

## Solar Power Generation and Training System



Note Shown image is just for illustration original may differ

**The trainer include single user Classroom / laboratory teaching, learning and simulation software module on Solar Technology:**

- Introduction of Solar PV technology
- Solar Reflection
- Serial & Parallel Connection of Solar Cells
- Series & Parallel Connections of Solar PV Module
- IV, & PV Characteristics of Solar Modules
- Solar measurements
- Fill Factor
- Solar Water Pumping System
- Off Grid Solar System
- On Grid Solar System
- Importance of DCDB, ACDB, Ear thing & Lighting Arrestor
- Single & Dual Axis Tracking & Its Importance

The training system provided with all safety protections, meters for analysis of parameters, connector sheathed shock proof type, DC voltmeter and DC ammeter.

**Specification:**

**Charge controller**

- 1 Solar PV module : 35–70V
- 2 Current : 40A
- 3 Battery voltage : 24V

**inverter**

- 1 Capacity : 1000VA
- 2 Input voltage : 190 - 260V AC
- 3 Output voltage on mains mode : same as input
- 4 Output voltage on UPS mode : 210 - 245V Output frequency on UPS mode : 50Hz  $\pm$ 0.1Hz
- 5 Output waveform on mains mode : same as input Output waveform on UPS mode : Modified Sine wave Efficiency at full load : >80%
- 6 UPS overload/UPS Short circuit : Yes
- 7 Technology : Microcontroller based
- 8 LED Indication : Mains ON, UPS ON, Low Battery, Charging & Over load
- 9 Terminals : BS10 type for safety purpose MCB :
- 10 C type -4nos
- 11 Solar Battery (4nos) : 12V/100Ah (C10 type)

**Solar panel**

- 1 Power Rating : 1KW
- 2 Cell type : Polycrystalline Solar
- 3 Panel structure Material : GI
- 4 Assembly : Detachable and easy to install Solar

**Technology :**

**PWM based MPPT Meters**

- DC voltmeter : 0-300V (2nos)
- DC Ammeter : 0-40A (3nos)
- Multi function meter : Voltage-10-230V, Current-100mA-5A Watt- 10-1200W
- Energy meter display resolution- 0.001kWh
- Frequency-50Hz
- AC/DC load, Rheostat: 50 ~~45A~~ no.

**Solar Tracking System**

- Single-axis and Dual-axis Tracking
- Microcontroller based Tracking System
- Manual, Time and Auto Modes of operation in Single axis Solar Tracking
- Manual mode of operation in Dual-axis Solar Tracking
- Master Reset Switch for recovery of System
- Emergency Motor Stop Switches
- Tilt Sensors for sensing angle of panel with respect to horizontal plane
- Supply Voltage : 12V DC Solar

**Panel**

- Maximum Output : 18W DC 1 NOS
- Motor : 12V
- Rechargeable Battery : 12V, 7Ah
  - Display : 20 x 4 LCD

