VORTEX TUBE REFRIGERATOR MODULE
F300F

Year 1
study

Features
- No moving Parts

Description
A compressed air vortex tube has two outlet ports that can be adjusted to vary the proportion of flow that leaves from the hot and cold exit points.

Using a common compressed air source at ambient temperature, the cold stream can reach temperatures below -30°C and the hot stream temperatures above 50°C.

The effect of air supply pressure on the performance can be investigated together with the overall refrigerating effect. The pressures, temperatures and air flow rate are recorded by a combination of instrumentation on the Compressible Flow Range F300 base unit and the optional module.

Related laws
- The cooling or warming of protective clothing
- Electronic cabinet cooling
- Chilling hot melt adhesives
- Dry drilling and machining of plastics
- Laboratory sample coolers
- Instrument cooling
- Cooling small plastic mouldings
- Environmental cabinet temperature control
- Shrink fitting
- Cutter cooling when machining

Learning capabilities
- Investigation of torque/speed and power/speed characteristics of a single stage reaction turbine.
- Application of the First Law of Thermodynamics to a

simple open system undergoing a steady flow process.

- Determination of the isentropic efficiency of a turbine.
- Construction of retardation curve and from this the estimation of the effect of resistances due to mechanical and fluid friction.

Technical Specification

- 3 x Thermocouples
- Cold Stream: -30°C
- Hot Stream: +50°C

Essential Ancillaries

- F300

What's in the Box?

- 1 x F300F
- 1 x T-S Diagram
- Instruction manual
- Packing List
- Test Sheet

Essential Services

- Air requirement: approximately 300 litres free air per minute at a pressure of 300 to 1000 kN m-2 gauge supplied to the F300 base unit.

Ordering information

To order this product, please call PA Hilton quoting the following code:
F300F