

Order Code -23247250.4 WIND ENERGY TRAINER

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SALIENT FEATURES:

- Table top wind tunnel with transparent acrylic & protection cage to identification of components of windmill.
- Axial fan with continuously variable speed to simulate wind.
- Renewable energy basics, energy conservation, charge controller, storage system, alternating current & invertor (optional).
- Converting kinetic wind energy into electrical energy in laboratory.
- Accumulator for storing the electrical energy.
- Pitching and yawing provision provided.
- Set of instructor Guide & Student Workbook.

TECHNICAL SPECIFICATIONS:

- A) Wind mill setup Consist of table top wind tunnel with transparent acrylic structure,
- Size: 650(H) x 800(W) x 550(D) holding various parts & Net Wt.:-
- Generator-1 No.

Max O/P wattage-100W

Max O/P voltage-24V

Max O/P current-4A

Blades-6 No.

Diameter:-740mm

Spring return arrangement with screw for pitching

Yawing arrangement similarly spring return.

Axial fan-1 No.

To generate air flow,

• Digital anemometer-1 No.

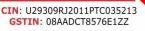
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To measure wind velocity.

- B) Main rack/Control unit
- Consists of table top aluminium profile rack (45x45) in 4x2 matrix holding various panels
- Charge controller Panel (WT1) -1 No.

Rated voltage-24Vdc, Max current-6A

Max generator voltage-25V

Min generator voltage-20V

Stand alone battery bank - 1 No.

- Rated voltage-12V, Capacity-7Ah Oroptionally
- Rated voltage-12V, Capacity-100Ah
- Battery type-Lead acid

Stand-alone Inverter-1 No.

I/P DC voltage-10-15Vdc, O/P AC voltage-230Vac

O/P power rating-600VA/1KVA

DC voltmeter & DC ammeter panel (EMT68) -1 No.

DC voltmeter (0-100V)

DC ammeter (0-5A) with polarity protection diode.

• Dimmer panel (HIT5)-1 No.

Dimmer 1 No, to vary the speed of axial fan.

- Lamp load panel (EMT7) -1 No.
- • 230V/15/40/60/100W x 3 bulbs with individual ON/OFF using 6A toggle switches.

List of experiments

1) Identification of the components.

2) To evaluate performance of horizontal axis wind turbine,

3) To analyze effect of pitching (blade angles) on performance of wind turbine.

4) To analyze effect of yawing on performance of wind turbine.

5) To study charging & discharging of battery.

Mechanical Dimensions (mm):-545(H) x 960(W) x 300(D) Weight (Kg):- Net Wt.:-35Kg. Gross Wt.: 45Kg

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