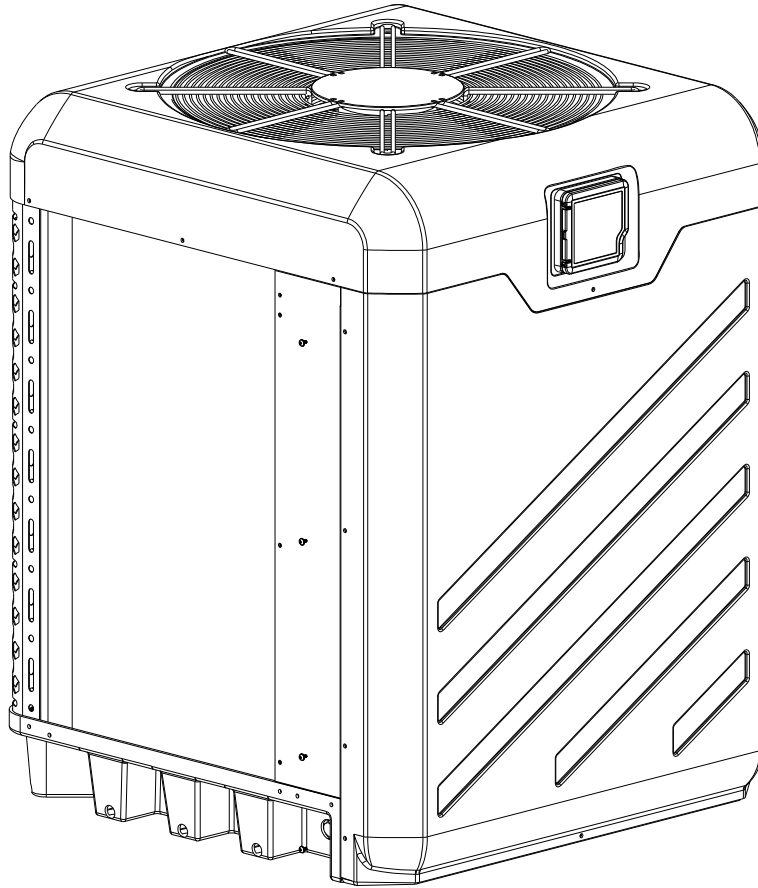


InverONE

Owner's Manual



INV1-115EE | INV1-140EE



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product warranty

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Warranty registration

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WARNING

This equipment must be installed and serviced according to the information found in this manual. Improper installation can create hazards which could result in property damage, serious injury or death. Improper installation will void the warranty.

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In order to provide our customers with quality, reliability and versatility, this product has been made to strict production standards. This manual includes all the necessary information about installation, debugging, discharging and maintenance. Please read this manual carefully before you open or maintain the unit. The manufacture of this product will not be held responsible if someone is injured or the unit is damaged, as a result of improper installation, debugging, or unnecessary maintenance. It is vital that the instructions within this manual are adhered to at all times. The unit must be installed by qualified personnel.

The unit can only be repaired by qualified installer centre , personnel or an authorised dealer.

Maintenance and operation must be carried out according to the recommended time and frequency, as stated in this manual.

Use genuine standard spare parts only. Failure to comply with these recommendations will invalidate the warranty.

Swimming Pool Heat Pump Unit heats the swimming pool water and keeps the temperature constant. For split type unit, The indoor unit can be Discretely hidden or semi-hidden to suit a luxury house.

Our heat pump has following characteristics:

01. Durable

The heat exchanger is made of PVC & Titanium tube which can withstand prolonged exposure to swimming pool water.

02. Installation flexibility

The unit can be installed outdoors.

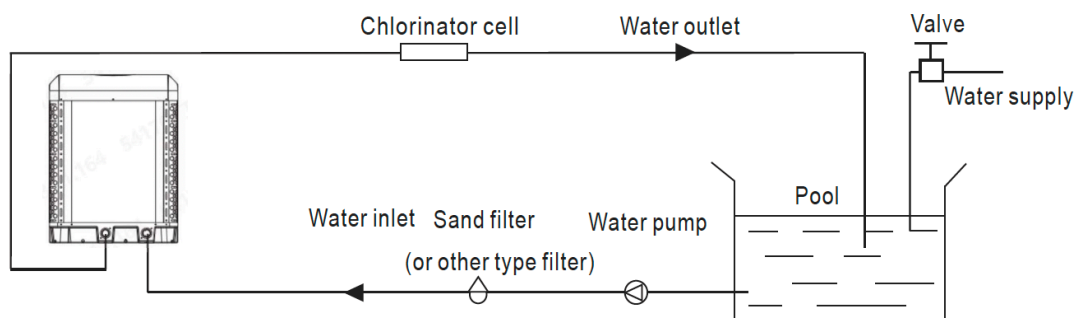
03. Quiet operation

The unit comprises an efficient rotary/ scroll compressor and a low-noise fan motor, which guarantees its quiet operation.

04. Advanced controlling

The unit includes micro-computer controlling, allowing all operation parameters to be set. Operation status can be displayed on the LCD wire controller. Remote controller can be chosen as future option.

Installation illustration



Installation items:

The factory only provides the main unit and the water unit; the other items in the illustration are necessary spare parts for the water system, that provided by users or the installer.

Attention: Please follow these steps when using for the first time

01. Open valve and charge water.
02. Make sure that the pump and the water-in pipe have been filled with water.
03. Close the valve and start the unit.

Attention: It is necessary that the water-in pipe is higher than the pool surface. The schematic diagram is for reference only. Please check the water inlet/outlet label on the heat pump while plumbing installation.

Swimming Pool Heat Pumps Location

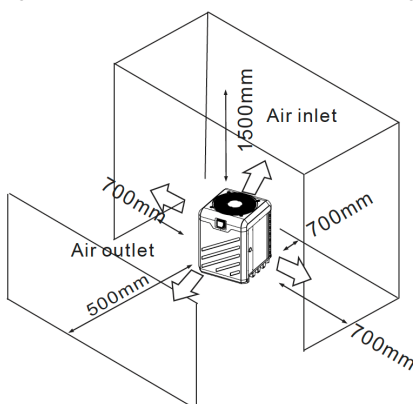
The unit will perform well in any outdoor location provided that the following three factors are presented:

1. Fresh Air - 2. Electricity - 3. Pool filter piping

The unit may be installed virtually anywhere outdoors. For indoor pools please consult the supplier. Unlike a gas heater, it has no draft or pilot light problem in a windy area.

DO NOT place the unit in an enclosed area with a limited air volume, where the units discharge air will be re-circulated.

DO NOT place the unit to shrubs which can block air inlet. These locations deny the unit of a continuous source of fresh air which reduces its efficiency and may prevent adequate heat delivery.



How Close To Your Pool?

Normally, the pool heat pump is installed within 7.5 metres of the pool. The longer the distance from the pool, the greater the heat loss from the piping. For the most part, the piping is buried. Therefore, the heat loss is minimal for runs of up to 15 meters (15 meters to and from the pump = 30 meters total), unless the ground is wet or the water table is high. A very rough estimate of heat loss per 30 meters is 0.6 kW-hour, (2000BTU) for every 5°C difference in temperature between the pool water and the ground surrounding the pipe, which translates to about 3% to 5% increase in run time.

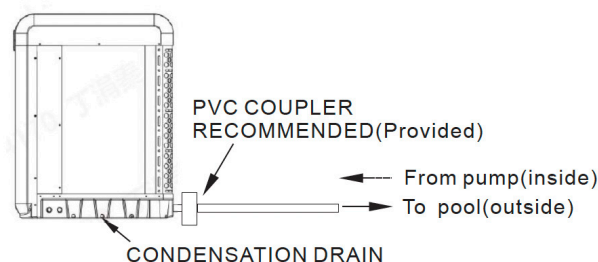
Swimming Pool Heat Pumps Plumbing

The Swimming Pool Heat Pumps exclusive rated flow titanium heat exchanger requires no special plumbing arrangements except bypass (please set the flow rate according to the nameplate). The water pressure drop is less than 10kPa at max. Flow rate. Since there is no residual heat or flame Temperatures, The unit does not need copper heat sink piping. PVC pipe can be run straight into the unit.

Location: Connect the unit in the pool pump discharge (return) line downstream of all filter and pool pumps, and upstream of any chlorinators, ozonators or chemical pumps.

Standard model have slip glue fittings which accept 32mm or 50 mm PVC pipe for connection to the pool or spa filtration piping. By using a 50 NB to 40NB you can plumb 40NB

Give serious consideration to adding a quick coupler fitting at the unit inlet and outlet to allow easy draining of unit for winterizing and to provide easier access should servicing be required.



Condensation: Since the Heat pump cools down the air about 4 -5°C, water may condense on the fins of the horseshoe shaped evaporator. If the relative humidity is very high, this could be as much as several litres an hour. The water will run down the fins into the basepan and drain out through the barbed plastic condensation drain fitting on the side of the basepan. This fitting is designed to accept 20mm clear vinyl tubing which can be pushed on by hand and run to a suitable drain. It is easy to mistake the condensation for a water leak inside the unit.

NOTE -

A quick way to verify that the water is condensation is to shut off the unit and keep the pool pump running. If the water stops running out of the basepan, it is condensation. AN EVEN QUICKER WAY IS to TEST THE DRAIN WATER FOR CHLORINE - if the is no chlorine present, then it's condensation.

Swimming Pool Heat Pumps Electrical Wiring

NOTE -

Although the unit heat exchanger is electrically isolated from the rest of the unit, it simply prevents the flow of electricity to or from the pool water. Grounding the unit is still required to protect you against short circuits inside the unit. Bonding is also required.

The unit has a separate molded-in junction box with a standard electrical conduit nipple already in place. Just remove the screws and the front panel, feed your supply lines in through the conduit nipple and wire-nut the electric supply wires to the three connections already in the junction box (four connections if three phase). To complete electrical hookup, connect Heat Pump by electrical conduit, UF cable or other suitable means as specified (as permitted by local electrical authorities) to a dedicated AC power supply branch circuit equipped with the proper circuit breaker, disconnect or time delay fuse protection.

Disconnect - A disconnect means (circuit breaker, fused or un-fused switch) should be located within sight of and readily accessible from the unit. This is common practice on commercial and residential air conditioners and heat pumps. It prevents remotely-energizing unattended equipment and permits turning off power at the unit while the unit is being serviced.

Initial startup of the Unit

NOTE -

In order for the unit to heat the pool or spa, the filter pump must be running to circulate water through the heat exchanger.

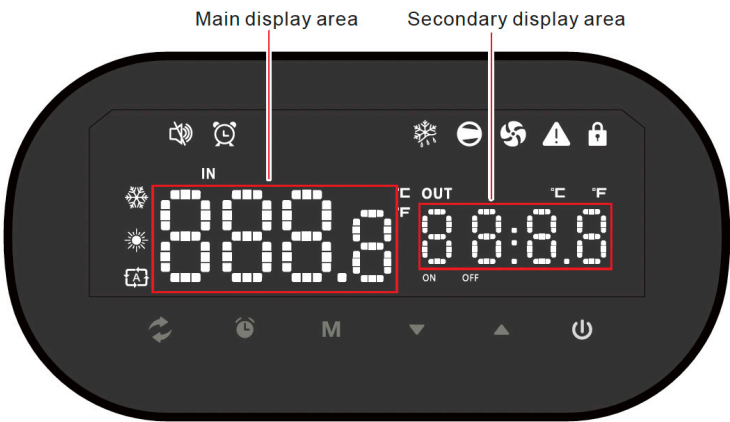
Start up Procedure - After installation is completed, you should follow these steps:

01. Turn on your filter pump. Check for water leaks and verify flow to and from the pool.
02. Turn on the electrical power supply to the unit, then press the key ON/OFF of wire controller. It should start in several seconds.
03. After running a few minutes make sure the air leaving the top(side) of the unit is cooler (Between 5-10°C)
04. With the unit operating turn the filter pump off. The unit should also turn off automatically,
05. Allow the unit and pool pump to run 24 hours per day until desired pool water temperature is reached. When the water-in temperature reaches this setting, the unit will slow down for a period of time, if the temperature is maintained for 45 minutes the unit will turn off. The unit will now automatically restart (as long as your pool pump is running) when the pool temperature drops more than 0.2 below set temperature.

Time Delay: The unit is equipped with a 3 minute built-in solid state restart delay included to protect control circuit components and to eliminate restart cycling and contactor chatter. This time delay will automatically restart the unit approximately 3 minutes after each control circuit interruption. Even a brief power interruption will activate the solid state 3 minute restart delay and prevent the unit from starting until the 5 minute countdown is completed.



Function of wire controller




Key and icon function instruction

Key function instruction:

Key	Key name	Key function
	Switch	Switching secondary area display, switching between outlet temperature and time.
	Setting	Press this key to enter the setting interface and confirm saving.
	Mode	Press this key to change the mode and setting the parameter.
	Down	Press this key to select the downward option or decrease the parameter value.
	Up	Press this key to select the upward option or increase the parameter value.
	ON/OFF	Press this key to turn on/off the unit.

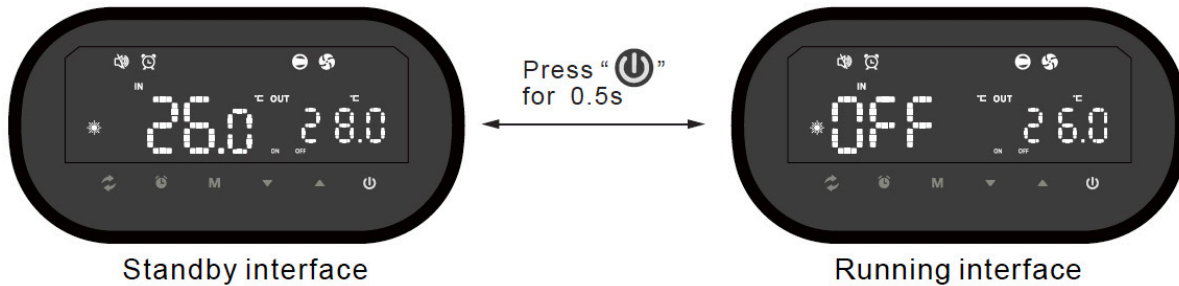
Icon function instruction:

Icon	Icon name	Icon function
	Mute	Display when timer silent is enabled.
	Timing	Display when timer on/off is enabled.
	Defrosting	Display when Defrosting function is enabled.
	Compressor	Display when compressor is on.
	Fan	Display when fan is on.
	Fault icon	Display when a fault occurs.
	Lock	Display when the screen is locked.
	Cooling	Display at cooling mode.
	Heating	Display at heating mode.
	Auto	Display at auto mode.
	Inlet	Display when the main area displays the inlet water temp.
	Outlet	Display when the axillary area displays the outlet water temp.
	Celsius	Display when the main area or axillary area display degrees Celsius.
	Fahrenheit	Display when the main area or axillary area display degrees Fahrenheit.
	Timer On/Off	Display after the user sets the timer on/off settings, and the function is started.

Turn ON/OFF the unit

When the unit is off, press the key "⏻" and hold on for 0.5s to turn on the unit;

When the unit is on, press the key "⏻" and hold on for 0.5s to turn off the unit.



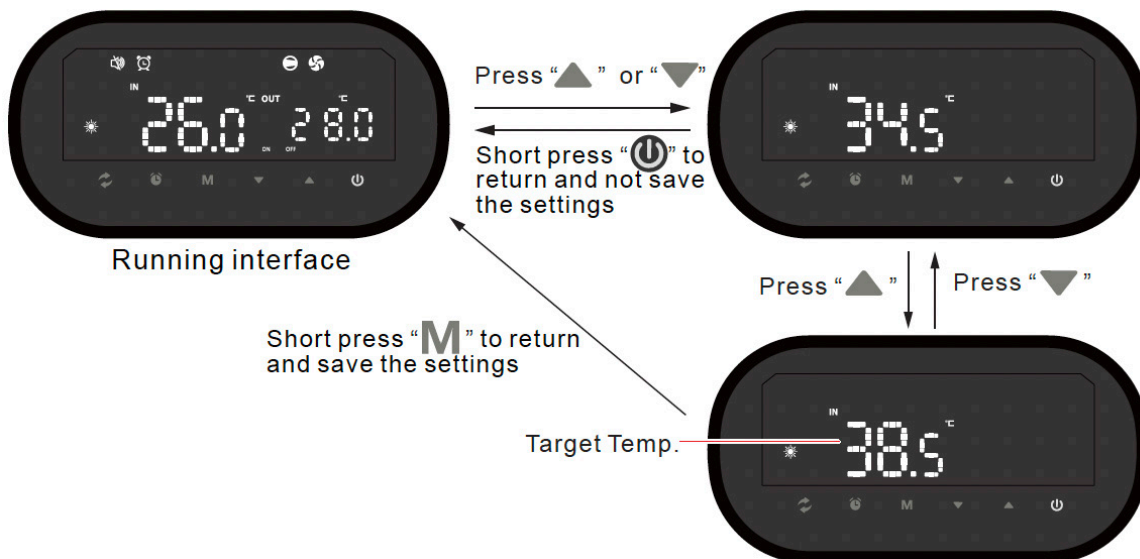
NOTE -

1. Turn on/off the unit can only be conducted in the main interface.
2. If there is no operation for 1 minute, it will display with full screen off, click any key for returning to ON/OFF main interface.

Setting temperature

In the running interface, press "▲" or "▼" then the current mode target-temperature flashes, then press "▲" to increase the temp.value, or press "▼" to decrease it. Press "⏻" will not save the settings but back to the main interface. Press "M" will save the settings and back to the main interface.

Attention: If there is no operation for 5s, system will remember parameter setting and back to the main interface.



NOTE -

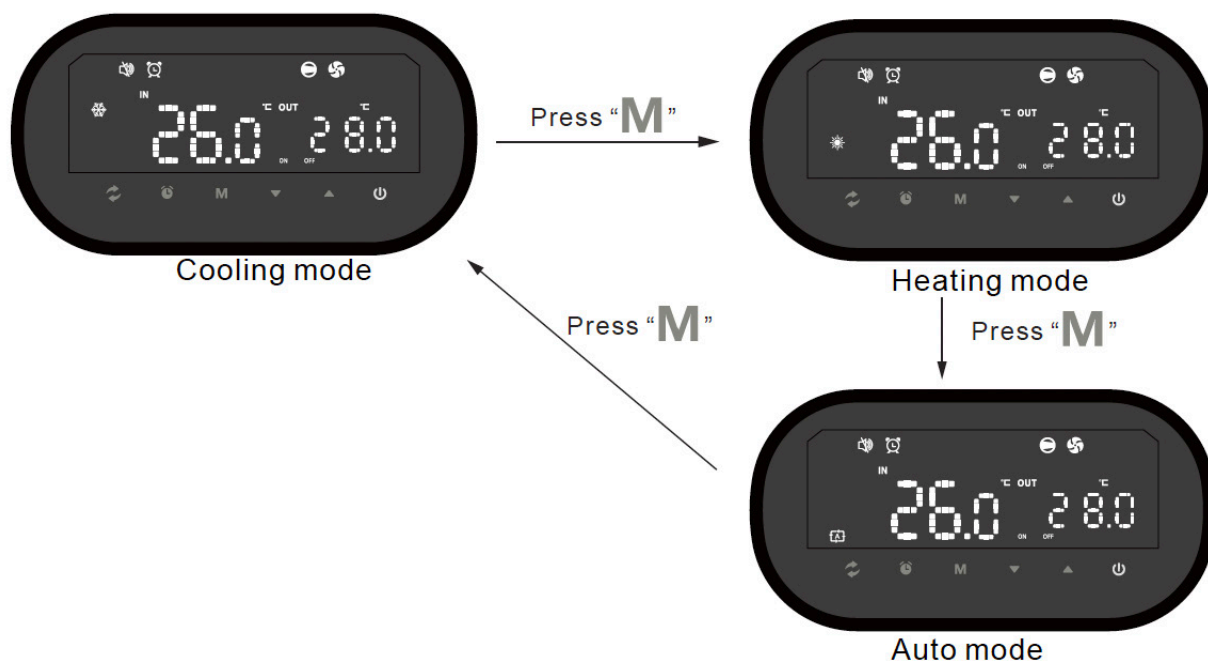
Operation: Press "▲" or "▼" to change each time.
Range of temp. variation 0.5°C/1°F

Mode switch

In the main interface, short press “**M**” to enter mode setting interface, the current mode icon flashes for 2s (at this point the wire controller does not send a mode change signal to the mainboard), then stops flashing and lights up, the mode change is successful.

NOTE -

1. Mode switch operation can only be conducted in the main interface.
2. The modes switching is useless of the unit you buy which is singel-cold/single-heat unit.

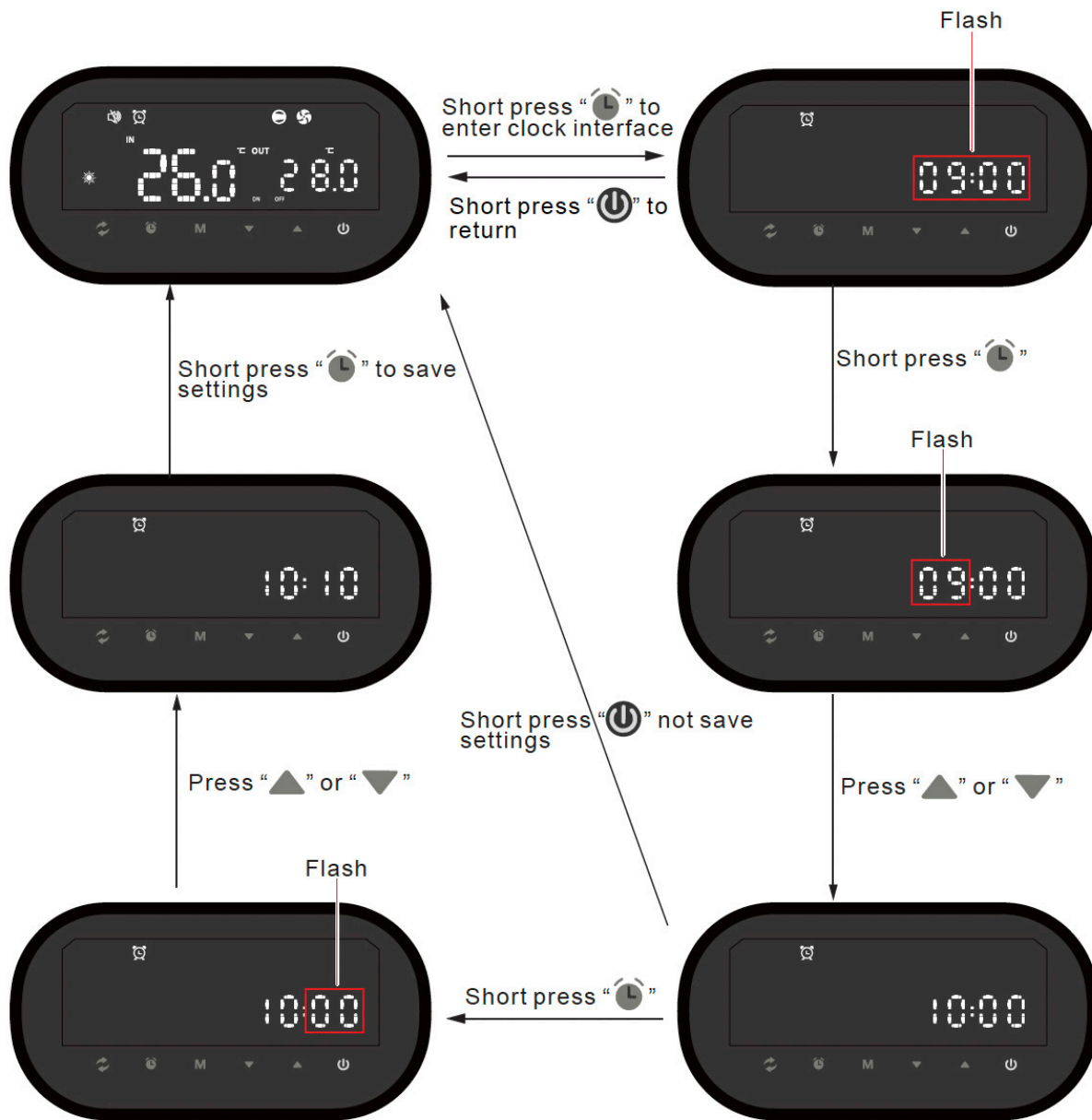


System time

In the main interface, short press “” to enter system time setting interface, the current time flashes, then short press “” hour digit flashes, press “” or “” to change the value, each time change 1H; Again short press minute digit flashes, press “” or “” to change the value, each time change 1min. Press “” to save the setting.

NOTE -

1. Under the clock setting interface, if short press “”, the change will not be saved and return to the main interface.
2. If there is no operation for 5s, system will remember parameter setting and back to the main interface.



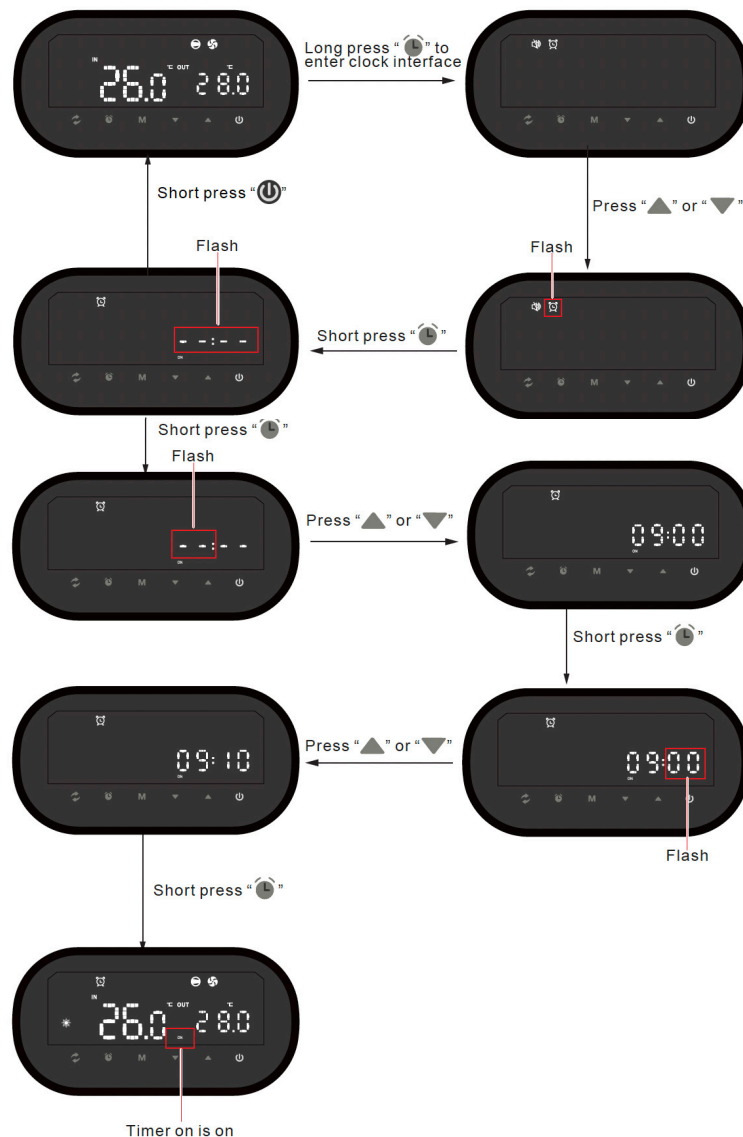
Timer on/off

In the main interface, long press "⌚" for 2s to enter timer function selection interface. Press "▲" or "▼" to select the clock and mute icon, when the clock icon is blinking, press the "⌚" to enter the timer on/off setting interface, short press "▲" or "▼" can switch to check the setting situation of timer on and off, when ON blinks, short press "⌚" to enter the interface of hour setting of timer on. Press "▲" or "▼" to modify the value of hour position of timer on, the precision is 1H; press "⌚" again to enter the interface of hour setting of timer on. Press "▲" or "▼" to modify the value of timer on minute, the precision is 10min; short press "⌚" to save the setting. Timer Off operation refers to the setting of Timer on.

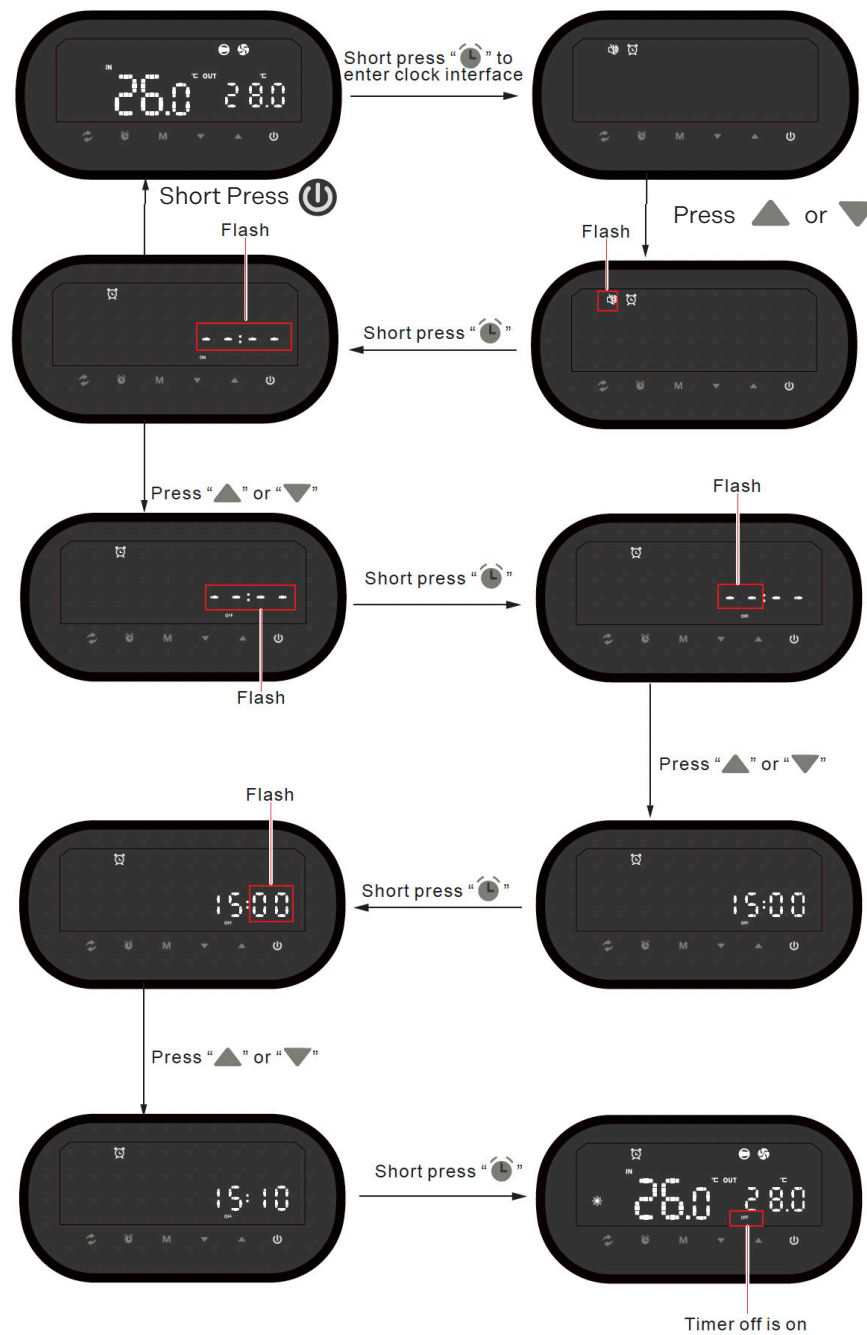
NOTE -

1. Press "⏻" during the timer on setting can cancel the timer on;
2. Press "⏻" during the timer off setting can cancel the timer off;
3. If there is no operation for 20s, system will save the settings and back to the main interface.

Timer on setting:



Timer off setting:



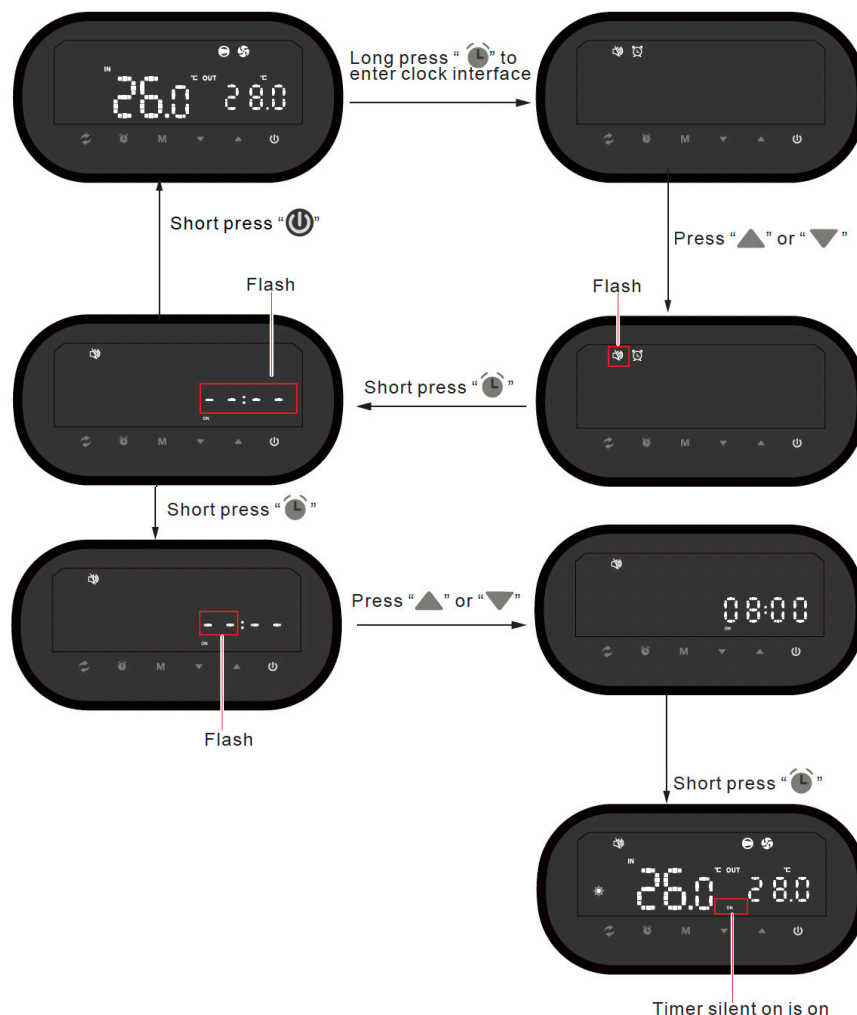
Timer silent

In the main interface, long press "⌚" for 2s to enter timer function selection interface. Press "▲" or "▼" to select the clock and mute icon, when the mute icon is blinking, press the "⌚" to enter the timer silent setting interface, short press "▲" or "▼" can switch to check the setting situation of timer silent on and off, when ON blinks, short press "⌚" to enter the interface of hour setting of timer silent ON. Press "▲" or "▼" to modify the value of hour position of timer silent on, the precision is 1H; press "⌚" again to enter the interface of minute setting of timer silent ON. Press "▲" or "▼" to modify the value of timer on minute, the precision is 10min; short press "⌚" to save the setting. Timer Off operation refers to the setting of Timer on.

NOTE -

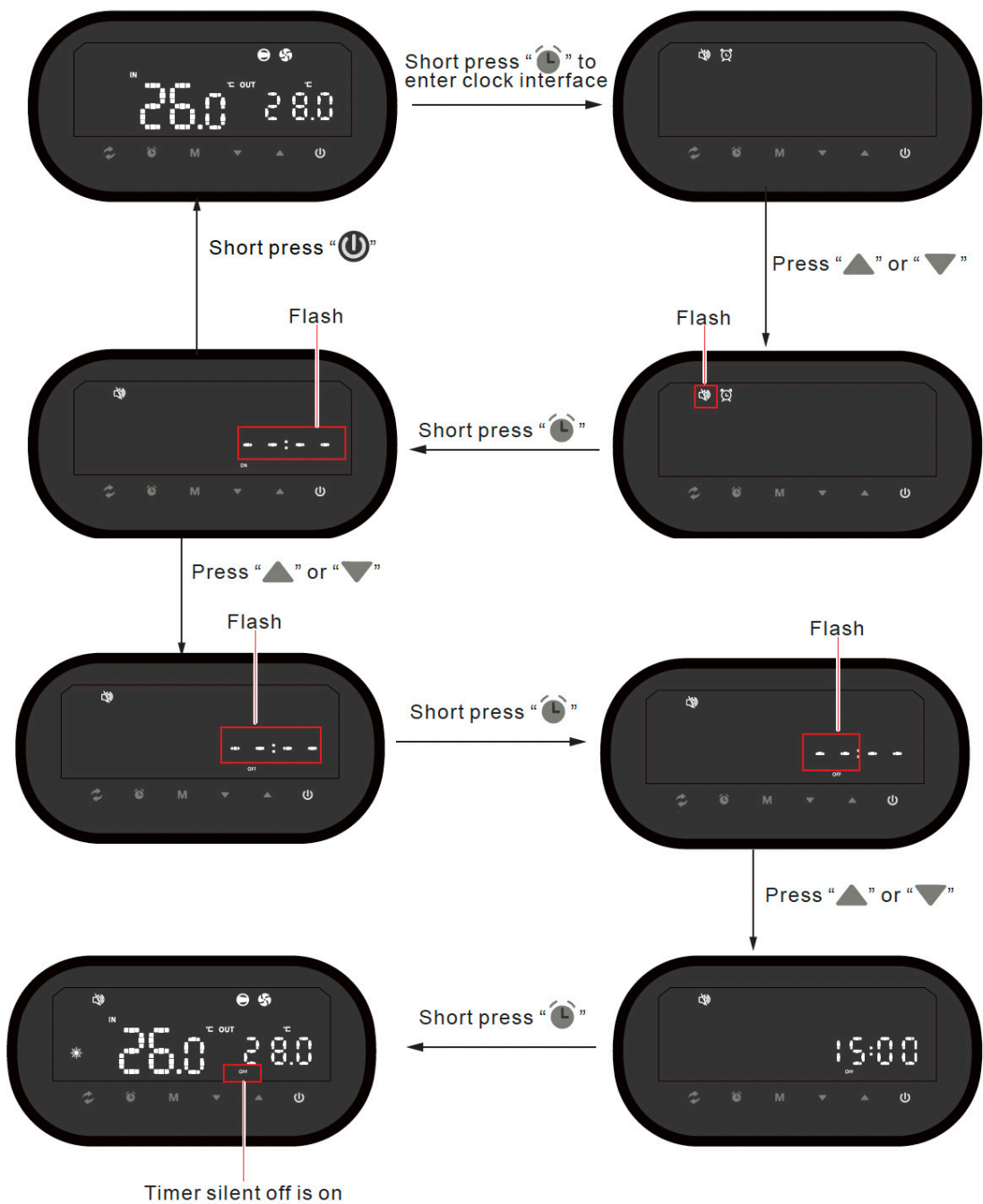
1. Press "⏻" during the timer on setting can cancel the timer on;
2. Press "⏻" during the timer off setting can cancel the timer off;
3. If there is no operation for 20s, system will save the settings and back to the main interface.

Timer silent on setting:






Timer silent off setting:

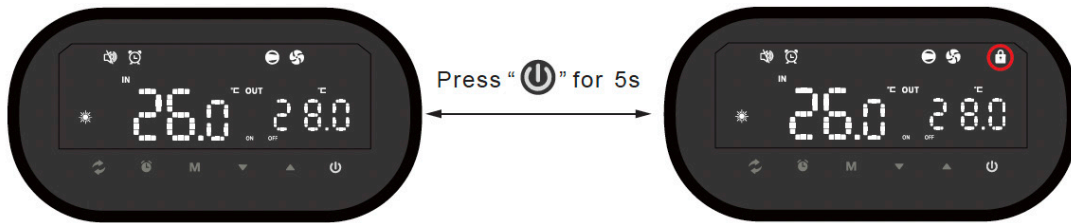


Keyboard lock


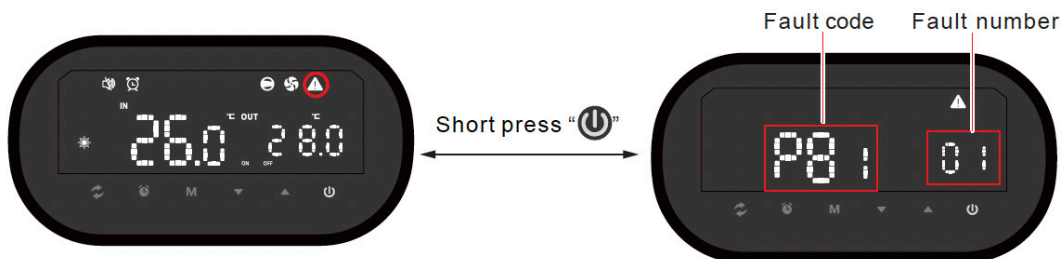
To avoid mis-operations, please lock the controller after completing the setting. In the main interface, pressing “

NOTE -


1. When the unit is in alarming state, the screen will be unlocked automatically;
2. In the locked state, press any key can still illuminate the screen.



Malfunction display

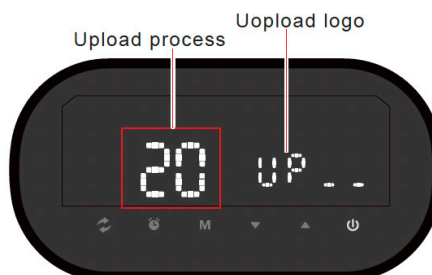
There will be malfunction code showing on the controller screen when relative malfunction occurs. If there are more than one malfunction occur at the same time, you can check the current error codes list by pressing “


NOTE -

1. In the fault interface, press “

Upload display

When the unit is uploading, the wire controller can display the following interface. All buttons are invalid, do not turn off the screen.



Malfunction table

The common failure cause and solution.

Protect/fault	Fault display	Reason	Elimination methods
Inlet Temp. Sensor Fault	P01	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Outlet Temp. Sensor Fault	P02	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Amibent Temp. Sensor Fault	P04	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Coil 1 Temp. Sensor Fault	P05	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Coil 2 Temp. Sensor Fault	P15	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Suction Temp. Sensor Fault	P07	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Discharge Temp. Sensor Fault	P081	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Exhaust Air over Temp Prot.	P082	The compressor is overload.	Check whether the system of the compressor running normally.
Antifreeze Temp. Sensor Fault	P09	Antifreeze temp. sensor is broken or short circuit.	Check whether the system of the compressor running normally.
Pressure Sensor Fault	PP	The pressure sensor is broken.	Check or change the pressure sensor or pressure.
High Pressure Prot.	E01	The high-preesure switch is broken.	Check the pressure switch and cold circuit.
Low Pressure Prot.	E02	The low-preesure switch is broken.	Check the pressure switch and cold circuit.
Flow Switch Prot.	E03	No water/little water in water system.	Check the pipe water flow and water pump.
Waterway Anti-freezing Prot.	E05	Water temp.or ambient is too low.	Check the water temp. and ambient temp.
Inlet and outlet temp. too big	E06	Water flow is not enough and low differential pressure.	Check the pipe water flow and whether water system is jammed or not.
Anti-freezing Prot.	E07	Water flow is not enough.	Check the pipe water flow and whether water system is jammed or not.
Primary Anti-freezing Prot.	E19	The ambient temp. is low.	Check the ambient temp. sensor.
Secondary Anti-freezing Prot.	E29	The ambient temp. is low.	Check the ambient temp. sensor.
Comp. Overcurrent Prot.	E051	The compressor is overload.	Check whether the system of the compressor-running normally.
Communication Fault	E08	Communication failure between wire controller and mainboard.	Check the wire connection between remote wire-controller and main board.
Communication Fault (speed control module)	E081	Speed control module and main board communication fail.	Check the communication connection.
Low AT Protection	TP	Ambient temp. is too low.	Check the ambient temp. sensor.
EC fan feedback Fault	F051	There is something wrong with fan motor and fan motor stops running.	Check whether fan motor is broken or locked or not.
Fan Motor1 Fault	F031	1. Motor is in locked-rotor state. 2.The wire connection between DC-fan motor module and fan motor is in bad contact.	1.Change a new fan motor 2.Check the wire connection and make sure they are in good contact
Fan Motor2 Fault	F032	1. Motor is in locked-rotor state. 2.The wire connection between DC-fan motor module and fan motor is in bad contact.	1.Change a new fan motor 2.Check the wire connection and make sure they are in good contact

Frequency conversion board fault table:

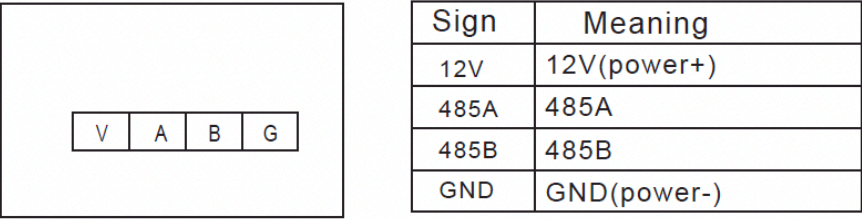
Protect/fault	Fault display	Reason	Elimination methods
Drv1 MOP alarm	F01	MOP drive alarm.	Recovery after the 150s.
Inverter offline	F02	Frequency conversion board and mainboard communication failure.	Check the communication connection.
IPM protection	F03	IPM modular protection.	Recovery after the 150s.
Comp. Driver Failure	F04	Lack of phase, step or drive hardware damage.	Check the measuring voltage , check requence conversion board hardware.
DC Fan Fault	F05	Motor current feedback open circuit or short circuit.	Check whether current return wires connected motor.
IPM Overcurrent	F06	IPM Input current is large.	Check and adjust the current measurement.
Inv. DC Overvoltage	F07	DC bus voltage>Dc bus over-voltage protection value.	Check the input voltage measurement.
Inv. DC Lessvoltage	F08	DC bus voltage<Dc bus over-voltage protection value.	Check the input voltage measurement.
Inv. Input Lessvolt.	F09	The input voltage is low,causing the inpuccurrent is high.	Check the input voltage measurement.
Inv. Input Overvolt.	F10	The input voltage is too high,more than outage protection current RMS.	Check the input voltage measurement.
Inv. Sampling Volt.	F11	The input voltage sampling fault.	Check and adjust the current measurement.
Comm. Err DSP-PFC	F12	DSP and PFC connect fault.	Check the communication connection.
Input Over Cur.	F26	The equipment load is too large.	Check whether the unit is overloaded.
PFC fault	F27	The PFC circuit protection.	Check the PFC switch tube short circuit or not.
IPM Overheating	F15	The IPM module is overheat.	Check and adjust the current measurement.
Weak Magnetic Warn	F16	Compressor magnetic force is not enough.	Restart the unit after multiple power failures, if the fault still exists, replace the compressor.
Inv. Input Out Phase	F17	The input voltage lost phase.	Check and measure the voltage adjustment.
IPM Sampling Cur.	F18	IPM sampling electricity is fault.	Check and adjust the current measurement.
Inv. Temp. Probe Fail	F19	The temp. sensor is broken or short circuit.	Check or change the temp. sensor.
Inverter Overheating	F20	The transducer is overheat.	Check and adjust the current measurement.
Inv. Overheating Warn	F22	Transducer temperature is too high.	Check and adjust the current measurement.
Comp. Over Cur. Warn	F23	Compressor electricity is large.	The compressor over-current protection.
Input Over Cur. Warn	F24	Input current is too large.	Check and adjust the current measurement.
EEPROM Error Warn	F25	MCU error.	Check whether the chip is damaged,replace the chip.
V15V over/undervoltage fault	F28	The V15V is overload or undervoltage.	Check the V15V input voltage in range 13.5v~16.5v or not.

Parameter list

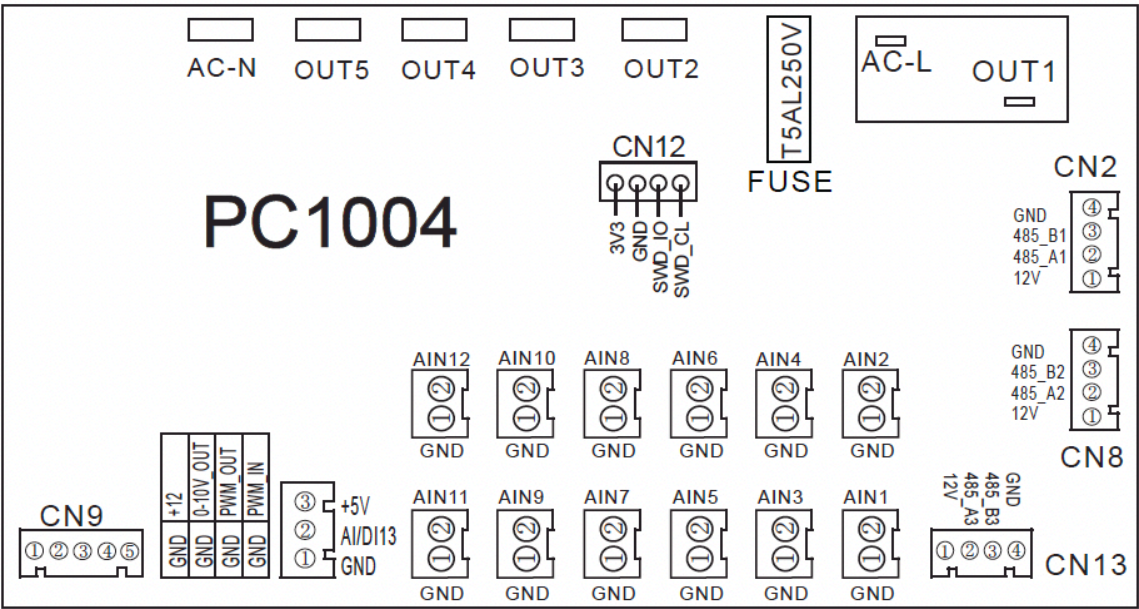
Meaning	Default	Remarks
Set-point of cooling mode target temp.	27°C	Adjustable
Set-point of heating mode target temp.	27°C	Adjustable
Set-point of auto mode target temp.	27°C	Adjustable

Interface drawing

Wire control interface diagram and definition



Controller interface diagram and definition



Main board of the input and output interface instructions below

Number	Sign	Meaning
01	OUT1	Compressor
02	OUT2	Water pump
03	OUT3	4-way valve
04	OUT4	High speed of fan
05	OUT5	Low speed of fan
06	AC-L	Live wire
07	AC-N	Neutral wire
08	AIN1	Emergency switch/SW1
09	AIN2	Water flow switch
10	AIN3	System low pressure
11	AIN4	System high pressure
12	AIN5	System suction temperature
13	AIN6	Water input temperature
14	AIN7	Water output temperature
15	AIN8	System fan coil 1 temperature
16	AIN9	Ambient temperature
17	AIN10	Mode switch / System fan coil 2 temperature/SW2
18	AIN11	Master-slave machine switch/Antifreeze temperature
19	AIN12	System exhaust temperature
20	AIN13	Compressor current detection/Pressure sensor
21	PWM_IN	Master-slave machine switch/Feedback signal of EC fan
22	PWM_OUT	AC fan control
23	O_10V_OUT	EC fan control
24	+5V	+5V
25	+12V	+12V
26	CN2	Frequency conversation board communications
27	CN8	WIFI / /3.5 inch color display communication port / DC fan speed control module
28	CN9	Electronic expansion valve
29	CN12	Program port
30	CN13	OMNI centralized control communication port



- 01. Check the water supply device and the release often. You should avoid the condition of no water or air entering into system, as this will influence unit's performance and reliability. You should clear the pool/spa filter regularly to avoid damage to the unit as a result of the dirty or clogged filter.
- 02. The area around the unit should be dry, clean and well ventilated. Clean the side heating exchanger regularly to maintain good heat exchange and conserve energy.
- 03. The operation pressure of the refrigerant system should only be serviced by a certified technician.
- 04. Check the power supply and cable connection often. Should the unit begin to operate abnormally, switch it off and contact the qualified technician.
- 05. Discharge all water in the water pump and water system, so that freezing of the water in the pump or water system does not occur. You should discharge the water at the bottom of water pump if the unit will not be used for an extended period of time. You should check the unit thoroughly and fill the system with water fully before using it for the first time.

Caution & Warning

01. The unit can only be repaired by qualified installer centre personnel or an authorised dealer.(for Europe market)
02. This appliance is not intended for use by persons (including children) with reduced physical sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. (for Europe market)
Children should be supervised to ensure that they do not play with the appliance.
03. Please make sure that the unit and power connection have good earthing, otherwise may cause electrical shock.
04. If the supply cord is damaged, it must be replaced by the manufacturer or our service agent or similarly qualified person in order to avoid a hazard.
05. Directive 2002/96/EC (WEEE): The symbol depicting a crossed-out waste bin that is underneath the appliance indicates that this product, at the end of its useful life, must be handled separately from domestic waste, must be taken to a recycling centre for electric and electronic devices or handed back to the dealer when purchasing an equivalent appliance.
06. Directive 2002/95/EC (RoHs): This product is compliant with directive 2002/95/EC (RoHs) concerning restrictions for the use of harmful substances in electric and electronic devices.
07. The unit CANNOT be installed near the flammable gas. Once there is any leakage of the gas, fire can be occur.
08. Make sure that there is circuit breaker for the unit, lack of circuit breaker can lead to electrical shock or fire.
09. The heat pump located inside the unit is equipped with an over-load protection system. It does not allow for the unit to start for at least 3 minutes from a previous stoppage.
10. The unit can only be repaired by the qualified personnel of an installer center or an authorized dealer. (for North America market)
11. Installation must be performed in accordance with the NEC/CEC by authorized person only. (for North America market)
12. USE SUPPLY WIRES SUITABLE FOR 75°C.
13. **Caution:** Single wall heat exchanger, not suitable for potable water connection.
14. The appliance shall be installed in accordance with national wiring regulations.
15. The appliance must be fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under overvoltage category III conditions, and these means must be incorporated in the fixed wiring in accordance with the wiring rules.
16. An all-pole disconnection switch having a contact separation of at least 3mm in all poles should be connected in fixed wiring.

Cable specification

(1) Single phase unit

Nameplate max. current	Phase line	Earth line	MCB	Creepage protector	Signal line
No more than 10A	2×1.5mm ²	1.5mm ²	20A	30mA less than 0.1 sec	n×0.5mm ²
10~16A	2×2.5mm ²	2.5mm ²	32A	30mA less than 0.1 sec	n×0.5mm ²
16~25A	2×4mm ²	4mm ²	40A	30mA less than 0.1 sec	n×0.5mm ²
25~32A	2×6mm ²	6mm ²	40A	30mA less than 0.1 sec	n×0.5mm ²
32~40A	2×10mm ²	10mm ²	63A	30mA less than 0.1 sec	n×0.5mm ²
40~63A	2×16mm ²	16mm ²	80A	30mA less than 0.1 sec	n×0.5mm ²
63~75A	2×25mm ²	25mm ²	100A	30mA less than 0.1 sec	n×0.5mm ²
75~101A	2×25mm ²	25mm ²	125A	30mA less than 0.1 sec	n×0.5mm ²
101~123A	2×35mm ²	35mm ²	160A	30mA less than 0.1 sec	n×0.5mm ²
123~148A	2×50mm ²	50mm ²	225A	30mA less than 0.1 sec	n×0.5mm ²
148~186A	2×70mm ²	70mm ²	250A	30mA less than 0.1 sec	n×0.5mm ²
186~224A	2×95mm ²	95mm ²	280A	30mA less than 0.1 sec	n×0.5mm ²

(2) Three phase unit

Nameplate max. current	Phase line	Earth line	MCB	Creepage protector	Signal line
No more than 10A	3×1.5mm ²	1.5mm ²	20A	30mA less than 0.1 sec	n×0.5mm ²
10~16A	3×2.5mm ²	2.5mm ²	32A	30mA less than 0.1 sec	n×0.5mm ²
16~25A	3×4mm ²	4mm ²	40A	30mA less than 0.1 sec	n×0.5mm ²
25~32A	3×6mm ²	6mm ²	40A	30mA less than 0.1 sec	n×0.5mm ²
32~40A	3×10mm ²	10mm ²	63A	30mA less than 0.1 sec	n×0.5mm ²
40~63A	3×16mm ²	16mm ²	80A	30mA less than 0.1 sec	n×0.5mm ²
63~75A	3×25mm ²	25mm ²	100A	30mA less than 0.1 sec	n×0.5mm ²
75~101A	3×25mm ²	25mm ²	125A	30mA less than 0.1 sec	n×0.5mm ²
101~123A	3×35mm ²	35mm ²	160A	30mA less than 0.1 sec	n×0.5mm ²
123~148A	3×50mm ²	50mm ²	225A	30mA less than 0.1 sec	n×0.5mm ²
148~186A	3×70mm ²	70mm ²	250A	30mA less than 0.1 sec	n×0.5mm ²
186~224A	3×95mm ²	95mm ²	280A	30mA less than 0.1 sec	n×0.5mm ²

When the unit will be installed at outdoor, please use the cable which can against UV.

Performance data of Swimming Pool Heat Pump Unit

REFRIGERANT : R410A

UNIT	INV1-115EE	INV1-140EE
Heating capacity (80°F air, 80°F water, 80% Humidity)	11.80~33.70 kW 40260~115000 Btu/h	16.85~41.00 kW 57490~140000 Btu/h
Heating Power Input	0.74~6.74 kW	1.05~8.20 kW
COP	16.0~5.0	16.0~5.0
Heating capacity (80°F air, 80°F water, 63% Humidity)	10.75~31.00 kW 36680~105800 Btu/h	15.30~38.40 kW 52200~131000 Btu/h
Heating Power Input	0.83~6.60 kW	1.18~8.00 kW
COP	13.0~4.7	13.0~4.8
Heating capacity (50°F air, 80°F water, 63% Humidity)	6.40~16.50 kW 21830~56300 Btu/h	10.40~18.50 kW 35500~63000 Btu/h
Heating Power Input	1.02~4.13 kW	1.65~4.51 kW
COP	6.3~4.0	6.3~4.1
Power Supply	208-230V/1N~/60Hz	208-230V/1N~/60Hz
Compressor Quantity	1	1
Compressor	Rotary	Rotary
Fan Quantity	1	1
Fan Power Input	250W	250W
Fan Rotate Speed	600-700 rpm	700-800 rpm
Fan Direction	vertical	vertical
Noise (1m)	53-59 dB(A)	50-61 dB(A)
Water Connection	2 inch	2 inch
Water Flow Volume	47.6(24.2~70.4) gal/m	59.0(30.8~88.0) gal/m
Heating Operating Water Temperature	48.2~10°F	48.2~104°F
Cooling Operating Water Temperature	48.2~86°F	48.2~86°F
Operating Water Pressure	14.5~145 PSIG	14.5~145 PSIG
Water Pressure Drop	2.36 PSIG	3.41 PSIG
Unit Net Dimensions(L/W/H)	See the drawing of the units	
Unit Ship Dimensions(L/W/H)	See package lable	
Net Weight	see nameplate	
Shipping Weight	see package label	

Operating range:

Ambient temperature: 19 - 109°F

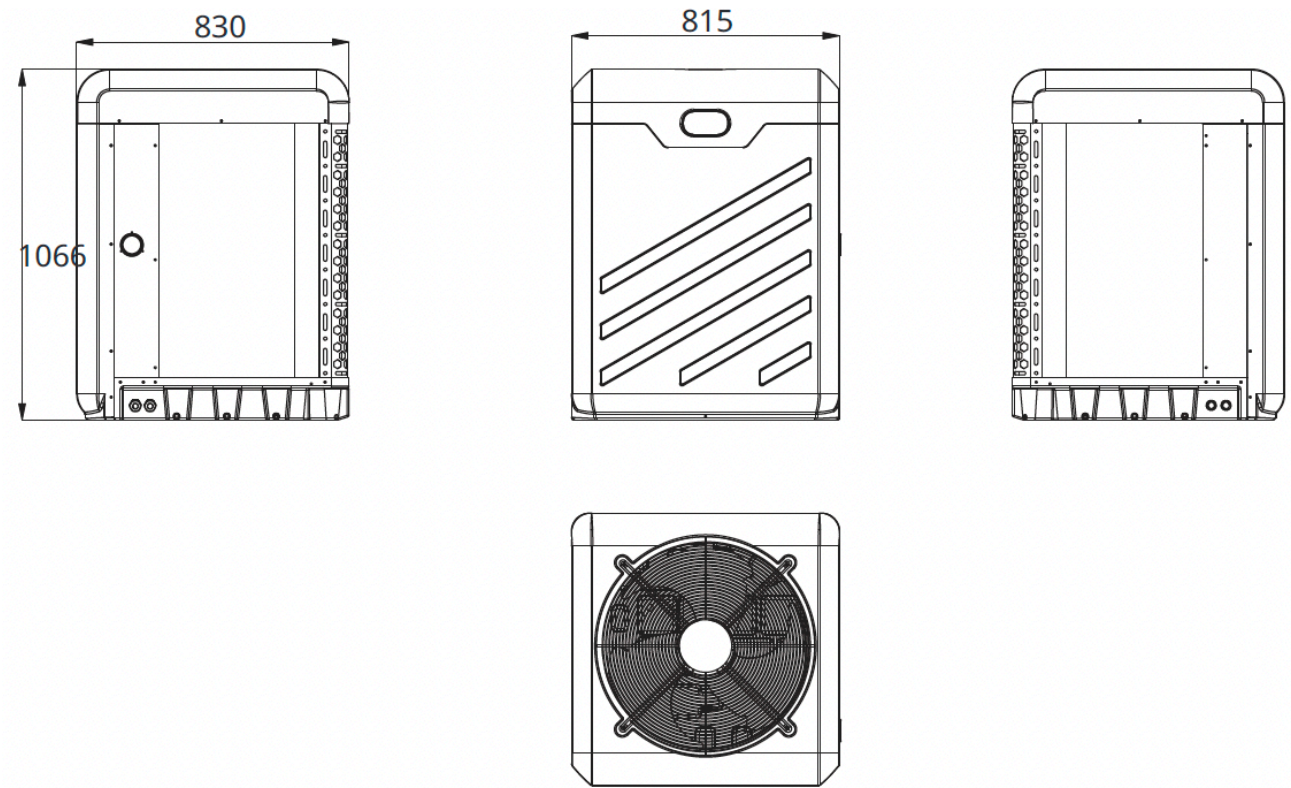
Water temperature: 48.2 - 104°F



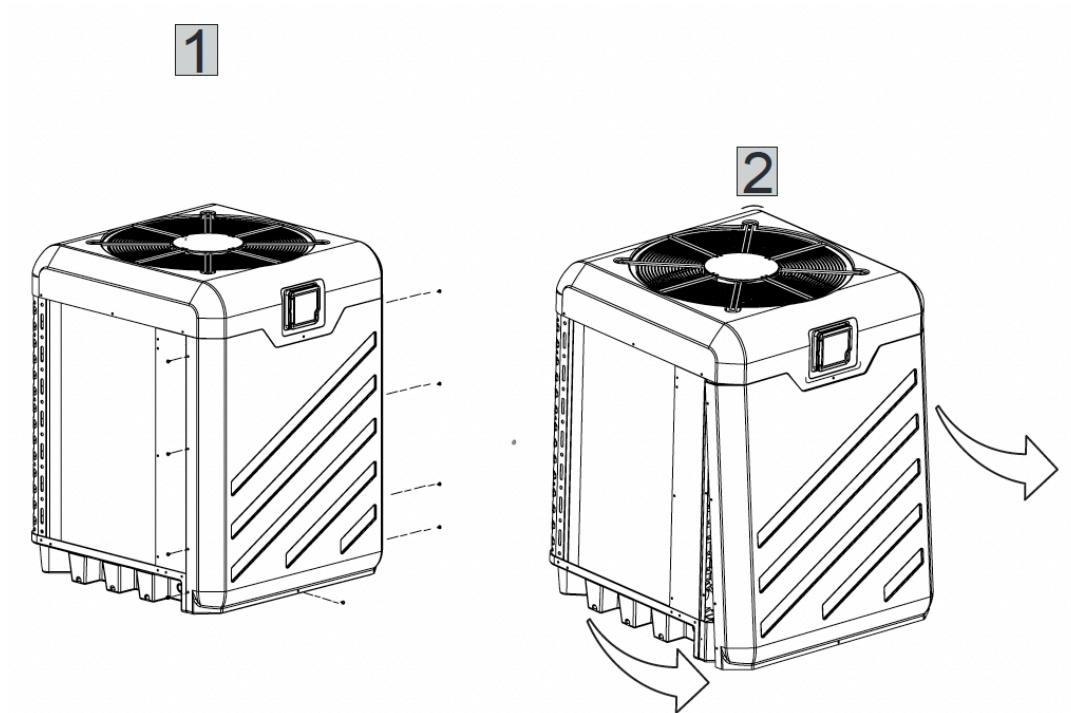
The dimensions for Swimming Pool Heat Pump Unit

Model: INV1-115EE/INV1-140EE

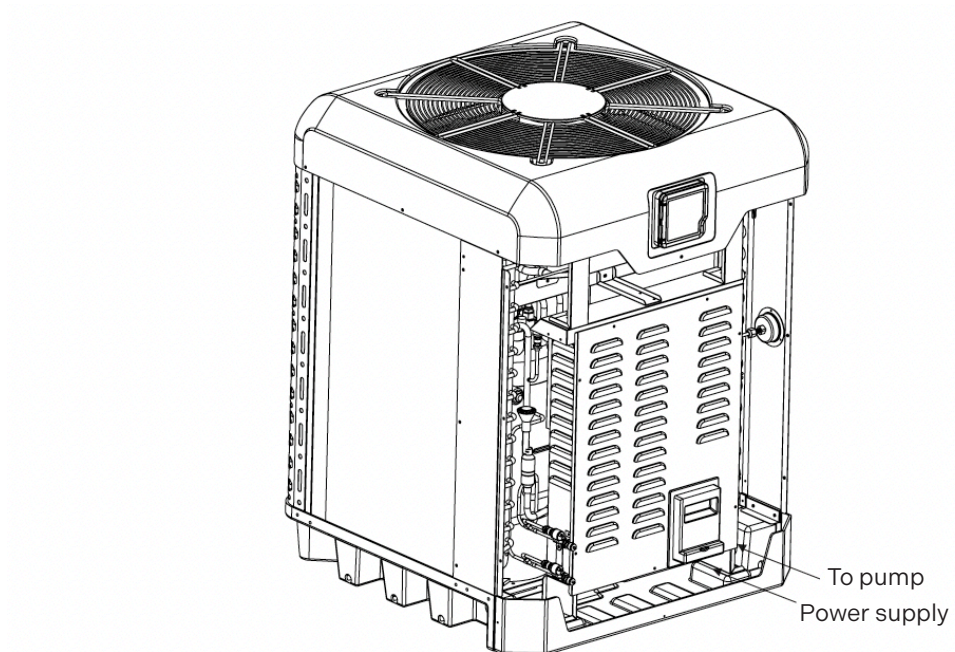
Unit: inch



How to disassemble the units



How the power cord go



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