Homeowner Information

SEPTEMBER 2011

Ecodan® Air Source Heat Pump and Flow Temperature Controller 2

Ecodan Air Source Heat Pump Model Number

- PUHZ-W50VHA(2)-BS
- PUHZ-W85VHA(2)-BS
- PUHZ-HW140VHA(2)-BS / YHA-BS
- PUHZ-HW140VHA(2)-BS / YHA2-BS

MITSUBISHI ELECTRIC
LIVING ENVIRONMENTAL SYSTEMS

Air Conditioning | Commercial Heating
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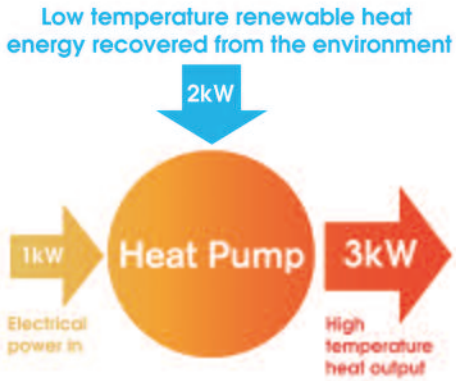
ecodan®
Renewable Heating Technology

Homeowner Information

The heating system installed in this property is not a fossil fuel boiler based system, it is a renewable energy technology called an air source heat pump or Ecodan. With ever increasing fossil fuel costs and our awareness of carbon effects on the environment, the choice to move to a renewable energy technology is a good one.

Air source heat pumps take energy available in the air, even if it's very cold, upgrade it using a small amount of electricity and use it to produce hot water. This is then used to heat your home and deliver hot water to your showers, baths and sinks. The system should not only save you money on your heating bill but also save carbon released to the environment.



This technology has been used for quite some time, but has only been made available for domestic use in the UK within the last few years, so although it seems new, Ecodan actually has a wealth of experience and understanding behind it. The Mitsubishi Electric Ecodan uses advanced technology not commonly used in the heat pump market and you may see better performance from your system compared to others.

Your Ecodan unit sits outside, is completely weather proof and requires very little maintenance other than ensuring it is not covered up and any leaves/dirt do not build up at the front and back of the unit. We recommend that you arrange for your installer to carry out an annual service on the hot water and heating circuit, ensuring the unvented cylinder is working properly and all pumps and valves are performing well.

Comparison to conventional boiler

If you are used to a fossil fuel boiler system, there are some differences you should be aware of and therefore manage in the day to day running of your system. Although these differences may take some time to get used to, they can save you money and help to reduce your carbon output.

Flow Temperature

The temperature of the water coming out of the unit (flow temperature) will generally be lower than that of a fossil fuel boiler. This lower temperature (up to 55ºC) is more than adequate to heat your home; your installer will have ensured the radiators are large enough or underfloor heating big enough to deliver the correct amount of heat for each room. The lower this flow temperature, the higher the efficiency of your system; the Ecodan heat pump actually regulates this flow temperature, delivering more when its cold and less when its hot, therefore maintaining a relatively constant internal temperature.

You may therefore notice that radiators are not quite as hot compared to an older system you've had, this does mean that if you let your property get cold by leaving windows and doors open it might take slightly longer to heat back up again.

Managing your heating system becomes more important and a few changes to the way you operate will ensure your house is warm enough during the times you most need it.

Control

The system uses 2 controllers you should be familiar with, a thermostat and a time clock programmer. The set up manuals for these controls should be left with you, but if you loose them, they can be found on the manufacturers website.

Hot Water

The system will normally be using a hot water cylinder located in an airing cupboard; this should be large enough to deliver a full days worth of hot water. The system is automatically designed to heat up your water if it does get low, but you need to decide when best to have your “heat up time” each day.

This first heat up time of the day is normally best set overnight, when you may be able to take advantage of cheaper electricity and have fewer requirements for heating.

The suggested time might be between 3:00am and 4:30am.

Fitted to your cylinder is also an immersion heater which is there to disinfect your cylinder during each cycle. This should be set up by your installer and should be set to come on for a short period of time, just after your tank has been heated up.

Heating

The heating circuit within your home is controlled by two units, a timed programmer and a thermostat. The timed programmer will control when you want the heating to come on, and the thermostat will control the temperature of your home.

Depending on the property and your lifestyle, the time clock pattern will need to be adjusted. If you are out of the property for most of the day and do not require heating at night, you may want to have the heating come on in the morning and evening.

However if you are in most of the day and do prefer to keep the house warm at night it should be more economical to actually leave the heating on continuously and let your thermostat manage the temperature. When doing this, “night time set back” should also be used reducing the desired temperature down to 16-18°C during night time hours. This ensures your house temperature stays at a comfortable level.

The heating pattern is individual to each property and may take you a few weeks to get it just right for you, but do be aware that if you set your thermostat extremely high or have the timed programmer to turn off and on continuously during the day, your electricity bills may be higher than is necessary.

Running Costs

Due to the fact that most houses will vary in size, occupants, electricity supplier and desired heating requirements it is impossible to give a completely accurate guide to electricity usage with an Ecodan air source heat pump, but providing the homeowner has followed the guidelines in this manual, savings will be made over conventional gas/ oil boilers.

When transferring from a gas boiler to a heat pump please be aware that your electricity bills will rise. The additional cost to your electricity bill should be less than the previous gas bill.

Where possible you should take advantage of low electricity tariffs by using comparison websites such as www.uswtich.com.

If unexpected additional cost is being seen, the homeowner will need to review the settings on the air source heat pump as it is likely to be running for longer than necessary. It is important to not waste energy as this will increase bills and release unnecessary CO_2. Significant savings will be made if the unit is working in an optimum operating condition.

FAQ's

Q) Why is the exhaust air from the outdoor unit cold?
A) The heat pump is working in reverse to a refrigerator therefore has removed the heat in the air and put it into the water.

Q) How long will the defrost cycle last for?
A) A complete cycle will take less than 3 minutes.

Q) How often do I need to clean the outdoor unit?
A) Visual checks should be carried out every 6 months and also an annual service by an Accredited Installer.

Q) My electricity bill is too high, how can I reduce this?
A) Well insulated houses have lower heating loads, you can also reduce the flow temperatures through the PARW21MAA controller. Always ensure Eco mode is selected for central heating. Eco-mode flow temperatures should be set at the commission stage and suit the property type. Lower flow temperatures lead to lower operating costs.

Q) How does Ecodan help reduce carbon emissions?
A) Because Ecodan's efficiencies for a season, known as SCOP (seasonal coefficient of performance) are around 3 to 3.5 (i.e. 300% to 350% if comparing to a boiler), the actual amount of electrical energy consumed from the national grid is significantly reduced. So even taking in to account the reduced CO_2/kWh for gas (0.19) against CO_2/kWh for electricity (0.43) Ecodan emits far less CO_2 than even the highest efficiency condensing gas boiler.

Q) Are air source heat pumps classed as a renewable technology?
A) Within the Climate Change and Sustainable Energy Act (Sources of Energy and Technologies), yes. Here air source heat pumps are defined as a microgeneration renewable technology.

If you have any further queries please refer to the design and installation manual or your installer

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