Firebird
The Future of Home Heating

ENVIROAIR

Hitachi Air Source Heat Pumps

END USER GUIDE

Environment

Innovation

Technology

QUALITY
ISO 9001:2015
NSAI Certified

HEAT PUMP
Association of Ireland

Guaranteed Irish

20/10/2022

FOREWORD

We would like to thank you for purchasing a Firebird Enviroair Hitachi Air Source Heat Pump. This instruction manual is produced for the reference and guidance of the end user. This guide is aimed at providing a basic understanding of the heat pump system installed within your property. Please always refer to the latest manual on our website: www.firebird.ie

ENVIROAIR HITACHI AIR SOURCE HEAT PUMPS

How it works

Firebird Enviroair Hitachi air source heat pumps work by using a refrigeration process to transform low-grade energy from the outside air into high-grade energy. The high-grade energy (heat) created by the heat pump is automatically transferred to water which is then ready to be used in a heating system or for providing domestic hot water. Even at temperatures as low as -20˚C it can supply significantly more energy than it uses**.**

Firebird Enviroair Hitachi air source heat pumps provide an economical and environmentally friendly alternative to traditional space heating and hot water systems. For every kW used by the Firebird heat pump, up to 5kW heat output can be used for space heating and domestic hot water.

Coefficient of Performance or CoP

The efficiency of the heat pump is also referred to as its CoP and is the result of the power output divided by the power input. For an air source heat pump, CoP is generally in the range of 2.5 to 5 but it varies all the time, as the outside air temperature varies.

ENVIROAIR HITACHI AIR SOURCE HEAT PUMPS

Running patterns and flow temperatures

A traditional boiler system is usually oversized for the property and is designed to work at a high flow temperature (80°C). The boiler will generally run for limited periods of time during the day.

In contrast, the heat pump will have been sized to match much more closely the steady state heat load for the property and is therefore able to run all day economically in cold weather. This is done to utilise the lower water flow temperature that the heat pump produces. If it were required to produce higher temperatures, then the efficiency would be compromised - efficiency goes down as the water flow temperature goes up. Radiators supplied from a heat pump will be warm rather than hot to the touch but, being larger than usual and warm for a longer period. this will maintain the house at a comfortable temperature.

Average house temperature

A Firebird heating system is designed to maintain the property at 21˚C for living areas, and 18˚C for bedrooms. Whether the system comprises underfloor heating or radiators it must be borne in mind that increasing the house temperature will increase the running costs. It is recommended by the industry standard that the target room temperature is set at no more than 21˚C in living rooms and 18˚C in bedrooms.

For working guidance on room temperature please see chart on the next page.

Room	Room Designed Temperature °C	Room	Room Designed Temperature °C
Lounge/Sitting Room	21	Cloakroom	18
Living Room	21	Toilet	18
Dining Room	21	Utility Room	18
Kitchen	18	Study	21
Breakfast Room	21	Game Room	21
Kitchen Breakfast	21	Bedroom	18
Hall	18	Bedroom/Ensuite	18

Weather compensation

The heat pump measures the outdoor temperature and adjusts the temperature of water being fed to the heating system. The warmer it is outside the lower the flow temperature and so the higher the efficiency of the heat pump. This method of operation is called 'weather compensation' and is critical to enabling the heat pump to operate efficiently by allowing it to always work at the lowest possible flow temperature.

Domestic hot water (priority)

The domestic hot water temperature has been setup during commissioning to between 42°C and 48˚C. When the set temperature of the tank falls below 5°C, the system will switch automatically to domestic hot water. Recharge times depend on the volume of the cylinder and the output of the heat source. The Domestic Hot Water "DHW" boost function via the PC-controller, can be used if required, when demand for hot water is high.

Note: The boost function activates the electric immersion heater within the domestic hot water tank and may have an effect on the running costs.

The cylinder immersion heater is normally only required during the periodic Legionella purge cycle.

**Legionella purge cycle - Function within the PC-Controller designed to raise the temperature of the cylinder above 60°C for an hour once a week, to purge the cylinder of Legionella and other bacterial growth.*

PC-controller

The controller is used to control your heating system and has been set up during commissioning. The temperature in the house can be adjusted by using the room stats. provided.
**More information page 8 (Controller Symbols).*

Running the system economically

Heat pump set-up

The heat pump should be setup by the commissioning engineer. Its settings should not be changed without full working knowledge of the system and of the parameters calculated during the design process. If there are any doubts about the way a heat pump is set up, Firebird technical support can assist customers in checking system parameters.

Room stats

Rooms with a thermostat: adjust the room thermostat to your preferred temperature (avoid settings above 21˚C as this will increase the running cost). The general room temperature can be increased or decreased using the temperature adjustment buttons on the thermostat. **Please refer to the manufacturer's instructions* or builder's handover pack.

Thermostatic radiator valves (TRVs)

It is good practice with radiators to use thermostatic radiator valves (TRVs) to control the heat output from individual radiators. Often TRVs are used in every room except one (usually the lounge or the hall) which contains the room thermostat.

Firebird System Efficiency

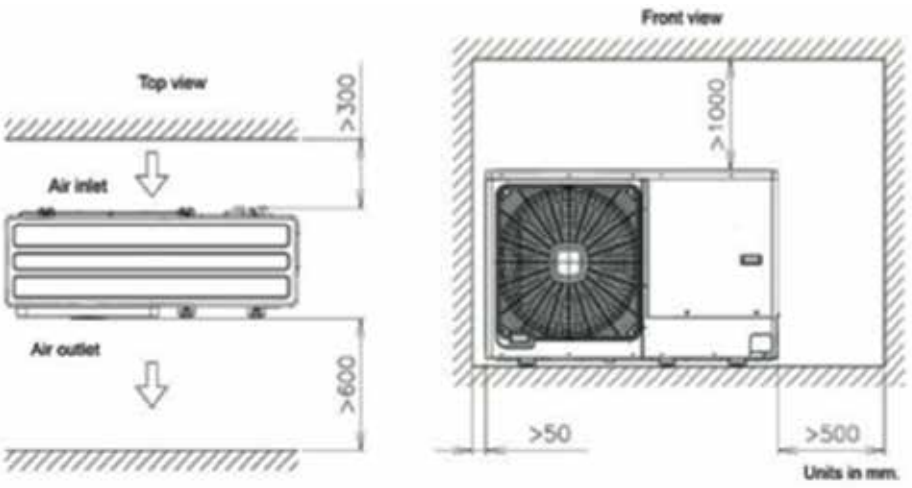
First year of use

During the first year after a house has been built, the energy required to heat the house can be higher than normal due to the need to dry out the fabric of the building.

- **Leaving windows/doors open**
  When leaving windows and doors open, room temperatures will fall below the desired set temperature point. This causes the heat pump to run on a higher load to react to heat which is lost and will increase the running cost of your heat pump.

- **Obstructing/reducing air passages of the heat pump**
  Heat pump needs air flow to work effectively. By blocking the air passage, you will prevent the heat pump from running effectively and can cause serious damage. Furthermore, always ensure that nothing is left resting on the heat pump.

For correct guidance on heat pump spacing please see chart below.



Commissioning

Similar to all heating systems, the Enviroair heating system must be commissioned by a competent, qualified engineer. This will ensure that:

- the heat pump is fine tuned to best suit your heating system so that it operates efficiently.
- The warranty is activated.

Preventive maintenance of equipment

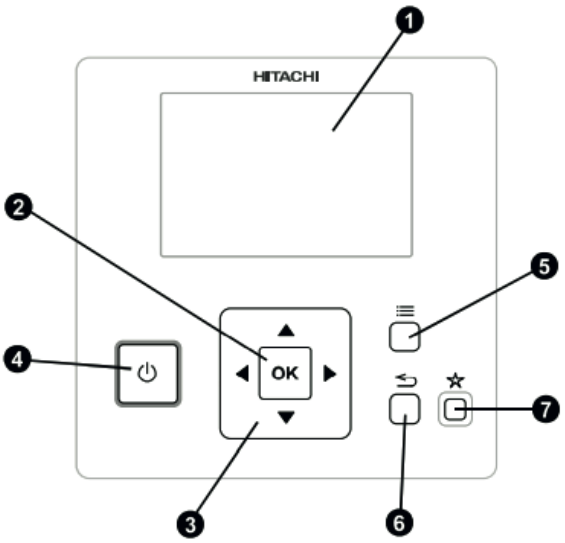
The Enviroair heating system must be serviced annually by a competent, qualified Engineer and with reference to the manufacturer's instructions.

PC- CONTROLLER

The PC-Controller has to be configured during commissioning for your heating system. No settings should be altered as this may have a direct impact on the operation of your system and invalidate the warranty.

Definition of the switches

1. ***Liquid Crystal display***
   Screen where controller software is displayed.
2. ***Ok button***
   To select the variables to be edited and to confirm the selected values.
3. ***Arrow keys***
   Helps the user to move through the menus and views.
4. ***Run/Stop button***
   Works for all zones if none of the zones are selected or only for one zone when that zone is selected.
5. ***Menu button***
   Shows the different configuration options of the user controller.
6. ***Return button***
   To return to the previous screen.
7. ***Favourite button***
   Domestic hot water boost *to be configured by commissioning engineer.



Controller Icons

Icon	Name	Description
	**Mode**	Heating mode is enabled
	Circuit Status	
	Demand -OFF	Heating circuit is turned off (domestic hot water gets priority over heating)
	No demand	Heating circuit load is turned on
	Low demand	Heating circuit is on low load 0 - 33%
	Medium demand	Heating circuit is on medium load 33 - 66%
	High demand	Heating circuit is on high Load 66 - 100%
	Defrost mode	The heat pump is performing a defrost cycle
	Compressor	Compressor within the heat pump is running
	Aux. Boiler	Boiler enabled (hybrid systems only)
	Circulating Pump	Displays which circulating pump is running
	**Alarm**	The ON button will go red and the alarm code will appear at No. 7 on the controller display.

COMMON QUESTIONS AND ANSWERS

How do I raise/lower the temperature in the house?

To increase/lower the temperature in the house, simply raise/lower the temperature on each room stat. We recommend raising/lowering the temperature of the room stat. by increments of 1°C when fine tuning the temperature. Once selected, the heat pump will maintain the desired temperature thereafter.

My hot water is not hot enough

Your system has been set up with comfort and efficiency in mind. Please read page 4 of this guide.

My House has dropped in temperature

1. Check if any windows/doors are open and close.
2. Ensure that your room stat. has not been turned down.
3. Verify that radiators are not covered by curtains, etc.
4. Check the controller to ensure that there is no red light.

If there is a red light on the controller, you should press the ON button for 3 seconds. Press the ON button again until the light goes green. If the controller goes red again, call your Engineer.

How do I turn off my heating during the summer months?

Simply lower/turn off the room stat. As winter months approach, it is recommended to increase the temperature by increments of 1°C until the desired temperature is reached.

My house is too warm

Reduce your room stats. temperature by increments of 1°C until the desired temperature is achieved.

Should I turn off the heat pump when I go to work?

No. Your heat pump is designed to maintain the temperature of the house throughout the day delivering the highest efficiency.

I am going on Holiday. What should I do?

When going on holiday, we recommend turning the temperature down to 15°C by adjusting the room stat. It is more efficient to maintain the temperature of the house. This also ensures quicker recovery time for heating when you return.

There is a red Light on my controller

If there is a red light on your controller you should try to reset it. Press the ON button for 3 seconds and press it again. If the controller goes red again. Contact your Engineer.

Ice or condensate around the heat pump

Air source heat pumps will naturally ice-up during the lower temperatures, but the heat pump will perform its own defrost cycle and melt the ice. Any water from the defrost cycle will be safety removed to a soakaway or drain.

What is the main benefit of an Enviroair heat pump?

There are many benefits, both financial and environmental, associated with an Enviroair heat pump installation. They can be used to heat through radiators, air convectors and under floor heating systems, and can also be used to heat water for general use in your home.

Does my Heating system qualify as a form of renewable energy?

Yes. According to the European Union and the International energy agency, heat pumps are classified as forms of renewable energy generation.

Will my air source heat pump reduce my carbon footprint?

Yes. Installing a heat pump could cut your carbon emissions by more than 23 tonnes of CO_2 over 10 years.

Where can I go to find more information about my system?

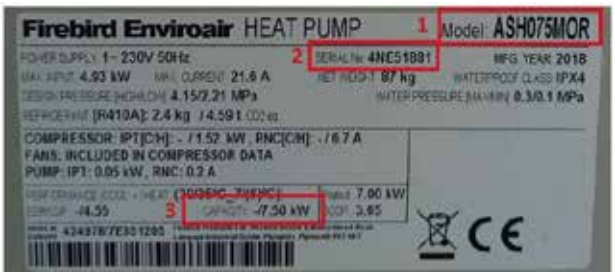
Visit our website: www.firebird.ie.

Technical Services

You will need your model number and / or serial number when contacting Firebird for a replacement manual, booking a repair or sourcing a spare part. The serial & model number can be found on the products rating plate.

Enviroair Heat Pump Data Plate

The rating plate can be found on the rear or side panel of the outdoor heat pump.



Envirocyl Quick Plumb Unit Rating Plate

The rating plate can be found on the inner right panel of the unit or on the tank inside the unit.

Firebird
The Future of Home Heating

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