



INSTALLATION & OPERATION MANUAL



EVO CONTROL

DOMESTIC HOT WATER & SPACE HEAT PUMP



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1. Introduction

This manual contains information relating to the installation, troubleshooting, operation, and maintenance of this EvoHeat unit. Instructions in this manual must always be followed. Failure to comply with these recommendations will invalidate the warranty. Should you have any questions or require technical support, call the EvoHeat office on 1300 859 933 to speak to our team.

The data and information contained in this manual is correct at the time of publishing and is subject to change without notice. For the most up to date manual, contact EvoHeat directly.



The Evo Control Series air to water heat pump is designed for multiple-use household heating requirements.

The Evo Control provides energy efficient space heating/cooling and floor heating – ALL IN THE ONE UNIT! The Evo Control series has one of the lowest running cost of any on-demand heating source.

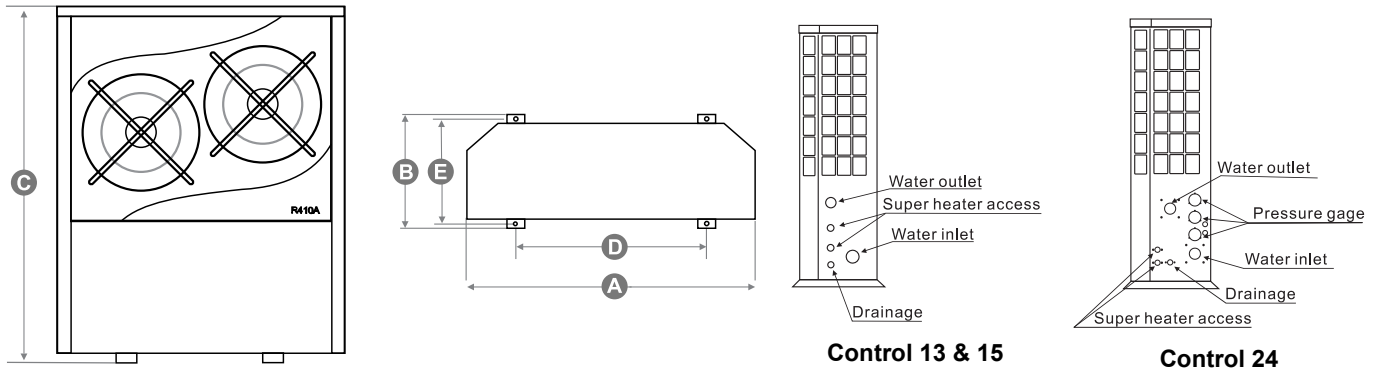
TECHNICAL DATA		Control 13	Control 15	Control 24
Heating Capacity	kW	13.0	15.0	22.5
	BTU/h	44200	51000	76500
*Heating Input Power	kW	3.1	3.6	6.43
*Heating C.O.P.	W/W	4.2	4.15	3.5
**Heating capacity	kW	12.5	14.0	20.5
	BTU/h	42500	47600	69700
**Heating Input Power	kW	3.86	4.29	6.61
**Heating C.O.P	W/W	3.24	3.26	3.1
Cooling Capacity	kW	9.5	10.5	17.0
	BTU/h	32300	35700	57800
Cooling Input Power	kW	3.5	4.1	6.8
Cooling EER	W/W	2.71	2.56	2.5
Power Supply	V/Ph/Hz	220-240/1/50	220-240/1/50	380-415/3/50
Compressor QTY & Type	/	2 x rotary	2 x rotary	3 x rotary
Water Pressure Drop	kPa	34	34	36
Noise at 1m	dB(A)	56	56	59
Electric Heating	kW	3.0	3.0	4.5
Max. Running Current	A	18.2+13.5	18.7+13.5	31.3+21.0 12.4+7.0
Net Dimensions	mm	1110/440/1350	1110/440/1350	1350/515/1450

*Heating: Ambient Temp (DB/WB): 7°C/6°C, Water Temp. (in/Out): 30°C/35°C;

**Heating: Ambient Temp (DB/WB): 7°C/6°C, Water Temp. (in/Out): 40°C/45°C;

Cooling: Ambient Temp, (DB/WB): 35°C/24°C, Water Temp (In/Out): 12°C/7°C

2. Dimensions



Unit: mm	A (L)	B (W)	C (H)	D	E
Control 13 & 15	1100	440	1350	700	400
Control 24	1350	515	1450	820	485

3. Safety Instructions



Installation, repair, or relocations must only be done by a fully qualified technician. If done incorrectly there is a number of hazards that can occur including fire, electric shock, water leakage and injury.

- Installation, repairs and maintenance of this unit must be performed by a qualified technician.
- Any wiring must comply with local electrical regulations.
- Ensure that the electrical supply corresponds to the specification indicated on the unit's makers plate before proceeding with the connection in accordance with the wiring diagram supplied.
- The unit must be earthed to avoid any risk caused by insulation defects.
- No wiring must come into contact with the heat source or the rotating fan parts.
- The unit must be handled and lifted with appropriate equipment in correlation with the unit's size and weight.
- Electrical power must be switched off before any work is started on the unit.
- Do not work on the electrical components if water or high humidity is present on site.
- When the unit is being connected, ensure that no impurities are introduced into the pipework and water circuits. A mesh filter must be provided on the hydraulic pump and in exchanger water inlets.
- If the supply cord is damaged, it must be replaced by the manufacturer.
- Do not expose the unit to or install near any flammable gases.
- Ensure there is a circuit breaker for this unit.
- The unit is equipped with an over-load protection system. After a previous stoppage, the unit will not start for at least 3 minutes.
- At the end of the unit's useful life, the unit must be taken to a recycling centre appropriate for electronic devices and not domestic waste.
- Use supply wires suitable for 75°C
- Caution: Single wall heat exchanger, not suitable for potable water connection.



WARNING

THIS PRODUCT CONTAINS A BUTTON BATTERY

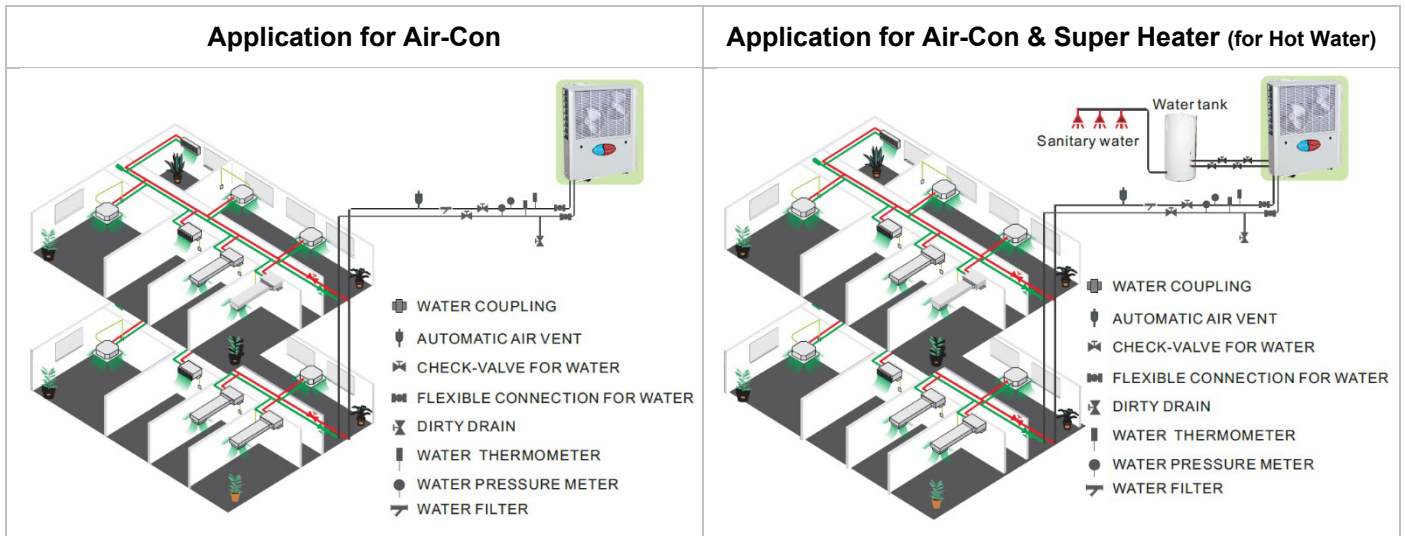
If swallowed, a lithium button battery can cause severe or fatal injuries within 2 hours.

Keep batteries out of reach of children.

If you think batteries may have been swallowed or placed inside any part of the body, seek immediate medical attention.

4. Installation

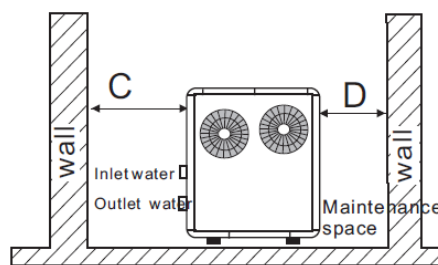
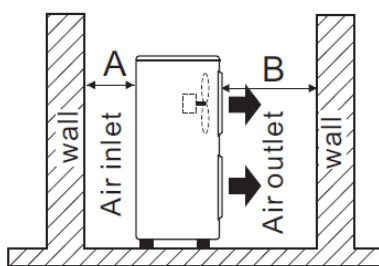
4.1 Applications



4.2 Location of Installation & Airflow Clearances

The heat pump can be installed onto a concrete basement by using expansion screws, or onto a steel frame with rubber feet which can be placed on the ground or the roof. Ensure that the unit is placed horizontally.

- The unit can be installed in any place outdoors which will be able to support the weight of a heavy unit such as a terrace, roof, the ground and any other places deemed suitable.
- The location must have good ventilation.
- The location must be free from heat radiation and other fire hazards.
- In cold climates, a pall is needed in winter to protect the unit from snow.
- There must be no obstacles near the inlet and outlet of the unit.
- The installation location must be protected from strong winds or air.
- There must be a water channel around the heat pump to drain condensing water.
- Leave enough space around the unit for maintenance.



A > 500mm
B > 1500mm
C > 1000mm
D > 500mm

4.3 Plumbing

- Try to reduce the resistance to the water from the piping.
- The piping must be clear and free from dirt and blockage. A water leakage test must be carried out to ensure that there is no water leaking before the installation can be made.
- The pipe must be tested by pressure separately. DO NOT test it together with the unit.
- There must be an expansion tank on the top point of the water loop, and the water level inside the tank must be at least 0.5meters higher than the top point of the water loop.
- The flow switch is installed inside of the heat pump, check to ensure that the wiring and action of the switch is normal and controlled by the controller.
- Try to avoid any air from being trapped inside the water pipe, there must be an air vent on the top point of the water loop.
- There must be a thermometer and pressure meter at the water inlet and outlet for easy inspection during running.

4.4 Electrical Connection



Always use a suitably qualified Electrician to perform any electrical work, they must read the manual before connecting.

Ensure all cabling, circuit breakers, and protections are of a suitable size and specification in accordance with electrical wiring legislation for the heater being installed. Ensure to check that there is adequate voltage and current available at the heater connection to run the unit.

- Open the front panel and open the power supply access.
- The power supply must go through the wire access and be connected to the power supply terminals in the controlling box. Then connect the 3-signal wire plugs of the wire controller and main controller.
- If an external water pump is required, insert the power supply wire into the wire access and connect it to the water pump terminals.
- If an additional auxiliary heater is needed to be controlled by the heat pump controller, the relay (or power) of the aux-heater must be connected to the relevant output of the controller.

4.5 Initial Start-Up

INSPECTION BEFORE TRIAL OPERATION

- Check the indoor unit, make sure that the pipe connection is done correctly, and the relevant valves are open.
- Check the water loop to ensure that the water inside of the expansion tank is filled to an appropriate level, and the water supply is working, and the water loop is full of water and free of trapped air. Make sure there is good insulation for the water pipe.
- Check the electrical wiring. Make sure that the power voltage is normal, the screws are fastened, the wiring is made in line with the diagram and that the earthing is connected.
- Check that the heat pump includes all the screws and components, and that they are in good order. When powering the unit on, review the indicator on the controller to see if there is any indication of failure. The gas gauge can be connected to the check valve to see the high pressure (or low pressure) of the system during trial running.

TRIAL OPERATION

- Start the heat pump by pressing the 'UP' or 'DOWN' arrow key on the controller. Check whether the water pump is running, if it runs normally there will be 0.2MPa on the water pressure meter.
- When the water pump has ran for a minute, the compressor will start. Listen for any strange sounds from the compressor, if an abnormal sound occurs, stop the unit and check the compressor. If the compressor runs well, look for the pressure meter of the refrigerant.
- Check whether the power input and running current is in line with the manual. If not, stop and check.
- Adjust the valved on the water loop to make sure that the hot (cool) water supply to each door is good and meets the requirements of heating (or cooling).
- Review whether the outlet water temperature is stable.
- The parameters of the controller are set by the factory, the user cannot change these themselves.

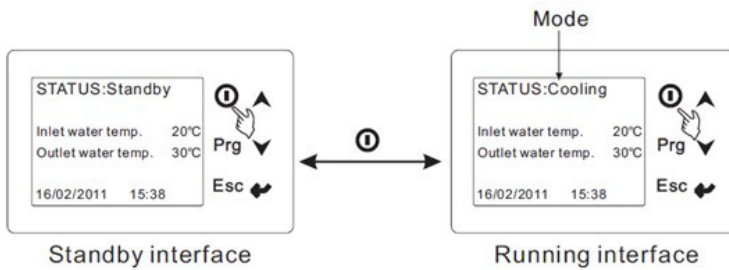
5. Operation

5.1 Operation Instructions (Control 13 & 15)

		ON/OFF	Turn the unit on or off.
	Prg	MENU	Press this button to enter the menu.
	Esc	ESCAPE	Return to the last interface.
		ENTER	Enter next menu OR change a parameter value.
		UP	Press this key to select the upwards option or increase the parameter value.
		DOWN	Press this key to select the downwards option or decrease the parameter value.

5.1.1 Starting & Shutting Down

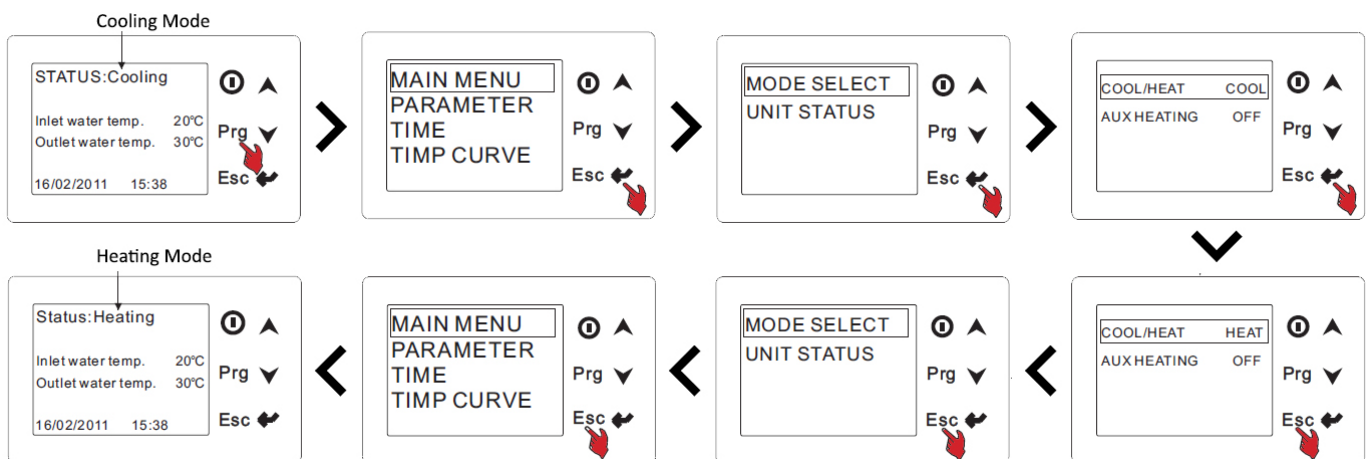
To turn on/off the unit, press the **ON/OFF** button for 1 second. The screen will display as following for each state:



5.1.2 Switching Modes

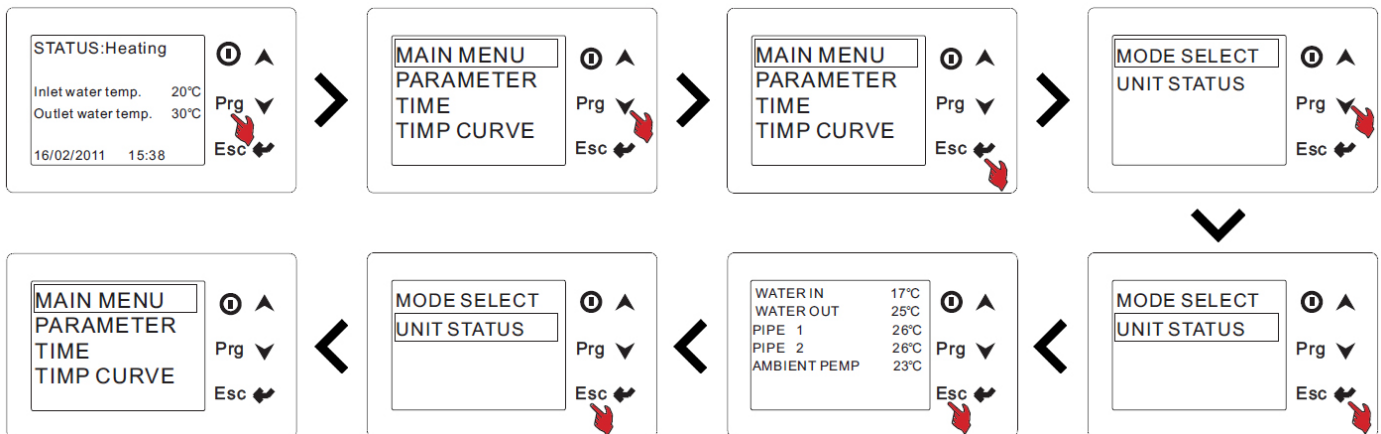
To select the mode, press the **MENU** Prg button. From here, use the **ENTER** button to choose **MAIN MENU**. Press the button again to enter **MODE SELECT**. Press the button on the chosen setting to switch between options. Press the **ESCAPE** Esc button once to save your settings, and twice to return back.

If the unit system is cool-only or electrical-heat, COOL or HEAT mode are unable to be changed. If the unit system is without electrical-heat, the AUX HEATING will not be able to be changed.



5.1.3 System State Checking

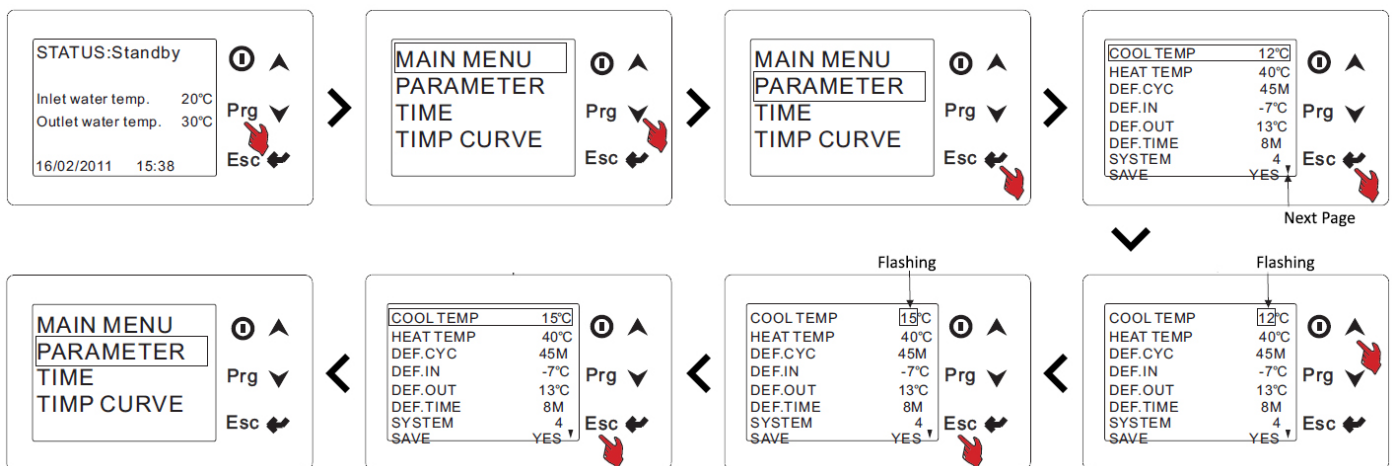
To check the unit state, press the **MENU Prg** button. From here, press the **ENTER** button. Press down again and select **UNIT STATUS**. Press the Escape button to return.



5.1.4 Check Parameters

While the unit is in the off state, press the **MENU Prg** key, then the down button until you reach Parameter. Select Parameter to access the menu where you can change values of different options. Press the **ENTER** button on an option to change the value, when the number is flashing this indicates it is selected and changeable.

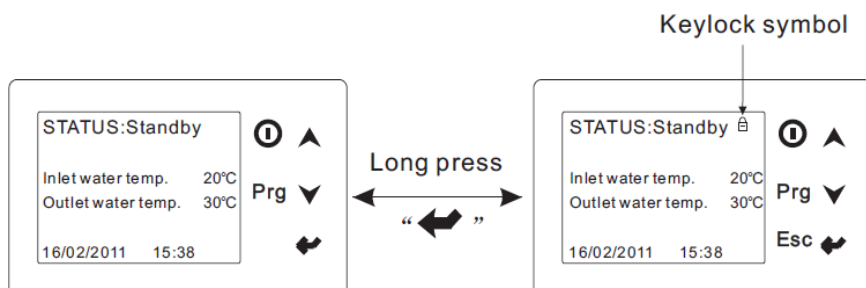
Use the **UP** or **DOWN** arrows to adjust the value. Press the **ESCAPE Esc** button once to save your settings and twice to return to the previous interface.



5.1.5 Keyboard Lock

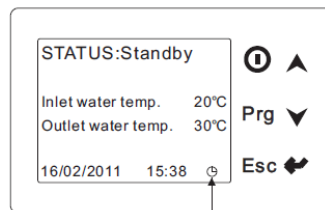
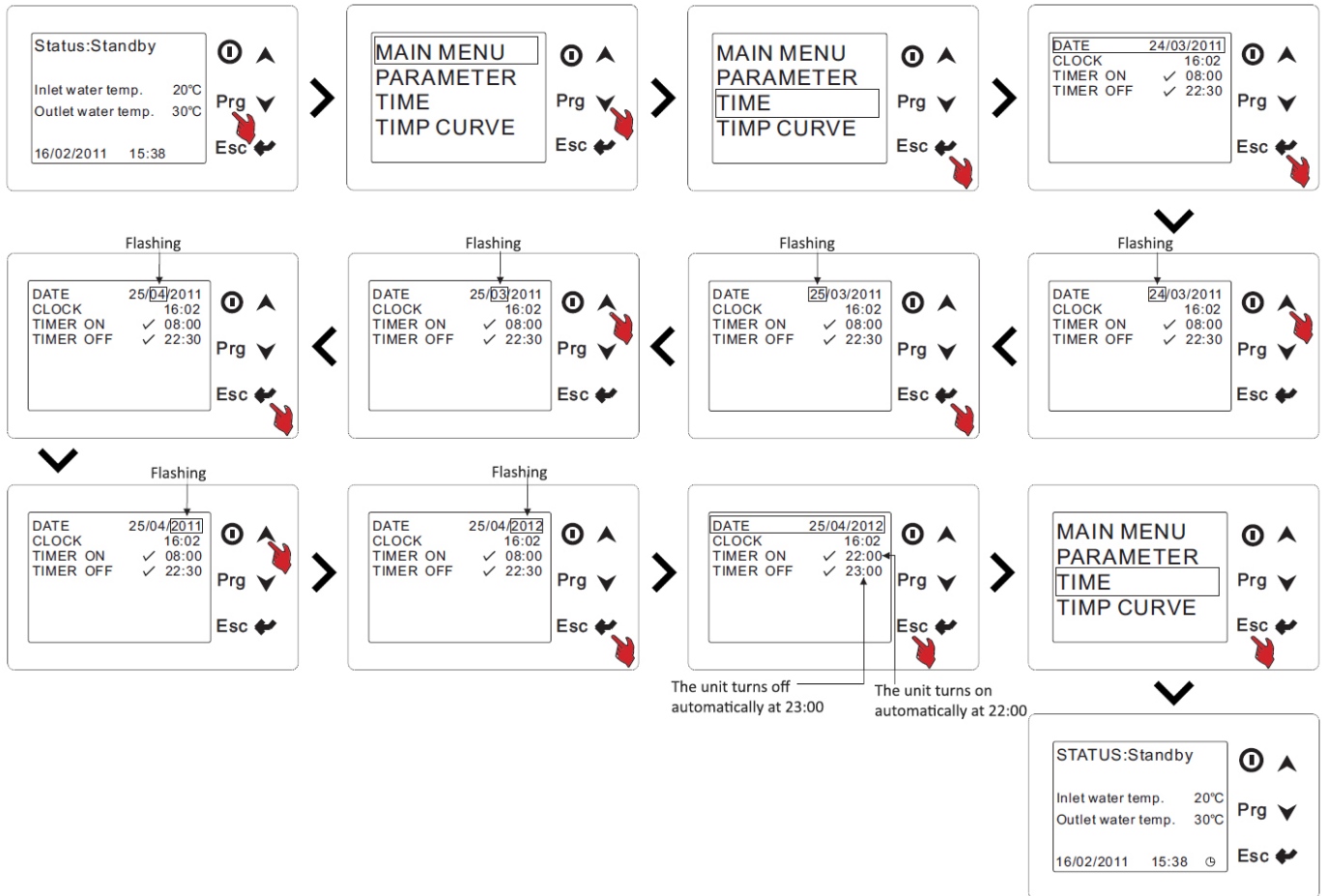
To prevent others using the controller it is recommended to lock the keyboard after adjusting settings. Hold the **ENTER** key until the screens shows a keylock symbol at the top. This will lock the unit so no changes can be made.

To unlock the unit, long press the **ENTER** key until the keylock symbol disappears.



5.1.6 System Time & Timer Settings

Press **MENU** Prg and you will see the Time interface option. Use the **DOWN** ▼ arrow to reach it then press **ENTER** ↵. Use the Up and Down arrows to reach the value you wish to change, then press **ENTER** ↵. While the value is flashing, use the Up and Down arrow to adjust the value. Press **ENTER** ↵ to save the settings or **ESCAPE** to return back without saving the settings.

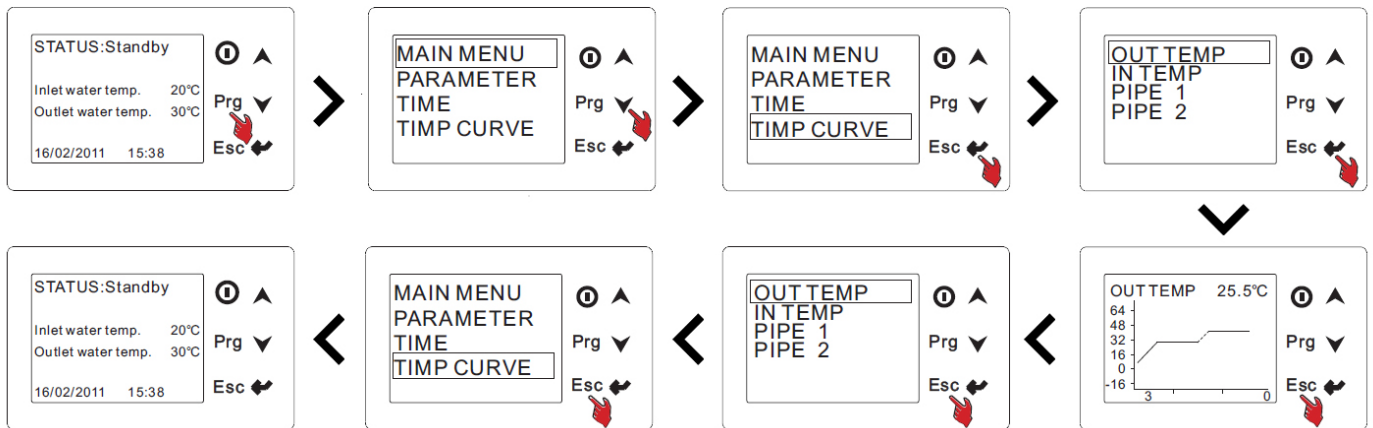


The unit will turn on or shut down automatically

Note: When there is an 'X' showing on the TIMER ON & TIMER OFF options, this means the unit will not be able to turn on or shut down automatically. When there is a clock icon (as shown below), it means that the timer has been set.

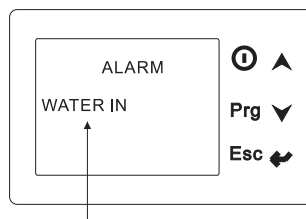
5.1.7 Temperature Curve

From the main screen, to check the temperature curves of the: water inlet, water outlet, coil 1, coil 2, coil 3 & coil 4; press the **MENU Prg** key. Press the Down button to reach **TEMP CURVE** and then press the **ENTER** button. From here you can choose to view the temperature curve for any of the beforementioned options. Press the **ESCAPE** button to return.



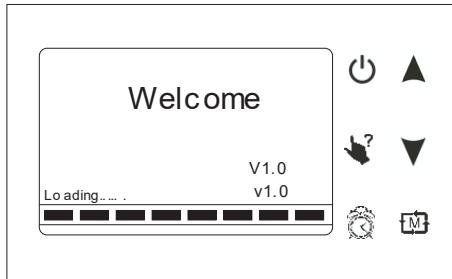
5.1.8 Malfunctions

If there is an error with the unit, the system will display a malfunction code according to the reason of the fault. Refer to the *Troubleshooting* section of this manual for code meanings.



There is something wrong with the temperature sensor of inlet water .

5.2 Operating Functions (Control 24)

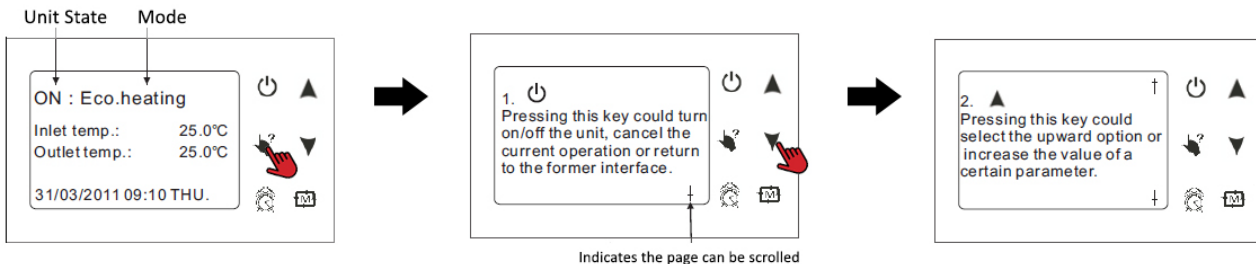


	ON/OFF	Press this button to start up/shut off the unit, cancel current operation or go back to previous interface.
	HELP	Press this button to check button function of system state.
	MODE	Press this button to change the current mode, page up or confirm current operation.
	CLOCK	Press this button to set the clock or turn the timer on/off.
	UP	Press this key to select the upwards option or increase the parameter value.
	DOWN	Press this key to select the downwards option or decrease the parameter value.

5.2.1 Using the HELP Button

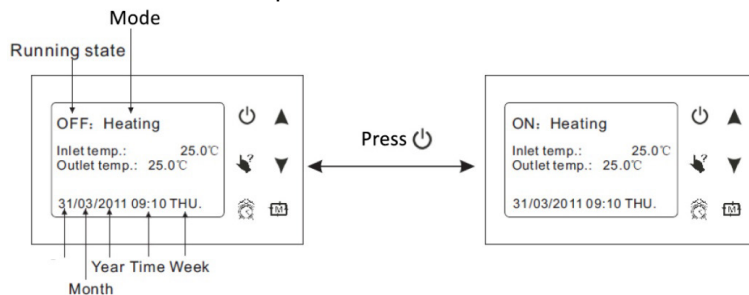
You can use at any interface and it will explain the buttons & functions of the current interface. To exit the help interface, simply press the **ON/OFF** button.

EXAMPLE: Press HELP at the Main Interface



5.2.2 Starting & Shutting Down

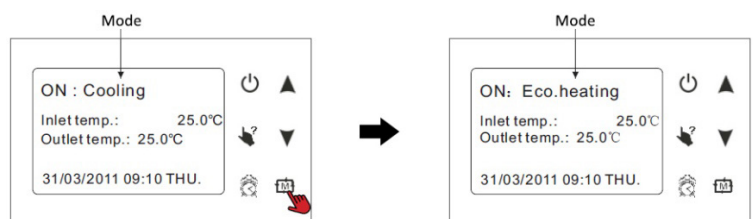
To turn on/off the unit, press the **ON/OFF** button for 1 second. The screen will display as following for each state:



5.2.3 Switching Modes

At the main interface, you can switch between the modes of cooling, economic heating, heating & rapid heating by pressing .

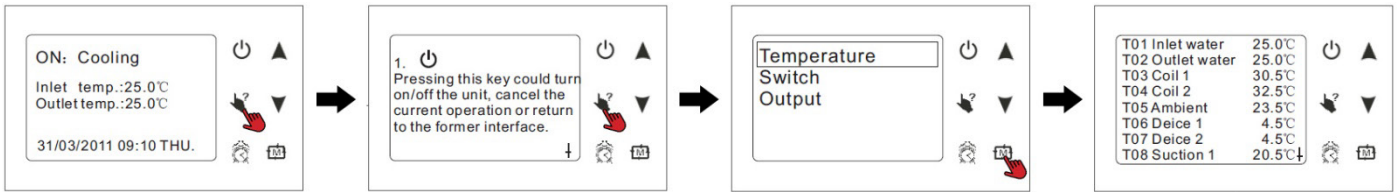
Example: Switch from Cooling mode to Economic Heating



Note: The operation of mode is invalid if the unit you purchase is heating only or cooling only.

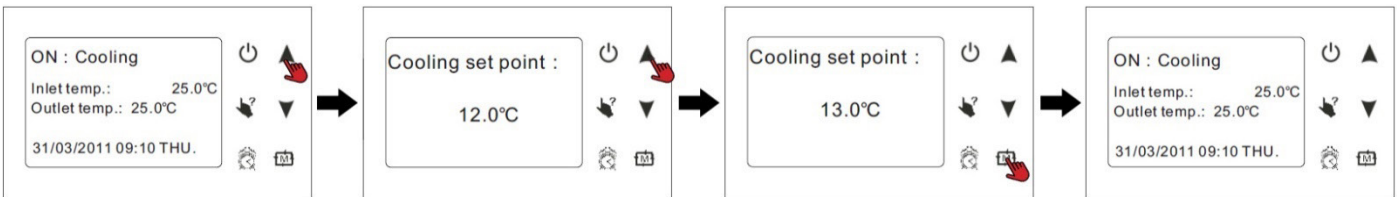
5.2.4 System State Checking

At any interface you can enter the system working state by pressing TWICE, then using the **UP** and **DOWN** arrow keys to highlight the required parameter, then press to enter. To exit, press the **ON/OFF** button



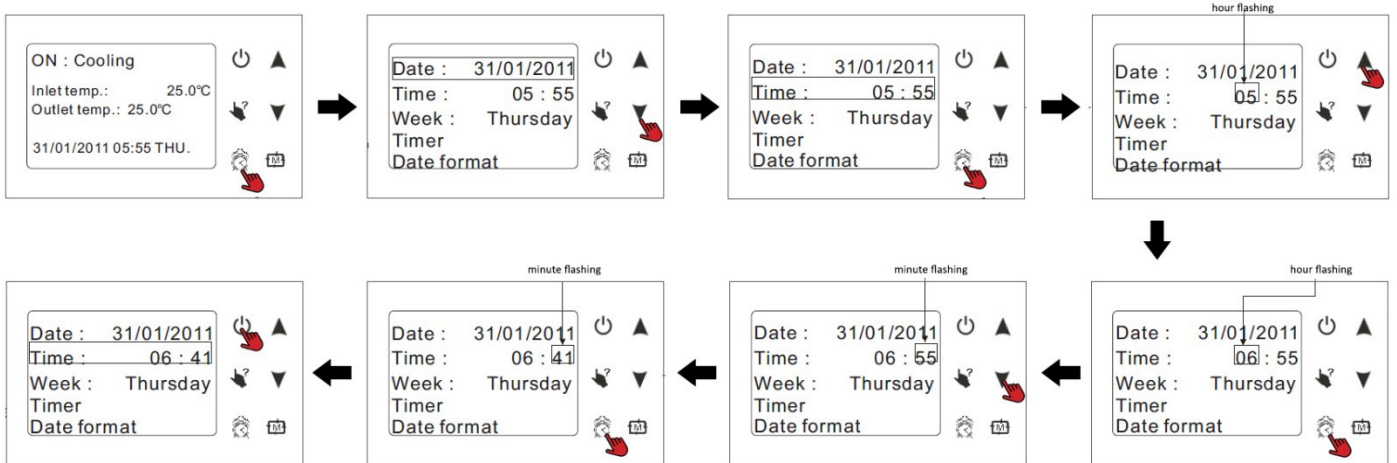
5.2.5 Changing Temperature

At the main interface, press the **UP** or **DOWN** key to adjust the temperature setting as desired. Once complete, press the button to save the settings and exit. Press the **ON/OFF** button to exit without saving settings. Refer to the Parameter Table to set relevant temperature.



5.2.6 Clock Setting

At the main interface press to enter the clock setting interface. Select the parameter you wish to change and press to make the parameter begin flashing which indicates it can be changed. Press the **UP** or **DOWN** keys to change the parameter value, then press to save. Press the **ON/OFF** button to return to the main menu.



Note: If there is no operation after 10 seconds, it will return to the main menu and changes will automatically be saved. To change the date, the same process is followed.

5.2.7 Timer Settings

Four timer periods can be set according to your needs.

From the main interface, press to enter the timer setting, press **DOWN** to select Timer, then press to enter the timer setting interface.

The process of setting a timer is much the same as adjusting the Clock settings.

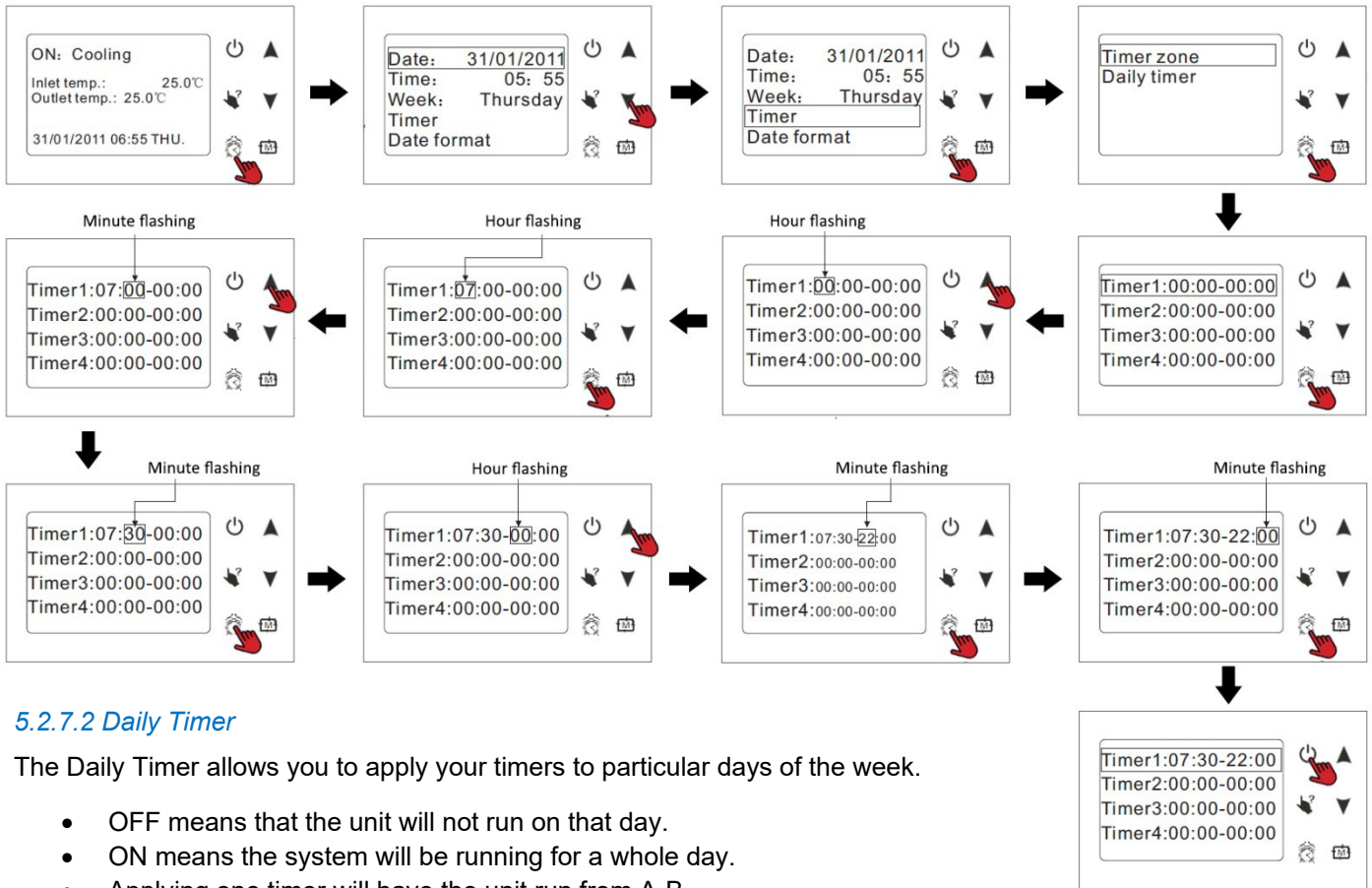
To cancel and return to the previous menu, press the **ON/OFF** button.

5.2.7.1 Timer

Each timer has an ON value when the unit will turn on an OFF value when the unit will turn off (00:00-00:00).

These timers are required for the Daily Timers & Temperature Timers to work.

Example: TIMER1 Unit is on at 7:30am – and off at 10pm



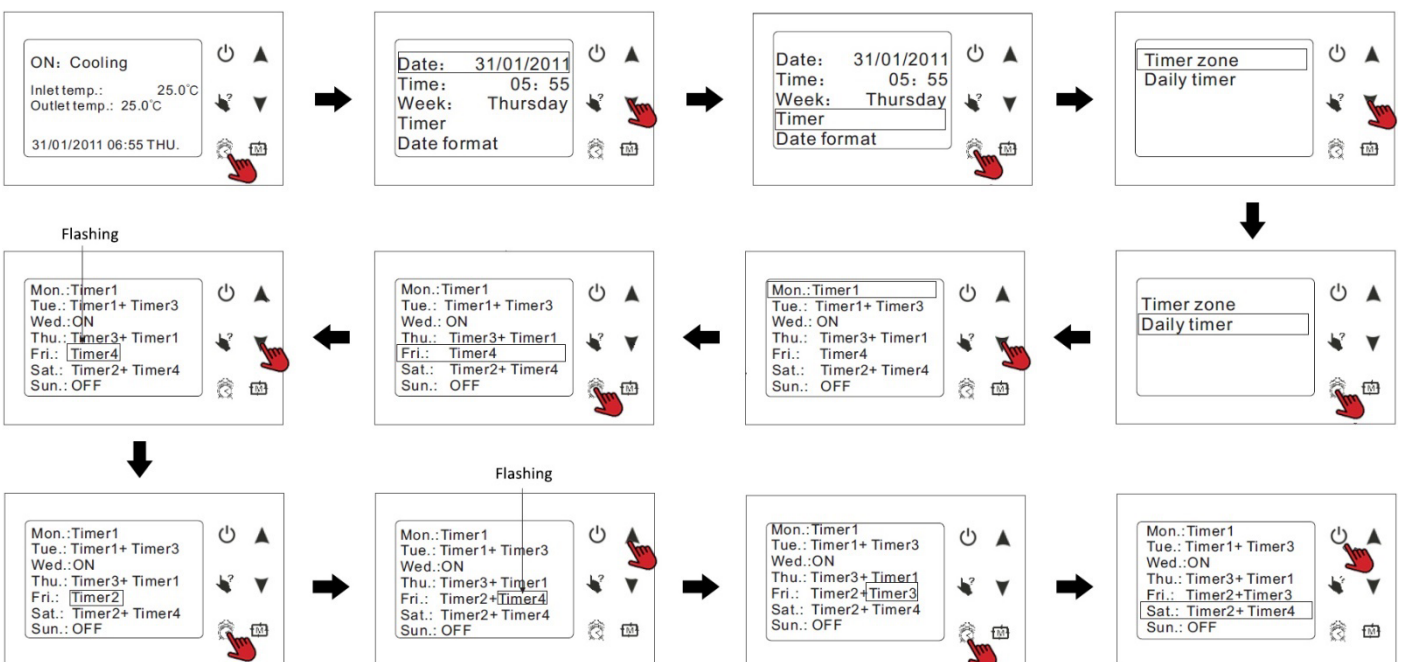
5.2.7.2 Daily Timer

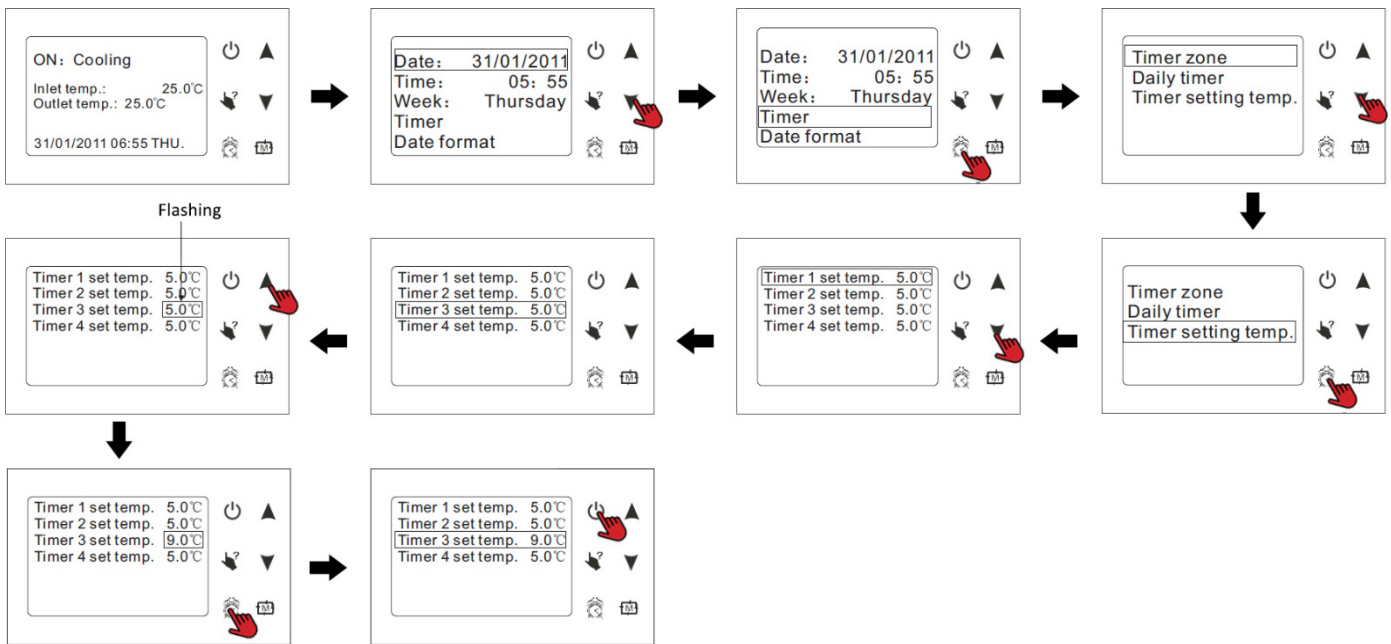
The Daily Timer allows you to apply your timers to particular days of the week.

- OFF means that the unit will not run on that day.
- ON means the system will be running for a whole day.
- Applying one timer will have the unit run from A-B.
- Applying two timers will mean the unit runs from A-B, then C-D.

Example: Setting the operation on Friday to run two different timers.

If the Timer2 were 8am-10am & Timer 3 were 1pm-5pm, the unit would operate or stop accordingly.



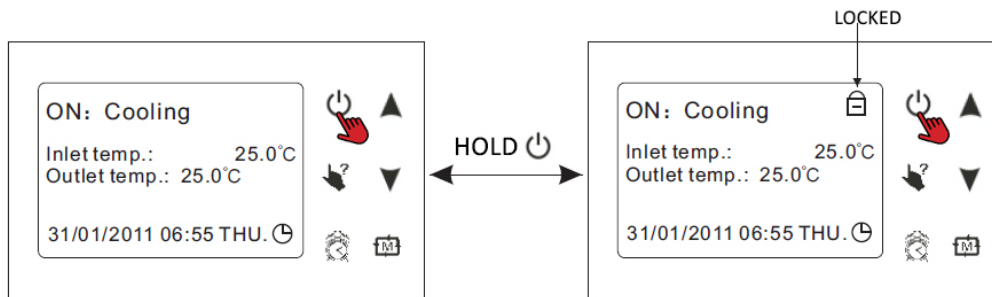


5.2.8 Keyboard Lock

You may wish to lock the keyboard to prevent unauthorised users from adjusting settings. When the keyboard is locked, a small lock symbol will be displayed on the screen.

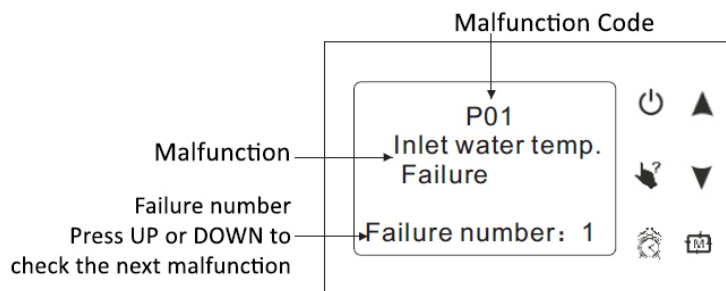
- To lock: from the main menu, hold the **ON/OFF** button for 5 seconds.
- To unlock: from the main menu, hold the **ON/OFF** button for 5 seconds.

. Note: If the unit is in alarm state, the keyboard lock is automatically removed.



5.2.9 Malfunction Display

If a fault occurs, there will be a malfunction code showing on the controller screen. Refer to the Malfunction Table (9.9) to find out the failure cause and solutions.



6. Troubleshooting

6.1 Failure Codes

6.1.1 Controller Failure Codes (Control 13 & 15)

Malfunction	Reason	Solution
WATER IN	Temp. sensor is open or short circuit	Check or replace the water inlet temp. sensor
WATER OUT	Temp. sensor is open or short circuit	Check or replace the water outlet temp. sensor
PIPE TEMP 1	Temp. sensor is open or short circuit	Check or replace the coil 1 temp. sensor
PIPE TEMP 2	Temp. sensor is open or short circuit	Check or replace the coil 2 temp. sensor
AMBIENT TEMP	Temp. sensor is open or short circuit	Check or replace the ambient temp. sensor
TEMP DIFFERENCE PROTECT	Outlet water temperature is too low	Check the flow volume to see if it meets requirements
TOO COOL FAILURE	Outlet water temperature is too low	Check the flow volume to see if it meets requirements
FROSTBITE 1 PROTECT	Ambient temperature is too low	
FROSTBITE 2 PROTECT	Ambient temperature is too low	
SYSTEM 1 PROTECT	System protection failure of system 1	Check all the protection devices of system 1
SYSTEM 2 PROTECT	System protection failure of system 2	Check all the protection devices of system 2
WATER FLOW	1. Water flow volume is not enough 2. No water in water loop	Check the flow volume to see if the water system is blocked
POWER PHASE (SYSTEM PROTECT)	Power supply connection failure	Check the power supply connection
TEMP DIFFERENCE ERROR	Outlet water temperature is too low	Check the flow volume to see if it meets requirements
FROSTING		
COMMUNICATION FAILURE	Communication failure between remote wire controller and main board	Check the wire connection between the remote wire controller and main board

Malfunction Code Display – PROTECT 300 (Control 13 & 15)

Display	Name	Reason	Action	Recover (yes/no)	Resolution
1	Refrigerant freezing	Refrigerant temp. too low from tube outlet	Unit stops and alarm	YES	Reduce refrigerant
2	Refrigerant leakage	Refrigerant temp. before tube inlet too low			Reduce refrigerant
3	Low pressure	Low pressure switch action			Check through the pressure switch and return system
4	Compressor exhaust temp. too high	Compressor exhaust temp. too high			Check through the refrigerant system
5	Over-current on compressor	Current through compressor too heavy			Check through the power supply for compressor or short circuit
6	High pressure	High pressure switch action			Check through the pressure switch and return system
7	Temp. sensor before tube failure	Temp sensor open or short circuit			Check and renew the sensor
8	Tube outlet temp. sensor failure	Temp sensor open or short circuit			Check and renew the sensor
9	Exhaust temp. sensor failure	Temp sensor open or short circuit			Check and renew the sensor
E	Power supply wrong connection	Wrong connection or lack of connection			Check the connections

6.1.1 Controller Failure Codes (Control 24)

Protect/Fault	Fault Display	Reason	Elimination Methods
Inlet temp. sensor failure	P01	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Outlet temp. sensor failure	P02	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Ambient temp. failure	P04	The temp. sensor is broken or short circuit	Check or change the temp. sensor
System 1/2/3/4 Coil temp. Failure	P15(system1),P25(system2) P35(system3),P45(system4)	The temp. sensor is broken or short circuit	Check or change the temp. sensor
System 1/2/3/4 absorb Temp. Failure	P17(system1),P27(system2) P37(system3),P47(system4)	The temp. sensor is broken or short circuit	Check or change the temp. sensor
System 1/2/3/4 anti-freeze Temp. Failure	P19(system1),P29(system2) P39(system3),P49(system4)	The temp. sensor is broken or short circuit	Check or change the temp. sensor
System 1 1/2/3/4 using side anti-freeze temp. failure	P191(system1),P291(system2) P391(system3),P491(system4)	The temp. sensor is broken or short circuit	Check or change the temp. sensor
System 1/2/3/4 coil inlet Temp. Failure	P151(system1),P251(system2) P351(system3),P451(system4)	The temp. sensor is broken or short circuit	Check or change the temp. sensor
System 1/2/3/4 high Pressure protection	E11(system1),E21(system2) E31(system3),E41(system4)	The high pressure switch is broken	Check the pressure switch and cold circuit
System 1/2/3/4 low Pressure protection	E12(system1),E22(system2) E32(system3),E42(system4)	The low pressure switch is broken	Check the pressure switch and cold circuit
Water flow failure	E03	Little or no water in water system	Check the pipe water flow and water pump
Electric-heater overheat protection	E04	Electrical-heat is over heat	Check or change electrical-heat
Water inlet and outlet temp. too big	E06	Not enough water flow and low differential pressure	Check the pipe water flow and if water system is jammed
System 1/2/3/4 anti-freeze protection	E17(system1),E27(system2) E37(system3),E47(system4)	Not enough water flow and low differential pressure	Check the pipe water flow and if water system is jammed
System 1/2/3/4 source side anti-freeze protection	E172(system1),E272(system2) E372(system3),E472(system4)	Not enough water flow	Check the pipe water flow and if water system is jammed
System 1/2/3/4 using side anti-freeze protection	E171(system1),E271(system2) E371(system3),E471(system4)	Not enough water flow	Check the pipe water flow and if water system is jammed
Anti-freeze protect level 1	E19	The ambient temp. is low	
Anti-freeze protect level 2	E29	The ambient temp. is low	
System protection	E05	The protection system has failed	Check each protection point of the system
Communication failure	E08	Communication failure between wire controller and main board	Check the wire connection between remote wire controller and main board

6.2 System Failures (All Models)

FAILURE	POSSIBLE CAUSES	SOLUTIONS
Heat pump cannot be started	Wrong power supply	Shut off the power and check power supply
	Power supply cable loose	Check power cable and correct the connection
	Circuit breaker open	Check for the cause and replace the fuse or circuit breaker
Water pump is running with high Noise or without water	Lack of water in the piping	Check the water supply and charge water to the piping
	Too much air in the water loop	Discharge the air in the water loop
	Water valves closed	Open the valves in water loop
	Dirt and block on the water filter	Clean the water filter
Heat pump capacity is low, compressor does not stop	Lack of refrigerant	Check for the gas leakage and Recharge the Refrigerant
	Bad insulation on water pipe	Make good insulation on water pipe
	Low heat exchange rate on air Side exchanger	Clean the air side heat exchanger
	Lack of water flow	Clean the water filter
High compressor exhaust	Too much refrigerant	Discharge the redundant gas
	Low heat exchange rate on air side exchanger	Clean the air side heat exchanger
Low pressure problem of the system	Lack of gas	Check the gas leakage and recharge freon
	Block on filter or capillary	Replace filter or capillary
	Lack of water flow	Clean the water filter and discharge the air in water loop
Compressor does not run	Power supply failure	Check off the power supply
	Compressor contactor broken	Replace compressor contactor
	Power cable loose	Tighten the power cable
	Protection on compressor	Check the compressor exhaust temp.
	Wrong setting on return water Temp.	Reset the return water temp
	Lack of water flow	Clean the water filter and discharge the air in water loop
High noise of compressor	Liquid refrigerant goes into Compressor	Bad evaporation check the cause for bad evaporation and get rid of it
	Compressor failure	Use new compressor
Fan does not run	Failure on fan relay	Replace the fan relay
	Fan motor broken	Replace fan motor
The compressor runs but heat Pump has no heating or cooling capacity	No gas in the heat pump	Check system leakage and recharge refrigerant
	Heat exchanger broken	Find out the cause and replace the heat exchanger
	Compressor failure.	Replace compressor
Low outlet water temperature	Low water flow rate	Clean the water filter and discharge the air in water loop
	Low setting for the desired water temp	Reset the desired water temperature
Low water flow protection	Lack of water in the system	Clean the water filter and discharge the air in water loop
	Failure on flow switch	Replace the flow switch

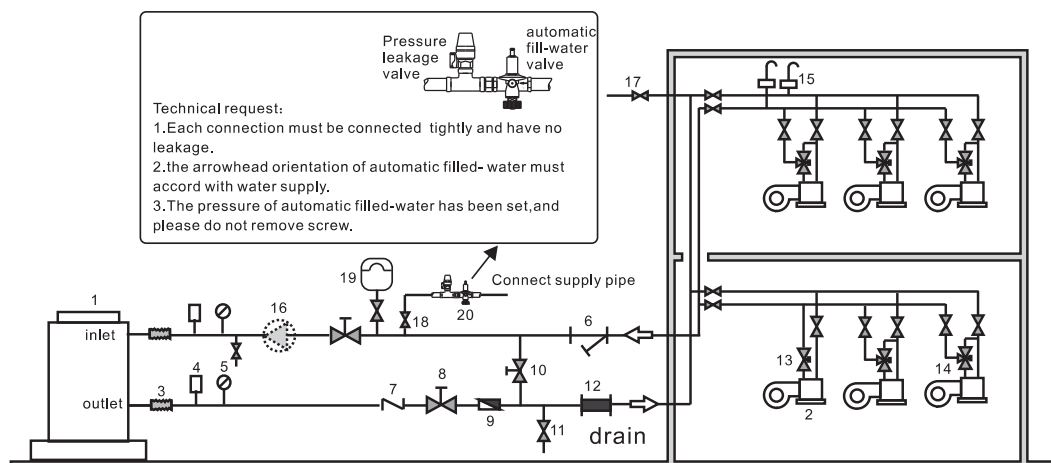
7. Appendix

7.1 Install Sketch Map

1. Main Unit	11. Drain
2. Fan Coil	12. Filter
3. Rubber Flexible Connection	13. Two-way Valve
4. Thermometer	14. Three-way Valve
5. Pressure Meter	15. Automatic Ventilation
6. Filter Similar as 'Y'	16. Water Pump
7. Check Valve	17. Ball Valve
8. Ball Valve	18. Ball Valve
9. Flow Meter	19. The close & expandable water tank
10. Bypass Valve	20. Automatically filled-water

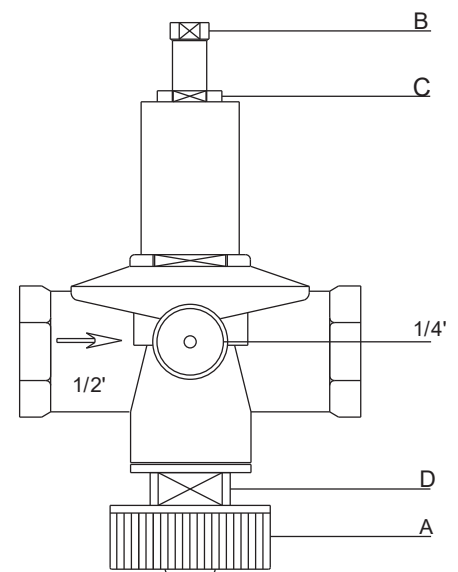
Note:

1. The Factory only offers main unit in the legend, the other modules which are indispensable fittings are to be provided by the user or installation company.
2. The unit of which code contains the letter "B" has a water pump inside and an external water pump is not needed.
3. Automatic ventilation (15) is installed on the top point of the water system.
4. The quantity proportion of the two-way valve (13) and the three-way valve (14) is referred to the technical regulation, and there is a three-way valve installed on the farthest place of water system.
5. The ball valve (17) is used when it is swashed, and the water in the water system is filled.



7.2 Automatic Filled Water Valve

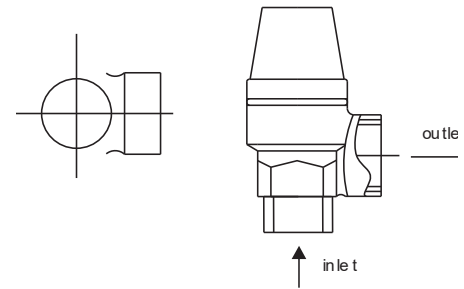
1. When the automatic filled-water valve is installed, the arrowhead orientation of inlet water must accord with the orientation of the valve
2. Automatically filled-water has been adjusted in advance to 1.5bar
3. If readjusting the pressure of inlet water, operate as follows:
 - a. Open the screw cap (C)
 - b. If reducing the pressure of water supply, screw down the pressure to adjust the screw (B)
 - c. If increasing the pressure of water supply, screw down the pressure to adjust the screw (B)
4. When the system needs the water filled first, rest the handle (A) of filled water. Then the handle (A) can return (close) when the system is full of water.
5. Automatic filled-water valve needs cleaning in a periodic time and then you must close the tap, unscrew the plug (D) and remove the inside filter net. Reassemble them again after cleaning.



NOTE: There are two connections for the water pressure meter in the central section of automatic filled-water, where the water pressure meter can be connected directly and display the set pressure. The screw cap (C) must be tweaked after adjusting the filled-water pressure.

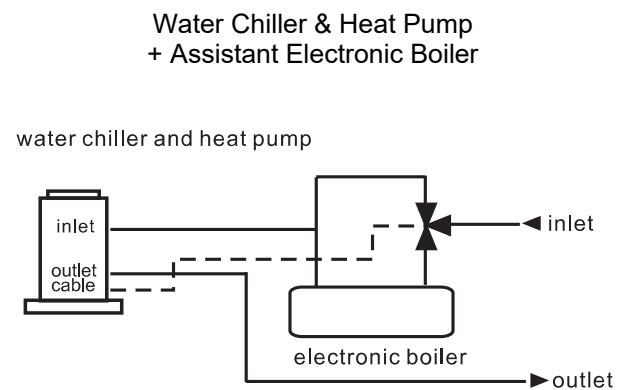
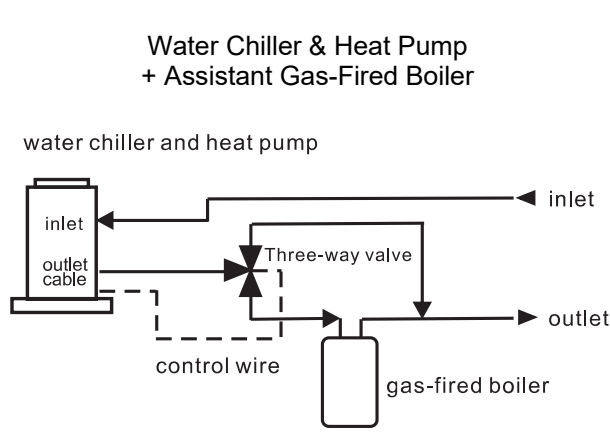
7.3 Leakage Pressure Valve

1. The action pressure of the leakage pressure valve is more than 3 bar (valve is open) but the pressure cannot be adjusted.
2. The valve will open automatically to make sure that the water loop of the air-con system is safe when the water pressure in the backwater side is higher than the set pressure.



7.4 Assistant Heat Source Connection

Unit provides the connection of assistant heat-source, which can be not only be for a gas fired boiler, but also for an electronic boiler or warm-net pipe for city accordingly.



7.5 Unit Parameters

Control 13 & 15

Parameter	Meaning	Default	Adjustable
0	COOL TEMP (set value for cooling)	12°C	
1	HEAT TEMP (set value for heating)	40°C	
2	DEF.CYC (Turnaround of dehumidifying under heating mode) (frost)	45MIN	
3	DEF.IN (Defrosting start temperature)	-7°C	
4	DEF.OUT (Terms of exit defrost under heating mode)	13°C	
5	DEF.TIME (time of exit defrost under heating mode)	8MIN	
6	SYSTEM (system quantity)	1/2	
7	SAVE (automatic restarting)	1	
8	TYPE (Model) (cooling only/heat pump/ auxiliary electrical heating/hot water)	1	
9	PUMP (water pump model)	0	

Parameter 6

- 1: Unit with single system
- 2: Unit with double system

Parameter 7

- 0: Unit cannot restart automatically
- 1: Unit can restart automatically

Parameter 8

- 0: Unit only with cooling function
- 1: Unit will all heat pump functions
- 2: Unit with auxiliary electrical heating
- 3: Unit with only heating function produced by heat pump

Parameter 9

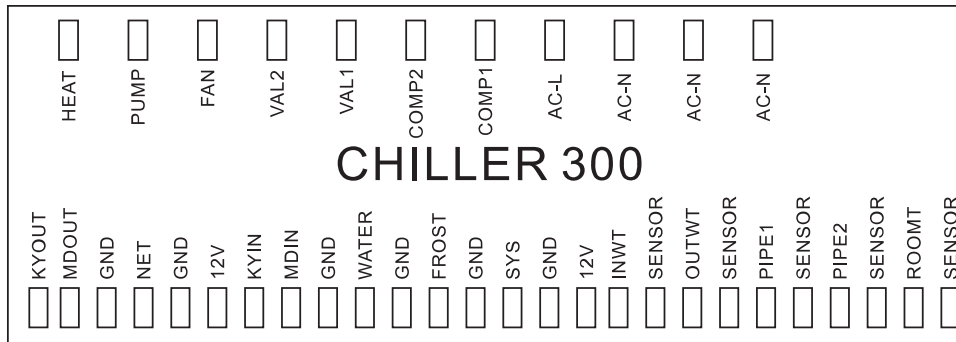
- 0: Water pump always on
- 1: Water pump starts 60 seconds earlier than compressor & shuts down 30 seconds later than compressor

Control 24

Meaning	Default	Remarks
Set point of cooling target temp.	12°C	Adjustable
Set point of heating target temp.	40°C	Adjustable
Set point of auto mode target temp.	27°C	Adjustable

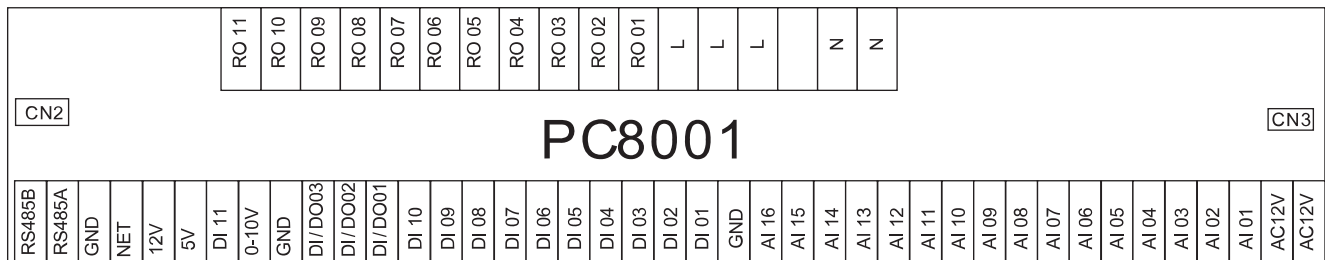
7.6 PCB Connection

7.6.1 Evo Control 13 & 15



No.	Symbol	Meaning	No.	Symbol	Meaning
1	HEAT	Auxiliary electrical heating (220VAC)	12	NET GND 12V	Wire controller
2	PUMP	Water pump (220VAC)	13	KYIN	On/Off Switch (input)
3	FAN	Fan motor (220VAC)	14	MDIN	Model (input)
4	VAL 2	Solenoid valve (220VAC)	15	WATER GND	Flow switch (input)(normal close)
5	VAL 1	4way valve of system1 (220VAC)	16	FROST GND	Defrost signal
6	COMP 2	Compressor of system2 (220VAC)	17	SYS GND 12V	System protection (normal close)
7	COMP 1	Compressor of system1 (220VAC)	18	ROOMT	Ambient temp.(input)
8	AC-L	Fire wire	19	PIPE2	Temp. Of fan coil2 (input)
9	AC-N	Neutral Wire	20	PIPE1	Temp. Of fan coil1 (input)
10	KYOUT GND	On/Off switch	21	OUTWT	Water out temp. (output)
11	MDOUT GND	Mode	22	INTWT	Water in temp. (output)

7.6.2 Control 24



No.	Symbol	Meaning	No.	Symbol	Meaning
1	L	Live line	27	DI 11	System protection signal
2	N	Null line	28	AI 01	Water input temperature input
3	RO 01	Compressor 1 output(220VAC)	29	AI 02	Water output temperature output
4	RO 02	Compressor 2 output(220VAC)	30	AI 03	System 1 fan coil temperature input
5	RO 03	Compressor 3 output(220VAC)	31	AI 04	System 2 fan coil temperature input
6	RO 04	Compressor 4 output(220VAC)	32	AI 05	System 3 fan coil temperature input
7	RO 05	High speed /source pump output(220VAC)	33	AI 06	System 4 fan coil temperature input
8	RO 06	Low speed output (220VAC)	34	AI 07	Ambient temperature input
9	RO 07	Water pump output(220VAC)	35	AI 08	System 1 antifreeze temperature input
10	RO 08	4-way valve output(220VAC)	36	AI 09	System 2 antifreeze temperature input
11	RO 09	Electric heater output(250VAC)	37	AI 10	System 3 antifreeze temperature input
12	RO 10	Spray valve output(220VAC)	38	AI 11	System 4 antifreeze temperature input
13	RO 11	Alarm system output(220VAC)	39	AI 12	System 1 suction temperature input
14	DI/DO 1	Emergency switch output	40	AI 13	System 2 suction temperature input
15	DI/DO 2	Mode indicator output	41	AI 14	System 3 suction temperature input
16	DI/DO 3	Emergency switch input	42	AI 15	System 4 suction temperature input
17	DI 01	System 1 high pressure protection input	43	AI 16	No use
18	DI 02	System 2 high pressure protection input	44	GND	Connecting to the remote controller
19	DI 03	System 3 high pressure protection input	45	NET	
20	DI 04	System 4 high pressure protection input	46	12V	
21	DI 05	System 1 low pressure protection input	47	RS485A	485 connection
22	DI 06	System 2 low pressure protection input	48	RS485B	
23	DI 07	System 3 low pressure protection input	49	AC12V	12V power input
24	DI 08	System 4 low pressure protection input	50	AC12V	
25	DI 09	Water flow switch protection input	51	CN2	System 1 electric expansion valve output
26	DI 10	Electric heater overload protection input	52	CN3	System 2 electric expansion valve output

7.7 Cable Specifications

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

8. Maintenance

8.1 F.A.Q



DO I NEED TO GET MY UNIT SERVICED?

It is recommended that you get your EvoHeat unit serviced once a year by your local certified air conditioning or refrigeration technician. If your unit is located in a coastal area, more frequent maintenance may be necessary. During the service, they will check the operational pressures of the refrigeration system and give the unit and fins a good clean to ensure maximum performance.



DO WE HAVE RECOMMENDED SERVICE AGENTS?

EvoHeat have a large database of recommended service agents. Please contact EvoHeat tech support on 1300 859 933 for your local service agent details.



SHOULD I CHECK MY UNIT REGULARLY?

We recommend you check your unit regularly to avoid potential issues and damage to your heat pump.

Check the water inlet/outlets often for leaks. You should avoid the condition of no water or air entering into the system, as this will influence unit's performance and reliability.

The area around the unit should be dry, clean and well ventilated. Make sure there is nothing blocking the airflow of the heater e.g. Leaf litter. Clean the heat exchanger every few months to keep a good heat exchange rate and save energy.



WHAT SHOULD I BE CHECKING REGULARLY?

You should discharge the water at the bottom of the water pump if the unit will not be used for an extended period. 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. Check the unit thoroughly and fill the system with water fully before using it for the first time after a period of time.

Check the power supply and cable connection often, should the unit begin to operate abnormally, switch it off and contact the qualified technician

Clean the water filter periodically to maintain good water quality. Lack of water and dirty water can damage the unit. The heat pump will start the water every 72 hours when it is not running to avoid freezing.

The water loop of the heat pump **MUST** be protected from freezing in winter. Do not shut off the power supply to the heat pump in winter. When the air temperature is below 0°C, if the inlet water temperature is above 2°C and below 4°C the water pump will begin freezing protection. If the inlet water is lower than 2°C, the heat pump will begin heating.

9. Warranty



Refer to the EvoHeat website for warranty details

- Australia: <https://evoheat.com.au/warranty-terms/>
- South East Asia: <http://evoheat.com.sg/warranty/>

1. Warranty terms are from date of purchase.
2. This warranty excludes any defect or injury caused by or resulting from misuse, abuse, neglect, accidental damage, improper voltage, vermin infestation, incompetent installation, any fault not attributable to faulty manufacture or parts, any modifications which affect the reliability or performance of the unit.
3. This warranty does not cover the following:
 - a. Natural Disasters (hail, lightning, flood, fire etc.)
 - b. Rust or damage to paintwork caused by a corrosive atmosphere
 - c. When serviced by an unauthorized person without the permission of Evo Industries
 - d. When a unit is installed by an unqualified person
 - e. Where a unit is incorrectly installed
 - f. When failure occurs due to improper or faulty installation
 - g. Failure due to improper maintenance (refer Operating Instructions)
 - h. 'No Fault Found' service calls where the perceived problem is explained within the
 - i. Costs associated with delivery, handling, freighting, or damage to the product in transit.
4. If warranty service is required, you should:
 - a. contact Evo Industries Australia on 1300 859 933 or via our Contact page on our web site
 - b. provide a copy of your receipt as proof of purchase
 - c. have completed the online *Warranty Registration Form*
5. Onsite technical service is available within the normal operating area of your Evo Authorised Service Agents. Service outside this area will incur a traveling fee.
6. Unless otherwise specified to the purchaser, the benefits conferred by this express warranty and additional to all other conditions, warranties, rights and remedies expressed or implied by the Trade Practices Act 1974 and similar consumer protection provisions contained in legislation of the States and Territories and all other obligations and liabilities on the part of the manufacturer or supplier and nothing contained herein shall restrict or modify such rights, remedies, obligations or liabilities.

REGISTER YOUR WARRANTY

EvoHeat highly recommend customers complete their warranty details online to ensure efficient warranty claim processing.

To register your warranty, scan our QR Code or head to our website and fill in the Warranty Registration Form: <https://evoheat.com.au/warranty-registration/>

