



## POWER CONDITIONING UNIT (PCU)

**Efficient bi-directional pure sine wave Inverter with built-in MPPT solar charge controller and battery charger**

NavSemi's **Power Conditioning Unit (PCU)** is a pure sine-wave inverter, MPPT solar charge controller, and battery charger integrated in a single, compact and sturdy enclosure. The PCU's innovative, proprietary design includes a mains (grid) charging turn-off feature, enabling users to reduce their electricity consumption when conditions permit.

Designed for effective operation even with low sunlight and in an electrically-noisy operating environment, NavSemi's PCU has the option of remote monitoring for a fully-flexible system solution.

The PCU is equipped with advanced safety features along with front panel LCD and LED indicators for fault notifications and functional analysis.



**HARVEST  
MATTERS**

## Product Highlights

- ★ Pure sine-wave output.
- ★ Low noise design with acoustic isolation
- ★ Galvanic isolated output.
- ★ MPPT tracking solar charge controller
- ★ Increased surge capacity for heavy load starts
- ★ Intelligent thermal management
- ★ Built-in smart Solar Management Unit (SMU) technology
- ★ Compatible with remote monitoring



## On board safety features include

- ★ Low battery indicator and disconnect
- ★ Overload protection with multiple retries
- ★ Thermal protection
- ★ Short circuit protection
- ★ Reverse polarity protection
- ★ Self-recovery after fault removal
- ★ Designed to resist dust, dirt, and insect entry
- ★ Continuous operation in the event of grid failure

PARAMETERS	PCU 500VA 250W 12	PCU 1KVA 1KW 24	PCU 2KVA 2KW 48
Description	500VA Solar PCU	1000VA Solar PCU	2000VA Solar PCU
Output Waveform	Pure Sine Wave Inverter		
Output Voltage (AC)	230V		
Load Regulation	± 3%		
Output Frequency	50 Hz ± 1%		
Nominal Input Voltage (DC)	12 V	24 V	48 V
Efficiency	> 80%	>85%	>86%
Surge Capacity	200% load (Fold Back)		
Total Harmonic Distortion	<3% on Linear Load		
Low Battery Indication	10.5 ± 0.4V DC*	21.6 ± 0.4V DC*	43.2 ± 0.4V DC*
Type	Maximum Power Point Tracking (MPPT)		
Max I/P Solar Voltage (VoC)	50 V	100 V	150 V
Voltage range of PV array (Vmpp)	18-40 V	36-80 V	50-120 V
Solar Array	250 Wp	1000 Wp	2000 Wp
Max. Charging Current	20A ± 1A	42A ± 1A	42A ± 1A
Over Voltage Cut-off (Battery)	15 V DC*	30 V DC*	60 V DC*
Boost Charging Voltage	14.2 ± 0.4V DC*	28.4 ± 0.4V DC*	59.2 ± 0.4V DC*
Float Charging Voltage	13.9 ± 0.4V DC*	27.6 ± 0.4V DC*	55.2 ± 0.4V DC*
Input Voltage Range	100V to 280V		
Change over time (Mains to Inverter)	<20 ms		
Change over time (Inverter to Mains)	<10 ms		
Low side change over voltage (Inverter to Mains)	11.8 ± 0.4V*	23.8 ± 0.4V*	47.6 ± 0.4V*
High side change over voltage (Mains to Inverter)	14.0 ± 0.4V DC*	28 ± 0.4V DC*	56 ± 0.4V DC*
Grid Charging Current (Max)	8A	10A	
Operating Temperature	10°C to 55°C		
Acoustic Noise at 1 Meter	<55 db		
Thermal Management	Fan Cooled		
Dimensions (H x W x D)	275 x 200 x 400 mm	335 x 230 x 525 mm	
Gross Weight	13 kg	28 kg	32 kg
Mounting	Floor/ Rack Mount		

\* Use of appropriate cable gauge is mandatory

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