

# SOLAR PCU WITH PWM TECHNOLOGY

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SPEARHEADING

## SOLAR TECHNOLOGY REVOLUTION



**AFFORDABLE**

**CREDIBLE**

**RELIABLE**

**ENVIRONMENT  
FRIENDLY**

S-PCU is a Dsp/ Micro controller based Solar-Grid Power Conditioning Unit which is programmed with grid electricity saving features, elongated back-up time and PWM/MPPT charge possessing smart charging profile for all type all types of batteries.

### FEATURES

With increase in power demand globally the conventional energy resources are not able to meet the consumption requirements and there is a huge gap between energy production and demand. Therefore technology is moving towards non-conventional energy resources like Solar energy, wind energy, geothermal energy, wave energy etc. Out of all these resources solar energy is found in abundance and now technology has grown to convert the solar energy into electrical energy very easily with the help of Silicon based solar panels.

### FUNCTIONING

Solar Power Conditioning Unit (S-PCU) is an intelligent solar inverter with grid connectivity and battery backup. It works with priority to solar/ grid/ battery power. This PCU will provide full power from solar panels and will charge battery simultaneously. In case of unavailability of solar power it will transfer load to the grid. It will provide power from batteries only when both solar and grid power is not available.

The PCU continuously monitors the status of battery, solar panel and load. Due to constant usage of power, if the battery voltage goes below a set level, the PCU will automatically transfer the load to the Grid/ DG power and charges simultaneously. Once the batteries are charged to the preset level, the S-PCU cuts off the Grid/ DG Power from the system and restores it to solar panels. The PCU will automatically switch to hybrid (current sharing) mode if the solar power is low compared to the load requirement.

**Applications:** Computers, Telecoax, Deep Freezers, Air Conditioners,



Petrol Pumps, Machines, Small Scale, Industries, Malls, Restaurants & Hotels, Banks, Clinics, Kitchen & Home Appliances, Weighing Bridges & many more.

**SOLAR SOLUTIONS • POWER PRODUCTS • LED LIGHTINGS • HOME APPLIANCES**

## TECHNICAL SPECIFICATION

Parameters		Solar UPS(PWM HOME PCU)			
		2.5k38V	2.5k48V	3k48V	5k48V
Model	Units	2000VA	2000VA	3000VA	5000VA
Rating					
PWM Based Charge Controller					
Charge controller Max.Amp	A	50			
Solar Voltage(Min-Max)	VDC	32-60	64-120	64-120	64-120
Max PV Power	W	1500	1800	2550	3000
Cell Support		60/72	60/72	60/72	60/72
Battery					
Switching Element				MOSFET	
Type of Charger				CVCC_PWM	
Efficiency				95%	
Grid					
Low cut off				10.5 +/- 2%	
Low Buzzer				10.7 +/- 2%	
High out off	V			15.5 +/- 2%	
Boost Charging Volt by Grid				14.5 +/- 2%	
Charging Voltage by Solar				14.5 +/- 2%	
Charging current by Grid	A			10 +/- 2%	
Inverter					
No of Phase				1Phase-3Wire P.N.E	
Voltage range				100-280(Inverter) 180-280(UPS)	
Frequency range	Hz			45-55	
Micro-Controller				32 Bit DSP (Microchip & ST)	
Output Voltage	V			220 +/- 2%	
Phase				1Phase-3Wire P.N.E	
Output Waveform				Digitally Filtered Pure Sine Wave	
Frequency	Hz			50	
Overload	> 150% Load - 1Sec			Upto 125% Load - 1Min 125% - 150% Load - 5Sec	
Switches				Load-Short circuit System ON/OFF Hybrid / PCU / Smart Mode Inverter / UPS Mode	
Led Indication				Inverter ON, Mains ON, Battery Low / High, Overload, SPV Charging	
Alarm				Battery Low, Overload, Charger ON, Inverter ON	
Protection				Overload, Short Circuit Protection, Over Voltage, SPC Surge and Transient protection (MOV Varistors), Reverse Polarity of Battery, Over Temperature Protection, Under voltage and Over Voltage Protection	
LCD Display Parameters					
Input				Voltage, Current, Frequency	
Output				Voltage, Current, Frequency	
Load				Load In % Actual Running Load in Watt	
Battery				Battery Level & Battery Voltage, Charging Current by Grid/Solar, Charging Stages(Soft Start, Bulk, Absorption, Float & Equalize)	
Solar				Solar Voltage, Charging Current by Solar, Charging Stages(Soft Start, Bulk, Absorption, Float & Equalize)	
Status and Faults				Overheat, Mains High / Low, Inverter On/Off, SPV Status Low /High, Output Low, Battery Low/High	
Other					
Cooling				Forced Air Cooling(Temp Controlled)	
Operating Temp	C			0-50	
Operating Humidity	%			95	

\* Specification may change due to continuous R&D

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