OPERATING and INSTALLATION MANUAL

TANK-TYPE WATER HEATER FOR VERTICAL MOUNTING

OKHE 80,100,125,160-SMART

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DRAŽICE
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CONTENTS

READ CAREFULLY THE BELOW INSTRUCTIONS PRIOR TO THE INSTALLATION THE HEATER!

Dear Customer,

The Works Cooperative of Dražice – Machine Plant, Ltd., would like to thank you for your decision to use a product of our brand. With this guide, we will introduce you to the use, construction, maintenance and other information on electrical water heaters.

The manufacturer reserves the right for engineering modification of the product. The product is designed for permanent contact with drinkable water.

It is recommended to use the product in indoor environment with air temperatures from +2°C to 45°C and a relative humidity up to 80%.

Product's reliability and safety is proven by tests implemented by the Engineering Test Institute in Brno.

This product contains an electrostatic sensitive component (electronic thermostat). During the mounting or maintenance of this product please follow general principles described in the EN/IEC 61340 series standard – Electrostatics and related standards.

Meaning of pictograms used in Manual

Important information for heater users.

Recommendations of manufacturer, observance of which will ensure trouble-free operation and long service life of the product.

CAUTION!

Important notice to be observed.

1 TECHNICAL SPECIFICATION OF PRODUCT

1.1 FUNCTION DESCRIPTION

The heater is designed for accumulation heating of service water using electricity. Water is heated by an electric element in an enamelled thermally insulated tank. At the time of heating, the element is controlled by an electronic thermostat E1 that provides multiple operation modes, including comfort functions. The thermostat carries a display, and setting is performed by means of five keys (arrows + OK). Once the selected temperature is reached, heating interrupts automatically. Water accumulated in the tank is then used for the consumption. The tank keeps constant pressure of water from the water main. If the combination faucet hot water valve is opened, water from the water supply conduit pressed out by cold water pressure flows out of the heater. Hot water flows out through the top part, and inflowing water remains in the bottom part of the heater.

1.2 ADVICE FOR CUSTOMERS

1.2.1 HOT WATER CONSUMPTION

Consumption of hot water in households depends on the number of people, amount of sanitary equipment, length, diameter and insulation of piping in the flat, or on individual habits of users. The cheapest option of water heating comes at the time when the electricity rate is reduced.

Find out in what time intervals your electricity supplier provides reduced tariff and, depending on that information, select relevant volume and power input of the heater so that your hot water consumption covered the needs of your household.

1.2.2 ENERGY SAVING

Adjust the temperature of the heater's thermostat to that level only that you need to run your home. Thus you will reduce electricity consumption, as well as the amount of lime sediments on the walls of the receptacle and on the electric element's pit. **To achieve higher electricity savings use one of the smart operation modes - SMART, SMART HDO (refer to chapter 3 “Thermostat operation” for more information on the operation modes).**

1.2.3 EMERGENCY POWER CONSUMPTION

If no heated water is taken from the tank, a small amount of heat leaks. This loss is measured for a period of 24 hours at the temperature of 65°C in the heater, and at 20°C in its ambient area. The resulting value is expressed in [kWh/24h] and indicates the amount of power needed to maintain the set temperature. Data Sheet pursuant to Directive No 442/2004 Coll. and Annex No 7; see Table 1 .

MODEL	OKHE 80-SMART	OKHE 100-SMART	OKHE 125-SMART	OKHE 160-SMART
UNIT HEAT LOSSES [kWh/24hr/l]				
NOMINAL CAPACITY [l]	80	100	125	155
TIME OF WARMING UP CONTENT OF TEMPERATURE ΔT=50°C [hours]	2.5	3	3,8	5
ELECTRICITY CONSUMPTION FOR WARMING CONTENTS FROM 15°C TO 65°C [kWh]	4.8	6	8	9.5
TOTAL HEAT LOSSES [kWh/24hr]				

Table 1

1.3 DESIGN AND GENERAL HEATER DIMENSIONS

The heater tank is made of a steel plate and tested by 0.9 MPa overpressure. The inside of the tank is enamelled. A flange is welded onto the bottom of the tank with a flange lid screwed to it. A sealing ring is inserted between the flange lid and the flange. Thermowells for placing a heating element and sensors of thermostat and safety fuse are located in the flange lid. Anode rod is mounted on M8 nut. Electric wiring is placed underneath the plastic removable cover. The temperature of water and other comfort functions can be set using the electronic thermostat E1. Description of basic parts of the heater – Figure 1. Heater dimensions - Figure 2 and Table 2.

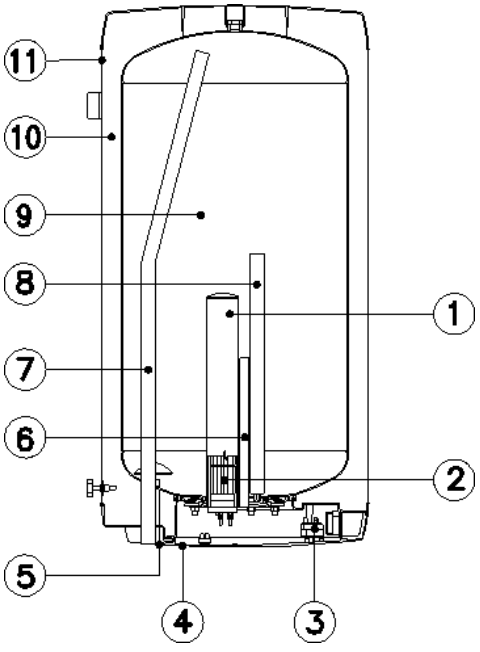


Figure 1

1 heating element well

2 ceramic heating element 2000W

3 electronic thermostat with external control and safety fuse

4 electric installation cover-SMART

5 cold water supply pipe

6 thermowell

7 hot water withdrawal pipe

8 Magnesium anode

9 enamelled steel receptacle

10 CFC free polyurethane insulation

11 heater shell

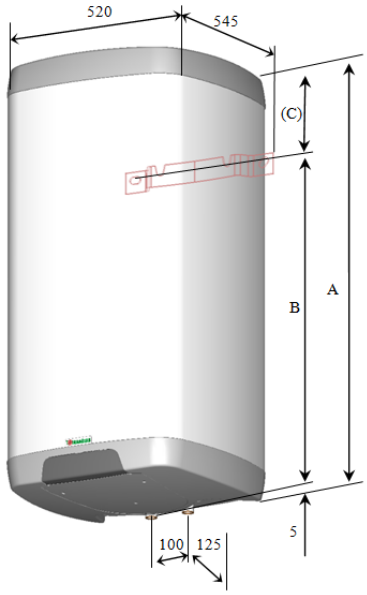


Figure 2

model	OKHE 80-SMART	OKHE 100-SMART	OKHE 125-SMART	OKHE 160-SMART
A [mm]	742	887	1052	1237
B [mm]	610 (560)	700 (650)	850 (800)	1050 (1000)
C [mm]	127 (177)	182 (232)	197 (247)	182 (232)
Max weight without water [kg]	37	42	49	57

Table 2

2 OPERATION AND FITTING INSTRUCTIONS

2.1 OPERATING CONDITIONS

The tank shall only be used in accordance with the conditions specified on the performance plate and in instructions for electric wiring. Besides legally acknowledged national regulations and standards, also conditions for connection defined in local electric and water works have to be adhered to, as well as the installation and operation manual. The room, in which the appliance will be operated, must be frost-free. The appliance has to be mounted at a convenient place, it means that the appliance must be easily available for potential necessary maintenance, repair or replacement, as the case may be.

If water is strongly calcareous we recommend that any of the common decalcifying devices was installed with the appliance, or the thermostat to be set to minimum operation temperature of 60°C. For proper operation, drinkable water of adequate quality shall be used. To avoid potential sediments we recommend that the device was installed together with a water filter.

2.2 WALL MOUNTING

Prior to the mounting, check the bearing capacity of the wall and the material it is made of, considering the weight of the heater filled with water. Depending on the wall material, choose adequate fixtures. Should you have any doubts regarding the wall bearing capacity, consult the suspension with a building specialist. The minimum diameter of the bolts for suspending the heater is **12 mm**. **When mounting the anchor bolts follow the guide provided by the anchor bolts' manufacturer.**

Mount the anchors by the dimensional drawing on Figure 3 in **350 mm** spacing, and screw firmly a steel hinge onto the wall. Check its proper vertical positioning. Double check the torque of the suspension bolts on the heater and suspend the heater. If needed, the suspension bolts can be shifted by **50 mm** in vertical direction. Using the detent support in the bottom part of the heater make sure it runs in parallel with the wall!

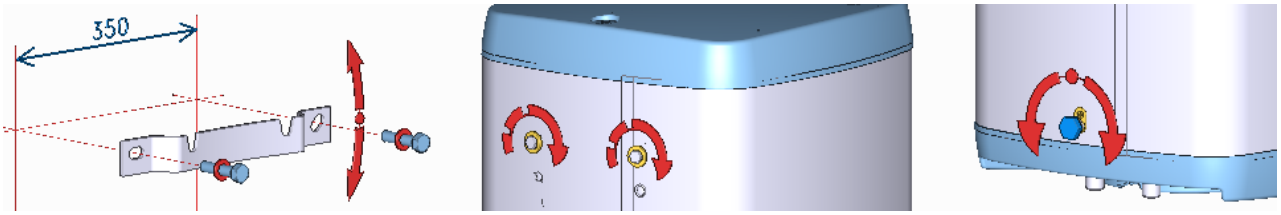


Figure 3

If the hot water heater is mounted in a **tight, small space**, or in an intermediate ceiling, etc., you have to make sure that the connecting side of the appliance (connections to water supply, area for electric plugging) remained accessible and no heat accumulation occurs. Free space of up to **500 mm** from the bottom edge of the heater has to be available under the heater. When mounted directly under the ceiling, the distance from the ceiling has to be **50 mm** at least.

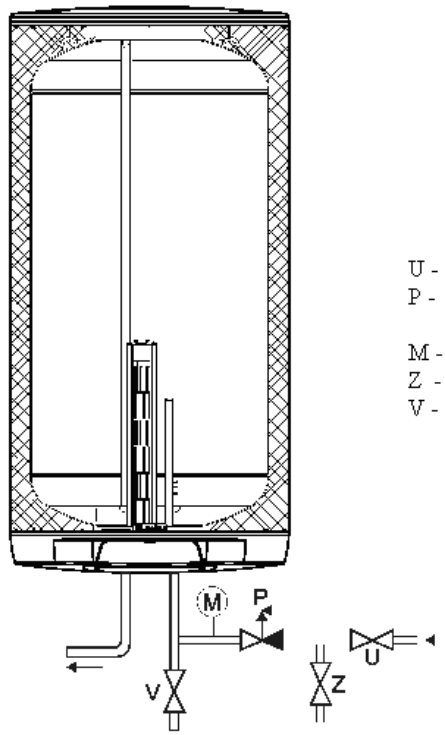
2.3 PLUMBING FIXTURE

Power water connects to pipes with 3/4“ thread in the bottom part of the heater. Blue - cold water supply, red – hot water outlet. For potential disconnection of the heater, the service water inlets and outlets must be provided with screw coupling Js 3/4“. Safety valve is mounted on the cold water inlet identified with a blue ring.

Each hot service water pressure heater must have a safety valve with a membrane spring. Nominal clearance of safety valves is defined in the ČSN 0 60830 standard. The heaters are not equipped with a safety valve. The safety valve must be easily accessible, as close to the heater as possible. The inlet pipes must have at least the same clearance as the safety valve. Safety valves with fixed pressure settings from the manufacturer are used for the assembly. Starting pressure of a safety valve must be identical with the maximum allowed heater pressure, and at least 20% higher than the maximum pressure in the water main – see Table 3. If the water main pressure exceeds such value, a reduction valve must be added to the system. No stop valves can be put between the heater and the safety valve. During the assembly, follow the guide provided by the safety equipment manufacturer.

It is necessary to check the safety valve each time before putting it into operation. It is checked by manual moving of the membrane from the seat, turning the make-and-break device button always in the direction of the arrow. After being turned, the button must click back into a notch. Proper function of the make-and-break device results in water draining through the safety valve outlet pipe. In common operation, such a check needs to be implemented at least once a month, and after each heater shutdown for more than 5 days. Water can drip from the safety valve through the drain pipe; the pipe must be freely open to the atmosphere, placed vertically and shall be in an environment free of temperatures below freezing. When draining the heater, use a drain valve. You must first close the water supply to the heater.

Required pressures – Table 3. We recommend that the hot water distribution from the heater was as short as possible to minimise heat losses.



U - Closure
P - Safety valve with backflow flap
M - Manometer
Z - Test valve
V - Drain valve

Figure 4

Safety valve starting pressure [MPa]	Admissible operating over-pressure of water heater [MPa]	Maximum pressure in cold water pipes [MPa]
0.6	0.6	up to 0.48

Table 3

Heaters must be provided with a discharge valve mounted on the cold service water inlet to the heater for potential disassembly or repair. **When assembling the security equipment, follow ČSN 06 0830.**

2.4 ELECTRIC WIRING

2.4.1 ELECTRIC INSTALLATION GENERAL INFORMATION

In the electric wiring casing remove the partition corresponding with the input wire diameter of ϕ8 or ϕ10. (Figure 5). The degree of protection of electric parts of the heater is IP 45. Power input of electric element is 2000 W.

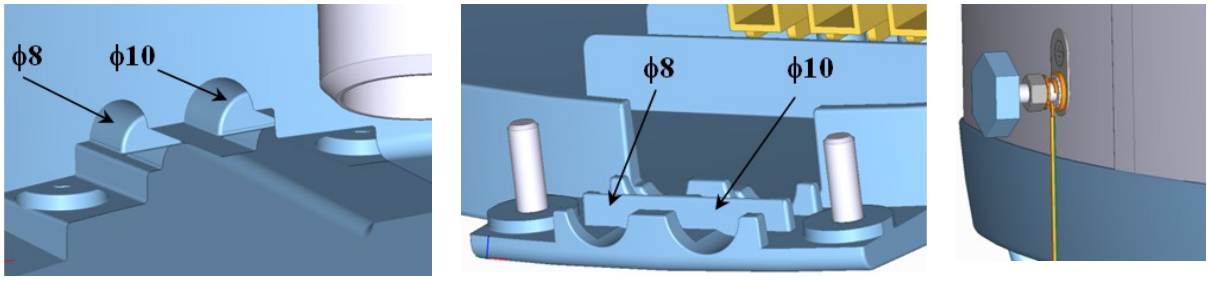


Figure 5

It is necessary to observe the below requirements during the electric wiring.

- Heater is connected to power supply 2 PEN AC 230V/50Hz via a fixed movable wire/wires (depending on the connection method).
- The circuit must contain a breaker disconnecting all poles of the network, and a circuit breaker (protector).
- Installations in bathrooms, lavatories and showers must comply with the **ČSN33 2000-7-701** standard.
- To adjust the distance from the wall, connect the wire of the external protective bonding!
- Respect the rules of protection against electrical injuries in accordance with **ČSN 33 2000-4-41**.

2.4.2 METHODS OF ELECTRONIC THERMOSTAT CONNECTION

A Permanent connection without HDO detection

This connection is convenient for households where the cheap and expensive supplied electricity tariff is not distinguished. Recommended modes for this connection: NORMAL, SMART, ECO, PROG/ANTIFROST.

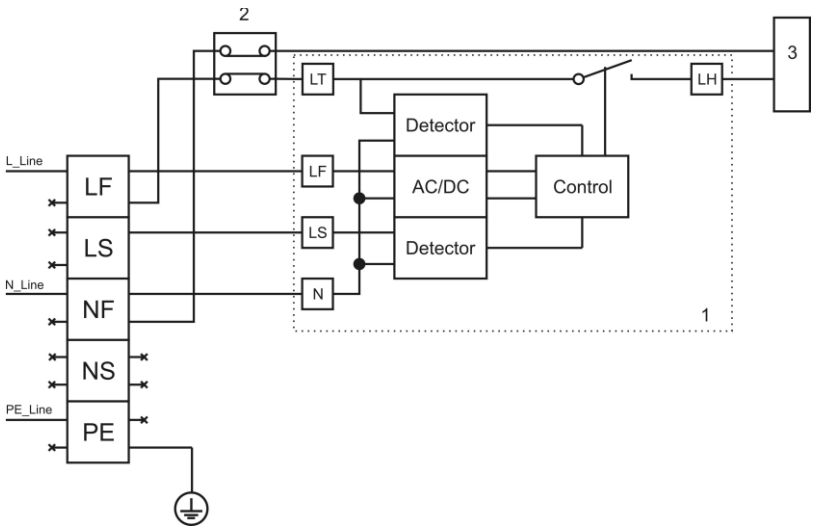


Figure 6 1-Printed conductor plate 2-Thermal fuse 3-Heating element

Conductors:

L_LINE – Phase conductor, permanent voltage
N_LINE – Working conductor, permanent voltage
PE _LINE – protective conductor

Clamps:

LT – Phase conductor, thermal fuse
LH – Phase conductor, heating element
LF – Phase conductor, feeding of thermostat
LS – Phase conductor, HDO detector
NF – Permanent voltage working conductor
NS – Non connected

B Permanent connection with HDO detection

This connection is convenient for households with HDO – reduced electricity tariffs, where all modes are functional - NORMAL, SMART, HDO, SMART HDO, ECO, PROG/ANTIFROST.

CAUTION! In this connection type the desired operating mode has to be selected correctly. If you intend to heat water by means of **HDO** only (reduced electricity tariff), you have to select between the **HDO** or **SMART HDO** modes (the expensive tariff current in these modes is only provided by the supply control electronics, and its consumption is minimal). If activated, other modes would use an expensive electricity tariff. **COSTS ON WATER HEATING WOULD THUS BE HIGHER!** The advantage of this connection is that the display shows all data except of the time when the HDO current supply is off (reduced electricity tariff).

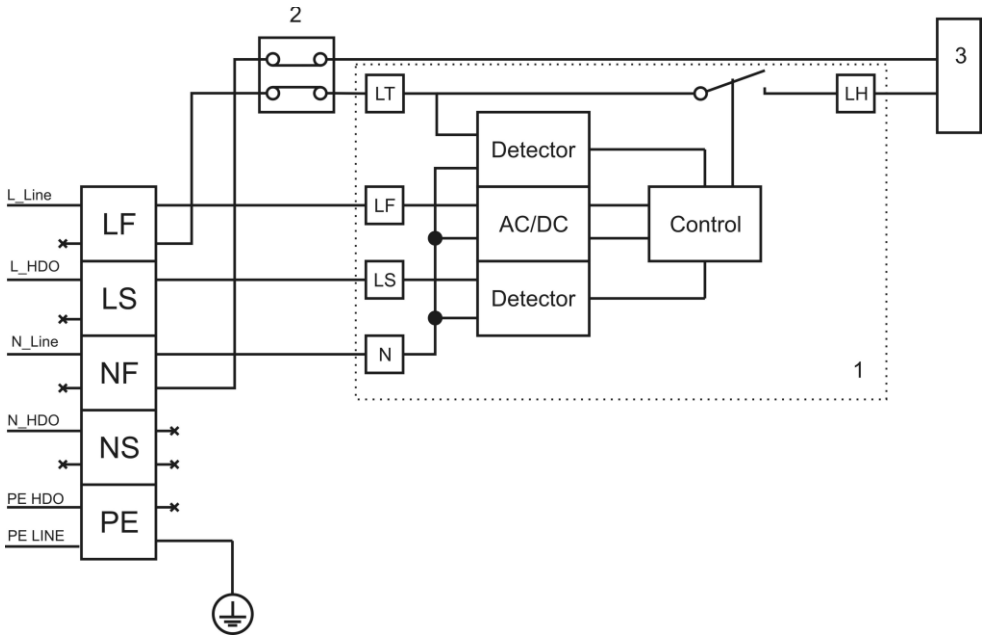


Figure 7 1-Printed conductor plate 2-Thermal fuse 3-Heating element

Conductors:

L_LINE – Phase conductor, permanent voltage
L_HDO – Phase conductor, HDO detector
N_LINE – Working conductor, permanent voltage
N_HDO – Working conductor, HDO
PE HDO – Protective conductor, HDO
PE LINE – Protective conductor, permanent voltage

Clamps:

LT – Phase conductor, thermal fuse
LH – Phase conductor, heating element
LF – Phase conductor, feeding of thermostat
LS – Phase conductor, HDO detector
NF – Permanent voltage working conductor
NS – Working conductor in this connection only serves as an auxiliary clamp for connection of the working HDO conductor

C, HDO connection

This connection is convenient for households with HDO – reduced electricity tariffs, and the following modes are functional: NORMAL (in this case same functionality as in the HDO mode), HDO, SMART, HDO, ECO and PROG.

The display is active (backlit, the temperature inside the heater is displayed) only when HDO is supplied. Beyond that time, the data on the display will who when pressing any key. The display will show the information for 20 seconds and then switches off. At the time the display backlit is inactive and so is the displaying of the temperature inside the heater. In this connection, a jumper has to be connected between the clamps LF and LS (Fig. 8), otherwise the heater will not work!

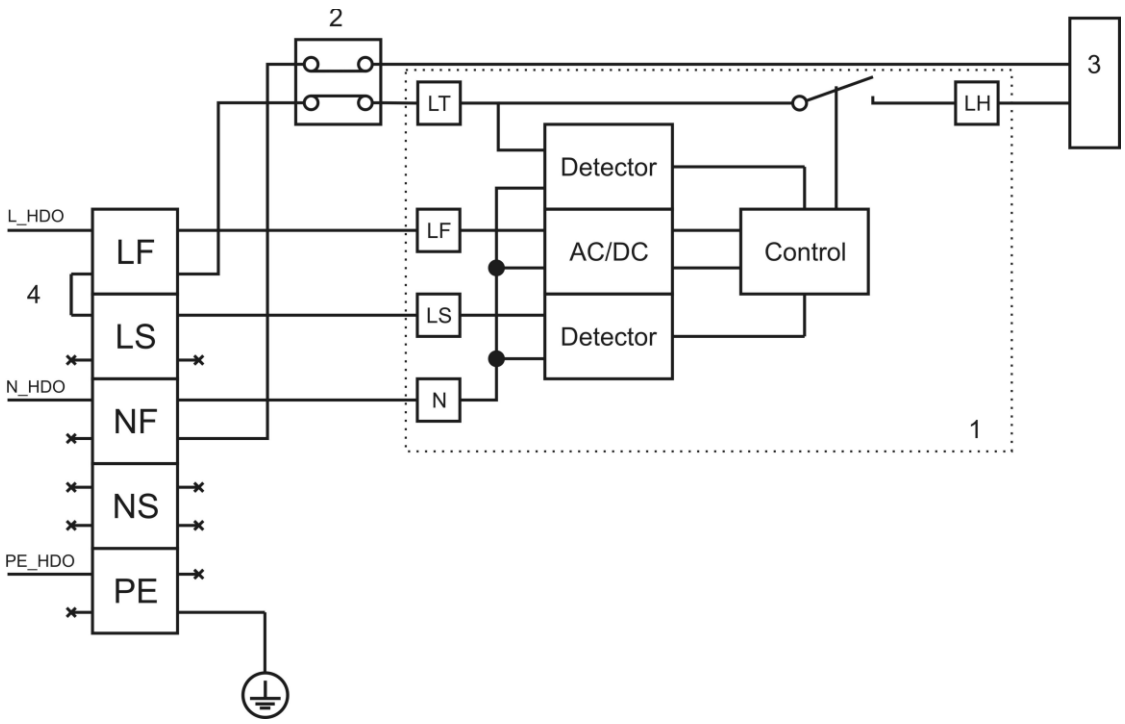


Figure 8 1-Printed conductor plate 2-Thermal fuse 3-Heating element 4 - Jumper

Conductors:

L HDO – Phase conductor switched by HDO signal
N HDO – Working conductor, HDO
PE HDO – Protective conductor

Clamps:

LT – Phase conductor, thermal fuse
LH – Phase conductor, heating element
LF – Phase conductor, feeding of thermostat
LS – Phase conductor, HDO detector
NF – Permanent voltage working conductor
NS – Non connected

Selection of the wiring type has to follow the contractual conditions between the consumer and electricity supplier (the power undertaking).

2.5 FIRST HEATER COMMISSIONING

Before opening the power supply, the tank must be filled with water. The process of first heating must be executed by licensed professional who has to check it. Both the hot water outlet pipe and safety armature parts may be hot.

During the heating process the pressurised connection water that increases its volume due to heating must drip off the safety valve. In non-pressurised connection water drips off the overflow combination faucet. When heating is finished, the set temperature and the actual temperature of consumed water should be roughly equal. After connecting the heater to the water main and electrical power system, and after checking the safety valve (following the instructions attached to the valve), the heater can be put into operation.

Procedure of putting the heater into operation:

1. Check the water main and wiring. Check proper placement of thermostat and safety fuse sensors. Electronic thermostat contains two temperature sensors placed on the holder that defines their exact position in the thermowell. The upper sensor is placed in a **430mm** distance, and the lower in a **120mm** from the bottom edge of the thermowell. The accurate position of the sensor is necessary to ensure proper function of the electronic thermostat, and is defined by the sensor holder. The safety fuse sensor has to be inserted all the way in the thermowell.
2. Open the hot water valve on the combination faucet.
3. Open the cold water inlet valve to the heater.
4. As soon as the water starts running through the hot water valve, the heater is filled and the valve can be closed.
5. In case of a leakage (flange lid), we recommend fastening the flange lid bolts.
6. Screw down the electric installation guard.
7. When hot service water heating by electric energy, switch on the power supply.
8. When commencing operation, flush the heater until the cloudiness in the water is gone.
9. Make sure to fill in properly the warranty certificate.

2.6 PUTTING OUT OF SERVICE, DISCHARGE

If the hot water heater is put out of service for a longer time, or if it is not going to be used it has to be drained and disconnected from the electric supply network on all poles. The switch for the supply lead or the fuse cut-outs have to be shut off.

At places with permanent risk of frost the hot water heater must be drained before the cold season starts if the appliance remains out of service for several days and if the power supply is disconnected. Alternatively, an antifreeze protection can be activated (refer to the PROG/ANTIFROST function).

Drainage of service water shall be performed after closing the shut-off valve in the cold water supply piping (through the discharge valve for safety valve combination), and with simultaneous opening of all hot water valves of connected fittings. **Hot water may outflow during the drainage**! If there is a risk of frost it has to be considered that not only the water in the hot water heater and in the hot water piping may get frozen but also the water in the entire cold water supply piping. It is therefore advisable to drain all fittings and piping that carry water, up to the part where the house water meter is installed (connection of the house to water main) which is not jeopardised by frost. When the tank is to be used again, it has to be filled with water and one needs to make sure that the water **flowing out at the hot water valves did not contain any bubbles**.

2.7 INSPECTION, MAINTENANCE & CARE FOR THE APPLIANCE

During the heating process the water that increases its volume during the heating must drip off the safety valve outlet (in non-pressurised connection this water drips off the combination faucet valve). In full heating (about 65°C) the volumetric water gain is approx. 3% of the tank capacity. The function of the safety valve has to be checked regularly (based on the information contained in the attached safety valve manual). In common operation, such a check needs to be implemented at least once a month, and after each heater shutdown that exceeds 5 days.

Caution! In doing so, the cold water supply pipe and the connection fitting of the tank may get heated! If the hot water heater does not work, or if hot water is not withdrawn, no water shall drip off the safety valve. If water drips, then the pressure in the supply piping is either too high, or the safety valve is defective. Please call a specialised plumber immediately!

If water contains too many minerals, an expert has to come to remove the scale that forms inside the tank, as well as free sediments. This has to be performed after one or two years of operation. The cleaning is carried out through the hole in the flange by: draining the boiler, dismantling the flange lid and cleaning the tank. A new sealing has to be used for re-fitting. Since the inside of the heater has special enamel, the surface of which must not get in contact with a scale removing agent – do not work with a lime pump. Remove the lime layer with a timber and suck it off, or wipe it off with a clout. After that, the appliance must be rinsed thoroughly and the heating process is checked the same as during the initial putting in operation. Do not use any abrasive cleaning agents or dye thinners to clean the outer shell of the heater (such as cellulose thinner, trichlor, and the like). For cleaning use a wet clout and add a few drops of liquid cleaning agent for household applications.

2.8 MOST FREQUENT FUNCTION FAILURES AND THEIR CAUSES

The thermostat is equipped with auto-diagnostics that allows display of some failure modes. If a failure occurs, the failure symbol shows on the display and the failure code can be looked up in the menu (Table 4).

Failure code	Err_	Err1	Err2	Err3
Failure description	no failure	bottom sensor failure	upper sensor failure	both sensors failed

Table 4

If one of the temperature sensors fails (Err1 or Err2), the boiler runs in NORMAL mode only (allows emergency run of the heater), if both sensors fail (Err3), the heating element does not heat.

Other potential failures – Table 5.

Failure symptom	Potential failure cause	Solution
Water is cold	• Low temperature is set on the thermostat (applies to modes NORMAL, HDO, ECO).	• Set higher temperature on the thermostat.
	• Heating element failure	• Seek an authorised service centre.
	• The thermal fuse is activated (relevant symbol lights on the display).	• Seek an authorised service centre.
Water is constantly dripping off the safety valve	• high input pressure	• Use pressure control valve
	• defective safety valve	• Replace the valve

Table 5

Do not try to repair the failure yourselves. Seek either expert or service help. It does not take much for an expert to remove the defect. When making a repair appointment, report the type and serial number you find on the performance plate of your water heater.

3. OPERATION OF THERMOSTAT

Electronic thermostat for controlling electrical water heaters of DZ Dražice allows multiple operating modes along with providing comfort functions. The thermostat contains a display and a five-key keyboard that allows setting of the heater.

3.1 OPERATING MODES

3.1.1 NORMAL

Mode in which the controller keeps the heater at constant, user defined temperature in the range between **5 to 65°C.** A standard thermostat function – keeps the heater constantly warmed up to the set temperature, same as the existing capillary thermostats.

3.1.2 HDO

The controller keeps the heater at constant, user defined temperature in the range between **5 až 65°C** only when low electricity tariff is detected.

3.1.3 ECO

Same function as in the NORMAL mode, just the maximum reachable temperature is limited to **55°C**.

3.1.4 SMART

In this mode the controller passes through two phases in order to save at least **10%** of electric power, comparing to the NORMAL mode. In the first phase (learning mode – only the SMART + NORMAL symbols are shown on the display) constant temperature of the heater is maintained in one calendar week, and the control electronics monitors the user's behaviour in terms of water consumption. This information is recorded and subsequently processed. In the second phase (which starts the following calendar week) the controller applies the information obtained in the first phase and prepares only such amount of water that user consumes in relevant time, leaving a certain reserve for case of unexpected water withdrawal. In this phase water consumption data are collected and evaluated. The obtained information is applied in such manner to adapt continuously to user's requirements. During this mode, minimum temperature is maintained automatically at **45°C**.

If, during the learning mode (the first 7 days) electricity dropout occurs, the learned data on hot water consumption will be lost. After electricity re-connection the learning mode is restarted and new data collected for another 7 days. When this period elapses, the collected data are kept in the appliance memory and potential electricity dropout will not cause loss of them.

3.1.5 SMART HDO

The boiler operates in HDO mode but if it detects that the heated water was not used in a day, the following day it will reduce the temperature automatically. On the contrary, if all the warmed water was consumed, it increases the temperature and this process is repeated until the heat accumulated in the heater equals the consumption.

3.1.6 PROG/ANTIFROST

The mode of putting the heater out of operation (holiday programme). Makes sure that the temperature of water in the heater does not drop below 5°C (electricity supply is necessary).

3.1.7 STOP

Function for switching off the heater. In this mode, the heating element cannot be switched on. Also the ANTIFROST function is eliminated.

In addition, in all modes (except STOP) the minimum temperature of **5°C** is maintained (if the temperature drops below this value, the heating element activates. Electricity supply is the only requirement.

3.2 DISPLAY

The display contains the below listed data (Figure 9):

1. **numerical** (when setting, the numerical area flashes in second intervals);
2. specifying displayed number / **units** (temperature, consumed energy in kilowatt-hours, amount of water available after mixing to 40°C, time and date);
3. displaying selected thermostat **mode** (NORMAL, SMART, SMART HDO, HDO, ECO and PROG);
4. **bar-graph** showing the amount of available water after mixing to 40°C (100% = full boiler of water warmed up to 65°C);
5. status report **icons**:
    - **Snowflake symbol** – emergency heating using the function – the temperature of the boiler was below +5°C and water distrubution pipes might get damaged;
    - **Fuse symbol** – mechanical thermal fuse was activated;
    - **Heating** symbol - heating element activity;
    - **Err** symbol– failure; the error code is shown on the display.

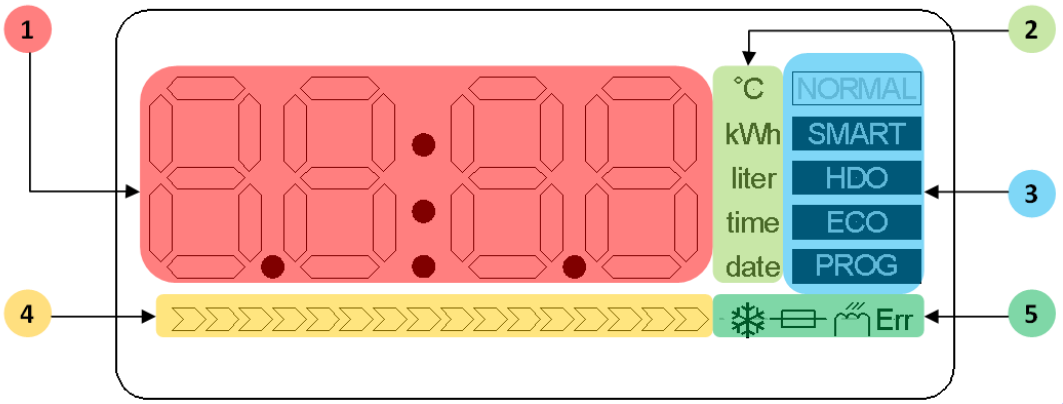


Figure 9

The options of display images are described in Table 6.

Data displayed	Description
Current and set temperature in boiler	In idle mode, the display does not show current temperature in the boiler, or this imaging can be achieved with arrows UP / DOWN (symbol °C). If network voltage is not available, dashes are displayed.
Amount of available water mixed to 40°C	Using the UP / DOWN arrows, approximate amount of available water after mixing to 40°C can be displayed after hitting the litre symbol. If no power supply is available, or it the water temperature in the heater is below 40°C, zero amount shows. As result of higher single hot water withdrawal a zero amount can be displayed (even BARGRAPH will not show on the display), despite water warmer than 40°C will flow out of the heater. This is caused by complex dynamic phenomena that develop when the boiler is filled with new cold water. Once water stabilises and distributes, numerical data will be displayed again.
Heating element activity indication	The symbol on the display indicates activity of the heating element.
Energy consumption with resetting option	Using the UP / DOWN arrows approximate amount of consumed electricity after hitting the kWh symbol can be displayed - the electronics from the element output and the time of its run counts with the energy consumed from the last reset.
Clock and date	The thermostat contains backed up actual time clock.
“ANTIFROST“	If the boiler is switched off, this function prevents temperature drop below +5°C. If heating takes place despite that, the snowflake symbol shows on the display if the temperature drops below +5°C and the ANTIFROST function activates.
Thermal fuse opening indication	If the mechanical thermal fuse opens, the fuse symbol shows on the display.

Table 6

3.3 CONTROL

The thermostat can be controlled by means of the UP, DOWN, RIGHT, LEFT and OK keys.
Short press is a press shorter than 3 seconds.
Long press is a press longer than 3 seconds.
Simultaneous press is a press of two keys at once that lasts longer than 3 seconds.

3.3.1 THERMOSTAT MODE SETTING

Setting the mode is possible after simultaneous pressing the RIGHT and LEFT keys longer than 3 seconds (protection against unintended mode switching). Once the set mode symbol starts flashing, you can use the RIGHT or LEFT keys to switch between the modes.

- NORMAL
- SMART (If SMART is selected the first week of “learning”, both the NORMAL and SMART symbols are active on the display and later also the SMART symbol);

- SMART HDO (the SMART and HDO symbols are active on the display).
- HDO
- ECO
- PROG/ANTIFROST

Confirm the selected mode by short pressing OK. If no confirmation by pressing the OK key comes within thirty seconds from the last pressing of any of the arrows, the newly set mode does not save and the thermostat returns to normal mode.

- **STOP** mode
    - Switching the boiler off to emergency mode when the heating element cannot switch. The STOP mode activates by simultaneous pressing the UP and DOWN keys for over 3 seconds. The “STOP” sign appears on the display. It switches off in the same way.

3.3.2 STANDARD DISPLAY MODE

In this mode, the UP / DOWN arrow keys can be used to switch cyclically in the display mode.

1. current temperature of water in the boiler
2. electricity consumption from the last reset of the counter
3. amount of available water after mixing to 40°C
4. current time
5. current date
6. current year
7. current day of the week (d 1 – d 7)
8. failure (error) code.

The display also shows the amount of available water and icons on the bar-graph: Antifrost activation, activation of mechanical thermal fuse, activity of heating element and general error report Err (the error code shows on the display). If no constant power supply is available, the display goes off in 20 seconds following the power outage. When any key is pressed, it will light up again for 20 seconds.

3.3.3 SETTING MODE

Enter the setting mode by long pressing the OK key.

3.3.3.1 Setting the desired temperature (for modes NORMAL, SMART HDO, HDO & ECO)

Using the UP or DOWN arrows select temperature display (symbol "°C“) and press long the OK key until the information on the set temperature starts flashing. Using the UP or DOWN keys set the desired temperature and confirm with short pressing of OK. If no confirmation by pressing the OK key comes within thirty seconds from the last pressing of any of the arrows, the new temperature does not save and the thermostat returns to normal mode.

3.3.3.2 Resetting the electricity consumption meter

Using the UP or DOWN arrows select the mode of displaying the electricity consumption (symbol "kWh“) and long press the OK key until the information on electricity consumption starts flashing. Use the DOWN key to reset the measured value and confirm by short OK pressing. If no confirmation by pressing the OK key comes within thirty seconds from the last pressing of any of the arrows, the reset is of no effect and the thermostat returns to normal mode.

3.3.3.3 Time setting

Using the UP or DOWN arrows select the current time display mode (symbol "time“) and long press the OK key until the time starts flashing. Using the UP or DOWN keys set the desired time and confirm with short pressing of OK. Minutes will start flashing; using the UP or DOWN keys set the desired minutes and confirm

with short pressing of OK. If no confirmation by pressing the OK key comes within thirty seconds from the last pressing of any of the arrows, the newly set time does not save and the thermostat returns to normal mode.

3.3.3.4 Date setting

Using the UP or DOWN arrows select the current date display mode (symbol "date“) and long press the OK key until the first double figure indicating the day starts flashing. Using the UP or DOWN keys set the desired day and confirm with short pressing of OK. The second double figure will start flashing; using the UP or DOWN keys set the desired month and confirm with short pressing of OK. If no confirmation by pressing the OK key comes within thirty seconds from the last pressing of any of the arrows, the newly set date does not save and the thermostat returns to normal mode.

3.3.3.5 Year setting

Using the UP or DOWN arrows select current year display (symbol "date“) and long press the OK key until the information on the set year starts flashing. Using the UP or DOWN keys set the desired year and confirm with short pressing of OK. If no confirmation by pressing the OK key comes within thirty seconds from the last pressing of any of the arrows, the newly set year does not save and the thermostat returns to normal mode.

3.3.3.6 Setting a day in week

Using the UP or DOWN arrows select current year display (symbol "date“, sign D1 to D7 on the display) and long press the OK key until the information on the set day starts flashing. Using the UP or DOWN keys set the current day (D1 = Monday, (D2 = Tuesday), and confirm with short pressing of OK. If no confirmation by pressing the OK key comes within thirty seconds from the last pressing of any of the arrows, the newly set day does not save and the thermostat returns to normal mode.

4 IMPORTANT NOTICES

4.1 INSTALLATION REGULATIONS

Regulations and instructions that must be obeyed in connecting the heater to power network – Table 7.

Standard No	Standard description:
ČSN 33 2180	Connecting of electric devices and appliances.
ČSN 33 2000-4-41	Low voltage electric installations: Protective measures to ensure safety – Protection against electric shock.
ČSN 33 2000-7-701	Low voltage electric installations: Single-purpose devices and devices in special premises - Premises with tub or shower.

Table 7

Regulations and instructions that must be obeyed in connecting the heater to the hot service water (HSW) heating system – Table 8.

Standard No	Standard description:
ČSN 06 0320	Thermal systems in buildings - Hot water preparation – Design and Project Engineering.
ČSN 06 0830	Thermal systems in buildings – Protecting devices.
ČSN 73 6660	Internal water conduits.
ČSN 07 7401	Water and steam for heat energy device with steam over-pressure up to 8 MPa.
ČSN 06 1010	Tank water heaters with water and steam heating; and combined with electric heating. Technické požadavky. Zkoušení.
ČSN EN 12897	Water supply – Indirectly heated closed tank-type water heaters.

Table 8

Both the electric and water installation must follow and meet the requirements and regulations relevant in the country of use!

4.2 DISPOSAL OF PACKAGING MATERIAL AND FUNCTIONLESS PRODUCT

A service fee for providing return and recovery of packaging material has been paid for the packaging in which the water heater was delivered. The service fee was paid pursuant to Act No 477/2001 Coll., as amended, at EKO-KOM a.s. The client number of the company is F06020274. Take the water boiler packages to a waste disposal place determined by the town. When the operation terminates, disassemble and transport the discarded and unserviceable heater to a waste recycling centre (collecting yard), or contact the manufacturer.

2-2014