



Evo Control 8

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. This manual and all others are available for download on our website.



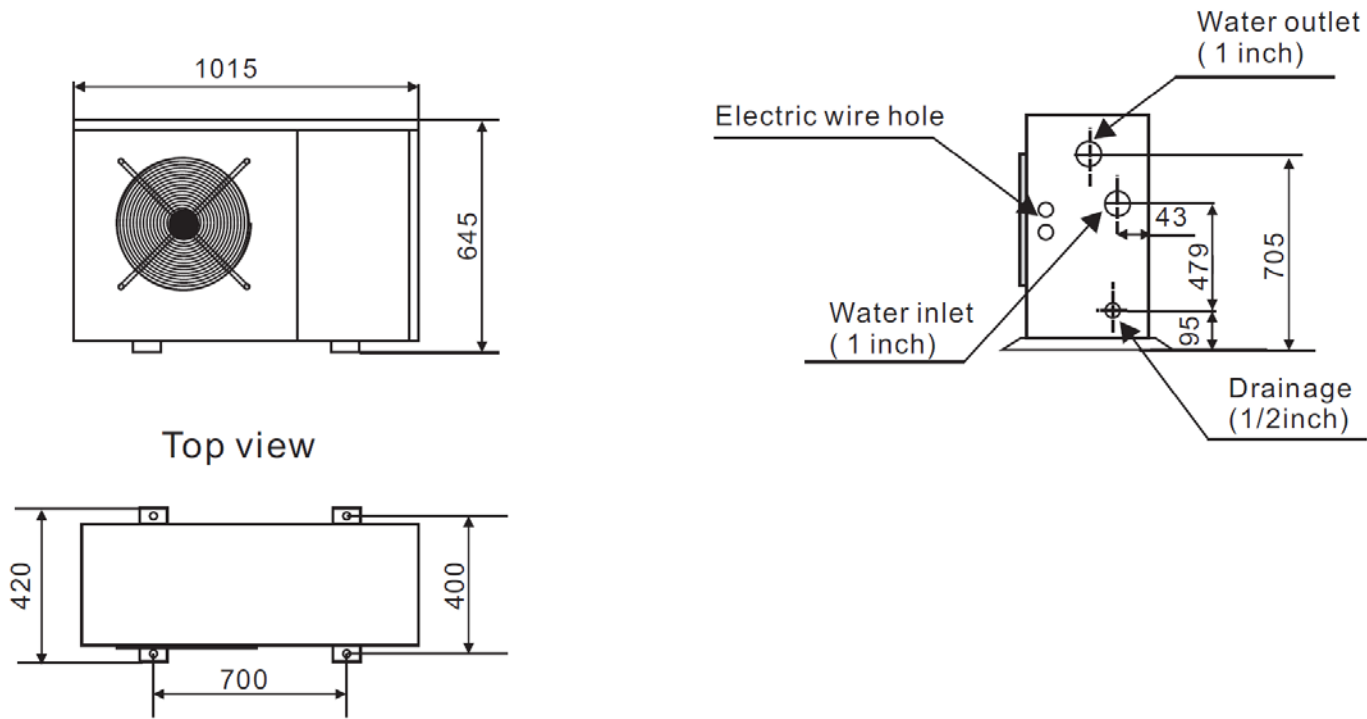
The Evo Control Series air to water heat pump is designed for multiple-use household heating requirements. The Evo Control provides energy efficient space heating/cooling and floor heating - ALL IN THE ONE UNIT!

The Evo Control Series is ideal for domestic space heating/cooling and floor heating.

2. Unit Specifications

2.1 Dimensions

Evo Control 8



2.2 Technical Data

	Evo Control 8	
Cooling Capacity	kW	7.1
	Btu/h	24200
Heating Capacity	kW	8.2
	Btu/h	28000
Cooling Power Input	kW	2.5
Heating Power Input	kW	2.0
Running Current (Cooling/Heating)	A	10.9/8.7
Power Supply		220-240V~/50Hz
Compressor Quantity		1
Compressor		Rotary
Fan Quantity		1
Fan Power Input	W	120
Fan Rotate Speed	RPM	850
Noise	dB(A)	56
Water Pump Input	kW	0.2
Water Head	m	8
Water Connection	Inch	1
Water Flow Volume	m³/h	1.4
Water Pressure Drop	kPa	17
Capacity of Water Storage	L	23
Unit Net Dimensions (L/W/H)	mm	
Unit Shipping Dimensions	mm	
Net Weight	kg	
Shipping Weight	kg	

Cooling: Ambient temperature 35°C / 24°C, inter/outlet water temperature: 12°C / 7°C

Heating: Ambient temperature 7°C / 6°C, inter/outlet water temperature: 30°C / 35°

3. Safety Instructions

- 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.
- 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.

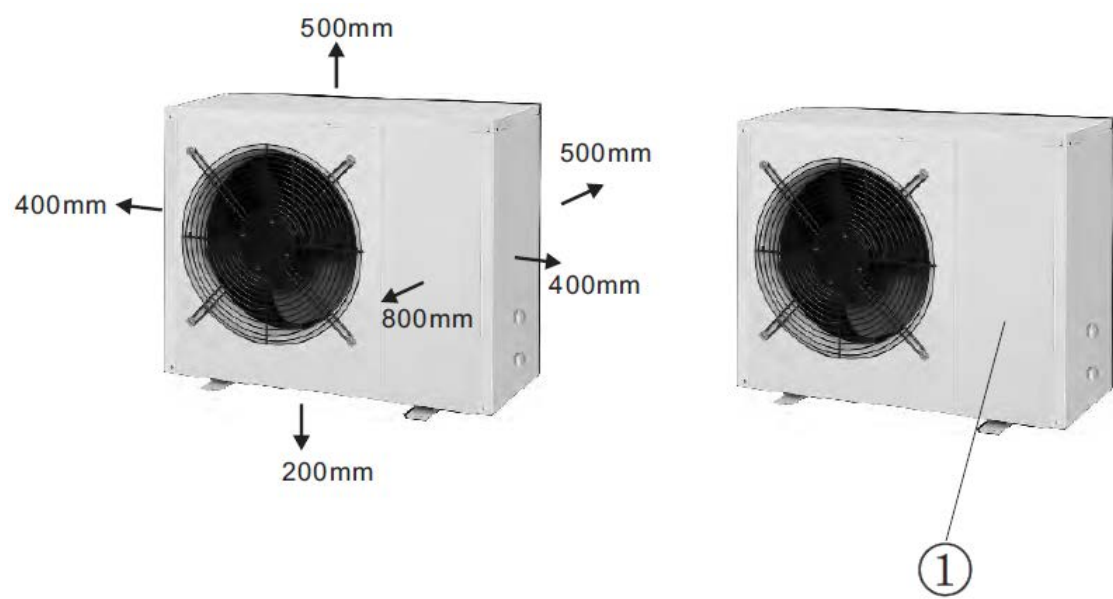
4. Installation

Upon receiving the unit, inspect to ensure that all required parts are included and to inspect for any possible damage. Take care to avoid any sharp movements during the unloading and moving of the unit. Do not push or pull it by any other means than its base.

4.1 Location of Install & Minimum Clearances

Because the unit is air-cooled they must be installed outdoors in an area with sufficient clearance to provide free air circulation through the condenser coil. Restriction of free air circulation will reduce the air flow, decrease the cooling capacity, increase the power input and in certain case, prevent the unit from operating by excess condensation pressure.

It is prohibited to connect the helicoid fan units to duct networks because of the pressure drops created by such networks. In the event that the unit is located in an area exposed to high wind, avoid the wind striking the fan surfaces directly. The arrows show the direction of air circulation through the unit.



After installation, all sides of the unit must be accessible for regular maintenance operations. Removal of Panel 1 provides access to the electrical junction box, the compressor and the cooling circuit.

Note: Panel 1 is removable independently of the other panels and enables the unit to be run maintaining its normal operating characteristics. To disengage the panel after removal, extract the controller and its support bracket.

When choosing an installation location for the unit, take care to leave sufficient free space all around it for carrying out maintenance. The minimum free distances are shown and must be adhered to, both for ensuring correction operation and for providing access.

Note: The grill is intended to protect operators from risks of injury from the exchanger during handling and installation.

In regions that are cold, mountainous or exposed to the elements there can be a risk of the grill clogging with frost or ice. In this case a shelter should be provided for the unit or the protective grill can be removed.

4.2 Plumbing Component

In choosing and installing water pipes, ensure local safety rules and precautions are followed.

Recommendations: The pipe circuit must be designed with minimal bends and changes in height in order to guarantee the best performance.

The pipe network must include:

1. A device to eliminate vibrations (e.g. connecting hoses) on all pipes connected to the unit in order to reduce vibration and noise transmission to the building.
2. Stop cocks to isolate the hydraulic circuit during maintenance.
3. Automatic or manual bleed valves at the highest points on the chilled water circuit.
4. An adequate system to maintain water pressure in the circuit (expansion tank or pressure regulating valve).
5. Thermometers and pressure gauges installed on the exchanger inlet and outlet. They will facilitate regular checks and maintenance.
6. To avoid any risk of foreign bodies entering the system and to maintain optimum performance, it is strongly advised to install the water filter accessory on the machine's inlet.

WARNING: The evaporator is equipped with a heating mattress (automatically controlled by the main controller) to prevent any ice intake during periods of low outside temperature. When the unit is not running in the winter, it is necessary to leave the power supply connected for this protection system to function.

The water filter/stop cock assembly is to be connected to the machine inlet, taking care to keep the water filter mesh towards the bottom.

4.2.1 Connection of the Chilled Water Loop

Check before connecting the unit that the installation is leak free and clean. Install manually controlled isolating valves (not provided) with a diameter corresponding to the diameter of the main pipework on the Water Inlet and Outlet connection of the unit without needing to drain the installation.

It is also recommended to install valves of the water supply lines and on the return of each terminal treatment unit, so to allow work on each appliance without affecting other parts of the installation. These valves allow also to adjust the flow arriving at each terminal unit.

It is important to verify that the pressure in the water supply network is adequate to fill the installation.

4.2.2 Drainage

Units are equipped with couplings to fill and drain the hydraulic circuit according to standards in force. The water should come from a distribution network, either to the unit directly, or to any other point on the circuit linking the terminal units together.

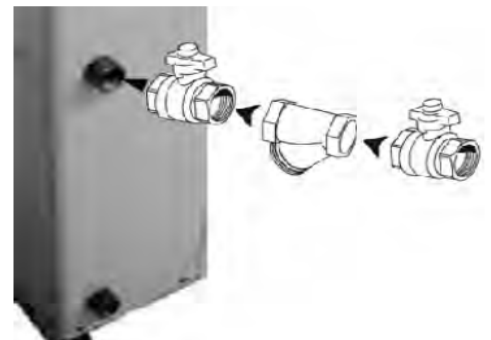
4.2.3 Terminal Insulation

In order to correctly keep power consumption low and to comply with standards in force, all chilled water pipes must be insulated.

For appropriate insulation with a conductivity of 0,04 W/m°K a radial thickness of 25 to 30mm is required.

4.2.4 Starting Operation

- When the installation is finished, the water circuit should be filled until the service pressure is reached (this should not exceed 2.5bar).
- Check that the air purge valves are open.
- Air in the circuit should be completely expelled for proper operation.
- Once the hydraulic circuit is correctly filled, the filling valve should be closed.



WARNING: It is not the manufacturer's policy to issue recommendations relating to water treatment. The user or the owner is responsible for contacting a specialised water treatment enterprise. Water treatment is a very critical subject and special consideration should be given to ensure it is properly carried out to avoid problems linking to fluid circulation. A clogged hydraulic circuit will systematically lead to premature wear in the machine's components.

Take care not to damage the hydraulic connections by over-tightening. A second wrench is required to compensate for tightening torque. The use of a counter wrench is necessary for tightening the valves.



4.2.5 Safety Differential Pressostat

A safety differential pressostat is fitted as standard on the water inlet pipe into the evaporator in order to ensure adequate water flow to the evaporator before starting the unit.

It acts both in the event of partial blockage (starting to take in ice) and in the event of a drop in water flow due to pump failure. This is the machine's main protection device.

4.2.6 Hydraulic Module

The hydraulic module requires no special maintenance. Fitting a mesh filter (accessory) on the unit inlet is strongly advised (see 4.2 Plumbing Component – Bullet Point 6).

Comment: Ensure that all of the various components are protected against freezing caused by the outside temperature. In the event of any accidental power failure, ensure that account is taken of ice protection requirements.

WARNING: In all air conditioning installations with chilled water distribution, the entire network must be dimensioned to provide a volume of 15 litres per kW of installed capacity.

4.3 Electrical Component

Before starting any electrical connection, check that the electrical supply corresponds to the specification indicated on the unit's maker's plate and to the unit's electrical characteristics table.

Important: It is the responsibility of the installer to provide circuit breaker protection, corresponding to the machine's capacity (refer to the unit electrical characteristics table), near to the machine.

Connection to the electrical network must comply with current electrical standards.

To carry out the electrical connection:

- Open the inspection panel which allows access to the junction box.
- To remove the inspection panel, extract the controller from its support bracket.
- Thread the power supply cable through the cable guide provided on the unit.

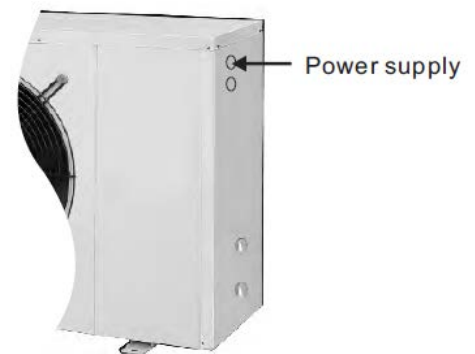
WARNING: On site wiring must be carried out in accordance with the wiring diagram affixed to the unit's junction box.

The power cables for general power supply to the unit must have a copper core and be dimensioned in accordance with current IEC standards.

The unit must be earthed via a terminal block provided inside the junction box.

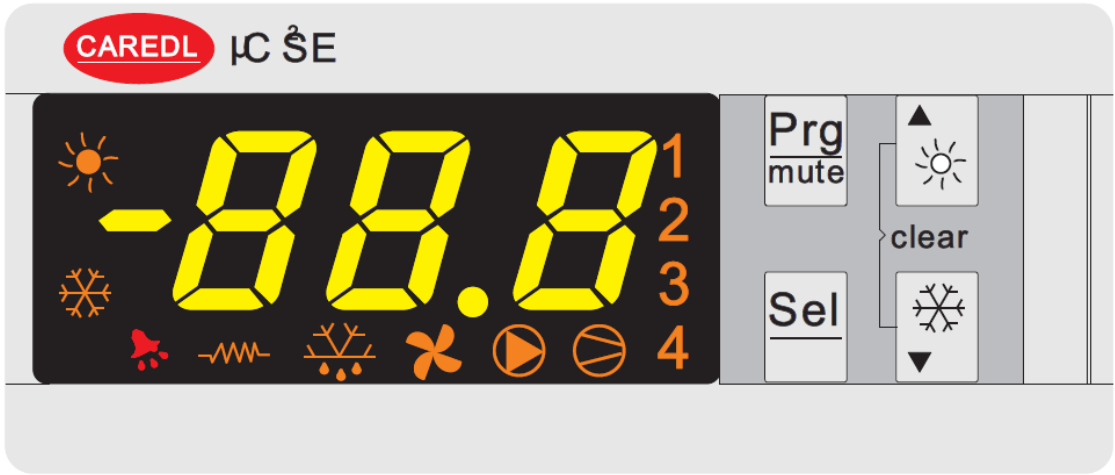
The supply voltage must not vary by more than 10%. Imbalance between the phases must not be greater than 3%.

All the connections are made on screw terminals. The wires should be stripped back 10mm.



5. Operation

5.1 Main Interface



Buttons Explained		
	Pressing this button will return back to the previous interface.	
	Function 1	continually pressing this button could enter into the set interface.
	Function 2	pressing this button could enter into the next interface.
	Function 1	continually pressing this button could start the heating mode.
	Function 2	pressing this button could turn up and increase the value.
	Function 1	continually pressing this button could start the cooling mode.
	Function 2	pressing this button could turn down and increase the value.

Icons Explained			
1;2	Compressor 1 and 2 start-up		Defrosting
3;4	Compressor 3 and 4 start-up		Electrical heater start-up
	At least one compressor starts up		Warning
	Water pump starts up		Cooling mode
	Condensate fan starts up		Heating mode

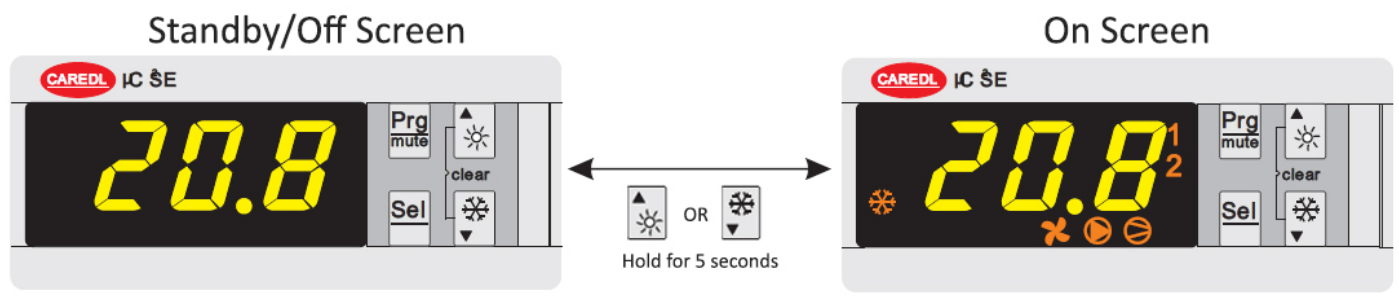
5.2 Controller Operation

5.2.1 Turn On/Off

While the unit is off only the water inlet temperature will be displayed, to turn it on, press or for 5 seconds.

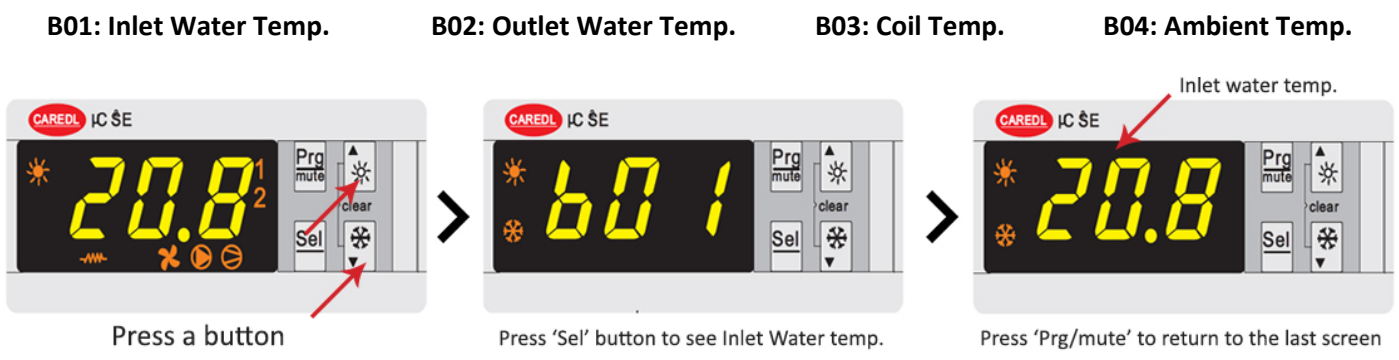
When the unit is on, the screen displays the mode and water inlet temperature. To turn the unit off press or for 5 seconds.

NOTE: If you start up the unit using the Heating button, the unit will turn on with heating mode. If you start the unit using the Cooling button, the unit will turn on with cooling mode.



5.2.2 Check Parameters

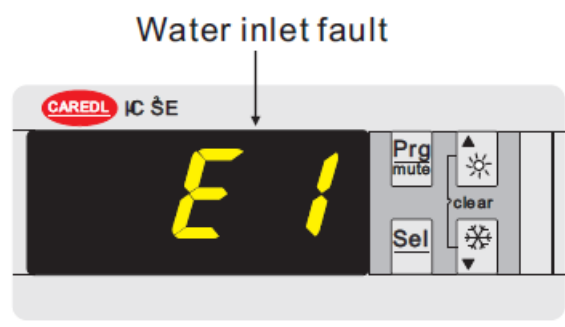
While the unit is on, the measured temperature of B01-B04 can be checked. Press or to enter into the temperature interface. Press (UP) or (DOWN) to find the required temperature, then press to confirm it. Press to return to the previous interface.








5.2.3 Malfunctions

When an error occurs with the unit, the controller will display an error code according to the reason of the fault.

(See 6.1 Fault Table for an explanation of the various error codes)

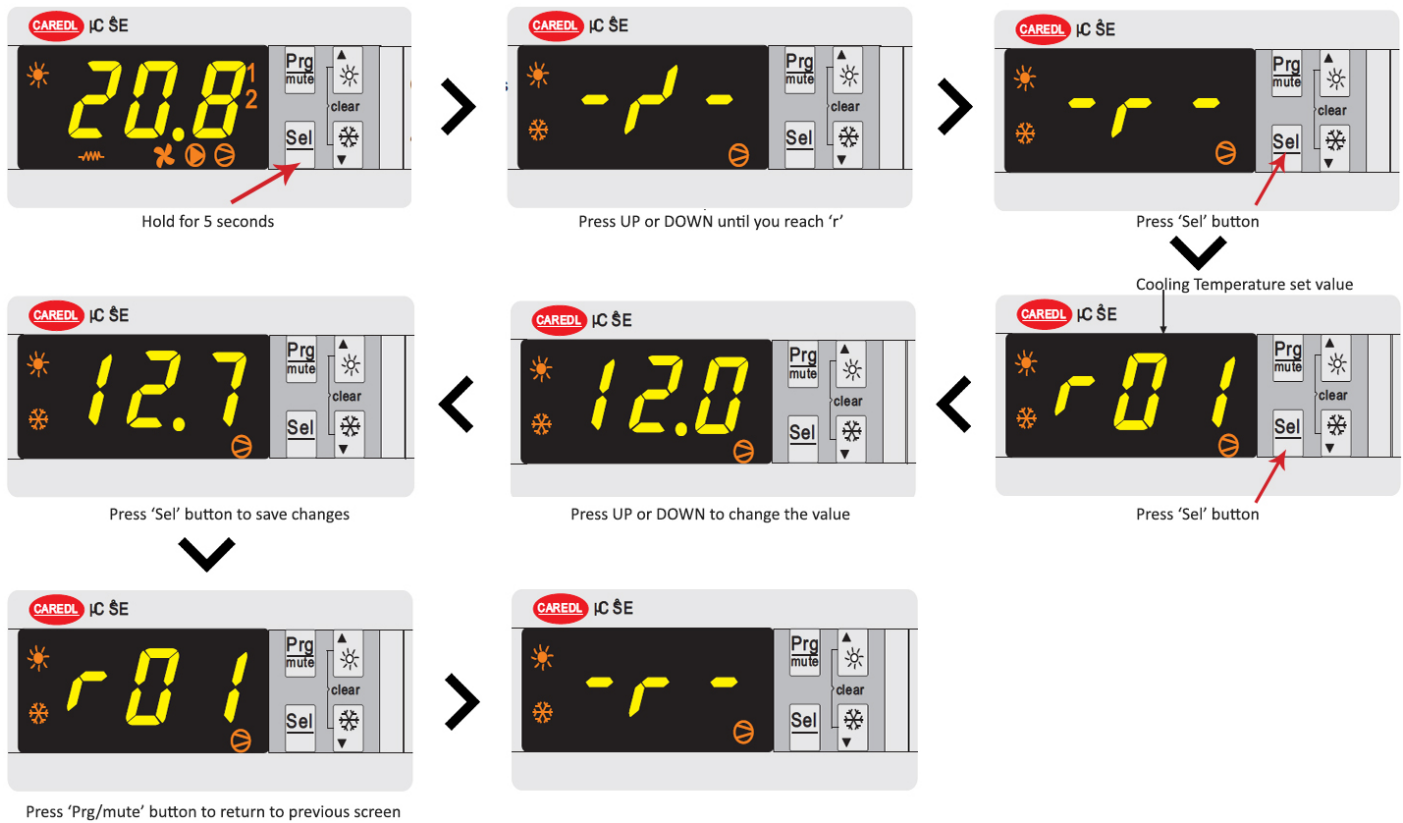


5.2.4 Temperature Setting

To set the heating or cooling temperature: Press  and hold for 5 seconds to enter into the parameter setting interface. Press the up or down button to choose the required setting. Press  to confirm. Press  again to enter into the corresponding parameter setting interface. Pressing the up or down keys will increase or decrease the value of the parameters. Press  to confirm the settings. To go to the previous interface, press the  button.

The setting of parameters will affect the performance and efficiency of the unit. Do not make many changes if it is not necessary. The parameters: r01, r02, r03 & r04 are permitted to be set but the users. For the default values, see 5.3 Parameter Table.

Example: r01



6. Troubleshooting

6.1 Fault Table

Malfunction	Display	Reason	Resolution
Normal working			
Water inlet temp. sensor failure	E1	The sensor is open or short circuit	Check or change the sensor
Water outlet temp. sensor failure	E2	The sensor is open or short circuit	Check or change the sensor
Evaporator sensor failure	E3	The sensor is open or short circuit	Check or change the sensor
Ambient sensor failure	E4	The sensor is open or short circuit	Check or change the sensor
Anti-freezing under cooling mode	A1	Water flow rate is not enough	Check the water flow volume or see if the water system is jammed
Flow switch failure	FL	No water/little water in water system	Check the water flow volume and for water pump failure
High pressure protect	HP1	High pressure switch action	Check through each pressure switch and return circuit
Low pressure protect	LP1	Low pressure switch action	Check through each pressure switch and return circuit
Exhaust temperature/ or correct protect	tC1	Exhaust temperature or current is too high	Check through exhaust temp. switch and current

7. Appendix

7.1 Parameter List

Code	Meaning	Default Value	Unit
R01	Cooling Temperature	12	°C
R02	Cooling Temperature Difference	2	°C
R03	Heating Temperature	40	°C
R04	Heating Temperature Difference	2	°C

7.2 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		
16 ~ 25A	2 x 4mm ²	4mm ²	40A		
25 ~ 32A	2 x 6mm ²	6mm ²	40A		
32 ~ 40A	2 x 10mm ²	10mm ²	63A		
40 ~ 63A	2 x 16mm ²	16mm ²	80A		
63 ~ 75A	2 x 25mm ²	25mm ²	100A		
75 ~ 101A	2 x 25mm ²	25mm ²	125A		
101 ~ 123A	2 x 35mm ²	35mm ²	160A		
123 ~ 148A	2 x 50mm ²	50mm ²	225A		
148 ~ 186A	2 x 70mm ²	70mm ²	250A		
186 ~ 224A	2 x 95mm ²	95mm ²	280A		

Three Phase Unit

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

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

8. Maintenance

Before proceeding with any intervention on the machine, you must be sure that the electrical supply is switched off. Servicing and maintaining the units must be carried out by qualified refrigeration technicians. Repeated triggering of safety and control devices must be thoroughly investigated and corrected before any further re-occurrence. The simplicity of the cooling circuit isolates it from any problem that might occur during operation. Thus, no work on the cooling circuit is required providing that the unit operates satisfactorily. However, it is advisable to carry out a certain number of preventive operations in order to maintain the unit in optimum working order. These operations essentially consist of standard checks (checking operating temperature settings, checking voltages and currents, checking water flow and temperatures, etc...) and should be carried out every 6 months and after the unit has been out of service for prolonged period (during the winter).

PREPARATION FOR SHUTTING DOWN THE UNIT FOR A PROLONGED PERIOD

The following recommendations should be taken into consideration: After stopping the compressor, stop the circulation pump. If the installation does not contain glycol, the evaporator and the chilled water pipes need to be carefully and completely drained of water.

FAN BEARINGS

The fan bearings are of the 'greased for life' type. These bearings require no greasing. However, check every 6 months that there is no abnormal wear on these moving parts.

ELECTRICAL TERMINALS

Check the screw terminal block every 6 months.

CONDENSER COILS

The condenser coils do not require any special maintenance except when they are clogged by paper or any other foreign bodies. In corrosive atmospheres, provide for suitable protection. To clean, wash with detergent and water at low pressure, and then rinse with clean water.

EVAPORATOR

The direct expansion evaporator comprises a tube in tube exchanger. These evaporators require no specific maintenance, but a mesh filter (mesh < 1 mm) must be fitted on the evaporator chilled water inlet in order to prevent the ingress of impurities which could clog the evaporator.

EXPANSION

The capillary expansion device requires no specific maintenance.

PUMP

The pump requires no specific maintenance.

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

9. 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, freight, 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.

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/>



Updated 25/08/21