

VARMEKS
HEAT PUMPS

VARMEKS

HEAT PUMPS

VARM ALL 300



KURULUM & KULLANIM KILAVUZU

OUR VALUED CUSTOMER

Thank you for choosing our high quality device. For your device to work efficiently for many years, read the User Manual carefully before using your device and always keep it in a place where you can reach it. This booklet, which has been prepared for you, contains very useful information and explanations about the correct and efficient use of your heat pump. Please do not use your heat pump without reading this booklet. If you notice any irregular operation, please refer to the manual immediately.

The first start-up of the heat pump must be performed by an Authorized Service. Otherwise, your heat pump will be out of warranty.

The minimum lifetime determined by the Ministry of Industry and Trade for these devices is 10 years. In accordance with the relevant law, manufacturers and sellers undertake to provide the necessary spare parts and service to the device in order for the devices to fulfill their functions within this period.

MANUFACTURER COMPANY

VARMEKS
HEAT PUMPS

Fevziçakmak, 10753 sok. 3-3/A, 42050 Karatay/KONYA

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1. INTRODUCTION

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION!

KEEP THIS GUIDE HANDY FOR FUTURE REFERENCE!

IMPROPER INSTALLATION OR CONNECTION OF EQUIPMENT OR ACCESSORIES MAY CAUSE ELECTRIC SHOCK, SHORT CIRCUITS, SHORT CIRCUITS, FIRE, OR OTHER DAMAGE TO THE EQUIPMENT. BE SURE TO USE ONLY ACCESSORIES MANUFACTURED BY THE SUPPLIER AND SPECIFICALLY DESIGNED FOR THE EQUIPMENT AND HAVE THEM INSTALLED BY A PROFESSIONAL.

ALL OPERATIONS DESCRIBED IN THIS MANUAL MUST BE PERFORMED BY A LICENSED TECHNICIAN.

WHEN INSTALLING, SERVICING OR MAINTAINING THE UNIT, BE SURE TO WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT SUCH AS PROTECTIVE GLOVES, GOGGLES, ETC.

IF IN DOUBT ABOUT INSTALLATION PROCEDURES OR OPERATION, CONTACT YOUR DEALER FOR ADVICE AND INFORMATION.

1.1. Scope of This Guide

These operating instructions describe the operating procedures for the VARM ALL 300.

2. SAFETY

CONSIDERATIONS

The security measures listed here are divided into the following types. As they cover very important issues, they need to be carefully monitored.

Meanings of **DANGER**, **CAUTION**, **NOTE** and **WARNING** symbols;

DANGER



Refers to very potentially dangerous situations that, if not avoided, could lead to death and serious injury.

CAUTION



Indicates potentially hazardous situations that, if not avoided, could result in minor or moderate injury. Can also be used as a warning against unsafe practices.

NOTE



Indicates only situations that may lead to accidents with equipment or property damage.

WARNING



Indicates potential hazard situations that, if not avoided, could result in death or serious injury.



DANGER

- Turn off the power switch before touching the electrical terminals.
- When the service panels are removed, live parts can be easily touched. During installation or service, never leave the unit unattended with the service panels removed.
- Do not touch any switch with wet hands. Touching the switch with wet hands may cause electric shock.
- Before touching electrical parts, turn off all running power sources.



WARNING

- To prevent children from playing with them, tear open plastic packaging bags and throw them away. Children

playing with plastic bags can be in danger of suffocation.

- Safely dispose of nails and other metal or wooden packaging materials. They can cause injuries.
- Ask your dealer or qualified personnel to carry out the installation work in accordance with this manual. Do not install the unit yourself. Improper installation may cause water leakage, electric shock or fire.
- Make sure that only special accessories and parts are used for installation work. Failure to use the appropriate parts may result in water leakage, electric shock, fire or the unit falling.
- Be sure to install a ground fault circuit breaker in accordance with local laws and regulations. Failure to install the earth fault circuit breaker may result in electric shocks and fire.
- Ensure that all electrical installations are secure, that suitable cables are used and that external forces have no effect on the end connections or cables. Incomplete connection or lack of fixing will cause **FIRE**.
- When connecting the power supply, route the cables so that the front panel is securely fastened. If the front panel is not secured in place, this may cause overheating of the terminals, electric shocks, or fire.

- After the installation work is completed, check the refrigerant for any leaks.
- Never, ever touch leaking refrigerant with bare hands. May cause severe frostbite.
- Do not touch the refrigerant piping during and immediately after operation; the refrigerant piping can be hot and cold depending on the refrigerant flowing through the compressor and other refrigeration cycle components. Touching the refrigerant piping can cause burns or ice burns to your hands. To avoid injury, wait until the pipes return to normal temperature; or if you must touch them immediately, be sure to wear the **APPROPRIATE GLOVES**.
- Do not touch internal parts (pump, backup heater, etc.) during and immediately after operation. Touching internal parts can cause serious burns. To avoid injury, wait for internal parts to return to normal temperature or, if you must touch them, always wear gloves.



CAUTION

- Ground the device.
- The grounding resistance must comply with local laws and regulations. Do



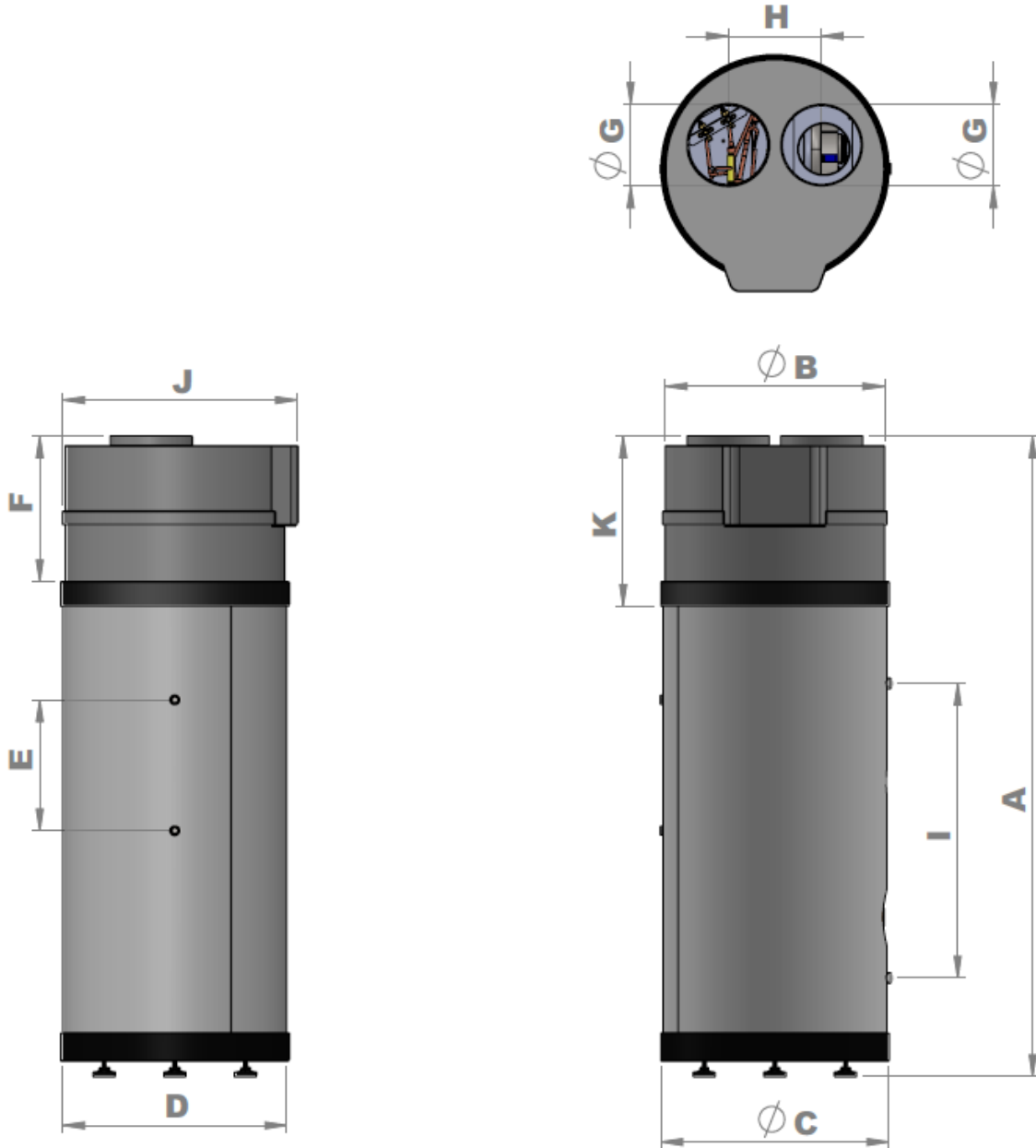
not connect the ground wire to gas or water pipes, lightning arrester or telephone ground wire. Incomplete grounding can cause electric shocks.

- The electrical threshold may be abnormally high as a result of a lightning strike.
- Do not wash the device. It may cause electric shock or fire. The appliance must be installed in accordance with national electrical installation regulations. If the power cable is damaged, it must be replaced by the manufacturer, service person or similar qualified person to avoid potential hazards.
- Do not install the device in places such as;
 - **Areas with mineral oil, oil spray mist or vapor.** Plastic parts can deteriorate, which can cause them to loosen or leak water.
 - **Places where corrosive gases such as sulfuric acid gas are produced.** Corrosion of copper tubes or brazed parts can cause refrigerant leakage.
 - **Locations with machines emitting electromagnetic waves.** Electromagnetic waves can damage the control system and cause equipment malfunction.

- **Places with high levels of salt in the air, such as the ocean coast.**
- **Places where voltage fluctuates a lot, such as factories.**
- **Land and watercraft.**
- **Places where acidic or alkaline vapors are present.**
- **Where flammable gases may leak, where carbon-fiber or combustible dusts are suspended in the air, or where volatile flammable substances such as paint thinner or gasoline are present.** These types of gases can cause fires.
- This applicator may not be used by children aged 8 years and under and persons with reduced physical, sensory or mental capabilities, as well as persons lacking sufficient experience and knowledge, unless they have been properly supervised and instructed in its safe use and the hazards involved. Children must not play with the appliance. Cleaning and user maintenance must not be carried out by unsupervised children.
- If the power cord is damaged, it must be replaced by the manufacturer, service person or similarly qualified person.
- **DISPOSAL / DESTRUCTION.**
Do not dispose of this product with unsorted municipal waste. This waste must be collected separately for special treatment. Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local authority for information on suitable connection systems. If power tools are disposed of in landfill or dumpsites, hazardous substances can enter groundwater and enter the food chain, resulting in impaired health and well-being.

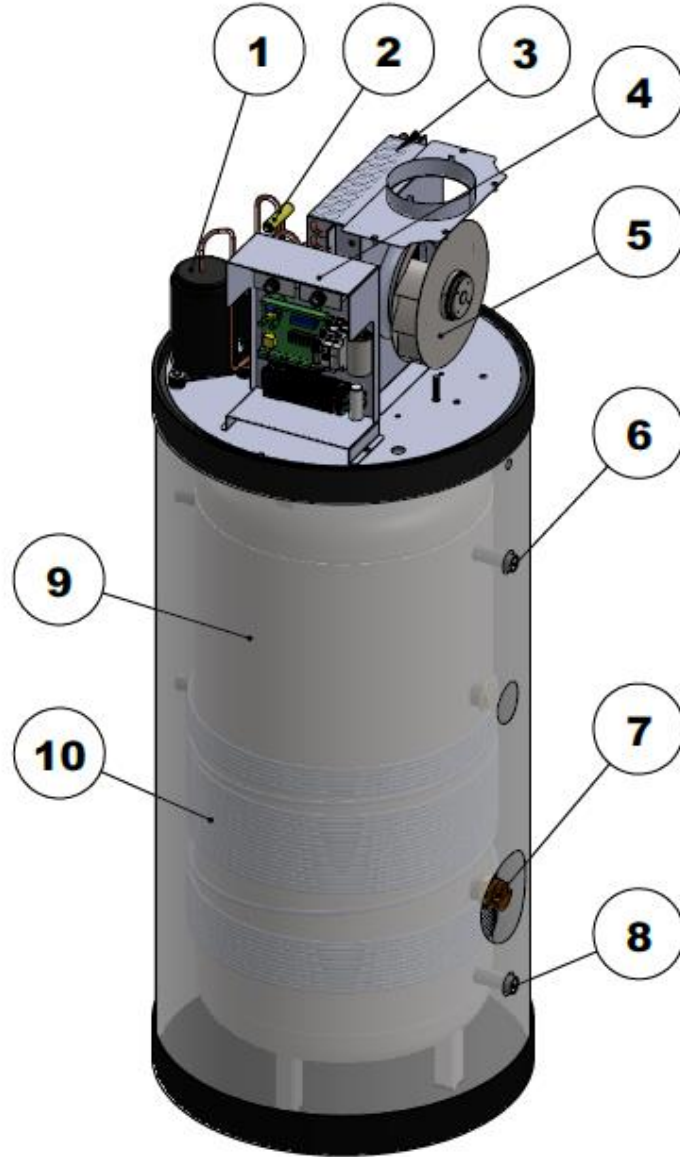
3. INFORMATION ABOUT THE DEVICE and INSTALLATION

3.1. Dimensioning



VARMEKS ALL 300											
	A	B	C	D	E	F	G	H	I	J	K
mm	1957,6	670	697	684	400	445	250	285,2	900	717,3	520

3.2. Device Components



NO	COMPONENT NAME	NO	COMPONENT NAME
1	Compressor	6	Hot Water Outlet
2	Four Way Valve	7	External Heater (Resistance)
3	Evaporator	8	Cold Water Inlet
4	Electrical Panel	9	300 L Tank
5	Radial Fan	10	Serpentine Heat Exchanger

3.3. Device Positioning

Read before positioning your device!

- The device should be installed outside and kept away from noise-exposed rooms such as bedrooms and children's rooms!
- The device must be installed on a flat, stable, slope-free and permanent substrate!
- The device must be installed where flammable oil, fluids and petroleum derivatives are present!
- **Any inconveniences that may arise from operations other than those specified in the manual are not covered by the warranty.**

The air inlet and outlet of the VARM ALL 300 are from above. For this reason, do not install in open areas that may receive rain or snow. You can install it in areas such as warehouses, basements, corridors under the specified conditions.

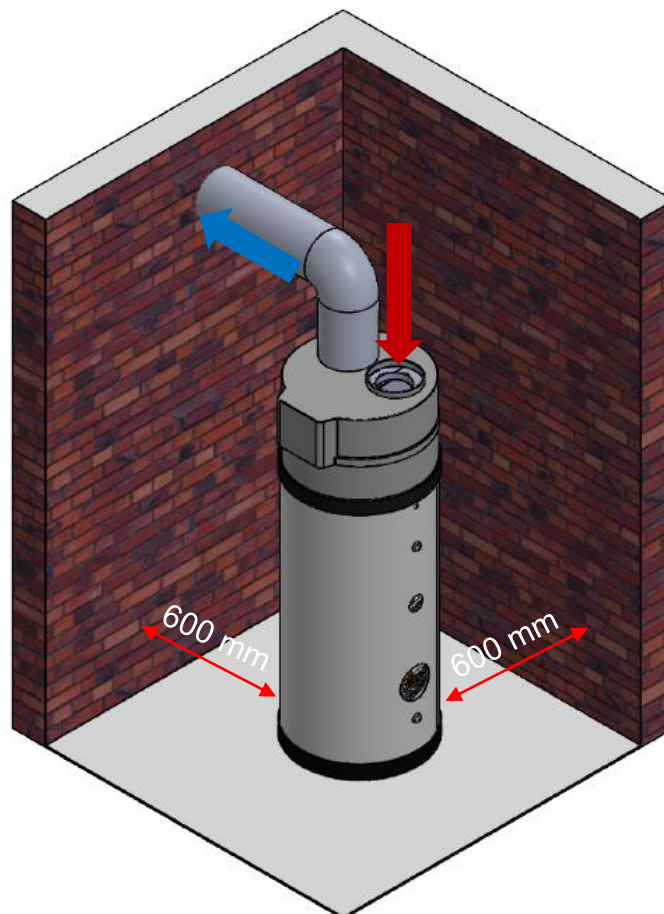


Fig. 1

When the device is installed as shown in Figure 1, it takes heat from the environment where the device is located and discharges it with the help of a pipe at the outlet. In this way, fresh air is constantly maintained. If the exhaust air is transferred to another room, the air temperature of the room will decrease.

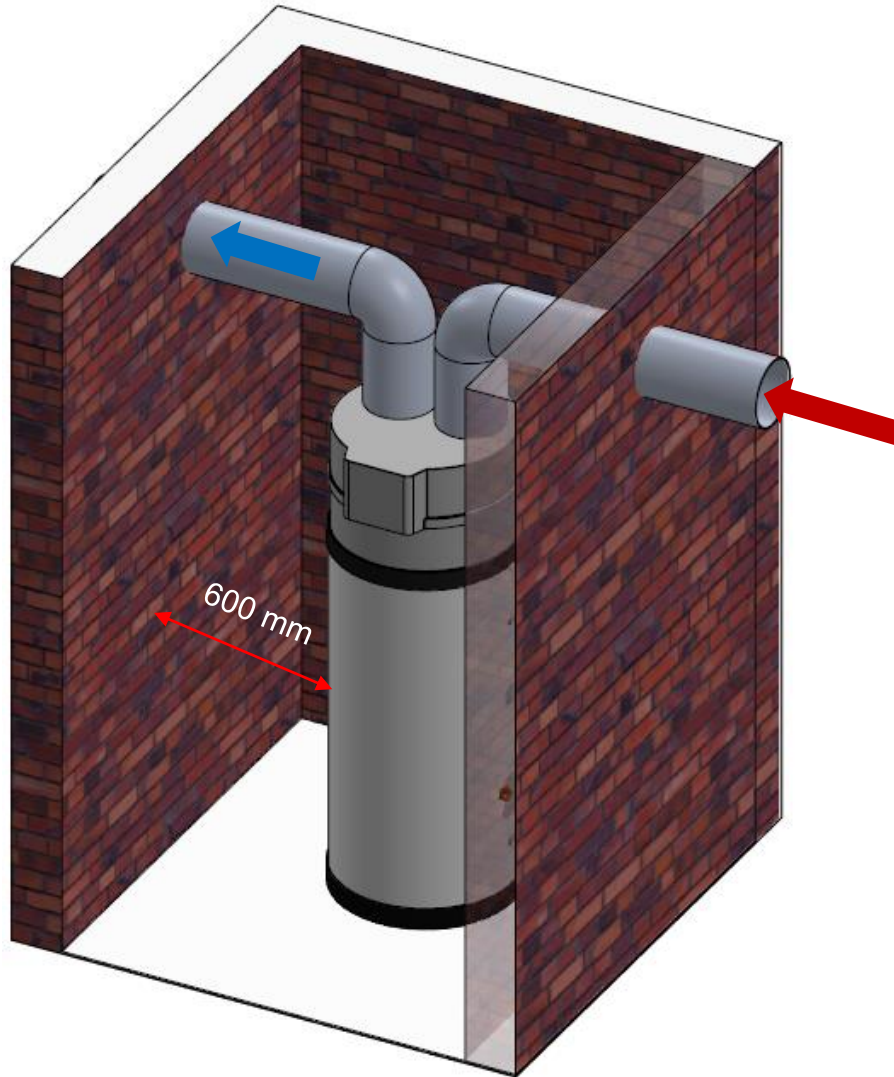


Fig. 2

When the device is installed as shown in Figure 2, it takes the heat from a different location and discharges it to another room or outdoor environment at the outlet. Thus, air freshness is maintained. In order for the device to work efficiently, the area where you position the device and the pipe inlets and outlets must be sufficient. Minimum dimensions are also shown on the figure.

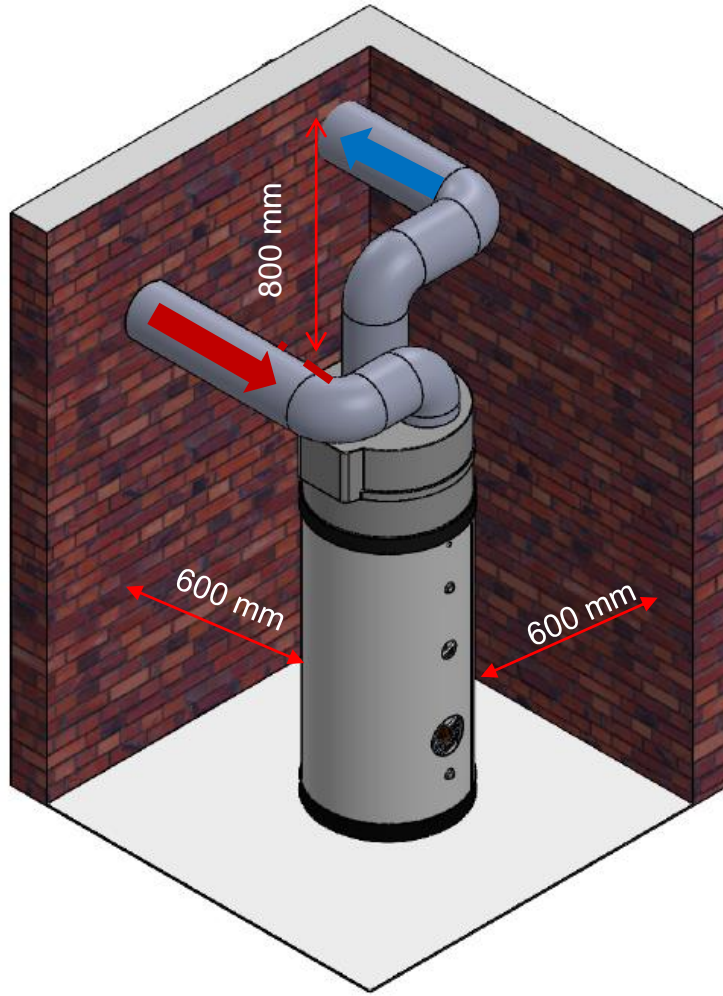


Fig. 3

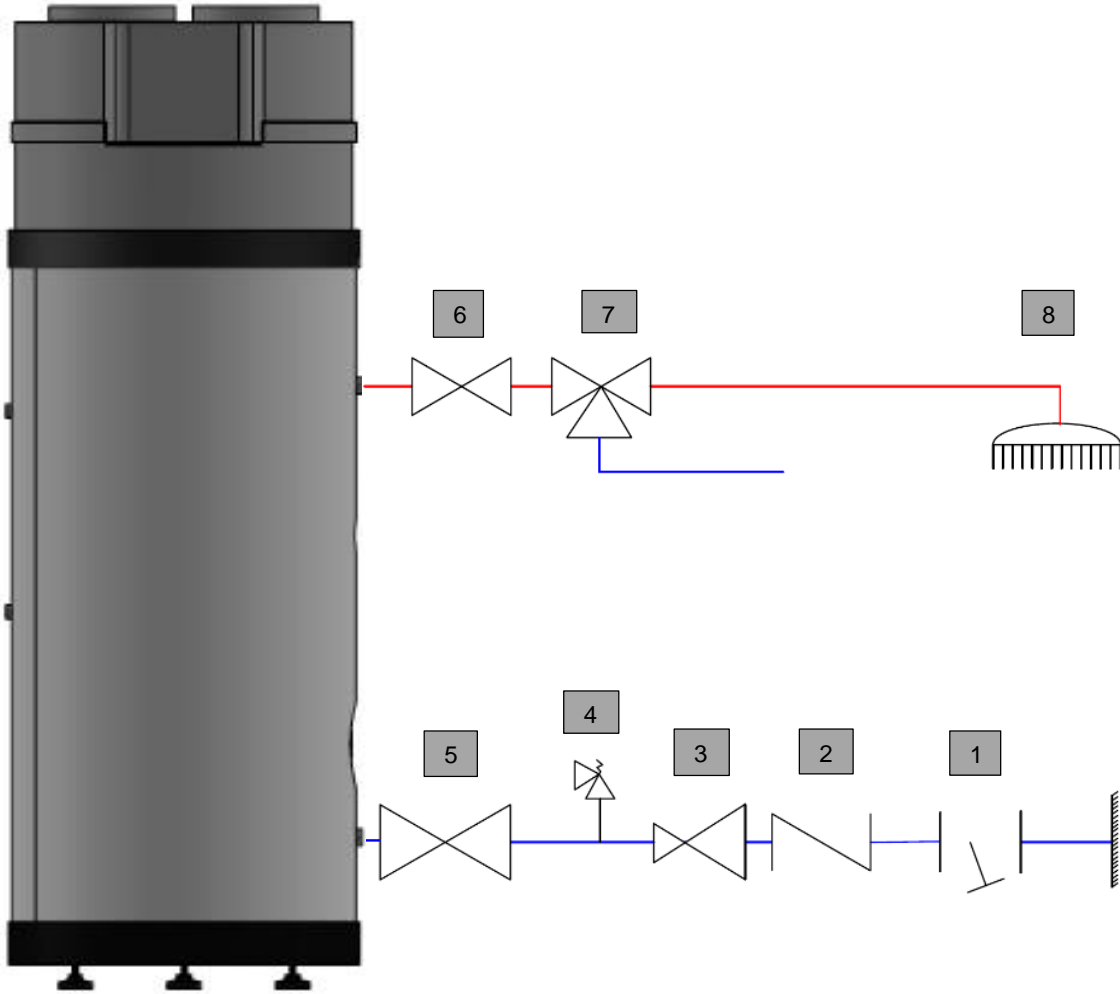
If the device is positioned as shown in Figure 3, the air inlet is taken from the outside environment and released to the outside environment through the ceiling. The height of your device from the ceiling is shown on the figure. Please pay attention to these dimensions during positioning! The air outlet can form condensation on the surface of the pipe. It may be necessary to seal the outlet pipe to prevent water leakage.



CAUTION

- **When the appliance is in operation, place it in a well-ventilated area and do not block the ventilation. This will allow the appliance to take in and exhaust sufficient air while providing hot water. The distance from the top cover to the ceiling must be at least 800m**

3.4. Device Installation Diagram

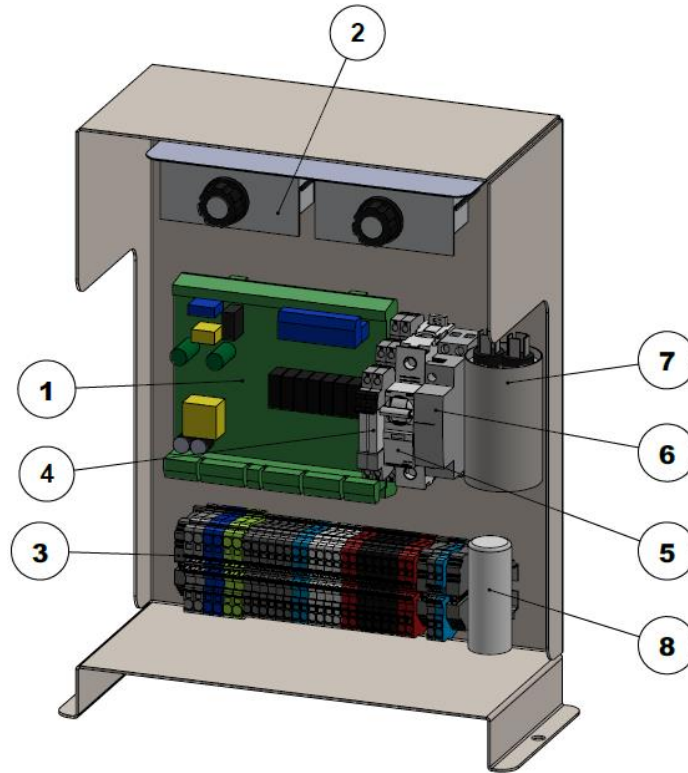


NO	EQUIPMENT NAME	NO	EQUIPMENT NAME
1	FiltER Dryer	5	Ball Valve
2	Check Valve	6	Ball Valve
3	Pressure Reducer	7	Mixing Valve
4	Safety Valve	8	Area of Use (Kitchen, Bathroom)

You can install your VARM ALL 300 according to the diagram above. Inlet and outlet to the tank inside is 1 piece. There is no other inlet and outlet. Water enters from the mains and comes out as hot domestic hot water at the outlet.

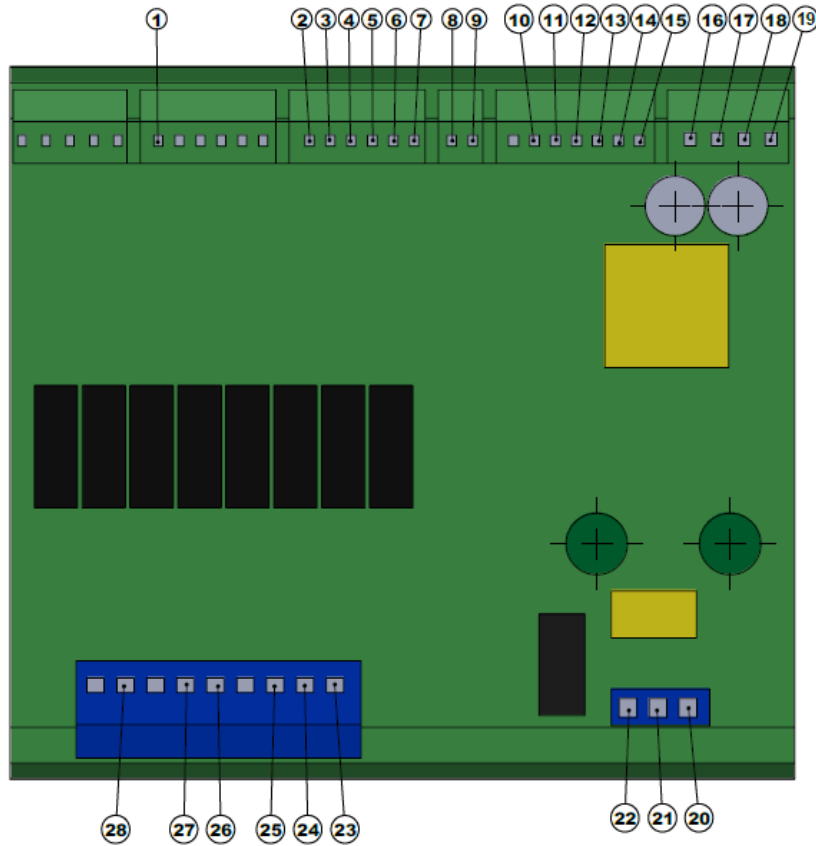
4. ELECTRICAL CONNECTIONS, PANEL and DISPLAY

4.1. VARM ALL 300 Panel and Electrical Connections



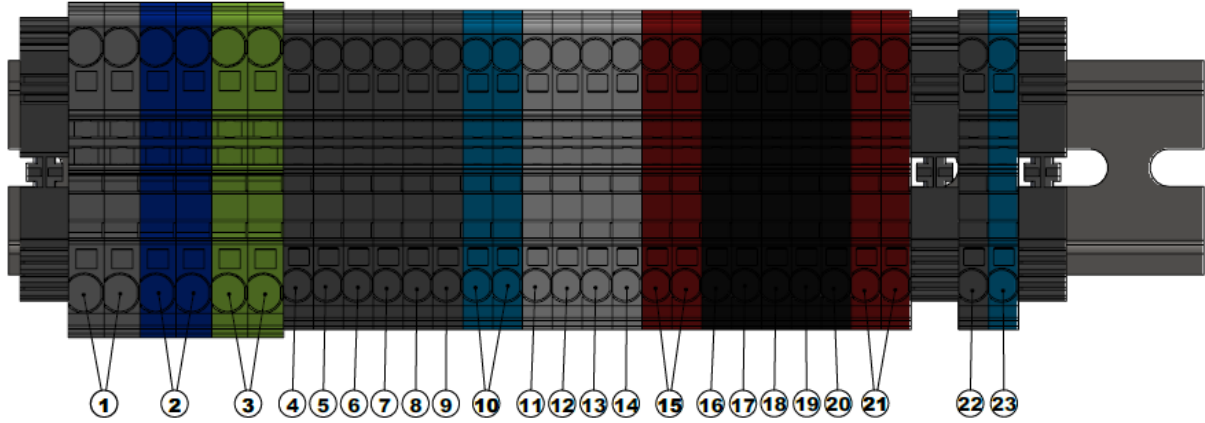
VARM ALL 300 PANEL MATERIALS		
No	Material name	Description
1	On/Off Controller Board	Manages all electronic components (Compressor, EEV, Sensors, Switches, Controller Display etc.)
2	Fan Dimmer	Circuit for adjusting the power of electric fans.
3	Terminal Group	It is the group where all electrical cables of the device are collected.
4	Relay	Allows the fan to start and stop.
5	Insurance	Protects and controls the compressor.
6	Silent Contactor	Protects and controls the compressor.
7	25 µf Motor Capacitor	Ensures that the compressor enters smoothly during start-up.
8	4 µf Fan Capacitor	To ensure that the fan enters the circuit smoothly.

- **On/Off Controller Board**



CONTROLLER CARD INPUTS			
No	Input	No	Input
1	PV Reference NTC	15	Input Partner
2	Water Inlet Temperature Sensor	16	Display Communication
3	NTC Partner	17	
4	Evaporator Temperature Sensor	18	
5	Compressor Outlet Temperature Sensor	19	
6	NTC Partner	20	
7	Ambient Temperature Sensor	21	Power Input (Neutral)
8	Modbus Communication(A)	22	Power Input (Ground)
9	Modbus Communication(B)	23	Power Input (Phase-220V AC)
10	Room Thermostat	24	COM
11	PV Input	25	Compressor
12	Flow Switch	26	Fan 1
13	High Pressure	27	Four Way Valve
14	Low Pressure	28	External Heater (Resistance)
			Fan 2

- **Terminal Group**



TERMINAL BLOCK GROUP INPUTS			
No	Input	No	Input
1	Phase	13	Room Thermostat
2	Neutral	14	PV Input
3	Ground	15	Input Partner
4	Compressor C	16	Ambient
5	Compressor R	17	Compressor Pressure
6	Compressor S	18	Evaporator
7	Fan Black	19	Water Inlet
8	Fan Brown	20	PV Referance NTC
9	Four Way Valve	21	NTC Partner
10	Neutral	22	External Heater (Resistance)
11	Low Pressure Switch	23	Neutral
12	High Pressure Switch		



Any inconveniences that may arise from operations other than those specified in the manual are not covered by the warranty!



Please make sure that the power supply is switched off during electrical connection or maintenance!

Errors caused by the user are not covered by the warranty!

4.2. Display Descriptions

The screen descriptions of VARM ALL 300 are as shown below.



	Always on when the compressor is active
	Lights continuously when in defrost mode
	Always on when the fan is active
	Lights up when the circulation pump is active
	Lights continuously in case of alarm
	Lights when in the setting menu
	Lights when the system is off
°C	Lights if Celsius is selected as the temperature measurement unit
°F	Lights when Fahrenheit is selected as the unit of temperature measurement
	Lights when a negative value occurs
	Lights if decimal notation is active

4.3. Keypad Descriptions

SET	Touching and releasing the button provides access to the machine status menu and pressing and holding the button provides access to the programmable parameter menu. It is used as a confirmation button by touching and releasing while in any menu.
	Used to move up between parameters and increase the parameter value while in any menu.
	Used to navigate down between parameters and decrease the parameter value while in any menu.
	It can be turned OFF by pressing and holding while the device is on the main screen, and it can be turned ON while it is OFF. It is used as menu exit button by touching and releasing while in any menu.

- While on the main screen, touching the **SET** button displays the **SET** parameter the first level of the machine status menu.
- While the first level of the machine status menu, **SET** is displayed, touching the **SET** button displays the temperature setpoint (Example: 4. 1)
- or buttons to set the desired temperature setpoint. Touch the **SET** button to save the changes made and return to the machine status menu, touch the button to return without saving.
- While on the main screen, press and hold the **SET** button for 3 seconds to access the service parameter menu.

- When the desired parameter is displayed using the ▲ or ▼ buttons (Example: setpoint 55.5) touching the SET button displays the parameter value (Example: 0. 0).
- The parameter value is set using the ▲ or ▼ buttons (Example: 2. 3).
- Touch the SET button to save the changes and return to the parameter menu, touch the ⏻ button to return without saving.
- These steps can be repeated for all parameter values. All parameters are shown in the table.



If you wait for 20 seconds without touching any key while anywhere in the parameter menu, the device will automatically return to the main screen without making any changes. After changing the parameters, the device must be restarted.

- To lock the keys, press the ⏻ and ▼ keys simultaneously for 3 seconds. When the keys are locked, the display show L O C.
- To unlock the keypad, press the ⏻ and ▼ keys simultaneously for 3 seconds. UnL is written when the keypad is unlocked.
- While on the display, press and hold the SET button and click on the RES parameter in the menu that opens. If you want to turn on the resistance, use the direction keys to turn it to I position. It necessary to pres the SET button to save the parameter.

4.4. Failure Codes

PO1	Sensor 1 (Outdoor sensor) no connection or short circuit
PO2	Sensor 2 (Comp. Pressure sensor) no connection or short circuit
PO3	Sensor 3 (Evaporator sensor) no connection or short circuit
PO4	Sensor 4 (Water inlet sensor) no connection or short circuit
PO5	Sensor 5 (Comp. Return sensor) no connection or short circuit
ALP	Low pressure alarm (Serious alarm, requires reset)
AHP	High pressure alarm
ASS	No water circulation
AOL	Ambient temperature alarm
APE	Compressor pressure line is too hot

- If there is more than one alarm, it will be shown on the screen in order. To turn off the alarm sound, press the ⏻ button. Press the ▼ button to hear the alarm sound again.

5. PARAMETER TABLE

- While in the main screen, press and hold the **SET** button for 3 seconds to display **PAR5** the first level of the service parameter menu.
- While it is displayed on the screen, set the previously set service password (42) value with the **▲** or **▼** buttons and enter the parameter menü by pressing the **SET** button.

Sıra	Group	Par.	Description	Range	Unit	Default
1	Control	SEt	Water inlet setpoint	hEt 55/21	°C-°F	hEt 55
2	Control	hYS	Temperature hysteresis value	6/2	°C-°F	2
3	Compressor	CFt	Compressor start-up time at first start-up	60/FFt + 1	Dk	1
4	Compressor	CEt	Waiting time between two compressors	10/1	Dk	2
5	Circulation	Sbt	Waiting time after the circulation pump stops	60/1	Dk	5
6	Circulation	SCt	Circulation pump operating time after reaching setpoint	60/1	Dk	15
7	Circulation	Sdt	Circulation pump stop time when the device is stopped	60/1	Dk	3
8	Defrost	dSS	Defrost start temperature	-5.0/-20.0	°C-°F	1.5
9	Defrost	dSt	Time to enter defrost after defrost start temperature	60/10	Dk	10
10	Defrost	dES	Defrost finish temperature	70.0/1.0	°C-°F	65.0
11	Defrost	dEt	Defrost finish time	15/1	Dk	2
12	Defrost	dFC	Fan operating temperature when defrosting	65.0/45.0	°C-°F	65.0
13	Alarm	Ad I	Delay time when alarm occurs	60/1	Sn	10
14	Alarm	AA I	Min. Outside temperature value	-5.0/-25.0	°C-°F	0
15	Alarm	AAA	Max. Outside temperature value	50.0/30.0	°C-°F	50.0
16	Alarm	ACt	Compressor pressure line max. Temperature value	100.0/80.0	°C-°F	100.0
17	Resistance	rES	Resistance off/on	0 - 1	-	00
18	Control	bCP	PV mod	3/1	-	1
19	Control	bCS	PV mod set temperature	75.0/55.0	°C-°F	65
20	Control	rES	External relay output	0/1	-	0

6. TECHNICAL SPECIFICATIONS

Area		
Outside temperature	°C	5°C – 43°C
Water temperature	°C	Max. 65°C
Minimum installation space	m ²	2,5
Heat transfer fluid	-	Water/propylene glycol
Electrical Parameters		
Power supply	-	1/N/PE 220-240V/50Hz
Recommended safety	-	C6
Max. Amperes drawn	A	2,5 + (rezistans: 9)
Fan and resistance power consumption	W	230 + (rezistans: 2000)
Energy consumption at 20°C	kW	0,6
Performance Data		
Profile upload	-	L
Sound decibel	dB(A)	60
COP, water heating 15°C - 55°C	W/W	3
Heating capacity at 20°C, 15°C - 55°C	kW	1,8
Working Factor		
Compressor type	Rotary	
Refrigerant/quantity	R134a / 1350gr.	
Low pressure	Bar	0,3
High pressure	Bar	26
Dimensions		
Diameter	mm	718
Height	mm	1958
Weight	kg	106,5
Heating Circuit Parameters		
Minimum pipe inside diameter	mm	DN25
Fan outlet flow rate	m ³ /h	550

7. MAINTENANCE

Your VARM ALL 300 is designed to minimize the frequency of system maintenance.



It is not recommended to personally inspect or service any part of the system. Turn off the machine and disconnect the power before starting any work. Maintenance is important to ensure optimum performance and extend equipment life!

7.1. Draining and Cleaning the System



Before starting any installation work, the water in the system must be completely drained. This will prevent damage to the storage tank in case of vacuum and overpressure in the storage tank.

Your VARM ALL 300 must be emptied, washed and cleaned every 5 years.

- Turn off and isolate the power supply to the electrical element.
- Fit a ½" flexible drain pipe to the cold connection in the tank and place the open end of the drain pipe where hot water can flow safely from the tank.
- Open the safety valve manually and release excess pressure from the tank.
- Close the cold water line to the tank.

7.2. Drain Valves

The lever on the drain valves must be operated at least once every 6 months. Failure to do so may cause the tank to malfunction. If water does not drain freely from the valves, they should be checked and possibly replaced. Drain valves and drain lines must not be blocked. Some water may drain during each heating cycle.

All safety valves must be replaced every 5 years to ensure the continued life and operational safety of the system.

7.3. Replacing the Anode Rod

High quality enameled tanks, long tanks, steel tanks are in need of anode rods. These anode rods should be checked every few years and replaced when they wear out. It is recommended to replace the anodes at least every 5 years.

7.4. Condensate Drain Pipe

Check the pipe regularly for cleaning. Any blockage will result in poor condensate flow or water pooling on the plastic base of the heat pump.

7.5. Evaporator Cleaning

The evaporator is an integral part of the optimum performance of the device.



The fins on the evaporator are very sharp. Be careful to avoid injury. Do not damage the fins as this will affect the performance of the unit!

It is recommended to clean the evaporator fins once a year with a soft bristle brush. If any of the fins are bent, carefully align them using a suitable comb.

7.6. HYdraulic Circuit

Check the watertightness of all connections and pipes for any water leakage.



Any inconveniences that may arise from operations other than those specified in the manual are not covered by the warranty!

WARRANTY CERTIFICATE

Manufacturer or Importer Company

Title:
Address:
Phone:
Fax:
Email:
Authorized Signature:
Stamp of the Company:

Seller Company

Title i:
Address:
Phone:
Fax:
Email:
Invoice Date and Number:
Delivery Date and Place:
Authorized Signature:
Stamp of the Company:

PRODUCT

Type:
Trademark:
Model:

Warranty Period:
Maximum Repair Time:
Banderole and Serial No:

WARRANTY TERMS

- 1) The warranty period starts from the date of delivery of the goods and lasts for **2 years**. The warranty certificate may be given in writing on paper or through a permanent data storage device. If requested by the consumer, it must be given in writing on paper
- 2) All parts of the goods, including all parts, are covered by the warranty.
- 3) In the event that it is understood that the goods are defective, the consumer may apply to the consumer in accordance with Article 11 of the Law No. 6502 on the Protection of Consumers;
a- Return from the contract,
b- Requesting a discount on the sale price,
c- Request repair free of charge,
ç- Requesting the replacement of the sold product with a defect-free equivalent,
may exercise one of its rights.
- 4) **If the consumer chooses the right to free repair from these rights, the seller is obliged to repair or have the goods repaired without any charge under the name of labor cost, replacement part cost or any other name. The consumer may also exercise the right to free repair against the manufacturer or importer. The seller, manufacturer and importer are jointly and severally liable for the consumer's exercise of this right.**
- 5) If the consumer exercises the right to free repair, the goods;
 - Failure again within the warranty period,
 - Exceeding the maximum time required for repair,
 - In cases where it is determined by the authorized service station, seller, manufacturer or importer with a report that repair is not possible;**The consumer may request from the seller the return of the goods, the price discount in proportion to the defect or, if possible, the replacement of the goods with a defect-free equivalent. The seller cannot refuse the consumer's request. In case this request is not fulfilled, the seller, manufacturer and importer are jointly and severally liable.**
- 6) Malfunctions arising from the use of the goods contrary to the points in the user manual are not covered by the warranty.
- 7) The consumer may apply to the Consumer Arbitration Committee or the Consumer Court in the place where the consumer has his/her place of residence or where the consumer transaction is made in case of disputes that may arise regarding the exercise of his/her rights arising from the warranty.
- 8) If the seller fails to provide this Warranty Certificate, the consumer may apply to the General Directorate of Consumer Protection and Market Surveillance of the Ministry of Trade.

NOTES

