VERITAS Engineering

Catalog
Of

Wind Power Generation Trainer

Brand: VERITAS

Model: VWPGT-003

Features

- The unit demonstrates the practical application of such a combined system for student to conduct the investigation of wind power generation.
- Three phase AC permanent magnet generator is used for the wind power generation, which is driven by a DC gear motor to simulate the wind turbine working under different wind speed.
- By this way to achieve system performance inside the laboratory irrespective of outside conditions
- Maximum power point tracking type wind controller is adopted for the high efficiency power generation control
- Multifunctional meter is adopted for system voltage / current monitoring, with LCD screen
- Dedicated instrumentation includes, AC/DC voltmeter and ampere meters for investigation of system efficiency and characteristics.

List of Experiment:

- Wind power generator simulated wind speed experiment
- Wind power generator output voltage experiment
- Wind controller braking experiment
- Wind power generator V/I output characteristic curve experiment
- Storage battery charging experiment
- Wind controller resistance load experiment
- DC resistive and inductive load experiment
- AC resistive and inductive load experiment
- Integrated load experiment

Configuration:

Frame structure:-

- Complete aluminium profile as support frame for solar cell and simulated light source
- Engraved and colorized printed panel, be inserted into grooved aluminium profile
- Overall size: 950mm x 455mm x 555mm (approx.)

Wind power generation system:

Wind power generator:

- Three phase AC permanent magnet generator,
- Power 100W, 12VAC, Speed 750r/min

Driving motor: DC gear motor 69W, 3000r/min, reduction ratio 1:3, speed adjustable
Speed sensor: 12VDC, NPN type- Wind speed control knob
Wind turbine control buttons and indicators

Instrument unit:

- AC voltage meter 0-450V
- DC voltage meter 0-50V
- AC current meter 0-3A
- DC current meter 0-5A
- Multifunction meter: LCD display voltage/ current/power, with on/off switch

Load unit:

- DC12V inductive load: sleeve bearing type fan, 0.2A/4500RPM with protective cover
- AC220V inductive load: dual ball bearing type fan, 1.5W/4700RPM with protective cover and ON/FF switch
- DC12V resistive load: angle adjustable 5 W LED white lamp
- AC220V resistive load: angle adjustable 3W LED white lamp with ON/OFF switch
- Variable resistor load: 0Ω ~ 30Ω, 100W adjustable
- DC motor 12V: with rotary disc
- Pilot lamp DC 12V
- Maximum power point tracking wind controller:
- Rated voltage 12V, 100W
- System related voltage: 12V/24V automatic identification
- Charging mode: MPPT- Protection grade: IP67
- Standby current: 3.6mA
- Power supply: AC220V input with circuit breaker
- Step-up inverter grid off: DC 12V input, output AC220V, with on/off knob and fuse protector,
- USB DC5V output
- Storage battery: 12V8AH maintenance free sealed lead acid battery
- Speed sensor and tachometer: 12VDC, NPN type
- Safety whole sealing cable:
  Conductor cross section: 16AWG tinned copper wire, 3kV, 20A, with axial socket-Power cord