



Advanced DHP-R

Installation & Operation Manual



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1. Introduction

This manual contains all the necessary information in regard to the installation, troubleshooting, operation and maintenance of this unit. Ensure instructions in this manual are adhered to at all times. Failing to comply with these recommendations will invalidate the warranty.



Our Advanced DHP-R pool heat pumps are our advanced premium domestic pool heater that offers greater control and energy savings. Enjoy your pool at any time of the year, with the powerful Evo Advanced DHP-R.

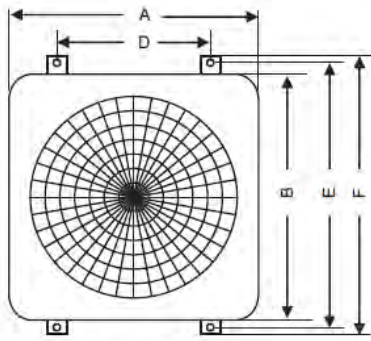
MODEL	Evo DHP-20R	Evo DHP-30R	Evo DHP-40R	Evo DHP-50R	Evo DHP-603R
Heat output at 24°C air 26°C water (kW)	9.7	14.0	19.0	23	26
Heat output at 15°C air 26°C water (kW)	8.0	11.5	15.5	20	23
Cooling output at 35°C air 30°C water (kW)	6	8.5	11	14	16
C.O.P. at 24°C air	5.3	5.3	5.2	5.4	5.3
Power input at 24°C air (kW)	1.83	2.64	3.65	4.26	4.91
Power supply	230/1/50	230/1/50	230/1/50	230/1/50	400/3/50
*Max current (amps) per phase	9.1	14	18.2	22.6	12.5
Connection type	10 AMP	15 AMP	Hard wired	Hard wired	Hard wired
Compressor type	Rotary	Rotary	Scroll	Scroll	Scroll
Refrigerant gas	R410A	R410A	R410A	R410A	R410A
PVC water connection (mm)	40	40	40	40	40
Water flow rate (L/min)	50	75	100	125	150
Noise dB(A) at 1M	51	54	56	58	58
Net dimensions L/W/H (mm)	680/645/720	680/645/720	700/700/848	700/700/848	1015/735/1130
Net weight (kg)	65	78	110	111	151

*Running current max: 43°C ambient heating / 29°C in cooling mode. The data above is based on the EVO heat pump only, it does not include auxiliary devices. Product specification information provided above is correct at the date of printing, this data may change without notice.

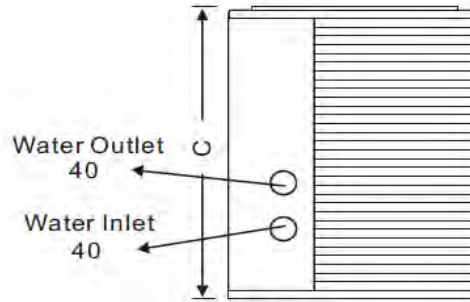
Please speak with an EvoHeat Specialist for the most current product specifications

2. Unit Dimensions

DHP-20R, DHP-30R, DHP-40R & DHP-50R



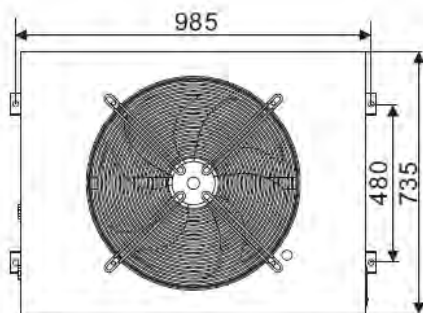
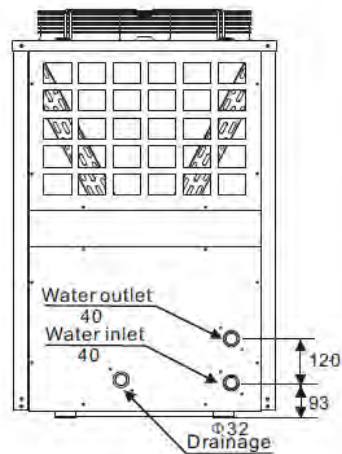
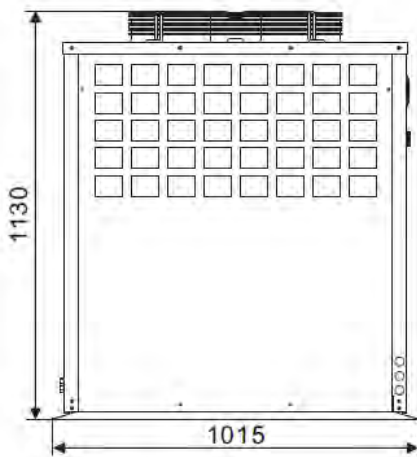
Vertical vision



Horizontal vision

	Size (mm)						
	A	B	C	D	E	F	G
DHP-20R & DHP-30R	680	645	720	422	663	686	Φ40
DHP-40R & DHP-50R	700	700	848	400	720	745	Φ40

DHP-603R



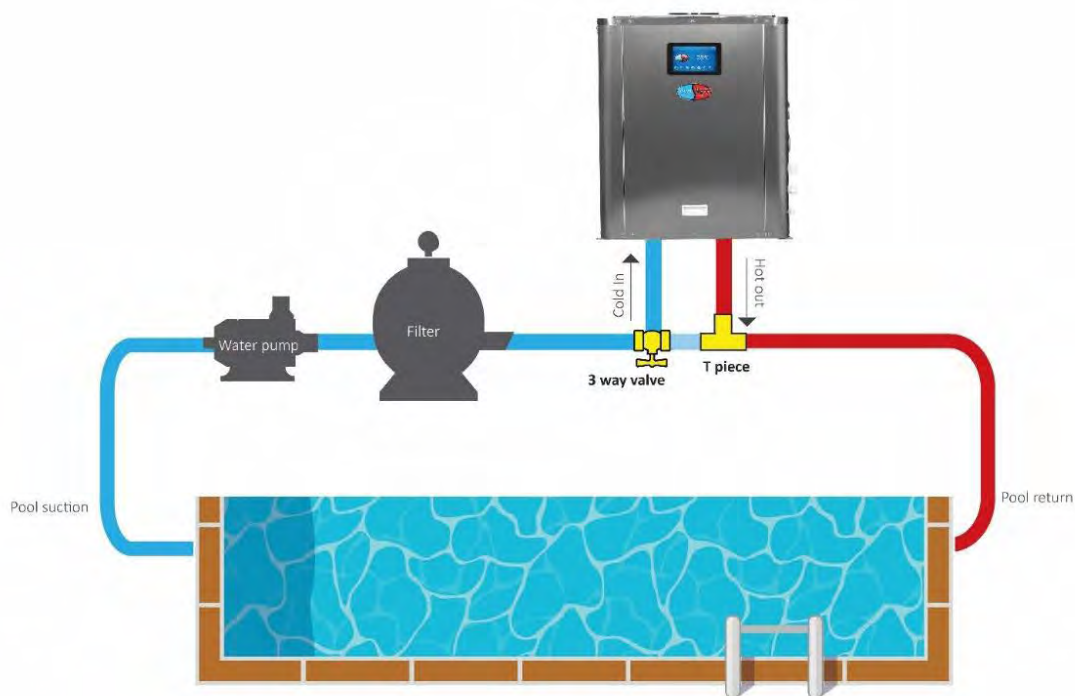
QUICK START GUIDE

IMPORTANT THINGS TO NOTE

- Ensure you meet the minimum clearances and recommended installation locations as outlined in the manual.
- All heat pump accessories are contained in a plastic bag inside the packaging of your heat pump unit.

PRE-INSTALLATION

1. Position the heater on a level pad in the desired location on the pool water return line (as shown in the example image below).
2. Install the supplied antivibration rubber pads under the feet of the unit.
3. Install the supplied condensation barb to the underside of the unit and direct the condensation to an appropriate drainage point.



PLUMBING INSTALLATION

PLEASE NOTE: Evo heat pumps standard plumbing fitting size can accept 40mm NB PVC pipe for connection to the pool or spa filtration plumbing.

1. Attach the supplied barrel unions to the cold inlet and hot outlet (hand tighten).
2. Use plumbing tape and ensure the 'O' ring is in position when sealing.
3. Install a 3-way valve at the cold-water inlet and create a bypass by connecting a "T" piece into the heated line.
4. Make the plumbing connections and brace pipework where necessary.








ELECTRICAL CONNECTION

PLEASE NOTE: Electrical connection should only be completed by licenced personnel and in accordance with all relevant Australian Standards, applicable laws and local legislations.

1. Remove the external cover to the electrical terminal by removing the screws and the terminal cover panel.
2. Feed the electrical cable in through the conduit nipple and attach the electric supply wires to the applicable Active Neutral and Earth connections located in the electrical terminal.
3. To complete the electrical connection, install electrical conduit, UF cable or other suitable means as specified (as permitted by local electrical authorities) and connect the cable to a dedicated power supply branch circuit equipped with the appropriate size circuit breaker, or time delay fuse protection.

INITIAL START-UP AND COMMISSIONING

PLEASE NOTE: The water pump must be running and water circulating through the heat pump for the system to operate.

1. Turn on your water filter pump.
2. Check for water leaks and verify flow to and from the pool.
3. Turn on the electrical power supply to the EvoHeat unit.
4. Press the ON/OFF  button of the controller to be green for on (off is white), it will start within 60 seconds
5. Ensure the fan icon is showing 5 fan blades  (performance mode)
6. Click on the large temperature display on the main screen to enter the parameter menu 
 - a. Click the sun icon  to activate heating mode
 - b. Click the temperature display to set the desired pool water temperature 
 - c. Enter the temperature via the digital keypad and click enter
7. After the system has been running for a running for approximately 5 minutes; check the Temperature Differential (TD) of the entering cold water to the exiting heated water:
 - a. Press the graph symbol in the top right corner of screen 
 - b. Review the inlet and outlet water temperatures and adjust the water flow by opening or closing the 3-way valve installed at the cold water inlet to achieve a target TD of approximately 2°C (e.g 22°C inlet water and 24°C outlet water) 
8. If there is any interruption to water flow (i.e. when the water pump is turned off), the unit will automatically turn off and display an E03 error code - no water flow. This is normal and the system will restart once water flow is reinstated.

INITIAL HEAT PUMP TIME

Initial heat up times will vary depending on the size of your pool, environmental conditions and the capacity of the system installed. After installation please allow the unit and pool pump to run continuously until the desired pool water temperature is reached (it may take several days for the pool to initially reach the set temperature).

Once the pool water reaches the desired set temperature, the unit will shut off. The unit will automatically restart (provided your pool pump is running) when the pool temperature falls more than 1°C below the desired set temperature.

**FOR ADDITIONAL INFORMATION
SEE THE REST OF THIS MANUAL**

4. Safety Instructions

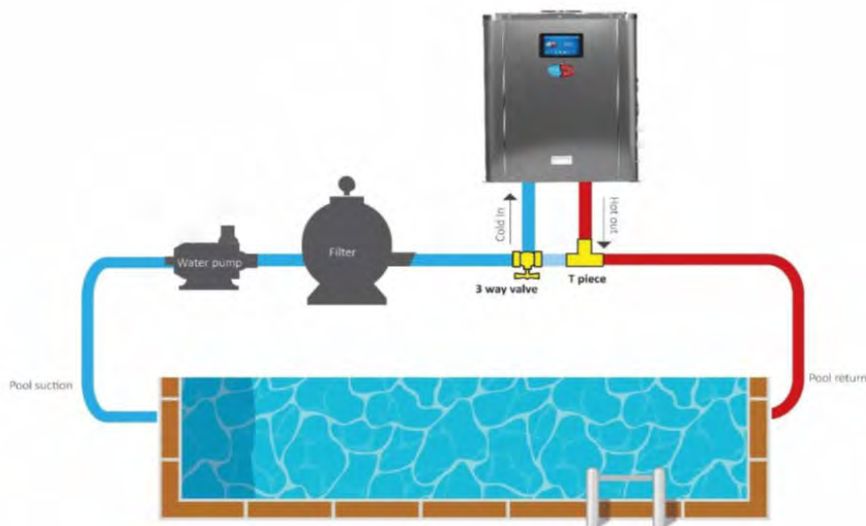
- Installation, repair or relocations must be done by a fully qualified person and not by the customer. If done incorrectly it may cause fire, electric shock, water leakage and other hazards.
- Maintenance and operation must be carried out according to the recommended time and frequencies, as stated in this manual.
- To avoid risk of electrical shock, the unit must have a good power connection and earthing.
- If the supply cord is damaged, it must be replaced.
- Use genuine standard spare parts only.
- When an abnormality (smell of burning, etc.) occurs, stop the unit and disconnect the power or turn off the breaker. If the unit continues to be operated in an abnormal condition, it may cause a fire or hazards.
- Do not insert fingers or objects into the fans or evaporator of the 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.
- For unit cleaning or maintenance, switch off and disconnect the power of the unit.
- Do not install the unit near flammable gas or spray flammable substances near it.
- Ensure the heat pump is installed on a strong and stable platform.
- A circuit breaker must be installed for the unit.
- Use supply wires suitable for 75°C

* Caution: Single wall heat exchanger, not suitable for potable water connection.

5. Installation

5.1 Installation Introduction

See the Evo Switch manual if you have purchased one.



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 are to be provided by users or the installer.

Attention

Please follow these steps when starting for the first time:

1. Open valve and charge water.
2. Make sure that the pump and the water-in pipe have been filled with water.
3. Close the valve and start the unit

The schematic diagram is for reference only. Please check the water inlet/outlet label on the heat pump while plumbing the unit.

IMPORTANT: EvoHeat heat pumps MUST be connected by a licensed electrician. Under no circumstances should an unlicensed person attempt to install or repair an EvoHeat heat pump themselves. Heater electrical installation undertaken by an unlicensed installer will void the warranty. Correct installation is required to ensure safe and efficient operation of your pool heater.

Before installation it is very important to ensure 5 variables are carefully checked to allow the unit to operate correctly.

- Heater Condition
- Location
- Clearances & Air Flow
- Adequate water flow & plumbing
- Correct electrical connection & supply

5.2 Heater Condition

Check the heater packaging upon delivery for any obvious signs of damage. Inform your supplier IMMEDIATELY if there is any evidence of rough handling. When the heater has been removed from the packaging check the refrigerant gauge on the front panel of the unit. The gauge should be showing a pressure of approx. 10 – 20 on the outside red band – any less than this figure means there may be a leak in the refrigerant system and you should immediately contact your EvoHeat Dealer.

NOTE: All accessories (drain barb, rubber feet, Wi-Fi module and barrel unions) and installation manuals are inside the DHP-R service panel. Please ensure to remove the service panel to locate these items.

5.3 Location Recommendations

Installation and service must be performed by a qualified installer.

Evo recommend the heat pump should be installed in an outdoor location with appropriate ventilation. Installing the heater indoors without adequate ventilation, or in a poorly ventilated enclosed space, will result in very poor performance and can, in extreme cases, damage the heater. Ensure the heater is installed in a well-ventilated area with plenty of fresh air.

Evo recommend the heat pump should ONLY be installed in a location with appropriate ventilation.

The Evo pool heat pump should be installed with a minimum clearance of at least 3.5m to the water's edge. Furthermore, EvoHeat recommend installing the heat pump no greater than 7.5 meters away from the water's edge due to heat loss from the piping.

The heat pump should be installed a maximum of 5m below the water level of the pool/spa.

Make sure the heat pump is not located where large amounts of water may run-off from a roof into the unit. Sharp sloping roofs without gutters will allow excessive amounts of rain water mixed with debris from the roof to be forced through the unit. A water deflector may be needed to protect the heat pump.

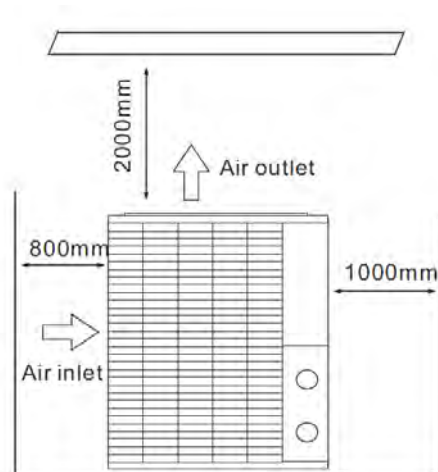
If installing the heater on an existing pump/filtration system the heater must be installed AFTER the filter and BEFORE the chlorinator/sanitizer.

The heat pump should be installed on a flat level surface.

In the event that a suitable outdoor location is unavailable please contact Evo Industries for specialist technical advice ON 1300 859 933.



5.4 Airflow Clearances



The heat pump unit needs continuous fresh air whilst running. The heater draws up to 80m³/min ambient air through the sides and discharges through the top fan cowl.

Installing the heater indoors or in an enclosed space will result in very poor performance and can in extreme cases damage the heater. Ensure the heater is installed in a well-ventilated area with plenty of fresh air, a minimum gap between walls/fences etc of 800mm on the sides and 2000mm overhead clearance.

Leave sufficient space for unobstructed airflow into and out of the heater. Do not locate the heater in an enclosed area, or the discharged cold air will recirculate into the unit and consequently lower the heating efficiency as well as possible icing up.

If you do not have a location with these suggested clearances, please contact our EvoHeat Tech Support Specialist to discuss appropriate installation locations.

5.5 Adequate Water Flow

All EVOHEAT heat pumps have a factory preset internal water flow switch. If there is insufficient water flow the heater will not operate.

It is CRITICAL that there is sufficient water flow to the unit. Incorrect water flow can cause a loss of efficiency and possible damage to the unit. Optimal water flow rates are listed in the EvoHeat manual. It is imperative that water flow is kept as close as possible to these flow rates. Correct water flow not only offers optimal heater performance but may also prevent possible damage to your heater.

Before connecting the heater to the plumbing, all piping must be thoroughly flushed to ensure no debris can enter the heater. Failure to remove pipe debris can jam or damage the flow switch and may cause damage to the heater. When cleaning the pool it is advisable to turn off your heater as restricted water flow may cause the heater to shut down and indicate low water flow fault (E03 error) or high pressure fault (E01 Error).

IMPORTANT: A Variable speed pump or bypass valve and plumbing MUST be fitted to allow water flow to be adjusted through the heater. Do not direct connect a water pump with higher flow than required to the heat pump.

5.6 Rubber Feet

All EvoHeat units are provided with rubber feet which EvoHeat highly recommend being installed. The rubber feet help reduce vibration of the unit and help provide a space below the heat pump to install the drainage barbs.

5.7 Condensate Drain Barb

Fit the condensate drain barb into the 2 holes under the unit if you need to direct water away from the heater. Put in hot water if stiff.



5.8 Drainage & Condensation

Whilst the heater is operating, water in the air condenses on the fins of the evaporator. In the instance of high humidity, the condensate may be several litres per hour. This may give the impression that the heater is leaking, however this is a normal function of heat pumps.

The heater will automatically activate reverse cycle or de-icing mode when required which also increases condensate discharge. This normally occurs at temperatures below 8 degC. The condensate water will discharge through the base of the heater. As an option a pipe can be connected to the drain on the base of the unit to direct condensate water to an appropriate location.

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 there is no chlorine present, then it's condensation.

5.9 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 40 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.

5.10 Electrical Connection

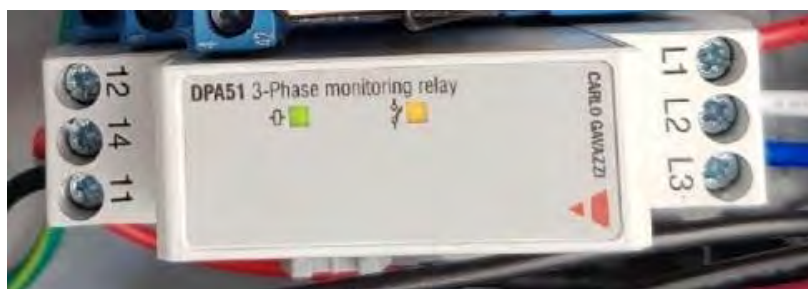
IMPORTANT: Always use a qualified Electrician to perform any electrical work. A licensed electrician must read the information before connecting.

Ensure the power cable and circuit breaker are of a suitable size for the heater being installed. Also check that there is adequate voltage and current available at the heater connection to run the unit.

Voltage range should be 220-230 volts for single phase, and 380-400 volts for 3 phase units. Voltage ranges outside these parameters will cause heater damage and void your warranty.

1. Ensure power is disconnected during installation or service.
2. Always comply with the national and local electrical codes and standards.
3. Ensure electrical cable size is adequate for heater requirements at the installation location.
4. The heater must be equipped with a circuit breaker and isolation device.
5. Circuit breaker must be installed between the heater and the water circulation pump if the water pump is hard-wired into the heater. Please note recommended circuit breaker sizes make no allowance for a water pump hard wired into the heater.
6. The unit must be well earthed. Remove the front panel to access the electrical connection terminals of the heater. The electrical wiring diagram is affixed to the inside of the front panel.

Correct phase connection is important with 3 phase heaters. NOTE: if 2 lights are showing on the 3 PHASE relay monitor this means the EvoHeat heat pump has been wired correctly (one orange light and one green light). If only one light is showing, the phases are out of rotation and need to be rotated to get the correct phase rotation.



5.11 Initial Start-up

Refer to the Quick Start Guide, page 5 for instructions on the initial start-up and commissioning of the unit.

6. Operation

Scan the QR Code or head to our YouTube channel for step by step videos.

<https://www.youtube.com/channel/UCfYiOxHuybBuC1NZcqUnrcA>



6.1 Main Controller Interface



Number	Name	Button Function
1	ON/OFF	Press to turn the unit on or off.
2	Parameter	Press to view the unit state and the parameter.
3	CLOCK	Press to set the clock, the timer on or off. When the timer is in use, the button will be green.
4	Fault Display	Click to view fault history.
5	Silent Setting	Click to turn on/off the silent function and to set timing Low speed function.
6	MODE	Click to enter mode setting and the target temperature interface.
7	Temperature Curve	Click to view the temperature and power curve.
8	Water Inlet Temperature	Press to enter mode setting and the target temperature interface.
9	LOCK	Click to lock the screen. To unlock, press this button again and enter the code "22".

6.2 Functions of the Controller

6.2.1 Start-up & Shut-Down

To turn the unit on or off, press the power button symbol (1).

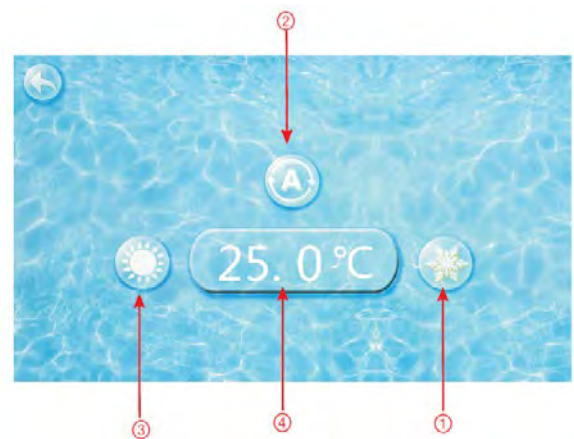
6.2.2 Switching Modes & Setting the Target Temperature

In the main interface, click the mode (6) button or inlet water temperature setting button (8) to get the following menu:

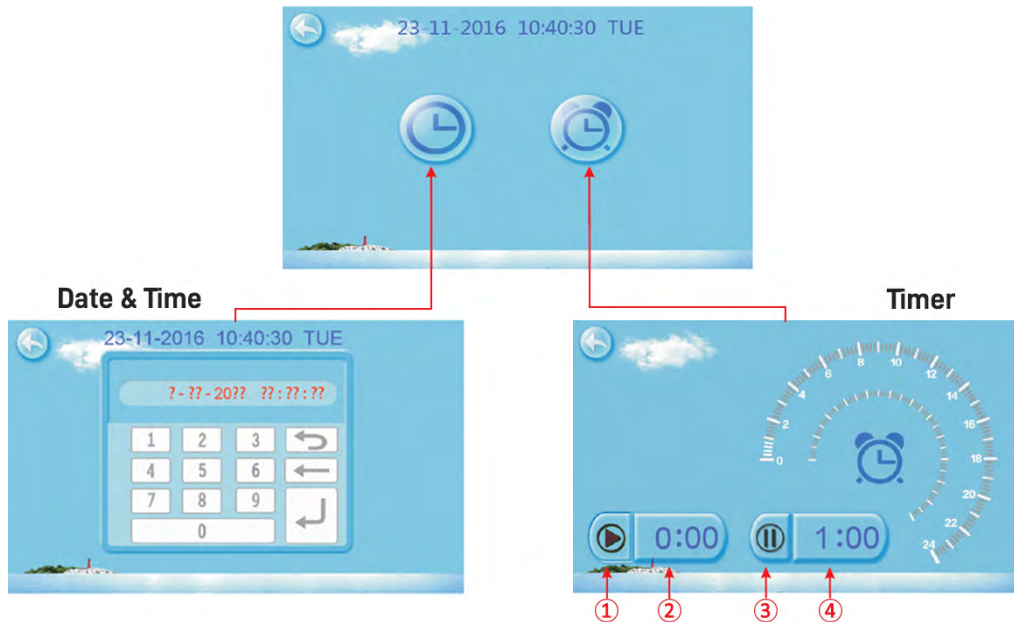
Choose from the modes: refrigeration mode (1), automatic mode (2) or heating mode (3).

Note: When the unit is designed for single automatic mode or single thermal mode, the mode cannot be switched.

From this screen, pressing the temperature (4) will allow you to adjust it as desired.



6.2.3 Clock Settings



After clicking the Clock button, a menu will appear where you can choose to adjust either Time or Timer settings.

Setting the Date & Time

Click the value you wish to change to set the time directly. Press confirm to save the settings.

For example, if the setup time were 23/11/2016 at 1:00pm; you would input: 23-11-16 13:00:00. Be aware that if the input format is incorrect, pressing the confirm button will save the wrong time.

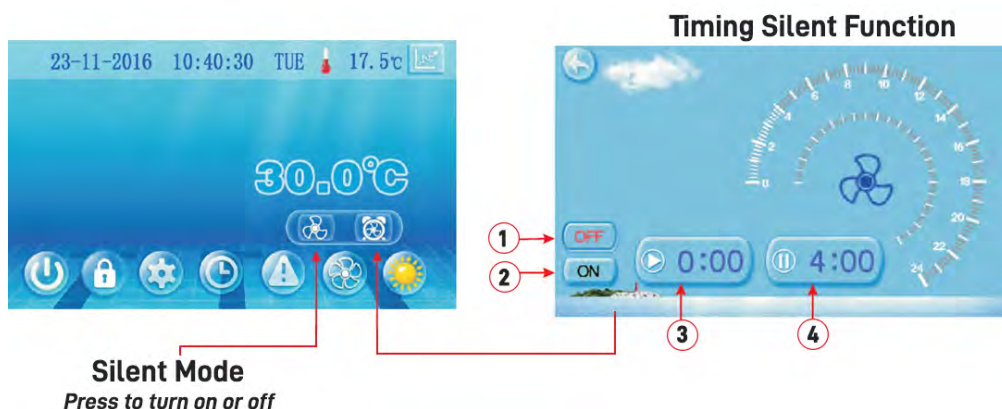
Timer Settings

No.	Name	Button Colour	Function
1	Timing Start Button	Start: Green End: Grey	Click this button to start or end the timing start setting function
2	Timing On Setting		Click to set the start time of the timer.
3	Timing End Button	Open: Red End: Grey	Click this button to start or end the timing end setting function.
4	Timing Off Setting		Click to set the end timer of the timer.

When the timer is on, the clock button will be green on the main interface.

6.2.4 Silent Setting & Silent Timing

DHP-40R & 50-R ONLY: Pressing the silent button (5) from the main menu will bring up the silent settings. Press the left-hand fan symbol to enable silent mode. To exit silent mode, follow the steps and press the button again.



Silent Mode
Press to turn on or off

DHP-40R & 50-R ONLY: Pressing the alarm clock symbol will display the screen shown above on the right.

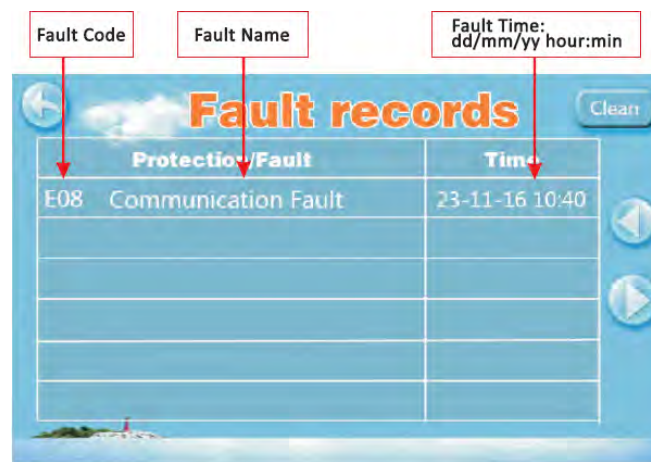
No.	Name	Colour	Function
1	Timing silent off	Used: Red Unused: Grey	Click to use or unused timing off function
2	Timing silent on	Used: Green Unused: Grey	Click to use or unused timing silent function
3	Timing silent start time		Click this button to set the timing silent start time
4	Timing silent end time		Click this button to set the timing silent end time


The start and end time values may be within the range of 0:00 – 23:00; the value can be precise to the hour digit.

Example: Click 'ON' to use timing silent. The unit will begin silent mode from 0:00 and end at 4:00. Click 'OFF' to turn off the timing silent manually, however the unit will turn off this setting once it reaches the end time.

6.2.5 Fault History


To view the fault records, press (4).



If there is no failure, the main interface will display a static “”

When a fault occurs, the fault icon will flash. When this occurs, the failure interface will record the time, code and name of the fault.

After troubleshooting, if you do not check the failure record, the main interface will display a static symbol: “”

If you check the failure record, the main interface will display a static: “”

The failure record is in reverse order according to the time of occurrence. Press the clean key to delete all fault records.

6.2.6 Colour Display Calibration

Keep clicking quickly on the blank area at any interface until you hear a long beep. You will then enter the calibration interface. Click “+” to start calibration. When you hear the beep again, you will finish calibration and exit.

Note: The wire controller can display the temperature unit as “F” or “C” according to the model you bought.

7. Troubleshooting

EvoHeat have developed a YouTube Channel where you will find useful videos - from setting up your timers to setting up the EvoHeat app. View it to see resolutions to some of our most asked, yet easily solved questions: <https://www.youtube.com/channel/UCFYiOxHuybBuC1NZcqUnrcA>



7.1 Parameter List & Breakdown Table

7.1.1 Electronic Control Fault Table

Protect/fault	Fault display	Reason	Elimination methods
Standby	Non		
Normal boot	Non		
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
Ambient Temp. Sensor Faulty	P04	The temp. sensor is broken or short circuit	Check or change the temp. sensor
Coil Temp. Sensor Fault	P05	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
High Pressure Prot.	E01	The high pressure switch is broken	Check the pressure switch and cold circuit
Low Pressure Prot.	E02	Low pressure1 protection	Check the pressure switch and cold circuit
Flow Switch Prot.	E03	No water/little water in system	Check the pipe water flow and water pump
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	
Secondary Anti-freezing Prot.	E29	The ambient temp. is low	
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
Low Temperature Protection	Non	The environment temp. is low	
Comp. Overcurrent Prot.	E051	The compressor is overloaded	Check whether the system of the compressor running normally
Exhaust air over Temp Prot.	P082	The compressor is overloaded	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
Antifreeze Temp. Sensor Fault	P09	Antifreeze temp sensor is broken or short circuited	Check and replace this temp sensor
Waterway Anti-freezing Prot.	E05	Water temp. or ambient temp. is too low	
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
Pressure Sensor Fault	PP	The pressure sensor is broken	Check or change the pressure sensor or pressure
Fan Motor1 Fault	F031	1. Motor in locked-rotor state The wire connection between DC-fan motor module and fan motor is in bad contact	1. Change a new fan motor Check the wire connection and make sure they are in good contact
Low AT Protection	TP	Ambient temp is too low	
Fan Motor2 Fault	F032	1. Motor 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
Communication fault (Speed control module)	E081	Speed control module and main board communication fail	Check the communication connection

7.1.2 Frequency Conversion Board Fault Table

Protection/fault	Fault Display	Reason	Elimination Methods
Drv1 MOP alarm	F01	MOP drive alarm	Recovery after the 150S
Inverter offline	F02	Frequency conversion board and main board 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 frequency 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 valve	Check the input voltage measurement
Inv. DC Lessvoltage	F08	DC bus coltage<Dc bus over-voltage protection value	Check the input voltage measurement
Inv. Input Lessvolt.	F09	The input voltage is low, causing the input current to be 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	
PFC Fault	F27	The PFC Circuit protection	Check the PFC switch tube tube short circuit or not
IPM Over heating	F15	The IPM module is overheat	Check and adjust the current measurement
Weak Magnetic Warn	F16	Compressor magnetic force is not enough	
Inv. Input Out Phase	F17	The input voltage lost phase	Check and measure the voltage adjustment
IPM Sampling Cur.	F18	IPM sampling electricity is at fault	Check and adjust the current measurement
Inv. Temp. Probe Fail	F19	Sensor is short circuit or open circuit	Inspect and replace the sensor
Inverter Overheating	F20	The transducer is overheating	Check and adjust the current measurement
Inv. Overheating Warn	F22	Transducer temperature is too high	Check and adjust the current measurement
Comp. Overcut. 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 overloaded or undervoltage	Check the V15V input voltage is range 13.5V~16.5V or not

7.1.3 Parameter List

Meaning	Default	Remarks
Refrigeration target temperature set point	27°C	Adjustable
Heating the target temperature set point	27°C	Adjustable
Automatic target temperature set point	27°C	Adjustable

7.2 Interface Drawing

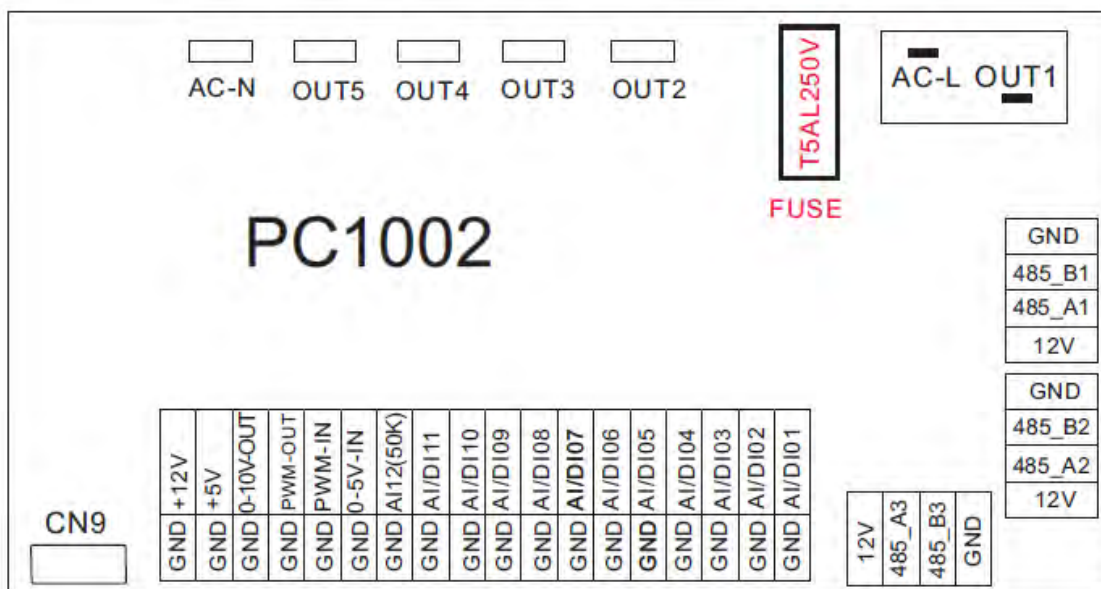
7.2.1 Wire Control Interface Diagram and Definition



Sign	Meaning
V	12V (power+)
R	No use
T	No use
A	485A
B	485B
G	GND (power-)

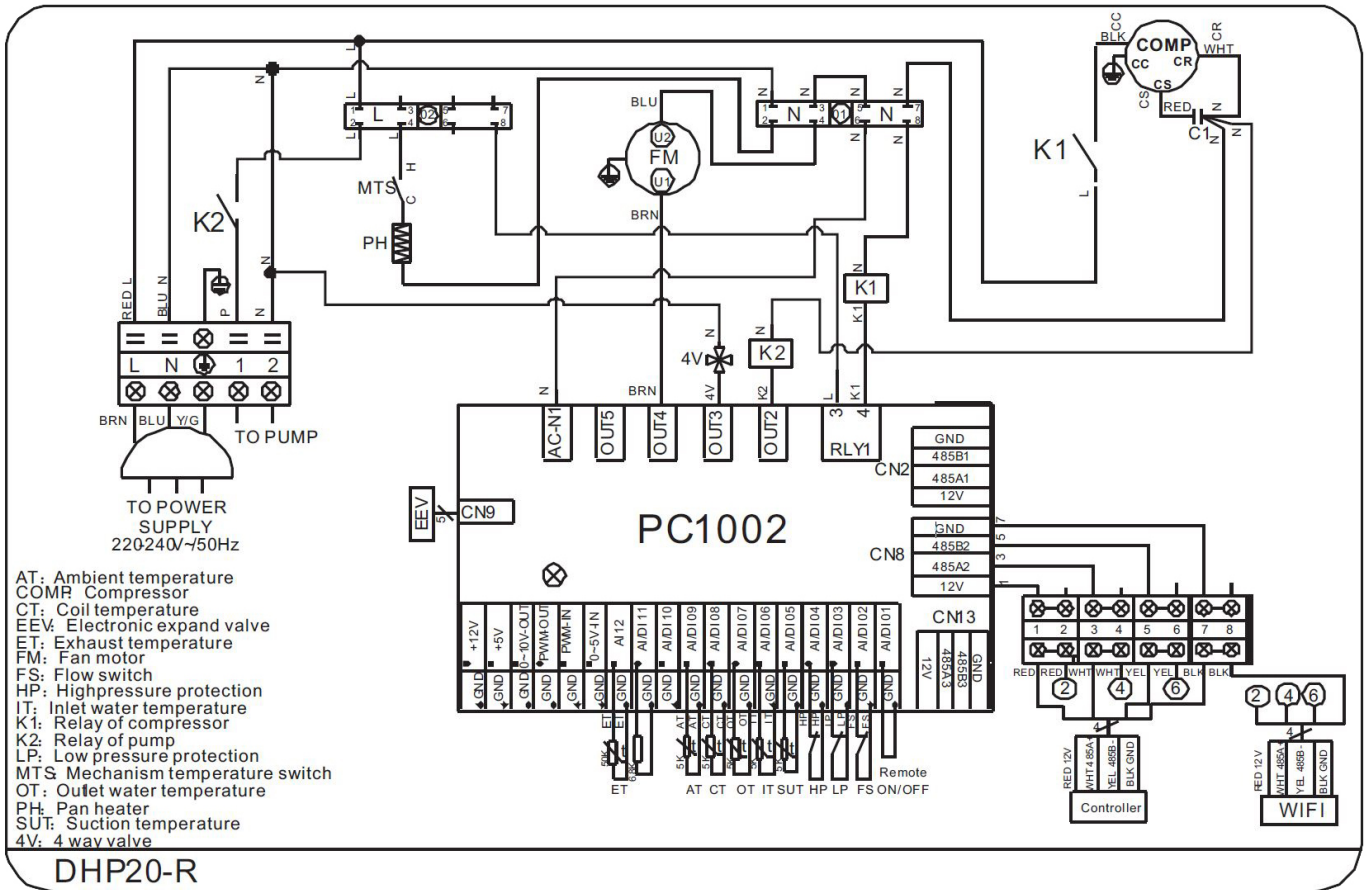
8. Appendix

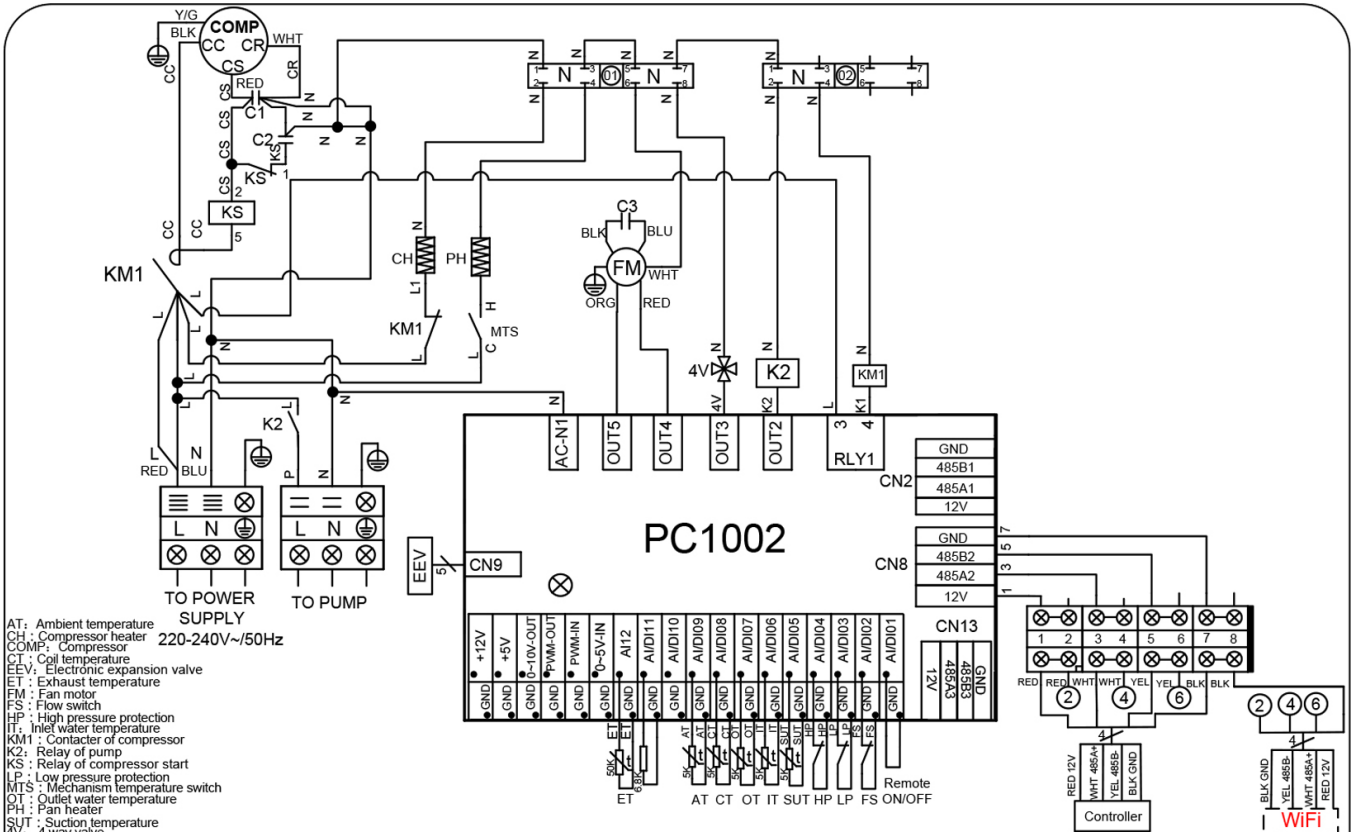
8.1 Controller Interface Diagram & Definition



No.	Sign	Meaning
01	OUT1	Compressor (output 220-230VAC)
02	OUT2	Water pump (output 220-230VAC)
03	OUT3	4-way valve (output 220-230VAC)
04	OUT4	High speed of fan (output 220-230VAC)
05	OUT5	Low speed of fan (output 220-230VAC)
06	AC-L	Live wire (input 220-230VAC)
07	AC-N	Neutral wire (input 220-230VAC)
08	AI/DI01	Emergency switch (input)
09	AI/DI02	Water flow switch (input)
10	AI/DI03	System low pressure (input)
11	AI/DI04	System high pressure (input)
12	AI/DI05	System suction temperature (input)
13	AI/DI06	Water input temperature (input)
14	AI/DI07	Water output temperature (input)
15	AI/DI08	System fan coil temperature (input)
16	AI/DI09	Ambient temperature (input)
17	AI/DI10	Mode switch (input)
18	AI/DI11	Master-slave machine switch/antifreeze temperature (input)
19	AI12(50K)	System Exhaust temperature (input)
20	0_5V_IN	Compressor current detection/pressure sensor (input)
21	PWM_IN	Master-slave machine switch/feedback signal of EC fan (input)
22	PWN_OUT	AC fan control (output)
23	0_10V_OUT	EC fan control (output)
24	+5V	+5V (output)
25	+12V	+12V (output)
26	GND	Frequency Conversion board communications
27	485_B1	
28	485_A1	
29	12V	
30	GND	Color line controller communication
31	485_B2	
32	485_A2	
33	12V	
34	CN9	Electronic expansion valve
35	GND	The port for centralized control
36	485_B3	
37	485_A3	
38	12V	

8.2 PCB Description

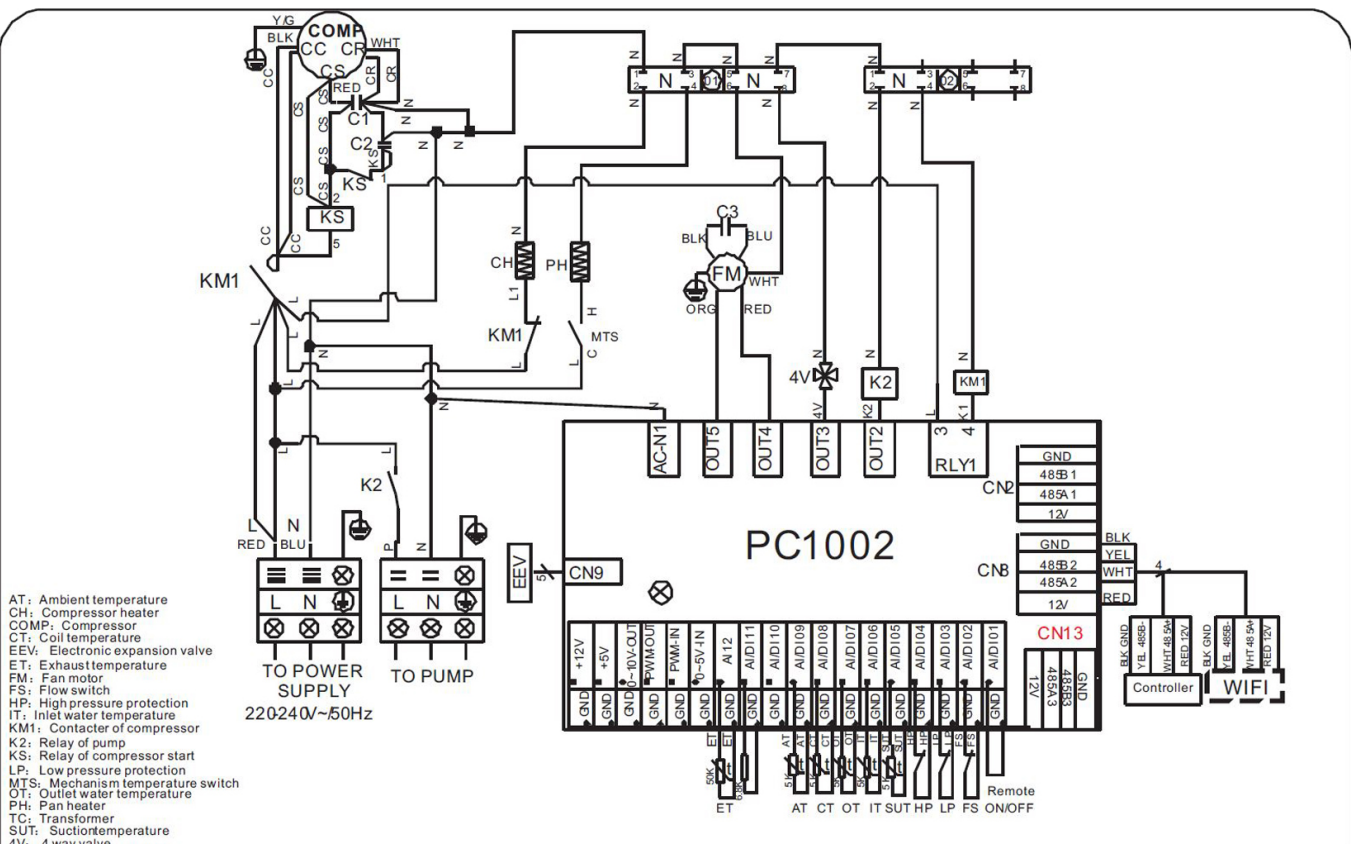




AT: Ambient temperature
 CH: Compressor heater
 COMP: Compressor
 CT: Coil temperature
 EEV: Electronic expansion valve
 ET: Exhaust temperature
 FM: Fan motor
 FS: Flow switch
 HP: High pressure protection
 IT: Inlet water temperature
 KM1: Contactor of compressor
 K2: Relay of pump
 KS: Relay of compressor start
 LP: Low pressure protection
 MTS: Mechanism temperature switch
 OT: Outlet water temperature
 SUT: Suction temperature
 4V: 4 way valve

DHP40-R

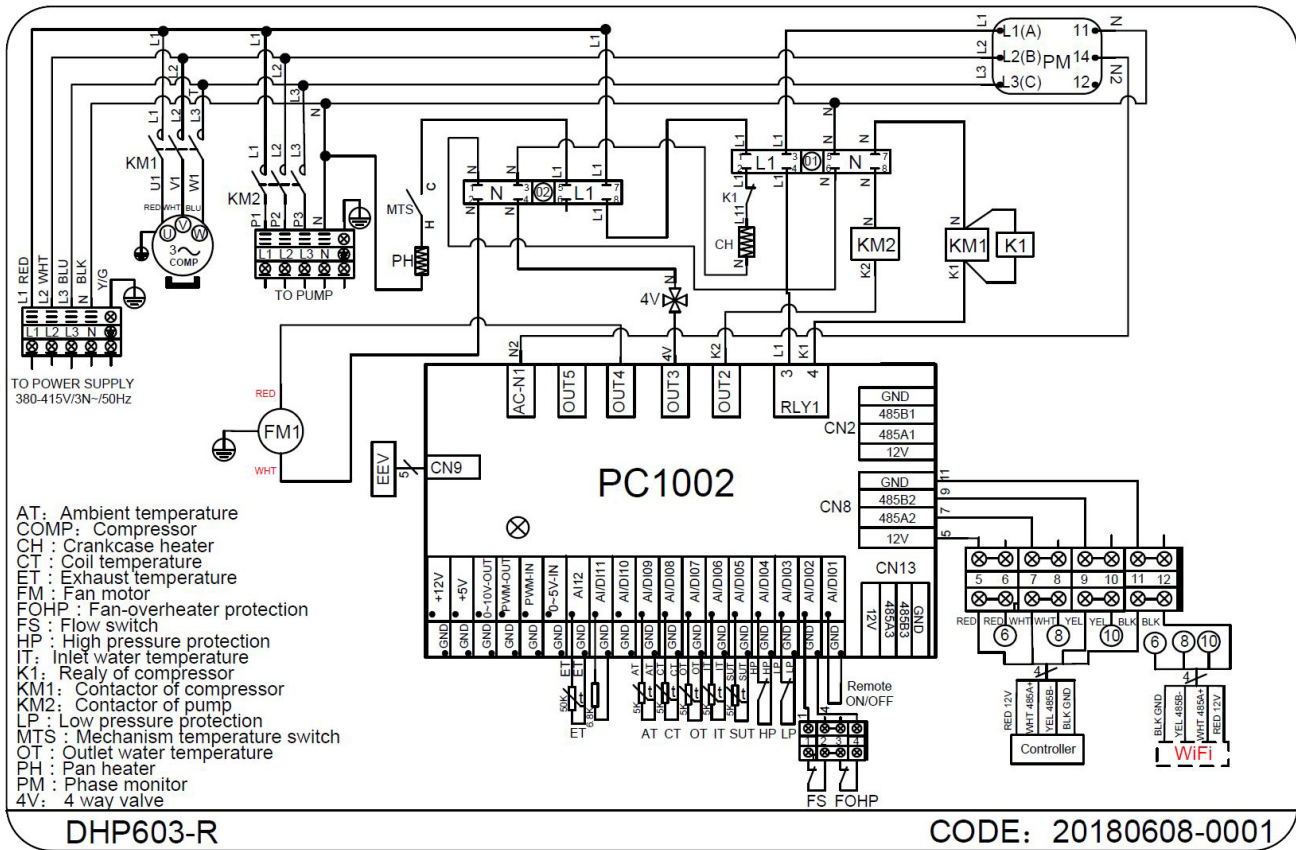
CODE: 20180613-0002



AT: Ambient temperature
 CH: Compressor heater
 COMP: Compressor
 CT: Coil temperature
 EEV: Electronic expansion valve
 ET: Exhaust temperature
 FM: Fan motor
 FS: Flow switch
 HP: High pressure protection
 IT: Inlet water temperature
 KM1: Contactor of compressor
 K2: Relay of pump
 KS: Relay of compressor start
 LP: Low pressure protection
 MTS: Mechanism temperature switch
 OT: Outlet water temperature
 SUT: Suction temperature
 TR: Transformer
 4V: 4 way valve

DHP50-R





8.3 Cable Specifications

Single Phase Unit

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

Three Phase Unit

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

If the unit is to be installed outdoors, ensure that a UV resistant cable is used.



9. Maintenance

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.

What should I be checking regularly?

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.

You should clear the pool/spa filter regularly to avoid damage to the unit as a result of the dirty or clogged filter.

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.

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. You should 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

Refer to our website evoheat.com.au for more maintenance, trouble shooting and energy saving tips.

10. Warranty



Please refer to the EvoHeat website for warranty details

- Australia: www.evoheat.com.au
- South East Asia: www.evoheat.com.sg

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, lightening, 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 or provide a completed warranty card.
5. Onsite technical service is available within the normal operating area of your Evo Industries authorized Service Centre. 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.

10.1 Warranty Registration

EvoHeat highly recommend customers to 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/>

