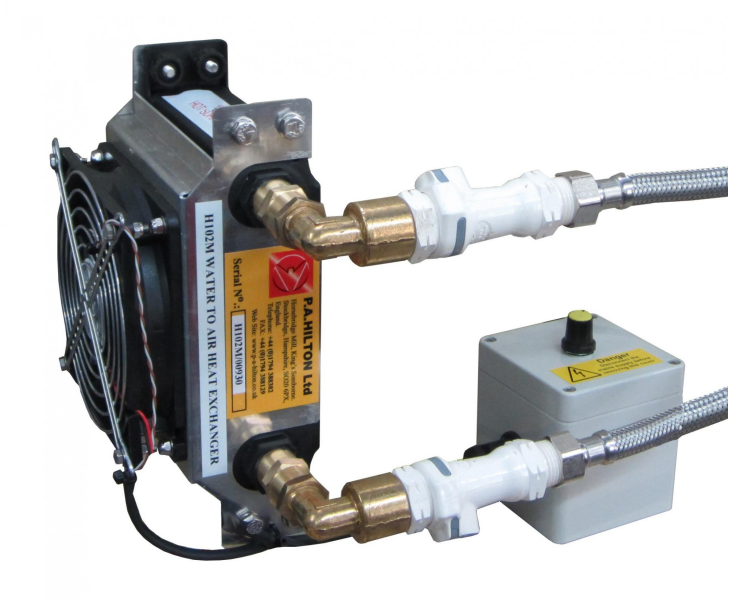
Water to Air Heat Exchanger

H102M



Features

- A small water to air heat exchanger illustrating the use of extended surfaces (fins) as a means of improving the heat transfer to gases from tubes
- Utilises a multi-speed blower fan

Description

An Example of one of the most commonly used heat exchangers; seen in every automotive engine bay and air conditioning installation. Multiple aluminium channels allow water to pass through the heat exchanger with cooling fins fixed between them to increase the surface area and heat transfer, resulting in a total surface area of 0.2025m2. A Cooling fan is supplied with a speed controller to control the airflow over the heat exchanger. Thermocouples are placed before and after the fan to measure air temperature. Water temperature is also measured via the inbuilt thermocouples of the base unit. Power is supplied by the external 240v socket mounted on the side of the unit which feeds a 12v power supply to the speed controller and fan. Quick release connections allow for ease and speed of connection of the hot water hoses.

Related Laws/Applications

- Mechanical Engineering
- Nuclear Engineering
- Chemical Engineering
- Control and Instrumentation
- Plant and Process Engineering
- Building Services
- Engineering Physics
- Refrigeration
- Marine Engineering

Learning capabilities

- Demonstration of indirect heating or cooling by transfer of heat from one fluid stream to another when separated by a solid wall (fluid to fluid heat transfer).
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- Investigation of a water to air heat exchangers characteristics at different water and air flow rates.
- Calculation of the temperature efficiencies of both the hot and cold streams.
- To determine the overall heat transfer coefficient for a water to air heat exchanger using the logarithmic mean temperature difference.
- Investigation of the effects of changes in hot fluid and cold fluid flow rate on the temperature efficiencies and overall heat transfer coefficient

Technical Specification

- Heat output 300w approximately
- Utilises self-sealing quick release connectors
- 16 row 124 x 115mm heat exchanger (core)
- 119mm square fan
- Variable speed fan

Essential Ancillaries

- H102 base unit

What's in the Box?

- 1 x H102M
- Instruction manual
- Packing List
- Test Sheet

You might also like

- H112 - Heat Transfer Service Unit
- H050 - Boyles Law Demonstrator
- H352 - Cross Flow Heat Exchanger
- H893 - Bench Top Cooling Tower

Weights & Dimensions

- TBC

Essential Services

- H102

Ordering information

To order this product, please call PA Hilton quoting the following code:
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H102M