

ELECTRIC INSTANTANEOUS WATER HEATER

GB



KDE



KDE2



PPE2



PPVE



Used product can't be treated as general communal waste. Disassembled appliance has to be delivered to the collection point of electrical and electronic equipment for recycling. Appropriate utilisation of used product prevents potential negative environmental influences that may occur as a result of inappropriate handling of waste. In order to get more detailed information about recycling this product you should contact the local government unit, waste management service or the shop where this product has been purchased.

Safety instructions

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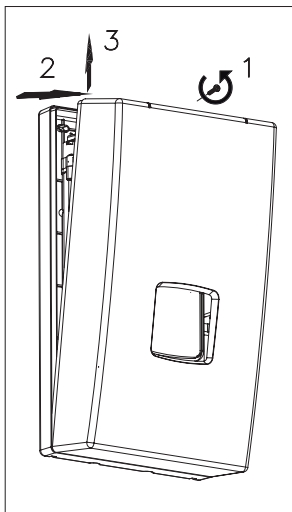
1. Read and strictly follow the installation and operating instructions to ensure a long life and reliable unit operation.
2. The unit is designed to be wall mounted.
3. The unit can only be used when in perfect technical condition and correctly assembled.
4. If there is a non-return valve installed on the water supply pipe the safety valve must be fitted between unit and non-return valve. This relates to KDE only.
5. Inlet and outlet pipes should not be made of plastic. This relates to KDE only.
6. The maximum inlet water temperature should not exceed 70°C.
7. The unit should always be vented before initial start-up. Vent the unit each time after the water has been emptied from the heater or pipes (e.g. when water supply system has been repaired or maintained).
8. Connection to the mains and measurement of fire protection effectiveness should be made by a qualified person.
9. The unit has to be earthed.
10. The unit must be permanently connected to the mains which is equipped with earth clamp.
11. Electric installation should be equipped with residual current protective devices and other solutions which will ensure disconnecting the heater from the source of power (intervals between all their poles should not be less than 3 mm).
12. The unit must not be installed in the place which is exposed to the danger of explosion and place in which the temperature may go down below 0°C.
13. The unit must be kept in a place in which the temperature never go down below 0°C (there is a water inside the unit).
14. Do not use when the water has been emptied from the unit or pipes (e.g. when water supply system has been repaired or maintained).
15. Unit's cover must not be taken off while power is on.
16. Failure to install the filter on water supply pipe can cause unit damage.
17. Appropriate precaution must be taken while using hot water. Temperature of water over 40°C may cause hot feeling and can be dangerous for children.

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instructions concerning use of the appliance by a person responsible for their safety.

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

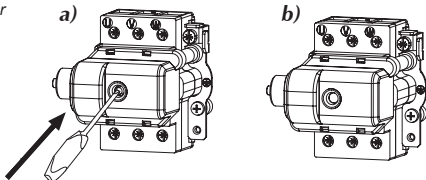
Installation – Assembly

1. Apply templete on place the unit will be fitted. Mark points for drilling the holes for fixing screws.
2. Bring the water system pipes and electric supply cables to the marked places.
3. Take off the unit's cover.
4. Run the supply wire through the hole and fix the unit on the wall.
5. Connect the unit to the electric mains.
6. Remove rubber plugs from cold and hot water fittings.
7. Connect the unit to the water supply system.
8. Open the cold water valve and check for leaks.
9. Vent the water system. See section "Venting"
10. Make sure that the WC3 or WT3 temp. limiter is at working position (the knob should be pushed in).
11. Put the unit's cover back.
12. Make sure that there is no access to live parts through the holes at the back plate.



Safety temperature limiter WC3/WT3

- a) to switch on
- b) WC3/WT3 on



Venting

1. Shut off electric supplies to the heater
2. Turn the flow on (turn the hot water tap on) in order to vent the water installation (for about 15-30 seconds), until the flow of water becomes constant and even.
3. Switch on the electric supplies.

PPE2, KDE2, PPVE Configuration

Before you supply voltage to the unit for the first time, make sure that you set the unit's power at appropriate value (always consider the capacity of your home's electrical system). Set the switches (located at the bottom of electronic board) at appropriate position to configure the unit.

1-6 Switches setting (the grey square shows the switch position):

- 1, 2 - rated power of unit,
- 3, 4 - size of heating box,
- 5 - ON - switch position that activates the air control at the heating box,
- 6 - ON - switch no. 6 in "ON" position blocks access to the unit's setting (this relates to PPE2 and PPVE only). In this case, the LED display shows the desired temperature value (which has been adjusted before the unit start-up), the heating icon and other possible working characteristics.

Heating box size 15 kW



9 kW



12 kW



15 kW

Heating box size 24 kW



18 kW



21 kW



24 kW


Heating box size 27 kW



27 kW


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PPE2 Operation

The heater switches on automatically straight after reaching the flow rate over 2,5 l/min. The temperature control system adjusts the power rate according to the water flow rate, required temperature and the temperature of water in the mains. The LCD backlight and  icon signals the heating operation.

If the unit reach the maximum power value which is too low for a given operating conditions the LCD display will show "INSUF POWER". The LED display backlight also turns on while pushing or turning the setting knob. The backlight will automatically turn off when the heating operation is turned off, or if more than 50 seconds have passed since the last adjustment.

If you block the unit by master appliance (NA entry) the display will show "NA BLOCK"

If the fault occurs the display will show  icon and error message.

Error messages:



- ER>T INLET – inlet sensor failure,
- ER> T OUTLET – outlet sensor failure,
- ER> T MAX – temperature has exceeded the maximum value,
- ER> AIR 1 – air bubbles in the heating box – equipment detection,
- ER> AIR 2 – air bubbles in the heating box – program detection.

If the display shows ER> T MAX, ER> AIR 1 or ER> AIR 2 the unit will stop heating. The unit will not heat again until the failure is resolved and the appropriate value of water flow is reached.

Temperature adjustment

Turn the knob to the right to increase the temperature value, or to the left to decrease it. Push the knob to read the temperature value that is stored in memory. Push it again to read the next stored value. You can switch between the following settings “SINK”, “SHOWER” and “BATH”.

To change the temperature setting in memory:

- select the temperature setting by pushing the control knob,
- push the knob and keep for about 3 seconds until the value starts to flashing,
- turn the knob to adjust the value,
- push the knob to save the value.

Notice: save the new value within 10 seconds, otherwise you will lose it.


Configuration and parameters view


- temperature (min-max) [S>SET TEMP] – °C,
- inlet temperature value [S>T INLET] – °C,
- outlet temperature value [S>T OUTLET] – °C,
- flow rate [S> FLOW] – l/min,
- percentage of maximum power with which the unit currently heats [S> FULL POW] -%,
- work time [S> T – h],
- minimum brightness / stand-by-mode [S> BRIGH MIN] [0 - BRIGH MAX],
- maximum brightness / active [S> BRIGH MAX] [BRIGH MIN -25],
- select language version [S> ENGLISH] (POLSKI, FRANCAIS, ENGLISH, DEUTCH, РУССКИЙ),
- software version (PW, MSP.....).


Push and keep knob for about 5 seconds (until the display backlight turns off) to exit parameters setting mode.

Notice: parameters setting mode will automatically exit after 5 minutes since the last adjustment.

Maximum temperature



Set the maximum temperature value then push and keep knob for about 5 seconds until the display shows . Take notice that the new maximum temperature value will be saved in memory for other settings as well.


To cancel the maximum temperature value, push and hold the knob for about 5 seconds (until the display shows ) while you set the temperature above the minimum value.

If you try to set the temperature above the adjusted maximum value the display will show  for about 1 second.






PPVE Operation


The heater switches on automatically straight after reaching the flow rate over 2,5 l/min. The temperature control system adjusts the power rate according to the water flow rate, required temperature and the water temperature in the mains.

The LCD red colour backlight and  icon signals the heating operation. If the unit reach the maximum power value which is too low for a given operating conditions the LCD display will show .


The LED display backlight also turns on while pushing or turning the setting knob. The backlight will automatically turn off when the heating operation is turned off, or if more than 30 seconds have passed since the last adjustment. If you block the unit (NA entry) by master appliance the display will show .

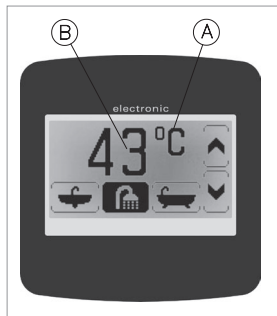
If the fault occurs the display will show error message:

-  - inlet sensor failure,
-  - outlet sensor failure,
-  - temperature has exceeded the maximum value,
-  - air bubbles in the heating box – equipment detection,
-  - air bubbles in the heating box – program detection.




If the display shows  the unit will stop heating.

The unit will not heat again until the failure is resolved and the appropriate rate of water flow is reached.


If you try to set the temperature above the adjusted maximum value the display will show .



Temperature setting




Display shows three icons:  You can set the desired temperature value (which has been stored in memory for each icon) by pressing one of them  - the icons will be displayed in inverse .

To change the desired temperature value:


- push the icon,
- push the icon again and keep (for about 3 seconds) until the value starts to flicker,
- to set the new value press ,
- to save the value press icon.

Notice: save the new value within 10 seconds, otherwise you will lose it.



Configuration

To enter the configuration mode press  To adjust the value press  The parameters will switch as you press . You can switch between the following parameters:


- maximum temperature value,
- display contrast (0-20),
- display brightness in stand-by-mode (0-20) /brightness min. / (0 – brightness max.),
- display brightness in active mode (0-20) /brightness max. / (brightness min. –20).

To exit parameters setting mode press . Notice: parameters setting mode will automatically exit after 20 seconds since the last adjustment.

Parameters view

To enter the parameters view mode press . The parameters will switch as you press . You can switch between the following parameters:

- flow rate Q ,
- percentage of maximum power with which the unit currently heats P ,
- rated power P_n ,
- correction of power ΔP ,
- software details and work time,
- inlet temp T_{in} ,
- outlet temp T_{out} .

To exit the parameters view mode press . Notice: parameters view mode will automatically exit after 5 minutes since the last adjustment.

KDE, KDE2 Operation

The heater switches on automatically straight after reaching the flow rate over 2,5 l/min. The temperature control system adjusts the power rate according to the water flow rate, required temperature and the water temperature in the mains.

There are two indicators on the case:

- green - power supply "on",
- red - heating "on".



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Other modes are shown through these two flickering lights in combination.

KDE

Number of impulses (red indicator)	the "green" indicator flickering with constant frequency
	description
1	the water flow is too high for the temperature setting
2	the unit was switched off by a master appliance

Number of impulses (green indicator)	the "red" indicator flickering with constant frequency
	description
3	the inlet temperature sensor failure

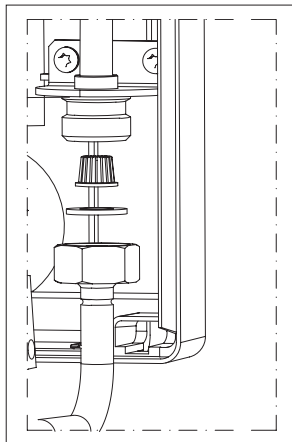
KDE2

Number of impulses (green indicator)	description
1	the unit was switched off because the temperature has exceeded the maximum value (fault signal will not disappear until the appropriate rate of water flow is reached)
2	the unit was switched off by a master appliance
3	the inlet temperature sensor failure
4	the unit was switched off because the air bubbles in the heating box (the unit will not heat again until the fault is resolved and the appropriate rate of water flow is reached)

Maintenance

Filter cleaning:

1. Cut off power and cold water supplies.
2. Take off the unit's cover.
3. Undo the inlet fitting - on the cold water side.
4. Take the filter out from the inlet fitting.
5. Clean up the filter.
6. Fix the filter back, put the gasket and do up the inlet fitting.
7. Open the cut-off valve on cold water supply pipe - check connections for leaks.
8. Fix the unit's cover back.
10. Vent the water system – see Venting section.



Co-operation with other appliances

Unit is equipped with the BLOK and NA clamps.

BLOK – relay input that switches off the slave appliance, the circuit that is connected to the BLOK clamps (max. 0,1A 250V-) will be opened at the time of heating operation starts up.

NA – input that locks the unit operation, opened NA contacts locks the heating operation - co-operation with the master appliance.

Wire (2 x 0,5mm²) for BLOK and NA clamps should be run inside the unit on the right side.

The wire connections must be performed by a qualified person.

KDE	9	12	15	18	21	24	27
PPE2, KDE2, PPVE	9/12/15						
Rated power	9	12	15	18	21	24	27
Rated voltage	400V 3~						
Rated current	3 x 13,0	3 x 17,3	3 x 21,7	3 x 26,0	3 x 30,3	3 x 34,6	3 x 39,0
Efficiency (at $\Delta t = 40^\circ\text{C}$ and water pressure at 0,4 Mpa)	3,3	4,3	5,4	6,5	7,6	8,7	9,8
Fuse rated current	A 16	20	25	32	40	4 x 6	50
Min. connecting wires section (PPE2, KDE2, PPVE)	4 x 1,5	4 x 2,5		4 x 4		4 x 6	
Max. connecting wires section	4 x 16						
The maximum allowed network impedance					0,43	0,37	0,30
Pressure in the water mains	0,1 ÷ 0,6						
Activation point (min. rate of flow)	2,5						
Temperature adjustment range	30 ÷ 60						
Overall dimension (height without tap set x width x depth)	KDE, KDE2						
	440 x 245 x 120						
Weight	PPE2, PPVE						
	440 x 245 x 126						
	~5,2						
Water fittings	KDE2						
	~4,3						
	~4,0						
	G 1/2" (distance between inlet and outlet 100 mm)						

The minimal resistivity of water at 150°C for PPE2, KDE2, PPVE is 1100 Ω cm.

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