



HORIZONTAL AXIS WIND TURBINE RE570



Year 1
study

Features

- Allows Investigation of an Efficient Three Phase to DC Horizontal Axis Wind Turbine
- Safe and Suitable For Student Operation.
- Instrumentation Allows Detailed Analysis of Turbine and Generator Performance.
- Optional Mast for Controlled Testing
- Optional Computerised Data Acquisition Upgrade

Description

In the field of renewable energy, wind power generation represents one of the most universally available sources of electrical energy. It is important that students understand the factors that affect turbine and generator performance. The Hilton Horizontal Axis Wind Turbine RE570 allows students to investigate the performance of a typical small scale 3 phase to DC wind generator. The unit will provide interesting and instructive experimental work for all students. A small diameter horizontal axis wind turbine with 3 phase generator and integral DC rectification. The unit is supplied with a small mounting 'stub' mast for installation at an elevated height. Alternatively the unit may be mounted on a locally available mast or the optional RE570C for examination by students. The unit may be operated into the battery charge controller supplied and a variable load for performance investigation. The instrumentation and control console supplied allows measurement of electrical power output, turbine speed and variation of applied load. The air velocities before and after the turbine are measured in order to allow students to investigate the overall performance of the unit.

Related Laws/Applications

- Renewable Energy
- Aerodynamics
- Thermodynamics
- Energy Conservation
- Mechanical Engineering
- Fluid Mechanics

Learning capabilities

- Measurement of wind speed turbine speed and power generation relationship.
- Measurement of air velocity before and after the turbine.
- Calculation of theoretical power.

Technical Specification

- Turbine Diameter: Ø910mm
- Standard number of Blades: 6
- 3 phase generator
- Mounting stub: 500mm long
- AC to DC generation
- Air velocity sensor before turbine
- Air velocity sensor after turbine
- External loading up to 15A

Recommended Ancillaries

- Please note that this unit requires either a wall mount or mast mounting for operation
- RE570B - Wall Mounted Plate
- RE570C - Tripod style Mast with Guy Ropes

What's in the Box?

- 1 x RE570
- 1 x Control console
- 1 x 12V battery
- Spare fuses
- Instruction manual
- Packing list
- Test sheet

Weights & Dimensions

- Weight: 20 kg
- Length: 910mm
- Width: 610mm
- Height: 1000mm

Essential Services

- 220-230 Volts, Single Phase, 50Hz (With earth/ground)
- Line current up to 5A at 230v.
- 110-120 Volts, Single Phase, 60Hz (With earth/ground)
- Line current up to 10A at 110v.

Ordering information

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

RE570 - Horizontal Axis Wind Turbine

RE570/230/RC - Horizontal Axis Wind Turbine Computer Linked

RE570/115/RC - Horizontal Axis Wind Turbine Computer Linked

RE570B - Wall Mounted Plate

RE570C - Tripod style Mast with Guy Ropes

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COUNTRY OF ORIGIN - UK WARRANTY PERIOD - 5 YEARS