SMARTEN®
FUSION IS THE FUTURE

TECHNICAL SPECIFICATIONS-SUPERB MPPT SOLAR PCU SERIES

Model Name	12V	24V	48V	72V	96V	120V	180V
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 WUPS 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 52 Hz						
Voltage Output in Mains Mode	Same as input						
Frequency Output in Mains Mode	Same as input						
Mains Charging Enable/Disable	We can set by Front switch						
Battery							
Battery Type	LA / Tubular / SMF						
Battery Qty. 12V 100Ah to 220Ah	1	2	4	6	8	10	15
Float charging voltage	13.7±0.2V	27.4±0.2V	54.8±0.2V	82.5±0.2V	109.6±0.4V	137±0.4V	205.5±0.4V
Boost charging voltage for LA Battery	14.0±0.2V	28.0±0.2V	56.0±0.2V	84.0±0.2V	112±0.4V	140±0.4V	210±0.4V
Boost charging volt. for Tubular/SMF Batt.	14.5±0.2V	29.0±0.2V	58.0±0.2V	87.0±0.2V	116±0.4V	145±0.4V	217.5±0.4V
Bulk absorption Voltage	14.8±0.2V	29.6±0.2V	59.2±0.2V	88.8±0.2V	118.4±0.4V	148±0.4V	222±0.4V
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)						
Charging Current By Grid	15A±2A						
Backup Mode							
Output voltage	220VAC ± 5% (until battery low alarm)						
Output frequency	50Hz ± 0.2 Hz						
Output waveform	Pure Sine Wave ≤ 5% THD						
Low Battery Warning	10.8+0.2V	21.6+0.2V	43.2+0.4V	64.8V±0.4V	86.4+0.4V	108+0.4V	162V±0.4V
Low Battery Cut	10.4V±0.2V	20.8V±0.2V	42.4V±0.4V	63.8V±0.4V	84.8V±0.4V	106V±0.4V	159V±0.4V
Change over time UPS mode	< 10msec				< 4msec		
Change over time WUPS mode	< 25msec						
Switching Element	MOSFET						IGBT
Cooling	Temp. Controlled Fan						
Protections							
Short Circuit in Backup Mode	System will shut down after 3 - retries in case of output short circuit						
Short Circuit in Mains Mode	Mains MCB 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		Battery MCB will trip				
Phase to Phase protection in mains mode	Yes provided						

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Model Name	12V	24V	48V	72V	96V	120V	180V
Solar Charge Controller							
Solar Charge Controller type	MPPT						
Max Panel wattage can be connected	750W	Upto 1500W	Upto 3000W	4500W	6500W	8000W	10000W
Maximum PV Voltage	50V	85V	130V	200V	250V	350V	450V
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. D.O.D Function will work when solar power is available.						
DOD (Depth of Discharge)	20%- if battery voltage is 12.5V Each Battery 30%- if battery voltage is 12.0V Each Battery 40%- if battery voltage is 11.5V Each Battery 50 %- if battery voltage is 11.0V Each Battery						
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						

Note : D.O.D. will work when Solar Power is available.