



INSTALLATION AND OPERATING INSTRUCTIONS

Louhi and Hiisi heaters

Contents

1	General safety instructions	3
2	Louhi and Hiisi heaters	4
	Heater components	4
3	Heater assembly and installation	5
	Heater assembly	5
	Stacking the stones	6
4	Technical specifications	7
	Heater power and voltage	7
	Heater dimensions and required quantity of stones	7
	Minimum distances to inflammable material	7
	Attachment points for heater installation	7
5	General instructions for users of Louhi and Hiisi heaters	8
	Note	8
	Installation	8
	Fire protection distances	8
	Additional connection options	8
6	Things to keep in mind when using the heater	8
	Preheating	8
	Sauna room	8
	Temperature adjustment with the controller	9
	Heating time	9
	Water thrown on heater	9
	Sauna room structure	9
7	Installation instructions	10
	Installation of external control and sensor	11
8	Wiring diagram	12
	Controller card wiring, heater	12
	Controller card wiring, controller	12
9	Heater control and operation	13
	First time use of the heater/calibration	13
	Resetting the heater	13
	Error codes	13
	Overheating protector	13
10	Troubleshooting	14
	Heater does not heat up	14
	Warnings	14
	Warranty	15
	Maintenance; spare parts	15
	Soapstone as material	15
11	Service history	16

1. General safety information



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

Electrical connections may only be carried out by an electrician with valid installation authorization 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 result in a risk of fire!

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.

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.

Extended periods in a hot sauna will raise the temperature of the body, which may be dangerous.

3

This device is not intended for use by children or persons whose physical, sensory or mental abilities or lack of experience and knowledge prevent them from using the device safely, without the supervision of a person responsible for their safety or before they have been instructed on how to use the device.

Children should be supervised to ensure that they do not play with the device.

This device complies with the requirements of:



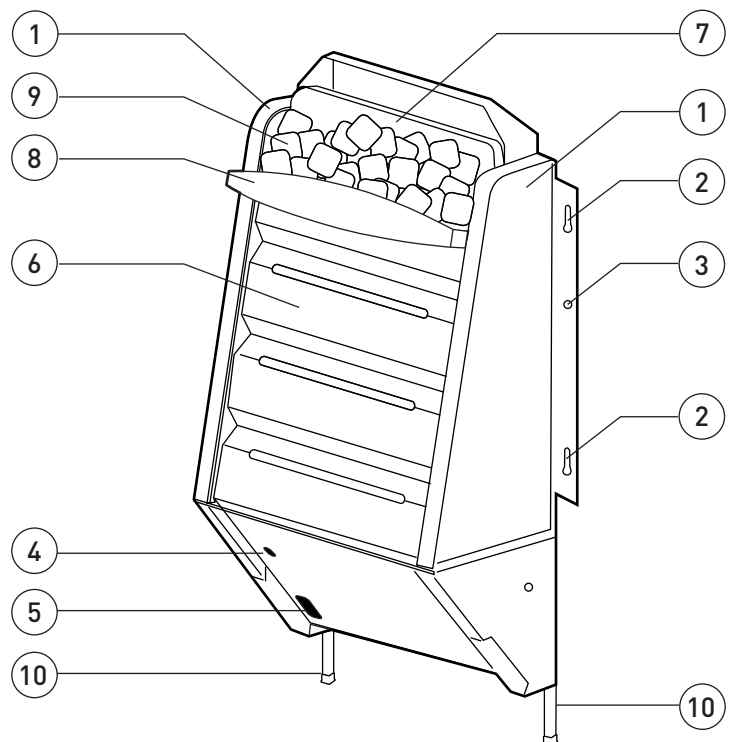
Mondex pursues an active policy of product development and continuous improvement. For this reason, Mondex reserves the right to make changes relating to the design and technical specifications of their products without prior notice.

2. Louhi and Hiisi heaters



Components of the Louhi and Hiisi heaters

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



3. Heater assembly and installation

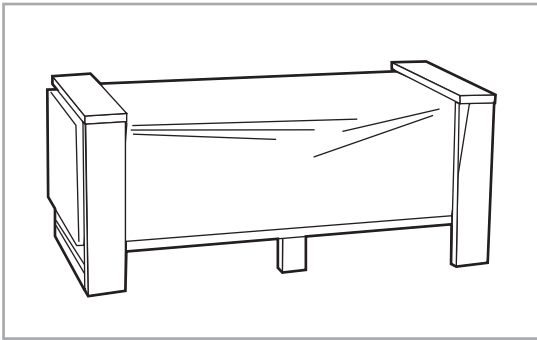


Figure 3.1

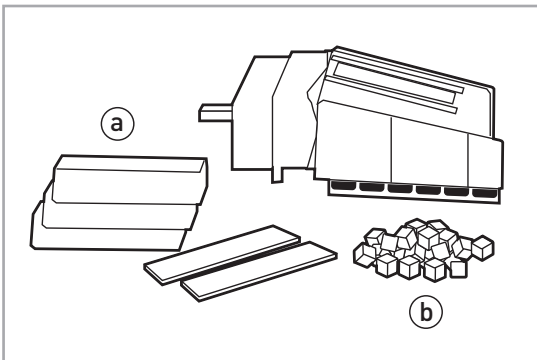


Figure 3.2

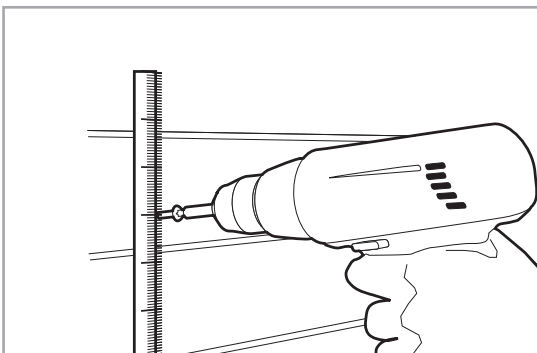


Figure 3.3

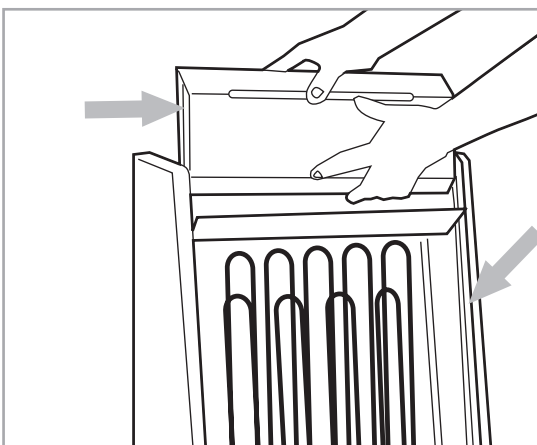


Figure 3.4

Heater assembly

- 1) The package includes the heater, heater blocks (a) and the 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, please contact the store from which 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) Fasten 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!

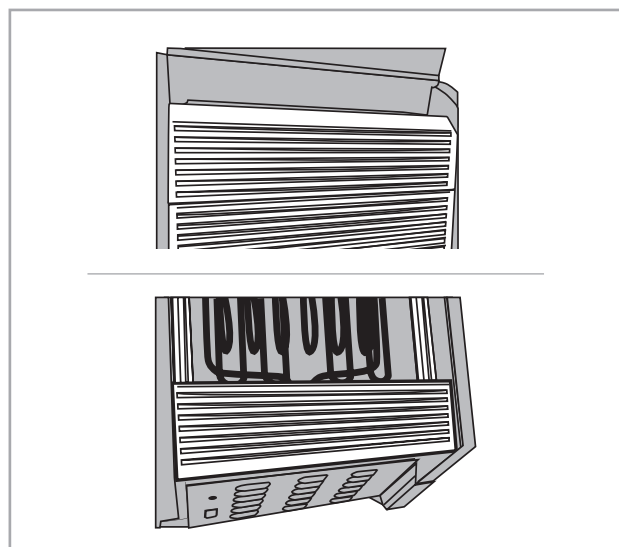


Figure 3.5

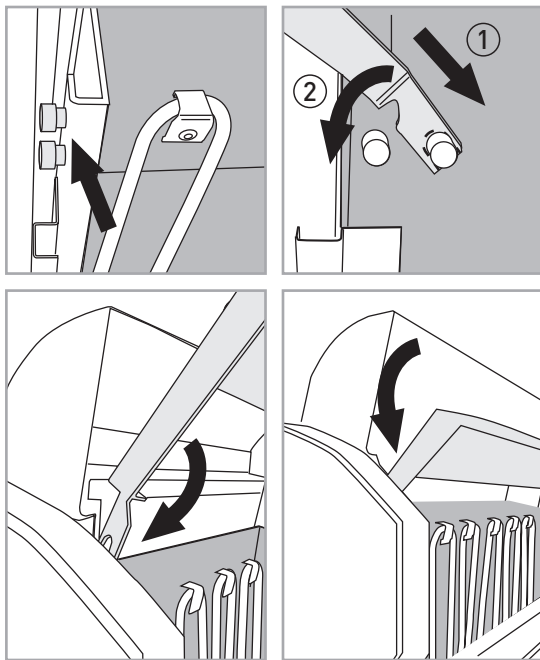


Figure 3.6

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) Replace 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 from behind the deflector.

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 14.

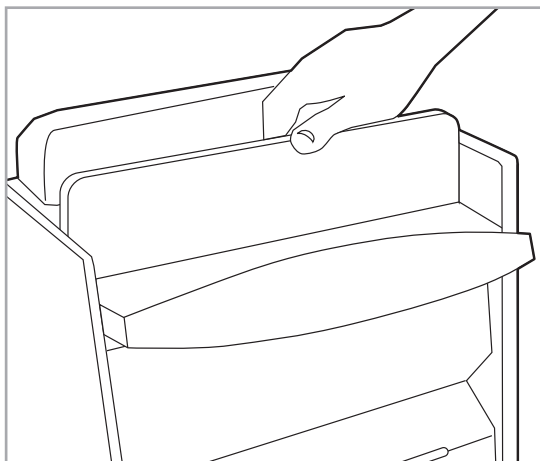


Figure 3.7

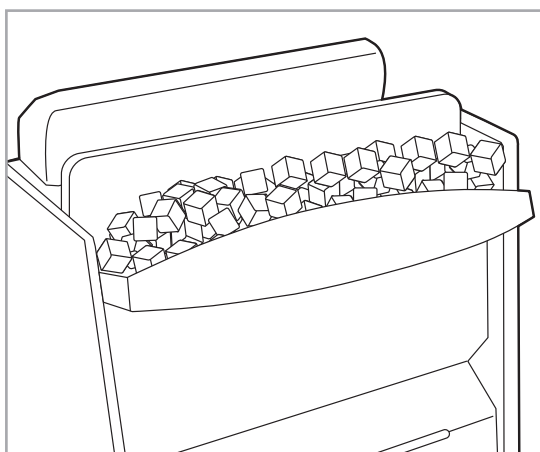


Figure 3.8

4. Technical specifications

Type	Power (kW)	Voltage	Connecting cable	Fuse
Louhi, Hiisi 6.6	6.6	400 V 3N	5 x 1.5 mm ²	3 x 10 A
Louhi, Hiisi 9.0	9.0	400 V 3N	5 x 2.5 mm ²	3 x 16 A

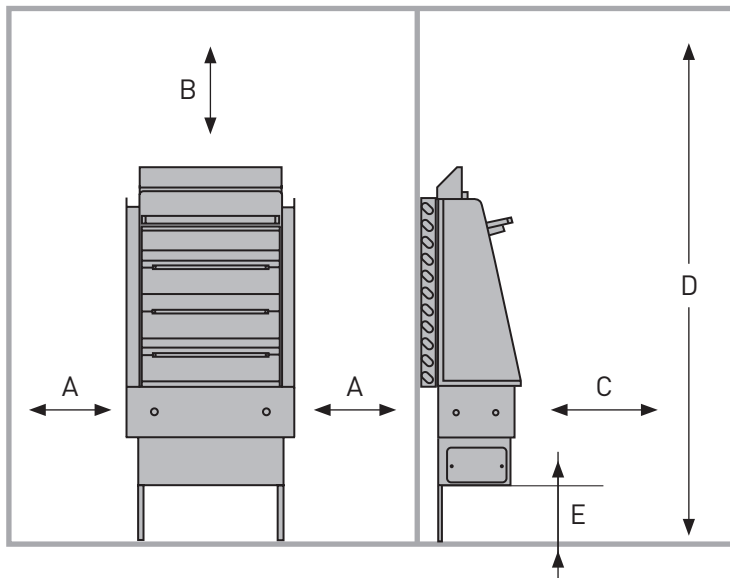
Table 4.1

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

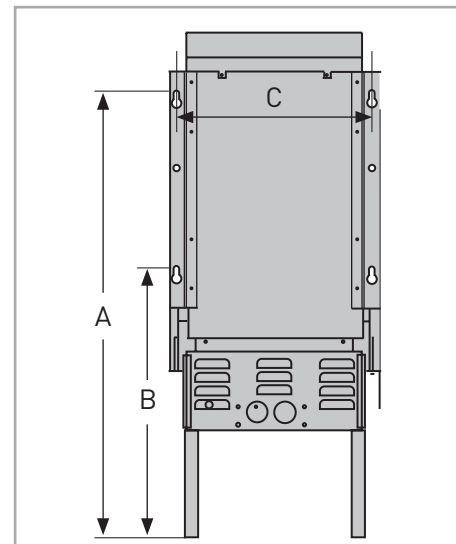
Minimum distances to inflammable material



Type	A	B	C	D	E	Volume
Louhi, Hiisi 6.6	50	920	300	1900	100	5–9 m ³
Louhi, Hiisi 9.0	50	970	300	1900	100	7–13 m ³

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

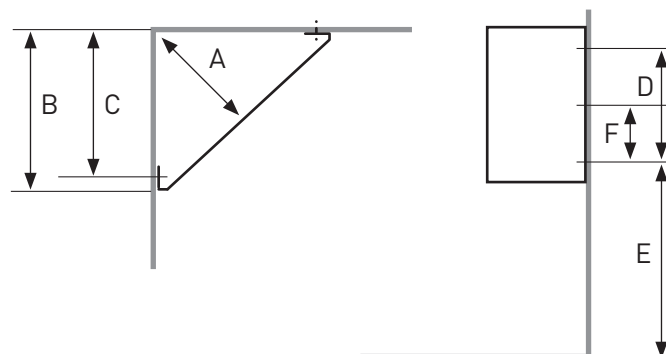


Table 4.5 Attachment points in corner installations (mm)

5. General instructions for users of Louhi and Hiisi heaters

Note

Electrical connections may only be carried out by an electrician with valid installation authorization 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 a fixed 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 stone wall, do not use plastic or nylon plugs. 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 result in a risk of fire!

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

6. Things to keep in mind when using the heater

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 twenty minutes with the sauna temperature set to two bars from the bottom. Let the heater cool down completely before the second, 40-minute preheating session, in which the temperature is set to five bars from the bottom. During preheating, the resistors may emit fumes. Therefore, ensure that the room is properly ventilated. **Do not throw water on the heater during the preheating sessions.** Always monitor the preheating!

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 (see page 4, item 4).

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 room-temperature water. The water should be fresh household water. The proper dose of water thrown on the heater is approximately a cupful (2 dl) at a time. Throw the water on the heater blocks. You may also slowly run water onto the small heater stones. From there, the water will flow onto the blocks and generate soft and oxygen-rich steam.

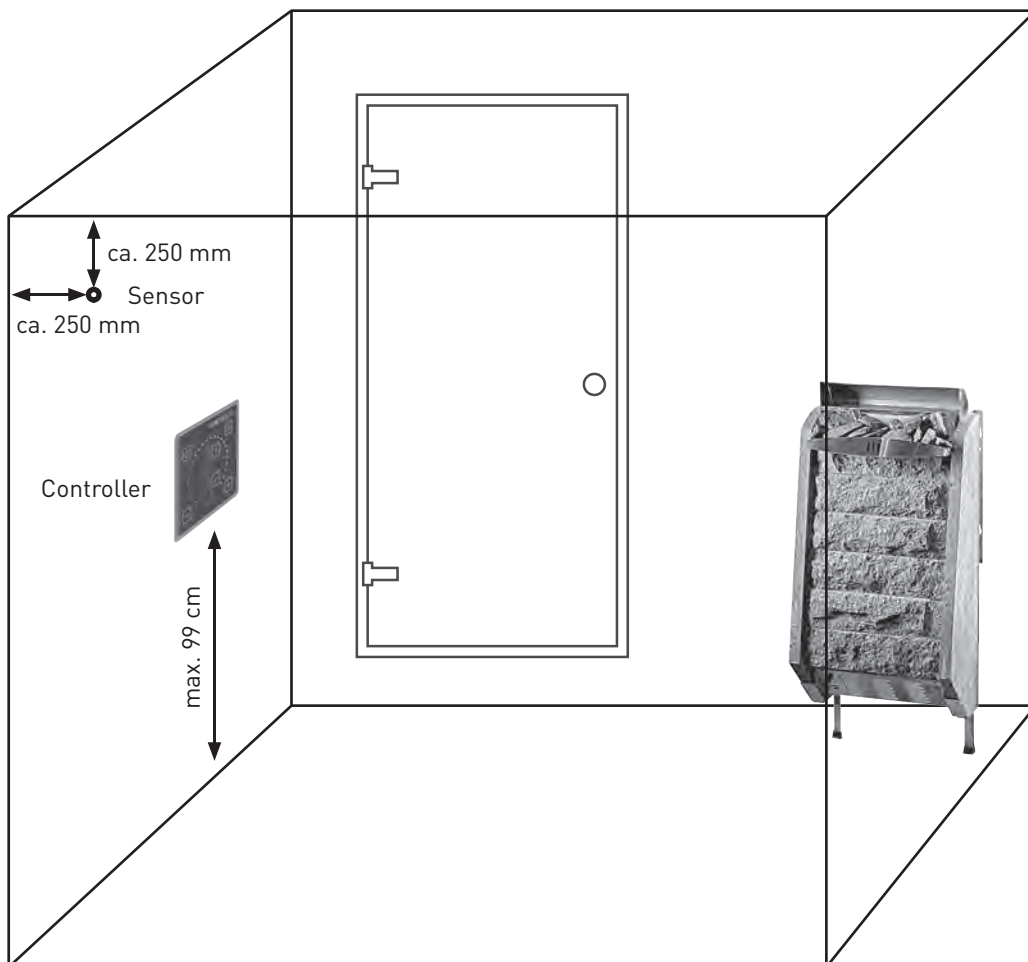
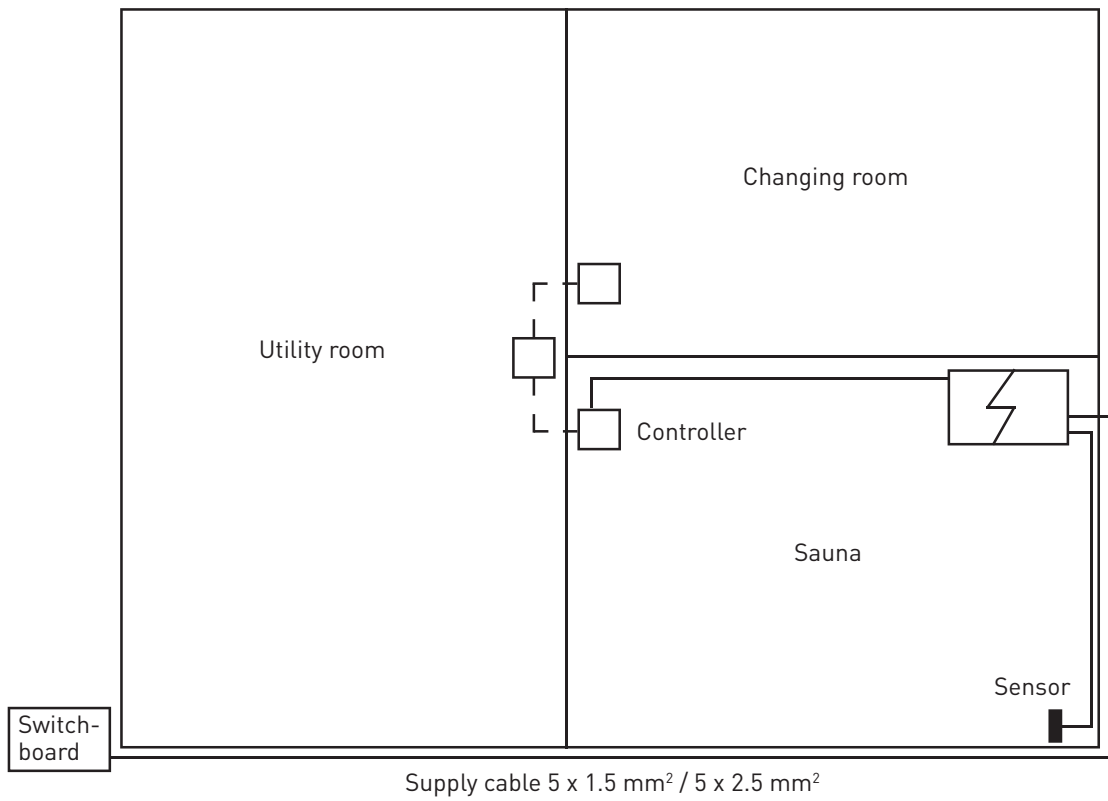
Sauna room structure

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 m³ and on timber surfaces by 1.5 m³. The factor for glass surfaces (glass walls, doors and uninsulated stone surfaces) is also 1.2 m³ 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. 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

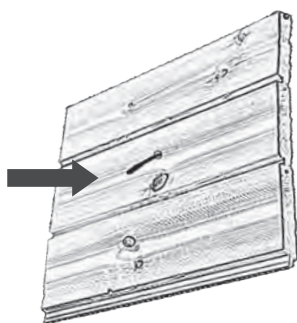
Included in the package:



Controller



Sensor



The most suitable location for installing the wall sensor is on the wall where the benches are mounted. Its distance to the ventilation duct should be at least 50 mm.

Drill a 3.5 mm hole in the wall panel and route the wire under the panel to the heater. Ensure that approximately 10 mm of the sensor remains visible. If needed, the sensor can be attached to the hole with a small drop of silicone adhesive. The length of the sensor cable is 6 m. Cut the excess wire and connect the other end to the heater. **Ensure that a minimum of 7 mm of the end of the wire is stripped to ensure a proper contact.**

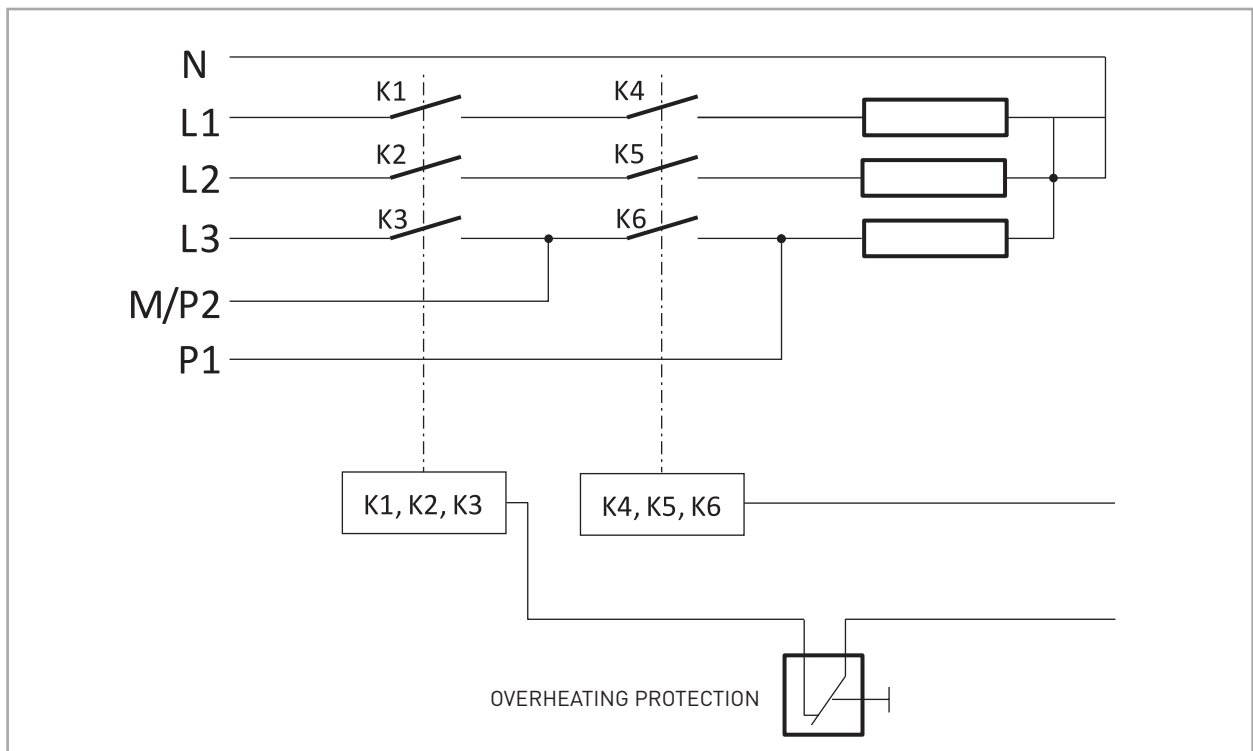


The wall mounting plate is either mounted to the wall using three screws or affixed to the bottom of the mounting box. The mounting plate is covered first with a cover plate and finally with the control panel. The length of the sensor cable is 8 m. Cut the excess wire and connect the other end to the heater. When installing the control panel, make sure that the cables do not become detached or bend.

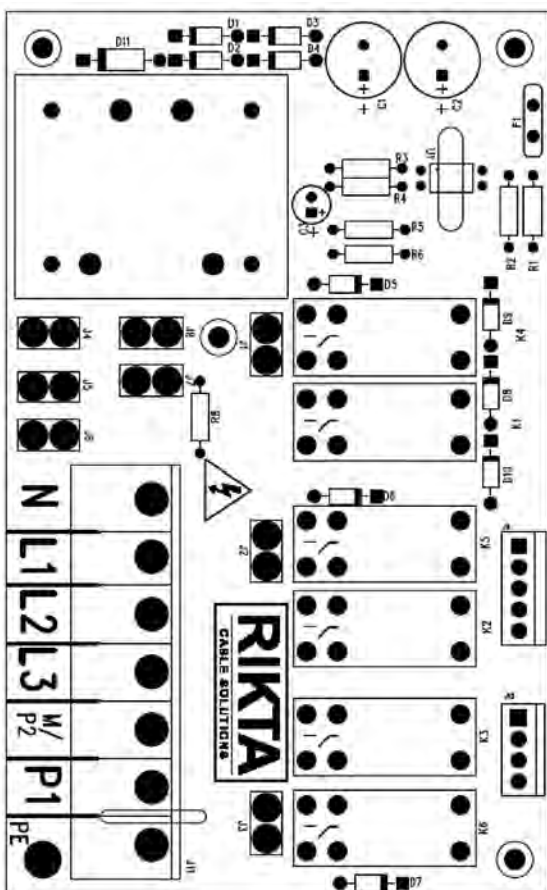
NOTE!

Remove the plastic protection film of the control panel before using the heater.

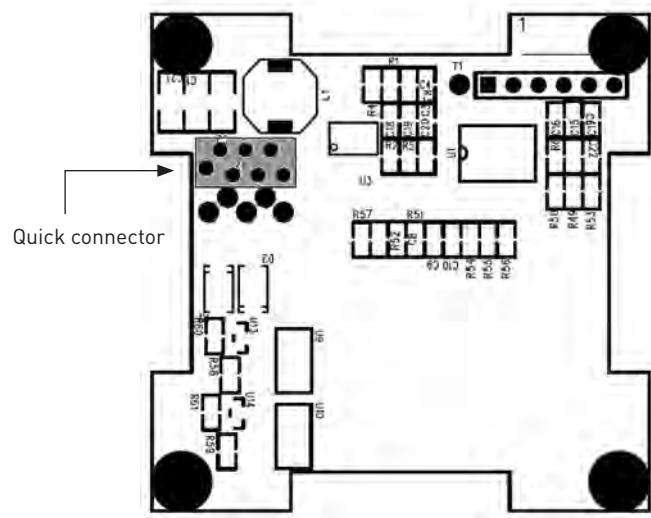
8. Wiring diagram



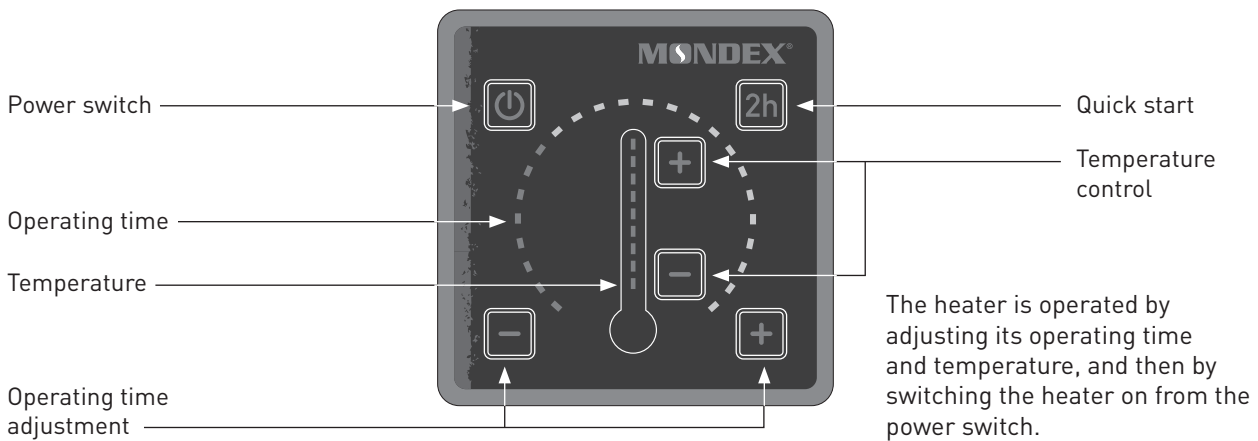
Controller card wiring, heater



Controller card wiring, controller



9. Heater control and operation



Normal start: Select the operating time with the control buttons.



The operating time is displayed in light bars. One bar equals 30 min. The maximum operating time is 4h.



Quick start: Press the quick start button. The heater will remain on for two hours.



Temperature control: Set the desired temperature with the control buttons.



One light bar affects the temperature by approximately 5°C.



Heater start-up: When the operating time and temperature have been set, switch on the heater from the power switch. NOTE! If the power switch is not pressed, the controller lights will keep blinking. NOTE! The heater will remember the previous temperature setting.



Timer function: You can set the heater to switch on in 30 min. – 8 hours. After that, the heater will remain on for 4 hours.

- Keep the operating time controller depressed until the red lights turn off.
- After this, the light bars will turn blue and each bar represents a period of 30 min.
- Select the desired temperature for the sauna with the temperature control buttons.
- You can switch off the heater at any time by pressing the power switch.



First time use of the heater (heater calibration)

Ensure that the main switch on the side of the heater is in the "I" position. Set the temperature to two LED lights from the bottom. Press the quick start button (2h). Switch the heater on by pressing the power switch in the upper left-hand corner. When 2 hours have elapsed or the blue LED light at the lower right-

hand corner has turned off, the heater calibration is complete. Do not open the sauna door during the calibration. During the calibration, the heater "teaches itself" to heat up optimally according to the size of the sauna. The heater can be used normally after the calibration. NOTE! The heater must be filled with heater stones before the first use (calibration).

Resetting the heater

Switch off the heater from the main switch located on the lower right-hand side of the heater. Keep the temperature control + and – buttons depressed. Switch the main switch of the heater on again while keeping the + and – buttons depressed. The heater is now ready for calibration. For calibration instructions, see "First-time use of the heater (heater calibration)".

Error codes

If the heater encounters an error, the electronics will turn off the resistors and indicate the controller faults with blue lights as follows:

4th light from bottom:

Relay fault

3rd light from bottom:

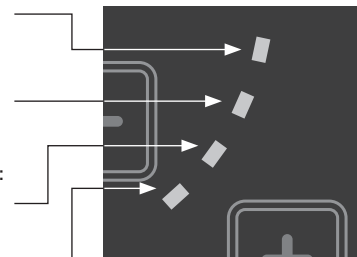
Short circuit of the thermal sensor

2nd light from bottom:

Contact failure of the thermal sensor

1st light from bottom:

Calibration status



Overheating protector

The overheating protector reset button is located above the heater's main power switch under a protective cap. Twist the cap to open. The red reset button located under the cap is 3.5 mm thick.

10. Troubleshooting

Heater does not warm up

Is the power on?

Has the overheating protector tripped?

→ Reset is performed by opening the black twistable protective cap next to the main switch on the left side of the heater and pressing the button under the cap.

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.

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. 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 natural stone 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 twenty minutes with the sauna temperature set to two bars from the bottom. **Let the heater cool down completely before the second, 40-minute preheating session**, in which the temperature is set to five bars from the bottom. During preheating, the resistors may emit fumes. Therefore, ensure that the room is properly ventilated. **Do not throw water on the heater during the preheating sessions.** Always monitor the preheating! If the preheating is not carried out in accordance with the instructions, the soapstone warranty will become void.

