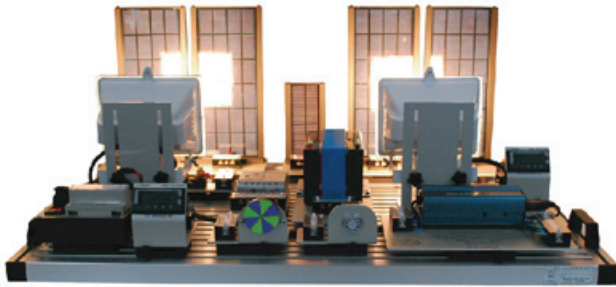


CPE-S25

Photovoltaic System Assembly & Disassembly Trainer



FEATURES

- Miniaturized solar PV system using the artificial solar source
- Capable of performing off-grid and grid-tied practices
- Supports assembly and disassembly practices by the modular system structure

EXPERIMENTAL CONTENTS

- Basic principles of solar power generation
- Electrical characteristic of solar PV modules
- I-V, P-V characteristics by distance of solar PV modules
- I-V characteristics and load practices according to series/parallel connection of solar PV modules
- Battery charge-discharge practices through the charging controller
- Power conversion through the off-grid inverter
- Power conversion through the grid-tied inverter

PRODUCT COMPOSITION

- Base panel (M00)
- Solar PV cell module [A-type] (M01) × 2
- Solar PV cell module [B-type] (M02) × 4
- Halogen light module (M03) × 2
- Diode module (M04-A, M04-B)
- Charging controller module (M05)
- Battery module (M06)
- AC/DC inverter module (M07)
- AC lamp module (M08)
- AC motor module (M09)
- AC buzzer module (M10)
- Digital meter module (M11)
- Grid connected inverter module (M12)
- Energy meter module (M13)
- Fuse module (M14)
- Variable resistor module (M15)
- Shunt module (50mV 1A) (M16)
- Shunt module (50mV 5A) (M17)
- DC voltmeter module (M18)
- DC ampere meter module (M19)
- AC voltmeter module (M20)
- AC ampere meter module (M21)
- AC input terminal block Module (M22)

SPECIFICATIONS

Solar PV Cell Module [A-type] (M01)

- Size of cell : 60(W) x 150(H)mm
- Maximum power (Pm) : 1W
- Maximum power voltage (Vmp) : 12V
- Maximum power current (Imp) : 85mA



Solar PV Cell Module [B-type] (M02)

- Cell size : 120(W) x 300(H)mm
- Maximum power (Pm) : 4W
- Maximum power voltage (Vmp) : 6V
- Maximum power current (Imp) : 660mA



Halogen Light Module (M03)

- Output: 300W
- Power source : 220V 50/60Hz
- Halogen linear lamp
- Heat-resistant glass
- Angle control function



Diode Module : DIODE-A, B (M04)

- Size : 115(W) x 75(H)mm
- Schottky barrier diode : 8ea
- Maximum voltage (Vmp) : 40V
- Maximum inverse Voltage (Vmp) : 40V
- Maximum current (Io) : 5A



Charging Controller Module (M05)

- Size : 90(W) x 185(H)mm
- Normal voltage : 12V
- Boost voltage : 13.5V (25°C), two hours
- Equalization voltage : 14.8V (25°C), two hours
- Float voltage : 13.7V (25°C)
- Low voltage disconnection (LVD):
 - 11.4 ~ 11.9V (controlled by the charging status)
 - 11.0V (controlled by voltage)
- Load reconnection voltage : 12.8V
- Temperature compensation : -4mV /cell*k
- Maximum input current (solar panel) : 5A / 8A / 10A / 15A / 20A
- Maximum load current (load) : 5A / 8A / 10A / 15A / 20A



Battery Module (M06)

- Size : 380(W) x 120(D) x 309(H)mm
- Battery (12V, 12AH) : 1ea



AC/DC Inverter Module (M07)

- Size : 270(W) x 160(H)mm
- Output (AC) : 250W
- Frequency : 60Hz
- Protection function : Overheat, short circuit and overload protection
- Alert function : Warning sound and red indicator lamp in case of low battery (or overheat)



SPECIFICATIONS

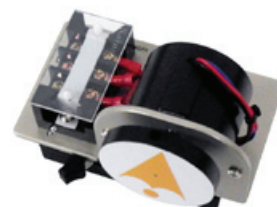
AC Lamp Module (M08)

- Size : 123(W) x 69(H)mm
- AC Lamp (AC 220V 1W): 1ea



AC Motor Module (M09)

- Size : 115(W) x 69(H)mm
- AC 220V motor with 5.3W rotary disk : 1ea
- AC Motor Phase Controller : 1ea



AC Buzzer Module (M10)

- Size : 115(W) x 69(H)mm
- Buzzer (AC 220V 13.5W) : 1ea



Grid Connected Inverter Module (M12)

- DC input voltage : 12V and 24V (10.8 ~ 30 VDC)
- Power output : 250W (* peak power: 300W)
- Efficiency : 92%
- Power factor : 0.99
- Output waveform : Sine wave
- Frequency : 46 ~ 65Hz
- Output voltage : 190 ~ 260 VAC
- MPPT : Built-in MPPT function
- Protection : Overcurrent and over-voltage circuit protection



Energy Meter Module (M13)

- Size : 130(W) x 130(D) x 220(H)mm
- Single-phase 2-wire type (1P2W)
- Current : 30(10)A
- Voltage : 220V



Fuse Module (M14)

- Fuse : 4ea
- Rating : 250V 5A



Variable Resistor Module (M15)

- Resistance range : 0 ~ 50Ω
- Maximum consumption power : 50W



Shunt Module (M16)

- Rating : 50mV 1A



Shunt Module (M17)

- Rating : 50mV 5A



DC Voltmeter Module (M18)

- Maximum measuring input : DC 500V
- Maximum display range : -1999 ~ 9999
- Hi/Low scale function



DC Ampere Meter Module (M19)

- Maximum measuring input : DC 5A
- Maximum display range : -1999 ~ 9999
- Hi/Low scale function



AC Voltmeter Module (M20)

- Maximum measuring input : AC 5A
- Maximum display range : -1999 ~ 9999
- Hi/Low scale function



AC Ampere Meter Module (M21)

- Maximum measuring input : AC 500V
- Maximum display range : -1999 ~ 9999
- Hi/Low scale function



AC Input Terminal Block Module (M22)

- AC 220V 5A
- AC output_L : 6ea
- AC output_N : 6ea



STANDARD ACCESSORIES

- Power cord: 1ea
- Y-connection cable : 1set
- User's guide manual : 1ea
- Experimental manual : 1ea