COMPRESSIBLE FLOW RANGE
F300



Year 1
study

Features

- Expandable Range of Economic Bench Top Equipment That Enables Student Investigation of Compressible Air Flow and Associated Air Turbines.
- The Optional Modules allow detailed investigation of Sonic and Supersonic Flow In Nozzles, Jet Efficiency, Pressure Losses In Pipes and a variety of Heat Transfer Experiments.
- Safe & Suitable for unsupervised student operation.
- Responds Immediately to system changes allowing efficient use of laboratory time.
- Optional Computerised Data Acquisition system for Most Options.
- Negligible Operating and Maintenance Costs.

Description

The phenomenon of compressible flow, sonic velocity and supersonic flow is possibly one of the most demanding areas of study for many students. The Hilton Compressible Flow range F300 and its collection of optional accessories enable students to safely and clearly investigate the fundamentals of compressible flow, air turbines and a variety of heat transfer experiments. The F300 Base Unit consists of an instrumentation and control console that supplies a variable flow of compressed air to the range of optional modules. The unit provides common instrumentation for all of the options. Specialised instruments are included as required with the modules.

Related Laws/Applications

- Aeronautical Engineering.
- Mechanical Engineering.
- Fluid Mechanics.
- Nuclear Engineering.
- Chemical Engineering.
- Control and Instrumentation.
- Plant and Process Engineering.
- Building Services.
- Engineering Physics.
- Marine Engineering.

Learning capabilities

- Nozzle Choking and Nozzle Efficiency
- Jet Reaction
- Over and Under Expansion in Supersonic Nozzles
- Pressure Distribution in Convergent and Convergent-Divergent Choked Nozzles
- Performance of Impulse Turbine
- Performance of Reaction Turbine
- Heat Transfer
- Pressure Losses in Pipes, Sudden Expansions and Bends
- Air flow Measurement Using Orifice Plates and Variable Area Flow Meters

Technical Specification

- Digital Temperature Indicator: 0.1°C Resolution
- Brake Load Indicator: 0.01N resolution
- Temperature Selector Switch
- Thermocouple sockets: Six
- Digital Tachometer Indicator:
- Return Air Flow meter: 0..12 g/s
- Gauge Pressure: 0…1100 kN/m2
- Miniature Circuit Breaker (MCB)
- Residual Current Circuit Breaker (RCCB)

Essential Ancillaries

- F300A
- F300B
- F300C
- F300D
- F300E
- F300F
- F300G

What's in the Box?

- 1 x F300
- 3m reinforced air inlet hose
- 1 x flexible hose
- Power lead
- Instruction manual
- Packing List
- Test Sheet

You might also like

- F860
- F865

Weights & Dimensions

- Weight: 17 kg
- Length: 440mm
- Width: 300mm
- Height: 440mm

Essential Services

- Electrical: 220-240 Volts, Single Phase, 50Hz (With earth/ground).
- Line current up to 10A at 230v.
- Electrical: 110-120 Volts, Single Phase, 60Hz (With earth/ground).
- Line current up to 20A at 110v.
- Compressed Air: 900kN/m2 (9 Bar Gauge) at up to 8g/s (400 litre/min free air)

Ordering information

To order this product, please call PA Hilton quoting the following codes:
F300/230 - Compressible Flow Range – Base Unit
F300/115 - Compressible Flow Range – Base Unit
F300/230/FC - Compressible Flow Range – Computer Linked Base Unit
F300/115/FC - Compressible Flow Range – Computer Linked Base Unit

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS