



MONDEX®



INSTALLATION AND OPERATING INSTRUCTIONS

Pipe C- and E-types

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1. General safety information



For safe use of sauna, please read these safety instructions first!

Electrical connections can only be done by an electrician authorized to installation according to the current regulations.

The MONDEX electric heater is suitable for use in a family sauna, one (1) heater/sauna room. Preserve the installation and operating instructions for future reference.

Always check the adequacy of fire protection distances!

Failure to observe the wiring instructions may result in a fire risk!

Always remember to check the sauna room before turning the heater on!

Always check whether the controller has switched off the power after the set time period!

Due to the risk of fire do not use the sauna as a drying room for clothes or laundry.

Be careful with the hot heater as the stones and metal parts become very hot and can cause burns.

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

It is recommended to supervise children, disabled and ill persons that are using the sauna.

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.)



The heater's improperly filled area for stones is a fire hazard.

Covering causes a fire risk.

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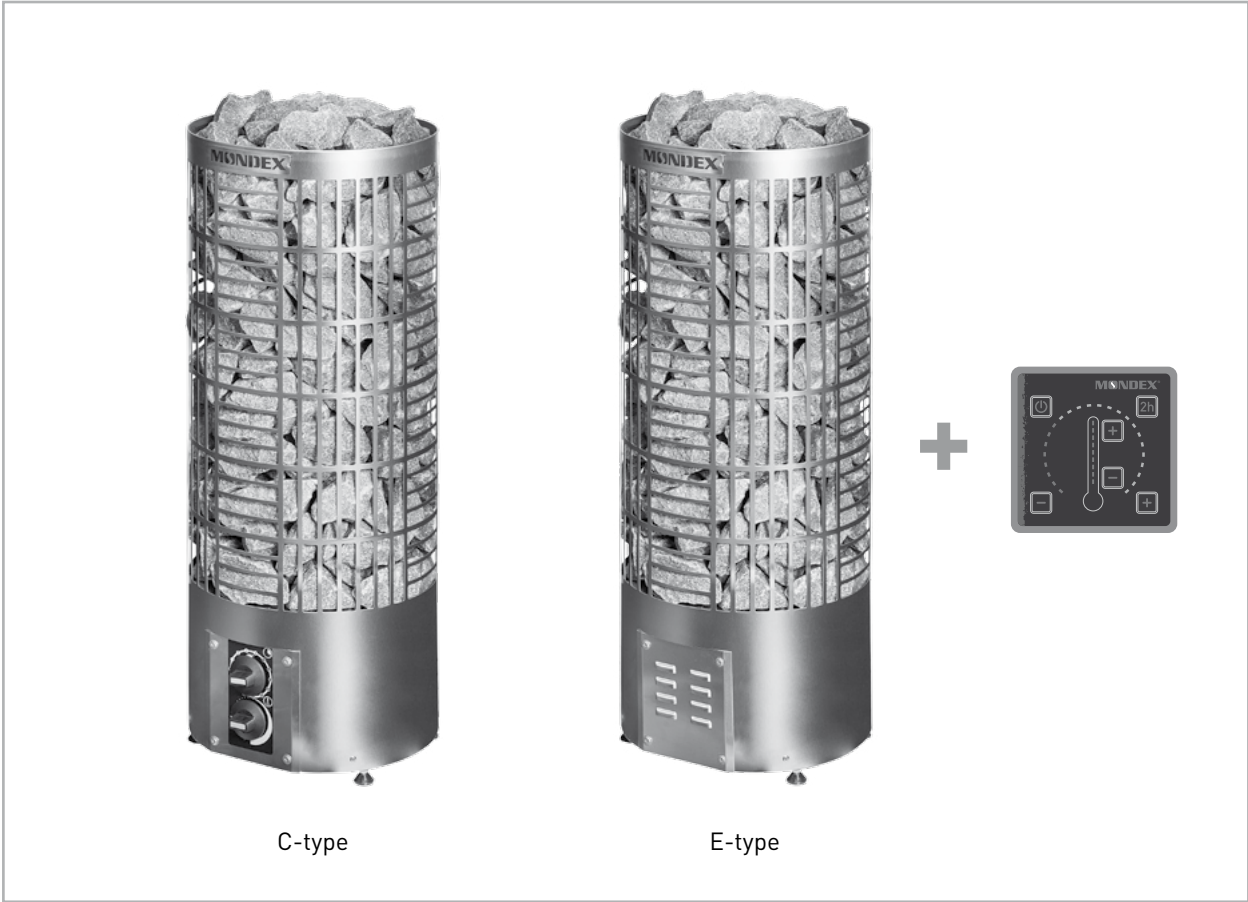
This device is not intended for children or people whose physical, sensory or mental capabilities, or lack of experience and knowledge prevents them from using the device safely, without the supervision of a person responsible for their safety or before they have been instructed on how to use the device.

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

This device complies with the requirements of:  

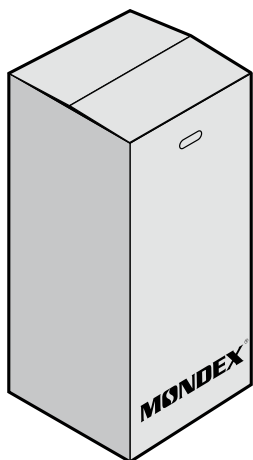
Mondex pursues an active policy of product development and improvement. For this reason, Mondex reserves the right to make changes relating to the design and technical specification of their products without prior notice.

2. Pipe heater types



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3. The assembly and installation of the heater



- 1) The package includes the heater (E-type also an external control unit) and its user manual. Heater stones are not included.
- 2) Inspect the heater visually and if you notice any discrepancies, please contact the store from where you purchased the heater or info@mondex.fi
- 3) The sauna's floor surface should be properly protected before starting the installation.
- 4) The electrician connects the wires before the heater is installed to its place. During the heater's installation observe the safety distances between the heater and combustible material as in Table 4.4. (see pg 7) as well as the heater's power rating according to Table 4.1 (see pg 6).
- 5) The heater should be installed on the floor and its feet should be adjusted so that the heater is upright.

Stacking of the stones

Note! Use regular olivine diabase, peridotite or olivine heater stones of less than 10 cm \varnothing in the PIPE heater. It is recommended to use protective gloves when stacking the stones. The heater stones should be stacked so that the resistors are not touching each other. The resistors should never be bended so that they would touch the metal structures of the stove.

The heater's area for stones should be entirely filled with stones, including the internal parts of the resistor column. The stones should be stacked in layers starting from the bottom of the heater. Continue filling the area step-by-step in this manner until all of the stones have been placed.

When stacking the stones, please do not batter on the heater's metal surfaces so to avoid damage. Dents caused by the user are not covered by the manufacturer's warranty or other product liability.

4. Technical information

Heater	Pipe 6,6	Pipe 9,0	Pipe 10,5
Power kW	6,6	9,0	10,5
Voltage	400 V 3N	400 V 3N	400 V 3N
Connecting cable	5 x 1,5 mm ²	5 x 2,5 mm ²	5 x 2,5 mm ²
Fuse	3 x 10 A	3 x 16 A	3 x 16 A
Size of the sauna	6 - 9 m ³	8 - 15 m ³	12 - 22 m ³

Table 4.1

Kiukaan mitat (mm)

Model	Diameter	Height
Pipe 6,6	320	850
Pipe 9,0	320	850
Pipe 10,5	370	1100

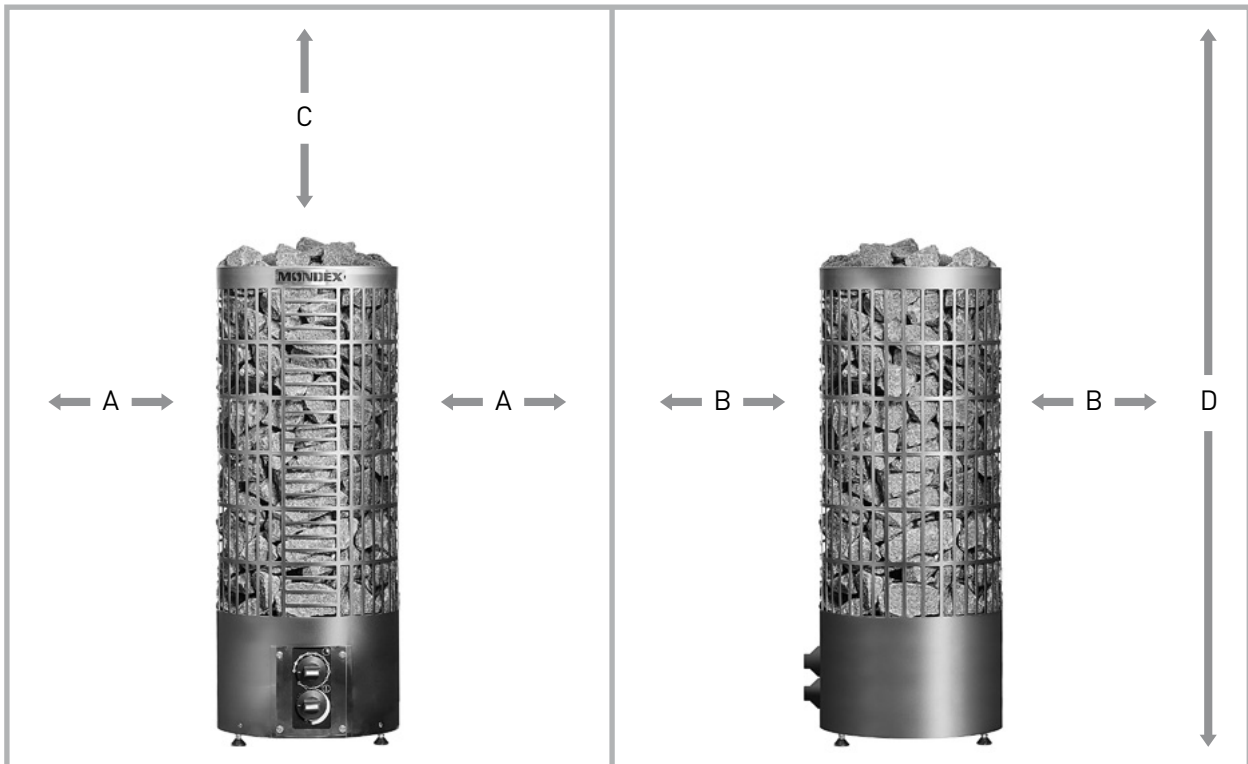
Table 4.2

Amount of stones

Model	Type Stone amount (kg)
Pipe 6,6	80
Pipe 9,0	80
Pipe 10,5	140

Table 4.3

Minimum distances from combustible material (mm)



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Model	A	B	C	D	Size of the sauna
Pipe 6,6	100	100	770	1900	6-9 m ³
Pipe 9,0	120	120	770	1900	8-15 m ³
Pipe 10,5	180	180	900	2000	12-22 m ³

Table 4.4 Minimum distances to combustible material (mm)

5. General instructions for the Pipe-heater users

Attention!

The electrical connections may only be done by an electrician authorized to installation according to the current regulations. The Pipe electric heater is suitable for use in a family sauna, one (1) heater per sauna room. Preserve the installation and operating instructions for future reference.

Installation cable

Use rubber cable H07RN-F as a connecting cable.

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 then further to the heater's terminal block with a rubber cable that is as strong as the connecting cable.

NOTE! Failure to observe the wiring instructions may result in a fire risk!

NOTE! Remove all plastic foil before starting to use the heater!

6. Consider the following when using the heater

First heating

During the first heating resistors can emit fumes, therefore you should see to it that the room's ventilation and air conditioning are functional. NOTE! See also the first time use of type E on p. 14!

Sauna room

Always remember to check the sauna room before turning the heater on! Always make sure that the timer has switched off the power after the set time period!

Temperature control

The desired temperature can be set either by a mechanical thermostat (see page 10 types C) or through the control panel (see page 14 E types). The actual heating time is affected by the sauna's dimensions, structure and thermal insulation. The temperature in the sauna room can be maintained at the desired level with a thermostat. Should the temperature of the sauna room, for any reason, become dangerously high, the automatic temperature overheat protector will turn off power from the heater. Always find out the cause of overheating. Power can be turned on again by pressing the overheat protector reset button (see page 10 types C and page 14 types E).

Heating time

Heating the sauna too long consumes energy and does not improve the steam's properties. The best steam is achieved by keeping the sauna's heating time relatively short, namely 30-60 min. according to the size of the sauna and the heater's power. Size of the sauna, glass doors, windows, or materials used may increase the heating time.

Water thrown on heater

We recommend using hand-warm water. The water used for throwing on heater should be household water. Smoother steam can be achieved by throwing the water to the heater sides / lower stones. If you want tougher and more aggressive steams pour plenty of hot water all at once on the heater.

Sauna room structure

Sauna and especially its roof should have good thermal insulation, as the steam tends to escape through the roof. Due to moisture we recommend using aluminium foil. The heater is dimensioned according to the sauna space.

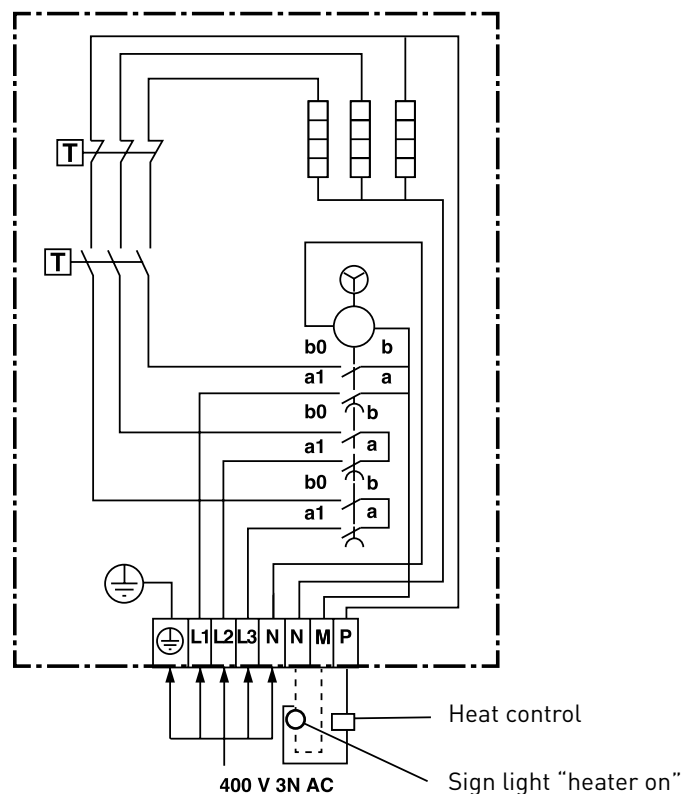
In addition to the conventional sauna structure (wool insulation, foil, timber), the power consumption is also affected by the following. If the sauna has walls made of uninsulated stone, tile or concrete surfaces or timber, the heater power should be slightly increased.

Power consumption increases for every uninsulated square meter the same amount as if increasing space by 1.2 m³ and on timber surfaces by 1.5 m³. Also the glass surfaces (glass walls, doors and uninsulated stone surfaces) are calculated as 1.2 m³ per square meter. Choose a higher-powered heater in borderline cases.

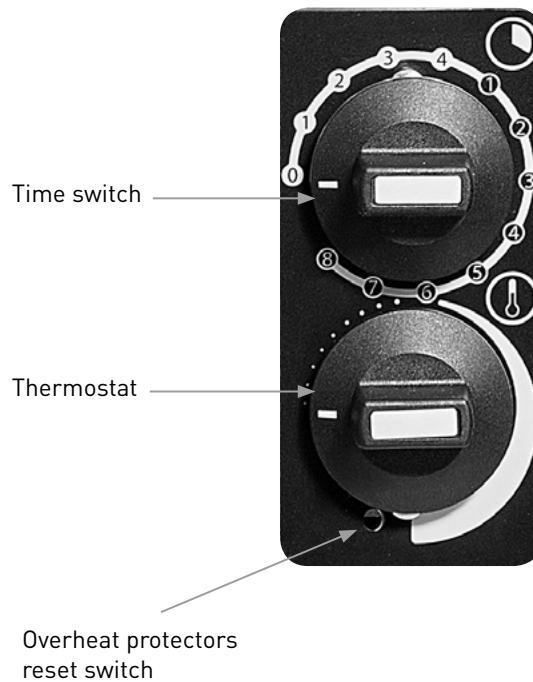
The sauna needs efficient ventilation in order to achieve good oxygen levels and fresh air. Air in the sauna room has to change 6 times/h. We recommend to place the valved fresh air tube above the heater. The exhaust valve should be installed as far away from the heater as possible and close to the floor limit. It is also possible to lead the exhaust air to the washroom from under the door. In this case there must be at least 50 mm of space under the sauna door and the washroom should have an exhaust valve.

For more information, see the construction guidelines and building regulations.

7. Wiring diagram for C-types (fixed control)



8. The operation of the clock timer and thermostat of the C-type



The time switch (4+8 h) operates as the heater's main switch. After the desired time the time switch automatically turns the power off from the heater. If you wish the heater to warm up after a set time, you can set the timer to start the warm-up after 1-8 hours. The maximum warm-up time is 4 hours.

For example:

If you want to go to the sauna as soon as possible, set the time switch between 1 - 4. The heater switches on immediately and begins to warm up. The desired temperature can be set by turning the thermostat.

For, example, if you want to go to the sauna after three hours, set the timer to 2 on the time switch 1-8. The timer starts and the power will be turned on and the heater will start to warm up after two hours. When power has been turned on, the heater will remain on for up to 4 hours. After this power will be turned off automatically. If desired, power can be switched off earlier by turning the time switch to zero (0).

Always make sure that the time switch has turned power off after the set time period!

Additional connection options

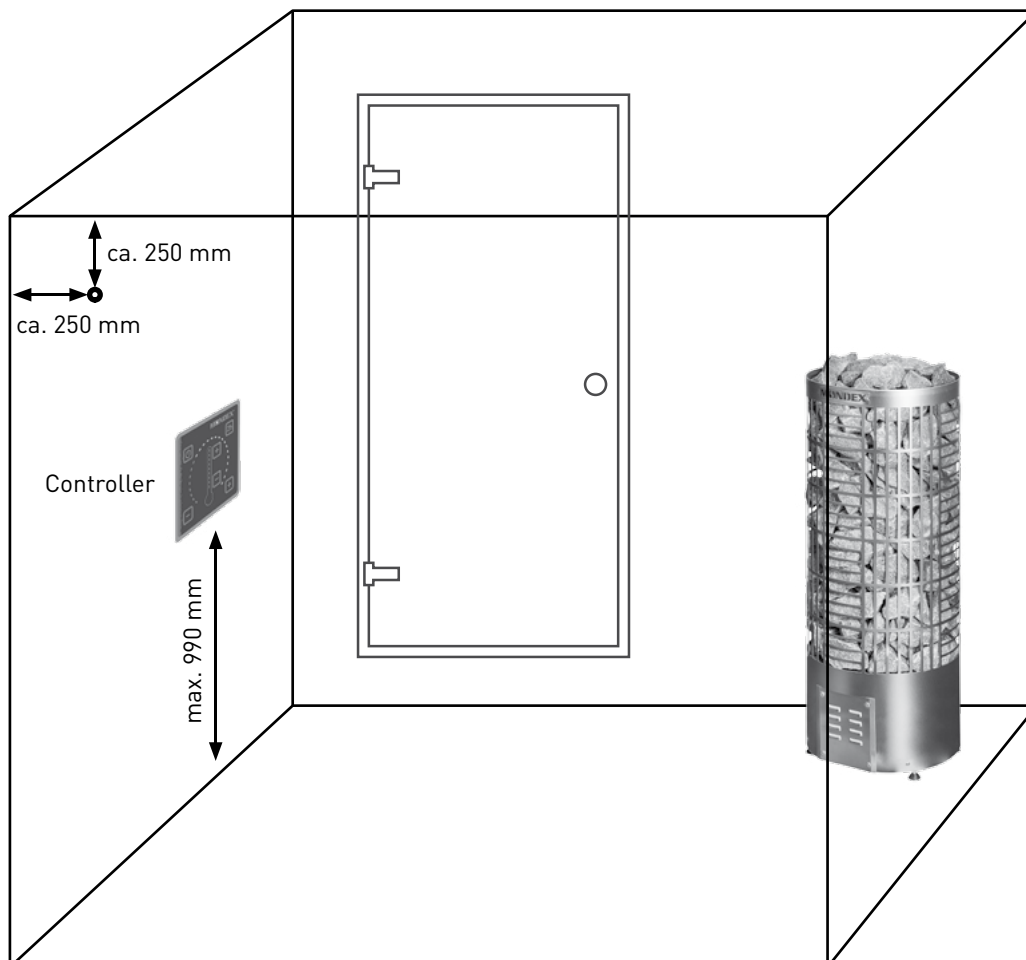
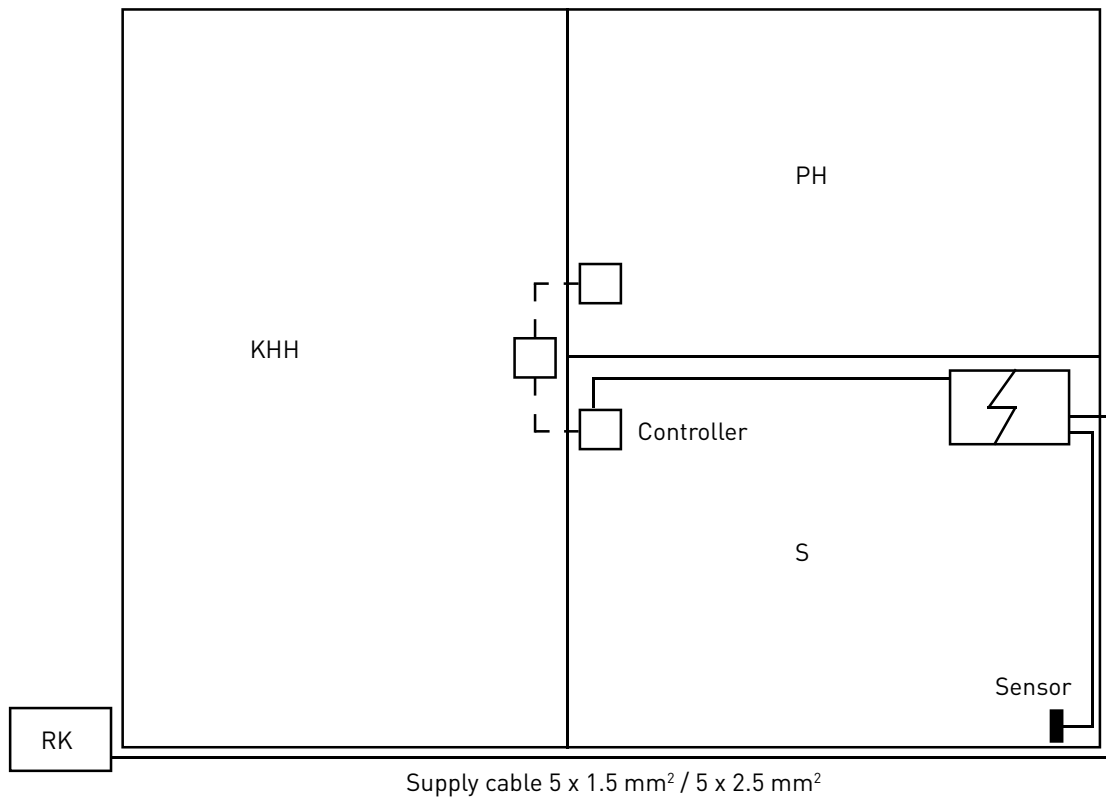
Wiring a signal light outside the sauna room

For example the cable H07RN-F should be used as connection cable and its cross-sectional area should be the same as the connecting cable's.

Control of electric heating with the heater

The electric heating control cable should be brought directly to the heater's junction box and then further to the heater's terminal block with a rubber cable strong as the connecting cable.

9. Installation instructions E- type



Installation of the external control and sensor

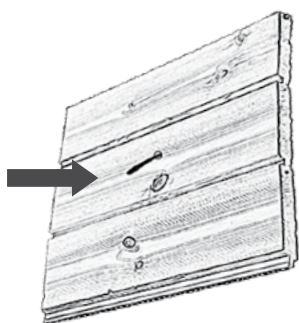
E-type heater includes:



External control



Sensor



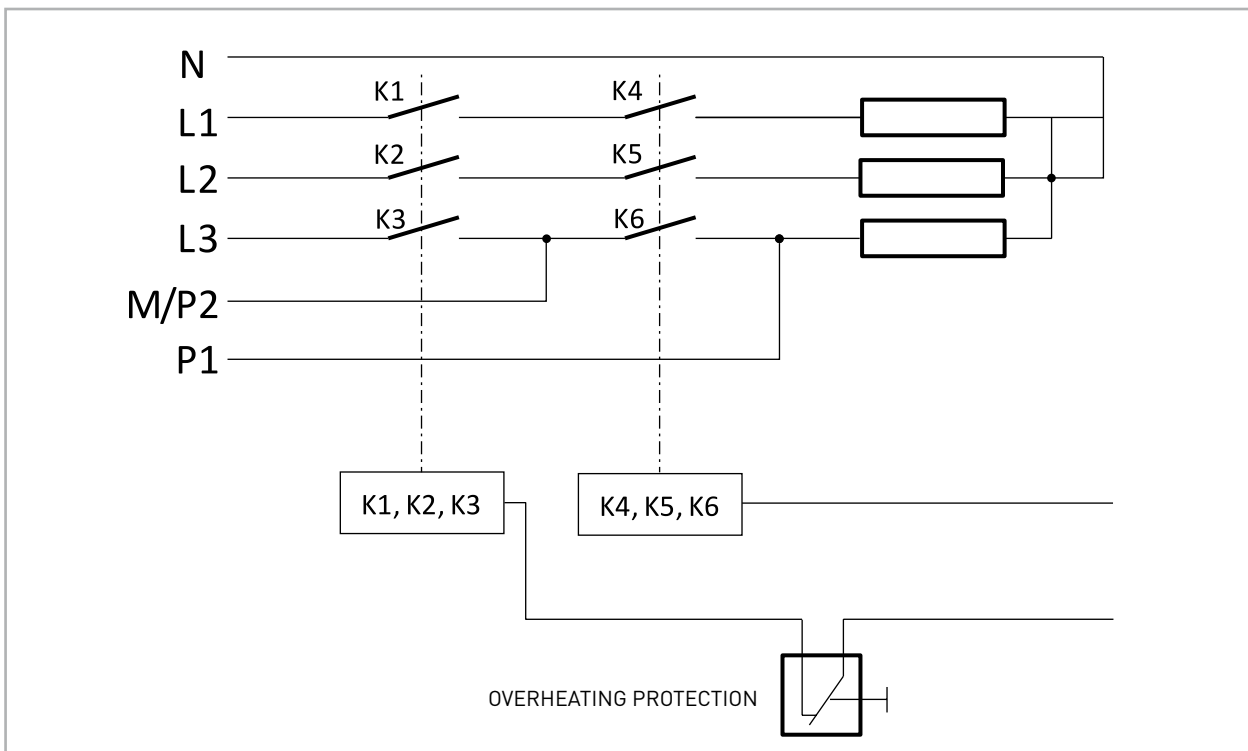
Drill a 3,5 mm hole to the panel and then bring it to the heater below the wiring panel. The sensor should remain visible for ca 10 mm. The sensor can when needed be fixed into the hole, for example, with a small drop of silicone adhesive. The sensor cable measures 6 m. Cut the excess wire and connect the other end to the heater.



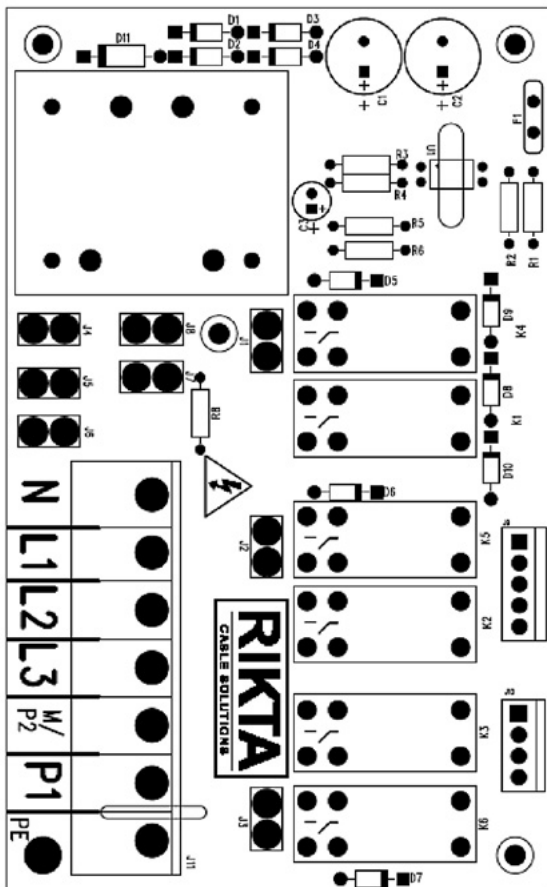
The wall mounting plate is either mounted with three screws to the wall or fixed to the bottom of the mounting box. The mounting plate is covered with a cover plate and finally with the control panel. The mounting cable is 8 m. Cut the extra cable and connect the other end to the heater. When installing the control panel make sure that the cables are not detached or deformed.

Note! Remove the plastic protection foil of the control panel before using the stove.

10. Wiring diagram E-type



Connecting the controller card in the heater

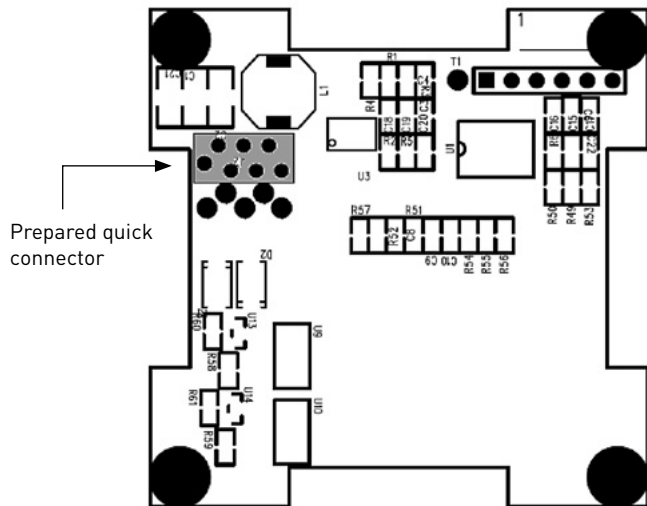


White
Grey
Green
Blue
Red

To the controller

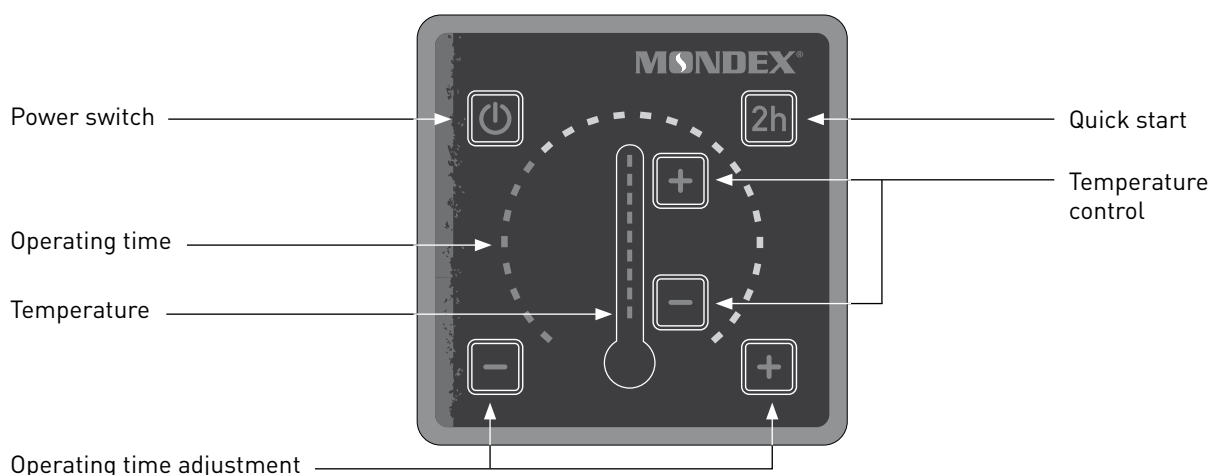
White To the overheating protection
White
Black To the thermal sensor
Black

Connecting the controller card in the controller



Prepared quick connector

11. Control and operation of the heater E-type



The heater is operated by adjusting its operating time and temperature and then switching the heater on from the power switch.

Normal start: Select the operating time with control buttons .



Operating time is displayed in light studs.
One light equals 30 min.
Maximum operating time is 4h.



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



Temperature control: Set the desired temperature with control buttons .



One light stud affects the temperature by ca. 5°C.



Heater start-up: When the operating time and temperature have been set, turn on the heater from the power switch. NOTE! In case the power switch has not been pressed, controller lights will be blinking. NOTE! The heater memorizes the previous temperature setting.



Scheduling the heater: The heater can be scheduled to start after 30 min – 8 h. After this the heater will remain on for 4 h.

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



First-time use of the heater (the heater's calibration):

Set the temperature from the temperature control 2 leds from below. Push the quick-start button (2h). Put the heater on from the left upper corner power switch.

When 2 hours have passed or the blue led at right hand corner below is gone out, the stove is calibrated. Do not open the sauna door during the calibration. During the calibration the heater learns to heat itself optimally according to the volume of the sauna. After the calibration the heater can be used normally.

Resetting the heater

Turn off the main switch of the heater (located on the right hand lower side of the heater). Press the heater's temperature + and - buttons at the same time. Put on the main switch of the heater on again by at the same time pressing the + and - buttons. No the heater is ready for a new calibration. Look at the instructions about calibration at the "First-time use of the heater."

Fault codes

In case of a fault in the heater, the electronics turn off the heating elements and notify the controller of the failure with blue lights as follows:

4. lower light:

Relay fault

3. lower light:

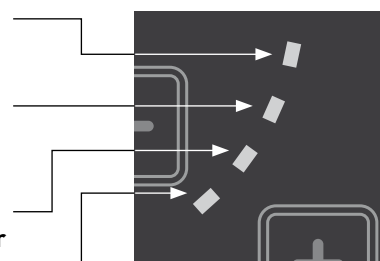
Short circuit of the thermal sensor

2. lower light:

Contact failure of the thermal sensor

1. lower light:

Calibration status



Temperature limiter

The temperature limiter reset button is located above the heater's main power switch under a protective cap. Open the protective cap by turning it. Red reset button located under the cap is 3.5 mm thick.

12. Troubleshooting

- Is the power on?
- Has the temperature limiter tripped ? -> This is reset by pressing the temperature limiter reset switch with a thin-headed object until a click is heard. One should always find out the reason for the temperature limiter tripping before the unit is switched on again.
- Has the time switch been turned to the point where the heater should warm up?
- Are the heater's main fuses in the electrical unit intact?
- Has the thermostat been set to higher values than the sauna temperature?
- Has the time switch stopped or stuck (for example stuck in the front panel)?
-> The suitable gap is 1-2 mm.
- Check that all the resistors are glowing when the heater is on.
- Check the fault codes in Models E.

If necessary, contact the dealer or manufacturer.

Warnings

- Due to the fire risk do not use the sauna as a drying room for clothes or laundry.
- Be careful with the hot heater as the stones and metal parts become very hot and can cause burns.
- Steam from the heater is burning hot and may cause burns.
- It is recommended to supervise children, disabled and ill persons that are using the sauna.
- 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.).

Maintenance, spare parts

If insolvable faults appear in the heater, please contact the manufacturer or service centre. Spare parts are available from the MONDEX distributors, service centre and manufacturer. When purchasing spare parts, please note down the name and power of the heater, so that the right parts can be supplied.

Natural stone as material

Small pebbles or pieces can come off the natural stone used in the heater. As this is not a failure of the organic material but its natural feature that cannot be predicted at the time of manufacturing the product, the manufacturer is not responsible for any damage resulting from this.

Warranty

For its heaters and control units in private use, the manufacturer Mondex Oy, grants a warranty of two (2) years from date of purchase. The warranty is limited to (1) year if these products are in commercial use. Preserve the sales receipt or warranty card. The warranty does not cover external or internal mechanical damage caused by, for example, impacts with a stone or the heater falling over. Nor does the warranty cover defects caused by nature like lightning or damages caused by overvoltage.

