



STAND ALONE INVERTERS

OVERVIEW

The "Stand Alone Inverter" SAI series by PPS Enviro is an intelligent, Pure Sine Wave, Stand Alone power Conditioning System. The SAI can be interfaced to an SPV array directly.

The SAI system allows the option of combining renewable energy sources on priority with the functionality of an industrial UPS system. Based on the Solar Power available, the connected load and battery state of charge the unit configures itself as either a charger or inverter.

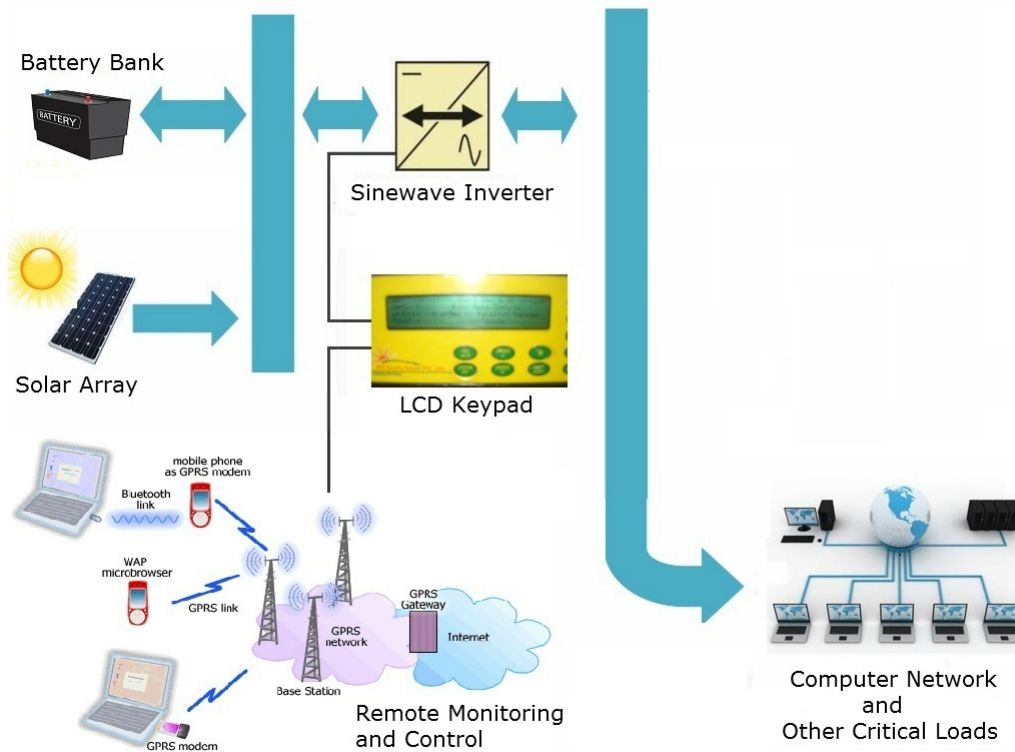
In charging mode, the system maintains the battery voltage at a user specified value and charges the battery in accordance with the manufacturer's specification thus maximizing the life of the battery

BASIC SYSTEM OPERATION

Under light load conditions with the battery in a "Full State of Charge" the available solar power will supply the load via the inverter with excess solar (renewable) power being fed to the load.

Under medium and heavy load conditions, all available solar power is used to charge the battery. Any excess solar power is used to handle the site load via inverter.

Once the battery reached the predetermined level of charge, all available renewable energy will be utilized to power the site load.



TECHNICAL SPECIFICATIONS – STAND ALONE SINGLE PHASE UNITS

Mechanical	5kVA	10kVA	15kVA	20kVA
Height x Width x Depth (MM)	1600 x 800 x 350	1800 x 1000 x 600	1800 x 1200 x 800	1800 x 1200 x 800
Weight (Kgs)	350	600	750	900
Nominal Output Voltage	230Vac, Single Phase, 2 Wire Output			

TECHNICAL SPECIFICATIONS – STAND ALONE THREE PHASE UNITS

Mechanical	15kVA	30kVA	45kVA	60kVA
Height x Width x Depth (MM)	1600 x 800 x 350	1800 x 1000 x 600	1800 x 1200 x 800	1800 x 1200 x 800
Weight (Kgs)	350	600	750	900
Nominal Output Voltage	415Vac, Three Phase, 4 Wire Output			

Parameters	Information
Surge Rating	150% of rated output for 30 seconds
Nominal Output Frequency	50Hz
Efficiency	> 94%
Waveform	Pure Sine Wave
Front Panel Interface	<ul style="list-style-type: none"> • 40 x 4 LCD panel with keypad for display • Output Voltage / Current / Frequency / Power • Input Voltage / Current • Accumulated Output kWhrs • Temperature (either from ambient or panel sensor)
RFI	Designed to minimize both conducted and radiated RFI emissions
Cooling	Fan forced
Internal Protection System	<ul style="list-style-type: none"> • Over / Under Temperature • Over / Under Voltage Protection • Over / Under Frequency Protection • Inverter Overload • Solar Regulator Breaker • Peak Current (Short Circuit) Protection
Front Panel Display	LCD display
Alarm Signals	Via system fault relay (voltage free contact)
Earthing Provisions	AC Bypassing to earth on inverter and DC Inputs
Control Type	Voltage source, microprocessor assisted output regulation
Power Control	Phase Controlled Pulse Width Modulation (PWM)
Power Switching	High Efficiency IGBT
Operating Temperature Range	0°C - 55°C
Humidity	0 – 95% non condensing
Enclosure	IP 30
Data Logging	
Within Inverter	<ul style="list-style-type: none"> • Mod Bus interface for local or remote SCADA communications • User adjustable averaging period from 1 minute to 24 hour results using 62.5 millisecond samples • Internal storage capabilities configurable for over 30 days storage • PC based software to control and monitor the control system locally or remotely via modem
Parameters Include:	<ul style="list-style-type: none"> • Average output voltage, current, power and frequency • Average battery voltage and current • Average battery temperature (degrees C) • Average Renewable Amps • Average solar radiation and wind speed • Historic time stamped event and fault diagnostics for the previous 32 actions and/or faults
External Logging	<ul style="list-style-type: none"> • Remote communications package • Online comprehensive system logging • Ability to transfer data to PC filing system such as Excel • Ability to store & restore system set point configurations remotely
Computer Ports	Isolated RS232
Communications Method	Protocol MODICON Mod Bus (RS232)
Data Transfer	ASCII 'CSV' format

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