

Product Name :
Centrifugal Compressor Demonstration Unit

Product Code :
ALABS-A104-509

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Description :

Centrifugal Compressor Demonstration Unit

- A small-scale multi-stage centrifugal compressor demonstration unit, comprising of an inlet duct, the compressor, an outlet duct and an adjustable aperture, all mounted on a stainless steel base.
- Seven stages in the compressor.
- Equipped with electronic measurement sensors for head pressure, flow-rate (via orifice plate) and air temperature.
- Capable of being linked to a PC (not supplied) via a dedicated interface console (an essential accessory).
- Supplied with software providing full instructions for setting up, operating, calibrating and performing the teaching exercises. Facilities for logging, processing and displaying data graphically.
- Full theoretical back-up together with a student questions and answers session.

Instruction Capabilities:

- Measurement of constant-speed machine performance in terms of static and total pressures, rotor speed and motor shaft power, as a function of inlet flow
- Measurement of compressor efficiency and estimation of impeller power efficiency
- Measurement of performance at constant speeds
- Introduction to similarity laws for scale-up
- Comparison of student calculations with computer results

Description:

- A motor driven multi-stage centrifugal compressor, mounted on a stainless steel plinth with transparent air inlet and air outlet ducts. A manually operated adjustable aperture allows the air flow rate to be varied at constant fan speed.
- A calibrated orifice plate is used on the discharge to measure the air flow rate.
- Electronic sensors measure the pressure head developed across the blower, the pressure across the orifice plate (and hence the flow rate) and the air temperature.
- The compressor speed is accurately controlled by an advanced electronic inverter within the (an essential accessory). This inverter also calculates the torque produced at the motor drive shaft, allowing the power used by the fan to be derived. Also provides the conditioning electronics for the sensors and allows their readings to be displayed on the computer software.
- Connections are a single multi-way connector for the sensors and a connector for the pump motor drive.
- The equipment is provided with advanced education and data logging software. See the software section of this datasheet for further details.

Specification:

- Max Flow Rate: 20 l/s typical
- Max Head: 6.0KPa
- Max fan speed 3000rpm
- Motor Power rating 250W
- Number of stages 7



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