



# SMARTEN POWER SYSTEMS PVT LIMITED

## PRODUCT SPECIFICATION

<b>Model Name</b>	<b>3.5KVA/48V SOLAR PCU</b>
<b>Mains Input mode</b>	
Mains AC low cut UPS mode	175VAC $\pm$ 10VAC
Mains AC low cut recovery UPS mode	185VAC $\pm$ 10VAC
Mains AC high cut UPS mode	265VAC $\pm$ 10VAC
Mains AC high cut recovery UPS mode	255VAC $\pm$ 10VAC
Mains AC low cut WUPS mode	90VAC $\pm$ 10VAC
Mains AC low cut recovery W.UPS mode	110VAC $\pm$ 10VAC
Mains AC high cut WUPS mode	295VAC $\pm$ 10VAC
Mains AC high cut recovery W.UPS mode	285VAC $\pm$ 10VAC
Input Frequency Range	48Hz to 52Hz
Voltage Output in Mains Mode	Same as input
Frequency Output in Mains Mode	Same as input
<b>Battery</b>	
Battery Type	LA / Tubular / SMF
DC input voltage	48V
Battery Quantity 12V 100Ah to 220Ah	4
Float charging voltage	54.8V $\pm$ 0.4V
Bulk absorption Voltage	59.2V $\pm$ 0.4V
Boost charging voltage for LA Battery	56.0V $\pm$ 0.4V
Boost charging voltage for Tubular and SMF Battery	58.0V $\pm$ 0.4V
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)
Charging Current at Grid priority/Battery priority	15A $\pm$ 3A
<b>Backup Mode</b>	
Output voltage	220VAC +5% -10% (until battery low alarm)
Output frequency	50Hz $\pm$ 0.2 Hz
Output waveform	Pure Sine Wave $\leq$ 5% THD
Capacity	3500VA
Discharging current @ full load	60A $\pm$ 2A
Low Battery Warning	43.2V $\pm$ 0.4V
Low Battery Cut	41.6V $\pm$ 0.4V
Change over time UPS mode	< 10msec
Change over time WUPS mode	< 25msec
<b>Protections</b>	
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
<b>Solar Charge Controller</b>	
Solar Charge Controller type	PWM type
Max Panel wattage can be connected	3000W
Max PV current	50A
Reverse PV protection	Yes provided, it will also display on LCD panel
Reverse current flow to PV	Yes provided, it will also display on LCD panel
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.
Option for Grid and Battery priority	Yes, provided, user can set priority for Battery or Grid. Hence user can set system in electricity bill saving.
<b>Display and Alarms</b>	
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, Battery Capacity Selected 100-135Ah / 150-200Ah,
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, Mains Low Cut, Mains High Cut, Mains Not Available, Mains Frequency Cut
Buzzer	Audible beep for Overload, Short Circuit, Back feed, Low Battery, Over Temperature, Mains Fuse blown / MCB Trip
<b>Safety</b>	
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	>5M $\Omega$ between @ 500VDC
IR Test Output to Earth	>5M $\Omega$ between @ 500VDC
Earth Leakage current in Mains mode	< 2.5mA
Earth Leakage current in Backup mode	< 2.5mA