



VERSIO 09/2014

NARVI SLIM 6kW & 9kW



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INSTALLATIONS- OCH BRUKSANVISNING

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INSTALLATION AND INSTRUCTION MANUAL

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ИНСТРУКЦИЯ ПО МОНТАЖУ
И ЭКСПЛУАТАЦИИ

INSTALLATION AND OPERATING INSTRUCTIONS

NARVI SLIM 6kW
NARVI SLIM 9kW

1. THE ELECTRIC HEATER SET INCLUDES:

1. Heater with control unit
2. Fastening plates and fastening screws
3. Temperature sensor
4. Control unit
5. Installation and operating instructions

TECHNICAL DATA:

- width 625 mm
- depth 240 mm
- height 700 mm
- weight 17 kg
(without stones)

2. BEFORE INSTALLATION:

Check on the following:

- Make sure the capacity of the heater (kW) corresponds to the size of the steam room (m³).
- Table 1 shows the heater types that correspond to various size saunas.
- If the steam room has any non-insulated brick, tile or glass surfaces, 1.5 m³ of space must be added to the size of the steam room for every square-meter of such surfaces. Based on the result, choose the heater with the required capacity shown in table 1.

When choosing a heater, strictly adhere to the steam room space shown in table 1.

Table 1. Installation information for heater

Heater model	Capacity kW	Sauna room			Minimal safety clearances to the heater				Quantity of stones 5-10 cm kg	Connection *)	
		Volume		Height min mm	on the sides A **)	at the front B **)	to the ceiling C **)	to the floor D **)		400 V 3N mm ²	Fuses A
		min m ³	max m ³		mm	mm	mm	mm			
SLIM 6kW	6	5	8	1900	60	60	1200	30	30	5x1,5	3x10
SLIM 9kW	9	8	14	1900	60	60	1200	30	30	5x2,5	3x16

**) See figure 1

*) Connected with rubber cable, type H07RN-F or corresponding cable

- The minimum height of the steam room and minimal safety clearances are shown in table 1.
- Make sure that the surface onto which the fastening plates are being screwed is sufficiently strong. Thin boarding is not sufficient. The surface can be reinforced with a supporting framework under the boarding or reinforcing boards on top of the wall, which is connected to a wall framework.

ONLY ONE ELECTRIC HEATER MAY BE INSTALLED IN EACH SAUNA ROOM.

All service operations must be done by professional maintenance personnel.

Electricity supply to the heater must be switched off from the fuse panel before any service measures.

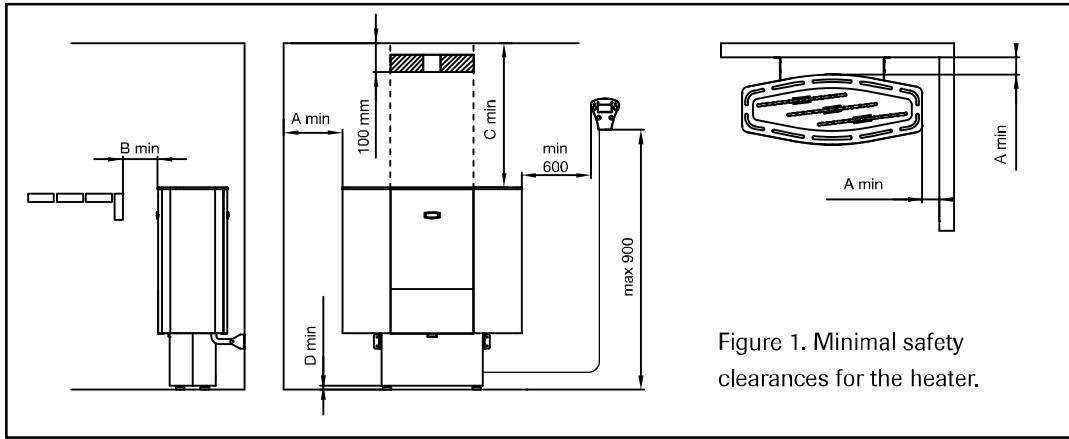


Figure 1. Minimal safety clearances for the heater.

3. INSTALLATION:

3.1 Installation instructions for the heater, the temperature sensor and the control unit

- Connection of the sauna heater to the power supply may only be carried out by an authorised electrician in accordance with the valid regulations.
- A rubber-sheathed cable of type H07RN-F or similar must be used as the connection cable.
- If you want to make use of the temperature control feature, we recommend using a rubber cable with at least seven wires. The cross-section of the cable and the fuse size are presented in Table 1.

3.11 Connection the power supply cable

- Remove the front panel. (see Fig. 2).
- Connect the power cable

3.12 Installing the temperature sensor

- Install the sensor in the area lined in Figure 1; 100 mm from the ceiling.
- Install the temperature sensor on the wall with the screws included in the delivery (2 pcs. Ø 2,9 x 16).
- The wiring for the temperature sensor can be embedded.
- Connect the sensor to the circuit plate.
- Connect the end of the conductor, the one with no connector in place, to the temperature sensor. You can cut the conductor to a suitable length.

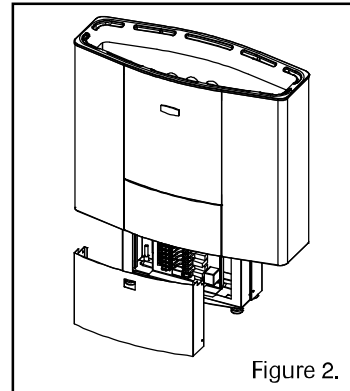


Figure 2.

3.13 Installing the control unit

- The control unit can be installed inside or outside the steam room. The control unit is moisture-proof, so it can be installed in the wash room.
- The installation height of the control unit is a maximum of 90 cm and a minimum of 60 cm from the side of the heater (see Fig. 1).
- Attach the control unit to the wall using screws (2 x 3,5 *15).
- Connect the control unit to the circuit plate.
- The control unit cable is 3,0 metres long.
- A cable of maximum length 10 metres is available by special order. The excess cable must not be inserted into the heater's connecting box. Wire is recommended to install surface-mounted.

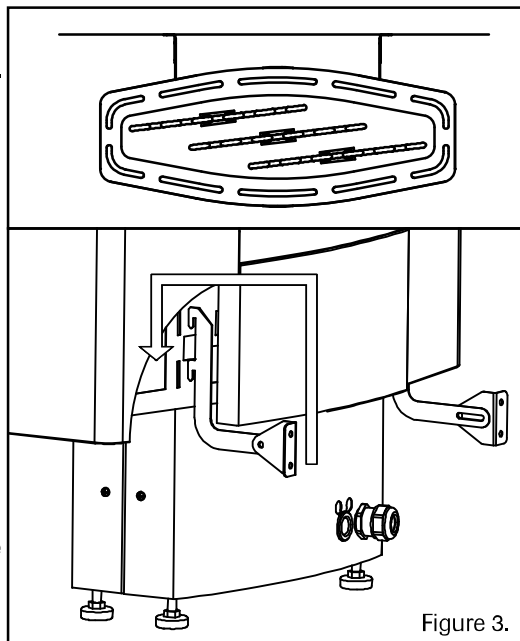


Figure 3.

3.2 Installing the heater and piling the stones

- The heater can be placed on the floor.
- When installing the heater, observe the given safe distances.
- The heater must be attached to the wall or to the benches using two support irons, as illustrated in Fig. 3.
- Pile the stones carefully, using safety gloves.
- Pile the stones carefully so as not to damage the exterior coating of the heater. Select flat stones for the space between the resistors.
- When piling the stones, make sure that the resistors do not get bent and that the circulation of air is sufficient.
- Stones 5-10 cm in diameter are suitable for the heater.
- Pile the stones loosely. Stones that are piled too tightly may make the resistors overheat (= shorter life span) and slow down the heating of the sauna.
- The stones must cover the heating resistors completely.
- Do not pile the stones above the top of the heater. See figure 4.
- The heater stones should be inspected and repositioned every 6 months and the stones should be replaced every 2-3 years
- **Ceramic stones cannot be used in this heater!**

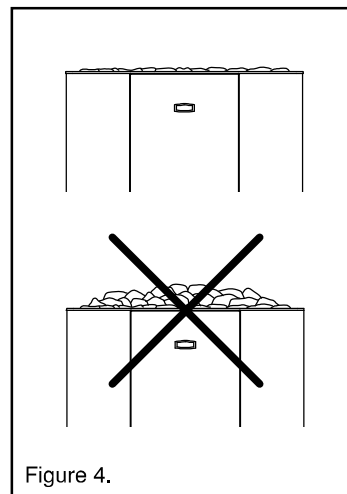


Figure 4.

A STONE CONTAINER THAT IS FILLED TOO SPARSELY MAY BE A FIRE HAZARD!

BEFORE PLUGGING IN THE HEATER, INSPECT THE SAUNA ROOM!

4. USING THE HEATER

- The heater's control switch is located in the front at the lower part of the heater.

4.1 Overview

- The heater is switched on and off by toggling the I/O button.
- The SET button is used for setting the following parameters: Preset timing, power-on time and temperature. During set-up, an LED flashes to indicate the parameter being set, with the respective value being displayed on the screen.
- The settings of the power-on time and the temperature remain in memory even after a short outage of power. After a longer outage of power, the times are reset to their default values. The preset timing will always be reset after use.
- The On/Off LED is illuminated red whenever the heating elements are turned on; at all other times it is illuminated green. During the preset time, the On/Off LED is not illuminated.

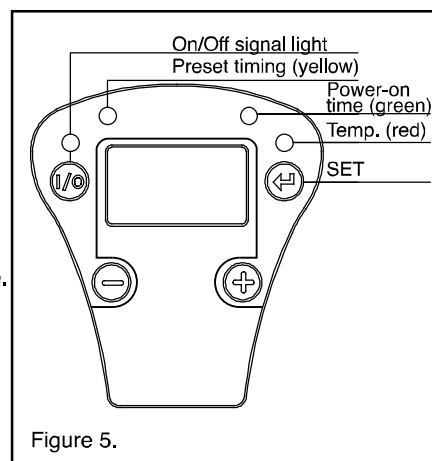


Figure 5.

4.2 Temperature

- The temperature of the sauna at the display is shown on the display.
- The temperature can be selected at intervals of one degree from the range 60°C-115°C.
- When setting the temperature, the temperature saved in the memory, will be displayed first, and after that will be displayed the temperature that is being set via the +/- buttons.

4.3 Preset timing

- The yellow LED glows when the preset timing is active. The remaining time to switch-on of the heater is shown on the display.
- Once this time has elapsed, the heater will be switched on, and the On/Off LED will start glowing red.
- The preset time will not be saved in the memory, but will reset to zero after use.
- When the preset time is being set, the yellow LED flashes. At first, the timing is staggered by intervals of 30 minutes and after that by an hour.

4.4 Power-on time

- The remaining power-on time is shown on the display.
- At first the timing is staggered by 15 minutes and after that by half an hour.

4.5 Power-on

- When the heater is switched on, the temperature of the sauna is showed on the display.
- Optionally, the display can be set to show the remaining power-on time or to alternate between the time and the temperature - see the point Settings.
- As soon as the heater reaches the predetermined temperature, the On/Off LED starts glowing green, and the elements will not be powered.
- Once the heater has cooled down to such an extent that the elements will be powered again, the On/Off LED will again glow red.
- The heater remains operational if the power outage lasts less than three minutes. When the power supply resumes after a power outage of less than three minutes, the heater will resume its operation from the point where it was before the outage. If the outage lasts longer than three minutes, the heater is switched off. The settings will always stay in the memory despite duration of the outage.

4.6 Settings

- When the heater is switched on, the power-on time, which will be saved in memory, can be set within about one minute. After this, the heater goes into its normal operating mode, and any subsequent settings of the power-on time will only affect the current heating session.
- When the SET button is depressed, the yellow LED will flash, and an array of zeros will be displayed.
- After this, the desired preset time can be selected in steps of 30 min. using the + /- buttons.
- The preset time setting is saved in memory by depressing the SET button a second time.
- After that, the green LED will flash to indicate that you are now able to set the power-on time via the +/- buttons. The remaining power-on time saved in the memory, will be displayed first.
- After having set the desired power-on time via the +/- buttons, press the SET button again. Now, the desired power-on time will be saved in memory.
- After the SET button is depressed, the red LED will flash. The temperature setting saved in the memory, will be displayed first. You can then set the desired temperature via the +/- buttons. The temperature can be set on the scale 60 °C-115 °C. After this, depress the SET button one more time to make the heater go into set mode, where the LEDs are continually illuminated to indicate the current status.
 - If the yellow LED is illuminated, the preset timing is active, and the remaining preset time is being displayed.
 - If the On/Off LED is illuminated red, the heater is switched on, the heating elements are turned on, and the temperature in the sauna is being displayed (default value).
 - If the On/Off LED is illuminated green, the heater is switched on, but the elements are switched off for the moment – the temperature in the sauna is being displayed (default value).
- Once the heater has been set, the set values will remain in memory, and when power is switched on via the I/O button, the heater will always be warmed up in the same way for the same set period of time. The preset time, however, will always be zero. If you wish to apply the preset timing feature, you will always need to activate it separately.
- If the SET button is not pressed after the setting, the LED will continue flashing for about one minute. After this, the heater will automatically return to its normal operating mode, and the settings will be saved in memory.

4.7 Display settings

- In the normal operation mode of the heater, the parameters to be displayed can be selected as follows: In the normal operation mode, keep the + and - buttons simultaneously depressed for more than three seconds. On the display is shown "d 1". Now, by pressing the + and - buttons one by one, you can switch between three different display modes: "d 1", "d 2" and "d 3".
 - "d 1": The temperature of the sauna is shown on the display
 - "d 2": The remaining power-on time is shown on the display
 - "d 3": The temperature of the sauna (the red LED is on) and the remaining power-on time (the green LED is on) are alternating on the display.
- After having selected the display mode, return to the normal operating mode by depressing the SET button.
- If the SET button has not been depressed after the setting, "d" and the number of the selected display mode will remain on the display for about one more minute. After this, the heater will automatically return to its normal operating mode, and the settings will be saved in memory.
- The display mode setting will stay in the memory despite outage of the power.
- During pre-timing, is always displayed the remaining preset time.
- After failure, it is possible that one of the following error codes is being displayed:
 - "E01" : Sensor circuit is open or the sensor is missing.
 - "E02" : The sensor is short-circuited
 - "E03" – Overheat switch has tripped/ break.The temperature sensor offers an option to reset the overheat protection switch after it has tripped. The reset requires a strong push.

**NOTE! In case of malfunction, the sauna heater will be switched off.
Find out the cause of the error.**

4.8 Examples

**The desired temperature in the sauna is about 100 °C and
the heater is desired to be switched on for 2.5 hours at a time.**

1. Switch on the power using the I/O button.
2. Depress the SET button -> the yellow LED flashes.
3. Depress the SET button a second time -> the green LED flashes.
4. Depress the + or - button several times until the reading 2:30 is displayed.
5. Depress the SET button -> the red LED flashes.
6. Depress the + or – button several times until the sign 100°C is displayed.
7. Depress the SET button -> the heater is switched on and the set values will be saved for the next time.

You wish to switch on the heater in about three hours

1. Switch on the power using the I/O button.
2. Depress the SET button -> the yellow LED flashes.
3. Depress the + or – button several times until the reading 3:00 is displayed.
4. Depress the SET button -> the green LED flashes.
5. If you want to keep the set power-on time, depress the SET button; to change the power-on time, use the + or - buttons.
6. After the SET button is depressed, the red LED will flash. If you wish to set the temperature, you can use the + or - buttons; if not, just depress the SET button to switch the heater to the preset mode.

**The remaining power-on time is only 15 minutes, but you wish to continue enjoying the sauna
for longer than this**

1. Depress the SET button -> the green LED flashes, the remaining power-on time will still be displayed.
2. Select the desired additional time by depressing the + button
3. Depress the SET button -> the red LED flashes.
4. Depress the SET button -> the heater will remain switched on for the time indicated on the display.
5. Note! After the desired period of time has been set, the green LED can be left flashing. The heater will then automatically return to its normal operating mode within about 1 minute.

The preset time has not run out yet, but you wish to switch on the sauna heater immediately.

1. Depress the SET button -> the yellow LED flashes, and the remaining power-on time will be displayed.
2. Depress the + or - button as many times as is necessary to decrease the display reading to zero. -> the heater is switched on and the On/Off LED in the top left corner glows red.
During the preset time it will not be illuminated at all.
3. Depress the SET button -> the green LED flashes.
4. Depress the SET button -> the red LED flashes.
5. Depress the SET button -> the heater remains switched on normally for the time indicated by the display.

5. TECHNICAL SPECIFICATIONS

Technical specifications

- Temperature range 60 °C–115 °C
- Preset timing max. 24 h
- Power-on time max. 4 h

5.2 Upper card

- enclosure class IPX4
- the control unit can be installed either in the sauna or in the dressing room

5.3 Lower card

- voltage 230 V 3N 50 Hz
- amperage 16 A
- heater capacity max. 10,5 kW
- protection class IPX4
- overheating protection 144 °C
- fuse 400mA

6. AIR EXCHANGE FOR THE STEAM ROOM:

- The air exchange in the steam room must be as efficient as possible, in order to guarantee sufficient oxygen content and availability of fresh air. The air in the steam room should be changed 3-6 times in an hour.
It is recommended that the ventilation be realised in accordance with the HVAC designer's plan
- The fresh air is directed through a ca. 100-mm diameter duct. The outlet duct should be larger in diameter than the inlet duct. If the ventilation is mechanical, we recommend placing the inlet air valve in the ceiling near the heater. Locate the temperature sensor at a sufficient distance from the inlet air valve!
- **There must be a space of at least 1,000 mm between the temperature sensor and the fresh air duct or 500 mm if the duct end can be turned.**
- If the ventilation is natural, we recommend placing the inlet air valve on the side of the heater or under it, either in the wall or in the floor.
- It is important to introduce fresh air, so that the air mixes with the air and the steam.
- The exiting air should be exhausted from near the floor as far as possible from the incoming air.
- The air exhaust valve may be located under the sauna benches.
- The exiting air may be directed out of the steam room through the washroom, for instance under the door. There must be an approximately 100-150-wide slit between the door and the floor.
- If you provide your sauna with a separate drying valve, place it in the ceiling of the steam room. (This valve shall be closed during the use of the sauna.)

7. CONSTRUCTION OF THE STEAM ROOM:

- The steam room must be well insulated, especially the ceiling, through which most of the steam escapes. Because of the humidity, it is recommended the insulation be covered with a moisture resistant material, for instance aluminum foil. Wood must always be used to panel the walls.

8. PROTECTIVE BARRIER:

- A protective barrier may be built around the heater if necessary. In this case, you should definitely adhere to the minimum clearances from structures made of flammable materials.

9. IMPORTANT ADDITIONAL INSTRUCTIONS:

- You should be careful in the vicinity of the hot heater, because the stones and metal parts of the heater may cause burns.
- Only a small amount of water (1-2 dl) should be thrown onto the heater stones, because the steaming water is scalding hot.
- This equipment is not to be used by children or people whose physical and psychological traits, mental functions, lack of experience or knowledge may hinder the safe operation of the equipment, if the person who is responsible for safety cannot supervise them or instruct them in the use of the equipment.
- Children may not be left unsupervised and they should be supervised to make sure they do not play with the equipment.
- Always inspect the steam room before plugging in the heater.
- The improperly filled stone container is a fire hazard.
- Covering the stove will cause a fire hazard.
- Use normal domestic water for steam water. Do not use sea water or other salty water.
- Do not place any objects top over the heater or dry clothes near by the heater.
- Door and window must be closed when using the heater.

When measuring the insulation barrier of the heater, some leakage may occur, which is caused by the humidity that has seeped into the insulation material during transport or warehousing. The moisture will evaporate after the heater is heated a few times.

Do not connect the power supply for the electric heater through a fault current protection!

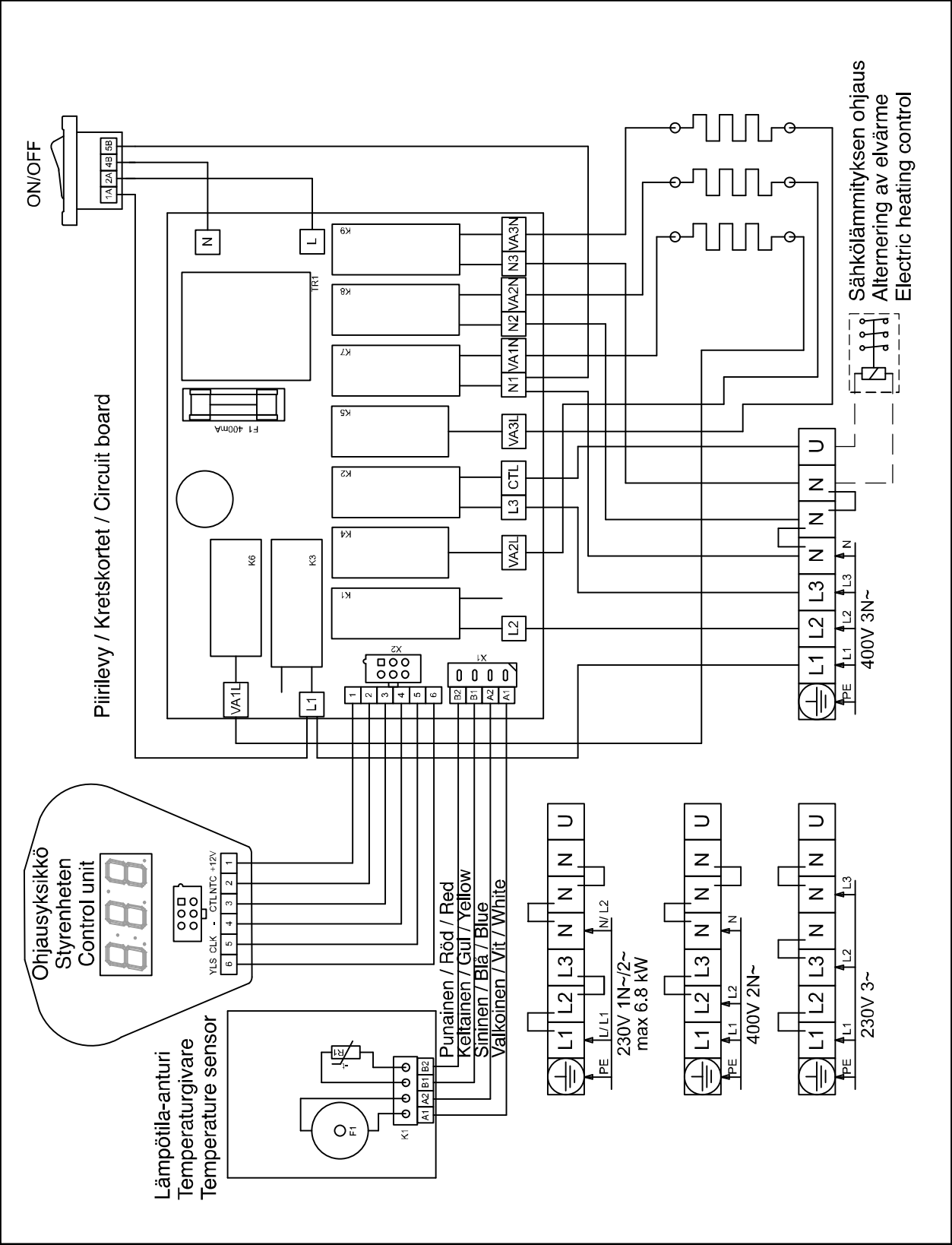
10. CONNECTION SCHEME:

The location of the connectors in the wiring diagram is indicative.
See the markings on the circuit board (page 38).

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CONNECTION SCHEME



ANSCHLUSSSCHEMA СХЕМА ЭЛЕКТРОСОЕДИНЕНИЙ

