

Product Name :
Turbine Service Unit

Product Code :
ALABS-A104-512



Description :

Turbine Service Unit

- A bench top service unit which provides a suitable water supply for testing a range of different turbines.
- Clear acrylic reservoir which holds up to 28 litres.
- Peripheral type pump providing up to 20 litres per minute or up to 30m head (not simultaneously).
- Paddle wheel type flow meter.
- Magnetic type dynamometer controlled from software.
- Software control of both pump and brake allows remote operation of the equipment over an internet.
- Links to a suitable computer via a USB interface device which does not require internal access to the computer.
Also allows interfacing to other software packages.
- Supplied with full education software package including comprehensive results processing and help facilities.

Instruction Capabilities:

Turbine Service unit plus accessory

- Determining the turbine characteristics of the selected turbine, including the relationships of volume flow rate, head, torque produced, power output and efficiency to rotational speed.
- Comparison of nozzle and throttling control of an Impulse Turbine.
- Comparison of throttle control and spear valve control of the speed of a Pelton Turbine.
- Determination of characteristic performance curves for a peripheral pump, including constant speed head/flow and efficiency curves.

Description:

The turbine under test is connected to the dynamometer by a toothed drive belt. Load is applied to the turbine using a magnetic brake controlled directly from the computer. The outer casing of the brake is restrained from rotating by a lever arm which is connected to a load cell, which allows the braking force and hence the torque produced to be directly measured. The dynamometer unit also incorporates an optical sensor which measures the rotational speed of the turbine.



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