

Description	Power Rating	Remarks
<b>Control</b>		
Rated Power 3 Phases	15kW AC1 (3 x 5kW)	
Rated Voltage 3 Phases	400V 3N~	
Rated Power Single Phase	9kW AC1	
Rated Voltage Single Phase	230V 1N~	
Frequency	50/60Hz	
Switching capacity per phase	21A	
Sauna temperature range	40-110°C	
Maximum session time (preset)	4,6,12,18,24h	Restrictions apply according to IEC/EN 60335-2-53
Dimensions INNOVA S types		
User Interface	(W) 180 x (H) 105 x (D) 31	
Power Controller	(W) 265 x (H) 245 x (D) 75	
Dimensions INNOVA B types	(W) 265 x (H) 245 x (D) 75	
Weight INNOVA S types		
User Interface	120g	
Power Controller	1500g	
Weight INNOVA B types	1600g	

Description	Remarks
<b>Sensor</b>	
Temperature Sensor with fuse	
<b>Bench Sensors</b>	
Bench Temperature Sensor	Optional
Bench Combined Temperature - Humidity Sensor	Optional

Description	Power Rating	Remarks
<b>Steamer</b>		
Rated Power 3 Phases	5kW AC1	
Rated Power Single Phase	3kW AC1	
Rated Voltage	230V 1N~	
Switching capacity	21A (3 Phases), 13A (1 Phase)	
Maximum sauna temperature for steamer operation	80°C or *55°C * Depending on the type of Sensor 2.	
Automatic water filling		Optional
Automatic drain valve		Optional
<b>Cabin Light</b>		
Rating	230V 1N~, 100W AC1	
		Dimmer optional
<b>Fan</b>		
Rating	230V 1N~,0.5A	Optional (with speed control)

Description	Power Rating	Remarks
<b>Power Extension Unit</b>		
Rated Power 3 Phases	15kW AC1 (3 x 5kW)	Additional Power expansion to maximum of 30kW
Rated Voltage 3 Phases	400V 3N~	
Frequency	50/60Hz	
Switching capacity per phase	21A	

# INNOVA CONTROLS



## INSTRUCTIONS MANUAL



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Subject to change without notice.



INN\_ML(EnV10408)

ENGLISH



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## Introduction of the Innova Controls

\* For illustration purposes only.

Congratulations on your purchase of Innova Control Unit!

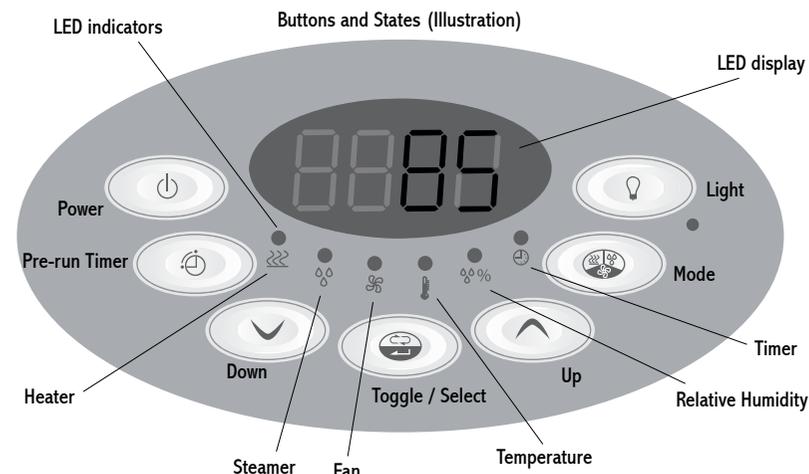
Innova Control Unit is developed to enhance your sauna bathing with a variety of interactive tasks. It can adjust temperature, humidity, ventilation and light luminosity (advanced model) in your sauna. The Innova Control Units are available on a separate or built-in mounting on the Power Controller Board.

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

### Precautions



1. Only a qualified electrician should make the electrical connections and repairs on the unit. Use original parts only.
2. Disconnect the Power Controller Board and the Contactor Unit from the electrical circuit when installing and repair.
3. Check power supply rating when installing.
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 the air ventilation cools down the sensor and may lead to overheating.
5. The control unit can be operated on a room temperature 0-40°C. Do not install the control unit inside the sauna room!
6. Do not pour water on the sauna control or clean it with a very wet cloth. For cleaning purposes, use a cleaning cloth that has been only slightly moistened with a mild soapy solvent (dish detergent).



### Operating Instructions

#### Quick Start

1. Switch the power "ON". First the software versions will be displayed. Then set temperature will be displayed for 5 seconds. Finally the actual temperature inside the sauna room will be displayed.
2. Short press the toggle button to see the actual values for the different functions: temperature, session time, fan\* and humidity\* (not all models). The corresponding LED will light up.
3. To reset the values, long press the toggle button.
4. Now the corresponding LED is blinking faster. Use the up and down arrows to select the desired temperature, session time, fan\* and humidity\* (not all models).
5. Confirm the settings by long pressing the toggle button. If no keys are pressed after 5 seconds, the control unit will discard the changes.
6. You can move from one parameter to another by short pressing the toggle button.
7. It usually takes around 25-40 minutes for the sauna to get warm. After this you can start to use your sauna.

## Directions of use

### Heater on



Press the on/off button to activate the heater. The heater LED is illuminated indicating that the heater is turned on.

The sauna will heat up to the temperature of the previous setting and operate for the length of previous session time, if the changes made were confirmed within the first 5 minutes of switching the heater on. Changes can also be made now to the previous settings.

### Warning



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

### Heater off



Turn the heater off by pressing the on/off button. This button will turn off all the active functions, including the pre-run session. However, the light will not be switch off, it can be used in "OFF" mode as well as the pre-run button.

### Pre-run button



Pre-run button works only on the "OFF" mode. It enables changing of the settings for the sauna room before using it.

Set the pre-run time by pressing the button. It will show the time when the sauna will be ready, the up and down arrow keys can be used to change the pre-run time.

Next, set the fan\*, temperature, steamer\* and session time (\*not all models have all the same features). Finally press the toggle button for long to confirm.

When the control unit is in the pre-run state, it will display the remaining time of the pre-run. The confirmed pre-run settings are saved for the next session.

When the pre-run function is used for the first time it estimates the time that the heater needs to reach the set temperature. For example, if the pre-run time is set to 2 hours, the heater will be switched on in 1.5 hours.

If the sauna has not reached the set temperature by the time is meant to be ready, in this case 2 hours, it will remember this. Next time the pre-run function is used, the heater will be switched on earlier, for example 1 hour before the end of the pre-run time.

Alternatively, if the heater reaches the set temperature too quickly, it will adjust itself to be switched on later. The control unit teaches itself to switch the heater on at the ideal time in order to reach the set temperature when wanted.

The pre-run function has different settings, depending on the installation made. For domestic use, the default time is 6 hours, including the pre-run time as well as the session time. See more details in the installation section of the manual.

### Warning



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

### Setting Mode



Long press the toggle button to go into setting mode. It can be used to select and adjust the fan\*, temperature, humidity\* and the session time (\*not all models have all the same features). Corresponding LEDs will be blinking on each selected features. Set the values by pressing the up and down buttons.

Save the settings by long pressing the toggle button, a high beep will confirm it. If no keys are pressed after 5 seconds, the control unit will discard the changes.

### Dimmer light (optional)



When the lights are switched off, short press the light button to activate the dimmer.

If the lights are on and the cabin light button is pressed for long, it will toggle the dimmer light state. Then the cabin lights can be adjusted with the arrow buttons from 0% to 100%. Confirm the settings with the toggle button.

### Fan (optional)



If the model installed has a fan, its speed can be regulated. Switch it on or off by pressing the mode button, LED light for fan will indicate if the fan is turned on or off. The speed of the fan can be set in the settings mode.

Please note: If the used heater is a Combi with a steamer, the button needs to be pressed for longer than 3 seconds to activate the fan. Long press it again to turn off the fan.

### Cabin Light Button



Cabin light can be switched on, even when the sauna is not used. Short press the button and the lights will be switched on/off.

LED for the light indicates if the light is switched on or off.

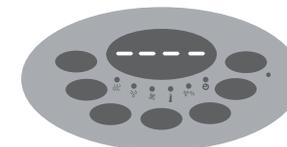
### Key pad lock



(to prevent unauthorised people from using the control unit)

Lock the key pad by pressing the up and down arrow keys at the same time for more than 5 seconds. A high beep will confirm the activation and the deactivation.

Any settings cannot be changed whilst the keys are locked. The only functioning keys are the on/off, cabin light buttons and toggle button to see the actual values, not to change them. If other buttons are pressed, "----" is shown in the display.



Unlock the buttons by pressing up and down arrow keys at the same time for more than 5 seconds. A high beep will confirm it.

The key lock function is set automatically if it was activated during the previous operation.

## Steamer Functions

### Steamer



The steamer function can only be activated if the heater has a steamer and the steamer feature is present on the controller. When there is no steamer present, all the functions and settings regarding the steamer are not available.

Press the mode button for less than 3 seconds to activate the steamer. Once activated, the steamer is switched on, unless the temperature or the relative humidity inside the sauna room is too high. High humidity and high temperature are not allowed, "HOT" will be displayed in the control unit and the steamer will not be activated.

The state for “HOT” depends on the second sensor, the bench sensor. If it is a temperature sensor only, and the bench temperature in the sauna room is 56°C or more, the steamer cannot be activated. With the temperature sensor, the user can choose the relative time for the steamer to be on, within 30-100% of the session time.

However, if the second sensor is combined temperature humidity sensor, the maximum bench temperature for the steamer to work is 80°C, as long as the relative humidity in the sauna room is not too high. With the combined sensor, the user can choose the relative humidity inside the sauna room.

The steamer can be switched off manually by pressing the mode button for less than 3 seconds.

### Water refill

When the water level is low, a low tone interval beep and “FILL” will be displayed to alarm the user. There are two possible ways to fill water levels, automatically or manually, depending on the model.

The auto Combi heater has a solenoid valve, which will automatically react to the low level of water. The water inlet will open to fill up the tank and steamer session can be continued without intervention.

In the manual fill, the alarm beeps and “FILL” will be displayed as long as the user fills the tank.

However if the user does not refill the tank and it becomes empty, a high tone interval beep and “dry” display will alarm the user. The steamer will automatically be switched off now, only the heater will be working.

The automatic refill mode will refill itself now, if it did not refill its tanks earlier. Always check that the water supply is open before using the automatic refill Combi heater!

### Cabin drying

10 minutes after the steamer session, the heater will automatically dry the sauna room. The cabin drying is set to 30 minutes at 85°C; the fan speed is at 100%. The total drying state will take 40 minutes. The remaining cabin drying time will be displayed on the interface board.

If the steamer operation is changed to heater only, there will be no cabin drying at the end of the session.

The cabin drying session can be stopped earlier by pushing the on/off power button.

### Automatic drain

This function is activated 1.5 hours after the steamer session time or straight after cabin drying.

The drain function can be activated in two ways:

1. Long press the on/off button to drain the tank without delay
2. Automatic drain after 1.5 hours after steamer session, i.e. 1.5 hours after the user has pressed the on/off button or 1.5 hours session time has ended.

The automatic drain function can be enabled or disabled when the control unit is in “OFF” mode. Long press the mode button and at the same time turn on controller by pressing the pre-set button. There will be feedback on the display. If the automatic drain is on, “Adr” and “on” will be constantly displayed in sequence. When it is off, “Adr” and “off” will be displayed.

#### Please Note:

This function is available only if the drain option is present on the controller board.

## Technical Diagram

Fig.1

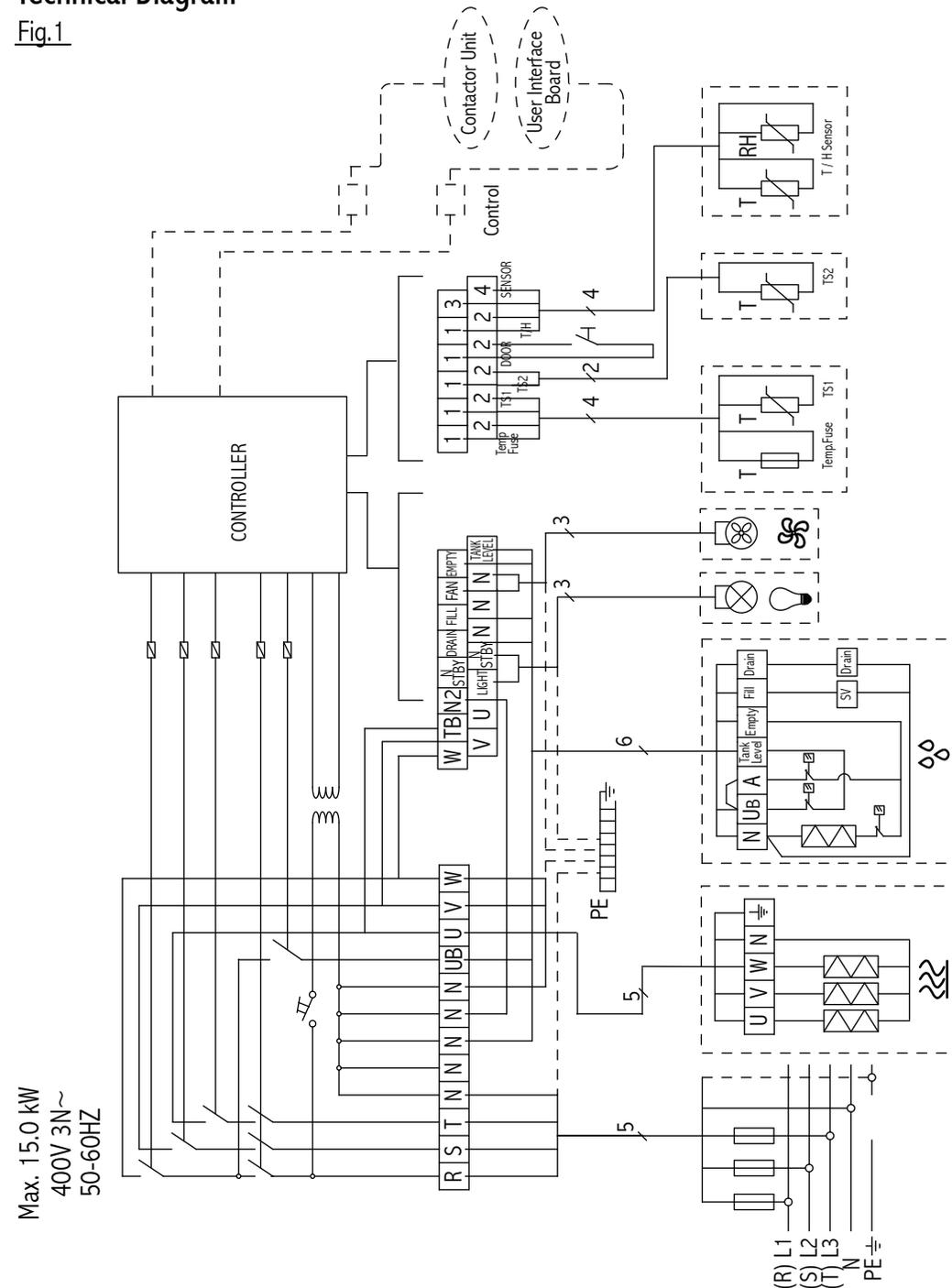
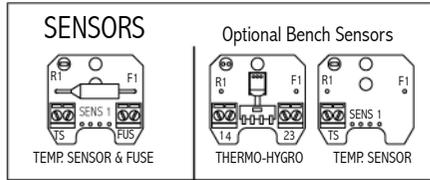


Fig.2



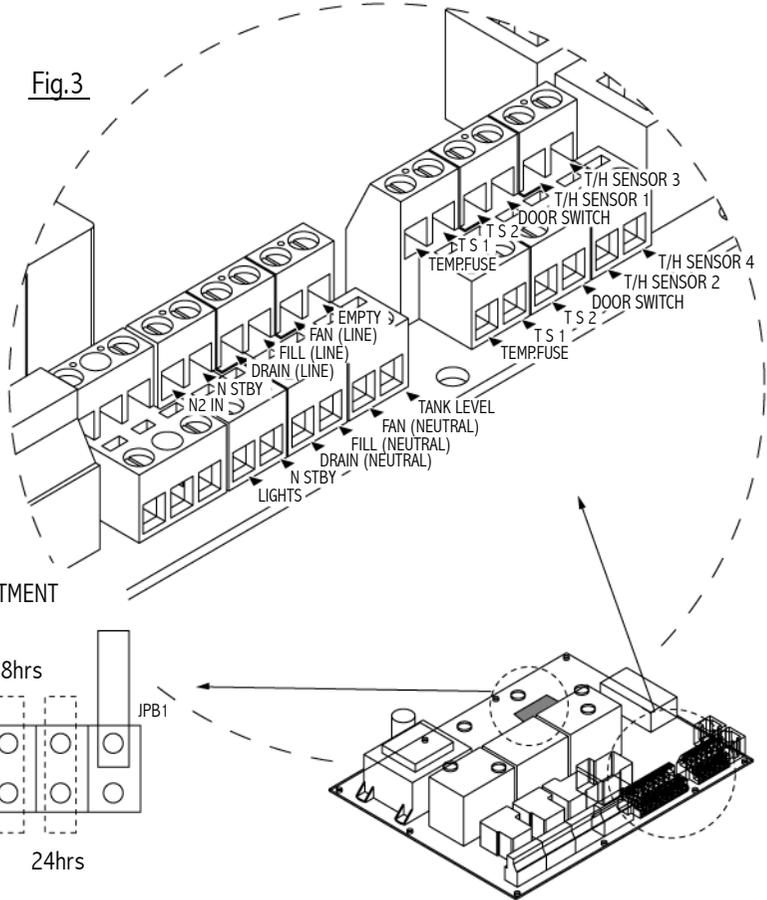
**Please Note:**

Make sure you mount the temperature sensor with the fuse, above the heater following the instructions given in the Sensor section!

The optional bench sensor, temperature sensor or combined temperature humidity sensor, needs to be mounted on the wall, opposite to the heater, close to the shoulder height of the sauna goes. Do not place the second sensor above the heater!

For safety reasons, please follow the instructions!

Fig.3



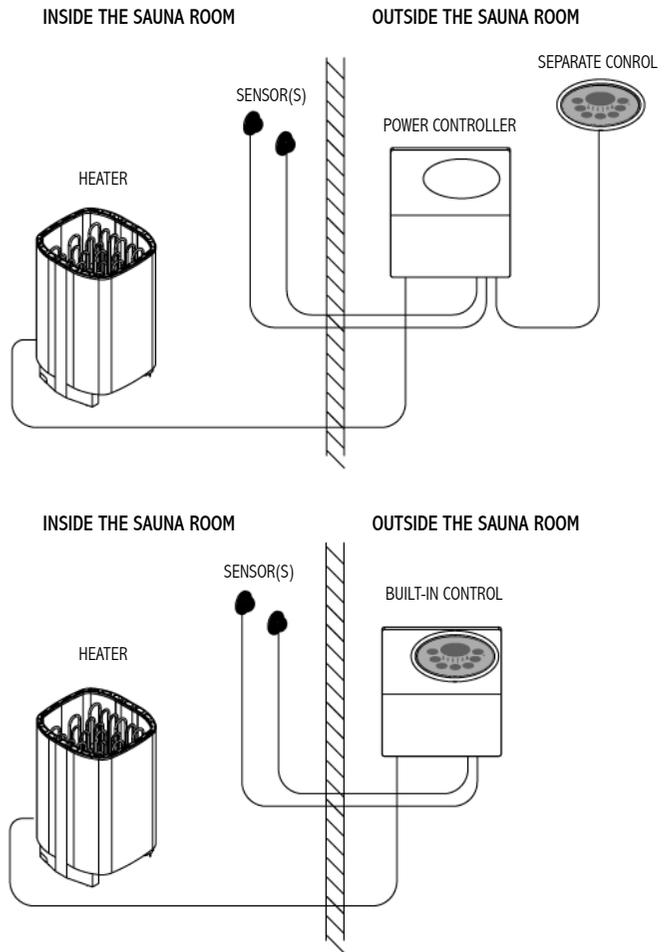
**Assembly and Installation**

The Innova Control Unit is composed of the Innova Interface (Separate or Built-in), Power Controller Board and the Sensors. The interface and Power Controller communicate by using a telephone-like cable.

The Innova Control Unit is designed to monitor and regulate the functions of the electric heater and steamer \*(not all models), maintaining the settings programmed by the user.

**Control to Heater Connection Diagram**

Fig.4



## Power Controller Board

The controller board or the separate interface must not be located inside the sauna room or in places where temperature can exceed 40°C. It is protected from water splashes, however it should not get in contact with water. Mount the controller board on a dry location, outside the sauna room.

Install the Power Controller Board on the wall in vertical direction only and at least 30cm from the ceiling (refer to Fig.5).

Electrical supply cable of H07RN-F or equivalent has to be used to connect the controller board to the heater.

Fig.5

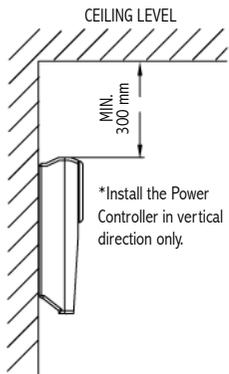
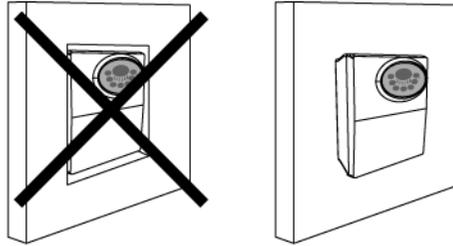


Fig.6



### Warning



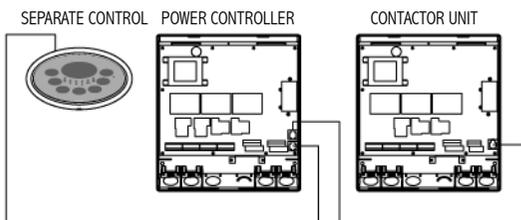
Do not embed the control unit into the wall, because it may lead to overheating of the unit and cause damage!

## Contactor Unit

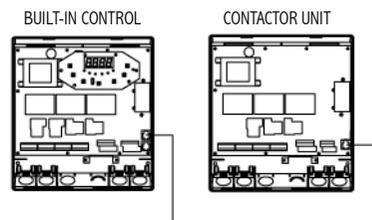
If the heater used is more than 15kW, an additional contactor is needed for increased power capabilities. The contactor unit is linked to the main Power Controller Board with a RJ12 cable (Fig.7).

Fig.7

### Installation for Separate Interface with Contactor Unit



### Installation for Built-in Interface with Contactor Unit



## Sensors

One or two sensors can be connected to the Control Unit. The first sensor measures the temperature, it is the sensor with temperature fuse and thermistor.

The second sensor, the additional bench sensor, is a temperature sensor or combined temperature humidity sensor. The combined sensor is capable of measuring the humidity as well as the temperature.

With two sensors it is possible to receive more accurate measurements from the sauna room.

If the heater is mounted to the wall, the first temperature sensor needs to be mounted on the wall of the sauna room, over the heater. Place the sensor 150mm from the ceiling (Fig.9).

However, if the heater is more than 200mm from the wall, place the sensor to the

ceiling, over the heater, as shown in the figure 11.

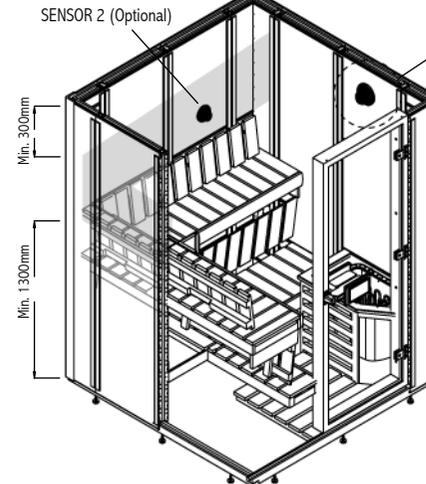
If the heater is placed on the floor, but is less than 200mm from the wall, follow the same guidelines than wall-mounted heater (fig 8).

The optional second sensor should be mounted on the wall, opposite to the heater, minimum 30cm from the ceiling and minimum 130cm from the floor (fig 8). It is designed to measure the bench temperature, so ideally place it close to the shoulder height of the sauna goers.

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.11).

### Sensor location with heaters mounted on the wall

Fig.8



TEMPERATURE SENSOR WITH FUSE

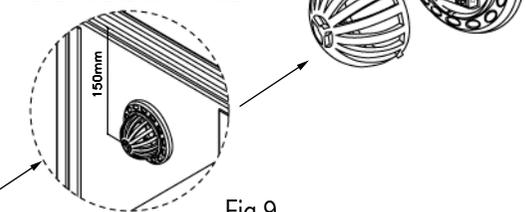
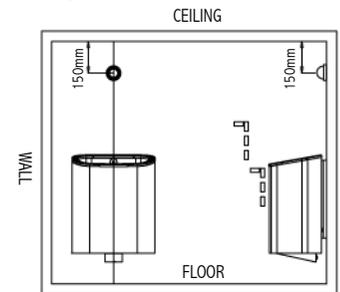
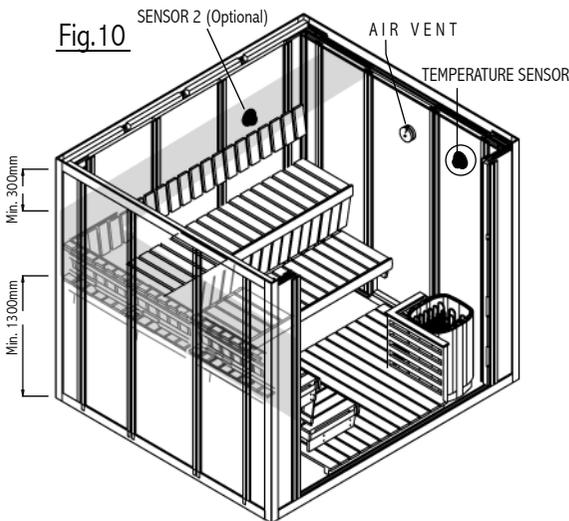


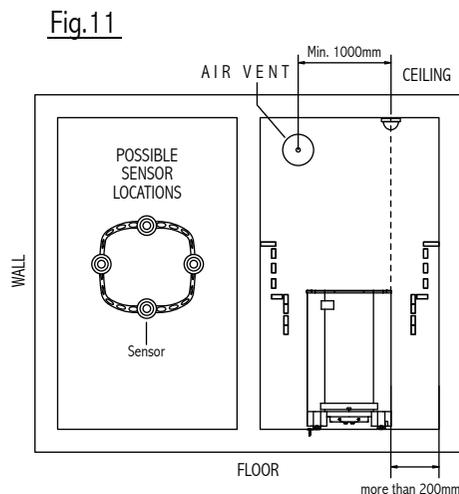
Fig.9



### Sensor location with heaters mounted on the floor



### Sensor location with heaters mounted on the floor more than 200mm from the wall



### 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 6 hours. It includes pre-run time and the session time. The factory setting for the control unit is 6 hours.

For public sauna, the operating period of the sauna heater can be either 18 or 24 hours. Please note, if the public sauna is set to 24 hours, it will be on constantly. It needs to be continuously attended.

For blocks of flats, 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 maximum heater on-time is set by the jumpers on SCB1. The standards and regulations of the country where the control unit is installed must be followed, when setting the jumpers. When no jumpers are placed, the default time is 6 hours. See the Table 1.

**Please Note:**

If you need to change the settings in the build-in interface, removing the display board helps.

Table 1

Sauna Type	Domestic sauna		Hotels, block of flats	Public sauna	
	1	2		4	5
Jumper			3		
Max. time	4h	6h	12h	18h	24h
Max. pre-run time	2h - steam	4h - steam	99h	99h	99h
	3h - sauna	5h - sauna			

### Door Switch

If the control unit is for other than household use, the sauna door shall be fitted with interlock. The interlock disables all pre-run operations if the door is opened while the pre-run countdown is active.

The door switch also ensures that the door

### Fan

The fan function can only be activated if the fan feature is present on the control unit.

The sauna room fan has to have the right type of motor for speed control. It has to be either shaded pole or permanent split capacitor motor. The maximum power is 100W with 230 VAC.

is not open for long periods of time when the heater is on. If the heater is on and the door is open for more than 15minutes, an alarm and "DOOR" will be displayed to warn the user. The heater will be switched off automatically.

### Dimmer

It is possible to use any suitable lamp of your choice in the sauna room. However, if the dimmer feature is present on the control unit and wished to be used, only incandescent lamp is suitable.

### Low Battery

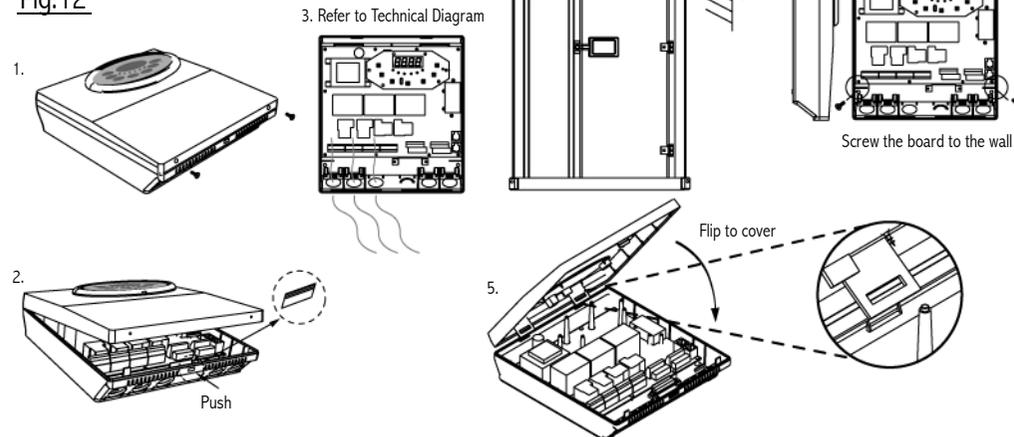
When the battery inside the controller is running low, "LbAt" will be displayed every minute for 5 seconds. It will continue until the battery is flat or is changed to a new one. One 9V PP3 cell battery can be used only!

### Installation for Built-In Interface (See Illustration)

Follow the steps how to attach the Controller Board on the illustration below.

1. Unscrew two screws from the top cover.
2. Remove the plastic cover of the control unit by pushing the front lock.
3. Insert the designated wires for each corresponding terminals. See Diagram.
4. Drill holes for the screws on the wall as where to attach the control unit. Install the control unit in vertical direction only. Follow the measurements given.
5. Cover back the control unit after the wiring connections have been made by snapping the front lock. Screw the two screws back to the top cover.

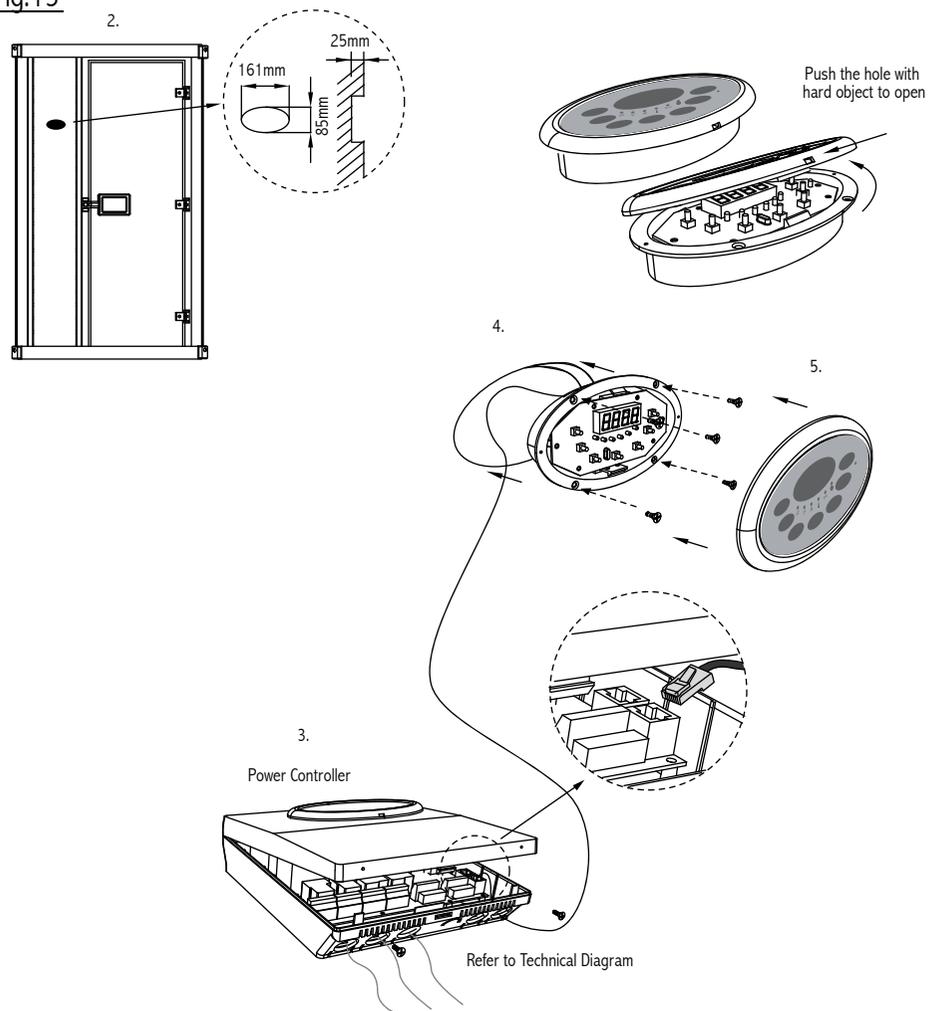
Fig.12



## Installation for Separate Interface (See Illustration)

1. Mount the Separate Interface casing outside the sauna room, on any preferred, secure area on a room temperature.
2. Cut the wall section according to the specifications.
3. Connect the RJ12 cable provided from the interface input to the Power Controller.
4. Insert the casing on the cut section.
5. Screw the interface to the wall on the holes provided.
6. Snap the top cover of the control to its place.

Fig.13



## Troubleshooting

If an error occurs, the heater will be switched off. There will be a warning beep and the code for the error will be displayed in the control panel, see the table below.

Please note, only a qualified electrician or maintenance personnel should make the service operations and repairs!

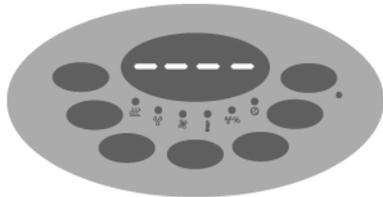
Possible errors are:

Table 2

Code	Problem	Solution
E1	Temperature sensor 1 is not connected.	Check the wire between the sensor and the control unit.
E2	Temperature sensor 1 is short circuit.	If there is no problem with the wires and they are correctly installed, check the sensor. If no problem can be found, contact the retailer.
E3	Temperature fuse is defective.	Check the wire between the sensor and the control unit. It has probably overheated. The reason for it needs to be discovered before using the sauna again. A new sensor is needed. If no problem can be found, contact the retailer.
E4	Temperature sensor 2 is not connected.	Check the wire between the bench sensor and the control unit.
E5	Temperature sensor 2 is short circuit.	If there is no problem with the wires and they are correctly installed, check the sensor. The heater can still be used with the sensor 1 only, but 2 sensors are needed for the steamer. If a new sensor is needed or no problem can be found, contact the retailer.
E6	Combined Temperature / Humidity sensor is defective.	
E7	Communication failure.	Check the RJ12 cable, if Innova Separate model is used. If the area where the cable is located has many other cables, it can cause EMC problems. If built-in model is used, remove the user interface board. Wipe the pin header contact to remove any dirt. Assemble back the user interface board in correct position and make sure the six pin header connectors are properly inserted to the socket. If no problem can be found, contact the retailer.
E8	Temperature is greater than the maximum temperature.	This should never occur under normal conditions. However, if this happens contact qualified electrician or maintenance personnel before using the sauna again.

## Other possible problems are:

- The control unit is working fine, but the heater does not turn on. Check the electricity supply to the heater. Check that the wires for the sensors are placed into the correct terminals in the control unit.
- The control unit cannot display the relative humidity\* (only when the combined sensor is installed). The combined sensor cannot be recognised. The wires for the sensor are placed in the wrong terminals.
- Control unit does not turn on and clicking sound can be heard. Check that the N2in jumper is connected with the N.
- User presses a button and “----“ is shown in the display. This indicates that the key pad is locked. Unlock the buttons by pressing up and down arrow keys at the same time for more than 5 seconds. A high beep will confirm the activation and the deactivation.
- The steamer is on and “dry” is displayed, even though there is plenty of water in the tank. Make sure that terminals “empty” and “tank level” are correctly connected to the right terminals on the controller.
- The steamer is switched on and “dry” is displayed immediately. Make sure that the “WB” terminal from the heater is connected with the “tank level” on the controller. Check that the “UB” terminal from the controller is connected with the “empty” terminal on the controller.
- When the user turns the steamer on and “Fill” is displayed continuously, the wiring needs to be checked. Make sure that the “UB” terminal from the controller is connected with the “empty” terminal on the controller. In addition, the “WB” terminal from the heater needs to be connected with the “tank level” on the controller.
- The control unit is attempted to be switched on with the power button and nothing happens or the software version/logo is displayed shortly. The problem may be low battery that does not have enough power to display “LbAt”. Change the battery inside the controller.



- If error E4 or E6 is displayed, there is a problem with the bench sensor. If only one sensor is installed, the steamer cannot be used. The user can confirm the error by pressing the on/off button, after which the heater will function normally, but the steamer cannot be used.
- The user switches the steamer on and “dry” is displayed immediately. Check that the “empty” and “tank level” terminals from the heater are connected with the “empty” and the “tank level” on the controller.

## The Sauna Room

### How to use the Sauna

1. Leave your clothes in the dressing room. You should have a clean set of clothes to wear after the sauna.
2. Take a shower before you enter the sauna.
3. Enter the sauna and sit on the bench. You may want to use a small towel to sit on.
4. In Sauna Heater operation mode you may increase humidity of the sauna room by throwing water on the stones of the heater. The recommended temperature in the sauna is 65 to 85°C, at most 100°C. In Steamer mode, the recommended temperature in the sauna room is 45 to 55°C.
5. Leave the sauna room when you feel hot enough. Cool off by taking a shower or a swim or just by sitting at room temperature or outside. Have a drink if you feel thirsty, but avoid alcohol in the sauna.
6. You may go back to the warm sauna room, taking your time to relax and enjoy the sauna atmosphere. You can repeat the hot-cold cycle as many times as you feel comfortable. Two rounds are suitable for average people.
7. After sauna bathing, wash yourself in a shower, or go for swimming.
8. Dry yourself up with a towel or just sit and relax at room temperature.
9. Before putting on clean clothes allow enough time for cooling off, otherwise sweating may still continue.
10. Finally, have a peaceful rest and a refreshing drink.

### Climate of the Sauna Room

The climate inside the Sauna Room can be monitored with a dedicated sauna sensors. The impact of temperature and moisture on an individual varies greatly. Hence it is impossible to recommend certain values as ideal bathing condition. The climate is right as long as the bather feels comfortable. Ventilation is important to maintain fresh and easy to breathe air.

Sauna bathing refreshes your body and is known to benefit your health by muscle relaxation, soothing and relieving stress. You may want to mediate inside a quiet sauna.