SUNSYSTEM®

HEAT PUMP

FOR DOMESTIC HOT WATER /DHW/

serie TDA

TECHNICAL PASPORT

INSTALLATION AND OPERATION MANUAL

Versie 0.2

CONTENTS

Dear clients,

Before using the device, be sure to familiarize yourself with these instructions for installation, storage and operation.
We hope that the device you buy will help create a home-like comfort and reduce the energy costs. This technical description and operating instructions are intended to familiarize you with the product and the conditions for its proper installation and operation. Compliance with the instructions in this manual is in the buyer‘s interest and is one of the warranty terms.

The hot water heat pump TDA is a compact device, which utilizes the aero thermal energy. It works by extracting heat from the surrounding atmosphere, intensifying it in the condenser node and transfering it to the water in the water tank. The heat exchange between the heat pump unit and the domestic water is done via the condenser - a large aluminum coil, tightly surrounding the water tank from the outside. The high efficiency of heat exchange is ensured thanks to the D-section of the aluminum pipe as well as the applied heat-conducting paste. It is possible to install it in a non-living room with a supply of fresh air from the outside environment. The added coil in the TDA model provides the possibility of using independent heat sources.
The instruction describes the process of installing and servicing the product. Installation and connection may only be carried out by qualified personnel. Read the instructions carefully before proceeding with the installation.

The instruction must be submitted for storage to the customer after carrying out the installation.

1. MAIN INSTRUCTIONS AND WARNINGS

Before starting the installation process, read the entire instruction.

The installation of the appliance should strictly follow the instructions, otherwise the warranty will expire.

Any modification or replacement of the original parts with others automatically cancels the warranty given by the manufacturer. Using the appliance in environments and conditions different from those described in this manual will automatically invalidate any submissions of claims.

Incorrect performance of electrical binding, which does not coincide with good practice, can lead to a injury.

Electrical connection must be carried out by a qualified electrician.

The device should not be placed in an aggressive environment that could damage it (dusty rooms, explosive substances in the air, open air, etc.).

To the inlet of the water reservoir, a 0.8 MPa (8 bar) safety valve must be secured to ensure that the pressure does not exceed the rated pressure. It is forbidden to put a stop valve between the water tank and the safety valve.

The water heater is intended for the storage of drinking water so it must comply with the applicable national drinking water regulations or in case of failure the warranty must be cancelled.

The device should never to working without water in the water tank.

The power cord has a standard plug that must be plugged into a standard outlet (16A; 230V). The socket must have a separate supply from the electrical chain and there should be no other connected consumers in that circuit.

The water from the water tank is drained through the cold water inlet. To this end, it is necessary to provide a crane for the installation.

To ensure the correct operation of the safety valve, periodic annual inspections of the safety valve must be carried out. If necessary, clear it from limestone and make sure it is not blocked.

The device can be used by 1 person who is familiar with instruction. Children over 8 years of age and people with disabilities may use the appliance only under the supervision of an instructed person.

During work it is forbidden to move lifting, cleaning or repairing the device.

The installation of the appliance must be carried out according to the standards in force by an authorized specialist.

⚠	**The device should not be locked or objects placed on it. If the temperature exceeds 85 degrees during operation, contact a workshop immediately.**
⚠	**Ensure that the device is not a threat to anyone. The access of children and uninstructed people should be restricted.**
⚠	**Do not place the appliance in a room where it can not be removed.**
⚠	**Service and maintenance may only be carried out by an authorized service specialist. In the event of a fault, first contact the equipment that installed the device.**
⚠	**Never clean with preparations containing sand, baking soda, acids, alcohols. Only clean with a moistened cotton cloth, making sure the appliance is disconnected from the mains.**
⚠	**The temperature in the room where the heat pump is installed is not lower than 7 ° C.**
⚠	**The appliance contains freon R134a, which in accordance with the Kyoto protocol, as declared gas for use. Operation of this gas is only permitted for authorized persons with a permit to work with such gases.**
⚠	**The premises where the water heaters are installed have a drainage channel in order to drain water during operation, service, and drainage of condensate water. When installing, it is imperative to install crane valves on each connection of the water heater terminals.**

2. STORAGE OF THE HEAT PUMP

The appliance should be stored in dry and clean rooms. The allowed temperature is between 10°C and 45^{0}C.

3. TRANSPORTATION OF THE THERMOPUMP TDA

The appliance is packaged on a wooden pallet. It is mandatory to be transported in a vertical position (as mounted on a pallet). Horizontal transport or tilting of the product is prohibited. When transporting and installing, depending on the weight, use appropriate safety devices, by Directive 2006/42 / EC. When transporting equipment weighing more than 30 kg, the use of appropriate means - pallet trucks or other lifting gear is required. spacers to protect all protruding parts.

When transporting, do not exceeds the maximum the permissible slope of 60 °.

In cases where the product was in an inclined position (transport, installation), we recommend the inclusion of aggregate to be done at least 1 (one) hour after the item is level.

- In case of prolonged storage, keep away from dust and away from sources of vibration and heat. The manufacturer is not responsible for damages caused by negligence or lack of protection from harmful external influences.

4. SUBJECT OF DELIVERY

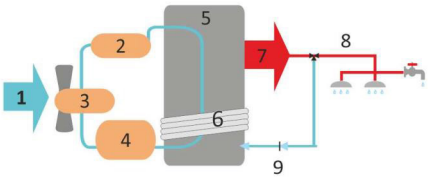
4.1. Thermodynamic water heater TDA.
4.2. Safety valve 8 bar
4.3. Instruction for installation and operation.
4.4. Warranty card.

5. TECHNICAL DESCRIPTION OF THE PRODUCT

5.1. Heat pump unit. Working process.

The thermodynamic water heater is designed to provide hot water by means of a heat pump and a polyurethane insulated water tank equipped with an electric heater. The water in the thermodynamic water heater is suitable for drinking needs.

Scheme 3. Principle of operation of the TDB-A model



1. Fresh air
2. Compressor
3. Evaporator
4. Thermoregulating valve
5. Water container
6. Capacitor
7. Hot water
8.Hot water /DHW/
9.Cold water

The operation of the heat pump is based on the use of a certain gas (freon R134a) which, in compression and subsequent expansion, delivers heat to the water by removing heat from the environment.

5.2. Water tank

The TDA water tank is a steel tank for domestic hot water. The water purity and protection of the metal from the corrosive action of the water is ensured by a uniform titanium enamel applied throughout the entire inner surface. The water container has been designed for use with water from the water supply network, with a pressure up to 8 bar. The water container is thermally insulated from the outside by means of a 50 mm thick closed cellular polyurethane structure.

5.3. Electric heating element

The appliance is equipped with two dry electric heaters, each with a power of 1kW, providing additional thermal power.

5.4. Anti-freeze sensor

The controller measures the temperature of the evaporator. If this temperature is below -70C the controller disables the heat pump unit and includes the heaters for a period of 30 minutes.

5.5. Safety thermostat

The electric heaters are provided by a safety thermostat with a limit of 90^0C. This means that if the temperature in the water tank exceeds 95^0C. the power supply will be shut off and the heat pump unit will stop working.

⚠	**In this case, you should contact an authorized specialist to determine where the problem is and restart the unit.**

5.6 High pressure protection system

To prevent system malfunction due to high pressure, a sensor is installed that stops the device from operating in case of exceeded set-up.

5.7. Work conditions.

The flawless operation of the thermodynamic pump is guaranteed at an ambient temperature of -70 ° C and 40 ° C. The air must be clean with an average humidity that must not exceed 50% at 40 ° C. At lower temperatures, the average air humidity may be higher. Instruments installed at high altitude may operate with reduced efficiency due to lower atmospheric pressure.

6. INSTALLATION THE THERMO-PUMP TDA

The minimum height of the room in which the thermodynamic boiler can be installed is

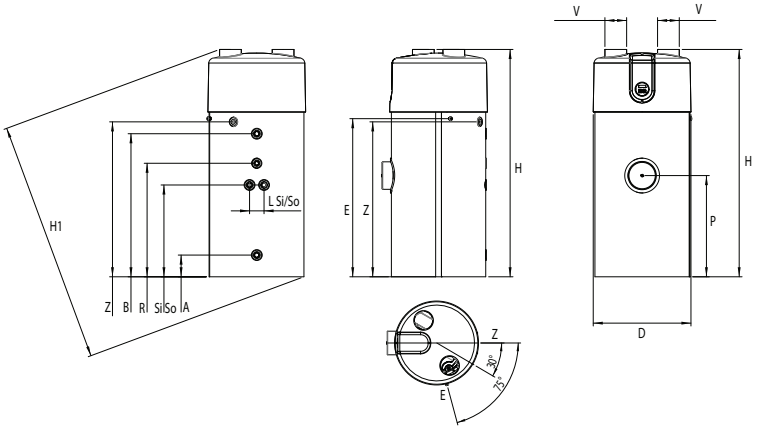
- 2000 mm for TDA E200 and TDA S200 models
- 2300 mm for TDA E300 and TDA S300

The product is designed to draw air from the environment or from another room through air ducts. At the same time, the outgoing cooled air can also be transported to a room or turned into the environment.

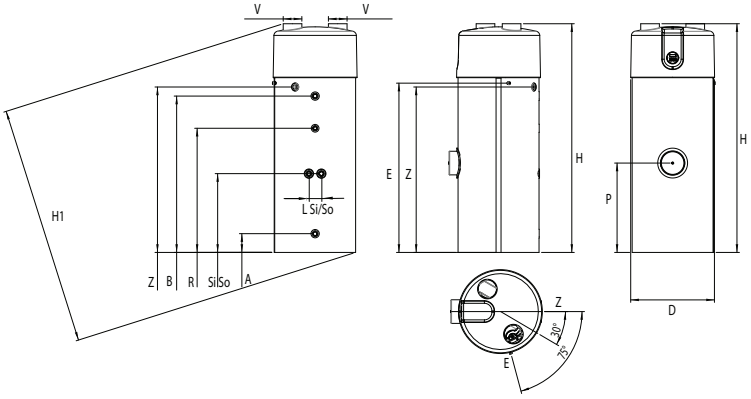
6.1. Installation and installation site.

- The TDA is always installed indoors on a flat surface that can support the weight of the product itself and its contents. Ensure access to the flange, anode, and electric heater for uninterrupted maintenance and repair. The allowable minimum distance is shown in the diagram below.
- Do not place the product near flammable gases, acidic or corrosive materials that could damage its components during installation / repair.
- Ensure that a drainage system is installed at the installation site, adequate to the boiler volume.

Schemes and table of mounting dimensions of the TDA thermo-pump



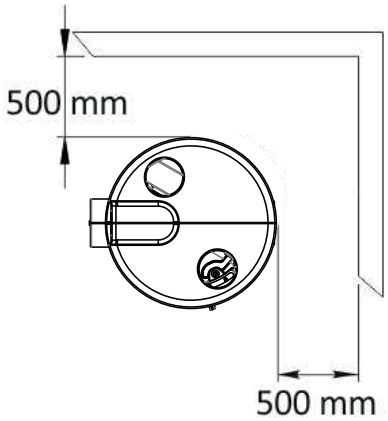
Sheme 4. Mounting dimensions of model TDA 200

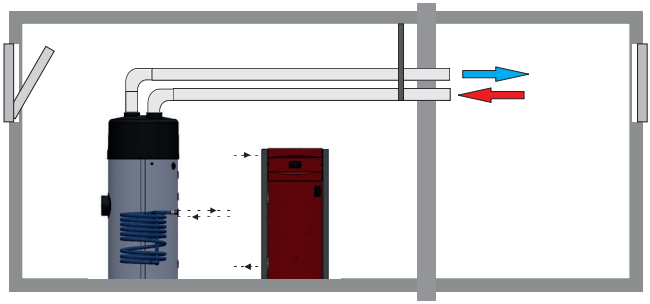


Sheme 5. Mounting dimensions of model TDA 300

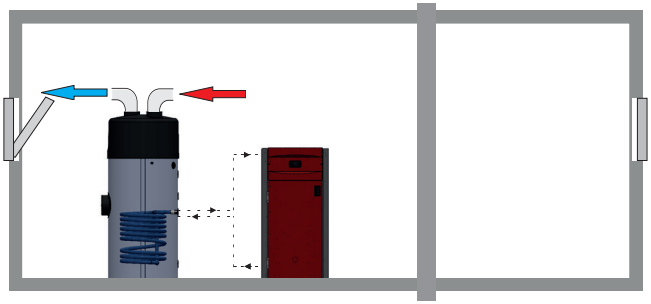
	Markings Measuring units	Model TDA 200	Model TDA 300
Height	H, mm	1570	1840
Min. vertical clearance	H1, mm	1675	1930
Diameter	D, Ø, mm	675	675
Cold water inlet	A, mm, Rp 1"	150	150
Hot water outlet	B, mm, Rp 1"	990	1260
El bindings	E, mm	1092	1362
Electric heating, anode	U,P, mm, Rp $1^{1/4}$" ø180	700	720
Recirculation	R, mm, Rp 3/4"	785	1000
Inlet coil	Si, mm, Rp 1"	635	635
Outlet coil	So, mm, Rp 1"	635	635
Distance between the coil terminals	L Si/So, mm	100	100
Air duct connection	V, Ø, mm	150	150
Condensate outlet	Z, mm, ø16	1070	1331

Scheme 6.
Recommended spacing at
TDA thermo-pump assembly

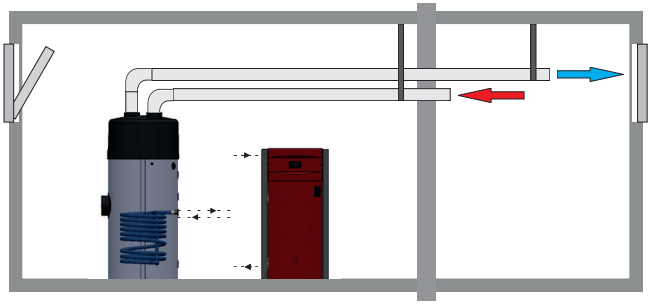




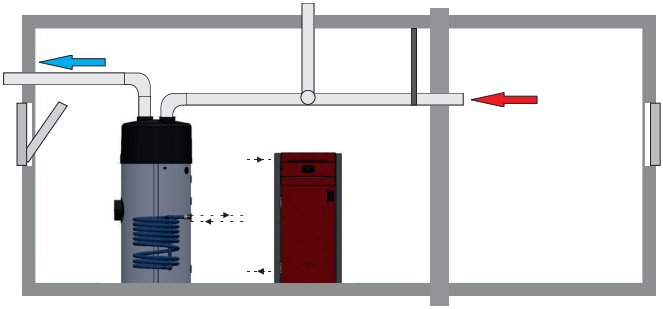
Sheme 7. Suction and blowing air to a neighboring room



Scheme 8. Suction and outlet of air in the same room



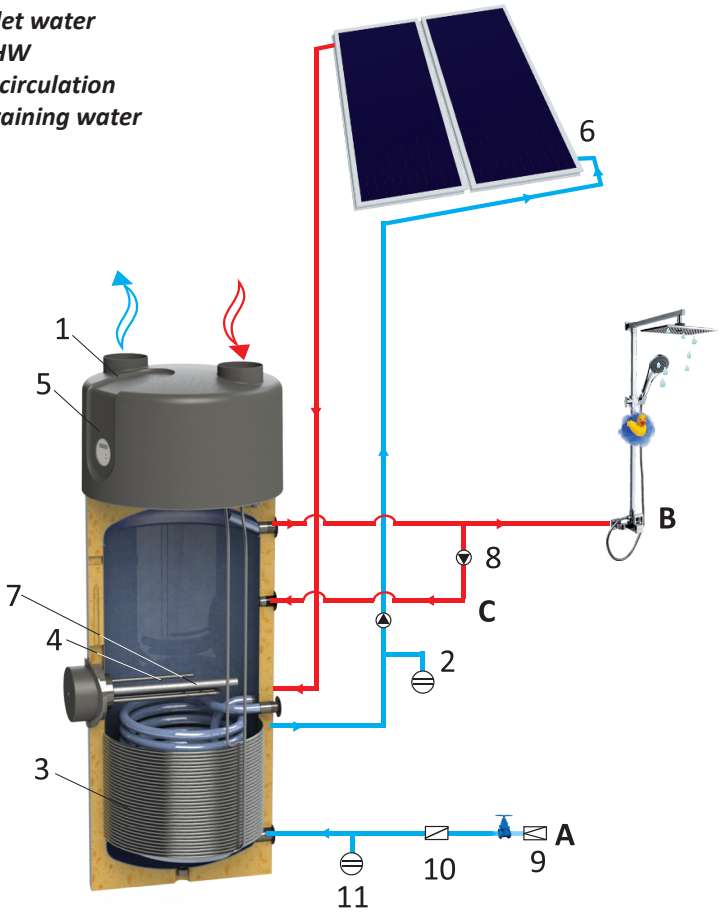
Scheme 9. Suction and blowing air to a neighboring room



Sheme 10. Suction from room and blowing into the environment

Scheme 7. Example of a TDA thermo-pump connection diagram

A - Inlet water
B - DHW
C - Recirculation
D - Draining water



1- Water Heater
2- Circulation group + expansion vessel for a solar system
3- Coil type heat exchanger
4- El. Heater
5- Built-in heat pump
6- Solar collectors
7- Magnesium anode
8- Circulation group
9- Safety valves
10- Non-return valve
11 - Expansion vessel

6.2. Connection to the water supply network

- Ensure that the anode is installed during installation.
- The connection schemes in this manual are exemplary. When connecting the product to a solar system or boiler it is necessary to consult and supervise a technical person authorized by the manufacturer.
- When connecting to the water supply network, we recommend that you secure at least one shut-off valve, non-return valve, safety valve and expansion vessel.

6.3. Connecting to the electricity mains

Before starting any operation, make sure the power is off!

- The electrical connection to the control panels must be carried out by a person authorized by the manufacturer in accordance with the wiring diagram. Ensure that the frequency and voltage of the data plate corresponds to the power grid to which the appliance will be connected. When connecting to the mains, all safety rules must be observed.

Do not use adapters, couplers, and extensions when plugging the heat pump into the mains!

- It is the duty of the installer to ensure the power supply with a separate fuse in the dashboard.

- It is the duty of the installer to ensure the power supply with a separate fuse in the dashboard.

6.4. Connecting air ducts

TDA boilers can be equipped with air ducts (ducts). Install the ducts to the boiler so that:

- Do not overload the product;
- allow access and removal of all accessories;
- preventing recirculation of air between the inlet and outlet of the machine;
- are protected from accidental penetration of external bodies in the unit.

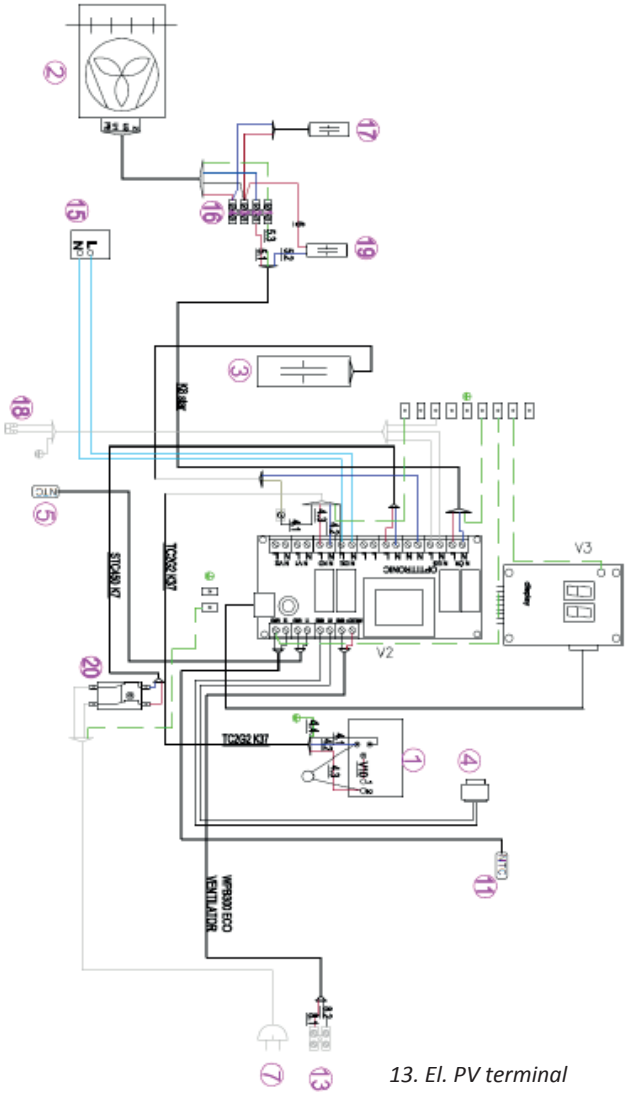
When connecting air ducts, the higher the evaporator fan speed can be switched. The length of the ducts shall not exceed 3 m for the inlet and 5 m for the outlet, for a minimum diameter ø150.

6.5. Condensation pipe connection.

During the operation of the heat pump, condensate water is discharged and drains into the sewage through a condensate pipe. The latter must be connected to the drainage pipe so as to ensure unhindered drainage of the condensed water.

7. CONTROLLER

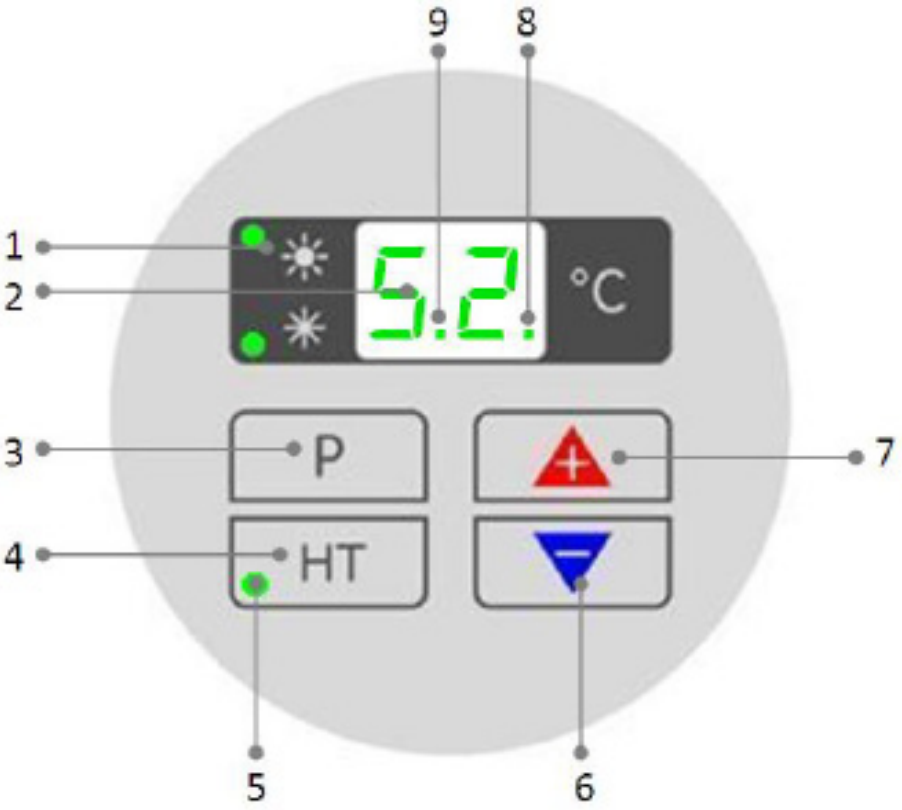
7.1. Controller circuit diagram



1. Compressor
2. Fan
3. Compressor condenser
4. Pressostat
5. Temperature sensor for water
7. El. power supply
11. Temperature sensor - evaporator
13. El. PV terminal
15. Electromagnetic valve
16. Fan socket
17. Condenser for a fan - 1
18. El. heater
19. Condenser for fan - 2
20. Safety thermostat.

7.2. Functions of the controller

7.2.1. User Interface



1. Operation mode indicator.
2. Temperature and Parameter Display.
3. Quick button „P“ - to change the operating mode.
4. Quick button „HT“ - for thermal disinfection (protection against legionella and rapid heating).
5. „HT“ indicator for thermal disinfection or rapid heating.
6. Quick„-“ button to set the temperature.
7. Quick button „+“ - to set the temperature.
8. Compressor protection indicator (PV signal indicator in combination with 9).
9. Active PV signal indicator.

7.3. Operating modes of the controller..

7.3.1. Short presentation

P.0 - Off Mode
p.1 - Normal Mode
P.3 - „Electric heater“ mode
P.5 - Automatic mode
P.6 - Photovoltaics - PV mode
P.7 - OFF PEAK Mode

Indicator status	Operating mode	Description
☼ *does not lit* ✳ *does not lit*	**P.0**	*The thermodynamic water heater is switched off. The display only shows the temperature of the water in it.*
☼ *lit* ✳ *does not lit*	**P.1**	*In this mode, the unit switches on and heats the water to the set temperature. In case of low inlet air temperature, the controller automatically shuts off the compressor.*
☼ *does not lit* ✳ *flashes*	**P.3**	*In this mode, the water is only heated by the electric heater to the set temperature. The temperature in the room does not matter.*
☼ *lit* ✳ *flashes*	**P.5**	*The appliance is in automatic mode and the water is heated by the heat pump unit to the set temperature. In case the inlet air temperature is too low or lower than the set minimum temperature (L1), the appliance automatically switches to heater mode with electric heater.*
☼ *flashes* ✳ *lit*	**P.6**	*The appliance is in automatic mode and the water is heated by the heat pump unit to the set temperature. In case the inlet air temperature is too low or lower than the set minimum temperature (L1), the appliance automatically switches to heater mode with electric heater. In case of PV signal, the desired value is increased by L6.*
☼ *flashes* ✳ *flashes* **On alert ON** ☼ *lit* ✳ *flashes*	**P.7**	*The device heats the water only when there is an "OFF PEAK" signal. The logic of operation is the same as in P6 mode.* *When the "OFF PEAK" signal is dropped, the water does not heat up. The maximum temperature setting applies only to this menu and is different from the settings in - R1, P3, P5 and P6 modes.*
By pressing the button **P** *the first time you check the currently selected mode of operation (the same can be done by checking the status of the light indicators). Pressing the button* **P** *within 8 seconds switches between different modes.*		

- By choosing the mode, you specify the heat source that will overheat the water.

7.3.2. List of parameters

Parameters	Description of the parameters	Settings range	Factory setting
Program		P0 ÷ P6	**(P5)**
Desired temperature		30 ÷ 55	**(52)**
L0	Evaporator temperature	-15 ÷ 95	
L1	Binary point	-15^{0}C ÷ +30^{0}C	**(-12)**
L2	Overheating time in days	1 ÷ 99 дни	**(14)**
L3	Displays the active outputs / only writes /	0 ÷ 7	**0**-without output **1-HP**-thermopump **4-EL. HEATER**-el. heating **5-HP+EH**-thermopump+ el. heating
L4	Excluding temperature / hysteresis /	1 ÷ 10^{0}C	**(5^{0}C)**
L5	Automatically fast heating	_ _/1 ÷ +55^{0}C	**(_ _)**
L6	Temperature rise in PV	1 ÷ 20	**(5^{0}C)**
L7	Stand by PV signal	1 ÷ 10	**(3^{0}C)**

7.3.3. Explanation of modes of operation.

1.Heating water with the heat pump (program P1). The water is heated by the heat pump unit until the set temperature is reached and the temperature in the evaporator is above the minimum operating temperature (-150C). If the air cools the evaporator below -150C, the controller automatically shuts down the compressor. When the evaporator temperature is above the minimum for more than 30 minutes, the controller turns on the compressor and heats the water to the set value.

The overheating of water in program **P1** is performed by the heat pump unit.

2. Heat water with the electric heater. (program P3).

The electric heater /EH/ works until the desired temperature is reached. The evaporator temperature does not affect the operation.

3. Heat pump water heating and automatic backup heat switching (program **P5) when the evaporator temperature is too low.** The heat pump operates completely independently with priority until reaching the maximum set temperature and the evaporator temperature is above the switching temperature (**Bivalent point - L1**). If the evaporator temperature drops to the

switching temperature - the controller also includes an electric heater. The compressor and electric heater operate together until the evaporator temperature drops to -15^{0}C. If the evaporator temperature is below -15^{0}C, the controller switches the compressor off and the water is only heated by the backup source.

ⓘ	**Switching from a backup source to heat the water with a heat pump takes place 60 minutes after the evaporator is warmed by 30 ° C above the minimum operating temperature (-150 ° C).**

ⓘ	**The overheating of water in program „P5“ is performed with an active heat pump unit.**

4. Temperature disinfection/ antiletoneel program (the indicator flashes).

One-time heating up to 60^{0}C is switched on by the button (the indicator on the button flashes). Once the program completes, the indicator goes off. By pressing the same button again, the program is terminated even if it is not completed.

ⓘ	**The indicator lights during the temperature disinfection.**

ⓘ	**IMPORTANT! In case the program is not executed for 12 hours, the function stops and switches to normal operating mode.**

5. Fast heating (Boost Mode). Quick water heating is turned on after the button is held.

for about 20 seconds (the indicator flashes). The appliance heats the water with the compressor and electric heater to the desired temperature, then the indicator goes out. We can stop the process after pressing the „HT“ button.

ⓘ	**IMPORTANT! The indicator flashes during fast warm up.**

ⓘ	**IMPORTANT! If the electrical heating is not executed for 12 hours, the function is switched off and the normal operating mode is switched off.**

ⓘ	**The Quick Heat Program works in programs „P5“, „P6“ and „P6“, „P7“.**

6. Automatic „Hot water“ heating.

The “Quick Heating” program can be set to run automatically when the temperature drops below the set perimeter (L5). Automatic “Quick Heatig” is used in programs **“P5”, “P6”, “P7”.** The appliance heats the water with the compressor and electric heater at the same time. The program may be terminated earlier by press-

ing the **“HT”** button.

7.3.4. Settings.

1. Setting the water thermostat. Pressing the buttons + and - for the first time displays the temperature setting. Additional button presses (within 8 seconds) changes the values. After waiting for 5 seconds, the new setting will be saved when the blink stops.

2. Switching between individual programs is performed by pressing the buttons P. The selected program is indicated by the indicator light and the display when the button P is pressed for the first time . (see the mode table). Pressing the button P within 8 seconds switches between individual programs.

3. Preview and parameter settings.

You can enter the parameter menu by briefly and simultaneously pressing the buttons + and - after which the same buttons can be used to toggle between parameters.

When the desired parameter is selected, you must wait for 8 seconds for the display to show the perimeter value. After another 8 seconds, the display returns to the main menu, which displays the current water value in the tank.

4. Set the interval for automatic thermal disinfection

You can enter the parameter menu by briefly and simultaneously pressing the buttons + and - . Switching between screens is done with the same buttons. Select parameter “**L2**” and after a few seconds set the overheating interval (factory setting is 14 days). After setting the desired value, wait 5 seconds, and after the blink stops, the setting will be saved.

9. INITIAL CONTROL

Check before operating the device:

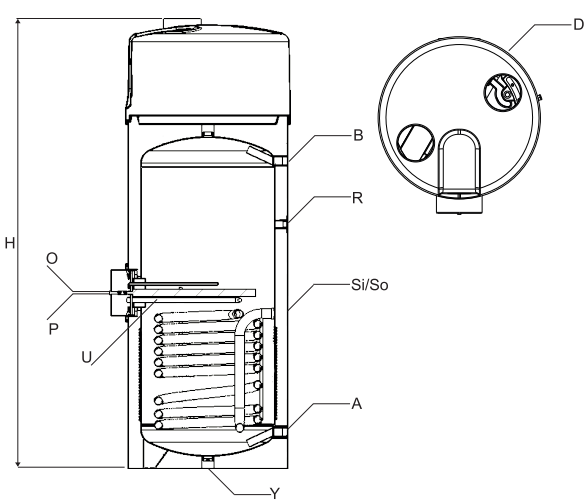
- Proper grounding of the machine;
- Protection of the contact;
- Proper pipe layout.
- In the beginning and after a few days of operation, check the screws on the inspection hole.

7.3.5. Possible problems and their resolution.

Message	*Reason*	*Decision*
A1	*Switching off the unit due to low evaporator temperature.*	*Room ventilation needs to be improved to decrease the evaporator temperature.*
		Select program "P3" and "P5".
A3	*Switching off the unit due to high evaporator temperature (40^{0}C).*	*Трябва да бъде подобрена вентилацията на стаята за да се понижи температурата на изпарителя.*
		Or provide suction of air from another room with a lower temperature.
E7	*High pressure in the cooling system.*	*Make sure the water tank is full of water.*
		You can clear the error by pressing the "+" button. If it appears again - contact your service center.
Alternative **E8** and --	*The DHW sensor is not connected.*	*Check if the sensor is connected and if it is not - contact your service provider.*
Alternative **E8** and --	*DHW sensor defect.*	*First restart your appliance from the power supply. Check the connection of the boiler and the sensor. If the error is still present - contact your service representative.*
Alternative **E9** and --	*The evaporator sensor is not connected.*	*Contact your service technician.*
Alternative **E9** and --	*Defect in the evaporator sensor.*	

8. TECHNICAL PARAMETERS OF THERMO-PUMP TDA

	TDA E-200/ TDA S-200	TDA E-300/ TDA S-300
Capacity:		
Energy effiency class	**A+**	**A+**
Heating power	1850 W (3850W)*	1850 W (3850W)*
COP (EN 16147, EU 812/2013)	3.4 - L	3.4 - XL
Quantity of hot water (EN 16147)	275 L	387.7 L
Variant:		
Heat source	air	air
Controller	4R OPTITRONIC	4R OPTITRONIC
Instalation	internal	internal
Power controll mode	ON/OFF	ON/OFF
Defrost	HotGas Bypas	HotGas Bypas
Electrical heater	2 x 1000 W	2 x 1000 W
Operating range:		
Air temperature: min-max	7^0C - 35^0C	7^0C - 35^0C
Water temperature: min. inlet - max. outlet	10^0C - 60^0C	10^0C - 60^0C
Refrigeration circuit:		
Refrigerant type	R134a	R134a
Refrigerant quantity	1.3 kg	1.3 kg
Heatsource:		
Required air flow	400 m^3/h-500 m^3/h	400 m^3/h - 500 m^3/h
Max. air pressure drop	50 Pa	50 Pa
External static air pressure	~90 Pa	~90 Pa
Water tank volume	200 L	300 L
Sanitary water connections (cold/hot water)	1”	1”
Sanitary water circulation connections	3/4”	3/4”
External heat source connections	1”	1”
Electrical data:		
Power supply / protections	230 V; 50 Hz / 16 A	230 V; 50 Hz / 16 A
Electrical power	440 W (2440 W)	440 W (2440 W)
Noise level	61 dB(A)	61 dB(A)



		TDA E-200 / TDA S-200	TDA E-300 / TDA S-300
General parameters:			
Capacity	**L**	**200**	**300**
Height	H, mm	1610	1880
Diameter	D, mm	ø75	ø75
Weight	kg	118/140	130/152
Inlets / Outlets:			
Cold water inlet	A, mm	Rp1”/150	Rp1”/150
Hot water outlet	B, mm	Rp1”/990	Rp1”/1260
Flange	O, mm,ø180	Rp1$^{1/4}$”/700	Rp1$^{1/4}$”/720
Anode	P, mm	Rp1$^{1/4}$”/700	Rp1$^{1/4}$”/720
Recirculation	R, mm	Rp$^{3/4}$’’/785	Rp$^{3/4}$’’/1000
Drain sleeve	Y, mm	Rp1”/30	Rp1”/30
Heat-exchanger coils /S1/:			
Heat exchange surface	S1 m^2	1.3	1.3
Coil capacity	S1 L	7.4	7.4
Prolonged power acc. to DIN 4708; 80°C/60°C/45°C	S1 kW (m3/h)	53(1.3)	53(1.3)
NL-power coefficient at 60°C	S1 NL 60°C	11	11
Pressure drop Δp	S1 Δp, mbar	120	120
Inlet / Outlet coil	S1i/S1o mm	Rp1”/ 635/635	Rp1”/ 635/635

9. INITIAL CONTROL

Check before operating the device:
- Proper grounding of the machine;
- Protection of the contact;
- Proper pipe layout.
- At the beginning and after a few days of operation, check the inspection hole bolts.

10. SUPPORT AND PROPHYLAXIA

- Before doing any maintenance, make sure that the machine is not and can not be accidentally or inadvertently electrically driven.
- At the beginning and few days after operation, check the service flange bolts for any loosening.
- We recommend annual inspection and maintenance. It must be carried out by a technician authorized by the manufacturer, on request of the client, and includes:

Verification of the tightness of all electrical connections.
Checking the controller - the settings and the programmed parameters.

Verify fan and compressor contact status.

Checking Filters - Hydraulic System Dehydrators.

Verification of magnesium anode and periodic replacement.

Check the safety of the valve system.

Check the coolant charge.

Check that the service flange bolts and the boiler water connections are loose.

10. RECYCLING AND WASTE DISPOSAL

Submit all packaging material for recycling according to the local regulations and requirements.
At the end of life cycle of each product its components are due to be disposed of in conformity with regulatory prescriptions.
According to Directive 2002/96/EC regarding electrical and electronic equipment waste, disposal thereof is required separately from the normal flow of solid household waste. Obsolete equipment shall be collected separately from other recyclable waste containing materials with adverse effect on health and environment.
Expired appliances must be collected separately from other recyclable waste containing substances hazardous to health and environment.
Both metal and non-metal parts are sold out to licensed organizations for recyclable metal or non-metal waste collection. In any case they should not be treated as household waste.

11. LEGAL BASIS

Directive 97/23/EC of the European Parliament and of the Council of 29 May 1997 on the approximation of the laws of the Member States relating to pressure equipment.

- EN 12897: 2007 - plumbing specification for water heaters for building a closed installation with indirect heating.
- EN 1717: 2002 - protection against contamination of drinking water in plumbing systems and general requirements for reverse flow contamination prevention devices.
- European Parliament Council Directive 2006/42 / EC of 17 May 2006 on the essential requirements and assessment of conformity of machinery.
- European Parliament Council Directive 2004/108 / EC of 15 December 2004 on the approximation of the laws of the Member States relating to electromagnetic compatibility.
- European Parliament Council Directive 2006/95 / EC of 12 December 2006 on the essential requirements and assessment of conformity of electrical equipment designed for use within certain voltage limits.
- Directive 2002/95 / EC of the European Council of 27 January 2003 on the restriction of certain hazardous substances in electrical and electronic equipment (RoHS).
- European Parliament and Council Directive 2002/96 / EC of 27 January 2003 on waste of electrical and electronic equipment (WEEE).

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tel.: +359 700 17 343
www.burnit.bg