INSTRUCTIONS MANUAL

SAUNOVA

SAUNA USER INTERFACE

Finland SAWO

ENGLISH

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1.0 INTRODUCTION OF THE SAUNOVA CONTROL

Congratulations on your purchase of Saunova Control Unit!

Saunova Control Unit is developed to enhance your sauna bathing with a variety of features. It can adjust temperature and light option in your sauna.

The following information provides you with instructions on adjusting the settings of the control unit. Please, read this instruction manual carefully before using the control unit. Familiarization of the key functions will give you a more enjoyable sauna experience.

1.1 Precautions

1. Only a qualified electrician is allowed to make the electrical connections and repairs on the unit. Use original parts only.
2. Disconnect the Power Controller and the Contactor Unit from the electrical circuit before installation, repair or opening the lid of the power controller.
3. Check power supply rating before installation.
4. Check the correct location of the sensor in the installation section of the manual. It is very important to place the temperature sensor correctly as its closeness to air ventilation cools down the sensor and may lead to overheating.
5. The control unit can be operated inside or outside of sauna room. Check the ambient requirements and limitations from technical data.
6. Do not pour water in the control unit or clean it with wet cloth. For cleaning purposes, use a cleaning cloth that has been only slightly moistened with a mild soapy solvent (dish detergent).

2.0 UNIT DESCRIPTION

2.1 GENERAL

The control unit consists of power controller and user interface. Control unit is designed to operate max 9 kW sauna heater and 100 W cabin light.

Power Controller

User Interface

WARNING The instructions of the manual must be followed when wiring of the components is executed.

2.2 DIRECTION OF USE

The control unit is ready for operation when all installations have been completed. If the user interface is connected to the system, a self-test starts running, and all LEDs start lighting up.

Afterwards, the user interface changes in the stand-by mode and the “ON/OFF” ( ) State LED lights up.

2.3 STANDARD ACCESSORIES

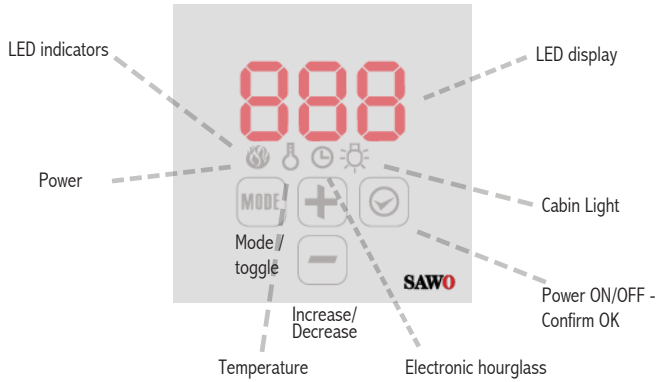
Scope of supply:

- Power Controller
- User interface
- Temperature sensor with thermal safety release 139 ℃
- Data cable and sensor cable

3.0. DIRECTIONS OF USE

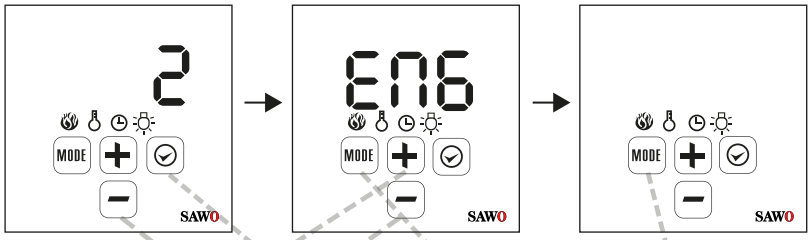
3.1 BUTTONS AND STATES

The control panel consists of:



3.2 CHANGING LANGUAGE

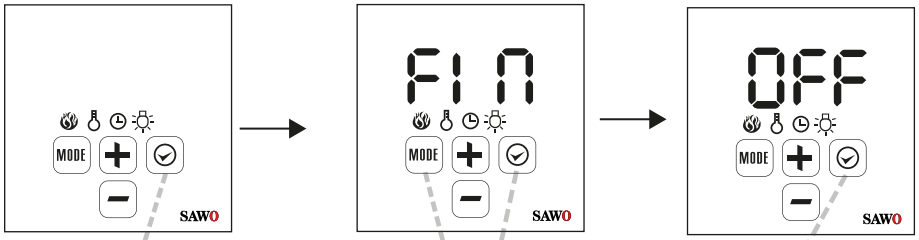
Saunova has the following languages available: English, German, Italian, Dutch, French.



To change the language make sure the control is in OFF mode. When in OFF mode, long press the − and ✓ buttons. This takes you to switch off menu. Change to the language menu by pressing MODE and change language with + and − buttons. Confirm your selection by pressing the MODE button.

3.3 TURNING ON THE HEATER

Make sure that the rocker switch in the power controller is in ON(I) position.

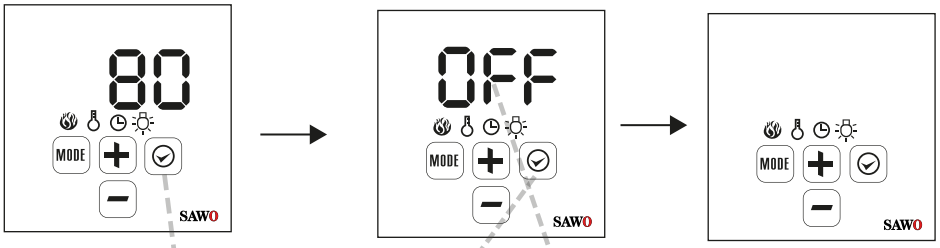


When the power controller is turned ON, the LED is lit up. By pressing the button you can turn on the user interface.

After pressing the button, you can activate heater by pressing button again while LEDs displays the text FIN
If you want to turn OFF the user interface, you can navigate by pressing the MODE button so that the display states OFF and confirming by pressing the button.

WARNING Always check that there are no combustible materials, like towels, above the heater, nor inside the safety distances, before switching the heater on! The safety distances are stated in the heater manual.

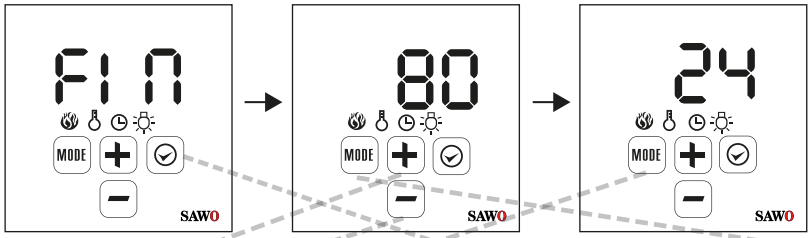
3.4 TURNING OFF THE HEATER



You can finish the on going sauna session before the max session time runs out by pressing the button. After pressing, the text OFF appears in the display. Confirm turning off the heater by pressing again. If max session time runs out, the heater will turn off automatically.

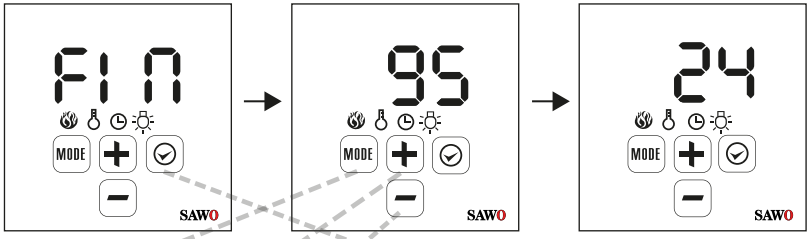
3.5 ELECTRONIC HOUR GLASS

Electronic hour glass is a feature which allows you to set a timer that will alarm you after a certain time interwall has elapsed. The buzzer can be switched off if wanted(see instructions on page 10)



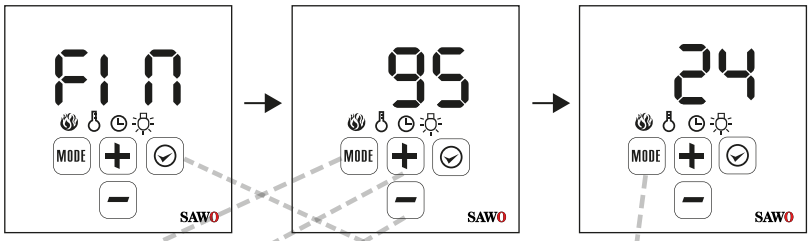
After the heater has been turned on by pressing the ⊘ button, navigate by using the MODE button until the ◷ symbol is lighten up. When the ◷ symbol is lighten up, you can use the + and − buttons to increase and decrease the interwall time. After you have set the desired interwall time, you can navigate back to displaying the actual temperature by using the MODE button. If no buttons are pressed, the screen returns back to displaying the current temperature. The unit of interwall time displayed is minutes.

3.6 SETTING TEMPERATURE



After the heater has been turned on by pressing the ⊘ button, navigate by using the MODE button until the 🌡 symbol is lighten up. When the 🌡 symbol is lighten up, you can use the + and − buttons to increase and decrease the temperature. After you have set the desired temperature, the screen returns back to displaying the actual temperature after if no buttons are pressed in 3 seconds.

3.7 CABIN LIGHT



After the heater has been turned on by pressing the ⊘ button, navigate by using the MODE button until the ☼ symbol is lighten up. When the ☼ symbol is lighten up, you can use the + and − buttons to increase and decrease the brightness of the cabin light. Short pressing the buttons will turn the light ON/OFF and long pressing allows you to dim the light. After you have set the desired brightness level, you can navigate back to displaying the actual temperature or remaining session time by using the MODE button. If no buttons are pressed, the screen returns back to displaying the current temperature.

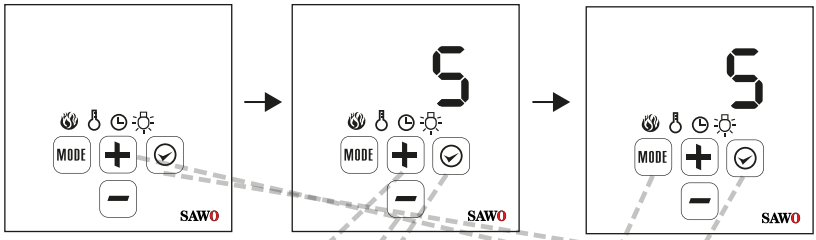
3.8 PROGRAMMING

3.8.1 PRE-RUN TIMER

Pre-run timer is already activated when the 🔥 and ◷ symbols are illuminated. The user interface displays you the time remaining in hours before the sauna heater will turn on automatically. If there is a blackout during pre-run, the pre-run is automatically cancelled.

WARNING Always check that there are no combustible materials inside the safety distances, before using pre-run timer!

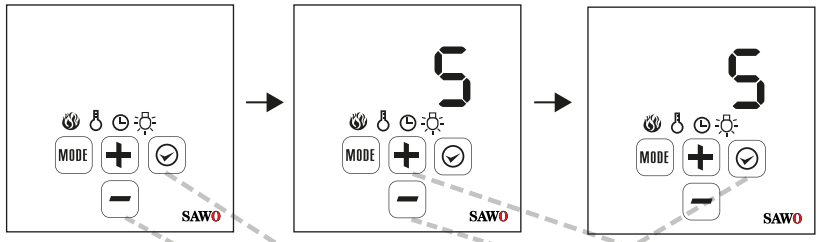
WARNING The pre-run time is limited to a maximum of 6 hours for domestic saunas according to *) IEC 60335-2-53



When heater is OFF, you can activate the pre-run timer by pressing + and ⊘ buttons for 3 seconds. After that you can set the heater to turn ON automatically between 1 and 24 hours by using + and − buttons. After the desired pre-run time has been set, confirm the settings by pressing ⊘ twice. If the symbols ON/OFF, 🔥 and ◷ are light up, the pre-run is activated. The digital display shows the hours remaining before switch-on. The hour display only changes after every full hour. If you want to disable the pre-run timer, you can turn on the heater by pressing the ⊘ button twice. If you want to disable the pre-run timer and turn off the heater press MODE so that the display states OFF and confirm turning off the control by pressing ⊘ button. Maximum length for pre-run time is set to 4 hours as factory default.

3.8.2 SESSION TIME

Automatic switch off feature is the maximum session time defined by the user after which the sauna heater turns off automatically. The switch off time can be set between 1 to 12 hours. Factory default setting is 4 hours.



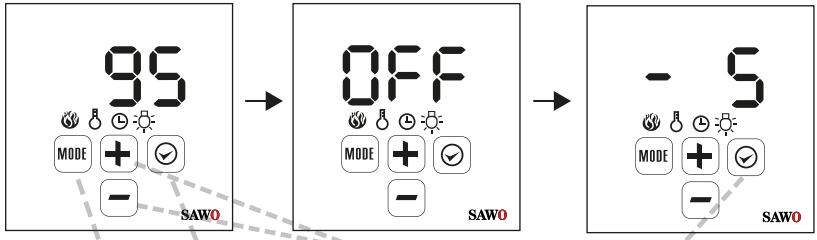
When in OFF mode long press the − and ⊘ buttons. Here you can choose the automatic swtich off time between 1 and 12 hours. Choose the desired time by pressing the − and + buttons and confirm your selection with ⊘ button.

3.8.3 TEMPERATURE CORRECTION FACTOR

Since the temperature is measured at the ceiling above the heater, the displayed temperature differs from the temperature in the bench area. This difference can be adjusted by entering a correction value between -9 and +9 for 100 ℃(+/- 9%).

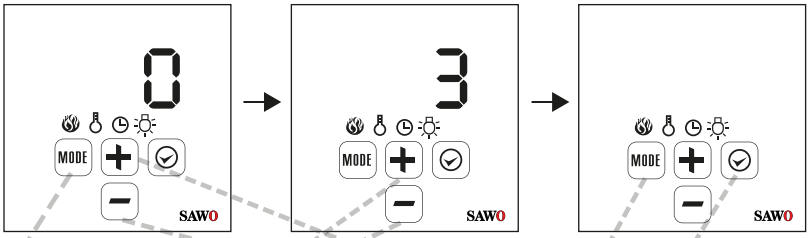
A value of 9, for example, means that if the measured temperature equals 100 ℃, the temperature displayed is 109 ℃; a value of -5 ℃ means that if the measured temperature is 100 ℃, the displayed temperature is 95 ℃.

Due to safety reasons, the maximum target temperature with a correction value of less than 0 will be reduced by this value, since the maximum reachable temperature is 110 ℃.



In ON mode, activate the symbol and press + and − buttons for 3 seconds, and then long press MODE and ⊘ buttons. In this menu you are able to choose the desired correction factor. Confirm your selection by pressing the ⊘ button.

3.8.4 PROGRAMMING OF THE ACOUSTIC SIGNAL



The acoustic signal (beeper) can be switched on and off in the following way. Switch with the MODE button to the ⏲ symbol. Press both buttons − + at the same time for 3 seconds. The number of the actual mode appears on the display. Change to desired operation mode with − and + buttons and confirm changes with MODE or ✓ button.

Value	Mode	Function
0	Quiet	No acoustic signal
1	Hourglass (= Standard)	Hourglass after expiration of 1 sec. active
2(not all heater models)	Water shortage	Continuous tone at water shortage
3(not all heater models)	Hourglass + water shortage	Both signals active
4(Not all control models)	Remote control	
5(Not all control models)	Remote control + hourglass	

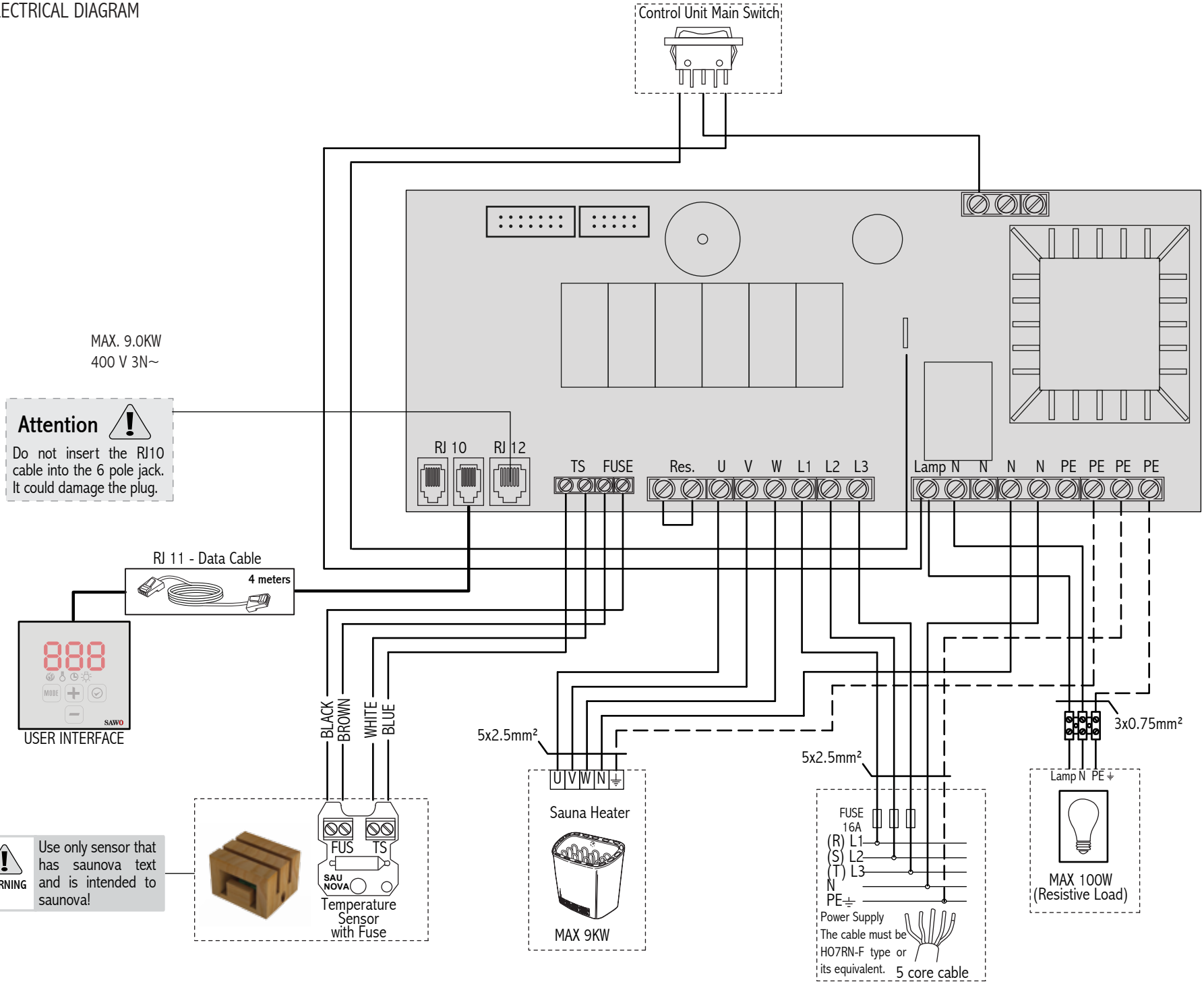
3.8.5 PROGRAMMING OF THE ACOUSTIC SIGNAL

When you select operating modes 4 or 5, you can make additional settings.

Here you can specify if the control unit should stay ON or turn OFF after the remote control voltage has stopped:

Switch ON Select = ON in the display
Switch OFF Select = OFF in the display

Confirm your selection with MODE or ✓ button.

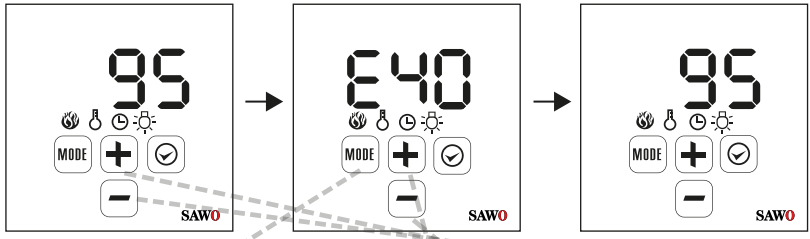

Control Unit Main Switch
MAX. 9.0KW
400 V 3N~
Attention
Do not insert the RJ10 cable into the 6 pole jack. It could damage the plug.
RJ 10
RJ 12
TS
FUSE
Res.
U
V
W
L1
L2
L3
Lamp N
N
N
N
PE
PE
PE
PE
RJ 11 - Data Cable
4 meters
USER INTERFACE
BLACK
BROWN
WHITE
BLUE
5x2.5mm²
U V W N
Sauna Heater
MAX 9KW
5x2.5mm²
FUSE 16A
(R) L1
(S) L2
(T) L3
N
PE
Power Supply
The cable must be HO7RN-F type or its equivalent.
5 core cable
3x0.75mm²
Lamp N PE
MAX 100W
(Resistive Load)
WARNING
Use only sensor that has saunova text and is intended to saunova!
FUS
TS
SAU NOVA
Temperature Sensor with Fuse

3.10 SAFETY SWITCH-OFF

The electronic control unit is equipped with a safety switch-off through a safety temperature limiter. If the sauna heater should not turn off, for any reason, the safety temperature limiter disconnects automatically the circuit at 139℃ and turns off the heater. The safety temperature limiter needs to be replaced and an expert needs to be consulted if this scenario takes place.

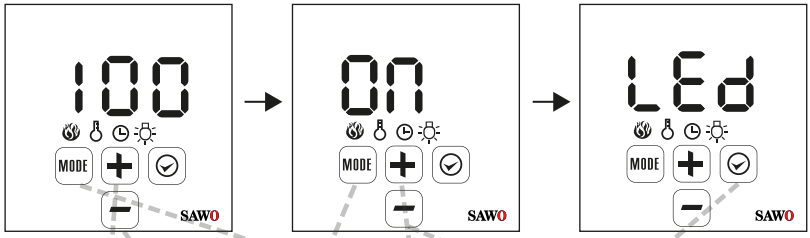
3.11 ECO MODE

Eco mode will help you to save energy if you want to take a break from sauna bathing. With this feature you can choose to have 20, 40, or 60 minute break. Eco feature lowers down the temperature during the break and heats it back to the target temperature after the chosen break time is over. While in Eco Mode, OFF light indicator blinks.



Navigate to the symbol while in ON mode and long press the + and − buttons. Select the desired length for the break by pressing + and − buttons. Confirm your selection with MODE button.

3.12 AUTOMATIC SWITCHING OF THE DISPLAY

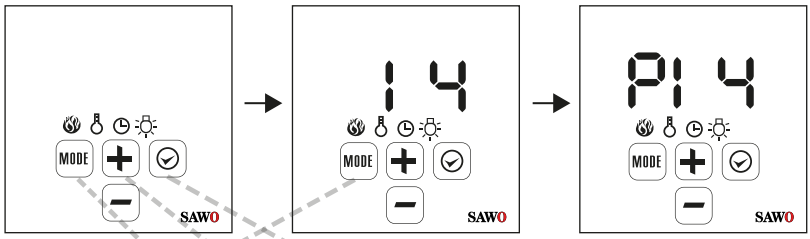


The display can be programmed to switch the displayed value automatically. The display switches between temperature and time. By using the MODE button, switch to the ☼ symbol. Press the + and − buttons at the same time for 3 seconds. On the display appears either “ON” or “OFF”. Switch on by using + button or switch off by using − button. Confirm by using MODE button.

NOTE: The electronic hour glass value must be set to 1 or more in order to switch displaying values.

You can select if the sauna lamp and the colour LED (not available in all models) should light up at the same time with the sauna light. By choosing “ALL”, both lights will turn on at the same time. By Choosing “LED”, only the LED lights will turn on. The colour relay module can always be turned on regardless if the sauna lamp is turned on or off. Confirm with MODE or ✓ button.

3.13 VERSION DISPLAY



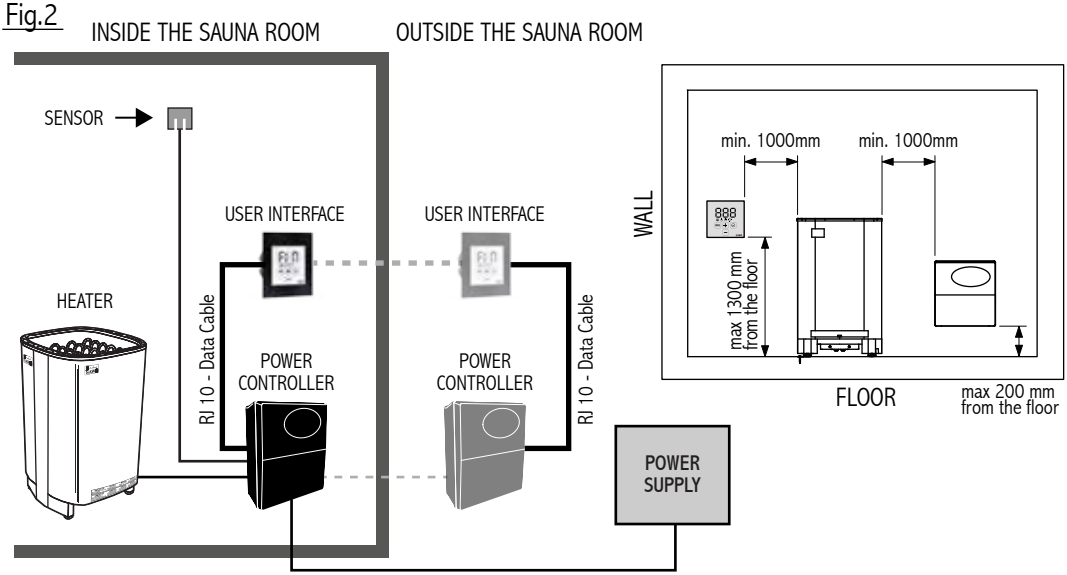
By pressing the buttons MODE, + and ✓ at the same time in the OFF mode, the software version number of the power controller will be displayed (i.e. “14”). If you press the MODE button during this time again, the software number of the control panel will be displayed together with a letter P, in order to separate it from the power controllers version number(i.e. “P14”). After few seconds, the display turns back to the OFF mode.

4.0 ASSEMBLY AND INSTALLATION

NOTE:
Saunova control unit can be installed inside or outside the sauna room.

ATTENTION!
Install the components only with a screwdriver and not with a portable electric drill!

Fig.2



4.1 INSTALLATION OF THE POWER CONTROLLER

The installation location of control unit must follow the allowed ambient limits. Don't install the power controller in a recess or less than 300mm from the ceiling (Refer to Fig. 3). If installed inside sauna room, always use additional SAWO splash cover and install the power controller close to floor level where the temperature is naturally cooler.

The heater is connected to the electrical network semi-stationarily with a H07RN-F rubber cable or its equivalent. The use of PVC-insulated cable as a connecting cable is prohibited due to thermal embrittlement.

Fig.3

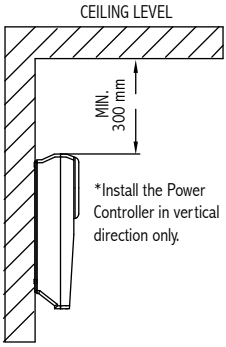
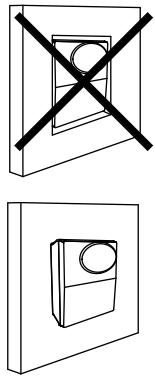


Fig.4



WARNING
Do not embed the control unit into the wall, because it may lead to overheating of the unit and cause damage!

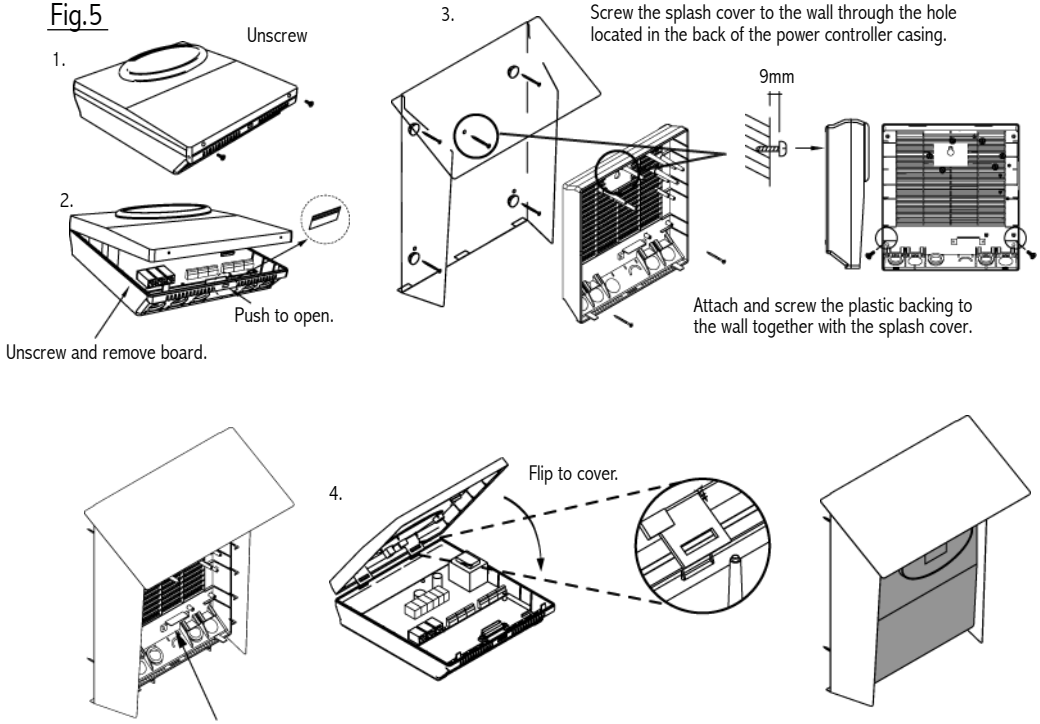
4.2 INSTALLING POWER CONTROLLER INSIDE SAUNA ROOM

If the power controller is installed inside sauna room, the ambient requirements must be followed (page 13). In addition to ambient requirements, the location must be in a place where there is no risk of water splash hitting the power controller. An additional splash cover (not included to the package) must be used to protect power controller. Preferred location to install the power controller together with the splash cover is underneath the benches close to the floor level where the temperature is naturally lower than in the upper portions of the sauna.

If installed inside sauna room, the power controller must be installed 200mm from the floor measured from the lower portion of the power controller and at least 1000mm from the heater. After installation, seal all the lead through holes with for example silicone.

WARNING Make sure that the ambient temperature won't exceed the allowed limit, and that the power controller is protected from water splashes.

Fig.5



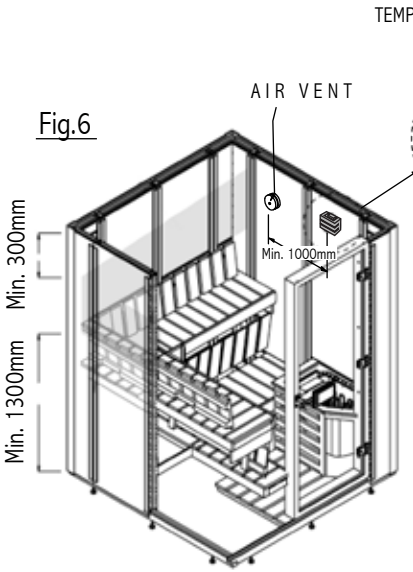
4.3 SENSOR LOCATION FOR WALL MOUNTED HEATERS

The power controller is equipped with a temperature sensor that works also as a safety release sensor at the same time. If the heater is mounted on the wall or floor standing less than 200mm from the wall, the temperature sensor needs to be mounted on the wall above the heater. Place the sensor 150mm from the ceiling (Fig. 6 & 7).

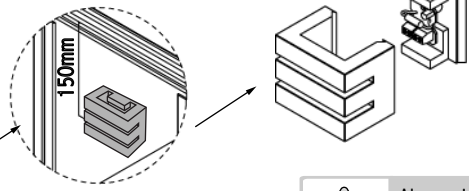
Do not place the sensors near the air ventilation. The closeness of the air vent cools down the sensor. Thus, an incorrect temperature is displayed and the heater may overheat (Fig.9).

Sensor location with heaters mounted on the wall or less than 200 mm from the wall.

Fig.6

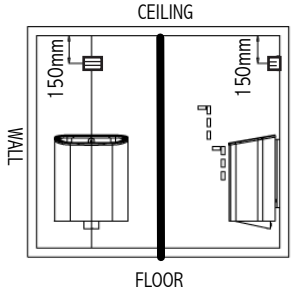


TEMPERATURE SENSOR WITH FUSE ON THE WALL



WARNING Always install the sensor in same orientation as illustrated in the manual

Fig.7



NOTE

Do not place the sensors too near to air ventilation. Not under 1000mm from a non directed ventilation or not under 500mm from air ventilation, which is directed away from sensors.

4.4 SENSOR LOCATION FOR HEATERS MOUNTED MORE THAN 200 MM FROM THE WALL

If the heater is floor standing model, and more than 200mm from the wall, place the sensor to the ceiling over the heater, as shown in the figure 8 & 9. If the heater is less than 200mm from the wall, use the same sensor location that is intended for wall mounted heaters on page17.

Fig.8

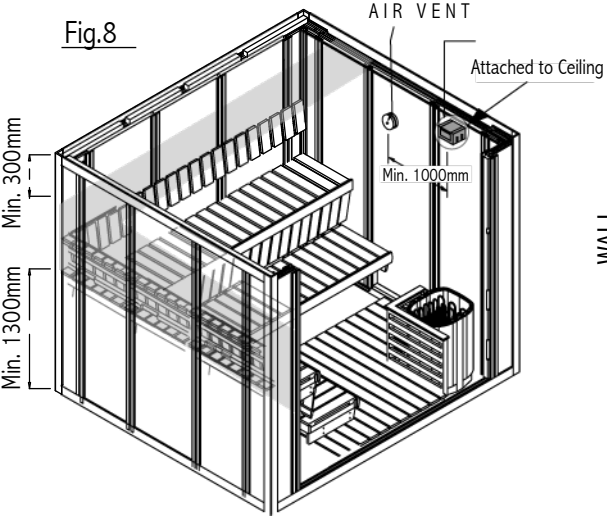
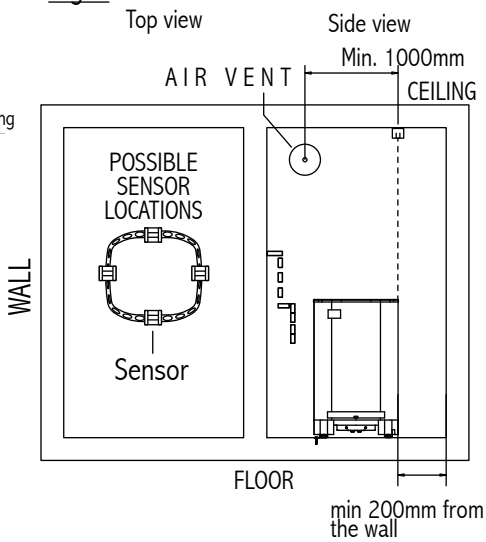


Fig.9



4.5 MAXIMUM SESSION TIME

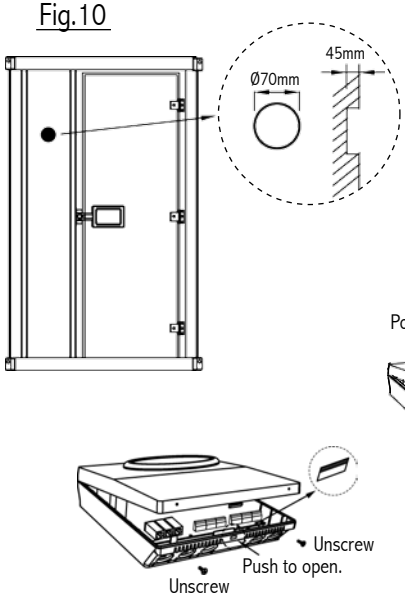
The maximum sauna session time depends on the purpose of the sauna. For domestic use, the total on-time of the sauna is limited to 4 hours. It includes pre-run time and the session time. The factory setting for the control unit is 4 hours.

For condominiums, hotels and similar locations, the operating period of the sauna heater is limited to 12 hours, including the pre-run time and the session time. The heater must have a minimum 6 hours of inactivity between sessions (IEC 60335-2-53). The standards and regulations of the country where the control unit is installed must be followed. Change the maximum session time by following the instructions in page 7.

4.6 INSTALLATION OF THE USER INTERFACE

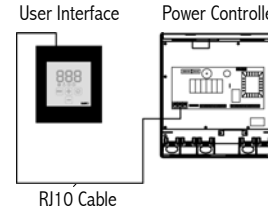
- Mount the separate control panel casing in preferred location.
- Cut the wall section according to the specifications.
- Cut tapered edges to the hole for the user interface to be flushed nicely to the wall.
- Connect the RJ10 cable from the control panel to the Power Controller.
- Insert the casing on the cut section and screw the Control panel to the wall tightly.

Fig.10



Installation of User Interface and Power Controller

Fig.11



Saunova user interface can be installed inside or outside the sauna room. Always make sure that the allowed ambient circumstances are not violated (see page 21). (RJ10 communication cable can not withstand high temperatures and must be installed inside the wall insulation).

It is recommended to install the user interface to max 1300mm from the floor level.

Fig.8 A B C

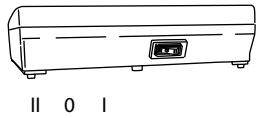
THE CONTROL UNIT MAIN SWITCH

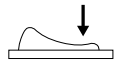
The control unit switch can be found on the top end of the unit.By using this switch, you can isolate the electronics from the mains power supply.

In order to activate the unit, switch to the ON position (switch position I). In this position all control unit's functions work normally.

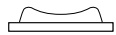
In case of breakdown, press the switch to the OFF position (switch position 0). The unit is now completely switched off.

In order to switch on the sauna light when the unit is switched off, press the switch to the LIGHT ON position (switch position II).

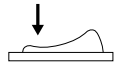




I = UNIT ON



0 = OFF



II = LIGHT ON

5.0 ELECTRICAL CONNECTIONS

NOTE:
Disconnect all poles until all work has been completed and fuse prior to re-connecting! The connection of the sauna control unit must be completed by a licensed specialist (electrician) in accordance with the relevant standards. The cable used must comply with the relevant statutory provisions.

NOTE:
According to standard EN60335, light and oven have to have a separate power supply. Since the sauna control unit is powered via the light supply, it is crucial that the light supply is connected!

Please note, only a qualified electricial or maitenance personnel should make the service operations or repairs.

5.1 ERROR DISPLAYS

The control unit is equipped with diagnosis software. When control unit is turned on, a self-test will be retrieved and various conditions will be checked during the normal use. If error was found, the control unit turns off, all user symbols start blinking and an error number appears on the display. The following table gives information about the cause.

Error number	Description	Repair/Cause
-5	No control unit is connected.	No control unit is connected or bad connection.
-10	No control unit is connected, after at least one was recognized at the high start.	Check connection to the control unit.
-21	Heater temperature sensor broken.	Damaged temperature sensor or bad connection.
-22	Heater temperature sensor short circuit.	Damaged temperature sensor or bad connection.
-24	Bench temperature sensor broken.	Damaged temperature sensor or bad connection.
-25	Bench temperature sensor short circuit.	Damaged temperature sensor or bad connection.
-26	Humidity sensor broken.	Damaged humidity sensor or bad connection.
-27	Humidity sensor short circuit.	Damaged humidity sensor or bad connection.
-30	Faulty thermal safety release.	Faulty heater sensor or bad connection.Contact service personnel!

5.2 SYMBOL REFERENCE

Indicators

 "ON" State

 Temperature

 Timer

 Cabin Light

Buttons

Mode

 Increase

 Decrease

 Confirm/OK

6.0 TECHNICAL DATA

6.1 POWER CONTROLLER

System connection	For 3 x 400 V ~ 50 Hz with L1-L2-L3-N-PE; 1 x 230 V ~ 50 Hz with L-N-PE; Housing only for standardised service connection with fusing and residual current circuit breaker (RCCB). The mains switch must have a minimum contact gap of 3 mm!
Connection internal display	4-pole with 5 V = supply and communication; length = 3 m
Control voltage	Extra low voltage 5 V
System cable	Typically 5 x 2.5 mm² for heater (cross section refer to 6.1.0) Typically 3 x 1,5 mm² for light + electronic
Light connection	With integrated phase dimmer, for 2 (3) pole connection of the 230 V incandescent lamp(s); max. 100 W
Heater connection	3 x 400 V ~ 5-pole, up to max. 3 kW depending on the heater output, and/or 14 A / phase
Thermal safety release	Integrated into the temperature sensor as over heating protection; release temperature 139 °C
Temperature sensor	2-pole; semi conductor sensor 9 °C to 140 °C
Power input	Mode FIN: max. 3 x 3 kW (heater) Mode FEU: max. 2 x 3 kW (heater) and max. 1 x 3 kW (evaporator) For light: max. 100 W
Ambient conditions	0 °C to max. 50 °C, max. 95 % reel. Humidity, not condensation!
Housing	CE IPX4 T40
Dimensions: L x W x H	265 x 245 x 80 mm
Weight	~ 1400 g without packaging

6.2 TECHNICAL DATA USER INTERFACE

Connection	4-pole with supply and communications line
Power input	5 V= / < 100 ma normal mode (< 0. 5 W)
Temperature setting	Display of current temperature and desired temperature 30 °C – 110 °C (+/- 1 °C) depending on the programme
Time interval/el. Hourglass	0 - 99 min with disengageable beeper
Light dimmer	0 % - 100 % (+/-2 %) for up to 100 W
Ambient conditions	0 °C - 80 °C, max. 99 % rel. Humidity, no condensation allowed!
Dimensions: L x W x H	110 x 95 x 50 mm
Weight	~ 212g without cable and without packaging

Note!
Only incandescent light bulbs are allowed to use with Saunova sauna controller. Light fixtures using electronic transformers, for example LED lights, compact fluorescent lights and other similar lights are not compatible with Saunova sauna controller. Damages caused by connecting these non-compatible lights are not covered by warranty.

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CE IPX4 T40

SAU_ML(En00517)