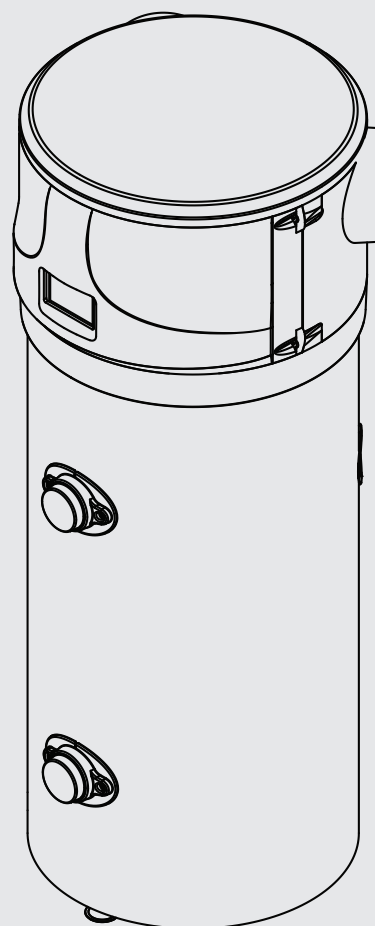


User Manual  
(original instruction)

EN

**Panasonic®**

N20002T – Rev.00 – 05/2025



# Domestic Hot Water Heat Pump

P-DHW\*\*AE5

P-DHW\*\*CAE5

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*Dear Customer,*

*Thank you for having purchased this product.*

*The Panasonic, has always paid a great deal of attention to environmental problems, therefore, it has used technologies and materials with a low environmental impact to manufacture its products in conformity with WEEE – RoHS (2011/65/EU and 2012/19/EU community standards.*

*Panasonic Corporation*

## Markings

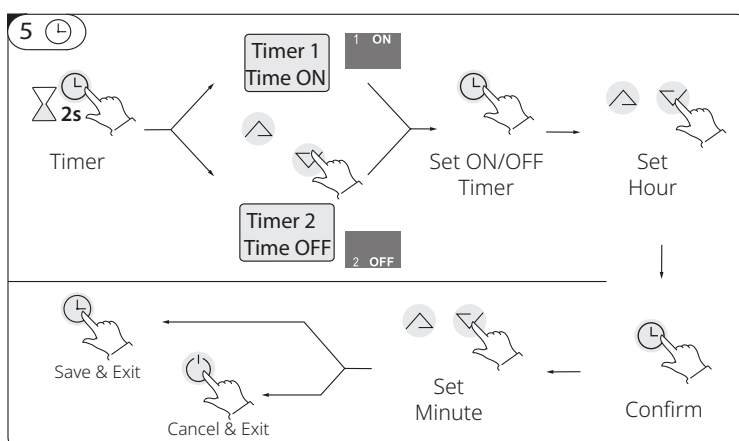
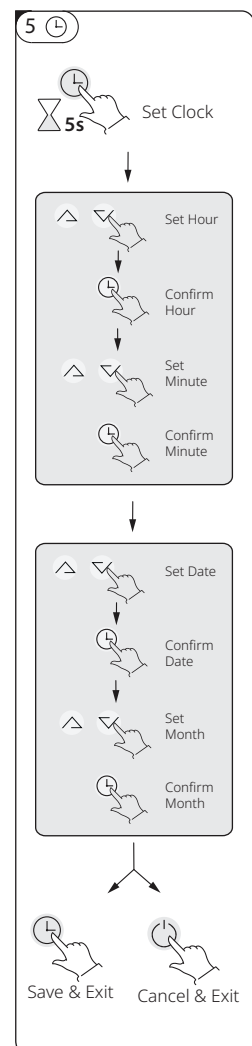
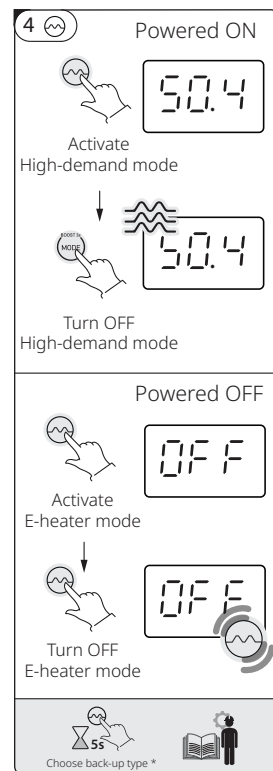
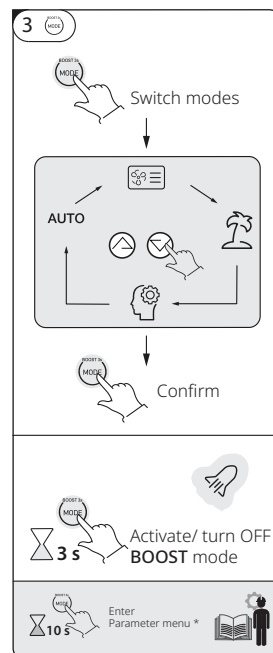
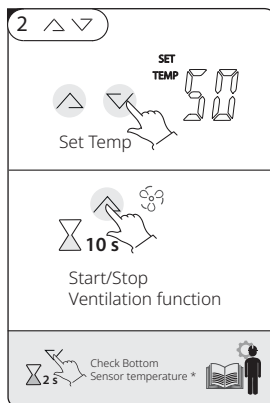
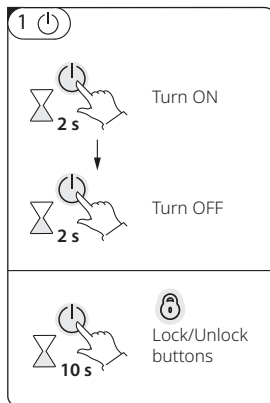
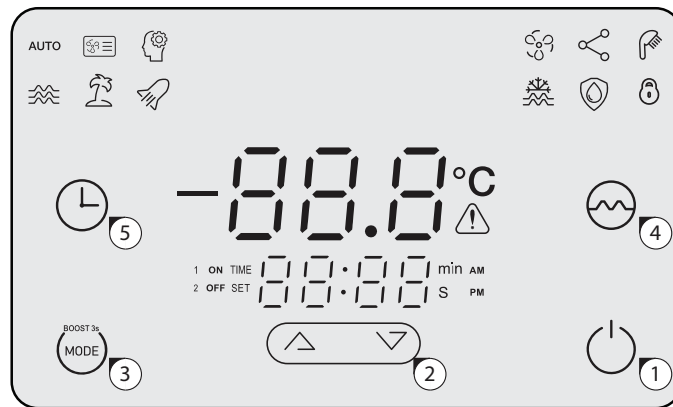


*The English text is the original instructions. Other languages are translation of the original instructions.*

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## 1. QUICK START GUIDE



## 2. IMPORTANT RULES AND SAFETY INSTRUCTIONS

This installation and maintenance manual are to be considered an integral part of the heat pump (hereafter referred to as equipment).




The manual must be kept until the heat pump itself has been dismantled. This manual is intended for both the specialized installer (installers – maintenance technicians) as well as the end user. The installation modes to be complied with in order to achieve a correct and safe operation of the equipment as well as methods of use and maintenance are described in this manual.

In case of the sale of the equipment or the change of owner, the manual must accompany the equipment to its new destination.











Before installing and/or using the equipment, read this instruction manual carefully and, in particular, chapter 4 related to safety.

The manual must be kept together with the equipment and, in any case, it must always be at the disposal of the qualified personnel in charge of installation and maintenance.






The following symbols are used inside the manual in order to quickly find the most important information:

	<b>INFORMATION ON SAFETY</b> (High risk warning in <b>bold text</b> / Low risk warning in plain text)
	<b>PROHIBITION</b> Refers to prohibited actions.
	<b>PROCEDURES TO FOLLOW</b>
	<b>INFORMATION/ SUGGESTIONS</b>

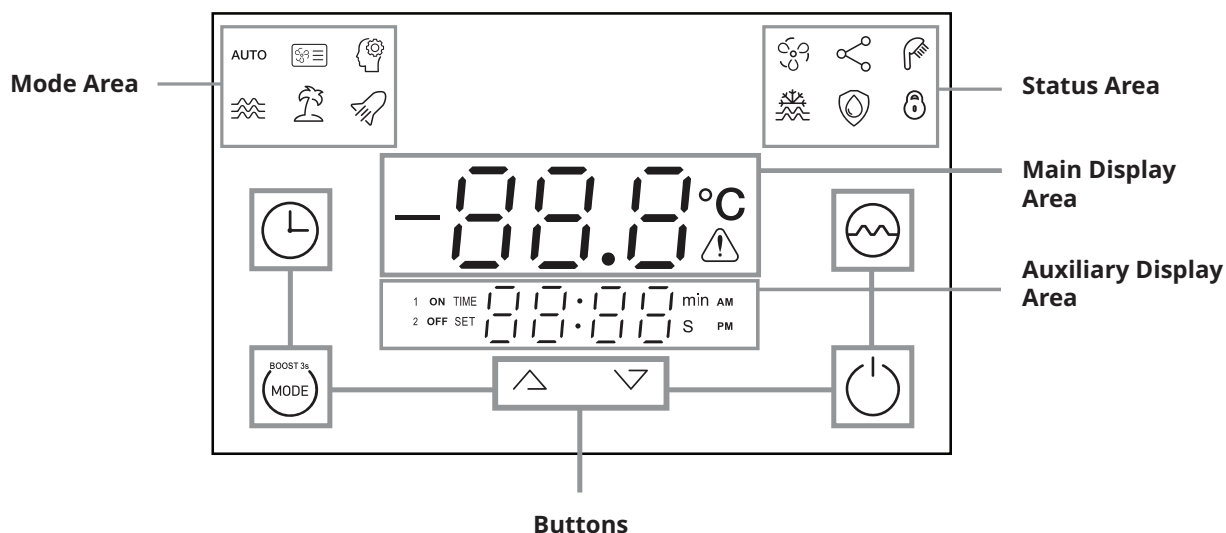
Non observance of below described rules leads to warranty fault and the producer bear no more responsibilities for your appliance

-  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 instruction 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.
-  Children must not play with the equipment. Cleaning and maintenance intended to be carried out by the user must not be performed by unsupervised children.
-  The use of the appliance for any purpose other than that it is intended is prohibited
-  Do not use the storage tank if it is not filled with water.
-  Installation, commissioning and maintenance of the device must be performed by qualified and authorized personnel. Do not attempt to install the device yourself.
-  The appliance must only be installed in premises with normal fire resistance.
-  Usage of this device at temperature and pressure level above prescribed leads to warranty violation!
-  This device is intended for heating of potable water in liquid state. Using different fluids in different states leads to warranty violation.
-  Device's heat exchangers are intended for use with circulating clean water and mixture of it and Propylene GLYCOL at liquid state. The presence of anticorrosion additives is obligatory. Using different fluids in different states leads to warranty violation.



### 2.1 Before starting the unit



-  Read carefully the "Installation and maintenance manual", that is an integral part of your appliance.
-  Check if the unit is installed and connected according to the "Installation and maintenance manual", that is an integral part of your appliance.
-  Check if the tank is full with water.
-  Check if the electric main supply is present and it is with accordance to the local regulations.
-  Check that the air ducts or air inlet/outlet are not blocked.

### 3. OPERATING MODES AND USER INTERFACE



#### 3.1 Lock/ Unlock

Press and hold ON/OFF button  for 5 seconds to lock/unlock the buttons. Lock keys icon  will light up.

- ⚠ In most cases where it is necessary to confirm or cancel setting, it is valid.
- ⚠ For confirm is used Mode button  or wait 15sec without action.
- ⚠ For cancel is used ON/OFF button ;  
In the instruction if there is not mentioned exact time, short press means 0.5 seconds.


## 4. EASY STEPS TO START USING YOUR APPLIANCE

### 4.1 Switching 'ON/OFF'

After connecting to the main electric supply:


When connecting the appliance to the main power supply, all icons are displayed on the controller screen for 3 seconds. After that an initial check is undergoing. If everything is ok, the unit enters into a standby state: (Fig. 31)

#### Switch ON:











- In the standby state, short press the "ON/OFF button"  on the main interface for 0.5 seconds, the unit enters ON state, and the "main display area" displays the temperature of the upper part of the water tank.







The switch operation can only be performed in the main interface. The 6 button lights are all lit up when the screen is on. The switch button light is white in power-on state and red in power-off state.


#### Switch OFF:

- In the power-on state, short press the "ON/OFF button"  on the HMI for 0.5 seconds, the unit enters in standby state, and the "main display area" displays "OFF";


### 4.2 Clock setting




- Click the "clock button" , and the hour digit in the "time display area" starts to flash;
- Press the "up button"  or "down button"  to modify the hour;
- Continue to click the "clock button"  to save the setting of the hour digit, and the minute digit starts to flash;
- Press the "up button"  or "down button"  to modify the minutes;
- Continue to click the "clock button"  to save the setting of the minute digit, and the month digit starts to flash;
- Press the "up button"  or "down button"  to modify the month position;
- Continue to click the "clock button"  to save the setting of the month digit, and the day digit starts to flash;


- Press the "up button"  or "down button"  to modify the date;
- Continue to click the "clock button"  to save the setting of the day digit, and the last two digits of the year digit start to flash;
- Press "up button"  or "down button"  to modify the last two digits of the year;
- Continue to click the "clock button"  to save the setting of the last two digits of the year and return to the main interface;

**During the clock setting period, short press the "Power button"  to return to the main interface without saving; if there is no operation for 15 seconds, it will return to the main interface.**

### 4.3 Mode choice

In the Control panel, short press the "Mode button" . The current mode starts flashing and using buttons "up"  or "down"  it is possible to switch between the modes below:

ECO mode ; AUTO mode **AUTO**; Intelligent mode ; Vacation mode .

When the wanted mode is chosen(flashes) press again "Mode button"  to confirm the mode.

In addition to the "Vacation mode", the "auxiliary display area" displays the system time.

The current active mode is displayed in white light. When the display is in off-screen state the active mode is not displayed.

The modes that are not currently active are not lit.

Press and hold "Mode button"  for 3 seconds to activate "Boost Function" .

Press and hold "Mode button"  for 10 seconds to enter in parameter menu.

#### 4.4 Eco Mode



In this mode only compressor works to maximum achievable temperature depending from ambient temperature and when out of this range the heating element becomes active. (Fig.27).

After achieving set water temperature, the compressor will stop. The heating process will restart when the real water temperature drops with 5°C bellow set temperature.

#### 4.5 Auto Mode





In this mode the compressor starts to work according to Fig. 29 and, if the target temperature is not reached after 200 min, the heating element starts too. Heating element and compressor work according to Fig. 27.

The restart temperature for both the compressor and the heating element is  $t_{02}, t_{03} < 55^\circ$ , if  $T_{set} > 60^\circ$ , if  $t_1$  is between  $5^\circ$  and  $25^\circ$ , otherwise if  $t_1$  is between less than  $5^\circ$  or greater than  $25^\circ$ , the start temperatures are  $t_2, t_3 < 50^\circ$ , if  $T_{set} > 55^\circ$ .

#### 4.6 High-Demand Mode



This mode is activated when the  is pushed. The e-heater starts to work simultaneously with the compressor all the time till  $T_{set}$  is reached. In this case compressor also works according Fig. 27

In this mode  is illuminated in the mode area of the display.

Short pressing the "MODE button"  disables the High-Demand Mode, and the unit switches to Eco-mode.

#### 4.7 Auto Mode



Both the heat pump and electric heater operate according the following logic:


If Ambient air temperature is more than  $25^\circ\text{C}$ , then "Eco mode" is active.

If Ambient air temperature is between  $5^\circ\text{C}$  and  $25^\circ\text{C}$ , then "Auto mode" is active.


If Ambient air temperature is between  $-7^\circ\text{C}$  and  $5^\circ\text{C}$ , then "High demand mode" is active.

#### 4.8 Boost mode




Press and hold "Mode button"  for 3 seconds to activate "Boost Mode" ;

When boost mode is activated compressor and heating element work simultaneously to reach  $T_{set}$ , but corresponding to Fig.27

In this mode  is illuminated in the mode area of the display.

**⚠ Urgent need of hot water!**

**⚠ This mode is activated once per push . When  $T_{set}$  is reached the unit exits boost mode and switches to previous active mode.**

**⚠ The Boost-mode can be deactivated manually by pushing mode button  for 3 seconds. Then the unit goes back to its previous working mode.**





**⚠ If the Boost-mode is activated from Auto-mode and it is manually de-activated the E-heater will continue to work till the set temperature is reached.**

#### 4.9 Vacation Mode. Delayed Start / Stop





In vacation mode, the customer has a possibility to choose between delayed stop or delayed start of the appliance.


##### Delayed stop

When the unit is running, chose a "Vacation mode" by pressing  button and using buttons "UP"  or "DOWN"  until the icon  appears. Then on main display area, a symbol "OFF" will light and on auxiliary display area it is shown the date and the year when the unit will be shut down ("delayed stop"). Before "delayed stop", the unit will continue running in previously chosen mode.

##### To set the "delayed stop"

Press and hold the "clock button"  for 2 seconds, and the month digit in the "auxiliary display area" will flash;

When the month digit of the "auxiliary display area" is flashing, short press the "UP"  or "DOWN"  buttons to modify the month digit of the scheduled shut down;

Short press the "clock button"  to save the month digit, and the day digit in the "auxiliary display area" starts to flash;

Short press the "UP"  or "DOWN"  buttons to modify the day for shut-down;







Short press the "clock button"  to save the day setting and the year's last two digits in the "auxiliary display area" starts to flash;


Short press the "UP"  or "DOWN"  buttons to modify the year for shut-down.

Short press the "clock button"  to save the settings and return to the main interface;

### Delayed start

When the unit is running, choose a "Vacation mode" by pressing  button and using buttons "UP"  or "DOWN"  until the icon  appears. Then on main display area, a symbol "OFF" will light and on auxiliary display area it is shown the date when the unit will be shut down ("delayed stop").

### In order to Switch to "ON" ("delayed start")

Press and hold the button  for 2 seconds. The symbol "ON" will appear on main display and on an auxiliary display area it is shown the date and the year when the unit will start (delayed start). The appliance stops running and is waiting the set "delayed start" (month and date).

The appliance stops running and is waiting the set "delayed start" (month and date).

To set the "delayed start", use the same procedure as setting "delayed stop", described above.

When the unit is shut-down, the "Delayed start date" is always displayed. When the actual date reaches the "Delayed start date", the unit turns ON;

When the unit is turned on, the "Delayed stop date" is always displayed. When the actual date reaches the "Delayed stop date", the unit shuts down;

When "Delayed stop/start" is activated while TIMER ON/OFF is set, the unit will shut down/switch on on the "Delayed stop/start" date and after that the unit will work according to the timer.

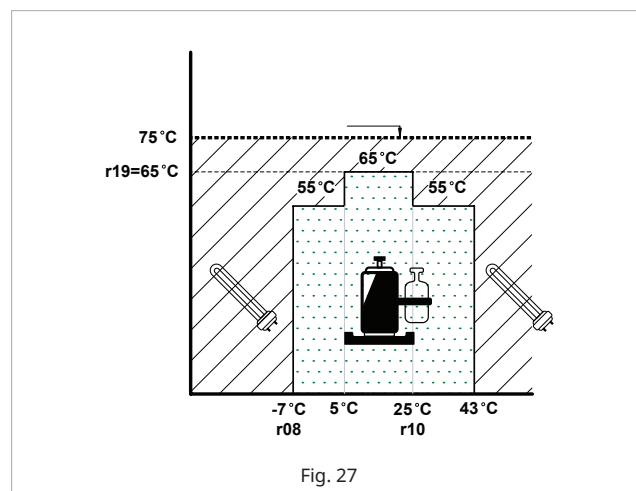


Fig. 27

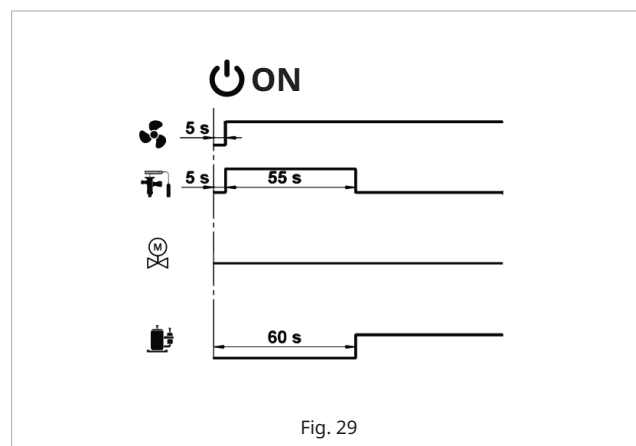


Fig. 29

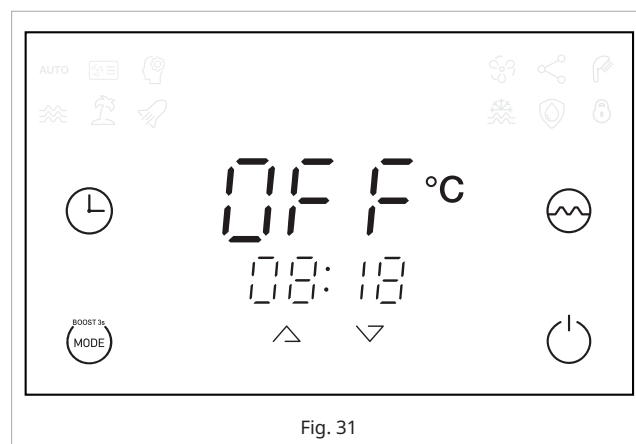





Fig. 31

## 4.10 Setting desired water temperature

In ECO mode, AUTO mode, Intelligent mode, High-Demand mode, and Vacation mode, press the "UP button"  or "DOWN button"  on the Control panel to increase or decrease the desired water temperature between 38-75°

The maximum achievable water temperature by heat pump only, depends on outside air inlet temperature and could be seen on Fig.27

If the set temperature (via control display) is more than the achievable one as per picture, the E-heater will be switch ON automatically to reach it.


When the appliance reaches water  $T \geq 42^{\circ}\text{C}$ , the icon  "ready for shower" will appear!


**!** In order to save energy, avoid setting the temperature above 55°C if not necessary! This way the heat pump will work without the help of the E-Heater!


## 5. USEFUL FUNCTIONS


### 5.1 Timer setting



#### Timer switch settings available in ECO mode, AUTO mode, Intelligent mode, and High-Demand mode.

Press and hold the "clock button"  for 2 seconds. Symbol "ON" and digit 1 of the "timer symbol" start to flash.


Continue to press and hold the "clock button"  for 2 seconds, symbol "OFF" and digit 1 of the "timer symbol" flash.

Continue to press and hold the "clock button"  for 2 seconds, the Symbol "ON" and digit 2 of the "timer symbol" start to flash.


Continue to press the "clock button"  for 2 seconds, the symbol "OFF" and digit 2 of the "timer symbol" start to flash. (only two timing intervals are available (timer 1 and timer 2),



This cycle can also be performed with a short press of the "UP button"  or "DOWN button" .


#### Set ON timer 1

When "ON" and "1" in the "timer symbols" are flashing, short press the "clock button" . The hour digit on the "time display area" and "ON" and "1" in the "timer symbols" will start to flash;


Short press the "UP button"  or "DOWN button"  to modify hours of time for power-on;



Short press the "clock button"  to save the modification of the hour digit, and "ON" and "1" in the minute digit of the "time display area" and "timer symbol" start to flash;


Short press the "UP button"  or "DOWN button"  to modify the minutes for power-on;



Short press the "clock button"  to save the time for power-on, and the "OFF" and "1" of the "timer symbol" will start to flash.

#### Set OFF timer 1

When the "OFF" and "1" in the "Timing Symbol" are flashing, short press the "Clock Button" , the hour digit in the "Time Display Area" and the "OFF" and "1" in the "Timing Symbol" will start to flash;


Short press the "UP button"  or "Down button"  to modify hours of time for power-off;




Short press the "clock button"  to save the modification of the hour digit, and "OFF" and "1" in the minute digit of the "time display area" and "timing symbol" start to flash;

Short press the "up button"  or "down button"  to modify the minutes for power-off;

Short press the "clock button"  to save the shutdown timer.

After the timer 1 interval, it will jump to the timer 2 interval; if it is in the timing 2 interval, it will return to the main interface.

 If only one timer is needed, when timer 1 ON and 1 OFF is set, no pressing any button for 15 seconds will save the timer and exit from the setting!

 In order to cancel the function "timer", press and hold the "clock button"  for 2 seconds. After that press button . The "timer" is no more active, but its settings will be kept in a memory. The symbols <sup>1</sup> ON <sub>2</sub> OFF will disappear.

## 6. HYGENIC FEATURES

### 6.1 Disinfection cycle

The E-heater will start each month at the set time automatically, regardless if the unit is on or in standby mode. E-heater will stop working, when the tank temperature reaches 63°C (disinfection against legionella bacteria)


## 7. TROUBLESHOOTING AND MAINTENANCE

### 7.1 Antifreeze mode

When the unit is in standby mode, if the water temperature in the tank is below 4°C (tank water frozen protection), only

the heating element will work, until tank temperature increases above 8°C or the unit is turned on.

### 7.2 Defrosting

The icon  indicates that the defrosting function is enabled. This is an automatic function; the system will enter or


exit the defrosting function according to the inner control program.

### 7.3 Pump anti-block function

When the external pump (if any) stops for 12 hours, it will be forced to run for 2 minutes.





### 7.4 Fan ventilation

This function is available in ON state only.

Press and hold the "UP" button  for 10 seconds to set the ventilation function. When ventilation function is turned on and compressor is on, the ventilator works on maximal speed.

If this function is enabled the fan will continue working to ventilate the air, even when the water temperature reaches the set point. On the contrary If this function is disabled the fan will stop, when the water temperature reaches the set point.

### 7.5 E heater only







When the unit is in standby, press  to turn on the electric heating mode. At this time, the button  starts to flash, and in the main display area shows on every 2 seconds "OFF" and outlet water temperature. If is chosen electric heater for back-up the E-heater button  will continue to flash, if Boiler is chosen for back up the Boiler icon will  lit.

Short press  again to turn off the electric heating mode, and the main display area shows "OFF".

Once the set temperature is reached the "E heater only" / Boiler function is deactivated. This mode is activated once per push.

### 7.6 Boiler ( Electrical and etc. ) – Backup Heating Source

If the Boiler has remote on/off switch input, then:

- To select the boiler, press and hold the button  for 5 seconds.
- The icons  and the boiler icon  will start blinking.
- Chosen state should be confirmed by MODE Button .
- If Boiler is selected, it will replace the e-Heater.
- In High Demand Mode, when the boiler is selected, both icons  and  will light up simultaneously.
- If a signal is received from the PV, it will take priority e-heater instead of the boiler.

## 8. IN CASE OF EMERGENCY

**⚠ Switch off the unit! Disconnect it the from main power supply!**



















**⚠ Call to the service and inform them about the error code or describe all abnormalities and strange behavior or noise of your appliance!**

### 8.1 Error codes

During standby or running status, if there is a malfunction, the unit will stop automatically and show the error code on the screen. See the installation and maintenance manual.

Code	Description	Code	Description
P01	The temperature sensor at the bottom of the water tank failure	E01	High pressure switch protection
P02	The temperature sensor at the top of the water tank failure	E02	Low pressure switch protection
P03	The exhaust temperature sensor failure	E08	Communication error (main controller board and display)
P04	The ambient temperature sensor failure	E09	Winter Frost-protection (water tank)
P05	The coil temperature sensor failure	E11	DC fan faulty error
P07	The suction temperature sensor failure	E43	High pressure switch 3 times protection
P82	High exhaust temperature protection	E44	Low pressure switch 3 times protection
		E45	High exhaust 3 times protection

## 9. MEANING OF LED ICONS

Symbol	Description	Symbol	Description
	Eco mode		Switch ON/OFF button
<b>AUTO</b>	Auto mode		Set mode button
	High-Demand mode		Clock button (Time settings button)
	Boost mode		E-Heater button
	Intelligent mode		Increase variable
	Vacation mode		Decrease variable
	Hot water available	<b>SET</b>	Set parameter
	Fan running	<b>TIME</b>	Shows clock
	Defrosting	<b>1 ON</b> <b>2 OFF</b>	Timer symbols
	Key lock	min AM S PM	Time format
	External signal is available (PV/SG ready function)		Error icon, presence of errors
			Boiler (if installed)

### 9.1 Environmental guidelines



The symbol on the product or packaging indicates that the product must not be treated as normal household waste, but must be taken to the appropriate collection point for recycling of used electrical and electronic equipment and batteries.

Proper disposal of this product avoids harm to humans and the environment and promotes the reuse of valuable raw materials.

For more detailed information about the recycling of this product, contact your local authority, your household waste disposal service or the shop where you purchased the product. Illegal disposal of the product by the user involves the application of the administrative sanctions provided for by the regulations in force. This provision is valid in the EU Member States.



# Panasonic®

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