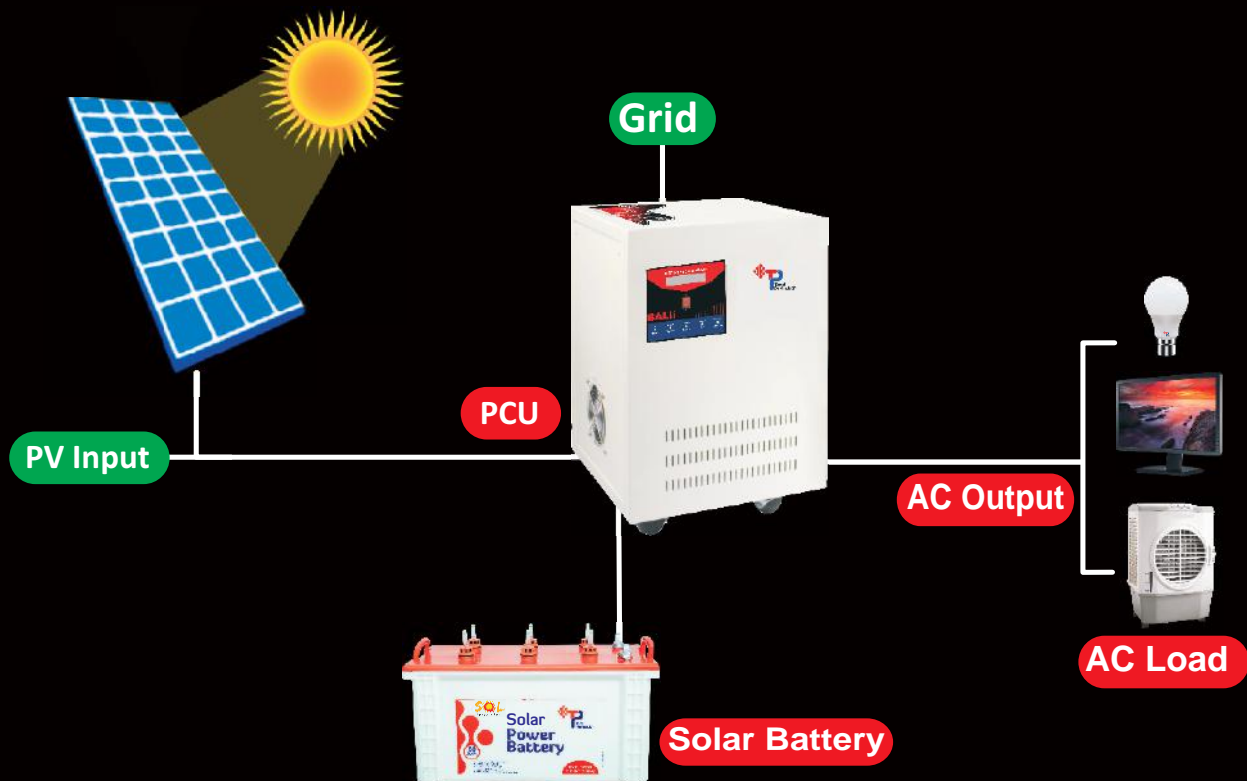


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SOLAR POWER CONDITIONING UNIT (S-PCU)

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.

SOLAR PCU FEATURE/ UTILITY

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 charger possessing smart charging profile for all types of batteries.

FUNCTIONING

Solar Power Conditioning unit (PCU) is an integrated system consisting of a solar charge controller, inverter and a grid charger. It provides the facility to charge the battery bank through either a Solar or Grid/ DG set. The PCU continuously monitors the status of battery voltage, solar power output and the 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 also charge simultaneously. Once the batteries are charged to the preset level, the Solar Power Conditioning unit cuts off the Grid/ DG Power from the system and restores it to feeding the loads from the battery bank while also returning to charging the battery from the available solar power. The PCU always gives preference to the solar power and will use Grid/ DG power only when the solar power/ battery charger is unable to meet the load requirement.

TECHNICAL SPECIFICATIONS

Inverter Mode Testing

S.No.	PARAMETER	3KVA/48V	5KVA/48V	5KVA/96V	7.5KVA/120V	10KVA/180V	15KVA/180V
1	Output voltage at No load	225±5V (MAX)					
2	No load Inverter Battery current	<=1.5A					
3	No load Inverter output Frequency	50.0±0.5Hz					
4	Full load Inverter output voltage range (from full battery to low battery)	190V -220 V					
5	Full load Inverter output Frequency	50.0±0.5Hz					
6	Full load Inverter output wave form	Pure Sine Wave					
7	Full load Watt(Bulb load)	>=Rating*0.8 (2400W)	>=Rating*0.8 (4000W)	>=Rating*0.8 (6000W)	>=Rating*0.8 (8000W)	>=Rating*0.8 (12000W)	>=Rating*0.8 (12000W)
8	Inverter short circuit test	O/P short					
9	Battery current at full load	58A+/-2AMP	92A+/-2AMP	47A+/-2AMP	50A+/-2AMP	53A+/-2AMP	78A+/-2AMP
10	Fan working test	During charging and Backup					
11	Battery low voltage alarm	42.6V+/-0.3V	84.8V+/-0.3V	103V +/-0.5V	154.5V +/-0.5V		
12	Battery low cut/trip voltage	40.8V+/-0.3V	81.6V+/-0.3V	100V +/-0.5V	150V +/-0.5V		
13	Inverter efi cency	>85%					
14	Total harmonic distorance	<3% on linear load					
15	Total harmonic distorance	<5% on non linear load					

FEATURES

1	Battery low retry	1	0
2	Overload retry	4	1
3	Short circuit retry	Instantaneous	
4	Input and output short	short circuit protection	

Mains Mode Testing

PARAMETER

1	Mains voltage low cut	120V ± 10V	
2	Mains voltage low cut recovery.	130V ± 10V	
3	Mains voltage high cut	280V ± 10V	
4	Mains voltage high cut recovery.	270V ± 10V	
5	Output frequency	SAME AS I/P	
6	Change over time mains to Inverter.	<10ms	<30ms
7	Change over time inverter to mains.	<10ms	<30ms

Charging Mode Testing

PARAMETER

1	Battery boost voltage	56.8V ±0.3V	113.6V ± 1.6V		
2	Battery boost voltage(HC)			14.2V ±0.5V	21.3V ± 0.5V
3	Battery boost voltage(NC)			13.8V ±0.5V	20.7V ± 0.5V
4	Battery charging current	10A ± 1.0A			

AUDIO & VISUAL INDICATION

1	Humidity	95% (non condensing)
2	Noise level	< 45db

PCU FEATURE

1	Solar charge controller type	PWM/DSP BASED, ZERO DROP
2	Mains cut ofi	14.8V each battery
3	Mains recovery	11.8V each battery
4	Solar charging cut off	15V each battery
5	Solar charging recovery	13.3V Each battery
6	Load sharing	Solar+mains both
7	Solar charge controller capacity	80AMP
8	Solar charge controller Efi cency	>90%

* Specifications may change due to continuous R&D

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