



PERFECT GAS LAWS DEMONSTRATION MODULE

H112J



Year 1
study

Description

Bench top accessory designed to allow experimental investigation of the first law of thermodynamics using the perfect gas law and the expansion of air. The unit consists of two vessels connected by a large bore pipe and valve together with an integral air pump. The pump can be used to both pressurise one vessel and evacuate the other. Additional valves allow the vessels to be used in isolation; venting to or from atmosphere and in a combined arrangement where the pressurised vessel can vent into the evacuated vessel. Low inertia thermocouple sensors located in each vessel record the air temperatures and individual pressure transducers record the chamber pressures. The vessels and interconnecting pipe work are constructed from impact resistant plastic and for operator safety pressure switches limit the operating pressures to safe levels. The unit is provided with its electrical services and temperature instrumentation by the Heat Transfer Service Unit H112. This also provides digital display of the air temperatures in the vessels while an auxiliary display provided with the H112J allows display of the chamber pressures. Though digital display of parameters is possible using the instrumentation provided, the processes involved are transient (vary rapidly with time) therefore we recommend using this module with the H112 computer linked.

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

- Investigation of the First law of Thermodynamics.
- The second Law of Thermodynamics and its Corollaries
- Observation of the Pressure, Volume, Temperature Relationship for Air.
- Observation of the transient responses to different rates of change in a process.

Technical Specification

- Large vessel: 22.6 litres
- Small vessel: 12.3 litres
- Maximum positive pressure: 35kN/m²

Essential Ancillaries

- H112

What's in the Box?

- 1 x H112J
- 1 x Control Console
- 1 x Grease
- PVC hosing
- Instruction manual
- Packing List
- Test Sheet

Weights & Dimensions

- Weight: 15 kg
- Length: 700mm
- Width: 350mm
- Height: 700mm

Essential Services

- H112

Ordering information

To order this product, please call PA Hilton quoting the following code:
H112J

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS