



# Solar PV Training Systems

Stand Alone System



The system is design to teach the principle of single phase Hybrid Solar PV System. The energy generated from the solar PV will power the load and the access energy will be stored in Battery. When the energy from PV unable to support the load demand the battery will discharge and eventually will start up a generator or grid supply if the battery reached certain depth of discharge.

The system consists of

### **2 Nos of Polycrystalline solar PV and Mounting Structure**

The trainer comes with Polycrystalline modules and configures it to suit the charge controller and the inverter. The modules can be either mounted on a mobile ground mounting structure.

### **RAPS255P-Panasonic Polycrystalline Solar PV Module specification :**

Peak Power (Pmax) : 255Wp	Dimension : 1665mm x 991mm x 38mm
Short Circuit Current (Isc) : 8.95A	Weight : 18kg
Open Circuit Voltage (Voc) : 37.6V	Comply with IEC 61215
Maximum Power Current (Ipmax) : 8.42A	
Maximum Power Voltage (Vpmax) : 30.5V	

### **Mounting Structure**

The ground mounting structure will be made of galvanised steel structure with 5% tilting angle. Aluminium frame will be fitted on top of the strucutre to mount the solar modules c/w adequate number of clamps.

### **RAPS-ACSA/WS - Solar PV Workstation**

The workstation must be made of insulated material such as wooden with fine finishing surface. All wiring must be in cable trunking with DC rated cable for DC section  
The system consist of :

### **RAPS ACSA/CoBx - DC Combiner box**

The DC combiner box must come with string fuses depending on the system configuration and it must be DC rated and DC Surge Protection Device (SPD).



### **RAPS SA/DC35 - DC Distribution board**

The DC DB must come with suitable DC Breaker for PV, Battery and Fuses from battery to Inverter

### **RAPS20MPPT/CC -Charge regulator ( Zigor Saturno 20)**

RAPS20MPPT is the appropriate system to manage power from photovoltaic panels, obtaining up to 30% more power than traditional systems, to control battery charging, safeguard battery service life and offer a protected output for our DC consumption.

#### **Technical Specifications**

System voltage : 12V/24V

Nominal current : 20A

PV maximum voltage : 70V dc (recommended PV Voltage : 35V)

Standby consumption : <1mA

Weight : 890g

Dimension : 190 x 112 x 59mm

### **RAPS HIS 2.4 – Single Phase Hybrid Sine wave Inverter (Zigor HIS 2.4)**

The inverter is designed with advanced digital controlled by microprocessor and with an efficiency of 93%. Standby saving mode to conserve the energy. Indicator on front panel to show the inverter status. It has a cooling fan which is thermostatically controlled. Inverter must have an built in protection system such low battery alarm, battery low shutdown, over voltage, over temperature, output shorted and overload

#### **Technical specifications**

VA/Watts : 2.4KVA/1600W  
<3.0%

Ac output waveform : True sine wave, THD

Nomin input voltage : 220V AC  
saving mode

No load dissipation : ≤ 6W @ stndby

DC Input rated Voltage : 24V DC

Working temperature : 0 -40°C @ 100% load

AC Output Voltage wavefrom : 220VAC

Safety standards : compliance to

EN60950-1

Output frequency : 50Hz



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