



GROUND SOURCE SIMULATOR RE590



Features

- Can be utilised with both solids and liquids as heat sources
- Flexible design
- Space efficient working environment
- Easy set-up

Description

The RE590 Ground Source Simulator is designed to provide a limited external heat source for the water evaporator on the R833 Air and Water Heat Pump or R560 Water Water Heat Pump. Normally the R833/R560 is operated from a mains water supply to both the water cooled condenser and the water sourced evaporator. By addition of the RE590, the main water sourced evaporator is replaced by a glycol/water solution pumped around a heat exchanger that is embedded in a 172 litre water or sand/soil reservoir. This is similar to real heat pump installations where the source may be a pond or ground area. Typically plastic pipes may be buried underground either in long trenches, boreholes or ponds. Usually a secondary fluid, such as a glycol-water mix, is pumped through the pipes where it picks up low grade heat and passes this to the evaporator heat exchanger of a vapour compression heat pump where the heat evaporates the refrigerant. The condenser side of the heat pump then discharges the higher grade heat either to water, or to the building HVAC for heating purposes. The ground or pond obtains its heat by conduction from the surrounding area and ultimately from the sun warming the above heat exchanger ground area. As may be seen above a potentially large area may be required to make a ground source heat pump a viable proposition. If too small an area is used then the heat extracted from the ground can be greater than that returned by solar gain or local conduction and the result can be freezing of the ground local to the coils of the heat exchanger. The RE590 Ground Source Simulator allows students to investigate the performance of a limited ground source heat exchanger in a laboratory environment.

Learning capabilities

- Investigation of the ground source temperature and heat extraction rate with time
- Investigation of the heat pump cycle diagram and system performance with time
- Investigation of solid versus liquid sources

Technical Specification

- 172 litre capacity Storage Tank
- 25mm Water pump - max discharge head 35m, 370 watts, 8m suction (lift)
- Comes complete with temperature probe
- Enhances learning capabilities of the R833 & R560 (see respective technical leaflets for details)

Essential Ancillaries

- R833/115 - Air and Water Heat Pump or
- R833/115/RC - Air and Water Heat Pump Computer Linked Version or
- R833/230 - Air and Water Heat Pump or
- R833/230/RC - Air and Water Heat Pump Computer Linked Version or
- R560/115 - Water Water Heat Pump with Digital Wattmeter or
- R560/115/RC - Water Water Heat Pump, Computer Linked Version or
- R560/230 - Water Water Heat Pump with Digital Wattmeter or
- R560/230/RC - Water Water Heat Pump, Computer Linked Version

What's in the Box?

- 1 x 172 litre Storage tank
- 1 x 5 litre Reservoir
- 1 x 1 litre Glycol solution
- 25m of ground source pipe - pre installed
- T/C Probe 250mm long
- 1 x Water pump
- 1 x manual

Weights & Dimensions

- 800mm x 600mm x 420mm
- Weight not more than 10Kg empty

Essential Services

- A single cold water supply capable of providing up to 3litre/min each at 10m head - for use with either heat pump (R833 or R560)
- A drain capable of receiving the above flow rate
- A single-phase power supply (suitable for a 700W load) and earth

Ordering information

To order this product, please call PA Hilton quoting the following code:
RE590 Ground Source Simulator

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