

		SMARTEN POWER SYSTEMS LIMITED
		PRODUCT SPECIFICATION
Model Name		SUPERB 4000/48V SOLAR PCU
Mains Input mode		
Mains AC low cut UPS mode		175VAC ± 10VAC
Mains AC low cut recovery UPS mode		185VAC ± 10VAC
Mains AC high cut UPS mode		265VAC ± 10VAC
Mains AC high cut recovery UPS mode		255VAC ± 10VAC
Mains AC low cut WUPS mode		90VAC ± 10VAC
Mains AC low cut recovery W.UPS mode		110VAC ± 10VAC
Mains AC high cut WUPS mode		295VAC ± 10VAC
Mains AC high cut recovery W.UPS mode		285VAC ± 10VAC
Input Frequency Range		48Hz to 52Hz
Voltage Output in Mains Mode		Same as input
Mains Charging Enable/Disable		Yes Provided, you can set by front switch
Frequency Output in Mains Mode		Same as input
Battery		
Battery Type		LA / Tubular / SMF
DC input voltage		48V
Battery Quantity 12V 100Ah to 220Ah		4
Float charging voltage		54.8V±0.2V
Boost charging voltage for LA Battery		56V±0.4V
Boost charging voltage for Tubular and SMF Battery		57.8V±0.4V
Bulk Absorption Battery Voltage		60V±0.2V
Battery deep Discharge Recovery		Yes (Independent Charger to Recover Deep Discharge Battery)
Charging Current By Grid		15A±3A
Backup Mode		
Output voltage		220VAC±10%
Output frequency		50Hz ± 0.2 Hz
Output waveform		Pure Sine Wave ≤ 5% THD
No Load current		<1.8A
Discharging current @ full load		60A ± 2A
Low Battery Warning		43.2V±0.4V
Low Battery Cut		41.6V±0.4V
Change over time UPS mode		< 10msec
Change over time WUPS mode		< 25msec
Switching Element		MOSFET
Cooling		Temp. Controlled Fan
Protections		
Overload in backup mode		Yes provided, system will indicate on display at 101% load
Short Circuit in Backup Mode		System will shutdown after 3 - retries in case of output short circuit
Short Circuit in Mains Mode		Mains MCB will trip
Back feed		System will shutdown in case of back feed and there is no retry
Over temperature		Yes provided, if heat sink temperature goes above 100°C System will shut down
Reverse Battery		DC fuse will blown
Phase to Phase protection in mains mode		Yes provided by electronic
Solar Charge Controller		
Solar Charge Controller type		MPPT
Max Panel wattage can be connected		3000 WATT
Maximum PV Voltage		135V
Maximum Battery current		50 Amp.
Efficiency		> 93%
Reverse PV protection		Yes provided, it will also display on LCD panel
Switches		Menu>Select),up,Down,Esc.
Reverse current flow to PV		Yes provided
Sharing of current when PV and Grid Both are available		If PV power is not sufficient enough to charge the battery, system will start sharing battery charging from PV and grid.
DOD definition(Depth of Discharge)		Mains will be connect when battery voltage reach at defined value of the battery voltage.
DOD (Depth of Discharge)		20% - if battery voltage is 50.0V±0.2V
		30% - if battery voltage is 48.0V±0.2V
		40% - if battery voltage is 46.0V±0.2V
		50% - if battery voltage is 44.0V±0.2V
Display and Alarms		
LCD Initial Display		Welcome, SMARTEN Website Address, System Capacity, Charging Till 90VAC and Deep Discharge Battery, System Setting, UPS / WUPS mode, I/P range 90-295VAC / 170-265VAC, Battery Type Selected LA / SMF / Tubular, DOD.
LCD Status Display		Mains ON, Input Voltage, Input Frequency, Battery Voltage, Battery Charging, Battery Charged, Charging Current, Backup Mode, UPS ON, UPS OFF, Battery Voltage, Load %, Output Voltage, Output Frequency, Battery Current, PV Current, PV Voltage. Mains Low Cut, Mains High Cut, Mains Not Available, Mains Frequency Cut
LCD Fault / Protection Status Display		Mains Fuse Blown / MCB Trip, Short Circuit, Overload, Battery Low, High Temperature, Back feed
Buzzer		Mains Fuse Blown / MCB Trip, Short Circuit, Overload, Battery Low, High Temperature, Back feed
Safety		
HV Test Input to Earth		Leakage current <5mA when 1.5kV applied for 1 min
HV Test Output to Earth		Leakage current <5mA when 1.5kV applied for 1 min
IR Test Input to Earth		>5MΩ between @ 500VDC
IR Test Output to Earth		>5MΩ between @ 500VDC
Earth Leakage current in Mains mode		< 2.5mA
Earth Leakage current in Backup mode		< 2.5mA
Environment		
Operating Temperature		0°C to 50°C
Storage Temperature		0°C to 50°C
Operating Relative Humidity		90% Non-Condensing