

VARMEKS
HEAT PUMPS

VARM UP SERIES

HEAT PUMP USER MANUAL

8 – 13 – 16 – 18 – 23 kW



PLEASE READ AND FOLLOW ALL INSTRUCTIONS CAREFULLY.
KEEP THIS MANUAL FOR FUTURE REFERENCE.

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Table of Contents

1. Important Safety Considerations _____ 4

- General Precautions
- Electrical Safety
- Laws and Standards

2. Energy-Saving Tips _____ 5

Chapter 3 – Introduction _____ 5-6

- Device Overview
- Product Benefits and Performance Features

4. Technical Specifications _____ 7

Chapter 5 – Installation _____ 8-19

- Materials Required for Installation
- Installation Location
- Installation Details
- Drainage & Condensation
- System Diagrams
- Water Connections
- Plumbing Requirements
- Electrical Connections
- Electrical Wiring Diagrams

Chapter 6 – Operating the Heat Pump _____ 20-33

- Control Panel
- Button Descriptions
- Operating Modes
- Temperature Settings
- Clock and Timer Settings
- Parameter Monitoring
- System Parameters (P Codes)
- Auxiliary Electric Heater Functions
- Smart Grid (SG) Function

Chapter 7 – User Guide & General Maintenance _____ 34-40

- User Rights and Responsibilities
- Security Measures
- Error Codes
- Error Code Descriptions (Er Codes)
- Detailed Error Code List (Er20)

8. Troubleshooting _____ 41-42

Chapter 9 – Wi-Fi Connection and Using the Mobile App _____ 43-49

- App Setup
- Wi-Fi Pairing Steps
- Mobile Interface
- Operating Mode & Temperature Settings
- Timer & Power Consumption
- Device Sharing and Deletion

10. Warranty Certificate and Terms _____ 50-51

- Warranty Terms
- Exclusions from Warranty Coverage

10. Contact Information _____ 52

IMPORTANT SAFETY CONSIDERATIONS Important Notice:

This guide provides installation and operational instructions for the EVI DC Inverter Air Source Heat Pump. Should you have any inquiries regarding the equipment, please consult your dealer.

Attention Plumber: This manual contains essential information pertaining to the installation, operation, and safe usage of the product. Upon completion of the installation, this critical information should be conveyed to the user and operator.

Attention Users: This manual contains essential information to aid you in the operation and maintenance of this heat pump. Please retain it for future reference.

 **WARNING:** Prior to installing this product, please read and adhere to all warnings and instructions included with it. Neglecting to follow safety warnings and instructions may lead to serious injury, death, or property damage.

Legislation and Regulations

The EVI DC Inverter Air Source Heat Pump must be installed in compliance with local building and installation regulations, as specified by the relevant public utility or competent authority. Local codes supersede national codes. In the absence of local regulations, consult the most recent edition of the National Electrical Code (NEC) as referenced in the local government's Electrical Code (CEC) for installation guidance.

DANGER — Risk of electric shock.



The electrical supply for this product must be installed by a licensed or certified electrician in compliance with the National Electrical Code and all relevant local laws and regulations. Improper installation may lead to electric shock, resulting in death or serious injury to the heat pump user, installers, or others, and may also cause damage to the appliance. Please read and adhere to the specific instructions provided in this manual.

 **WARNING** – To mitigate and avert the risk of injury, under diligent supervision. Unless absolutely necessary, do not permit children to approach or utilize it!

Consumer Information and Security

EVI DC Inverter Air Source Heat Pumps are engineered and produced to deliver years of safe and dependable service, provided they are installed, operated, and maintained in accordance with the guidelines outlined in this manual and the installation codes referenced in the following sections.

Throughout the guide, safety warnings are denoted by the “  ” symbol. Ensure that you read and adhere to all warnings and important notes.

Heat Pump Energy-Saving Tips

If you don't plan on using hot water for an extended period, you can choose to turn off the heat pump or lower the temperature to minimize energy consumption.

We offer the following recommendations to help you save energy and minimize the operating costs of your heat pump without compromising on comfort:

1. A maximum water temperature of 60°C is recommended.
2. It is recommended to turn off the heat pump if the outdoor temperature is below -30°C and the unit will not be in use for more than one week. The water in the heat exchanger must be drained.
3. To save energy, operate the heat pump during daytime hours when the average daily temperature is high.
4. Try to install the heat pump in well-ventilated indoor locations. If outdoor installation is necessary, install it in areas as sheltered as possible from wind, snow, storms, and extreme cold. Store it in a practical manner to minimize the risk of freezing.

General Installation Information

1. Installation and service must be performed by a qualified installer or authorized service representative in compliance with all national and local laws and safety regulations.
2. This EVI DC Inverter Heat Pump is specifically designed for heating domestic hot water and the home.

Chapter 1: Overview

Device Overview

EVI DC Inverter Air Source heat pumps efficiently transfer heat from the external environment to water, delivering hot water at elevated temperatures of up to 60°C. This distinctive high-temperature heat pump is extensively utilized for residential heating. Employing innovative and advanced technology, the heat pump functions effectively in ambient temperatures as low as -30°C. With high output temperatures reaching 60°C, it seamlessly integrates with standard-sized radiator systems without necessitating additional components. In comparison to traditional liquid fuel or LPG boilers, the EVI DC Inverter heat pump generates up to 50% less CO₂ emissions while achieving savings of up to 80% in operating costs.

Our heat pumps are not only exceptionally efficient but also user-friendly and safe.

General Characteristics

1. Low operating costs and high efficiency
 - A high coefficient of performance (COP) of up to 5 ensures lower operating costs compared to traditional ASHP technology.
 - No immersion heater backup required.
2. Reduced capital costs
 - Simple installation
3. High comfort levels
 - High storage temperature increases hot water availability.
4. No risk of fire, gas poisoning, explosion, fire, or electric shock associated with other heating systems.
5. A digital controller is included to maintain the desired water temperature.
6. The durable, corrosion-resistant composite cabinet is designed to withstand harsh climates.
7. The Panasonic compressor delivers exceptional performance, ultra-high energy efficiency, durability, and quiet operation.

8. The self-diagnostic control panel monitors heat pump operations and troubleshoots issues to ensure reliable performance.
9. Smart digital controller with a user-friendly interface and blue LED backlight.
10. A separate, insulated electrical compartment prevents internal corrosion and extends the heat pump's lifespan.
11. The heat pump can operate at ambient air temperatures as low as -30°C.

Section 2: Installation

The following general information outlines the installation process for the EVI DC Inverter air source heat pump.

Note: Prior to installing this product, please read and adhere to all warning instructions. The heat pump must be installed exclusively by a qualified service technician.

Materials Required for Installation

The installer must provide the following items for all heat pump installations:

1. Plumbing fixtures.
2. A level surface to ensure adequate drainage.
3. Ensure that an appropriate electrical supply line is provided. Consult the rating plate on the heat pump for electrical specifications, paying particular attention to the specified current rating. A junction box is unnecessary for the heat pump, as the electrical connection occurs within the heat pump's electrical compartment. The piping may be affixed directly to the heat pump jacket.
4. It is advisable to utilize PVC piping for the electrical supply line.
5. Employ a booster pump to elevate water pressure when it is insufficient.
6. A filter is necessary at the water inlet.
7. Plumbing must be insulated to minimize heat loss.

Note: For convenience during maintenance, we recommend the installation of shut-off valves on both the inlet and outlet water connections.

Technical Specifications

VARM UP SERIES TECHNICAL SPECIFICATIONS					
Varmeks Model	8 kW	13 kW	16 kW	18 kW	23 kW
Power Supply	230V/1Ph 50-60Hz	230V/1Ph 50-60Hz	230V/1Ph 50-60Hz	230V/1Ph 50-60Hz	380V/3Ph 50-60Hz
Circulation Pump	Shimge DC Pump	Shimge DC Pump	Shimge DC Pump	Shimge DC Pump	Shimge DC Pump
Heating Capacity Range (kW)	1.57-8.40	4.40-13.00	5.8-15.5	5.9-18.2	7.5-23.0
Heating Input Power Range (kW)	0.32-1.87	0.90-3.02	1.22-3.66	1.20-4.11	1.61-5.38
Current Range (A)	1.42-8.30	4.12-13.8	5.58-16.57	5.49-18.8	4.23-14.0
COP Range	4.49-4.91	4.30-4.90	4.23-4.75	4.43-4.92	4.28-4.66
Cooling Capacity Range (kW)	0.99-6.22	2.80-8.20	5.5-11.0	3.81-11.53	4.73-14.6
Cooling Input Power Range (kW)	0.29-2.18	0.85-3.31	1.67-3.99	1.11-4.05	1.47-5.29
Current Range (A)	1.28-9.67	3.89-15.1	7.64-18.26	5.08-18.5	3.86-13.9
EER Range	2.85-3.41	2.48-3.29	2.76-3.29	2.85-3.43	2.76-3.22
DHW Heating Capacity (kW)	1.28-6.81	3.52-10.50	8.2-13.6	4.80-14.72	6.1-18.5
DHW Input Power Range (kW)	0.31-2.13	0.88-3.39	1.91-3.68	1.17-4.60	1.61-6.12
Current Range (A)	1.38-9.45	4.03-15.5	8.74-16.74	5.35-21.1	4.23-16.1
COP Range	3.2-4.1	3.1-4.0	3.7-4.3	3.2-4.1	3.0-3.7
Refrigerant	R32 (GWP only 1/3 of R410a)				
Operating Range	-30~43 °C				
Water Flow Rate (m³/h)	1.4	2.2	2.7	3.1	3.9
Water Pressure Drop (kPa)	31	25	35	35	45
IP Protection Class	IPX4	IPX4	IPX4	IPX4	IPX4
Electric Shock Protection Class	I	I	I	I	I
Sound Pressure Level at 1 m dB(A)	≤53	≤55	≤57	≤57	≤57
Net Weight / Gross Weight (kg)	110/120	115/125	130/140	170/180	165/175
Pipe Diameter (mm)	DN25	DN25	DN25	DN25	DN25
Unit Dimensions (W×D×H) (mm)	970×475×835	1100×475×985	1080×480×1060	1050×480×1330	1050×480×1380
Package Dimensions (Carton)	1028×520×974	1120×515×1108	1100×490×1210	1100×530×1470	1100×490×1510
Package Dimensions (Wooden Crate)	1048×520×974	1140×515×1110	1140×520×1220	1120×530×1470	1120×520×1520
Compressor Brand	Panasonic				
DHW Outlet Water Temperature (°C)	33-60				
Heating Outlet Water Temperature (°C)	20-58				
Cooling Outlet Water Temperature (°C)	7-25				
Power Supply Cable Size (mm²)	3x4mm²	3x6mm²	3x10mm²	3x10mm²	5x4mm²
Circuit Breaker (A)	25	32	40	40	25

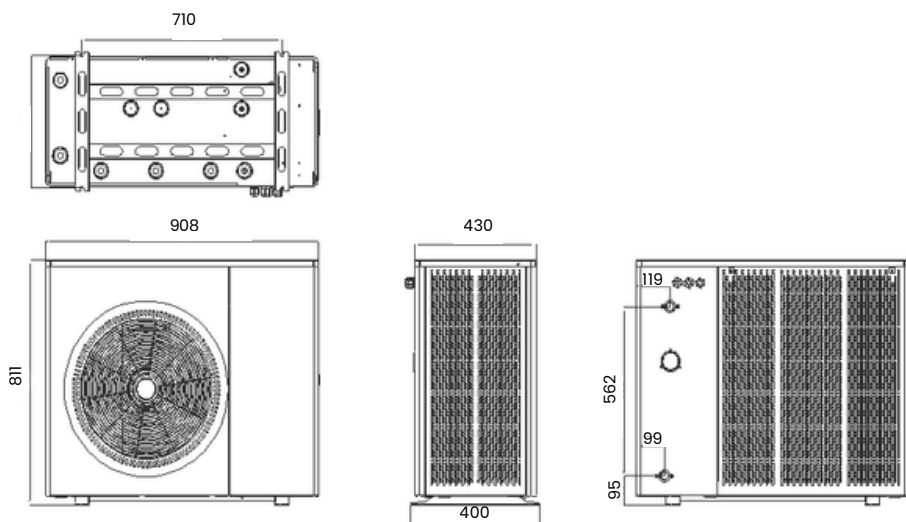
Proper installation is crucial to guarantee safe operation. The requirements for heat pumps encompass the following:

1. Specifications for essential connections.
2. On-site installation (if necessary).
3. Appropriate site selection and permits.
4. Appropriate electrical cables.
5. Adequate water flow.

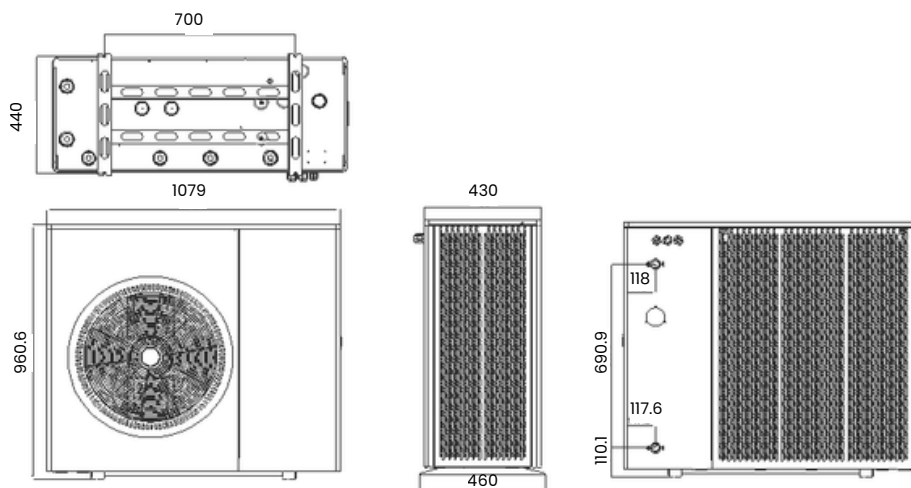
This guide offers the necessary information to fulfill these requirements. Carefully review all application and installation procedures before advancing with the installation.

Dimensions: Unit: millimeters

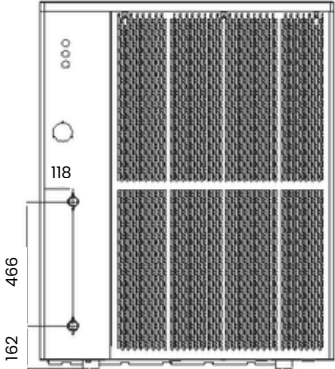
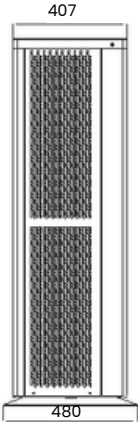
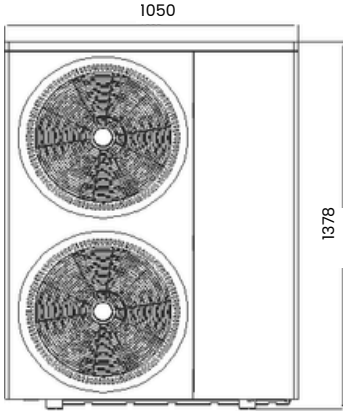
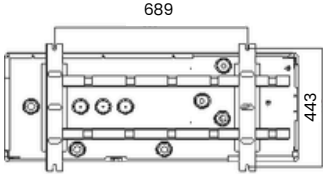
VM-0MB1112008



VM-0MB1112013

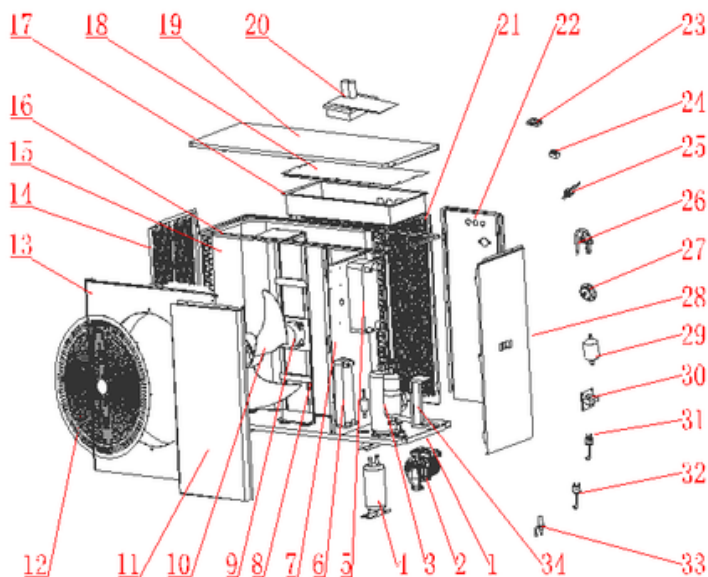


VM-OMB1112018, VM-OMB3112023



Explosive Appearance

VM-OMB1112008, VM-OMB1112013, VM-OMB1112016



No Spare Parts

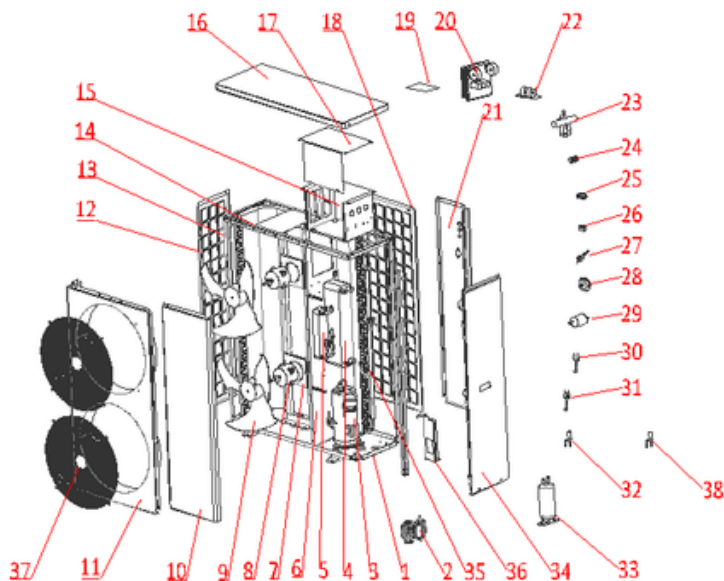
- 1 Chassis / Structure
- 2 Water pumps
- 3 Compressors
- Four liquid storage tanks
- 5-plate heat exchanger
- 6-plate heat exchanger
- 7 Mid-range category
- 8 Motor brackets
- 9 Motor
- 10 Fan Blades
- 11 Front right side panel
- 12 Fan guard grille
- 13 You panel
- 14 Left protective grille
- 15-fin heat exchanger
- 16 Upper frame
- 17 Electrical enclosure

No Spare Parts

- 18 Electrical enclosure cover
- 19 Upper panel
- 20 Control Cards
- 21 Rear protection grille
- 22 Rear side panel
- 23 Terminal blocks
- 24 Transfer terminal block
- 25 Water flow switch
- 26 four-way valves
- 27 Pressure gauge
- 28 Right-side panel
- 29 Dryer filter
- 30 Reactance / Coil
- 31 High Voltage Switch
- 32 Low Voltage Switch
- 33 Electronic Expansion Valve
- 34 Water pump bases

Explosive Appearance

VM-0MB1112018, VM-0MB3112023



No Spare Parts

- 1 Chassis / Structure
- 2 Water pumps
- 3 Compressors
- 4-plate heat exchanger
- 5-plate heat exchanger
- 6 Mid-range segments
- 7 Motor brackets
- 8 Motor
- 9 fan blades
- 10 Front right side panel
- 11 You panel
- 12 Left protective grille
- 13 Column/Pole Segment
- 14 Upper frame
- 15 Electrical enclosure
- 16 Upper panel
- 17 Electrical enclosure cover
- 18 Rear mesh/protective grille
- 19 Ana kart

No Spare Parts

- 20 Driver cards
- 21 Rear side pumps
- 22 Electric Reactors
- 23 four-way valve
- 24 Terminal blocks
- 25 Terminal blocks
- 26 Terminal blocks
- 27 Water flow switch
- 28 Pressure gauge
- 29 Dryer filter
- 30 High-Voltage Switch
- 31 Low Voltage Switch
- 32 Electronic Expansion Valve
- 33 Liquid Storage Tanks
- Right-side panel
- 35-fin heat exchanger
- 36 Water pump bases
- 37 Fan protection grille
- 38 Electronic Expansion Valve (Second)

Installation Location Notice

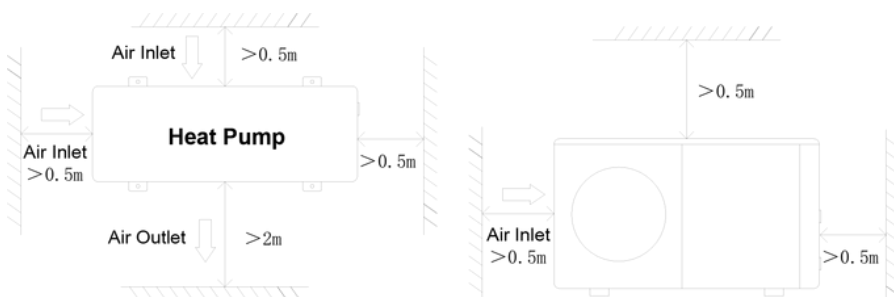
⚠ WARNING

1. DO NOT INSTALL the heat pump near hazardous materials or areas.
2. DO NOT INSTALL the heat pump under steeply sloped roofs that lack gutters to prevent rainwater mixed with debris from flowing over the unit.
3. Install the heat pump on a flat, slightly sloped surface such as concrete or a prefabricated panel. This will ensure that condensation and rainwater drain properly from the unit's base. If possible, the unit should be installed at the same level as the floor or slightly higher than the floor.

Installation Specifications

All criteria listed in the following sections represent minimum clearances. However, each installation should also be evaluated by taking into account applicable local conditions, such as the proximity of walls, the height of the structure, and proximity to public areas. The heat pump must be installed with sufficient clearance on all sides to allow for maintenance and inspection.

1. The heat pump installation area must be well-ventilated, and air intake/exhaust must not be obstructed.
2. The installation area must have proper drainage and be constructed on a solid foundation.
3. Do not install the unit in areas where contaminants such as aggressive gases (chlorine or acids), dust, sand, and leaves accumulate.
4. For easier maintenance and troubleshooting, obstacles around the unit should not be closer than 1 meter. Additionally, there should be no obstacles within 2 meters vertically from the ventilation unit.



5. The heat pump must be mounted using shock-resistant mounts to prevent vibration and/or instability.
6. Although the control unit is waterproof, care must be taken to avoid direct sunlight and high temperatures. Additionally, the heat pump should be positioned to ensure the control unit is clearly visible.
7. Plumbing pipes must be installed with appropriate supports to prevent potential damage caused by vibration. The water flow pressure must be maintained above 196 kPa. Otherwise, a booster pump must be installed.
8. The acceptable operating voltage range must be within $\pm 10\%$ of the rated voltage.
 - The heat pump must be grounded for safety purposes.

Drainage and Condensation

Condensation will develop in the evaporator during the unit's operation and will be expelled at a consistent rate, influenced by the ambient air temperature and humidity. Increased humidity in the surrounding environment will result in greater condensation. The base of the unit serves as a reservoir to collect rainwater and condensation. It is essential to ensure that the drain holes in the bottom tray of the unit's base remain unobstructed.

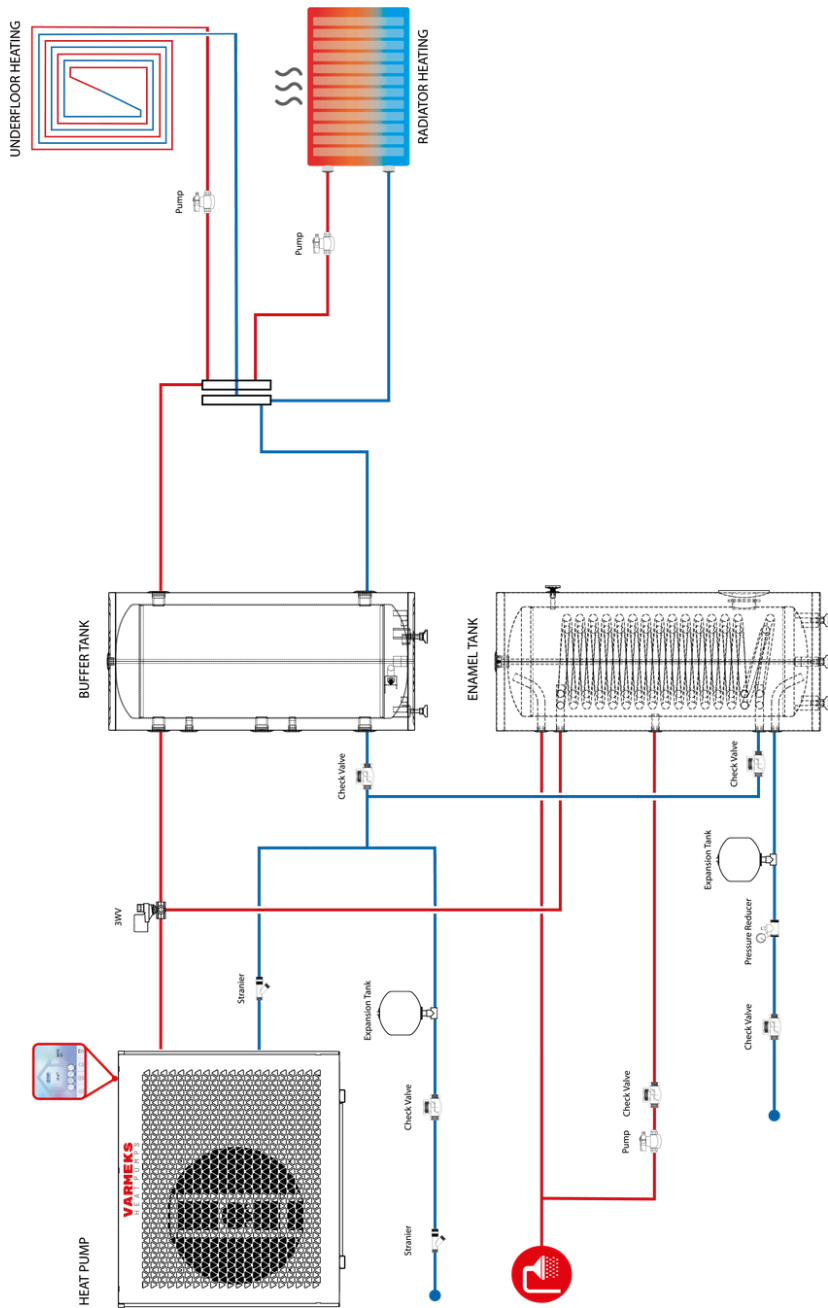
Suggested Installation Techniques

The DC Inverter Heat Pump can provide heating, cooling, and domestic hot water. Underfloor heating loops and radiators are used for space heating, while fan coil units are used for space cooling. Domestic hot water is supplied from a domestic hot water tank connected to the heat pump.

The DC Inverter Heat Pump includes a main circulation pump. During installation, installers must connect the heat pump to other components, including a buffer tank (for space heating/cooling) and a storage water tank (for domestic hot water). External connection components, including a safety valve, a water fill valve, and a three-way valve, are also required. A temperature sensor must be installed in the storage water tank. An additional electric heater can be installed in the DHW tanks or in the buffer tank capable of receiving a control signal from the heat pump.

- 1) Refer to the diagram for system installation.
- 2) 3-way valve: The 3-way valve is opened for domestic hot water mode. The 3-way valve is closed for underfloor heating or cooling.
- 3) When neither the heating (or cooling) nor the domestic hot water has reached the set temperature, domestic hot water takes priority.
- 4) The coil-type boiler must be customized for domestic hot water.
- 5) The coil's heat exchange capacity must be $\geq$ the heat pump's nominal heating capacity.
- 6) The unit is delivered ready for operation and pre-charged with R32 refrigerant.
- 7) R32 refrigerant is flammable and explosive. Installation in an environment with active or potential ignition sources is prohibited.

Schematic Diagram of Circuit Configuration



Water Connections

Water Connections in a Heat Pump System

It is advisable to install Quick Connect fittings on the water inlet and outlet connections. The utilization of stainless steel or PPR piping is recommended for heat pump installations. The water inlet and outlet connections to the heat pump accommodate stainless steel or PPR pipe fittings.

 **CAUTION** — Verify that the installation and piping limitations for supplementary heat pumps facilitate adherence to flow requirements and tap water circulation rates.

Plumbing Installation Specifications

1. When the water pressure surpasses 490 kPa, please employ a throttling valve to decrease the water pressure to below 294 kPa.

2. Each component linked to the unit must be affixed using a loose connection method and assembled with an intermediate valve.

3. Verify that all plumbing is correctly installed, and subsequently conduct a water leak and pressure test.

4. To mitigate heat loss, it is essential that all pipelines and pipe fittings are properly insulated.

5. Install a drain valve at the lowest point of the system to facilitate evacuation in freezing conditions (frosting).

6. Install a check valve on the water outlet connection to prevent back siphoning when the circulation pump ceases operation.

7. To minimize back pressure, pipes ought to be installed in a horizontal orientation.

8. Minimize the use of elbows (90-degree connections). If a higher flow rate is necessary, install a bypass line.

Electrical Connections

 **WARNING** — Risk of electric shock.

Prior to commencing the installation of the heat pump, verify that all high-voltage circuits are deactivated. Interaction with these circuits may result in fatality or severe injury to users, installers, or bystanders due to electric shock, and may also inflict damage on the appliance.

 **CAUTION** — Clearly label all cables prior to disconnecting the heat pump during maintenance. Improper wiring may result in malfunction and hazardous operation. After maintenance, verify and confirm proper functionality.

Power Source

1.If the supply voltage is excessively low or high, it may result in damage to the heat pump unit and/or lead to unstable operation due to elevated surge currents during startup.

2.The minimum starting voltage must exceed 90% of the rated voltage. The permissible operating voltage range should fall within $\pm 10\%$ of the rated voltage.

3. Verify that the cable specifications align with the precise requirements for the specific installation. The distance from the installation site to the mains power supply will influence the cable gauge. Adhere to local electrical standards when selecting cables, circuit breakers, and insulator breakers.

Grounding and Overcurrent Protection

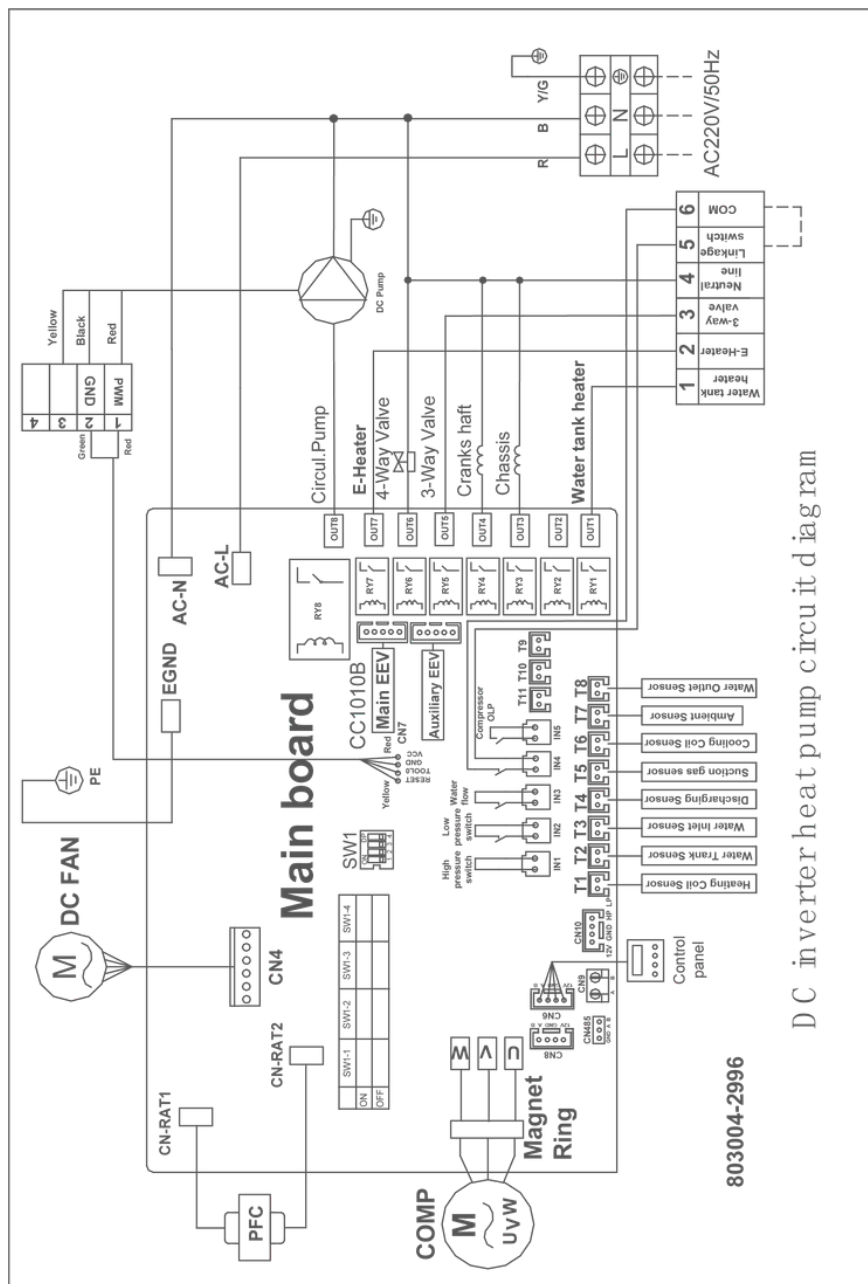
In the event of electrical leakage from the unit, to avert electric shock, install the heat pump in accordance with local electrical standards.

1.Do not frequently disrupt the voltage supply to the heat pump, as this may reduce its lifespan.

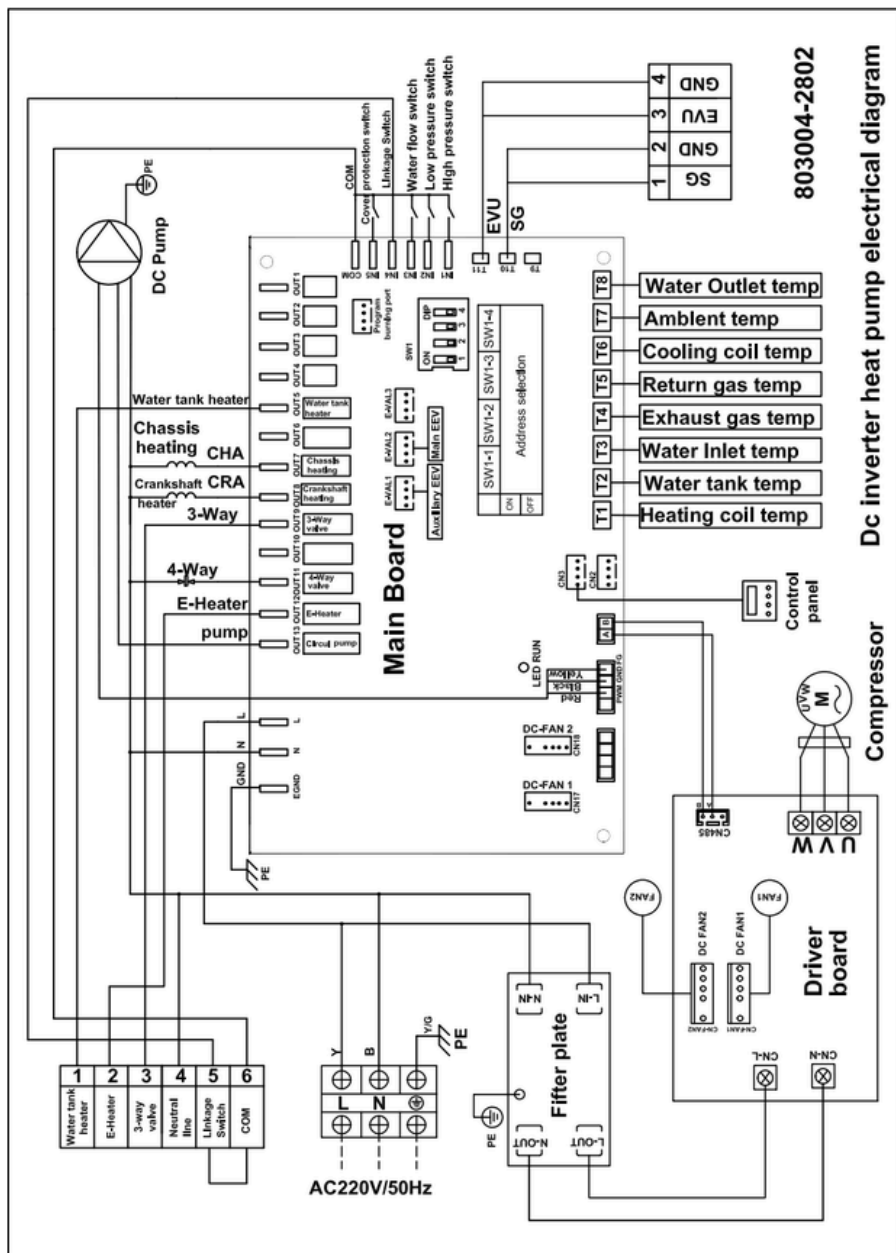
2.When installing overcurrent protection, it is essential to ensure that the appropriate current rating is adhered to for this particular installation.

3.If an additional auxiliary heater needs to be managed by the heat pump controller, the relay (or power) of the auxiliary heater must be linked to the appropriate output of the controller.

Single-Phase System (VM-0MB1112008, VM-0MB1112013)



Single-Phase System (VM-0MB1112016, VM-0MB1112018)

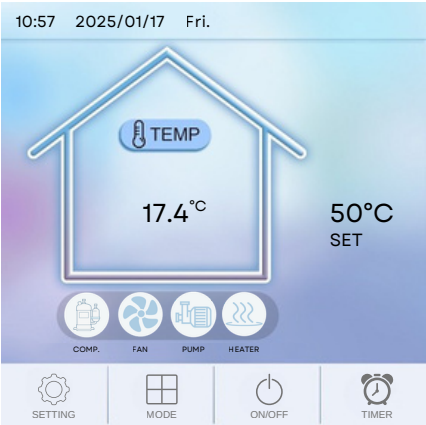


3-Phase System (VM-0MB1112023)

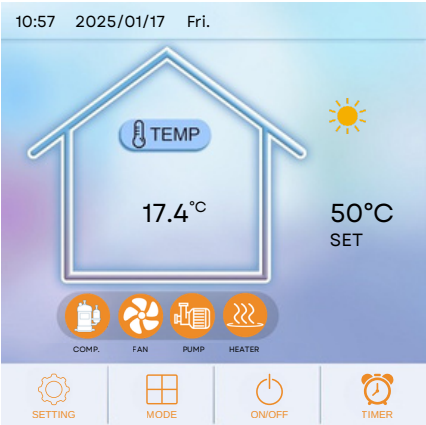


Chapter 3: Operating the Heat Pump

Control Panel



Off State (All buttons appear gray)



On Status (All buttons are orange)

Against	Explanation
	Heating Mode
	Hot Water Setting
	Cooling Mode
	Heating and Hot Water Mode (Hot water function is prioritized)
	Cooling and Hot Water Mode (Hot water function is prioritized)
	Holiday mode
	The compressor is operational.
	The circulation pump is operational.
	The fan motor is operational.
	The electric heater is operational.
	Error message displayed

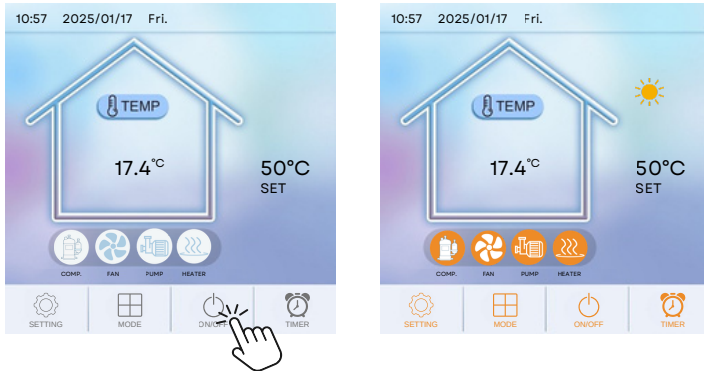
2. Essential Descriptions

Ink	Definition	Function
 ON/OFF	Open/Closed	Activate or deactivate the heat pump.
 AGAINST	Against	Alter the operational mode of the heat pump.
 TIMER	Timer	Organize your tasks and timetable for the weekdays.
 SETTINGS	Settings	Query execution parameters, verify and modify system settings, error code logs, Wi-Fi connectivity, etc.
40°C SET	Set	Set the target temperature of the water tank exclusively in hot water mode, or the return water temperature solely in heating or cooling mode.
50°C WT SET	WT SET	Set the desired temperature for the water tank in heating and hot water mode or cooling and hot water mode.
8°C AC Unit	AC Unit	Establish the return water target temperature for heating or cooling in heating and hot water mode, or in cooling and hot water mode.
8°C 40°C AC Unit SET 50°C WT SET	HEAT	Display the real-time temperature of the water tank in hot water mode exclusively, or the real-time return water temperature for heating or cooling in heating/cooling or heating-only mode.
	WT SIC. AC SIC.	WT SIC: Shows the current temperature of the water tank in real time. Heating and hot water or cooling and hot water mode. AC SIC: Displays the real-time return water temperature for heating and cooling in either heating with hot water or cooling with hot water mode.
	Situation	Verify the operational parameters of the heat pump.
	Defective	Document the most recent error codes.
	Wi-Fi	Wireless network configurations.
	System Parameter	Adjust and verify the parameters of the heat pump system.
	Factory Specifications	Verify and modify the factory settings (we do not advise altering the factory parameters).

3. Controller Operation

Activate/Deactivate the Heat Pump

On the main interface, press the ON/OFF button for about one second to activate or deactivate the heat pump.



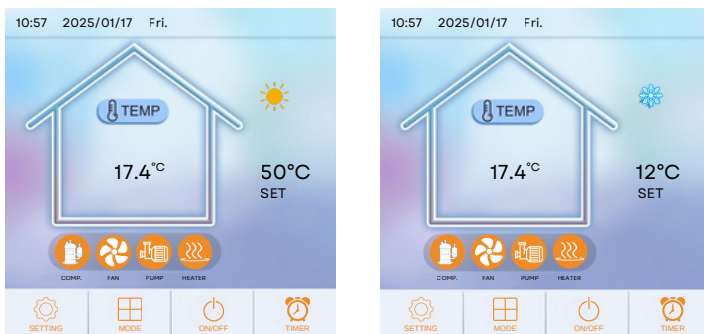
Off state (All buttons are inactive) On state (All buttons are active)

Operating Mode Configurations

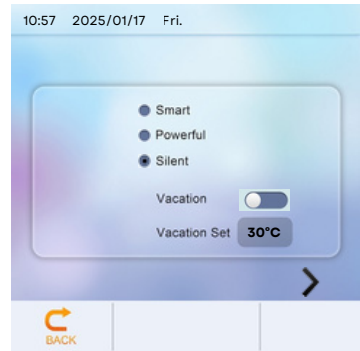
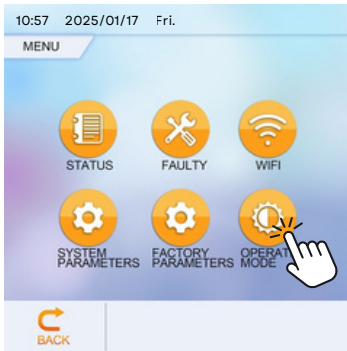
With the heat pumps activated and on the main interface, press the MODE button for approximately one second to change operating modes. (Five modes available: heating only, cooling only, DHW only, heating + hot water, cooling + hot water)

☉ In heating + hot water mode or cooling + hot water mode, the hot water function will take precedence.

☉ In both heating and cooling modes, the TEMPERATURE icon on the interface indicates the real-time return water temperature. In hot water mode, the TEMPERATURE icon reflects the real-time temperature of the water tank.



Operating Mode Selection



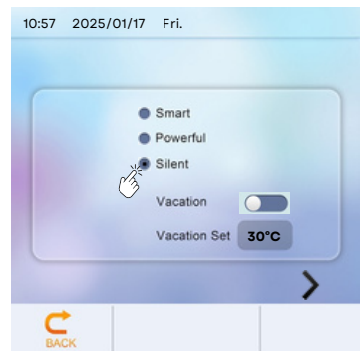
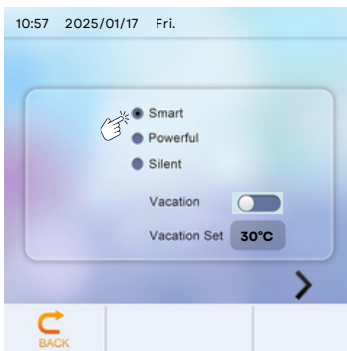
To access the operating mode selection interface, click on “OPERATION MODE” within the Settings interface.

© Operation mode description: In standard mode, the heat pump offers selectable Smart, Powerful, and Silent Operation modes.

© Holiday mode description: When activated, this mode allows the heat pump to function solely in heating mode, maintaining the designated holiday target temperature.

Quiet Period

© To access the Quiet Mode interface, click “>” on the “OPERATION MODE” interface. The unit will operate in Quiet Mode for the scheduled quiet time.



Establishing the Target Water Temperature

◎ On the main interface, press the SET button to access the Target Temperature Setting interface (illustrated below). Input the desired temperature value, then press "Enter" to save and exit, or press "Esc" to exit without saving.

On the main interface, press the SET button to access the Target Temperature Setting interface (illustrated below). Input the desired temperature value, then press "Enter" to save and exit, or press "Esc" to exit without saving.

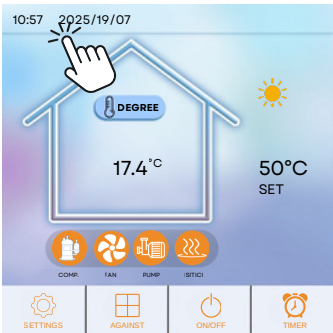


Temporal Context

◎ On the main interface, select the following option to access the clock setting interface.

◎ Select the date (Year/Month/Day column) or time (Hour:Minute column) to bring up the keyboard for value entry. To toggle between Monday and Sunday, select the day of the week (Weekday column).

◎ To save and exit, press the CONFIRM button; to exit without saving, press the CANCEL button.



Timer Configuration

◎ On the main interface, select the TIMER button to access the timing settings.

◎ In the WEEK column, users may select the weekdays on which the timer toggle will activate. When the weekday button (Mon to Sun) appears in orange, the timer will operate on that day. Conversely, when the weekday button is gray, the timer will not function on that day.

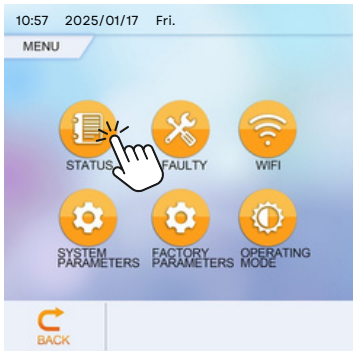
◎ In the TIMER column, users may configure a maximum of four pairs of timers.

If the power-on time matches the power-off time on the same timer, the timer is rendered invalid.



Transaction Parameter Inquiry

To access the settings interface, select “SETTING” on the main screen. Next, choose “STATUS” to enter the Parameter Query and review the operational status of the heat pumps. The list will appear as follows:



List of Transaction Parameters

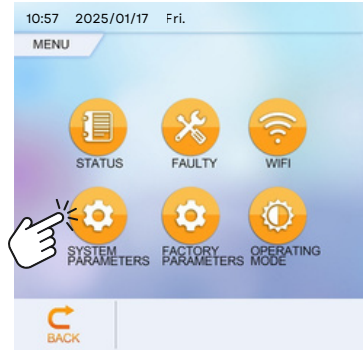
KOD	Tanim	Görüş
1	Inlet water temperature	-30~99°C
2	Water outlet temperature	-30~99°C
3	Ambient temperature	-30~99°C
4	Exhaust gas temperature	0~125°C
5	Exhaust gas temperature	-30~99°C
6	Evaporator temperature	-30~99°C
7	Economizer inlet temperature	-30~99°C
8	Economizer outlet temperature	-30~99°C
9	Coolant Temperature	-30~99°C
10	Water tank temperature	-30~99°C
11	Expansion valve opening	
12	Auxiliary expansion valve opening	
13	Compressor Current	
14	Heat sink temperature	
15	DC conductor voltage value	
16	True frequency compression	
17	Low-pressure gauge reading (R410)	Real-time data (Bar)
18	High-pressure gauge reading (R410)	Real-time data (Bar)

KOD	Tanım	Görüş
19	The wind speed of DC fan 1	
20	The wind speed of the DC fan 2	
21	Low-pressure conversion temperature	
22	High-pressure conversion temperature	
23	DC pump speed	

Querying and Modifying System Parameters

To access the settings interface, select "SETTINGS" on the main interface, then choose "SYSTEM PARAMETERS" to review and modify parameter settings.

The subsequent list presents the codes, definitions, ranges, and default values.



System Parameter List

Code	Definition	Adjustable Range	Default
P01	Return water – cooling target temperature difference	2°C ~ 18°C	2°C
P02	Return water – hot water target temperature difference	2°C ~ 18°C	5°C
P03	Hot water setting temperature	28°C ~ 60°C	50°C
P04	Cooling setting temperature	7°C ~ 30°C	12°C
P05	Heating setting temperature	15°C ~ 50°C	35°C
P06	Exhaust gas protection very high (TP4)	50°C ~ 125°C	120°C
P07	Exhaust gas recovery is very high (TP0)	50°C ~ 125°C	95°C
P08	Water temperature compensation	-5°C ~ 15°C	(inlet/outlet water & tank)
P09	Defrost frequency	30–120 Hz	60 Hz
P10	Defrost period	20–90 min	45 min
P11	Defrost inlet temperature	-15°C ~ -1°C	-3°C
P12	Defrost time	5–20 min	10 min
P13	Defrost outlet temperature	1°C ~ 40°C	30°C
P14	Defrost ambient – evaporator temperature difference 1	0°C ~ 15°C	5°C

Code	Definition	Adjustable Range	Default
P15	Defrost ambient – evaporator temperature difference 2	0°C ~ 15°C	5°C
P16	Ambient temperature for defrosting.	0°C ~ 20°C	17°C
P17	High-temperature disinfection cycle (days)	0–30 days	0
P18	Disinfection start time	0–23:00	23
P19	Disinfection retention time	0–90 min	30 min
P20	High temperature disinfection setting temperature	0–90°C	70°C
P21	HP high temperature disinfection target temperature	40–60°C	53°C
—	Celsius/Fahrenheit choice	0 = °C / 1 = °F	0
P22	Automatic setting of heating target temperature.	0–1	0
P23	Heating compensation temperature point	0–40°C	20°C
P24	Target temperature compensation coefficient	1–30 (with a multiplier of 0.1)	1
P25	Compressor mode after constant temperature	0/1	0
P26	Pipeline E-Heater ambient temperature activation	-20–20°C	0
P27	Water tank E-Heater input time	0–60 min	30 min

Code	Definition	Adjustable Range	Default
F01	Heat pump functions	1 Heating / 2 Heating + Cooling / 3 Heating + DHW / 4 All	4
F02	Circulation pump after target temperature	0 Intermittent / 1 Continuous / 2 Constant temperature	1
F03	Circulation pump on-off cycle	1–120 min	30 (OFF 30 sec – ON 3 sec)
F04	DC circulation pump mode	0 Start / 1 Automatic / 2 Manual	1
F06	DC water pump manual speed	%10–100	%50
F08	Minimum speed of DC circulation pump	%10–100	%40
S01	Smart grid (SG)	0 Closed / 1 Open	0
S02	SG working hours	0–600 min	120 min

High-Temperature Antisepsis Function: (When Hot Water Function is Activated)

◎ The high-temperature sterilization cycle occurs every 7 days (disable this function when the selection is 0). ◎ Upon initiating high-temperature sterilization, the water tank's electric heater will automatically activate.

During the antisepsis process, if the water tank temperature exceeds 60°C (the adjustable maximum temperature), the compressor will remain inactive, and only the electric heating will be engaged. Conversely, if the water tank temperature is 55°C or lower, both the compressor and the electric heater will function.

◎ Cease high-temperature antisepsis when the water tank temperature reaches or exceeds 70°C and the storage temperature is at least 65°C for a duration of 30 minutes.

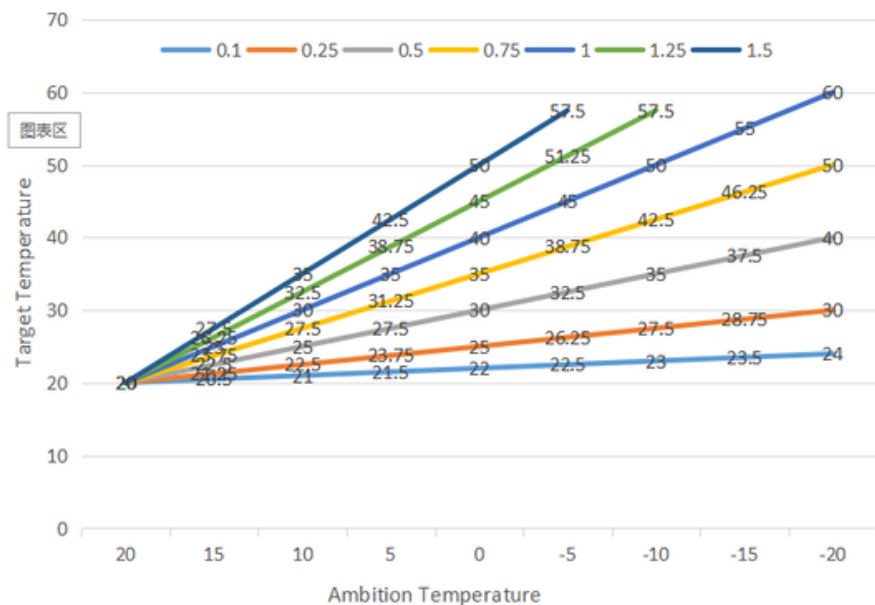
◎ Upon activating the high-temperature antisepsis mode, if the hot water tank temperature fails to reach 65°C within 1 hour, the high-temperature antisepsis program must be terminated.

Target Temperature Automatic Adjustment Algorithm (in Heating Mode)

In heating mode, the desired temperature can be automatically modified based on the surrounding temperature.

◎ Input conditions: When the parameter activates the automatic configuration mode for the heating target temperature.

The formula for determining the heating target temperature is: $P_set \text{ (heating target temperature)} = 20^{\circ}\text{C} + (\text{Target temperature compensation coefficient} \div 10) * (\text{Heating compensation temperature point} - \text{current ambient temperature})$



The various curves depicted above illustrate distinct values of the target temperature compensation coefficient. When the target temperature compensation factor is set to 1, the actual value is 0.1. The designated temperature range for automatic temperature adjustment is 20~60°C.

Electric Auxiliary Heater for Water Storage Tank

⊙ Preliminary requirements (all of the following conditions must be satisfied concurrently)

In heated water mode;

2) The Compressor P27 operates for a duration of 30 minutes;

There is a demand for hot water, and the temperature of the water tank is $\leq 55^{\circ}\text{C}$.

4) The pump is operational ⊙ Output condition (only one of the following conditions needs to be satisfied)

When the heat pump is functioning in cooling mode or hot water mode;

When there is an absence of demand for hot water or continuous temperature regulation;

3) A fault alarm has been triggered in the water tank temperature sensor.

⊙ During defrosting, forced defrosting, or secondary antifreeze, the electric heating is automatically activated;

If a high-pressure failure, low-pressure failure, exhaust temperature sensing failure, or excessive exhaust protection shutdown occurs, resulting in the compressor being locked and unable to start, electric heating will be initiated in place of the compressor after 5 minutes.

Electric Auxiliary Heater for Space Heating ⊙ Activation Condition:

1) In heating mode:

2) Ambient Temperature $< P26$ (0°C) or Ambient Temperature Sensor Malfunction

3) Heating demand is present when the inlet water temperature is less than or equal to the heating set temperature ($P05$) - Restart difference ($P01$);

4) Water pump in operation: When the aforementioned conditions are satisfied, the electric heater activates.

⊙ Closure Condition:

In Cooling or Heating Mode

2) In the Absence of Heating Demand or Constant Temperature Regulation

3) Malfunction or Alarm of Inlet Water Temperature Sensor

4) Ambient Temperature $> 0^{\circ}\text{C}$ ($P26$) +1

5) Issues with Water Flow

6) Circulation pump deactivation: The E-Heater must be turned off if any of the aforementioned conditions are satisfied.

Intelligent Grid

When the smart grid function parameter is set to enabled ($S01 = 1$), the heat pump initiates the operation of the smart grid function.

Employment Status	SG	EVU
Enhanced operations	OPEN	OPEN
Enhanced operations	CLOSED	OPEN
Standard operation	OPEN	CLOSED
Minimized operation	CLOSED	CLOSED

7) When both the SG signal and EVU signal are activated, and the hot water mode is designated as active, the heat pump will function with priority given to hot water mode, adjusting the set temperature for hot water to 70°C. If the water tank temperature is less than 69°C, TBH will be on; if the water tank temperature is 70°C or higher, TBH will be off.

8) When the SG signal is inactive and the EVU signal is active, with the hot water mode enabled, the heat pump will prioritize operation in hot water mode. If the water tank temperature is less than P03-P02, TBH will be activated; if the water tank temperature is equal to or greater than P03+2, TBH will be deactivated.

The unit functions properly when the SG signal is activated and the EVU signal is deactivated.

10) When both the SG signal and EVU signal are inactive, the unit will not function in hot water mode, rendering TBH ineffective, and the disinfection feature will also be disabled. The maximum operational duration for cooling or heating is defined as the "SG operating time," after which the unit will cease operation.

* TBH: Water tank heater * To utilize this function, an auxiliary electric heater must be installed for the domestic hot water boiler; otherwise, the EVU interface should remain disconnected.

General Operating Manual

Initial Startup Measures

The energy necessary to produce the equivalent power output as indicated on the product label.

Unit 2 Electrical Connection: Verify that the routing and connection of the power supply cable are accurate; ensure the grounding cable is securely attached; confirm that the water pump and other associated devices are properly connected.

3. Water Plumbing and Pipes: Pipes should be flushed a minimum of two to three times to guarantee they are clean and devoid of any debris.

4. Inspecting the Water System: Confirm that there is adequate water and no air present, and verify the absence of leaks.

5. For initial start-up or a restart following an extended period of inactivity, first ensure that the power is activated and allow the crankcase to warm up for a minimum of 12 hours (with a local cycle temperature of zero). Begin by starting the water pump, followed by the fan after a brief interval, then activate the compressor, and the unit will function normally.

6. Operational checks (based on the data below to verify if the unit is functioning properly) Once the unit is confirmed to be operating normally, examine the following item:

A. Inlet and outlet temperatures

B. Water circulation cycle

C. Current consumption by the compressor and fan during operation

D. High and low pressure readings in heating

⚠ WARNING — Refrain from using this heat pump if any electrical components have been exposed to water. Promptly contact a qualified service technician to examine the heat pump.

⚠ WARNING — Ensure that all objects are kept clear of the heat pump. Obstructing airflow may result in damage to the unit and void the warranty.

User Manual

1. Rights and Obligations

1.1 To guarantee service within the warranty period, installation and repairs must be conducted solely by qualified personnel. Our company will not assume any responsibility for damages incurred due to non-compliance with this stipulation.

1.2 Upon receipt of the unit, inspect it for any shipping damage and verify that all components are present; should there be any damage or missing parts, please inform the seller in writing.

2. User Guide

2.1 All safety protection devices are pre-configured on the unit prior to leaving the factory; do not configure them independently.

2.2 The unit contains an adequate supply of refrigerant and oil; do not replace or alter them. If refilling is required due to a leak, please consult the amount indicated on the label. (If you are refilling the refrigerant, re-vacuuming will be necessary.)

2.3 The external water pump must be linked to the unit's signal; otherwise, you may inadvertently activate several water shortage alarms.

2.4 Ensure adherence to the routine clean water system in accordance with maintenance requests.

2.5 Exercise caution with antifreeze when ambient temperatures fall below zero during winter.

2.6 Safety Precautions

A-A user must not install the unit on their own or have a third party or professional installation company do so, as this may cause a safety hazard and affect the unit's service life.

B-When installing or using the unit, please verify that the power supply matches the unit's power requirements.

C-A ground fault circuit interrupter (GFCI) must be installed on the unit's power switch; the power cord must meet the unit's power requirements as well as national standards and local Fire and Safety Regulations.

D-The unit must have a grounding wire; do not use the unit if there is no grounding wire; do not connect the grounding wire to the neutral line or the water pump.

E-The unit's power switch must be installed at a height of at least 1.4 meters to prevent children from playing with it and causing danger (do not allow children to touch it).

F-Water exceeding 52°C can cause harm; hot and cold water must be mixed before use.

G-If the unit gets wet, please contact the manufacturer or maintenance department; you can use it again after maintenance.

H-Do not insert any tools into the unit's fan guard; the fan can cause serious danger. (Keep children away.)

I-Do not use the unit if the fan is turned off.

J-To prevent electric shock or fire, do not store or use flammable gases or liquids such as oil-based paint or petroleum near the unit; do not spill water or other liquids on the unit, and do not touch the unit with wet hands.

K-Do not adjust the switch, valve, controller, or internal settings except through the company server or authorized personnel.

L-If the safety protection device is frequently activating, please contact the manufacturer or your local dealer.

Chapter 4: Comprehensive Maintenance

Error Codes

If a fault occurs in the heat pumps, the fault code and description will be shown on the main interface and documented in the FAULTY column within the SETTINGS interface.

◎ The subsequent common error codes will be presented on the control panel:

Error Code	Definition of Error or Safeguard
ER 03	Water flow anomaly
ER 04	Antifreeze malfunction
ER 05	High-pressure error
ER 06	Low-pressure error
ER 09	Communication failure
ER 10	Frequency conversion module communication failure.
ER 12	The exhaust temperature protection is exceptionally high.
ER 14	Malfunction of the water tank temperature sensor.
ER 15	Malfunction of the water inlet temperature sensor.
ER 16	Malfunction of the evaporator coil temperature sensor.
ER 18	Exhaust temperature anomaly
ER 20	Abnormal protection of the frequency conversion module.
ER 21	Ambient temperature sensor malfunction.
ER 23	Cooling outlet water temperature overcooling safeguard

Error Code	Definition of Error or Safeguard
ER 26	Coolant temperature malfunction
ER 27	Malfunction of the outlet water temperature sensor.
ER 29	Return throttle temperature sensor malfunction.
ER 32	Heating system featuring robust protection against excessively high outlet water temperatures.
ER 33	The coil temperature is excessively elevated.
ER 34	The frequency conversion module is excessively heated.
ER 42	Malfunction of the cooling coil temperature sensor.
ER 62	Economizer inlet temperature discrepancy
ER 63	Malfunction of the economizer outlet temperature.
ER 64	DC fan 1 malfunction
ER 66	DC fan 2 malfunction
ER 67	Low-pressure switch malfunction
ER 68	Failure of the high-pressure switch.
ER 69	Extremely low pressure protection
ER 70	Extremely high-pressure protection

© When an Er 20 error occurs in the system, it will present the detailed error codes ranging from 1 to 348 below. Among these, codes 1 to 128 belong to the first class and are displayed initially, while codes 257 to 384 are categorized in the second class and will only be shown if no errors from the first class are present. If two or more errors arise simultaneously within the same class, the system will indicate the total number of errors. For instance, if errors 16 and 32 occur concurrently, it will display the error code 48. (16+32=48)

© Comprehensive error code list for ER 20:

Error Code	Name	Definition	Proposed Resolution
1	IPM Overcurrent	IPM Module Issue	Replace the inverter unit.
2	Abnormal compressor synchronization	Compressor Malfunction	Replace the compressor unit.
4	Separated	—	—
8	Absence of compressor output phase.	The compressor wiring is damaged or compromised.	Examine the compressor inlet circuit.
16	Low voltage DC busbar	Low voltage input; PFC module malfunction.	Verify the input voltage and replace the module.
32	DC bus high voltage	High voltage input; PFC module malfunction.	Replace the inverter unit.
64	Radiator overheating.	Main unit fan motor malfunction, air duct obstruction.	Inspect the fan motor and air duct.
128	Radiator temperature discrepancy	Radiator sensor short circuit or open circuit malfunction.	Replace the inverter unit.

Error Code	Name	Definition	Proposed Resolution
257	Communication failure	The inverter module is not obtaining data from the primary controller.	Inspect the communication cables (main controller ↔ inverter module).
258	No AC input phase detected.	Input phase is not present (Three-phase module is operational)	Examine the input circuit.
260	AC overcurrent	Three-phase imbalance (when the three-phase system is operational)	Verify the voltage levels of the three-phase system.
264	AC low-voltage input	Low-voltage input	Verify the input voltage.
272	Compressor high-pressure malfunction	Compressor high-pressure fault (isolated)	—
288	IPM elevated temperature	Main unit fan motor failure, air duct obstruction.	Inspect the fan motor and air duct.
320	The peak current of the compressor is excessively high.	The compressor current is excessively high due to incompatibility between the driver and the compressor.	Replace the inverter unit.
384	PFC module thermal overload	PFC modules experience extremely high temperatures.	—

Inspection Owner

We recommend that heat pumps be inspected frequently, especially after abnormal weather conditions. The following basic guidelines are recommended for your inspection:

1. Ensure that the front of the unit is accessible for the next maintenance.
2. Clean the top and surrounding area of the heat pump of all debris.
3. Trees or plants nearby must be pruned, especially to keep the area above the fan clear.
4. Keep the unit away from faucets and similar items to prevent corrosion and wear.
5. Ensure the grounding wire is always properly connected.
6. Have the filters serviced regularly to ensure a supply of clean water and prevent damage to the heat pump.
7. Inspect the power cord and wiring of electrical components to ensure they are functioning normally.
8. All safety protection settings are in place; please avoid altering these settings. If any changes are necessary, please contact authorized personnel.
9. If the heat pump is installed under a roof without gutters, ensure all necessary precautions are taken to prevent water from flowing onto the unit.
10. Do not use the heat pump if any electrical components have come into contact with water. Contact an authorized representative.
11. If the increase in power consumption is not due to cold weather, contact the authorized dealer and the company.
12. If the heat pump is not used for an extended period, please turn it off and disconnect it from the power source.

Troubleshooting

Utilize the troubleshooting information provided below to address any issues with your EVI DC Inverter heat pump.



WARNING — RISK OF ELECTRIC SHOCK OR ELECTRIC PULSE.

Before beginning the heat pump installation, make sure all high-voltage circuits are disconnected. Contact with these circuits can result in death or serious injury to users, installers, or others due to electric shock, and may also damage the unit. Do not open any part of the heat pump, as this may cause electric shock.

1. To prevent injury, keep your hands and hair away from the fan blades.
2. If you are not familiar with your heater:

A) DO NOT attempt to adjust or maintain the unit without consulting your authorized installer/representative.

B) Please read the entire Installation and/or User Manual before operating the unit or adjusting the heater.

IMPORTANT: Prior to commencing any service or repair, ensure that the main power supply to the EVI DC Inverter heat pump is turned off.

Maintenance

The EVI DC Inverter air-source heat pump unit is a highly automated device. If the units are maintained and serviced regularly, their operational reliability and service life will improve significantly.

When performing maintenance, special attention should be paid to the following important tips:

1. The water filter must be cleaned periodically to ensure the water is clean and to prevent any damage caused by filter clogging.
2. All safety protection devices installed by the manufacturer must not be adjusted by the user. No liability should be accepted for any damage resulting from the user's own adjustments.
3. The unit's surroundings must be clean, dry, and well-ventilated. If the heat exchanger side can be cleaned periodically (every 1–2 months), heat exchanger efficiency improves, and energy savings are achieved.
4. The water level in the water system and the air vent should be checked frequently to prevent air from entering the system and causing reduced water circulation or water circulation issues; otherwise, the unit's cooling and heating efficiency, as well as its operational reliability, will be affected.
5. The unit's power supply and electrical cables should be checked frequently; ensure the cables are securely fastened and the electrical components are intact. If any abnormalities are found, they must be repaired or replaced, and the unit must be properly grounded.
6. During operation, inspect each component of the unit frequently. Check whether the operating pressure of the cooling system is normal. Check for oily residue at the pipe joints and the air injection valve. Ensure there are no refrigerant leaks in the cooling system.
7. Do not pile any objects around the unit to prevent blocking the air intake and outlet. The area around the unit must be clean, dry, and well-ventilated.
8. If the unit will be shut down for an extended period after running for a certain duration, the water in the system must be drained and the power connection disconnected. Before restarting the unit, the system must be completely refilled with water and allowed to warm up for at least 6 hours. Once this process is complete, the unit can be safely restarted.

Information

The unit must be equipped with a dedicated power supply. The voltage must be within $\pm 10\%$. The circuit breaker must be an automatic air circuit breaker.

The rated current must be 1.5 times the operating current, and the unit must be equipped with phase failure protection. The use of a knife switch on the unit is prohibited.

The unit must be turned on for at least 12 hours to warm up before operation each season. For cooling-only models that are not in use for extended periods during the winter, ensure all water is drained to prevent damage to the pipes and unit due to freezing. The main controller and the unit must be in sync; for heated models only, if operation is suspended for an extended period in winter, the power must not be turned off to prevent freezing damage.

The heat pump switch must not be operated frequently; it must not be activated more than four times within an hour. The electrical cabinet will prevent moisture damage.

Do not wash the EVI DC inverter air-source heat pump with water; avoid any risk of electric shock or other accidents.

Common Mistakes and Error Assessment

The user should engage professional maintenance personnel to address any issues the unit may experience during operation. Maintenance personnel can consult the troubleshooting table.

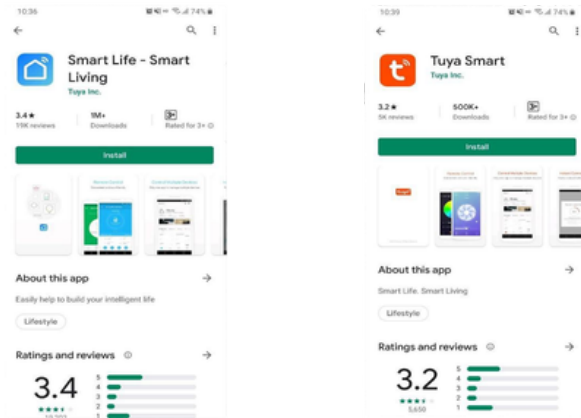
Error Status	Justifiable Cause	Solution
The heat pump is malfunctioning.	Power outage, loose connection, blown fuse, thermal overload protection disengaged, low pressure (excessively low).	Deactivate the power switch and inspect the power supply. Identify the cause and effectuate repairs. Substitute the blown fuse. Measure the voltage and current.
The water pump is operational; however, there is no circulation of water, or the pump is producing a loud noise.	Water scarcity in the system; Air trapped in the water system; Valves not completely opened; Filter is contaminated and obstructed.	Inspect the system renewal device and replenish the system. Purge the air from the water system. Open the water system valve. Clean the water filter.
Insufficient heating capacity	Insufficient coolant, inadequate water system insulation, obstructed filter dryer, ineffective heat dissipation in the air heat exchanger, and inadequate water flow.	Leak detection and refrigerant supply. Enhance the thermal protection of the water system. Replace the desiccant filter. Clean the air heat exchanger. Clean the water filter.
The compressor is inoperative.	Power failure. Damage to compressor contactor. Loose wiring. Compressor overheating protection activated. Excessive outlet water temperature. Inadequate water flow. Compressor overload protector engaged.	Identify the causes and rectify the power outage. Replace the contactor of the compressor. Locate and repair the loose connection. Verify the unit's pressure and exhaust gas temperature. Reset the outlet water temperature. Clean the water filter and purge the air from the system. Assess the operating current and inspect the overload protector for damage.

Error Status	Justifiable Cause	Solution
The operational noise of the compressor is exceedingly loud.	Liquid refrigerant enters the compressor. The internal components of the compressor are compromised. The voltage is insufficient.	Inspect the expansion valve for any malfunctions. Replace the compressor. Verify the power voltage.
The fan is malfunctioning.	The mounting screw of the fan is loose. Damage to the fan motor. Damage to the contactor.	Tighten the screw. Replace the fan motor. Replace the contactor.
The compressor is operational; however, the heat pump is not providing heat.	The coolant is leaking extensively. Compressor malfunction. Compressor has reversed.	Inspect for leaks and replenish coolant. Replace the compressor. Adjust the compressor's phase sequence.
Low water flow safeguard	The system experiences inadequate water flow. There is a malfunction in water circulation.	Clean the water filter and purge the air from the system. Inspect and replace the water switch.

Chapter 5 Wi-Fi Connection and Operation

Application Download

Please visit the Google Play Store or Apple App Store and search for "Smart Life" or "Tuya Smart," then proceed to download the application. Refer to the images below.



WIFI Connection Method: Bluetooth Configuration

Step 1

By default, a connection can be established within 10 seconds of the initial power-on; after this period, a key press is necessary to connect. (10 seconds is the duration for Wi-Fi to transition into low power consumption mode.) To manually enter smart distribution mode: select "SMART MODE" or "AP MODE" on the wired controller's Wi-Fi interface, then click the "Add Device" button to access smart distribution mode. The "  " icon on the main screen will blink, allowing the mobile phone to commence network configuration.

After three minutes, the network configuration process concludes, the "  " icon ceases to blink, and the Wi-Fi module disconnects from the network. To reconfigure the network, you must click the "Add Device" button on the Wi-Fi interface once more.

Step 2

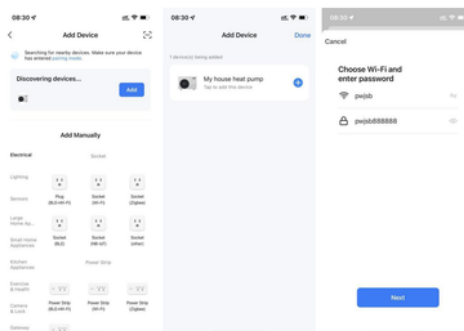
Activate Bluetooth on your mobile device.

Activate your phone's Wi-Fi and establish a connection to the Wi-Fi hotspot. The Wi-Fi hotspot should now be capable of connecting to the internet as usual. For instance, connect to the Wi-Fi hotspot "123456789" as illustrated below.



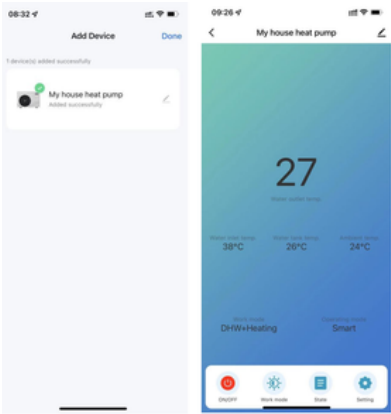
Step 3

- Open the "Smart Life" application, log in, and navigate to the home screen.
- Click the "+" icon located in the upper right corner or select the "Add Device" option on the screen.
- The message "Discovering devices..." will be displayed on the screen. Click "Add."
- Access the "Add Device" interface.
- Click the "+" symbol once more.
- On the Network Selection screen, choose Wi-Fi.
- Input the accurate Wi-Fi password and verify.
- Click "Next" to initiate the Wi-Fi pairing process.



Step 4

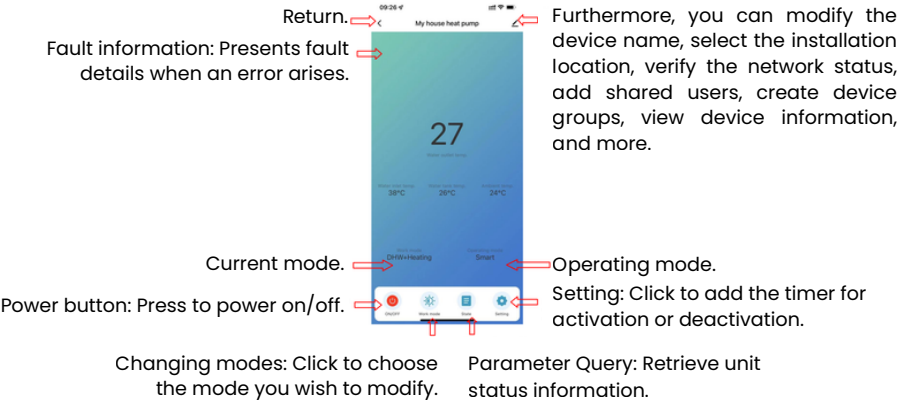
Upon successful connection, the system will display the message "Added successfully," indicating that the network configuration is complete. Click the "Done" button to proceed to the main page.



Utilizing Software Functions

Interface Overview

Once the device has been successfully paired, navigate to the control page for "My House Heat Pump" (the device name can be modified). To access the operating page for your heat pump, click on "My House Heat Pump" within the "All Devices" section on the main screen of the Smart Life application.

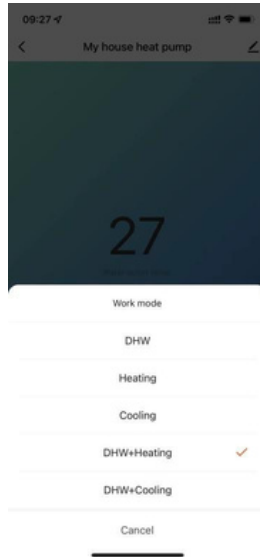


Mode Configuration

You can alter the mode by selecting "Work mode" on the device's primary operating screen.

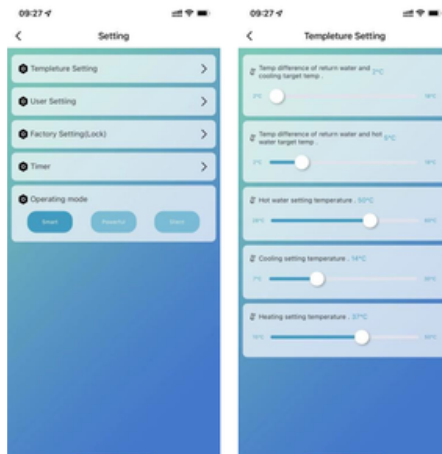
The mode selection interface appears on the screen (as illustrated in the image below).

Simply click on the desired mode to select it.

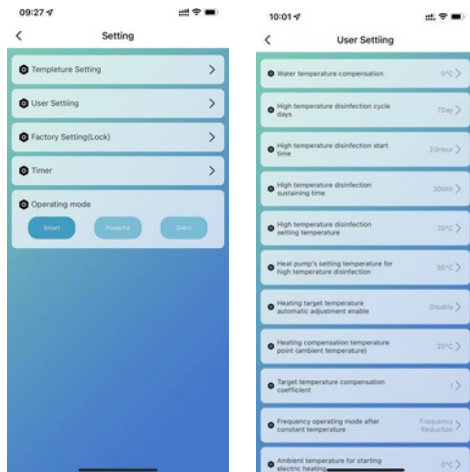


Water Temperature Regulation

In the Settings interface, you can modify the desired temperature (Desired Temp.) and the return difference temperature (Return Difference Temperature) by selecting the "Water Temp. Setting" option.



User Preferences



High-Temperature Antiseptic Function

When the hot water function is selected, the high-temperature antiseptic cycle occurs every seven days. This function is deactivated when the selection is set to 0. Upon initiation of the high-temperature antiseptic process, the boiler's electric heater is automatically engaged.

During the Antiseptic Procedure

- If the boiler temperature exceeds 60 °C (the maximum adjustable temperature), the compressor will remain inactive, and only the electric heater will be engaged.
- If the boiler temperature is $\leq 55^{\circ}\text{C}$, both the compressor and the electric heater will function.
- The high-temperature antiseptic procedure concludes when the boiler temperature attains a minimum of 70 °C and is sustained at or above 65 °C for a duration of 30 minutes.
- Following the commencement of the high-temperature antiseptic procedure, if the hot water tank temperature fails to attain 65 °C within one hour, the program will be automatically terminated.

Target Temperature Automatic Adjustment Algorithm (in Heating Mode)

In heating mode, the desired temperature can be automatically modified based on the surrounding temperature.

Admission Criteria

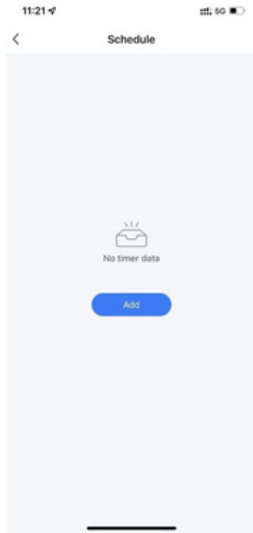
- In the parameters, the automatic setting mode for the target heating temperature must be activated.

Heating Target Temperature Calculation Formula:

$$P_{\text{set}} (\text{Heating target temperature}) = 20^{\circ}\text{C} + (\text{Target temperature compensation coefficient} \div 10) \times (\text{Heating compensation temperature point} - \text{Current ambient temperature})$$

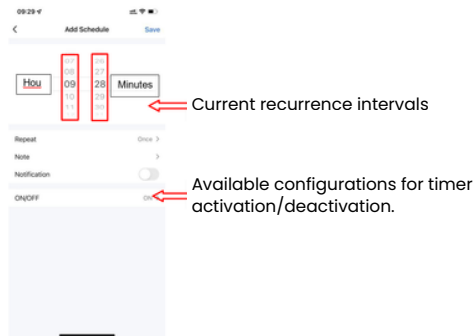
Timer Configuration

Access the timer settings by selecting the “Timing” option within the Settings interface. You can establish a new timer by selecting the Add Timer option.



Timer Configuration

- ⦿ In the timer settings screen, adjust the timer duration by sliding the hour and minute values up or down.
- ⦿ Configure the repetition week and the On/Off status.
- ⦿ Click the Save button located in the upper right corner. (Refer to the image below)



Power Consumption Curve Visualization

You can access the power consumption curve screen by selecting the "Power Statistics Module" option within the Settings interface.



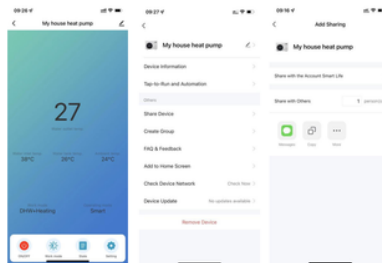
Device Allocation

To share the paired device, the individual sharing it should follow these steps.

◎ Upon successful sharing, the individual with whom the content was shared will appear in the list.

To remove a shared contact, long-press the selected user; the deletion interface will appear, and then click the "Delete" option.

◎ The procedures in the sharing interface are as follows:



◎ Input the account of the individual you wish to share with and click "Done".

◎ Upon successful completion of the sharing process, the account of the newly added individual will appear in the success list.

The individual who receives the shared device is able to view it; they can click on it to operate and manage the device.

Device Disengagement

Remove through the Application

- On the device's main screen, select the top right corner to enter the Device Details interface.
- Select "Remove Device" from this location.
- This procedure activates the device's smart network configuration mode.
- During this period, the corresponding indicator light will remain steady, and the device can be reconfigured within three minutes.
- If it surpasses 3 minutes, the network will terminate distribution mode.

Exclusions from Warranty Coverage

The following situations are not covered by the warranty and do not entitle the manufacturer, importer, or seller to provide free repair or replacement:

1. Damage occurring after delivery: Malfunctions caused by external factors such as transportation, impact, collision, falling, breakage, scratching, or exposure to chemicals.
 - The delivery form is filled out to record the physical condition of the product at the time of delivery. If visible damage detected during delivery is not noted on the form, it is assumed that such external physical damage occurred after delivery.
2. Improper storage and unsuitable environmental conditions: Storage or failure to protect the device in unsuitable temperature, humidity, dust, or environmental conditions.
3. Electrical faults: Damage caused by high or low voltage, sudden fluctuations, incorrect wiring connections, and lack of grounding.
4. Water-related problems: Blockages and malfunctions caused by the water used in the device being excessively calcareous, sedimentary, or dirty.
5. Incorrect use: Pouring cold water into the device while it is hot or operating the device without water; also, malfunctions caused by use contrary to the user manual.
6. Installation deficiencies: Malfunctions caused by the absence of fuses or grounding in the electrical installation or the use of non-standard installations.
7. External factors: Natural disasters (earthquakes, floods, flash floods, lightning strikes), fire, or other force majeure events.
8. Unauthorized intervention: Malfunctions caused by repairs, gas refills, electrical connection changes, removal/installation, or interventions performed by unauthorized personnel.
9. Non-original parts: Damage caused by the use of spare parts, accessories, refrigerants, or chemicals not approved by the manufacturer.
10. Installation errors: Malfunctions caused by installation contrary to the manufacturer's instructions (incorrect piping, lack of insulation, drainage errors, incorrect positioning of the outdoor unit, etc.).
11. Failure to perform periodic maintenance: Performance decline or malfunctions resulting from failure to perform regular maintenance and cleaning as recommended by the manufacturer.
12. Unauthorized setting changes: Malfunctions resulting from changes to the control panel, mode, parameters, or software settings by persons other than authorized service personnel.
13. Use outside of limits: Operating the device outside of its design limits (heating at very low outdoor temperatures, cooling at excessively high temperatures, incorrect water flow or pressure).
14. Freezing-related malfunctions: Freezing and related damage resulting from shutting down the device during winter months or failing to drain the water circuit.

Important Points for Customers to Note Regarding Warranty

Please pay attention to the following points:

1. During installation and use of the device, ensure that you follow the instructions in the installation and user manual.
2. If you encounter any malfunction or problem, do not attempt to fix it yourself; contact our authorized service center directly.
3. Keep your warranty certificate, along with the service form issued by the service center when the device was first put into operation, and a copy of the device invoice in a safe place.

WARRANTY CERTIFICATE	
Manufacturer's Name: Address: Phone: Fax: Email: Authorized Signature: Company Seal:	Seller Company Name: Address: Phone: Fax: Email: Invoice Date and Number: Delivery Date and Location: Authorized Signature: Company Seal:
The Product	
Type: Brand: Model:	Warranty Period: Maximum Repair Period: Label and Serial Number:
Warranty Terms	
1. The warranty period begins on the date the goods are delivered to the consumer and applies for 2 years. The warranty certificate may be issued on paper or via a durable data storage medium. Upon the consumer's request, the certificate must be provided in writing on paper. 2. All parts of the goods are covered by the warranty without any distinction. 3. If the goods are found to be defective, the consumer may exercise one of the following options under Article 11 of Law No. 6502 on the Protection of Consumers: A) Withdrawal from the contract, B) Requesting a reduction in the sale price, C) Free repair, D) Replacement of the goods with non-defective goods. 4. When the consumer exercises their right to free repair, the seller is obligated to repair or have the goods repaired without charging for labor, parts, or any other fees. The consumer may exercise this right against the seller, manufacturer, or importer. These parties are jointly liable to the consumer and cannot transfer their liability to each other. 5. Even if the consumer exercises their right to free repair: • If the product malfunctions again within the warranty period, • The maximum time specified for repair is exceeded, • The authorized service center, seller, manufacturer, or importer reports that the product cannot be repaired, the consumer may request a refund, a price reduction proportional to the defect, or replacement of the product with a defect-free equivalent. The seller cannot refuse this request; the seller, manufacturer, and importer are responsible for fulfilling the request. 6. The maximum repair period for the goods is 20 business days. This period begins: • During the warranty period, on the date the defect is reported to the authorized service center or seller, • Outside the warranty period, on the date the goods are delivered to the authorized service center. If the defect cannot be repaired within 10 business days, the manufacturer or importer must provide the consumer with a similar product free of charge until the repair process is completed. For goods that malfunction within the warranty period, the repair period is added to the warranty period. 7. Defects resulting from use of the product contrary to the user manual are excluded from the warranty. 8. Products or parts replaced under warranty are covered only for the remaining warranty period of the purchased product. 9. Whether the defect is due to misuse is determined by an authorized service station or, if no authorized service station is available, by the seller, importer, or manufacturer, in that order, within the maximum repair period, based on a report. A copy of this report is provided to the consumer. 10. Consumers may submit their complaints and objections to consumer arbitration boards or consumer courts.	

VARMEKS

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