

	SMARTEN POWER SYSTEMS LIMITED	
	PRODUCT SPECIFICATION	
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
Frequency Output in Mains Mode		Same as input
Battery		
Battery Type		LI-ION
DC input voltage		12V
Battery Quantity 12V 100Ah LI-ION		1
Bulk absorption Voltage		14.2±0.2V
Boost charging voltage for LI-ION Battery		14.2V±0.2V
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)	
Charging Current LI-ION Battery		20A ± 3A
Charging mode		5Amp 5A ± 1A
		10Amp 10A ± 2A
		Enable 20A ± 3A
		Disable
Backup Mode		
Output voltage		220VAC +5% -10% (until battery low alarm)
Output frequency		50Hz ± 0.2 Hz
Output waveform		Pure Sine Wave ≤ 5% THD
Capacity		1100VA
Discharging current @ full load		73 ±3A
Low Battery Warning		10.8V±0.2V
Low Battery Cut		10.4V±0.2V
Change over time UPS mode		< 10msec
Change over time WUPS mode		< 25msec
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
Battery High Protection		Yes provided by Firmware
Solar Charge Controller		
Solar Charge Controller type		MPPT type
Max Panel wattage can be connected		1200W
Max PV Voltage		60 ±3V
Max PV current		55A
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.
Mode Option	1. Solar >> Grid >> Battery (In this condition first priority is Solar then Grid and Battery) 2. Solar >> Battery >> Grid (In this condition first priority is solar then Battery and Grid) 3. Grid >> Solar >> Battery (In this condition first priority is Grid then Solar and Battery, Mains will not be disconnect in this condition)	
Mains Disconnect SOC (State of charge)**		65%- of battery capacity*** Default SOC is 30%
		75%- of battery capacity*** Default SOC is 40%
		85%- of battery capacity*** Default SOC is 30%
		90%- of battery capacity*** Default SOC is 30%
Mains Disconnect SOC definition(State of charge)**		Mains will disconnect if battery will charge defined SOC level
Mains Connect SOC (State of charge)**		20%- of battery capacity
		30%- of battery capacity
		40%- of battery capacity
		50%- of battery capacity
Mains Connect SOC definition(State of charge)**		Mains will be connect when battery use defined SOC value of full capacity
Battery Capacity**		100Ah
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/LI-ION, Battery	
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,	
Buzzer	Audible beep for Overload, Short Circuit, Back feed, Low Battery, Over Temperature, Mains Fuse blown / MCB Trip	
Mains Chargin Enable and Disable		
	Yes, Provided user can set mains chargin Enable/Disable from front keypad	
UNIT SAVING IN DISPLAY		
	LCD Display will show the total saving unit from Solar	
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	
Definition		
* This option is enabled only for the LA/SMF/TUB batteries		
** This option is enabled only for the LI-ION Batteries		