

Solar Generating System / CP-Solar110



Features

- Real-time educational training system.
- Designed to enable the user to understand the principal of solar generation, solar cell, power converter, and solar generation system and to make experiments of solar generating structure and operation.
- Designed to enable the user to use easily as system diagram is attached with voltmeter and ammeter on every measurement area.

Specifications

1. Experimental contents

- The characteristics of solar cell modules
- The characteristics of power converter
- The principle of solar generation
- The system of solar generation
- The experiment of load devices

2. Solar modules

- Solar plate was designed with high-tech structure in harmony with the surroundings and generated power is used for the power of experimental load equipments, experimental lamps, and generating equipments.
- Solar cell plate was manufactured with the products made of crystalline silicone cell.
- Peak power (Wp): 110W
- Max. power voltage (Vmp): 16.7V
- Max. power current (Imp): 6.60A
- Open circuit voltage (Voc): 21.2V
- Short circuit current (Isc): 7.4A

a. The characteristics of solar cell modules

- Module capacity: Keeping up normal conditions at $-40\sim 85^{\circ}\text{C}$ with 85% of humidity
- High effective solar cell:
Solar cells are single crystal or multi-crystal silicon solar cells for high efficiency and module cells were laminate between high-transmittal strengthen glasses.

b. Solar cell module supporter

- Designed to able to adjust angle with lock devices for the user's convenience.
- Manufactured with aluminum profile (100W solar cell module supporter).
- Installed 8 halogen lamps (12V 50W) with solar cell module transmission structure.
- Applied anti-noise 4 wheels for easy carry.

3. Storage battery

- Nominal voltage: 12V
- Quantity: 2ea
- Capacity: 100W more
- Type: Long-life enclosed storage battery
- Load capacity: 100Ah
- Temperature: $-40\sim 70^{\circ}\text{C}$
- Storage voltage: 14.5V~14.8V
- Storage current; MAX 0.25CA

4. Power converter equipment

- Rating continuous output: 600W
- Max. surge output: 1200W
- Overload protection range: 600 ± 50 W
- AVR (Automatic voltage control)
- Rating fluctuation: ± 5 %
- Frequency: $60 \text{ Hz} \pm 3$ %
- Effective rate: 85 %
- Low-voltage input alarm function: $\text{DC } 10.5\text{V} \pm 0.5\text{V}$
- Low-voltage input interception function: $\text{DC } 10.0\text{V} \pm 0.5\text{V}$
- High-voltage input interception function: $\text{DC } 15.0\text{V} \pm 0.5\text{V}$

5. Display panel contents

- DC voltmeter: Solar module voltage, Inverter input voltage
- AC voltmeter: Solar module current, Inverter input current
- AC ammeter: Inverter output voltage
- AC ammeter: Inverter output current (when load)
- Wattmeter: Load power measurement
- Frequency meter: Inverter output frequency
- Scope BNC measurement terminal: 3ea
(Solar sell output voltage, battery output voltage, Inverter output voltage)

6. Load panel

- Lamp (220V): 1ea
- Φ 1 motor (220V 6W): 1 ea (Inc. rotational part)
- Buzzer: 1ea
- Inverter output: 1ea
- Main NFB: 1ea
- Inverter output NFB: 1ea
- Halogen lamp out (220V socket): 1ea
- 220V socket: 1ea
- Input terminal: 4 Φ 4ea

7. System case

- Applicable range :
This system was designed to fit the size of system and storage battery and is used for the safety operation of system and storage battery equipments.
- Structure: Designed with strong structure to protect System and storage cells.
 - : Easy to carry and good withstand load.
 - : Has ventilation hole and installed cooling fan.
 - : Waterproof and anti-corrosion
 - : Consisted of 2 battery unit, battery charger and inverter unit, load panel, and display panel.
- Size: more than 570(W) \times 1540(H) \times 590(D)

8. Accessories

- Connection cable: 1set
- Users manual: 1ea

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