



**EarthSaveProducts**  
Renewable Energy Solutions

## **ESP ECOCENT ENERGY**

# INSTALLATION AND OPERATION MANUAL



**Ecocent**  
Energy

## **WARNING!**

### **READ THIS BEFORE INSTALLING THE UNIT.**

*All un-vented water heating systems above 15 litres (this may include the ESP Ecocent Energy depending upon the installation configuration although it is unlikely) **MUST** be installed to meet the requirements of the local area Building Regulations. In the unlikely event that the configuration of the system leads to a volume in excess of 15 litres, It is a legal requirement that the local Building Control Officer be notified of any proposed installation.*

*Furthermore, any systems where the volume exceeds 15litres must be fitted by an installer who has successfully completed a recognised course covering the installation of un-vented heating systems, such as CITB. Failure to properly fit the unit, or having it fitted by an installer that is qualified as above may affect its safety, efficiency and invalidate any guarantee.*

*Safety requirements in the UK call for an expansion space (internal or external) and safety devices to prevent the stored water exceeding 100°C and/or exceeding design/safe operating pressure, and pipe work to convey discharged hot water safely away from the safety devices.*

**IN THESE CIRCUMSTANCES, THE UNIT MUST BE INSTALLED, COMMISSIONED AND MAINTAINED BY A COMPETENT INSTALLER IN ACCORDANCE WITH BUILDING REGULATION G3 (ENGLAND AND WALES), TECHNICAL STANDARD P3 (SCOTLAND) OR BUILDING REGULATION P5 (NORTHERN IRELAND) AND THE WATER FITTING REGULATIONS (ENGLAND AND WALES) OR WATER BYELAWS (SCOTLAND). FOLLOWING INSTALLATION AND COMMISSIONING, THE OPERATION OF THE UNIT SHOULD BE EXPLAINED TO THE USER AND THESE INSTRUCTIONS LEFT WITH THEM FOR FUTURE REFERENCE.**

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## 1.0 Preface

*Important: please read and ensure that you understand these instructions before installing the ESP Ecocent Energy. Incorrect installation **will** invalidate any guarantee.*

### 1.1 INFORMATION FOR INSTALLERS AND SERVICE ENGINEERS

Under the Consumer Protection Act 1987 and the Health and Safety at Work Act 1974, it is a requirement to provide information on substances hazardous to health (COSHH Regulations 1998).

ESP takes all reasonable steps to ensure that its heat pumps are designed and constructed to meet these general safety requirements, provided they are properly installed and used.

To check that it is complying with these requirements, ESP heat pumps are comprehensively tested and examined before despatch.

When working on the appliance, it is the responsibility of the user/engineer to ensure that appropriate personal protective clothing/equipment is worn/used having regard to the work being undertaken on the unit and the components/areas of the unit that is/are to be worked on/accessed and which could be considered hazardous or harmful.

This heat pump may contain some of the items below:

#### Refrigerants

The appliance contains 720g of R410A refrigerant. The constituents of R410A have low toxicity levels. Only suitably qualified engineers should work upon any part of the unit that contains or may cause the escape of, any refrigerant. Site engineers should have a certificate of competence confirming that they are qualified to work with and/or around refrigerants and should know and understand the properties of refrigerants in the heat pumps and hazards that such refrigerants present before handling liquid refrigerants.

When handling refrigerant, avoid inhalation and contact with the skin and eyes. Suitable personal protective equipment must be worn (gloves, overalls, eye protection) and a comprehensive first-aid kit (containing eye wash) should be immediately accessible.

When the appliance has come to the end of its life- span, the equipment and refrigerant must be disposed of in accordance with local and EU law and by an approved engineer.

***Seek urgent medical attention if any refrigerant is inhaled or ingested.*** Exposure to eyes and skin should be followed by immediate cleansing of the affected areas and professional medical attention sought.

#### Glues, Sealants and Paints

Glues, sealants and paints are used in the heat pump and present no known hazards when used in the manner for which they are intended.

**1.2 IMPORTANT SAFETY INFORMATION FOR THE END USER**

Below you will find information that is critical for not only the safe and proper installation of the unit but also the use of the system. Please make sure that you understand the contents of this manual to help avoid the risk of injury or damage to the unit and/or other property.

1.2.1 Installation Precautions.

|  |   |
|--|---|
| Professional & qualified installer is required | The heat pump must only be installed by a suitably qualified engineer. Failure to ensure this can cause damage to the unit and may cause serious injury. The warranty on the unit will also be invalidated if a suitably qualified engineer is not engaged to install it.   |
| Earthing required                              | Please make sure that the unit and power supply are properly earthed in accordance with current regulations.  |
| Refrigerant                                    | If you are installing the unit in a small room, please give full consideration to adequate ventilation being available in the event of a refrigerant leak.  |
| Installation Site                              | Do not install the unit near to a gas installation. This unit is designed to be installed inside a building.  |
| Site consideration                             | Ensure that this unit is installed on a solid level surface capable of bearing its operation weight. Make sure that you have a suitable facility to cater for disposal of condensate from the condensate drain on the unit.   |
| Power Supply                                   | Make sure that this unit is connected to the power supply via A 5 Amp fused switched spur from the domestic ring main.  |
| Unit Upright                                   | The unit <u>must</u> be installed level across the whole unit. Failure to install the unit level will mean that condensate can spill over the lip of the condensate tray.   |
| Siting the Unit                                | The unit must only be installed indoors – the unit is neither designed, nor suitable, for installation outside. The Unit needs to be sited where the ambient temperature never goes below 5 degrees. If the unit is to be left unused for any significant period of time during which the ambient temperature could cause the unit or pipe work from the unit to freeze, it should be drained down. |

1.2.2 Precautions when Operating the Unit

|                        |   |
|------------------------|---|
| Physical security      | Do not push anything into the fan blades when running and make sure that children cannot access the unit or play close to the unit. Do not place anything on, or cover, the unit. |
| Unusual sounds/ odours | If there is an unusual sound or smell coming from the unit, immediately shut off the power supply and call your installation engineer.  |
| Cleaning               | When cleaning the unit, shut off the power supply.  |

1.2.3 Precautions when moving or repairing the unit.

|                       |   |
|-----------------------|---|
| Moving or repairing   | Do NOT try to install, move or repair the unit yourself – it is NOT worthwhile running the risk of injury.  |
| Transporting the Unit | The unit must be transported in the vertical position. It can be tilted up to 60° from the horizontal axis. |

## 2.0 Introduction

Always put the unit into standby mode before turning off power supply to the unit.

Do not operate the unit or the programmer with wet hands/fingers.

Always replace any fuse in any part of the power feed to the unit with one of the correct rating. Do not, under any circumstances, use a fuse that is too large or bridge the fuse with silver paper, nails, wire, or anything similar.

Keep the programmer for the unit out of reach of children.

Isolate the electrical supply during a heightened risk of lightning strikes.

Do not attempt to move the appliance once installed; this must be carried out by a qualified engineer

Isolate the electrical supply to the appliance if you detect an odour from the unit, or scorching is detected anywhere in or on the unit.

Only use the unit for the purpose intended and in accordance with this manual.

Ensure the area around the unit is clean, well-ventilated and kept free of all obstructions.

Do not keep items on top of the unit or use it to support other appliances.

Isolate the electrical supply to the unit if it is to be switched off for a period of more than a week.

Drain the water from the water circuit if power to the unit is to be switched off during very cold weather.

Periodically check the condition of any supports or wall brackets for deterioration - have these replaced immediately if any deterioration is evident.

Before cleaning, isolate the electrical supply to the unit. If cleaning of any internal part of the unit is required, this should only be done by an appropriately qualified engineer.

Do not wash the unit with water, alcohol, benzene, thinners, glass cleaner, polish or powders.

If you have any questions about the operation and maintenance of the unit that are not addressed in this manual or, if you feel that something in this manual is unclear, please call the seller, distributor or ESP.

All ESP ASHPs are covered by the warranty contained in the ESP *Terms and conditions of Business* a copy of which will have been provided to you prior to your purchase.

## 2.1 General Principles and Efficiency

Unlike traditional electric water heaters (commonly known as immersion heaters), the EcoCent Energy works by moving energy from one location to another rather than generating heat directly by electricity. Because it is easier to move heat rather than generate it, the EcoCent Energy is much more efficient than a traditional immersion heater or, indeed, heating by indirect coil from a traditional boiler. In fact, the EcoCent Energy will use approximately 25% of the energy used by an Immersion heater for the same qualities and temperatures of domestic hot water (DHW) supply.

## **2.2 Environmental Impact**

Because the Ecocent Energy uses less energy to produce the same amount of DHW it has less impact on the environment. With the right choice of DHW storage vessel, it can be combined with other renewable energy sources such as solar thermal systems (and Photo Voltaic arrays) to reduce running cost and environmental impact still further. The only emission from the unit itself is cool, dry air. The very fact that it uses waste energy from your dwelling (normally bathrooms and kitchens), harvesting the thermal energy to heat your DHW means that you will, potentially, save energy in that extractor fans may not need to run for so long.

## **2.3 All Year-Round Hot Water**

Unlike solar thermal solutions, the Ecocent Energy is not susceptible to the vagaries of the weather so it will deliver your DHW efficiently all year-round.

## **2.4 Reliability**

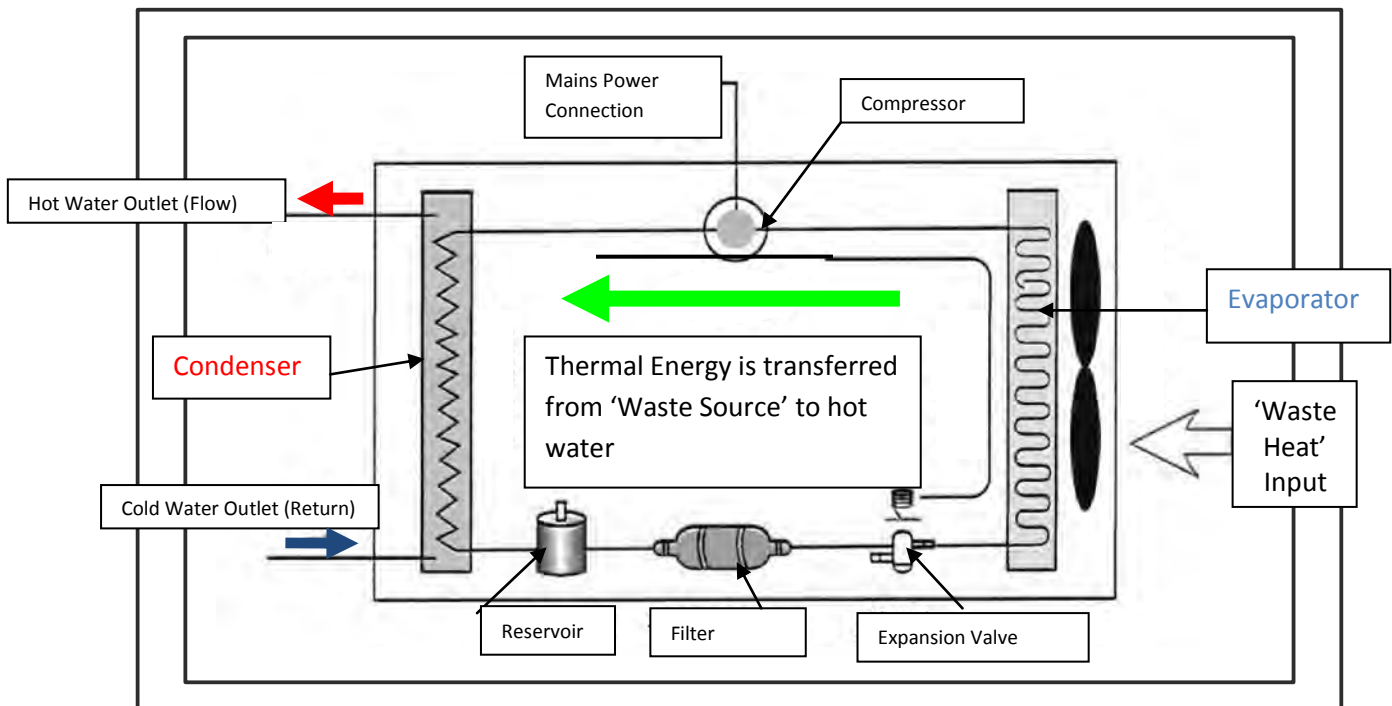
As with all ESP products, the Ecocent Energy is built using 'best in class' components such as compressors and evaporators. Because we chose to use the best, all our products are reliable and robust although spare parts would be available for the life of the system in the event that replacements are necessary.

## **2.5 Ease of Installation**

The monobloc compact design and the minimal power supply mean that the Ecocent Energy is easy to install in any convenient location.

**3.0 How it works**

The refrigerant gas is drawn from the evaporator by the compressor and is, at that point, under low pressure and is relatively cool. The Compressor increases the pressure of the gas which also increases the temperature of the refrigerant. As the high-pressure, high temperature gas passes through the condenser, the pressure drops which releases the heat energy into the water via the highly efficient and patented heat exchanger. The (now cold, low pressure) gas passes on to the evaporator where it is warmed by the air drawn from your 'waste energy' areas via the 150mm inlet port. The cold air is ejected from the unit via the 150mm exhaust ducting and the cycle continues as shown below:



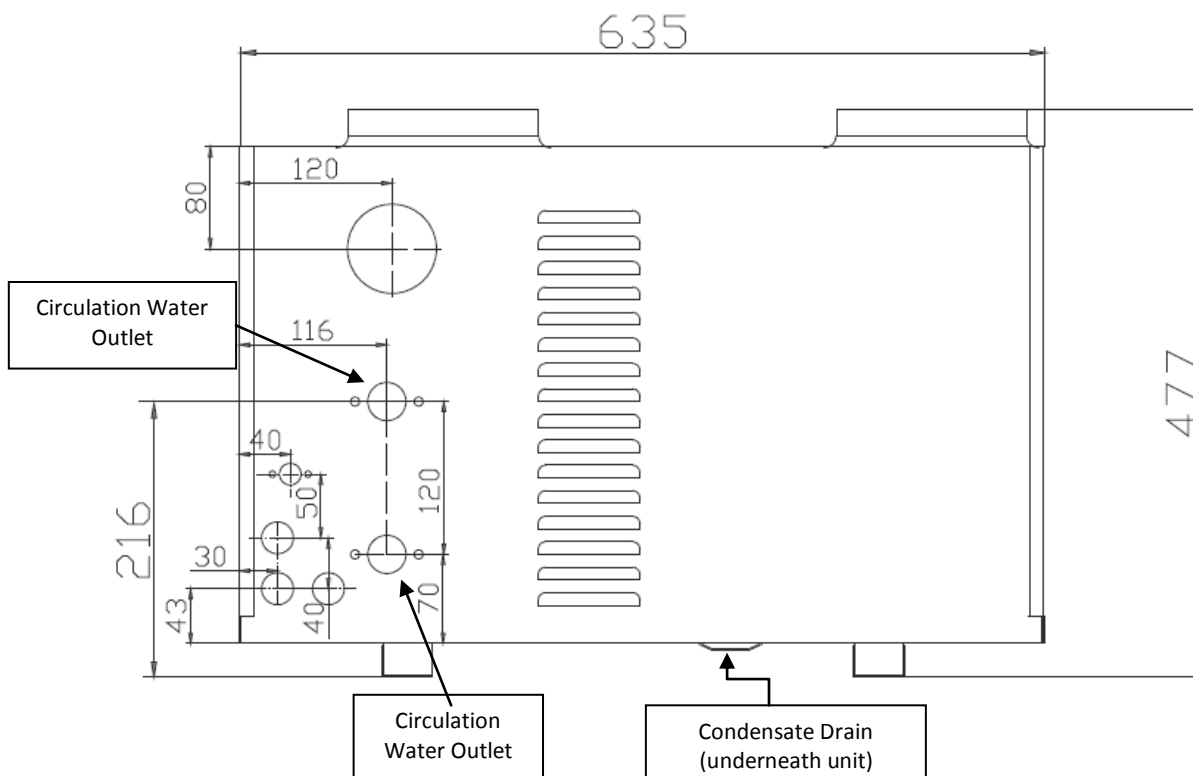


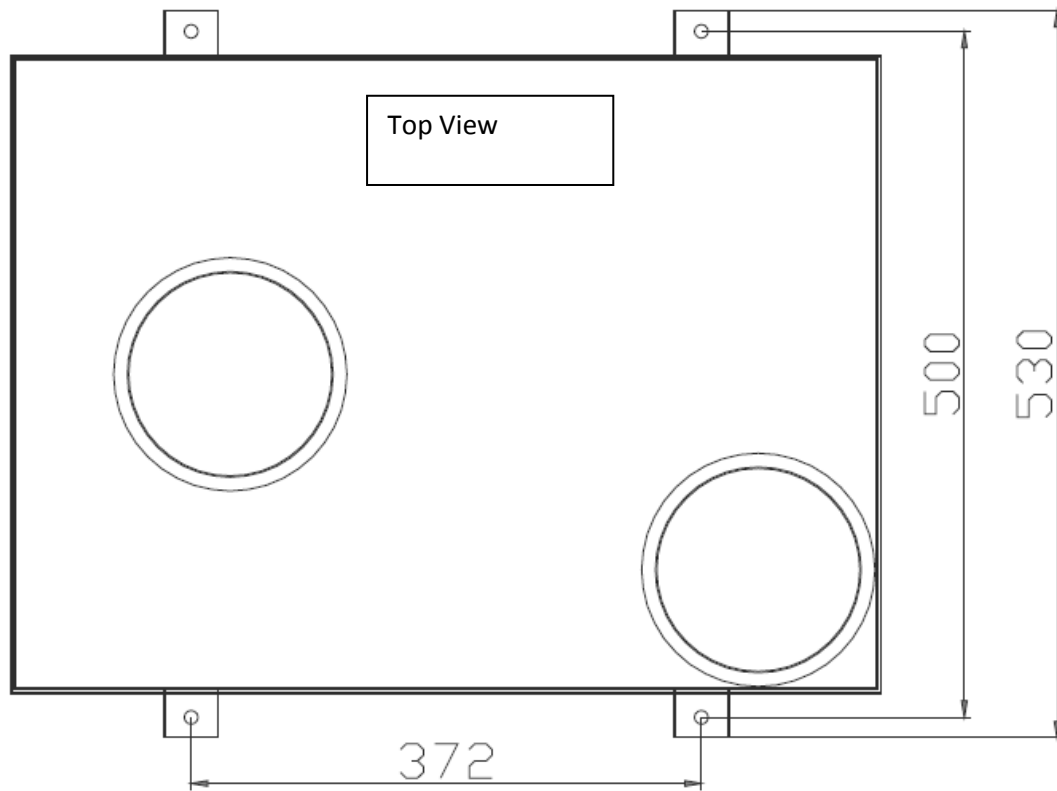
**4.1 Performance**

|                                   | Units                   | Value              |
|-----------------------------------|-------------------------|--------------------|
| Rated Heating Capacity*           | <b>W</b>                | <b>3000</b>        |
| <b>Power Supply</b>               | <b>V/Ph/Hz</b>          | <b>220/1/50</b>    |
| <b>Input Power</b>                | <b>kW</b>               | <b>0.81</b>        |
| <b>Running Current</b>            | <b>A</b>                | <b>3.8</b>         |
| <b>Hot water Generation Rate</b>  | <b>L/Hr</b>             | <b>514</b>         |
| <b>Default Target Temperature</b> | <b>°C</b>               | <b>55</b>          |
| <b>Maximum Target Temperature</b> | <b>°C</b>               | <b>60</b>          |
| <b>Water Connections</b>          | <b>Inch</b>             | <b>3/4</b>         |
| <b>Number of Compressors</b>      | <b>N/A</b>              | <b>1</b>           |
| <b>Number of Fans</b>             | <b>N/A</b>              | <b>1</b>           |
| <b>Fan Input Power</b>            | <b>W</b>                | <b>30</b>          |
| <b>Water Flow Rate</b>            | <b>m<sup>3</sup>/hr</b> | <b>0.44</b>        |
| <b>Noise</b>                      | <b>dB(A)</b>            | <b>49</b>          |
| <b>Net Dimensions (W/D/H)</b>     | <b>mm</b>               | <b>635/530/447</b> |
| <b>Net Weight</b>                 | <b>Kg</b>               | <b>46</b>          |

\*Test conditions: Dry bulb 20°C, wet bulb 25°, water inlet C40°C, water output 45°C

**4.2 Dimensions**

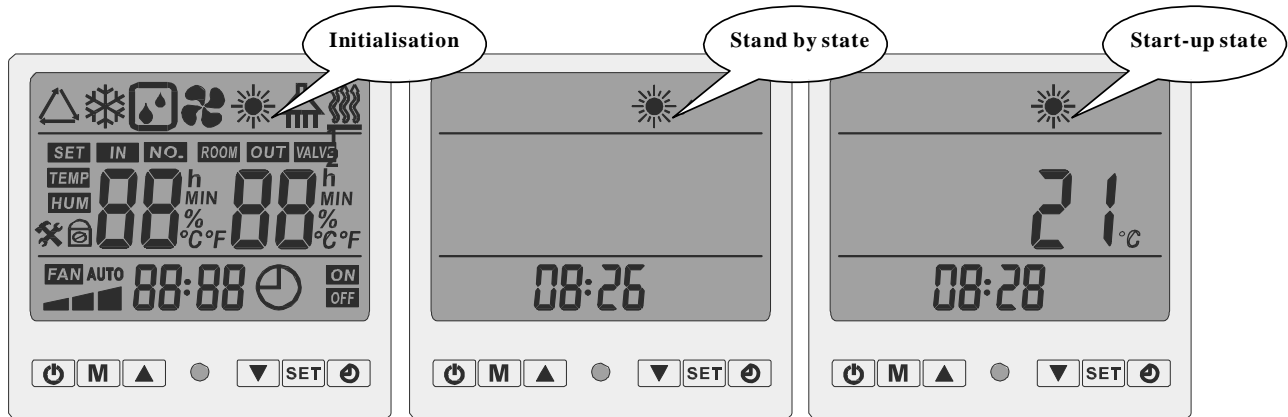




### 5.0 Operation

#### 5.1 Initialisation.

When power is applied to the Ecocent Energy, the initialisation screen will be displayed. If the initialisation screen does not appear after a maximum of 10 seconds, the controller is not connected properly to the Ecocent Energy. If this happens, turn off the power supply to the unit, check the controller connection and turn the unit back on.



#### 5.2 Stand-by.

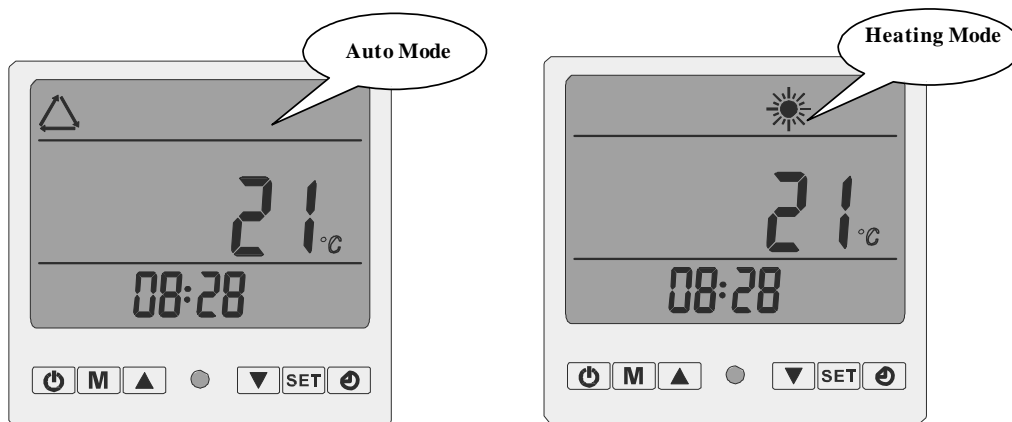
When there is power on to the unit but it is in 'Stand-by' only the 'Sun' symbol will be displayed together with the time.


#### 5.3 'Normal' Screen.

When the unit is running, the 'Sun' symbol, the time and the tank temperature will be shown.



### 6.0 Modes of Operation

There are two modes of operation – 'Auto' mode and 'Heating' mode. The modes are displayed as follows:



Press the “” button to turn the unit on or to return it to standby.

Press the “M” button to toggle between Auto and Heating modes.

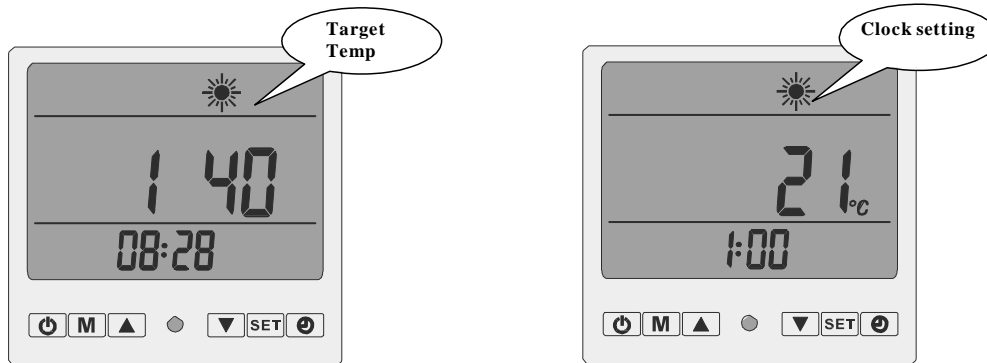
Pressing the “” or “” will change the parameters (see below).

The “☺” button is used to set the timer (see below).

### 7.0 Setting Parameters

7.1 Target Temperature. When the unit is either in stand-by mode or is starting up, pressing either the “▼” or “▲” buttons will display the target temperature to be displayed. If no button is pressed during the next 8 seconds, the display will return to the previous state.

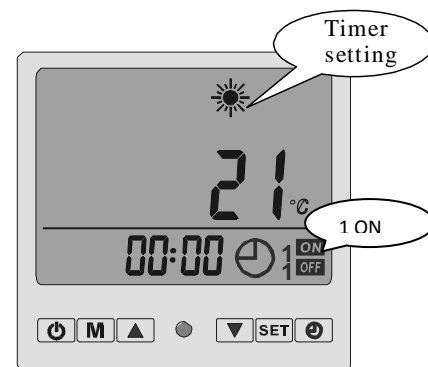
7.2 Checking the target Temperature. In Standby mode, pressing the “▲” button will display target temperature (40°C in this example).



***Please note that the target temperature can only be changed when the unit is in stand-by.***

7.3 Setting the Clock. To set the clock, make sure that the unit is in standby or is starting up. Pressing the ‘Set’ button will cause the hour to flash and pressing the “▲” or “▼” will increase or decrease the hour value. Press the ‘set’ button again to make the minute value flash and use the increase and decrease buttons again to set the correct time then press the ‘set’ button again to confirm and save the time.

7.4 The most efficient way to run the Ecocent Energy is to set it for continuous running but 2 timers can be set for intermittent running. To set the timers for on and off periods, press the “☺” button whilst in standby. The hour and “1 ON” (See diagram) will flash. Use the “▼” and “▲” to select the desired hour-on setting then Press the “☺” button again to make the minute value flash. Adjust this in the same way then press the “☺” again to Confirm the minute value. The “1 OFF” and hour symbols will then flash. Set the hour and minute as before. Press the “☺” one more time to confirm the timer one settings and save them.

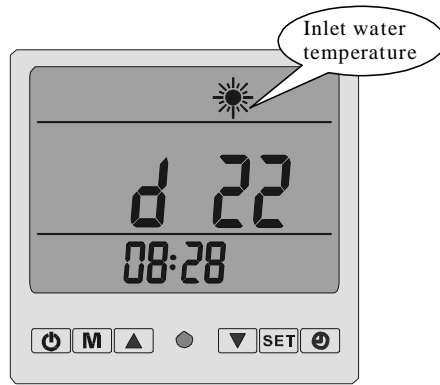


Pressing the ‘set’ button at this stage will cancel the timer 1 setting.

To set timer 2, the procedure is much the same but the process is started by pressing the “ ” button for 3 seconds whilst in standby.

***Please note: When setting the timers, all 4 values (1 ON and OFF & 2 ON and OFF) must be different.***

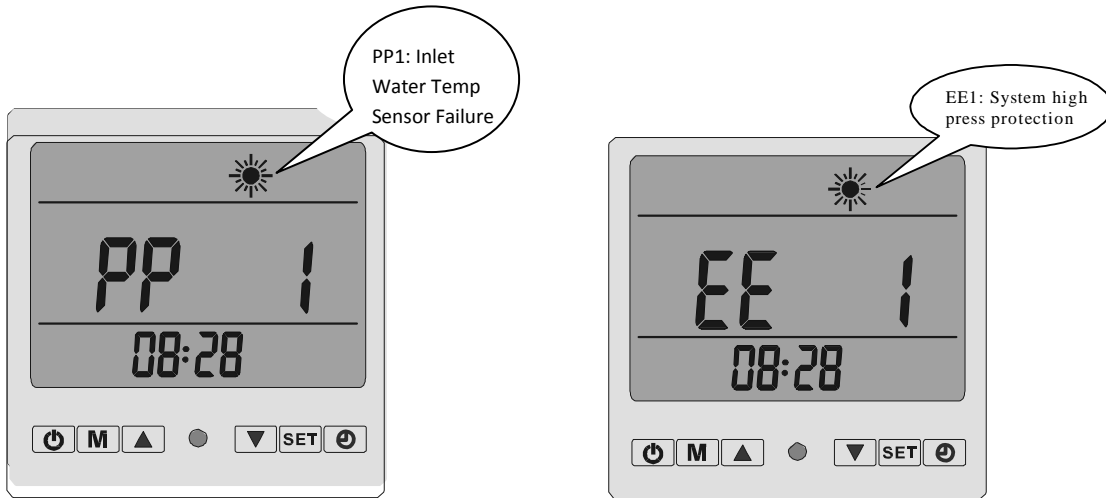
7.5 Displaying the Inlet Temperature. Inlet To display the actual, current, inlet temperature, press the “▲” button whilst in standby mode. This is the actual temperature and cannot, therefore, be changed.



7.6 Parameter List. Of the 22 parameters that can be displayed, 10 *can* be changed. However, you are ***strongly*** advised not to change any parameter without consulting the ESP technical team first; the units are set for optimum performance and altering any setting will reduce efficiency and could be dangerous.



| Parameter | Meaning  | Range                                 | Default  | Notes       |
|-----------|--|---------------------------------------|----------|-------------|
| 0         | Inlet water temperature to start Auxiliary Heater Ht1  | 0-30°C                                | 15°C     | Reserved    |
| 1         | Inlet water target temp  | 10-60°C                               | 40°C     | Adjustable  |
| 2         | Return water temp difference   | 1-10°C                                | 5°C      | Adjustable  |
| 3         | Defrost Cycle  | 30-90 Mins                            | 40Mins   | Adjustable  |
| 4         | Trigger Temp for Defrost Start   | -30 to 0°C                            | -7°C     | Adjustable  |
| 5         | Trigger Temp for Defrost End   | 2-30°C                                | 13°C     | Adjustable  |
| 6         | Defrost time   | 1-12 Mins                             | 8Mins    | Adjustable  |
| 7         | System Quantity  | N/A                                   | 1        | Adjustable  |
| 8         | Power Failure Protection   | 0/1                                   | 1 (yes)  | Adjustable  |
| 9         | Manual or Automatic control of Expansion Valve   | 0/1                                   | 1 (Auto) | Adjustable  |
| A         | Pressure Water Pump present  | 0/1                                   | 1        | Reserved    |
| B         | Water Pump Control Mode:<br>0= Water Pump continues to run when target temperature is reached and unit returns to standby.<br>1= Water Pump turns off 30 seconds after compressor. | 0/1                                   | 0        | Adjustable  |
| C         | Temp difference between gas suction and expansion valve  | -15°C - ~15°C<br>(Displays as -F - F) | 0        | Adjustable  |
| D         | Manual control for electronic Expansion Valve  | 0-50                                  | 35       | Adjustable  |
| E         | Inlet Water Temperature  | -9~99°C                               |          | Tested Data |
| F         | Outlet Water Temperature   | -9~99°C                               |          | Tested Data |
| 10        | Evaporator Tube Temperature  | -9~99°C                               |          | Tested Data |
| 11        | Gas temperature (high temp side)   | 0~127°C                               |          | Tested Data |
| 12        | Ambient Temperature  | -9~99°C                               |          | Tested Data |
| 13        | Water Tank temp  | -9~99°C                               |          | Tested Data |
| 14        | Gas Temp (Low temp side)   | -9~99°C                               |          | Tested Data |
| 15        | Steps for expansion valve  | 0-50                                  |          | Tested Data |

7.7 Error Codes. Should a fault develop with the EcoCent Energy, either a PP or an EE code will be displayed as shown below:



| Error  | Code on Display | Lights on Main Unit           |
|--|-----------------|-------------------------------|
| Heat Pump in Standby                                 |                 | Off                           |
| Heat Pump Running                                    |                 | On                            |
| Inlet water temperature sensor failure               | PP1             | ☆ ●(1 on 1 off)               |
| Outlet water temperature sensor failure              | PP2             | ☆☆ ●(2 on 1 off)              |
| Evaporator defrosting temperature sensor failure     | PP3             | ☆☆☆ ●(3 on 1 off)             |
| Gas compressing side temperature sensor failure      | PP4             | ☆☆☆☆ ●(4 on 1 off)            |
| Ambient temperature sensor failure                   | PP5             | ☆☆☆☆☆ ●(5 on 1 off)           |
| Water tank temperature sensor failure                | PP6             | ☆☆☆☆☆☆☆☆☆☆ ●(11 on 1 off)     |
| Anti-freeze protection (Winter)                      | PP7             | Off                           |
| Gas compressing side high temperature sensor failure | PP8             | ☆☆☆☆☆☆☆☆ ☆☆☆☆ ●(12 on 1 off)  |
| Gas suction side temperature sensor failure          | PP9             | ☆☆☆☆☆☆☆☆ ☆☆☆☆☆ ●(13 on 1 off) |
| System high pressure protection                      | EE1             | ☆☆☆☆☆☆ ●(6 on 1 off)          |
| System low pressure protection                       | EE2             | ☆☆☆☆☆☆ ●(7 on 1 off)          |
| Water flow switch failure                            | EE3             | ☆☆☆☆☆☆☆☆ ●(8 on 1 off)        |
| Power source wrong/open phase                        | EE4             | ☆☆☆☆☆☆☆☆☆☆ ●(9 on 1 off)      |
| Water pressure failure                               | EE5             | ☆☆☆☆☆☆☆☆☆☆ ●(10 on 1 off)     |
| Wire controller communication failure                | EE8             | (No indication on main unit)  |
| Defrosting   | Defrost         | ☆☆☆☆☆☆☆☆ (long on)            |

*Notes: Standby, Running and Defrosting are not errors but have been included in the above table for completeness.*

7.8 Defrost. The EcoCent Energy will defrost automatically as required. However, the unit can be forced to defrost out of normal cycle by pressing the “” and the “” buttons together for 5 seconds from stand-by mode.

### 8. General

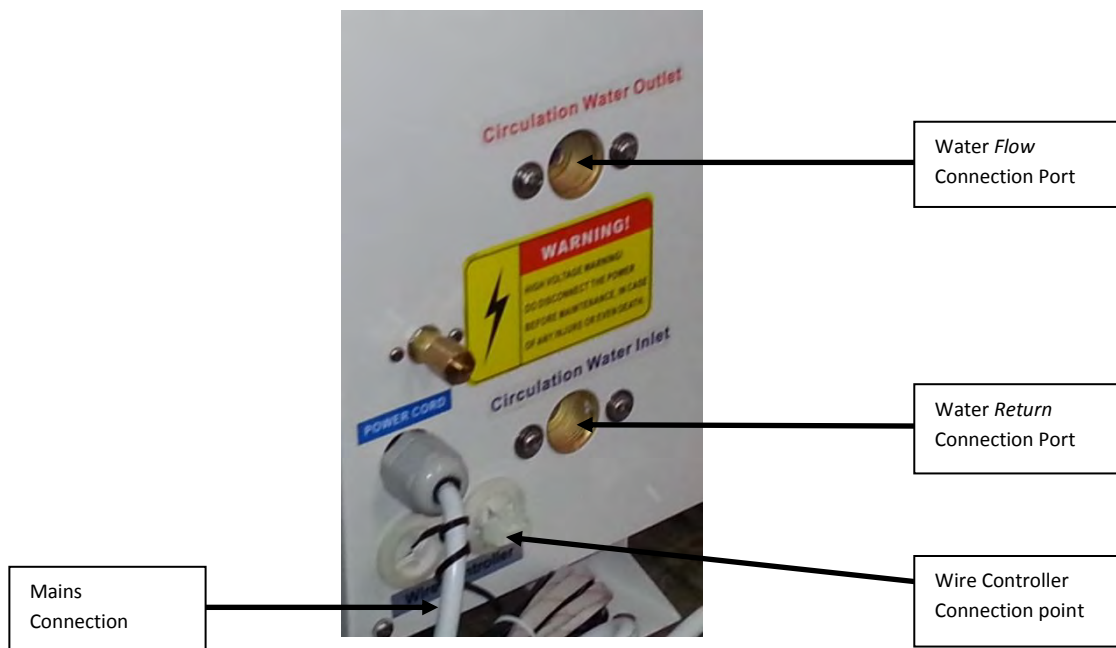
8.1 Regulations. The installation must be carried out in accordance with the relevant requirements of:

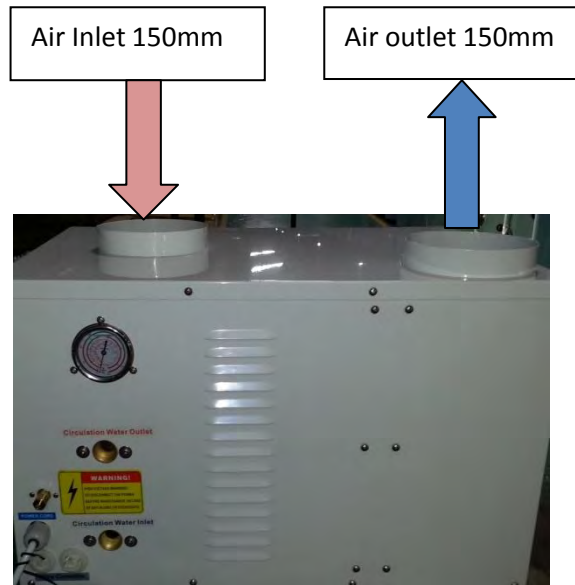
- A) The appropriate Building Regulations: either The Building Regulations (England and Wales), The Building Regulations (Scotland) or Building Regulations (Northern Ireland). This includes regulations governing water heating systems above 15 litres if applicable.
- B) The Water Fittings Regulations (England and Wales) or Water Bye Laws (Scotland). Bye laws (Scotland).
- C) Any other applicable Regulations.

Failure to observe any of the above conditions will invalidate the warranty/guarantee.

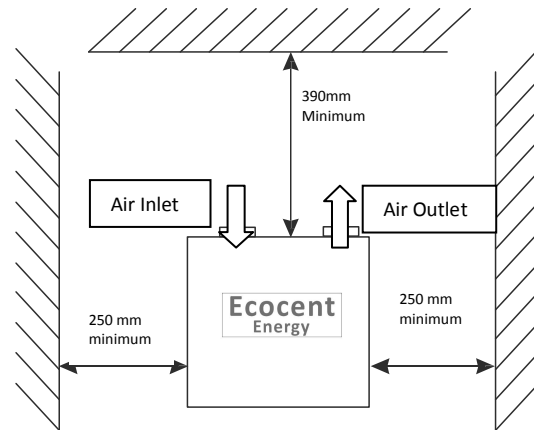
8.2 Connections. The Ecocent Energy requires the following connections:

- An electrical connection from a fused spur on the ring-main,
- Flow and return hydraulic connections,
- A connection for the condensate drain,
- 150mm insulated ducting from the heat source and a 150mm insulated outlet duct and
- the wired controller,
- Safe termination of the pressure relief valve.



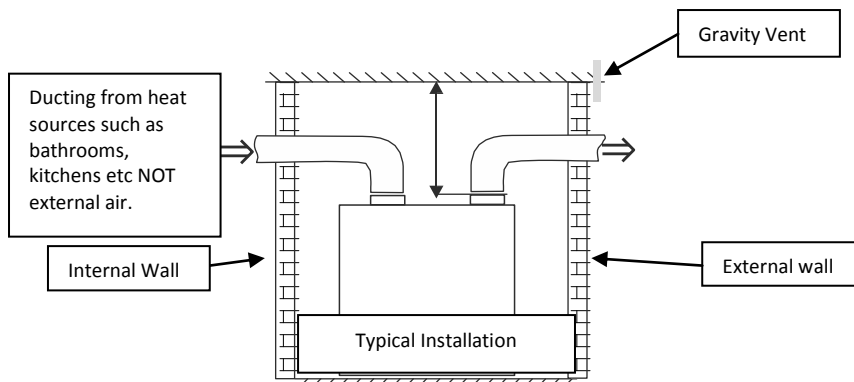


8.3 Positioning the Ecocent. The Ecocent Energy must be installed in a well ventilated area with the minimum clearances shown on all sides to allow access for maintenance. Provided that access is not impaired, other units or temporary obstructions can be placed within this space. An example would be a door 50mm in front of the Ecocent Energy logo that could be opened such as an airing cupboard. The unit must be secured to a firm, level, base with rubber mounts. The location should allow for maintenance access. The Ecocent Energy should be installed up-right and level. Provision must be made for the connections listed



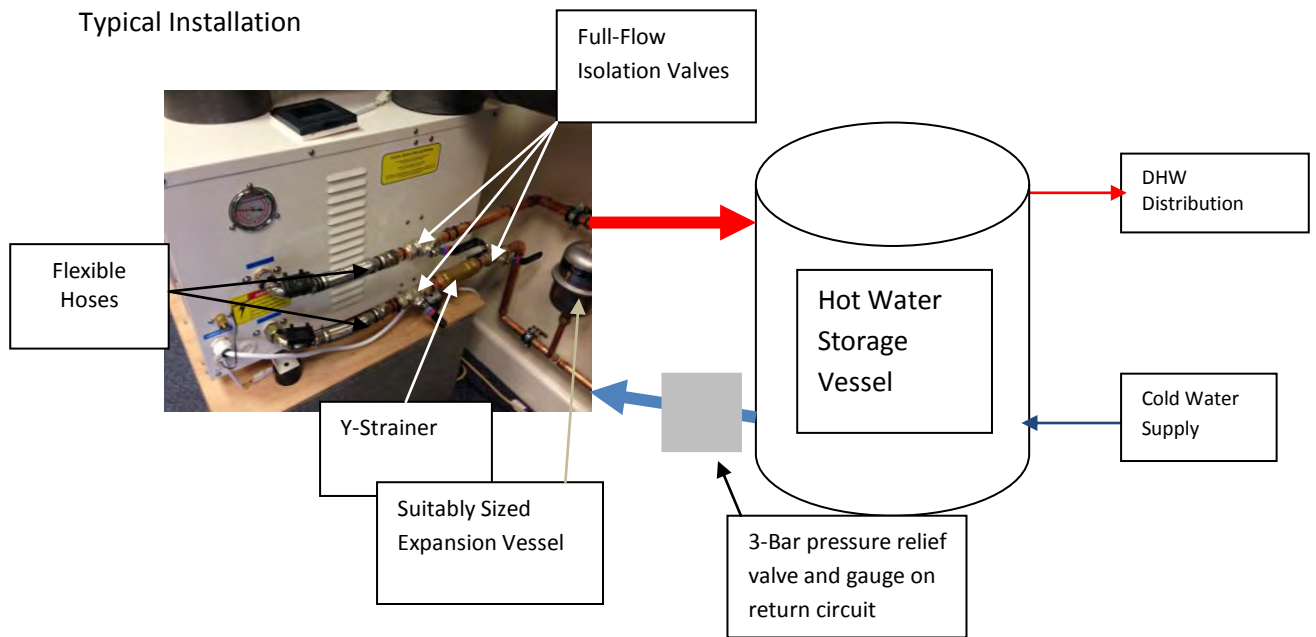
The unit must be sited out of direct sunlight and clear of areas of falling debris.

***IMPORTANT NOTE: DO NOT SITE THE UNIT IN THE SAME ROOM AS AN OPEN FLUED APPLIANCE OR A ROOM WHERE AN OPEN FLUED APPLIANCE TAKES ITS COMBUSTION AIR FROM, UNLESS THE MATTER HAS BEEN CAREFULLY CONSIDERED AND ADEQUATE DUCTING AND VENTILATION HAS BEEN PROVIDED FOR THE ECOCENT ENERGY AND THAT THE OPEN FLUED APPLIANCE IS FULLY CATERED FOR IN TERMS OF A SUITABLE AIR SUPPLY.***





8.4 Hydraulic Connections. Flow and return connections are made via the 3/4" female ports on the front of the unit (see above). These connections must be made using flexible hoses to reduce vibration, protecting the unit and reducing the risk of vibration transference. The rest circuit should be completed in copper pipe with as few bends in the pipework as possible, auto vents as necessary on high points. The condensate drain is connected via 3/4" connection on the bottom of the unit. The water pressure in the system must be less than 0.6Mpa.



Please note that the expansion tank is not supplied as it depends on the configuration of the pipework and, therefore, the volume of that pipework and associated control fittings. However, an optional fitting kit is available from ESP, please ring for details or visit our web site.

There will also need to be suitable drains to take the discharge from the pressure relief valve (via the tundish) and the condensate drain.

All pipework and fitting should be lagged using high quality, non-flammable PVC insulating material of 15-20mm thickness to guard against both heat loss and possible freezing in winter.

8.4.1 Discharge Paperwork. The installation should include the discharge pipe(s) from the safety device(s) which must be installed in accordance with current regulations

8.4.2 Expansion Vessel. An appropriately sized expansion vessel must be fitted to the system in which the unit is incorporated. The expansion vessel must be fitted to the cold feed in to the unit (see above diagram).

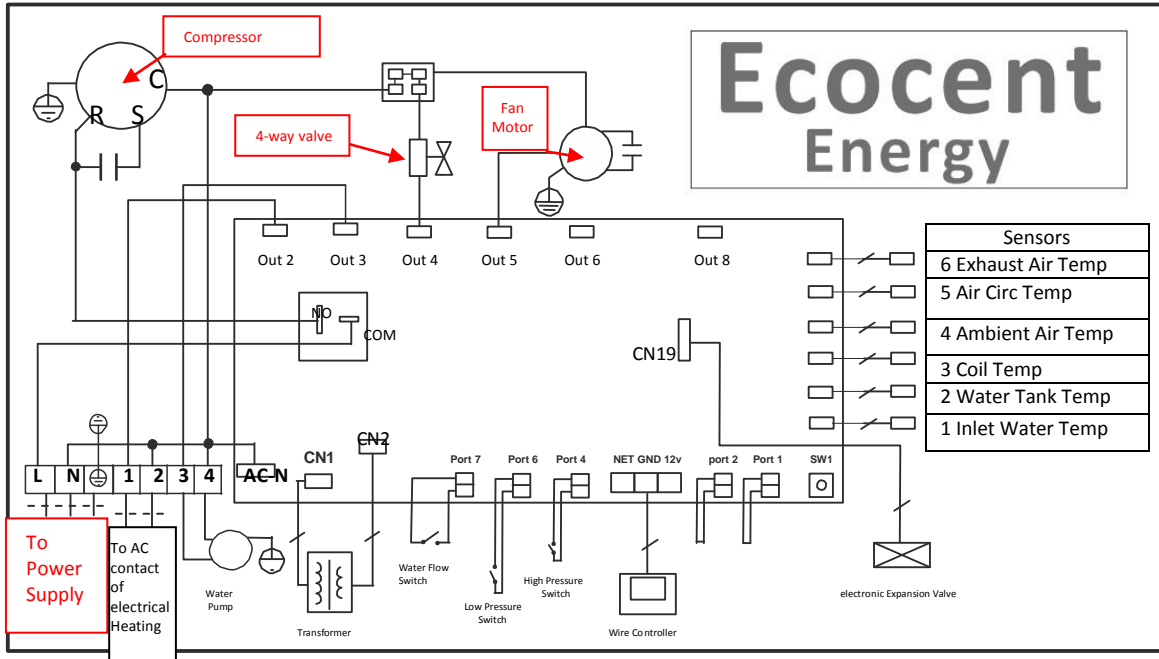
8.4.3 In the unlikely event that the Ecocent Energy volume exceeds 15 Litres, G3 (ENGLAND AND WALES), TECHNICAL STANDARD P3 (SCOTLAND) OR BUILDING REGULATION P5 (NORTHERN IRELAND) AND THE WATER FITTING REGULATIONS (ENGLAND AND WALES) OR WATER BYELAWS (SCOTLAND) must be met:

There shall be precautions to ensure that the hot water discharged from safety devices is safely conveyed to where it is visible but will not cause danger to persons in or about the building.

8.4.4 Checking. Once all the pipework has been completed and flushed, the system should be checked for leaks and purged of air. Once the installer is certain that the Full-Flow isolator valves are all open the Ecocent Energy can be commissioned (see below).

8.5 Electrical Connection.

**For information only.** There will not, normally, be a need to expose the internal wiring.



All electrical wiring MUST be carried out by a competent electrician and be in accordance with the latest I.E.E. Wiring Regulations. The Ecocent Energy is connected to the 13amp ring main via a 5A fused spur and the pre-installed power cord. It must be properly earthed.

**9. Starting the Ecocent Energy.**

9.1 Pre-Start Checks.

Before powering-on your Ecocent Energy, make sure that:

- All full-flow isolation valves have been opened.
- There are no leaks in the hydraulic circuits.
- All air has been purged from the system.
- The unit has been secured properly.
- The electrical connections have been made properly by a qualified electrician.
- The unit is properly earthed.
- There is no debris or obstruction in the ducting or air ports on the unit.

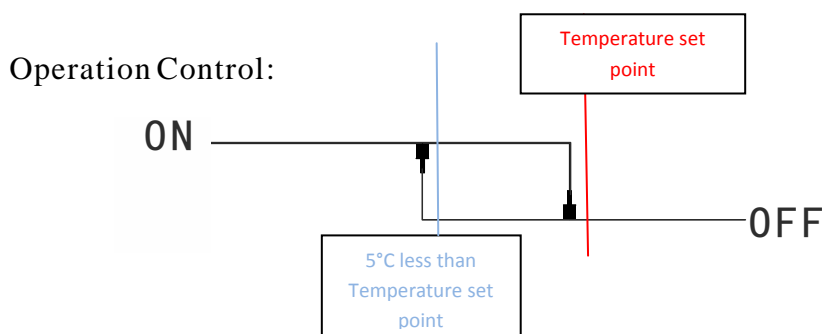
9.2 Power-On Checks. When power is applied to the unit for the first time, the display will go through the initialisation sequence then enter standby. If the controller is blank, turn the unit off then check the wired-controller connection.

9.3 Start-up. Start the unit as described above. The display will change to ‘heating mode’ as described earlier. The first stage of the Ecocent Energy start-up sequence is that the water pump will run after a delay of 3 minutes. If, at this stage, there is air in the system, error code EE3 will be displayed on the controller and the start-up sequence will halt; the system must be purged of air. The second stage is that the fan will start after a short delay to draw air into the unit through the ducting. Finally, and once the previous stages have been completed and provided that there is a ‘call’ for heat, the compressor will start after a further short delay.

9.4 Post-Start Checks. If, at any stage during the start-up, there are strange noises or odours emanating from the unit, it should be powered off immediately and advice taken from the ESP Technical Team. As the temperature rises, the unit should be checked for normal operation and the pipework (and fittings) checked for leaks.

*Please note that once the target temperature has been reached, the compressor will stop, the fan will stop after a short delay then the water pump will stop after 30 seconds.*

**9.5 Normal Running.**



The Ecocent Energy will run until the temperature set point is reached. At that time, it will stop until the temperature of the stored DHW drops to more than 5°C below the set point at which point it will re-start.

**10.0 Maintenance**

The ESP Ecocent Energy is, essentially, a fit-and-forget system that is designed to operate automatically and with minimal maintenance. To ensure that the unit runs to peak efficiency, the following checks should be carried out within 3 months of installation then at yearly intervals as a minimum:

Check and clean the in-line filter. If there is debris in the filter, it should be checked again after 3 months, reverting to annual checks when no noticeable debris is present after 3 months.

Check hydraulic connections and the entire hydraulic circuit for leaks, correcting any problems found.

Check Electrical connections. If signs of wear or there is any cause for concern, the unit should be isolated and a qualified electrician consulted.

The temperature and pressure relief valve should be triggered manually to ensure correct operation.

All isolator valves should be operated then returned to 'open'.

Clean and inspect the evaporator.

Check that the unit has not been covered over.

Any faults discovered during the above checks should be rectified immediately.

The Ecocent Energy is designed for continuous operation. If it is intended to turn the unit off for an extended period, the electrical supply to the unit should be isolated and the unit drained. The unit should be re-commissioned as explained above when appropriate.

**11.0 Spare Parts.** ESP maintains a complete inventory of spare parts. Should you need replacement parts, please contact the ESP Technical Team.

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# Ecocent Energy



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