

Product Name :
Astra Scientific Centrifugal Fan Demonstration Unit

Product Code :
Fluid Mechanics Lab0005



Description :

Astra Scientific Centrifugal Fan Demonstration Unit

Technical Specification :

The advanced experimental unit provides the basic experiments to get to know the operating behavior and the most important characteristic variables of radial fans.

Radial fans are used to transport gases with non-excessive pressure differences. The medium is drawn in axially to the drive shaft of the radial fan and is deflected by 90° by the rotation of the rotor and discharged radially.

To demonstrate the effect of different blade shapes two rotors are included in the scope of delivery: one rotor with forward curved blades and one with backward curved blades. The rotors are easily interchangeable.

The experimental unit is fitted with sensors for pressure and temperature. The flow rate is determinate via

differential pressure measurement on the intake nozzle. The microprocessor-based measuring technique is well protected in the housing. The measured values are transmitted directly to a PC via USB where they can be analyzed using the software included.

FEATURES

- Functioning and operating behavior of a radial fan
- Radial fan with 3-phase AC motor
- Variable speed via frequency converter
- Transparent intake and delivery pipes
- Throttle valve to adjust the air flow in the delivery pipe
- Interchangeable rotors: 1 rotor with forward curved blades and 1 rotor with backward curved blades
- Determination of flow rate via intake nozzle
- Display of differential pressure, flow rate, speed, electrical power consumption and hydraulically power output, temperature and efficiency
- Display and evaluation of the measured values as well as operation of the unit via software

SPECIFICATIONS

Intake pipe

Inner diameter: 90mm & Length: 430mm

Delivery pipe

Inner diameter: 100mm & Length: 530mm

Radial fan Power consumption: 110W

Nominal speed: 2800min⁻¹

Max. Volumetric flow rate: 480m³/h

Max. Pressure difference: 300Pa

Measuring ranges

Differential pressure: 0...1800Pa

Flow rate: 0...1000m³/h

Temperature: 0...100°C

Speed: 0...3300min⁻¹

Electrical. Power consumption: 0...250W

Power required

230V, 50Hz, 1 phase



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