

# INSTALLATION AND OPERATING INSTRUCTIONS

**Louhi and Hiisi E2 heaters**

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# 1. General safety information



To ensure safe use of the sauna, please read these safety instructions first!

Electrical connections may only be made by an electrician with a valid installation authorisation according to the current regulations.

The Mondex electric heater is suitable for use in a family sauna, one (1) heater per sauna room. Retain the installation and operating instructions for further reference.

Always check the adequacy of the fire protection distances!

Failure to observe the connection instructions may cause a fire hazard!

Always check the sauna room before switching the heater on!

Always check that the controller has switched the heater off after the set time period!

Due to the risk of fire, do not use the sauna to dry clothes or laundry.

Exercise caution with a hot heater, since the heater stones and metal parts become very hot and can cause burns.

Steam from the heater is burning hot and may cause severe burns.

Children, disabled and ill persons who are using the sauna should be supervised.

Children may not play with the device.

A child must not carry out any cleaning or maintenance unattended.

Benches and floors may be slippery, therefore move in the sauna with caution.

Do not go to a hot sauna under the influence of narcotic substances (alcohol, drugs, narcotics, etc.).

A stone compartment without stones or filled improperly will present a risk of fire!

Covering the heater will present a risk of fire.

3

This device may be used by children who are 8 years of age or older, as well as by persons whose physical, sensory or mental abilities have deteriorated or who lack of experience and knowledge, only under supervision or when they have been instructed on the safe use of the device and they understand the hazards associated with using the device.

This device complies with the requirements of:



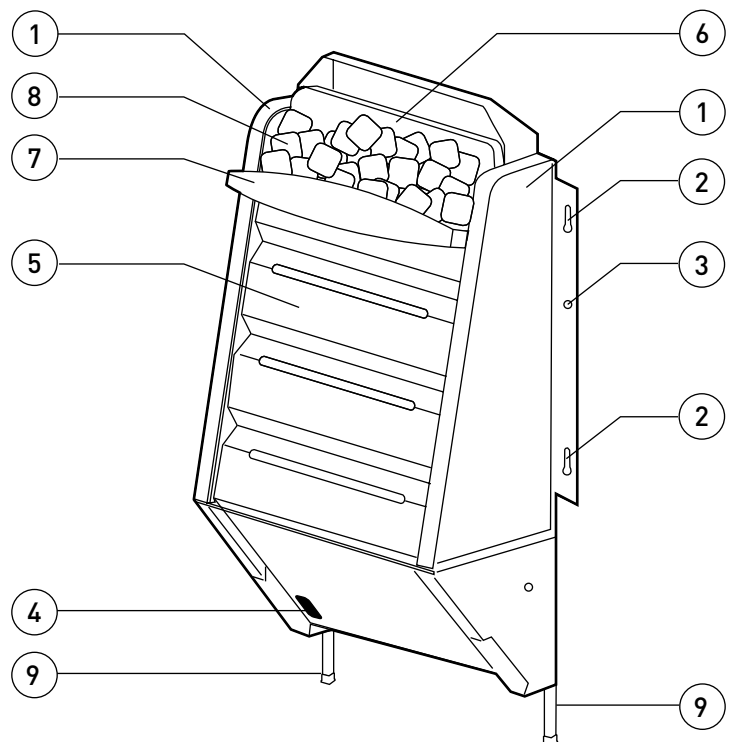
Mondex pursues an active policy of product development and continuous improvement. For this reason, Mondex reserves the right to make changes relating to the design and technical specifications of their products without prior notice.

## 2. Louhi and Hiisi heaters



### Components of the Louhi and Hiisi heaters

- 1) Side stones
- 2) Fastening screws
- 3) Locking screws
- 4) Main switch for the electronics
- 5) Large heater stones
- 6) Background stone
- 7) Heater stone shelf
- 8) Small heater stones
- 9) Feet



### 3. Heater assembly and installation

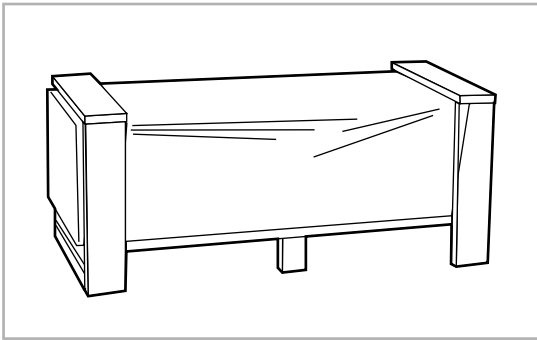


Figure 3.1

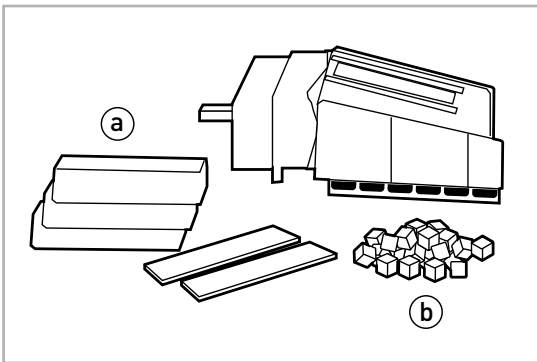


Figure 3.2

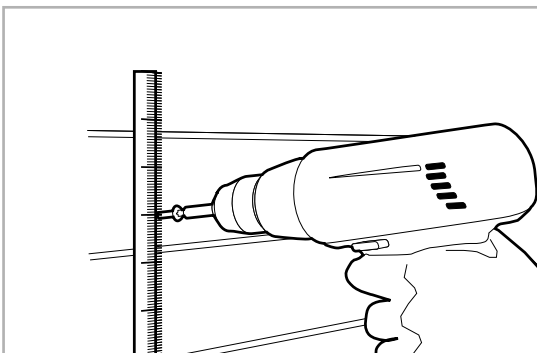


Figure 3.3

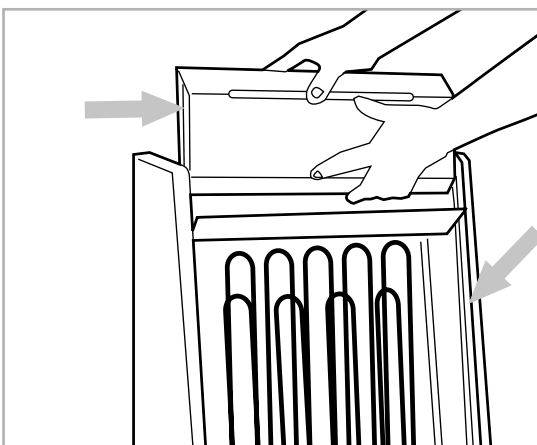


Figure 3.4

#### Heater assembly

1) The package includes the heater, heater blocks (a) and small heater stones (b). Unpack the components with the box placed horizontally (see Figures 3.1 and 3.2).

Inspect the heater components visually. If you notice any discrepancies or deficiencies, please contact the store where you purchased the heater. Do not expose soapstone parts to blows and denting when taking them out of the package.

The sauna's floor surface should also be properly protected before you begin the installation.

2) Attach the heater to the wall with screws. Observe the safety distances between the heater and any inflammable material in accordance with Table 4.4 (see Figure 3.3) when installing the heater.

3) Install the heater blocks by aligning the grooves on their sides with the rails on the inside of the heater sides and lowering the blocks carefully into place (see Figure 3.4).

The bevelled block should be placed topmost, with the bevel facing up. **Ensure that there is a gap between the resistors and the heater blocks** (see Figure 3.5).

**NOTE!** Remove all plastic film before using the heater!

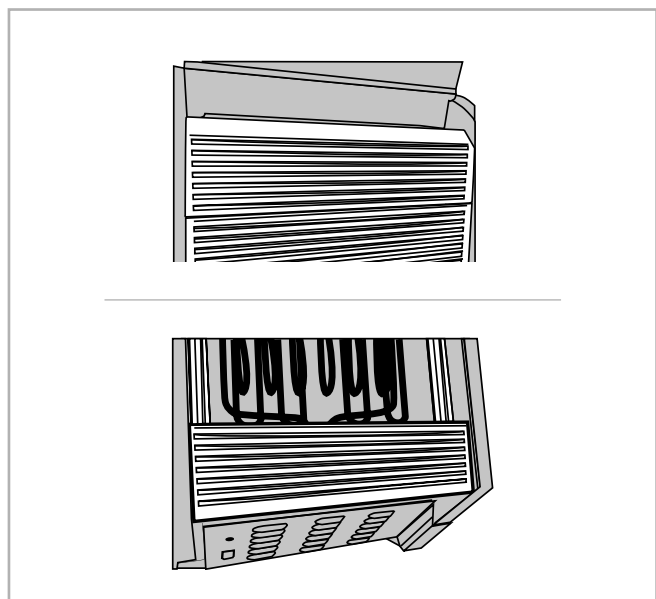


Figure 3.5

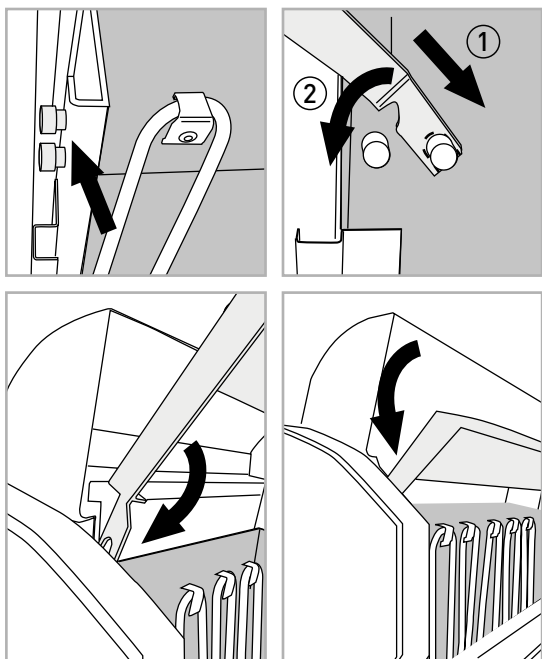


Figure 3.6

4) Install the heater stone shelf: there are metal fastening pins for the shelf, located on the inside of the heater, approximately 9 cm downward from the upper end of the air deflector. Insert the support arms of the heater stone shelf in the rearmost pins diagonally from the top (1) and turn the shelf by the arms so that it rests on the front fastening pins (2). After that, the heater stones can be stacked on the shelf (see Figure 3.6).

5) Attach the background stone (see Figure 3.7).

6) When stacking the stones, ensure that you do not place **small heater stones among the resistors or on top of the ventilation grill located at the top edge of the heater** (see Figure 3.8).

After the assembly, remove all plastic films, including those from behind the deflector.

Do not make a heap of stones on top of the heater!

**Do not use the heater without the stones!**

Dents caused by the user or others are not covered by Mondex's warranty or other product liability. When stacking the stones, be careful not to dent the heater's metal or painted surfaces to avoid damaging them. For more information on the warranty and replacing stones, see page 15.

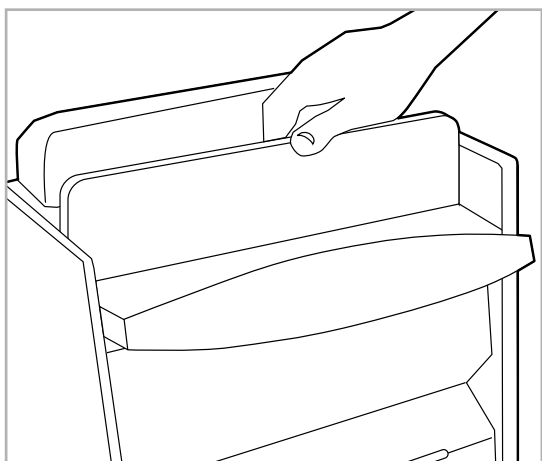


Figure 3.7

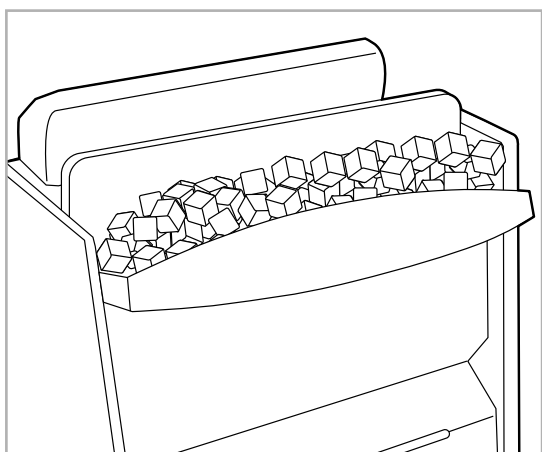


Figure 3.8

## 4. Technical specifications

Type	Power (kW)	Voltage	Connecting cable	Fuse
Louhi, Hiisi 6.6	6.6	400 V 3N	5 x 1,5 mm <sup>2</sup>	3 x 10 A
Louhi, Hiisi 9.0	9.0	400 V 3N	5 x 2.5 mm <sup>2</sup>	3 x 16 A

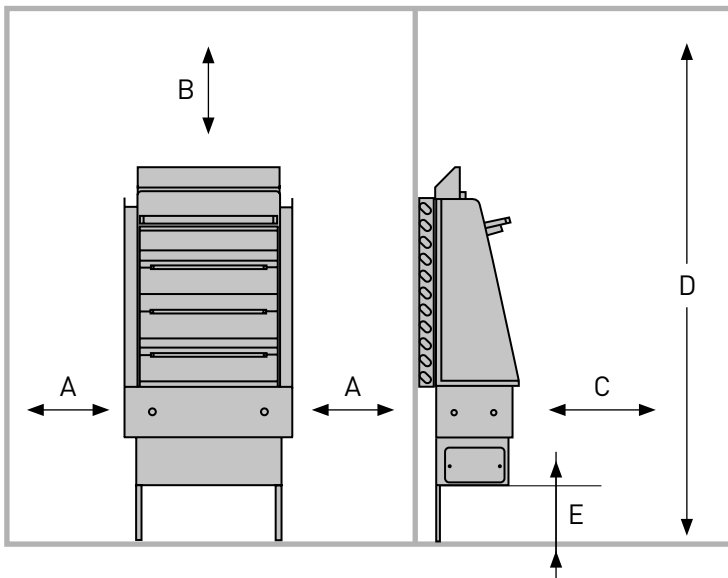
Table 4.1

### Heater dimensions and required quantity of stones

Type	Width (mm)	Depth (mm)	Height (mm)	Stone amount (kg)
Louhi, Hiisi 6.6	420	300	860	65
Louhi, Hiisi 9.0	420	300	860	65

Table 4.2

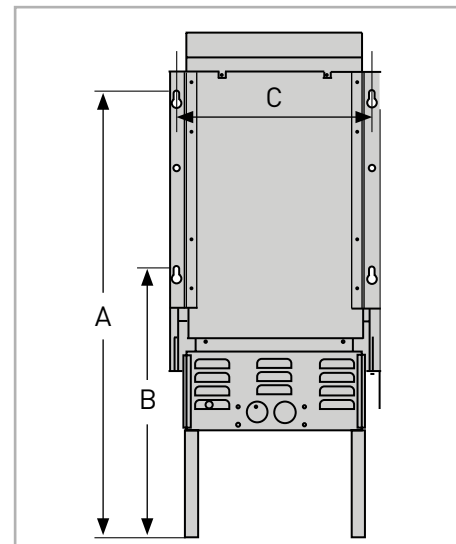
### Minimum distances to inflammable material



Type	A	B	C	D	E	Volume
Louhi, Hiisi 6.6	50	920	200	1900	100	5-9 m <sup>3</sup>
Louhi, Hiisi 9.0	50	970	200	1900	100	7-13 m <sup>3</sup>

Table 4.3 Minimum distances to inflammable material (mm)

### Attachment points



Type	A	B	C
Louhi, Hiisi 6.6	854	604	400
Louhi, Hiisi 9.0	854	604	400

Table 4.4 Attachment points (mm)

### Attachment points in corner installations

Louhi and Hiisi 6.6 and 9.0	
A	220
B	310
C	275
D	206
E	615
F	103

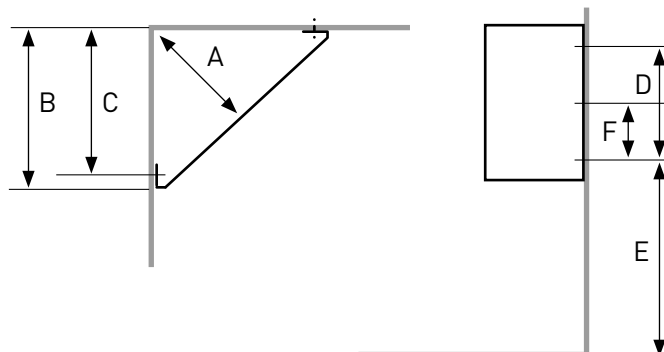


Table 4.5 Attachment points in corner installations (mm)

## 5. General instructions for users of Louhi and Hiisi heaters

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### Note

Electrical connections may only be made by an electrician with a valid installation authorisation according to the current regulations. The Louhi and Hiisi electric heaters are suitable for use in a family sauna, one (1) heater per sauna room. Retain the installation and operating instructions for further reference.

### Installation

Making the heater connections is easier for the electrician when the heater is not yet attached to the wall. The connecting cable is the **H07RN-F** rubber cable. The heater connection is semi-fixed. The control centre is an integral part of the heater structure. The panel wall behind the heater must be reinforced. When mounting the heater on a log wall, note that the logs may still settle. When mounting the heater on a concrete or brick wall, plastic or nylon plugs must not be used. The heater is mounted on the wall using the mounting screws (4 pcs) included in the package and locked in place with the locking screws (2 pcs). See Table 4.5 for the location of the Attachment points.

### Fire protection distances

The fire protection distance is measured to the inflammable material. See the table on page 6 for the minimum safety distances between the Louhi and Hiisi heaters and inflammable material. Safety distances can be reduced by protecting the benches, railings or edges, for example, with a safety rock (1 sheet reduces the distance by 50%).

When needed, check the fire safety of the wall surface material by contacting the retailer or manufacturer of the material.

### Additional connection options

Control of electric heating with the heater: The electric heating control cable is brought directly to the heater's junction box and further to the heater's terminal block with a rubber cable that is dimensionally identical to the incoming cable.

**NOTE! Failure to observe the connection instructions may cause a fire hazard!**

**NOTE! Remove all plastic films before using the heater, including from behind the deflector!**

## 6. Things to keep in mind when using the heater

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### Preheating

Stack the heater stones according to the instructions. **Before you start using the heater, you need to preheat the heater two consecutive times** (follow the same procedure also when the heater blocks are replaced). In the first preheating, the heater will be heated for 20 minutes with the target temperature of the sauna set to 60 degrees. Let the heater cool down completely before the second, 40-minute preheating session, in which the target temperature is set to 80 degrees. During preheating, the resistors may emit fumes, so please ensure that the room is properly ventilated. **Do not throw water on the heater during preheating.** Always monitor the preheating runs!

### Sauna room

Always check the sauna room before switching the heater on! Always check that the controller has switched the heater off after the set time period!



## Temperature adjustment with the controller

The desired temperature is set with the controller. The actual heating time depends on the dimensions, structure and thermal insulation of the sauna. The temperature in the sauna room can be maintained at the desired level with the thermostat. If the temperature of the sauna room becomes dangerously high for any reason, the overheating protector will switch the heater's power off. The cause of overheating must always be investigated. The power can be switched on again by pressing the overheating protector reset button.

## Proper heating time

An excessive heating time consumes energy and does not improve the steaming properties. The best steam is achieved by keeping the sauna's heating time relatively short, at about 25–60 min., according to the size of the sauna and the heater's power. The size of the sauna, the glass door, windows, or materials used may require a longer heating time.

## Water thrown onto the heater

We recommend using hand warm water. The water should be fresh household water. Throwing the water onto the heater sides / lower stones generates softer steam. If you want steam that feels hotter and more intense, pour plenty of warm water on top of the heater all at once. **Do not use sea water or water that contains chlorine.**

## Sauna room structure

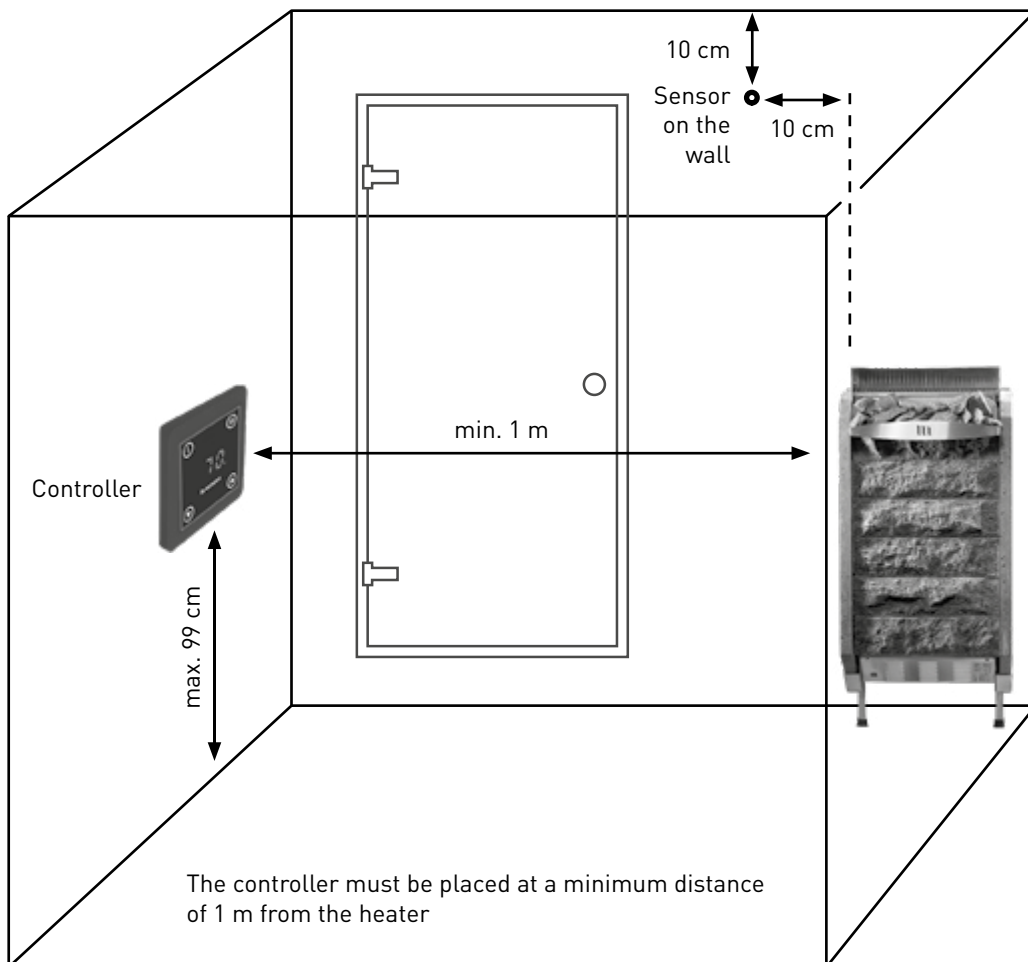
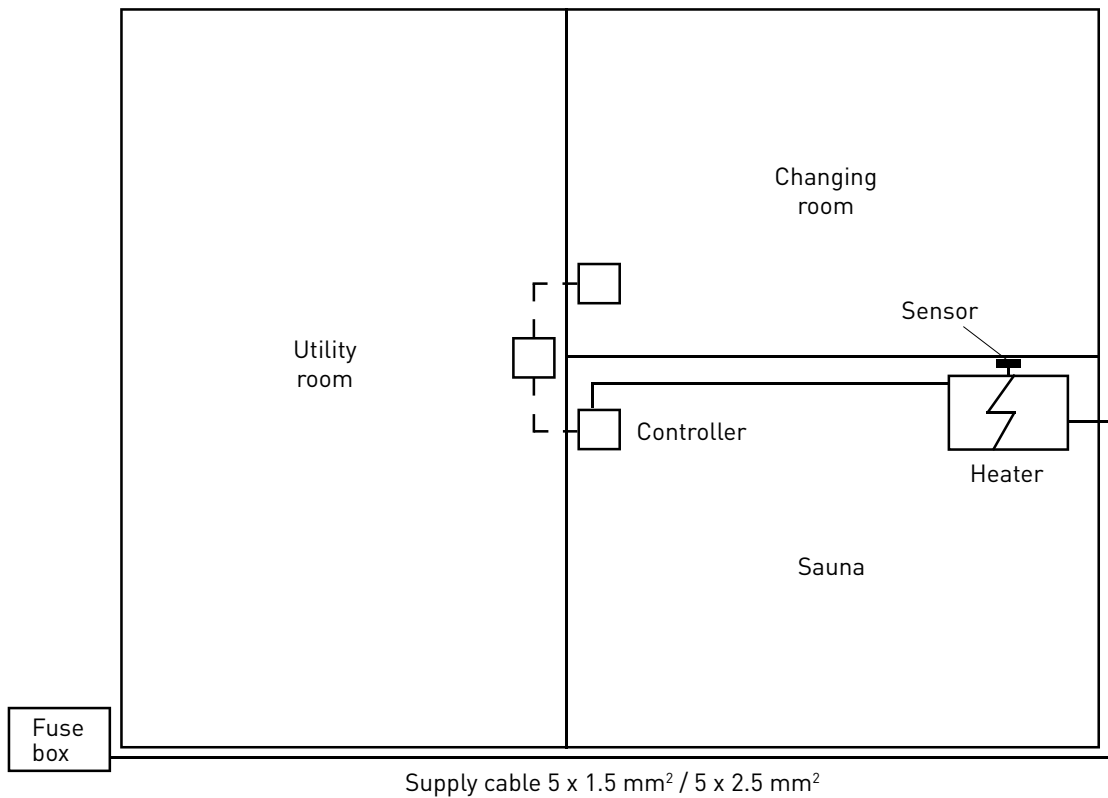
The sauna and its ceiling, in particular, should have good thermal insulation, as heat tends to escape through the ceiling. Due to the moisture, we recommend that you use aluminium paper. The size of the heater should be selected according to the size of the sauna (in cubic metres). In addition to calculating the power need for the regular sauna structure (glass wool–foil–wood), the following should be taken into consideration.

If the sauna has any uninsulated wood, tile or concrete surfaces or the walls are made of logs, the heater power needs to be increased. For every uninsulated square metre, the heater power need increases by the same amount as if increasing the space volume by 1.2 m<sup>3</sup> and on timber surfaces by 1.5 m<sup>3</sup>. The factor for glass surfaces (glass walls, doors and uninsulated stone surfaces) is also 1.2 m<sup>3</sup> per square metre. In borderline cases, you should choose a heater with higher power.

The sauna needs efficient ventilation for a good oxygen level and a sufficient amount of fresh air. The air in the sauna needs to change at least 6 times per hour. For a sauna with an electric heater, mechanical ventilation is the most convenient ventilation method. The supply air should be provided through an inlet located 500 mm, at a minimum, above the heater, either on the wall or in the ceiling. NOTE: the distance of an undirected inlet air valve from the temperature sensor must be at least 1,000 mm, while the distance of an inlet air valve directed away from the sensor must be at least 500 mm. The exhaust valve should be placed on the opposite wall, as far away from the heater and as close to the floor level as possible. It is highly recommendable to install an exhaust air valve in the ceiling as well for an easier removal of moisture after sauna sessions.

For more information, refer to the construction instructions and building regulations.

## 7. Installation instructions



## Installation of external control and sensor

Included in the package:



Controller

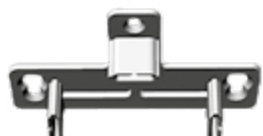


Temperature sensor

Reinforcing plate



Plastic clip



Cover plate



Control panel



The wall-mounted sensor is placed above the heater.

The temperature sensor must be installed so that it cannot be affected by inlet air.

Place the sensor the following way: 10 cm in a vertical distance from the ceiling, and 10 cm in a horizontal distance from the heater (compare sketch on page 10).


Place the reinforcing plate between the wall/box and the plastic clip.

The plastic clip is either mounted to the wall using three screws or affixed to the bottom of the mounting box. The plastic clip is covered first with a cover plate and finally with the control panel. The length of the sensor cable is 10 m. Cut the excess wire and connect the other end to the heater. When installing the control panel, make sure that the cables do not become detached or bend.



## 8. Heater control and operation




### Switching on the heater

The heater is switched on by pressing the ON/OFF button. 



If three lines appear on the display, the buttons are locked.


The buttons can be unlocked by pressing the ON/OFF and MENU buttons simultaneously until all LED segments on the display are lit (as shown in the picture).  



The heater is switched on by pressing again the ON/OFF button. 

### Starting the heating process


When the heater is switched on, the duration of heating last used is displayed (the default value is 2 hours).

The duration of heating can be changed by using the UP and DOWN buttons, either by repeatedly pressing them briefly or by keeping them depressed longer. The time will change in 30-minute increments.  



The target temperature last used can be displayed by pressing the MENU button. 


The temperature can be changed by using the UP and DOWN buttons, either by repeatedly pressing them briefly or by keeping them depressed longer.  

### Timing of the heating process



The timing setting is displayed by pressing again the MENU button. 


The right-hand decimal point on the display is lit as an indication of the fact that the timing setting is displayed.

The setting can be changed by using the UP and DOWN buttons, either by repeatedly pressing them briefly or by keeping them depressed longer. The time will first change in 30-minute increments, and after ten hours, in one-hour increments.  



If the timing has been set and the ON/OFF button is pressed, the timing will start first and only after that the actual heating process. 

During the timing, the right-hand decimal point on the display is blinking as an indication of the timing being in progress.

The timing setting can be changed during the timing process by using the UP and DOWN buttons, either by repeatedly pressing them briefly or by keeping them depressed longer.  

If the timing setting is changed to zero or the ON/OFF button is pressed during the timing process, the timing process ends and the heating process starts immediately. 

### Starting the heating

The duration of heating is displayed again by pressing the MENU button one more time. You can now start the heating by pressing the ON/OFF button. The current temperature will be displayed, and the right-hand decimal point on the display is lit as an indication of the heating process being in progress.  

The target temperature can be adjusted by using the UP and DOWN buttons. When the target temperature has been adjusted, the current temperature will again be displayed after a while. The remaining heating time is displayed by pressing the MENU button during the heating process.



The duration of heating can now be changed by using the UP and DOWN buttons, and the current temperature will be displayed when the change has been made. If the duration of heating is changed to zero, the heating stops immediately.



### Stopping the heating or timing process

The heater can be turned off by pressing the ON/OFF button for a while during the heating or timing process or any other state.



### Quick start of the heating process

The heating process can be started quickly by pressing the MENU button. That sets the duration of heating to two hours and the target temperature to the value last used (the default value is 70 °C).



If three lines appear on the display, the buttons are locked. The buttons can be unlocked by pressing the ON/OFF and MENU buttons simultaneously until all LED segments on the display are lit (as shown in the picture).



The heating process can be started by pressing again the MENU button.



### Parental control

The heater has a menu for separately set parameters.

You can enter the menu by pressing the MENU and ON/OFF buttons simultaneously for a while. The abbreviation of the first parameter will be displayed.



The current value of the parameter can be displayed by pressing the MENU button.



You can change the parameter value by using the UP and DOWN buttons.



The chosen parameter value can be saved by pressing the MENU button so that the abbreviation of the parameter is again displayed.



You can leave the menu by pressing the ON/OFF button. This will also switch the heater off.



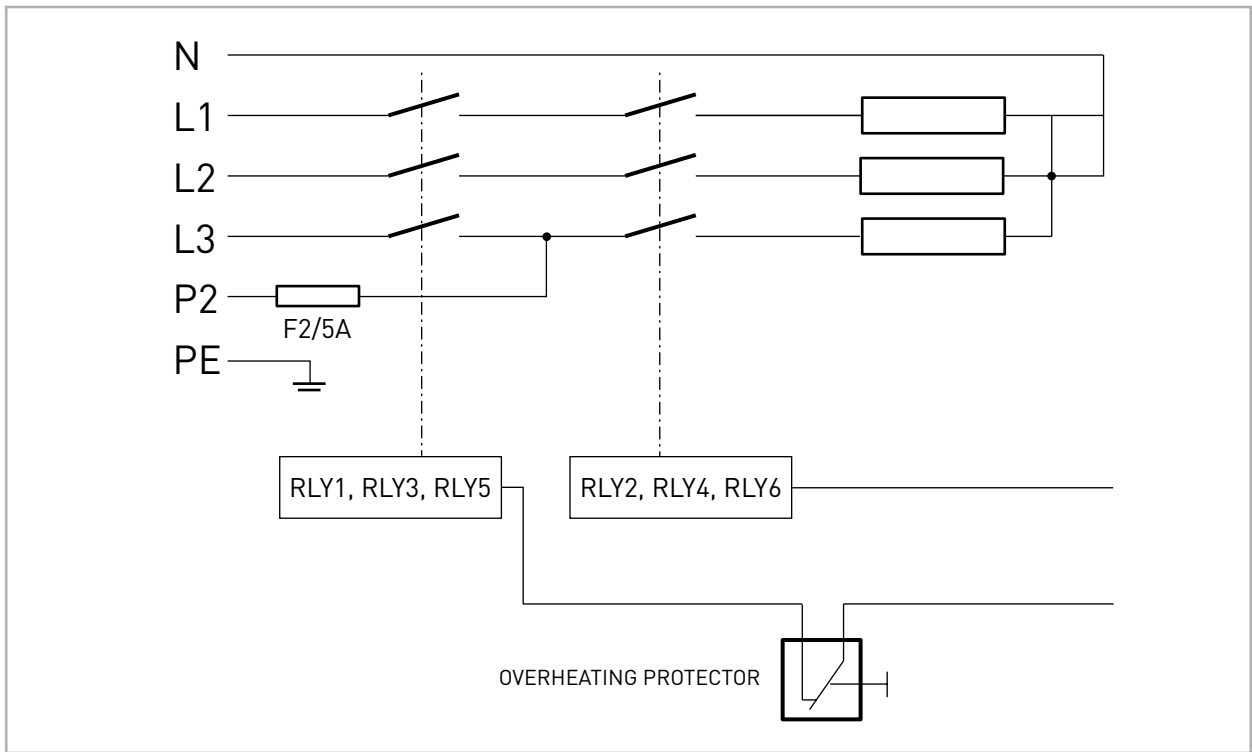
Parameter	Abbreviation	Value range	Default value
Button locking	---	on/off	ON

### Error codes

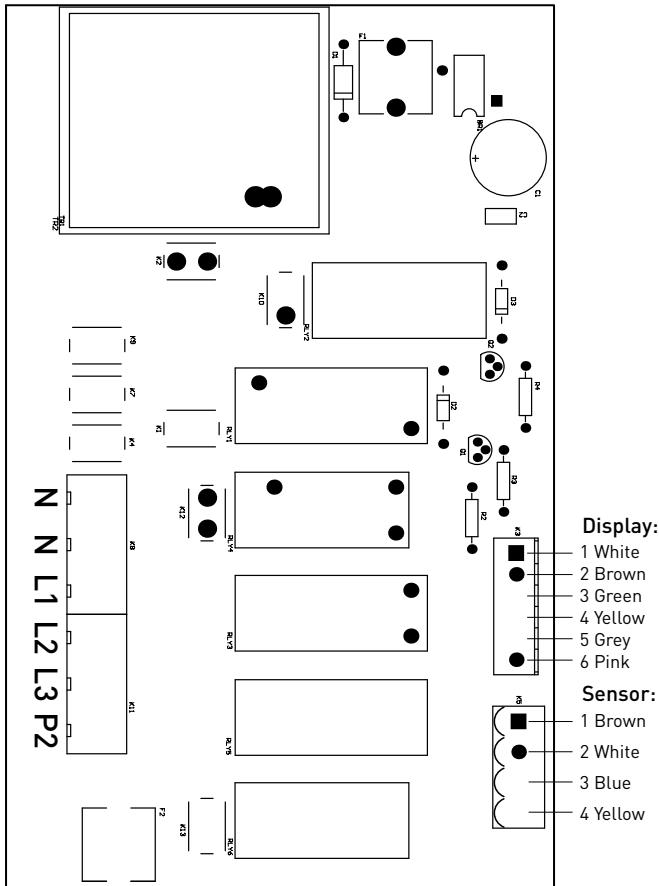
When a known fault situation arises, an error code is displayed. It has one of the following meanings:

Error code	Meaning
E01	The overheating protector has tripped
E02	The thermal sensor is out of order
E03	The thermal sensor is not connected

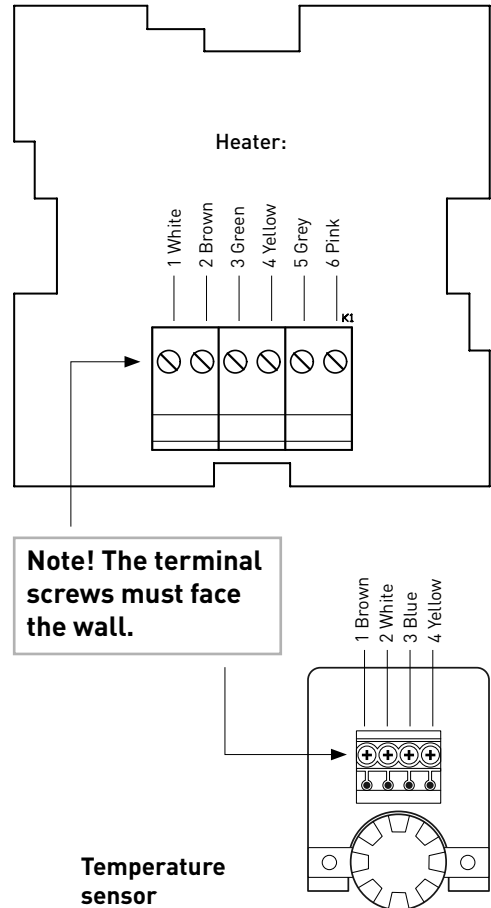
## 9. Wiring diagram



### Controller card wiring, heater



### Controller card wiring, controller



## 10. Troubleshooting

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### Heater does not warm up

#### Is the power on?

#### Has the overheating protector tripped?

→ This is reset by pressing the button in the sensor box until a click is heard. The cause of overheating must always be determined before the heater is switched on again! If necessary, contact the dealer or manufacturer.

#### Warnings

- Due to a risk of fire, do not use the sauna to dry clothes or laundry.
- Exercise caution with a hot heater, since the heater stones and metal parts become very hot and can cause burns.
- The water steam rising from the heater is hot and can cause burns.
- Children, disabled and ill persons who are using the sauna should be supervised.
- Benches and floors may be slippery, therefore move in the sauna with caution.
- Do not go to a hot sauna under the influence of narcotic substances (alcohol, drugs, narcotics, etc.)

#### Warranty

For heaters and control units in private use, the warranty is two (2) years. In commercial/professional use, the warranty is three (3) months. Commercial use refers to facilities in which the heater is in use on a continuous basis, such as fitness centres, swimming pools, housing companies etc. It is not recommended that the heater is on for longer than six (6) hours at a time. Retain the sales receipt or warranty card. The warranty does not cover external or internal mechanical damage caused by, for example, the impacts of stones or the heater falling over. The warranty also does not cover defects caused by acts of nature, such as lightning, or damage caused by overvoltage. Please also see chapter "Changing the heater stones".

**Removing or re-stacking of heater stones are not covered by the warranty in a potential warranty maintenance.** The manufacturer will not compensate the buyer for expenses incurred by a product defect or malfunction, loss caused by disruption of business operations, or any other direct or indirect damage. For more detailed warranty terms and conditions, please see [www.mondex.fi/en/product-support/](http://www.mondex.fi/en/product-support/).

#### Maintenance, spare parts

In case of a fault that cannot be solved, please contact the store where you purchased the heater or email [info@mondex.fi](mailto:info@mondex.fi). Spare parts can be purchased from Mondex distributors and the manufacturer. When purchasing spare parts, please refer to the name, power, serial number and manufacturing date of the heater to ensure you receive the correct parts.

#### Soapstone as material

Small pebbles or pieces may come off the soapstones used in the heater. As this is not a failure of the organic material but a natural feature that cannot be predicted at the time of manufacturing the product, the manufacturer is not responsible for any damage. The heater blocks will become brittle, change colour and may blister over the years, which indicates that they need to be changed. Any spots of rust are due to the ferric oxide contained in soapstone. You may try to clean the stone surface with a brass brush or a wet sanding paper.

#### Changing the soapstone blocks

Stack the heater stones according to the instructions. **Before you start using the heater, you need to preheat the heater two consecutive times** (follow the same procedure also when the heater blocks are replaced). In the first preheating, the heater will be heated for 20 minutes with the target temperature of the sauna set to 60 degrees. **Let the heater cool down completely before the second, 40-minute preheating session**, in which the target temperature is set to 80 degrees. During preheating, the resistors may emit fumes, so please ensure that the room is properly ventilated. **Do not throw water on the heater during preheating.** Always monitor the preheating runs! If preheating is not carried out in accordance with the instructions, the soapstone warranty will become void.

