sauna room below 1,000 mm from the floor must be rated for at least 90 °C (e.g., T125-class components).

RECOMMENDED CABLE DIAMETERS

Temperature sensor - thermal protection
(silicone or other heat-resistant material rated for at least 140 °C):

min 4 x 0,25 mm

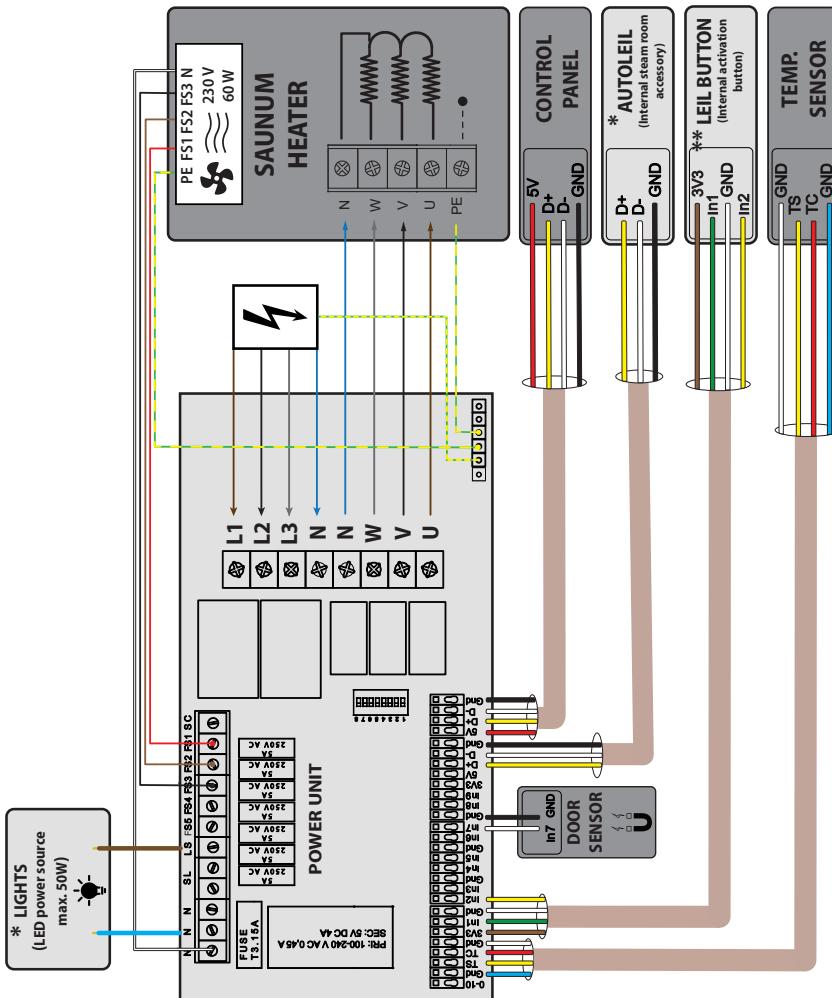
Control panel (a ferrule extension sleeve is required for stranded cables):

min 4 x 0,8 mm²

Door sensor cable: min 2 x 0,34 mm²



CONTROL UNIT



* The power supply for LED lights (max 50W) must be equipped with an inrush current limiter.

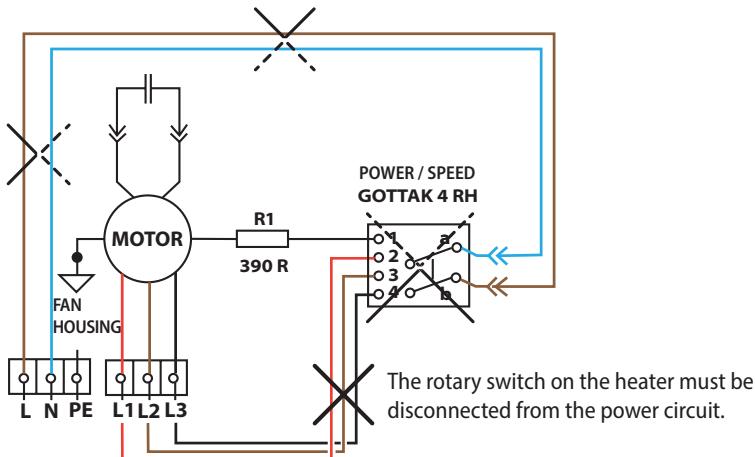
For loads exceeding 50W, the circuit must be used for switching purposes only.

** AutoLeil and Leil button are sold separately

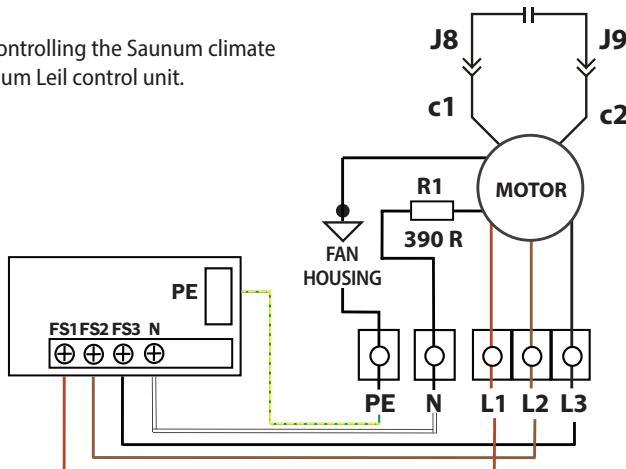


WIRING DIAGRAM FOR PRIMARY OR PREMIUM HEATER

Electrical wiring diagram for Primary or Premium heater for controlling fan speeds with the Leil device.



Wiring diagram for controlling the Saunum climate device with the Saunum Leil control unit.



The controller connection is shown in the wiring diagram. For additional information on connecting the heater, see the heater installation and user manual.



INSTRUCTIONS FOR INSTALLATION

WARNING! Failure to install the product in accordance with all instructions herein will void the warranty. It can result in the risk of fire and/or electrical short-circuiting, leading to property damage, bodily injury, or death.

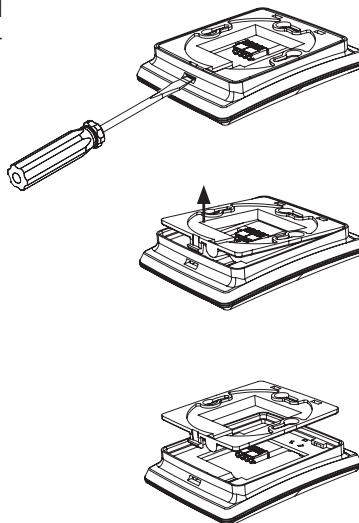
A licensed professional electrician may only do the installation of the control unit in accordance with current regulations. The person in charge of the installation should provide the necessary training and return the user manual to the product owner after completing the installation. The product owner should provide access to the manual to all persons using or operating the product.

INSTALLING THE CONTROL PANEL

For concealed installation, the data cable can be installed in a protective tube with a diameter of 1/2 in. inside the wall; if this is not possible, it must be installed on the wall surface.

The control panel must be installed on the wall outside of Sauna Room, in a place protected from water splashes. Has to be inside protective enclosure when outdoor.

1. Remove the wall mount from the device.



INSTRUCTIONS FOR INSTALLATION

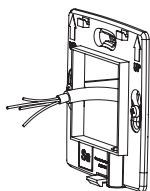
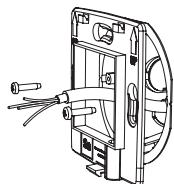
ENG



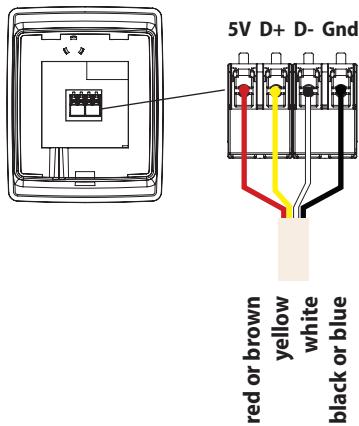
2. Thread the data cable through the hole in the wall mount and fasten the wall mount to the wall with screws.



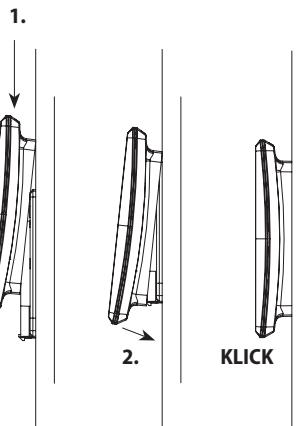
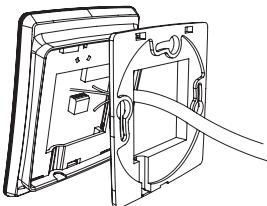
min 4 x 0,8 mm



3. Connect the data cable to the Leil panel connector.



4. Press the Leil control panel into the wall mount.





INSTALLING THE DOOR SENSOR

For the wiring diagram of the door sensor cable to the controller box, see page 15.

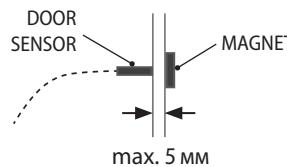
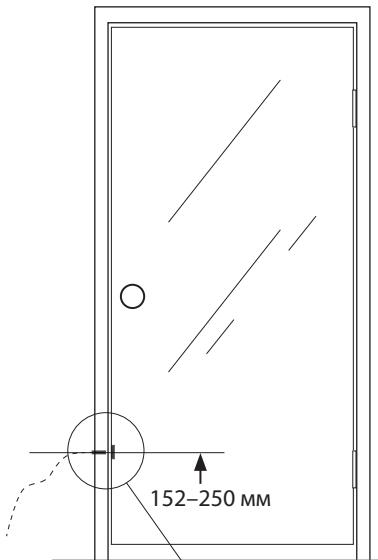
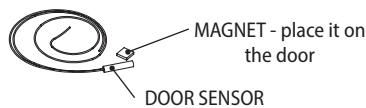
The door sensor is a magnetic switch that is attached to the door frame of the sauna room.

When the door is closed, the circuit of the door sensor closes, allowing the sauna control unit to operate.

When the door is opened, the door sensor circuit is broken, and it is not possible to switch on the heater.

The door sensor consists of two components: a magnetic sensor and a permanent magnet.

- Connect the cable to the sensor wires.
- Attach the magnet to the door using double-sided tape. It must allow the door to close and be positioned close to the door frame.
- Attach the sensor to the door frame, aligning the sensor and the magnet when the door is in the closed position.
- The maximum gap between the sensor and the magnet when the door is closed must not exceed 5 mm





INSTALLING THE TEMPERATURE SENSOR



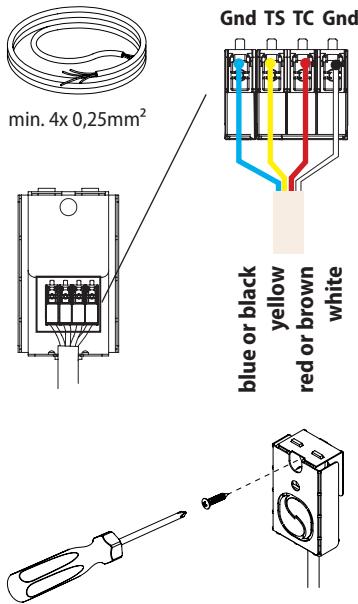
To install the temperature sensor/ overheating protection, proceed as follows.

- Connect the cable to the temperature sensor's plugs.
- Screw the temperature sensor onto the wall (see figure).
- The temperature sensor cannot be placed above the heater. See the user manual for each **Saunum climate device** for details.

The temperature sensor can't be any air opening (ventilation, door, or window).

The airflow near an air vent cools down the sensor, giving the control unit inaccurate temperature readings.

As a result, the heater might overheat.





Leil control panel is displayed "THERMAL CUTOFF" - the thermal protection of the temperature sensor and/or Saunum climate device has been activated. This results in the fan and device shutting down for safety reasons.



Airflow near a ventilation opening may cool the sensor, which can result in the control unit receiving incorrect temperature readings. This may lead to overheating of the heater.

The sensor housing includes a temperature sensor and a thermal cutoff fuse. The temperature sensor detects the sauna room temperature. If overheating occurs, the thermal protection disconnects the power supply to the heater. The cutoff fuse can be manually reset.

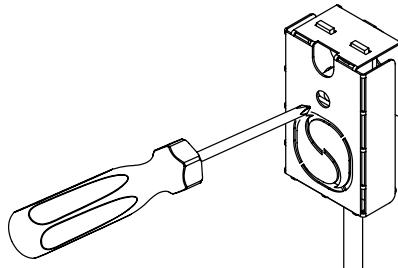
To restart the device:

Cool the sauna room down by approx. 20 °C for 5–10 minutes by keeping the sauna door open. Then reset the safety switch by pressing the brown reset button on the sensor until you hear a click.

NOTE! The cause of the shutdown must be identified before attempting to reset the system.

NOTE! The location of the device safety switch is shown in the device manual.

NOTE! After resetting the safety switch, restart the device to resume operation.

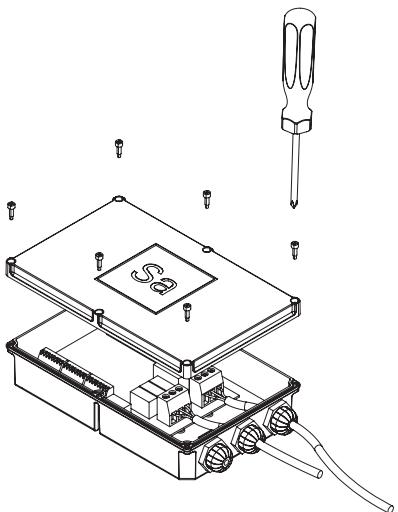




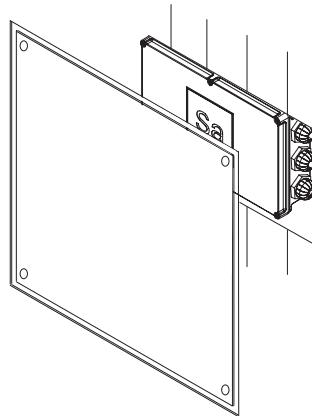
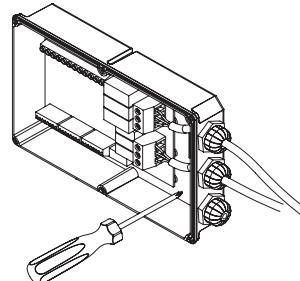
INSTALLING THE POWER UNIT

The installation spot must be dry, and its temperature must not exceed 40 °C.

1. Open the cover of the power unit.

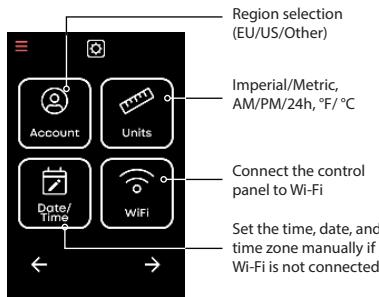


2. Drill holes in the case and attach the power unit to the wall or electrical panel.

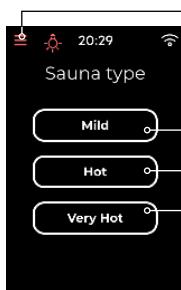




CONTROL PANEL VIEWS



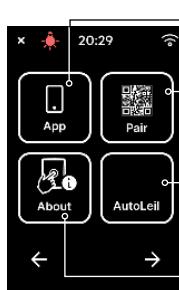
Views 3



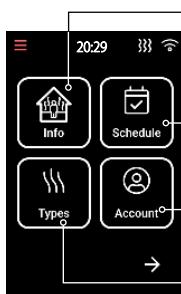
Menu

Preset sauna types in quick selection (see p. 26)

Views 1



Views 4



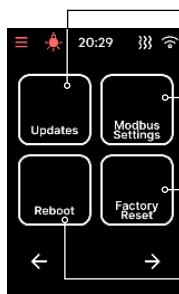
Sauna room and climate device information (see p. 25 "Entering sauna data")

Set automatic start time and day for sauna session (see p. 28).

User password and child lock

Create up to 3 custom sauna types for quick selection (see p. 27)

Views 2



Views 5



CONTROL PANEL INITIAL SETUP

! Saunum's Leil automation system is continuously developed to add new features that improve ease of use.

! All updates are announced by Saunum to customers, and an internet connection is required to download them.

To ensure the automation software stays up to date even if not permanently connected to Wi-Fi, a mobile phone internet hotspot must be used to access and download updates.

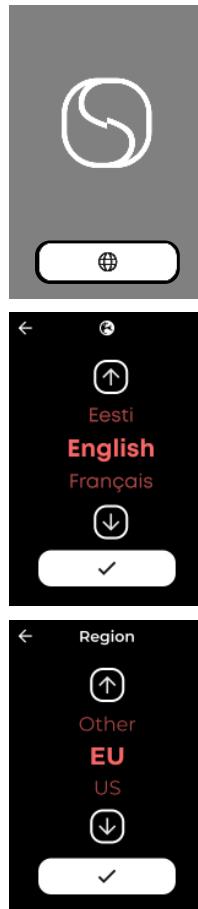
During the initial installation of the control system, internet access must be provided, and updates should be downloaded immediately.

The regional setting must be configured according to the region where the device is installed. The device is manufactured according to EU/US standards.

Saunum and its resellers are not responsible for any consequences resulting from the incorrect region selection.

1. When the device is started for the first time, the control panel will display "Setup".

To begin, select the language and region.





2. Connecting to Wi-Fi.

Select "Setup" -> "Connect Wi-Fi" -> choose a **Wi-Fi network** -> enter the password.

Note: For best compatibility, connect to a 2.4 GHz Wi-Fi network.



If you do not wish to connect the control panel to a Wi-Fi network, select "**Set up offline**".



The control panel must be installed in a location with a sufficiently strong Wi-Fi signal.

Check the signal strength at the installation site using your mobile phone, follow these steps:

- Turn off mobile data on your phone.
- Turn on Wi-Fi on your phone.
- If the Wi-Fi signal at the installation site is strong and other applications that require data are working, the connection is sufficient.

If the Wi-Fi signal is weak, try the following:

- Test the network connection of the control panel in a different location.
- If possible, relocate the Wi-Fi router to improve the connection to the control panel.

Wall materials, recessed installation of the control panel, and other factors may interfere with the Wi-Fi signal.

Tip! To improve network coverage, you can use a Wi-Fi range extender.

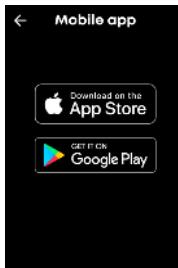
The Saunum Wi-Fi-enabled control panel is designed for controlling Saunum climate devices. To control sauna heaters from other manufacturers, please consult Saunum technical support.



3. Downloading the Saunum app.

With the control panel, it is also possible to:

- Set and monitor the sauna temperature.
- Switch on and set the speed for the Saunum sauna climate function.
- See the heater status information.
- Set a scheduled start.



The Saunum Mobile App is a mobile application that allows you to control the Saunum control panel remotely.

4. Opening the Saunum app download.

Scan the QR code on the control panel to open the Google Play or App Store page and download the Saunum app.

Then:

- Create an account using your email address.
- A verification code will be sent to your email.
- Enter the verification code to start using the app.



5. Pairing the Leil control panel with a mobile device

To pair the Leil control panel with your mobile device, scan the QR code displayed on the control panel.





6. Setting units



7. Setting the time zone.

The local time zone (UTC) configuration is required if the sauna control panel has been previously connected to the Wi-Fi network.

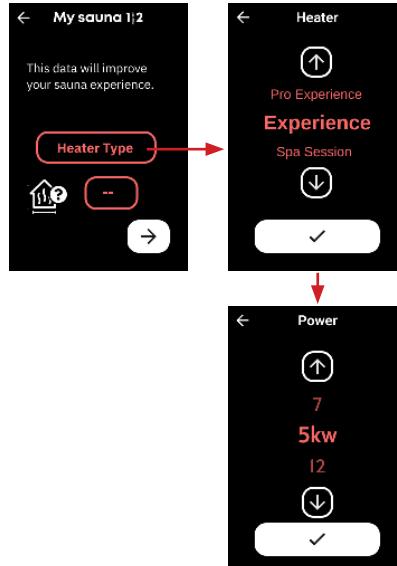


If the control panel is not connected to a Wi-Fi network, configure the settings manually.



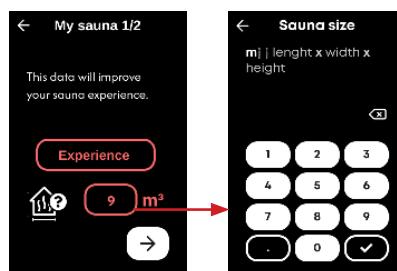
8. Entering sauna data:

Select the sauna climate device model and its power from the list.



9. Entering sauna data:

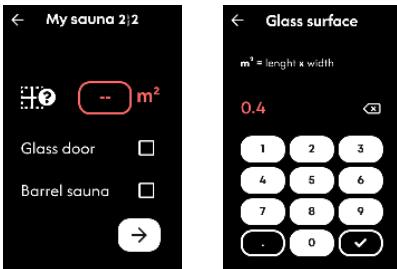
Set the size of the sauna room.





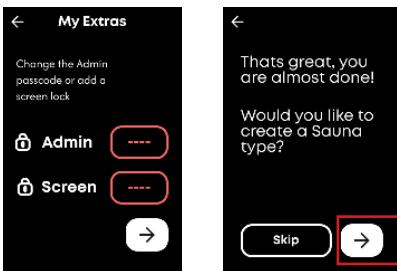
10. Entering sauna data:

Set the size of the glass surfaces in the sauna room. Glass surfaces affect the heating time, as glass does not retain heat as well as insulated sauna materials.



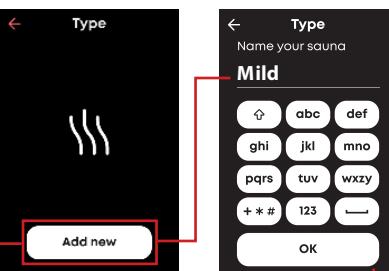
11. Setting passwords

Set a code to unlock the screen. This feature prevents children from turning on the sauna climate device. If you do not wish to enable the screen lock, press "Skip".

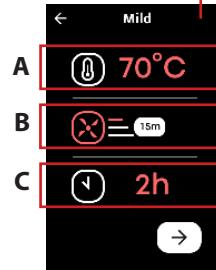


12. Creating a sauna type

You can set up to 3 custom sauna profiles by naming them and configuring the temperature, session duration (starting from heating start), and the fan speed and runtime of the sauna climate device. Presets allow you to start a sauna session with a single tap. The settings can be changed at any time, including during heating or while using the sauna.



12.1 Enter a name for the sauna session.



12.2 Set the session parameters: desired temperature (A), fan speed and duration (B), and sauna duration starting from heating (C).



SAUNA SCHEDULING

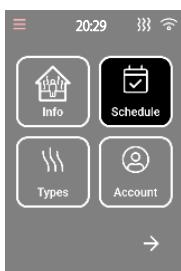
Saunum allows you to schedule a sauna in advance by setting up a weekly schedule.

⚠ Before setting up a scheduled sauna session, make sure there are no foreign objects on the sauna climate device's stones or within its permitted safety distance.

The safety distances are provided in the user manuals for the sauna climate device models.

⚠ Heating will not start if the sauna room door is open at the scheduled time.

1. Open the Menu "Schedule"

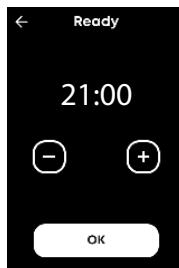


2. Set the desired day



Select the day and choose whether you want to repeat the same sauna session daily, weekly, or not at all.

3. Setting the time.



Set the time when you want the sauna to be ready on the selected day.

4. Setting the sauna type.



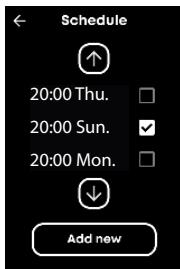
Select a suitable preset steam type (see p. 27) for the desired day and time.

If no steam types have been configured yet, you can choose from "Mild", "Hot", or "Very Hot". By default, the target temperature for these steam types is 80 °C, and the duration is 2 hours.



Once the desired settings are configured, press "Add Event".

You can add up to 10 schedules if needed.



Once you have paired the Leil control panel with your mobile device (see p. 25), the mobile app will notify you shortly before the scheduled heating begins.

To cancel the heating, select "Cancel". If not canceled, the heating will start as scheduled.

Once the target temperature is reached, it will be maintained for 30 minutes. After that, heating will stop unless manually confirmed.

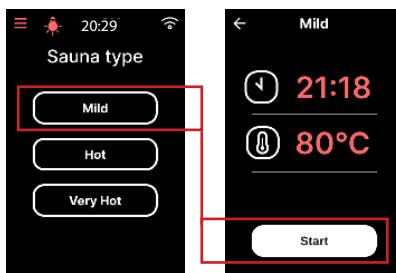
SAUNUM SAUNA CLIMATE DEVICE CONTROL FUNCTION

WARNING! Do not use the climate function (fan) during the heating phase, as it may prolong heating time and cause overheating.

Use the sauna climate device only during a sauna session. To prevent overheating, the climate system may also activate automatically. Do not leave the climate device running unattended!

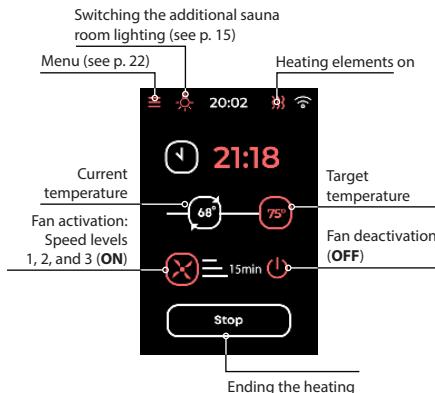
HEATING

To start heating the sauna, tap the control panel. If you have preset sauna types, they will be displayed. When you select one of the three available presets, a new window will open. Press "Start" to begin.

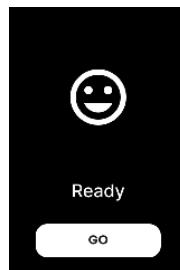




Sauna heating will start, and the screen will display the current sauna room temperature and the estimated time until the sauna is ready.



When the desired target temperature is reached, "Ready" will be displayed on the screen.



In the "Steam Type" window of an unconfigured control panel, the default options are "Steam Type 1", "Steam Type 2", and "Steam Type 3". Select the desired target temperature and press "Start". Fan speed and duration must be set manually once the target temperature is reached.



WARRANTY CONDITIONS

The Saunum warranty starts from the date of purchase and includes all manufacturer-provided parts of the control unit. The warranty covers faults from the manufacturing and materials only. Under this warranty, Saunum will provide replacement parts to the buyer, but only after the faulty parts have been returned to the manufacturer or reseller. Replacement of any part in the control unit by Saunum does not extend the original warranty period.

The electrical device should only be connected to power and/or utilities in accordance with all laws and regulations by a licensed, certified electrician.

The warranty applies only to the first installation of the product and to the original purchaser.

- The warranty is only valid if a completed installation report is submitted with the claim;
- The device is connected to the power and/or utilities in accordance with all laws and regulations by a licensed, certified electrician;

- A warranty period of two (2) years applies to the Device if it is used in a private sauna;
- A warranty period of one (1) year applies to the Device if it is used in a public sauna.

The warranty does not cover:

- Routine maintenance and cleaning of the device, and replacement of the components due to normal wear and tear;
- Adaptation or modification of the device for any purpose other than that indicated in the instructions for use;
- Risks arising from transport;
- Damage resulting from the misuse of the device;
- Damage resulting from the improper installation of the device;
- Repairs to the device not carried out by Saunum's recommended repair and maintenance partner;
- Accidents, lightning, water, fire, improper ventilation, or any other factor beyond the control of Saunum.



INSTALLATION REPORT

Saunum sauna's control unit model: _____

Date of purchase: _____

Original purchaser: _____

Place of installation: _____

Purchased from: _____

Date of electrical installation: _____

Signature of the installer: _____

Notes: _____

Customer's contact (name, email address): _____

Work accepted: _____

Start date of warranty: _____

For Saunum installation and maintenance help contact with your local distributor:

techsupport@bathingbrands.com

phone: +1 (224) 253-5909

Please note! The sauna may only be connected to the power network by a qualified electrician in accordance with the local NEC.

Read all of the instructions for use carefully and thoroughly **before using the device** and keep them in a safe and easily accessible place for future reference.

INSTRUCTIONS FOR USE AND INSTALLATION



EC declaration of conformity

Manufacturer: Saunum Saunas OÜ

certifies that the product:

Saunum Sauna Control Unit Set Leil

complies with the requirements of the following directives of the European Parliament and of the Council, provided that the installation has been carried out in accordance with the installation instructions issued by the equipment manufacturer and EN 60 204-1 "Safety of machinery. Electrical equipment for the machinery – Part 1: General requirements":

Machinery Directive 2006/42/EC

Low Voltage Directive 2014/35/EU

Electromagnetic Compatibility Directive 2014/30/EU.