



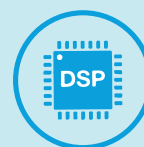
**MAXIMIZE
POWER,
SAVINGS &
REVENUES**

SOLAR HYBRID ESS

1kW to 10kW (Single Phase)
5kW to 100kW (Three Phase)



**Bidirectional
Inverter Operation**



**Advanced
DSP Control**



**IGBT Based
Rectifier**



**Battery Less
Operation**



**Grid Utilization
Features**

Specifications

System Rating (KVA)	1KVA	3KVA	5KVA	10KVA
SOLAR				
Open circuit Voltage	400V			
Maximum PV power	110% Of Inverter kVA Rating			
Charge Controller	MPPT base Charge Controller			
Switching Element	IGBT			
Type of charger	MPPT			
Charger Efficiency	Upto 94%			
GRID				
Input supply	230 VAC,(+15%,-20%)			
Input Frequency	50Hz ±6%			
BATTERY				
Battery Voltage	96VDC		180VDC	
Charging current from grid	Battery Charging Current can be adjusted			
Grid charger type	Bi-Directional			
INVERTER				
Switching Element	IGBT			
Output waveform	Pure Sine wave			
Output Voltage	230VAC ±2% 1Ph			
Output Frequency	50Hz ±1%			
Load Power Factor	0.6 lag to 1(within kVA and KW rating)			
Inverter Peak Efficiency	> 94%			
Vthd with 100% linear load	<3%			
Galvanic isolation	Inbuilt isolation transformer at inverter output			
Voltage stability in Dynamic condition	Complies with IEC/EN 62040-3,Class1			
PROTECTION				
Protection	Input Under and Over voltage, Input Under and Over Frequency Output Over load, Output short circuit, Output over and Under voltage, Short Circuit Over Temperature, Array Reverse Polarity Battery Over and Under voltage			
Display Parameter, LED Indication and Alarm				
Display Parameter	<ul style="list-style-type: none"> • Grid - Voltage Current Power • Output Voltage - Current, Total Power, Load Percentage. • Battery- Voltage, Current, DC Power • Solar- Voltage, Current, Power. • Statistics - KWH (Grid Import, Grid Export, Inverter, Battery IN and OUT, Solar) Event log 			
LED Indication	Grid, Grid Static Switch, Solar, Inverter / Grid Charger, Inverter static Switch, Load and Fault			
Alarm	Faults and Warnings			
CONFIGURATION				
Modes	Priority selection Solar, Battery, Grid			
Parameter Setting	Through user interface			
BYPASS	Bypass Switch available for Maintenance and Service			
ENCLOSURE				
Degree Of protection	IP 20 (IEC 60529)			
Cooling	Forced Air cooling			
Color	DA grey			
Dimension (L*W*H) mm	250 x 625 x 550		250 x 640 x 680	
Package dimension (L*W*H) mm	310 x 685 x 610		310 x 700 x 740	
Net Weight (kg)	60	85	98	134
Gross Weight (Kg)	85	105	118	158
ENVIRONMENT				
Temperature Operating	0-40°C			
Max. Relative humidity@25°C (non condensing)	Up to 95%			
Max. Altitude above sea level without de-rating	up to 1000 mtr			
Standard Compliance	IEC 61683 ; IEC 60068-2 (1,-2,-14,-30) ; IEC62116			

*Specifications are subject to change without prior notice due to continuous improvement in design

**For offgrid, Grid export shall be disabled

Specifications

System Rating (KVA)	10KVA-20KVA		30KVA-50KVA			60KVA-100KVA		
SOLAR								
Open circuit Voltage	600 VDC					750 VDC		
Maximum PV power	110% Of Inverter kVA Rating							
Charge Controller	MPPT base Charge Controller							
Switching Element	IGBT							
Type of charger	PWM with MPPT							
Charger Efficiency	Upto 94%							
GRID								
Input supply	415 VAC,3Phase 4 Wire (+15%,-20%)							
Input Frequency	50Hz ±6%							
BATTERY								
Battery Voltage	240 VAC		360 VDC			480 VDC		
Charging current from grid	Battery Charging Current can be adjusted							
Grid charger type	Bi-Directional							
INVERTER								
Switching Element	IGBT							
Output waveform	Pure Sine wave							
Output Voltage	415VAC ±2%, 3Ph							
Output Frequency	50Hz ±1%							
Load Power Factor	0.6 lag to 1(within kVA and KW rating)							
Inverter Peak Efficiency	> 94%							
Vthd with 100% linear load	<3%							
Galvanic isolation	Inbuilt isolation transformer at inverter output							
Voltage stability in Dynamic condition	Complies with IEC/EN 62040-3,Class1							
PROTECTION								
Protection	Input Under and Over voltage, Input Under and Over Frequency Output Over load, Output short circuit, Output over and Under voltage, Short Circuit Over Temperature, Array Reverse Polarity Battery Over and Under voltage							
Display Parameter, LED Indication and Alarm								
Display Parameter	<ul style="list-style-type: none"> • Grid - Voltage Current Power • Output Voltage - Current, Total Power, Load Percentage. • Battery- Voltage, Current, DC Power • Solar- Voltage, Current, Power. • Statistics - KWH (Grid Import, Grid Export, Inverter, Battery IN and OUT, Solar) Event log 							
LED Indication	Grid, Grid Static Switch, Solar, Inverter/ Grid Charger, Inverter static Switch, Load and Fault							
Alarm	Faults and Warnings							
CONFIGURATION								
Modes	3 modes selectable from display							
Parameter Setting	Mostly all parameters are settable via display							
BYPASS	Bypass Switch available for Maintenance and Service							
ENCLOSURE								
Degree Of protection	IP 20 (IEC 60529)							
Cooling	Forced Air cooling							
Color	DA grey							
Dimension(L*W*H) mm	400 x 770 x 810		535 x 930 x 1090			700 x 1000 x 1500		
Pacakage dimension (L*W*H) mm	500 x 870 x 910		635 x 1030 x 1190			800 x 1100 x 1600		
Net Weight (kg)	225	275	320	335	375	490	575	1060
Gross Weight (Kg)	245	295	365	380	420	435	630	1115
ENVIRONMENT								
Temperature Operating	0-40°C							
Max.Relative humidity@25°C (non condensing)	Up to 95%							
Max.Altitude above sea level without de-rating	1000m(For higher altitude complies with IEC/EN 62040-3)							
Standard Compliance	IEC 61683 ; IEC 60068-2 (1,-2,-14,-30) ; IEC62116							

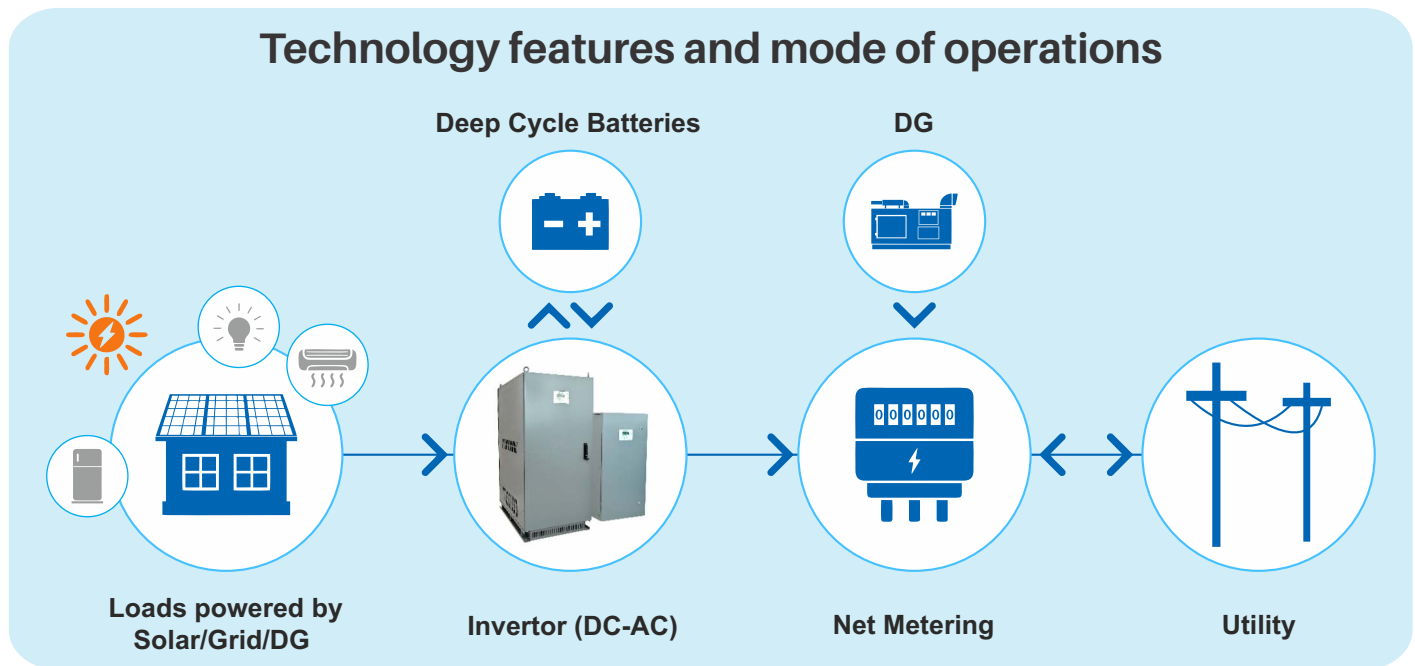
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**For offgrid, Grid export shall be disabled

Reliable, safety, maintainability characteristics of a new generation

ProstarM Solar Hybrid Inverter (PCU) design with its advance technology, it adopts double transform high frequency PWM and high-performance digital control technique (DSP), with perfect protection, super network management function, reasonable man-machine interface and a series of precision design, meets all high reliability requirements to integrates reliable, safety, maintainability characteristics of a new generation

Technology features and mode of operations



Features

- ✦ Space vector Modulation
- ✦ Real Time MPPT tracking
- ✦ Battery Less operation
- ✦ High Efficiency
- ✦ Inbuilt Charger controller
- ✦ MPPT-Achieved through Perturb and Observe Technique
- ✦ Selectable Priority Features - SOLAR/BATTERY/GRID
- ✦ Inbuilt galvanic Isolation Transformer
- ✦ Seamless synchronisation with DG sets
- ✦ Grid Synchronisation with storage
- ✦ Export Excess PV power to Grid
- ✦ Surge Protections on Grid side/PV side
- ✦ MODBUS / RS-485 / RS-232 / Web based remote monitoring
- ✦ Large LCD display and MIMIC panel for Real time information
- ✦ High reliability for Maximum System Availability

Application

- Petrol Pump
- AC Unit
- Cold Storage
- Microgrid
- Factory & Dairy Equipment
- Water Pump
- ATM
- Farmhouse
- Primary Health Care Center
- Rural Bank
- Government Offices
- Lift in Society