



Smarten Power Systems Ltd.
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SOLAR
ENERGY

COMPLETE SOLAR SOLUTIONS





WHAT DO WE DO

Smarten believes in empowering every home & commercial space with its world class product range of Solar Inverters, Batteries, Solar Panels & much more. "Evolution of Renewable Energy" is the only motto, to achieve the desired Smarten is rigorously working on its designs, R&D & manufacturing capacity. We believe that "Fusion is the Future", with such advancements in technology the time is to enrich mother earth through ultimate source of all power Sun.



Smarten has experienced a substantial surge in the demand for its products from more than 25 countries and has been leading the power backup product expert space, have been recognised as one of the top players in the country.

Backed by a team of over 300 technologists and dignitaries in power, Smarten is now well-known across many countries in the world, including India, Nepal, Bangladesh, Afghanistan, UAE, Nigeria and Benin.

WHAT ARE WE

Smarten Power Systems Ltd. is a Solar Product Manufacturing Company that was established in 2014 with a mission to provide best solution to need of power/solar that can drive our present towards a sustainable future.

Smarten Power Systems is more than just inverter manufacturers. Since inception in 2014, Smarten has been defined by the vision of its founders: to put the company at the forefront of the evolution to a renewable energy future. This vision is enshrined in the company's brand statement, Fusion is the Future, which is a salute to the nuclear fusion reactions in the Sun which are the ultimate source of all power on the Earth.

Beginning with a series of Home UPS, Smarten has developed a range of unique Power Backup Solutions and Solar Products which differentiate it from the Industry. The diverse product range includes Home UPS, Inverters, Solar Power Conditioning Units, Solar Charge Controllers, Solar Inverters, Solar Panels, Batteries, Off-Grid Solutions, Grid Tie Inverters, Hybrid Inverters and Customized Solar Solutions.

Smarten's products are designed and manufactured in-house to exacting standards and best-practice processes and are backed up in the field by unmatched reliability and the company's renowned service support. Due to a clear focus on quality throughout the organization's operations, Smarten has rapidly established a footprint across India as well as further afield in Nepal, Bangladesh, Afghanistan, Dubai, Nigeria, Benin, Uganda and South Africa.

Thank you for associating with Smarten, we have been doing continuous efforts to cater your requirements & deliver the best. You are so valuable for us.

Stay Tuned!

Rajnish Sharma
Chief Executive Officer and Director



Welcome to the next chapter of Smarten Power Systems, culminating in our brand-new facility at Reliance MET. Established in 2014, we began our journey in a modest space with a focused range of products, earning the trust and loyalty of our customers while meeting market needs with precision.

Today, we proudly announce our expansion to a larger, cutting-edge factory. This move signifies a monumental step forward, empowering us with robust in-house manufacturing capabilities. We now produce over thousands of products daily, meticulously crafted to uphold our commitment to quality and innovation. This growth not only reinforces our dedication to meeting market demands but also sets a new standard in the industry.



CERTIFICATIONS



ISO 14001:2015
Environmental Management System

RCMC by
MPEDA





BRAVO
1050 VA - 10 KVA

PURE SINE WAVE HOME UPS



25 ampere current for faster battery charging*



Smart charging even during low voltage 90V*



Complete protection from back feed and phase to phase supply



Compatible with Li-Ion, Tubular, LA & SMF*

India's Inverter Series which is need of every household!

The technically advanced BRAVO Sine Wave Home UPS operates on mains and supplies power while charging the battery when mains supply is available. In case of a power outage, Bravo transfers the entire load to its optimally charged battery and supplies high quality sine wave AC power.

Apart from the highest quality components and engineering, what makes Bravo special is the inbuilt charger that even charges zero volt zero gravity battery as-well. In simple terms, it charges the dead battery and get it recover slowly that provides the user uninterrupted supply.



LED BULB



TUBU PUMP



JUICER MIXER



PC



LED TV



REFRIGERATOR



SUBMERSIBLE PUMP



DENTAL CHAIR



PHOTOCOPIER

TECHNICAL SPECIFICATIONS

MODEL NAME	1050VA	2000VA	3500VA	5500VA	5500VA	7500VA	10000VA
MAINS 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 WUPS mode				110VAC ± 10VAC			
Mains AC high cut WUPS mode				295VAC ± 10VAC			
Mains AC high cut recovery WUPS mode				285VAC ± 10VAC			
Input Frequency Range				40Hz to 60Hz			
Voltage Output in Mains Mode				Same as Input			
Frequency Output in Mains Mode				Same as Input			
BATTERY							
Battery Type	Li-Ion / Tubular / LA / SMF						
DC input voltage	12V	24V	48V		96V	96V	120V
Battery Quantity 12V 100Ah to 350Ah	1	2/1	4	4/1	8	8	10
Bulk absorption Voltage	14.8V	29.6V±0.2V	59.2V±0.4V	59.2V±0.4V	118V±0.4V	118V±0.4V	148V±0.4V
Float charging voltage	13.7V±0.2V	27.4V±0.2V	54.8V±0.4V	54.8V±0.4V	109.6V±0.4V	109.6V±0.4V	137V±0.4V
Boost charging voltage for LA Battery	14.0V±0.2V	28.0V±0.3V	56.0V±0.4V	56.0V±0.4V	112V±0.5V	112V±0.5V	140V±0.5V
Boost charging voltage for Tubular and SMF Battery	14.5V±0.2V	28.8V±0.3V	57.8V±0.4V	57.8V±0.4V	116V±0.5V	116V±0.5V	145V±0.5V
Boost charging voltage for Li-Ion Battery		28.8V±0.2V		58.0V±0.4V			
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)						
Charging Current 100Ah-135Ah Setting (Input range 135VAC to 295VAC)	12A ± 2A	20A ± 2A	12A ± 2A	20A ± 2A	12A ± 2A		
Charging Current 150Ah-350Ah Setting (Input range 135VAC to 295VAC)	15A ± 2A	25A ± 2A	15A ± 2A	30A ± 2A	15A ± 2A		
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	50A ± 2A	62A ± 2A	60A ± 2A	90A ± 2A	45A ± 2A	65A ± 2A	
Low Battery Warning	10.8V±0.2V	21.6V±0.2V	43.2V±0.4V	43.2V±0.4V	86.4V±0.4V	86.4V±0.4V	108V±0.4V
Low Battery Cut	10.4V±0.2V	20.8V±0.2V	41.6V±0.4V	41.6V±0.4V	83.2V±0.4V	83.2V±0.4V	104V±0.4V
Change over time UPS mode	< 10msec				< 4msec		
Change over time WUPS mode	< 25msec						
PROTECTIONS							
Overload in backup mode	Yes provided, system will give indication 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						
ALARMS							
Buzzer	Audible beep for Overload, Short Circuit, Back feed, Low Battery, Over Temperature, Mains Fuseblown / MCB Trip						
ENVIRONMENT							
Operating Temperature	0°C to 50°C						
Storage Temperature	0°C to 50°C						
Operating Relative Humidity	90% Non-Condensing						
WEIGHT AND DIMENSIONS							
Dimensions in mm (LxWxH)	355x355x195	425x315x335	425x315x385	518x415x515		575x415x640	
Weight (Kg)	9.35	18.5	24.5	45	50	72	75



BRAVO ECO
875 VA - 2050 VA

PURE SINE WAVE HOME UPS



**Great power saving
up to 30%**



12% to 15% more backup



**Battery charges at
very low voltage till 90V***



**Compatible with
Li-Ion, Tubular, LA & SMF***

Bravo Eco is a Pure Sine Wave Home UPS that comes with its unique features. The product is a great companion for people who are looking to run appliances with small applications.

The product has high efficiency of converting battery load to AC load results into long backup. The whole process helps the customer to provide uninterrupted power supply with low electricity bill & more savings.

Bravo Eco gives 12%-15% extra backup to have smooth experience for domestic and commercial purposes.



TECHNICAL SPECIFICATIONS

MODEL NAME	875VA	1075VA	1250VA	2050VA
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 WUPS mode	285VAC ± 10VAC			
Input Frequency Range	40Hz to 60Hz			
Voltage Output in Mains Mode	Same as input			
Frequency Output in Mains Mode	Same as input			
BATTERY				
Battery Type	Li-Ion / LA / Tubular / SMF			
DC input voltage	12V			24V
Battery Quantity 12V 100Ah to 350Ah	1			2
Bulk absorption Voltage	14.8V			29.6V±0.2V
Float charging voltage	13.7V±0.2V			27.4V±0.2V
Boost charging voltage for LA Battery	14.0V±0.2V			28.0V±0.2V
Boost charging voltage for Li-Ion, Tubular and SMF Battery	14.5V±0.2V			29.0V±0.2V
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)			
Charging Current 100Ah-135Ah Setting (Input range 135VAC to 295VAC)	15A ± 2A			
Charging Current 150Ah-350Ah Setting (Input range 135VAC to 295VAC)	20A ± 2A			
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	42A ± 2A	52A ± 2A	62A ± 2A	62A ± 2A
Low Battery Warning	10.6V±0.2V		10.8V±0.2V	21.6V±0.2V
Low Battery Cut	10.4V±0.2V			20.8V±0.2V
Change over time UPS mode	< 10msec			
Change over time WUPS mode	< 25msec			
PROTECTIONS				
Overload in backup mode	Yes provided, system will give indication 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 Fuse will blown			
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			
ALARMS				
Buzzer	Audible beep for Overload, Short Circuit, Back feed, Low Battery, Over Temperature, Mains Fuse blown / MCB Trip			
ENVIRONMENT				
Operating Temperature	0°C to 50°C			
Storage Temperature	0°C to 50°C			
Operating Relative Humidity	90% Non-Condensing			
WEIGHT AND DIMENSIONS				
Dimensions in mm (LxWxH)	305x302x165	355x355x195		403x392x227
Weight (Kg)	7.7	8.8	9.8	16



NOVA
1075 VA - 3050 VA

PURE SINE WAVE HOME UPS



WUPS/UPS Selectable Switch



Recover Deep Discharge Battery Even Zero Volt Gravity



Smart Charging Even During Low Voltage 90V*



Compatible with Li-Ion, Tubular, LA & SMF*

When Performance comes with style!

The smartly designed Nova Home UPS comes with LED Buttons that operates on mains and supplies power while charging the battery when mains supply is available. In case of a power outage, Nova transfers the entire load to its optimally charged battery and supplies high quality AC power.

Apart from the highest quality components and engineering, what makes Nova special is the inbuilt charger that even charges zero volt zero gravity battery as-well. In simple terms, it charges the dead battery and get it recover slowly that provides the user uninterrupted supply.



TECHNICAL SPECIFICATIONS

MODEL NAME	1075VA	1250VA	1500VA	2075VA	2050VA	2525VA	3600VA
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 WUPS mode				285VAC ± 10VAC			
Input Frequency Range				40Hz to 60Hz			
Voltage Output in Mains Mode				Same as input			
Frequency Output in Mains Mode				Same as input			
BATTERY							
Battery Type	Li-Ion / LA / Tubular / SMF						
DC Input voltage	12V	12V	12V	24V			
Battery Quantity 12V 100Ah to 350Ah	1	1	1	2			
Bulk absorption Voltage	14.8V	14.8V	14.8V	29.6V±0.2V			
Float charging voltage	13.7V±0.2V	13.7V±0.2V	13.7V±0.2V	27.4V±0.2V			
Boost charging voltage for LA Battery	14.0V±0.2V	14.0V±0.2V	14.0V±0.2V	28.0V±0.3V			
Boost charging voltage for Tubular and SMF Battery	14.5V±0.2V	14.5V±0.2V	14.5V±0.2V	28.8V±0.3V			
Boost charging voltage for Li-Ion Battery		14.4V±0.2V	14.3V±0.2V				
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)						
Charging Current 100Ah-135Ah Setting (Input range 135VAC to 295VAC)	12A ± 2A						
Charging Current 150Ah-350Ah Setting (Input range 135VAC to 295VAC)	20A ± 2A	20A/25A ± 2A		25A/30A ± 3A	15A ± 2A		
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	52A ± 2A	62A ± 2A	72A ± 2A	90A ± 3A	60A ± 2A	70A ± 3A	90A ± 3A
Low Battery Warning	10.8V±0.2V				21.6V±0.2V		
Low Battery Cut	10.4V±0.2V				20.8V±0.2V		
Change over time UPS mode	< 10msec						
Change over time WUPS mode	< 25msec						
PROTECTIONS							
Overload in backup mode	Yes provided, system will give indication 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						
DISPLAY AND ALARMS							
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 Fuseblown / MCB Trip						
ENVIRONMENT							
Operating Temperature	0°C to 50°C						
Storage Temperature	0°C to 50°C						
Operating Relative Humidity	90% Non-Condensing						
WEIGHT AND DIMENSIONS							
Dimensions in mm (LxWxH)	355x355x195			425x315x335	403x392x227		425x315x335
Weight (Kg)	8.8	9.8	10.3	16.7	16	17.8	20.5



EverOn

HOME UPS WITH
INBUILT LITHIUM BATTERY



**Inbuilt 100Ah
Lithium Battery**



**Faster Charging,
More Backup**



Wall Mount



**Lightweight &
Compact Design**

Experience uninterrupted power with Everon, a next-generation Home UPS designed for modern homes. Powered by an advanced inbuilt lithium battery, Everon delivers faster charging, longer backup, and superior efficiency compared to traditional systems. Its compact and sleek design saves space while ensuring reliable performance during power cuts, making it the perfect solution for homes, offices, and small businesses.

Built with intelligent technology, Everon offers enhanced safety, longer battery life, and low maintenance, eliminating the hassle of frequent replacements. With consistent power output and smart energy management, it protects your appliances while optimizing energy usage. Choose Everon for a smarter, cleaner, and more dependable power backup experience.



TECHNICAL SPECIFICATIONS

MODEL NAME	EVERON 1100		EVERON 2675	
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			24V
Battery Quantity 100Ah Li-ION			1	
Bulk absorption Voltage	14.2±0.2V			28.4V±0.2V
Boost charging voltage for LI-ION Battery	14.2V±0.2V			28.4V±0.3V
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)			
Charging Current at LI-ION Battery	25A ± 3A			
BACKUP MODE				
Output voltage	220VAC +5% -10% (until battery low alarm)			
Output frequency	50Hz ± 0.2 Hz			
Output waveform	Pure Sine Wave ≤ 5% THD			
Discharging current @ full load	52A ± 3A			72A ± 3A
Low Battery Warning	10.8V±0.2V			21.6V±0.2V
Low Battery Cut	10.4V±0.2V			20.8V±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			
DISPLAY & ALARMS				
LCD Initial Display	Welcome to smarten world, 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 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			
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			
WEIGHTS AND DIMENSIONS				
Dimensions in mm (LxWxH)	490x455x670		520x500x290	
Weight (Kg)	28		48.5	



HELIO

900 VA - 3650 VA

MPPT SOLAR PCU WITH IN-BUILT LITHIUM BATTERY

Grid Charging Enable / Disable Option

Multiple SOC Setting

Faster Charging, More Backup

Can Install 24V Solar Panels upto 3000W

In-built 100Ah lithium battery

Wall Mount

Smarten Helio MPPT in-built Lithium Battery Solar PCU is a next-generation power conditioning unit designed for reliable and efficient solar energy management. Powered with advanced MPPT technology, it ensures maximum solar energy extraction even in low light conditions.

With a built-in lithium battery, Helio offers higher efficiency, longer life, faster charging, and zero maintenance compared to traditional batteries. Its compact design saves space, while the intelligent control system provides seamless power backup, making it an ideal solution for homes, offices, and institutions looking for sustainable and uninterrupted green energy.



TECHNICAL SPECIFICATIONS		
	HELIO 1500	HELIO 3650
Mains Input mode		
Mains AC low cut UPS mode	175VAC $\pm$ 10VAC	185VAC $\pm$ 10VAC
Mains AC low cut recovery UPS mode	185VAC $\pm$ 10VAC	265VAC $\pm$ 10VAC
Mains AC high cut UPS mode	265VAC $\pm$ 10VAC	255VAC $\pm$ 10VAC
Mains AC high cut recovery UPS mode	255VAC $\pm$ 10VAC	90VAC $\pm$ 10VAC
Mains AC low cut WUPS mode	110VAC $\pm$ 10VAC	295VAC $\pm$ 10VAC
Mains AC low cut recovery WUPS mode	295VAC $\pm$ 10VAC	285VAC $\pm$ 10VAC
Mains AC high cut WUPS mode	48Hz to 52Hz	Same as input
Mains AC high cut recovery WUPS mode	Same as input	Same as input
Input Frequency Range	48Hz to 52Hz	Same as input
Voltage Output in Mains Mode	Same as input	Same as input
Frequency Output in Mains Mode	Same as input	Same as input
Battery		
Battery Type	LI-ION	LI-ION
DC input voltage	12V	24V
Battery Quantity 12V 100Ah LI-ION	1	1
Bulk absorption Voltage	14.2V $\pm$ 0.2V	28.4V $\pm$ 0.2V
Boost charging voltage for LI-ION Battery	14.2V $\pm$ 0.2V	28.4V $\pm$ 0.2V
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)	
Charging Current LI-ION Battery	20A $\pm$ 3A	
Charging mode	5Amp 5A $\pm$ 1A 10Amp 10A $\pm$ 2A Enable 20A $\pm$ 3A Disable	20A Disable
Backup Mode		
Output voltage	220VAC $\pm$ 5% - 10% (until battery low alarm)	
Output frequency	50Hz $\pm$ 0.2 Hz	
Output waveform	Pure Sine Wave $\leq$ 5% THD	
Capacity	1250VA	2500VA
Discharging current @ full load	73 $\pm$ 3A	80 $\pm$ 3A
Low Battery Warning	10.8V $\pm$ 0.2V	21.6V $\pm$ 0.2V
Low Battery Cut	10.4V $\pm$ 0.2V	20.8V $\pm$ 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	3000W
Max PV Voltage	60 $\pm$ 3V	105 $\pm$ 2V
Max PV current	55A	70A
Reverse PV protection	Yes provided, it will also display on LCD panel	
Reverse current ow 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 40% 75% of battery capacity*** Default SOC is 30% 85% of battery capacity*** Default SOC is 30% 95% of battery capacity*** Default SOC is 30%	
SOC definition (State of charge)**	Mains will disconnect if battery will charge denied SOC level	
SOC (State of charge)**	20%- of battery capacity 30%- of battery capacity 40%- of battery capacity 50%- of battery capacity	
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, UP 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 charging Enable/Disable from front keypad	
UNIT SAVING IN DISPLAY		
Safety	LCD Display will show the toal saving unit from Solar	
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 Ω between @ 500VDC	
IR Test Output to Earth	>5M Ω 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	



Superb 1100 VA - 20 KVA
TRENDY 1100 VA - 10 KVA

MPPT SOLAR PCU



**MPPT Based Advance
Technology PCU**



**Set Solar Charging Current
as per Battery Capacity**



**Smart Charging even
During Low Voltage 90V***



**Grid Charging Enable /
Disable Option for Reduced
Electricity Bill**

Made with high-grade quality and MPPT-based advanced technology, these Solar PCUs feature an operating input AC Voltage of 90-290V for low voltage charging. The conversion of solar energy begins with the first rays of the sun, ensuring maximum utilization even during the rainy season. Packed with exciting features such as grid charging enable/disable to reduce electricity bills, customizable battery discharge levels, UPS mode for IT load operation, an LCD display for important notifications, an advanced DSP controller, and more.

The Superb/Trendy PCU boasts 30% greater efficiency compared to traditional PCUs, thanks especially to Smarten's impeccable solar panels. It offers four levels of battery depth of discharge options to cater to various power requirements, a 10ms changeover time, and triple protection to safeguard house wiring and appliances.



TECHNICAL SPECIFICATIONS

MODEL NAME	1100VA	2675VA	3550VA	3600VA	4000VA	5500VA	6000VA	7500VA	10000VA	15000VA	15KVA	20KVA
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						40Hz to 60Hz						
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 / Li-Ion				LA / Tubular / SMF / Li-Ion		LA / Tubular / SMF / Li-Ion		LA / Tubular / SMF / Li-Ion			
DC input voltage	12V	24V		48V		72V		96V	120V	180V	240V	
Battery Quantity 12V 100Ah to 350Ah	1	2/1		4		4/1		6	8	10	15	20
Float charging voltage	13.7V±0.2V	27.4V±0.2V		54.8V±0.2V		82.2V±0.2V		109.8V±0.4V	137V±0.4V	205.5V±0.4V	274V±0.4V	
Boost charging voltage for LA Battery	14V±0.2V	28V±0.3V		56V±0.4V		84V±0.2V		112V±0.4V	140V±0.4V	210V±0.4V	280V±0.4V	
Boost charging voltage for Tubular and SMF Battery	14.5V±0.2V	29.0V ± 0.2V		57.8V±0.4V		87V±0.2V		116V±0.4V	145V±0.4V	217.5V±0.4V	290.5V±0.4V	
Bulk Absorption Battery Voltage	14.8V±0.2V	29.6±0.2V		60V±0.2V		88.8V±0.2V		120V±0.4V	150V±0.4V	222V±0.4V	296V±0.4V	
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)											
Charging Current by Grid	20A ± 3A	15A±2A	20A ± 3A		15A±2A							
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	72A ± 2A	70A ± 2A	80A ± 2A	90A ± 2A	60A ± 2A	90A ± 2A	66A ± 2A	65A ± 2A		50A±2A	68A±2A	
Low Battery Warning	10.8V±0.2V	21.4V±0.2V	21.64V±0.2V	21.64V±0.2V	43.2V±0.4V	43.2V±0.4V	64.2V±0.4V	86.4V±0.4V	108V±0.4V	162V±0.4V	214V±0.2V	
Low Battery Cut	10.4V±0.2V	21V±0.2V	21V±0.2V	21V±0.2V	41.6V±0.4V	41.6V±0.4V	62.4V±0.4V	83.2V±0.4V	104V±0.4V	156V±0.4V	208V±0.2V	
Change over time UPS mode	< 10msec											
Change over time WUPS mode	< 25msec											
Cooling	Temp. Controlled Fan											
PROTECTION												
Phase to Phase Voltage Protection	Mains Mode											
Back feed protection	Mains apply in output side@<295V											
Over Load system Shutdown	> 130% after approx >180sec, and > 300% system will be shutdown approx < 20 Sec.											
Short Circuit (A PK-PK)	Yes, After 3 tries system will be shutdown (System reset from front switch)											
Reverse Battery	DC Fuse Burn											
SCC Reverse Battery	DC Fuse Burn											
Short Circuit in Mains Mode	Mains MCB Trip											
Battery Over Charge	Battery Over Charge Protection in Charging mode											
Reverse PV Connected	Yes, Provided											
Over Charge Protection	Yes, Provided											
Over Current Protection PV	Yes, Provided											
SOLAR CHARGE CONTROLLER												
Solar Charge Controller type	MPPT											
Max Panel wattage can be connected	1200 WATT	1800 WATT	3000 WATT		3000 WATT	5500 WATT	4500 WATT	8500 WATT	8000 WATT	15000 WATT	15KW	20KW
Maximum PV Voltage	60V	105V	105V		135V	180V	200V	250V	350V	450V	550V	
Maximum PV current	55 Amp.	50 Amp.	70 Amp.		50 Amp.	70 Amp.	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	12.5V	25.0V±0.2V		50.0V±0.2V		75V±0.2V	100V±0.2V	125V±0.2V	187.5V±0.2V	250V±0.2V	
	30% - if battery voltage is	12.0V	24.0V±0.2V		48.0V±0.2V		72V±0.2V	96V±0.2V	120V±0.2V	180V±0.2V	240V±0.2V	
	40% - if battery voltage is	11.5V	23.0V±0.2V		46.0V±0.2V		69V±0.2V	92V±0.2V	115V±0.2V	172.5V±0.2V	230V±0.2V	
	50% - if battery voltage is	11.0V	22.0V±0.2V		44.0V±0.2V		66V±0.2V	88V±0.2V	110V±0.2V	165V±0.2V	220V±0.2V	
Mode Selection			Solar>>Battery>>Grid Grid>>Solar>>Battery Solar>>Grid>>Battery				SOLAR>GRID>BATTERY SOLAR>BATTERY>GRID					
Battery Charging Current by Solar			20A ± 3A - 70A ± 3A									
LCD DISPLAY												
LCD Display	Messages (Display Values can be different 2% from the RMS actual values)											
	Mains Input Voltage / Battery Voltage / Mains Fuse Blown / Solar Power Available or Not. / Reverse PV / High PV Voltage / Mains Current / Solar Current / Battery Current / PCU ON, OFF / Battery Voltage / Battery Current / Solar Power Available or Not / Load % / Short Ckt. / Over Load / Wiring Fault / Battery Low. / Battery High / Out Put Voltage / High Temp. / Output Frequency.											
	Mains Disconnected, Connected Selection											
	If solar is available battery reaches float voltage after <5 min. mains will be disconnected, when mains is connected battery voltage reaches permitted DOD voltage and solar power not available. NOTE: This Condition is not applicable for Grid >> Solar >> Battery Condition.											



In built 70 Amp* strong solar charge controller

		
LED BULB	TULLU PUMP	JUICER MIXER
		
AIR CONDITIONER	LED TV	REFRIGERATOR
		
SUBMERSIBLE PUMP	DENTAL CHAIR	PHOTOCOPIER

TECHNICAL SPECIFICATIONS

MODEL NAME	850VA	1025VA	1250VA	1700VA	2650VA	3550VA	3600VA	4000VA	5500VA	5500VA	6000VA	7500VA	10000VA	
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 WUPS mode							110VAC ± 10VAC							
Mains AC high cut WUPS mode							295VAC ± 10VAC							
Mains AC high cut recovery WUPS mode							285VAC ± 10VAC							
Input Frequency Range							40Hz to 60Hz							
Voltage Output in Mains Mode							Same as input							
Frequency Output in Mains Mode							Same as input							
BATTERY														
Battery Type	LA / Tubular / SMF					LA / Tubular / SMF / Li-ion		LA / Tubular / SMF						
DC input voltage	12V			24V			48V		96V	72V	96V	120V		
Battery Quantity 12V 100Ah to 350Ah	1			2			2/1		4	8	6	8	10	
Float charging voltage	13.7V±0.2V			27.4V±0.2V			54.8V±0.4V		109.6V±0.4V		82.2V±0.4V		109.6V±0.4V	
Bulk absorption Voltage	14.8V±0.2V			29.6±0.2V			59.2V±0.4V		118.4V±0.4V		88.8V±0.4V		118.4V±0.4V	
Boost charging voltage for LA Battery	14.0V±0.2V			28.0V±0.2V			56.0V±0.4V		111.5V±0.5V		83.5V±0.5V		111.5V±0.5V	
Boost charging voltage for Tubular and SMF Battery	14.5V±0.2V			29.0V±0.2V			57.8V±0.4V		115.5V±0.5V		86.5V±0.5V		115.5V±0.5V	
Boost charging voltage for Li-ION Battery				28.5V±0.2V										
Battery deep Discharge Recovery	Yes (Independent Charger to Recover Deep Discharge Battery)													
Charging Current at Grid priority/Battery priority	15A ± 3A								13A ± 3A					
Charging Current at Grid priority/Battery priority Li-ION Battery							25A ± 3A							
Grid Charging Enable/Disable Option							Yes							
BACKUP MODE														
Output voltage	220VAC +5% -10%													
Output frequency	50Hz ± 0.2 Hz													
Output waveform	Pure Sine Wave ≤ 5% THD													
No Load current	<1.8A													
Discharging current @ full load	42A ± 2A	48A ± 3A	62A ± 3A	90 ± 3A	70 ± 2A	80 ± 3A	90A ± 3A	60A ± 2A	90A ± 2A	46A ± 2A	65A ± 2A			
Low Battery Warning	10.8±0.2V				21.4V ± 0.2V				43.2V±0.4V		86.4V±0.5V		106.4V±0.5V	
Low Battery Cut	10.4V±0.2V				21V ± 0.2V				41.6V±0.4V		83.2V±0.5V		104V±0.5V	
Change over time UPS mode	< 10msec						< 25msec						< 4msec	
Change over time WUPS mode														
PROTECTION														
Phase to Phase Voltage Protection	Mains Mode													
Back feed protection	Mains apply in output side@<295V													
Over Load system Shutdown	> 130% after approx >180sec, and > 300% system will be shutdown approx < 20 Sec.													
Short Circuit (A PK-PK)	Yes, After 3 tries system will be shutdown (System reset from front switch)													
Reverse Battery	DC Fuse Burn						Battery MCB will trip							
SCC Reverse Battery							DC Fuse Burn							
Short Circuit in Mains Mode	Mains Fuse will blown						Mains MCB Trip							
Battery Over Charge							Yes, Provided							
High PV Voltage	28V± 2V				55V±2V				100V±2V		250V±2V	130V±2V	250V±2V	
Reverse PV Connected							Yes, Provided							
Over Charge Protection							Yes, Provided							
Over Current Protection PV							Yes, Provided							
SOLAR CHARGE CONTROLLER														
Solar Charge Controller type	PWM type													
Max Panel wattage can be connected	600W	800W	1200W	1800W	2400W	3000W	5500W	6500W	4500W	6500W	8000W			
Max PV current	25A	40A	50A	50A	70A	50A	70A	50A	50A	50A	50A			
Battery Charging Current by Solar	20A±3A - 70A±3A													
Reverse PV protection	Yes provided													
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.													
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.													
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 12.5V±0.2V			25.0V±0.2V			50.0V±0.2V							
	30% - if battery voltage is 12.0V±0.2V			24.0V±0.2V			48.0V±0.2V							
	40% - if battery voltage is 11.5V±0.2V			23.0V±0.2V			46.0V±0.2V							
	50% - if battery voltage is 11.0V±0.2V			22.0V±0.2V			44.0V±0.2V							
SOC definition(State of charge)**	Mains will be connect when battery SOC use defined value of capacity													
SOC (State of charge)**	20% of battery capacity 30% of battery capacity 40% of battery capacity 50% of battery capacity													
Battery Capacity**	100Ah / 150Ah / 200Ah / 250Ah													
Mode Selection	Solar>Battery>>Grid Grid>Solar>>Battery Solar>Grid>>Battery			Solar>Grid>>Battery Grid>Solar>>Battery Solar>Grid>>Grid			Solar>Grid>>Battery Grid>Solar>>Battery Solar>Grid>>Grid			Solar>Grid>>Battery Grid>Solar>>Battery Solar>Grid>>Grid				
Battery Charging Current By Solar	You can set the battery charging current by solar 15Amp to 70Amp (This option is available on 1700, 3275 & 3575 models)													
LCD DISPLAY														
Messages (Display Values can be different 2% from the RMS actual values)														
Mains Input Voltage / Battery Voltage / Mains Fuse Blown / Solar Power Available or Not / Reverse PV / High PV Voltage / Mains Current / Solar Current / Battery Current / PCU ON, OFF / Battery Voltage / Battery Current / Solar Power Available or Not / Load % / Short Ckt. / Over Load / Wiring Fault / Battery Low. / Battery High / Out Put Voltage / High Temp. / Output Frequency.														
Mains Disconnected, Connected Selection														
If solar is available battery reaches float voltage after <5 min. mains will be disconnected, when mains is connected battery voltage reaches permitted DOD voltage and solar power not available.														
NOTE: This Condition is not applicable for Grid >> Solar >> Battery Condition.														

* This option is enabled only for the LA/SMF/TUB batteries

** This option is enabled only for the Li-Ion Batteries



Kranti+
5 KVA - 10 KVA

BATTERY LESS SOLAR PCU



**Advanced
DSP Technology**



**Max Panel Voltage Range:
VOC 400-750 V**



Big LCD Display



No Battery Requirement

With the advanced technology, Smarten came up with battery-less renewal energy PCU, this advanced system does not require batteries for converting solar power into utility power of 220V AC.

It absorbs solar power directly from solar panels and if the load driven by this system exceeds the available solar power, it will draw the required power from the mains to compensate the output power requirement without any glitch. In conventional solar power systems using batteries, one third of the total investment goes for batteries and since they are required to be replaced after some years.



LED BULB



ATTA CHAKKI



AIR CONDITIONER



REFRIGERATOR



JUICER MIXER



LED TV



SUBMERSIBLE PUMP



FAN



TUBE LIGHT

TECHNICAL SPECIFICATIONS

MODEL: KRANTI+	5KVA	8KVA	10KVA
Min. Solar Input Voltage	400V		
Max. Solar Input Voltage	750V		
Technology	Digital Processor Based High Efficiency Design		
Max. Load Wattage	4200 Watt*	6500 Watt*	8000 Watt*
Max. Output Current	20Amp. $\pm$ 3Amp.	30Amp. $\pm$ 3Amp.	37Amp. $\pm$ 3Amp.
Panel Install	5KW to 10KW	5KW to 20KW	5KW to 35KW
Output Voltage	220VAC $\pm$ 10%		
Low Solar Cut	300V		

PROTECTIONS

Low Solar Voltage	Yes Provided, It will show on display
High PV Voltage	Yes Provided, It will show on display
Reverse PV Protection	Yes Provided, System will not ON

DISPLAY PARAMETERS

Display Type	LCD Display
Display Parameters	Solar PV Voltage, Load%, Output Voltage, Solar Current, Overload, Short Circuit, Low Solar Please Reduce load

ENVIRONMENT

Operating Temperature	0°C to 40°C
Storage Temperature	0°C to 50°C
Operating Relative Humidity	90% Non-Condensing

*The load depends on the connected panel and weather conditions. There may be load fluctuations during morning and evening hours due to low solar power.

Note: If you want to run heavy load like (1.5 Ton AC, 2HP Water Pump) you need to connect > 8KW solar panel.





STAR 1 kW - 6 kW SINGLE PHASE ON-GRID SOLAR INVERTER

Patented Cooling Design • Unique H6 Topology Prevent Leakage Current
Dual Cooling System (Force + Natural) • Voltage Range Upto 290V • DC Switch

- Big LCD display
- Compact and easy to install
- Power export limit
- Wifi/GPRS/Lan communication optional



STAR 5 kW - 25 kW 3 PHASE ON-GRID SOLAR INVERTER

Patented Cooling Design • Unique H6 Topology Prevent Leakage Current
IP66 • Voltage Range Upto 290V • DC Switch

- Big LCD display
- Compact and easy to install
- Power export limit
- Wifi/GPRS/Lan communication optional

Model	S1KW	S1.5KW	S2.2KW	S3KW	S3.6KW	S4.4KW	S5KW	S6KW
DC Side / Input Parameters								
Max DC power (W)	1500W	2250W	3300W	4500W	5400W	6600W	7500W	7500W
Max DC voltage (Vdc)	550	550	550	550	550	550	550	550
Min System start/Shut down voltage (Vdc)	65/70	75/100	75/100	75/100	75/100	75/100	75/100	75/100
MPPT voltage range(Vdc)	70~500	100~500	100~500	100~500	100~500	100~500	100~500	100~500
Max. input current (A)			18A				22A	
Max.input short circuit per MPPT			25A				30A	
Number of MPP trackers				1				
Strings per MPP tracker				1				
AC Side / Output Parameters								
Nominal output power (W)	1000	1500	2200	3000	3600	4000	5000	6000
Maximum output power (W)	1100	1650	2420	3300	3960	4400	5500	6600
Nominal output voltage/range (V)				208,220,230,240/180~270				
AC grid frequency/range (Hz)				50Hz,60Hz(auto-selection) / 44Hz-55Hz; 54Hz-65Hz				
Maximum output current (A)	6	8	12	16	16	21	23	28
AC connection (with PE)				Single phase				
Current distortion(THDi)	<1.5%	<1.5%	<1.5%	<1.5%	<2.5%	<2.5%	<2.5%	<2.5%
Power factor				~1%(Adjustable from 0.8 leading to 0.8 lagging)				
Efficiency								
Maximum conversion efficiency	97.3%	97.3%	97.4%	97.5%	97.8%	97.8%	97.5%	97.6%
European efficiency	97.0%	97.0%	97.1%	97.2%	97.3%	97.3%	97.2%	97.3%
MPPT efficiency	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Safety and Protection								
DC reverse-polarity protection				yes				
Anti-islanding / Overvoltage protection				yes				
Short circuit protection				yes				
Leakage current protection				yes				
Grid monitoring / Ground fault monitoring				yes				
DC/AC side SPD (thermally protected)				yes				
General Parameters								
Dimension (L/W/H)(mm)		300/294/104				370/318.5/105.5		
Weight (kg)		5				7		
Embedded DC Switch				Optional				
Night power consumption (W)				< 0.2				
Isolation type				Transformerless				
Protection degree				IP65 according to IEC60529				
Operation temperature (°C)				-25 ~ +60				
Cooling concept				Smart Cooling				
OperatingAltitude (m)				<2000m without power derating				
Acoustic noise level (dB)				< 25				
Display				Graphic LCD				
Communication Interface				Standard WIFI; RS485 (optional)				

Model	TP5KW	TP6KW	TP8KW	TP10KW	TP12KW	TP15KW	TP17KW	TP20KW	TP25KW
Input (DC)									
Max DC power (W)	6500W	7500W	9500W	11500W	18000W	22500W	25500W	30000W	30000W
Max DC voltage (Vdc)					1000Vd.c.				
Min working voltage (Vdc)				160Vd.c.				250Vd.c.	
MPPT voltage range (Vdc)				160...850Vd.c.				200...850Vd.c.	
Max input current / per string (A)				18A/18A			26A/26A		36A/26A
Max.input short circuit MPPT				25A/25A			34A/34A		46A/34A
Number of MPP trackers					2				
Strings per MPP tracker				1				2	
Output (AC)									
AC nominal power (W)	5000	6000	8000	10000	12000	15000	17000	20000	25000
MaxAC apparent power (VA)	6000	7000	8800	11000	13200	16500	18700	22000	27500
Max output current (A)	10	12	15	17	20	23	25	30	36
NominalAC output					50/60 Hz; 400 Vac				
AC output range					45/55 Hz ; 280 ~ 490 Vac (Adj)				
Power factor					0.8leading...0.8lagging				
Harmonics					< 5%				
Grid type					3 W/N/PE				
Efficiency									
Max efficiency	98.2%	98.2%	98.3%	98.4%	98.4%	98.4%	98.5%	98.5%	98.5%
Euro efficiency	97.7%	97.7%	97.8%	97.9%	97.9%	98.0%	98.1%	98.1%	98.2%
MPPT efficiency	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Safety and Protection									
DC reverse-polarity protection					yes				
DC breaker					yes				
DC/AC SPD					yes				
Leakage current protection					yes				
Insulation Impedance Detection					yes				
Residual Current protection					yes				
General Parameters									
Dimension (W/H/D)(mm)		480*476*157					520*510*160		
Weight (kg)		16					23		
Operating temperature range °C					-25 ~ +60				
Degree of protection					IP65				
Cooling concept					Smart Cooling				
Topology					Transformerless				
Display					LCD				
Humidity					0-95%, no condensation				
Communication					RS485/WiFi/GPRS				



ULTRA

4 KVA - 12.5 KVA

MPPT HYBRID SOLAR PCU



MAX PV INPUT CURRENT 27A

Designed with 27A PV input current compatible to the market trend of increased Imp in solar panel.



BATTERY

Battery equalization function extend life cycle reserved communication port (RS485, CAN) for BMS.



INTERFACE*

Global cloud platform mobile APP anytime and anywhere open APP support power internet applications.



EASY ACCESS*

Two outputs for smart load management. The second output can be scheduled on & off based on setting point of battery transfer to utility.



OFF-GRID AND ON-GRID

Smarten Ultra series is suitable for on-grid and off-grid application.



PROTECT

Built-in anti-dust kit for harsh environment, AC over current, AC over voltage, over temperature protection.

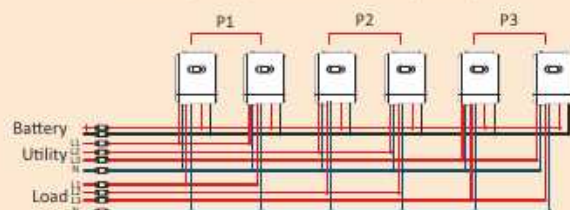
WITH BATTERY CONNECTED



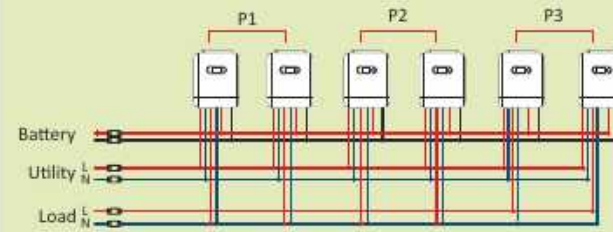
WITHOUT BATTERY CONNECTED



Three phase output using either 3 units (18kW) or max 6 units (36kW)



Single phase output up to 36kW using 6 units



*On selected models only

PRODUCT SPECIFICATIONS

MODEL NAME	4KVA/3200W	4.4KVA/3500W	5KVA/4000W	6KVA/5000W	7KVA/6000W	10KVA/8000W	12.5KVA/11000W
AC INPUT							
AC Voltage	220/230/240VAC						
Voltage Range	170-280VAC (For Personal Computers), 90-280VAC (For Home Appliances)						
Frequency Range	50/60Hz (Auto Sensing)						
AC OUTPUT							
Rated Output Power	3200W	3500W	4000W	5000W	6000W	8000W	11000W
Surge Power	6400VA	7000VA	8000VA	10000VA	12000VA	16000VA	22000VA
AC Voltage Regulation (Battery Mode)	220/230/240VAC ± 5%						
Rated Frequency	50Hz / 60Hz						
Efficiency (Peak)	93%						
Transfer Time	10ms (For Personal Computer), 20ms (For Home Appliances)						
BATTERY							
Battery Voltage	24 VDC			48 VDC			
Floating Charge Voltage	27 VDC			54 VDC			
Overcharge Protection	33 VDC			63 VDC			
Battery Type	Lithium / Lead acid						
SOLAR CHARGER & AC CHARGER							
Maximum PV Array Open Voltage (V)	500 VDC						
Maximum PV Array Power	4000W	5000W	7000W	10000W(5000Wx2)	13000W(6500Wx2)		
MPPT Voltage Range (V)	60-450 VDC						
Maximum Input Current	15A	20A	27A	27Ax2(MAX 40A)			
MPPT tracker / strings	1			2			
Maximum Solar Charge Current	100A	120A	120A	120A	150A		
Maximum AC Charge Current	80A	100A	100A	120A	150A		
Maximum Charge Current	100A	120A	120A	120A	150A		
PROTECTION & FEATURE							
AC Overcurrent	Yes						
AC Overvoltage	Yes						
AC Temperature Protection	Yes						
Smart Load Management	Yes						
On Grid	Yes						
Parallel Function	Yes (Optional)						
CT Anti-backflow Function	No			Yes			
GENERAL PARAMETERS							
Operation temperature	-10°C - 50°C						
Relative Humidity	5% - 95% (Non-condensing)						
Attitude	(2000m Derating)						
Dimesnions DxWxH (mm)	348x254x105	358x295x105	126.5x302x400	541x480x400	136x440x540		
Net Weight (Kg)	5.5	6.2	9	10	19.4	18.5	
DISPLAY AND COMMUNICATION							
Display	Touch Buttons						
Interface	Standard: RS232, USB, CAN&RS485; Optional: WiFi, Bluetooth						
Safety Standard	EN/IEC62109-1, EN/IEC62109-2						

ACDB/DCDB with adequate SPD is mandatory

TECHNICAL SPECIFICATIONS - SINGLE PHASE

INVERTER RATING (KVA)	1KVA	2KVA	3KVA	5KVA	5KVA	7.5KVA	10KVA	15KVA	20KVA	25KVA	30KVA	40KVA	50KVA
A. SOLAR CHARGE CONTROLLER (SCC)													
1. Charge Type & Topology	Buck Type MPPT												
2. PV Total Nominal Capacity (KVA)	1KW	2KW	3KW	5KW	5KW	7.5KW	10KW	15KW	20KW	25KW	30KW	40KW	50KW
3. No. of MPPT Channels	1	1	1	1	1	1	1	1	1	1	1	1	1
4. Per Channel PV Capacity (w/Nominal Peak)	1KW/1.1KW	2KW/2.2KW	3KW/3.3KW	5KW/5.5KW	5KW/5.5KW	7.5KW/8.2KW	10KW/11KW	15KW/16.5KW	20KW/22KW	25KW/27.5KW	30KW/33KW	40KW/44KW	50KW/55KW
5. Max. open Circuit PV Volts (Voc)	240	240	240	240	300	300	400	700	700	700	700	700	700
6. MPPT Voltage Range (Volts)	70-240	70-240	70-240	70-240	96-300	96-300	140-400	240-700	240-700	240-700	240-700	240-700	240-700
7. PV Minimum Voltage (Volts)	48	48	48	48	96	96	120	240	240	240	240	240	240
8. Max. I/P Amps per channel (Amps)	15	30	45	75	35	35	60	45	60	75	80	105	132
9. Max. Battery Amps during PV Charging(Amps)	20	40	60	100	50	75	75	60	78	80	97	129	161
10. Max. SCC O/P (Amps)	20	40	60	100	50	75	75	60	78	80	97	129	161
11. Battery type Supported	VRLA / LMLA/Li-Ion/Li-Ph (User Settable)												
12. Min. Battery AH (Suggested)	150	150	150	150	150	150	150	300	300	300	300	300	300
13. Peak charging Efficiency (%)	>93												
B. SOLAR INVERTER													
1. No. of Phases/Connection Type	1-Phased/2 wire												
2. Nominal Battery Voltage (Volts)	48	48	48	48	96	96	120	240	240	240	240	240	240
3. Battery Ripple	5% for VRLA & LMLA 1% for Li-Ion & Li-Ph Battery												
4. Nominal Output Voltage/Frequency (Volts/Hz)	230V/50												
5. Nominal KVA Capacity (KVA)	1KVA	2KVA	3KVA	5KVA	5KVA	7.5KVA	10KVA	15KVA	20KVA	25KVA	30KVA	40KVA	50KVA
6. Output Amps	3.47	6.96	10.43	17.39	17.39	26.29	34.78	52.17	69.57	86.96	104.3	139.1	173.9
7. Voltage Regulation (in Standalone Mode)	±2%												
8. Freq. Regulation (in Standalone mode)	±0.5 Hz												
9. THD	< 3%												
10. Load Power Factor	0.8 lag to unity												
11. Efficiency (%) Peak/100% Load/25% Load	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95	>95 / >95 / >95
12.	100-115% - 60 sec												
13. Over Load :	110-125% - 30 sec												
14.	125-150% - 5 sec												
15. Max Allowed Phase Imbalance (%)	N/A												
16. Auto Bypass Feature	Provided												
17. Parallel Operation with Grid/OG	Provided												
18. Power Export to Grid Facility Enable / Disable	Enable / Disable (User Settable)												
19. Anti Islanding from Grid	Provided												
C. GRID CHARGER													
1. Grid Voltage Range (Voltage Sync. Range)	160V-280V (Phase to Neutral)												
2. Grid Frequency Range (Freq. Sync. Range)	50 Hz ±5%												
3. Max Grid Import Power (KVA)	1KVA	2KVA	3KVA	5KVA	5KVA	7.5KVA	10KVA	15KVA	20KVA	25KVA	30KVA	40KVA	50KVA
4. Max Battery Amps During Grid Charging (Amps)	13	27	40	66	34	51	54	40	54	68	72.5	96.6	120.8
5. Peak charging Efficiency (%)	>87												
INVERTER (KW)													
	0.8	1.6	2.4	4.0	4.0	6.0	8.0	12.0	16.0	20.0	24.0	32.0	40.0
1. PV Side	Reverse Polarity , Surp Protection												
2. Battery Side	Reverse Polarity, Over/Under Voltage , Current Limit												
3. Grid Side	Over/Under Voltage , Over/Under Frequency ,Anti-Islanding,Surp Protection												
4. Load Side	Overloads, Short circuit												
5. System Protection	Over Temperature,Trip,Breakers at all Inputs,Emergency stop												
D. USER INTERFACE													
1. DISPLAY INTERFACE	Graphical Display with mimic diagram												
2. DISPLAYED PARAMETERS													
1. Battery Parameters	Voltage, Charging Current, Discharging Current,AH-in,AH-out,Cumulative AH-in,Cumulative AH-out,charging state,charging,Discharging.												
2. PV Parameters	Voltage, Current, Power, Cumulative, Today Generation, Irradiance, Ambient Temperature.												
3. Grid Parameters	Voltage, Current, Frequency, Export Power, Import Power, Export Cumulative Energy, Import Cumulative Energy,Power Factor.												
4. Load Parameters	Voltage, Current, Frequency, Power,Cumulative,Power Factor												
5. Data Logging	90 Days PV Generation, Export Energy, Import Energy, Load Energy.												
6. System Level	Faults and warnings.												
3. INDICATIONS/PROTECTION													
1. LED Indications	Power ON, PV Available, PV Charging, Inverter ON, Grid Import Mode, Grid Export Mode, Fault, HYBRID /OFF GRID Mode												
2. User Keypad for Settings Change	Keypad for Settings Input.												
3. Breakers at all inputs/Space Heater/Emergency stop Button	Provided												
4. Over shoot due to misbehaviour of BMS	Provided												
5. Remote monitoring: Optional	Data monitoring through GPS (Optional)												
Designed and Manufactured the product as per IEC	Tested as per IEC 61683, IEC 61727, IEC 62116 / IS 16169: EN 50530 and IEC 60068 (1, 2, 34, 30).												
MISCELLANEOUS													
1. Degree of Protection	IP31												
2. Cooling Method	Temp. Controlled Force Cooling												
3. Operating Temperature	0-55°C ambient operation												
4. Humidity (Non-condensing)	Max. 95% Non-Condensing												
5. Altitude (above sea level)	1000m above sea level												
6. Housing	Sheet Metal/Floor Standing						Floor Standing,Front/Rear Door						
7. Colour Shade	RAL-7035RAL-7016 (Other Colours also available on request)												
8. Cable Entry	Rear Bottom						Front Bottom						
9. Cable Termination Type	Bus Bar Type with ring type lugs												
10. Terminal Sizes(PV/Battery/Grid/Load)	TERMINAL SCREW TYPE						35-50MM/35-50MM/25MM/25MM						
11. Dimensions in mm (H X W X D)	360X280X530	360X280X560	360X280X665	360X280X665	478X375X675	528X375X775	528X375X775	715X850X750			715X1000X750		
12. Approx. Weight (kg)	30	35	60	80	80	130	140	160	215	245	290	350	360

Note: The specifications are subject to change due to continuous improvements. Higher rating systems are available on request.



ULTRAECO
1 KVA - 50 KVA | 10 KVA - 150 KVA
Single Phase | 3 Phase
TRANSFORMER BASED HYBRID PCU

Smarten Transformer-Based Hybrid PCUs are designed to deliver reliable and efficient power management for both residential and commercial needs. Available in single-phase and three-phase models, these PCUs combine the benefits of solar energy, battery backup, and grid power to ensure uninterrupted electricity. The transformer-based design enhances durability and provides superior protection against voltage fluctuations, making them ideal for Indian power conditions.

In single-phase models, they cater to homes and small businesses with stable and efficient energy usage, while the three-phase models are built to support larger loads, industries, and institutions with seamless power distribution. With advanced hybrid technology, Smarten Transformer-Based Hybrid PCUs maximize solar utilization, ensure faster battery charging, and provide long-lasting performance with minimal maintenance.

SALIENT PRODUCT FEATURES

- MNRE-approved, MPPT-based system
- Tested as per IEC 61683, IEC 61727, EN 50530 and IEC 62116 / IS 16169, IEC 60068 (1, 2, 14, 30)
- Active front-end charger
- Low input current distortion
- Remote device monitoring available
- Live device monitoring on RS-232
- Over 5 MW of systems successfully supplied
- > 93% system efficiency
- Compatible with all types of batteries
- Can be configured as an Off-Grid system
- Peak demand management
- Wi-Fi enabled data through mobile application
- Insensitive to Input Grid phase sequence

APPLICATIONS

- Rural Electrification
- Remote Sites
- Farmhouses, Schools, Offices
- Rural Health Schemes
- Telecom, Oil & Gas pipelines
- Defence
- Industrial applications
- Hospitals, Cold stores
- Mini grid

Note: The specifications are subject to change due to continuous improvements. Higher rating systems are available on request.



*** Default values in different modes (Close approximation)



energia
POWER WITH INTELLIGENCE

12.8V - 360V (100-400Ah)

LITHIUM-ION BATTERY



BLUETOOTH
CONNECTIVITY*



EXTENDED
LIFESPAN



LOW SELF
DISCHARGE



LONG LIFE
CYCLE



ACTIVE
BALANCING*



ECO
FRIENDLY



RYDER
Longer Rides, Stronger Power

51.2V 105AH - 64V 105AH

LITHIUM EV BATTERY

Remote Monitoring

Fast Charging

Last for a Long Distance

App-based Monitoring

Easy Connection

Durable Design

TECHNICAL SPECIFICATIONS

Parameters	Specified Value		
	SMARTEN 12.8V - 100Ah	SMARTEN 25.6V - 100Ah	SMARTEN 51.2V - 100Ah
Battery Capacity	100Ah		
Battery Nominal Voltage	12.8V ± 0.2V	25.6V ± 0.2V	51.2V ± 0.2V
Battery High cut Voltage	14.4V ± 0.2V	28.8V ± 0.2V	57.6V ± 0.2V
Battery Low Cut Voltage	10.4V ± 0.2V	20.8V ± 0.2V	41.5V ± 0.2V
Standard Charging Current	50Amp. ± 0.5Amp.		
Allowed Maximum Charging Current	70Amp. ± 1.0Amp.		
Allowed Maximum Discharging Current	80Amp. ± 1.0Amp.		
Standard Charge	CV-CC		
Over Current Protection	150Amp-60Sec		
Battery Cell	4S	8S	16S
Over Voltage Protection (OVP)	3.65V ± 25mV		
Over Voltage Protection Release (OVPR)	3.55V ± 50mV		
Under Voltage Protection (UVP)	2.60V ± 80mV		
Under Voltage Protection Release (UVPR)	2.90V ± 100mV		
Short Circuit Current Protection	660A		
Operating Temperature	0 to 60		

*Selected models only

TECHNICAL SPECIFICATIONS

Nominal Voltage	51.2V
Rated Capacity	105Ah
Rated Power	5.12kWh
Charging Voltage	58.4V
Max. Charging Current	50A
Full Discharging Voltage	44.8V
Max. Discharging Current	80A
Operating Temperature	0 to 55°C
Cooling Method	Natural Cooling
Cycle Life	≥ 4000
Approx. weight	50kg
Dimensions(mm)	565 X 372.1 X 188.8
Communication	RS_485/CAN
AIS 156 Complied	Yes
Protections	Cell Over Voltage, Cell Under Voltage, Battery Pack Over Voltage, Battery Pack Under Voltage, Charging Over Current, Discharging Over Current, Over Temperature, Under temperature, Open Wire detection, Short Circuit Protection, Pre charge Feature, Current Limiting, Visual Buzzer, Display, IoT, Bluetooth





SOLAR TALL TUBULAR BATTERY

170 Ah - 350 Ah

Durable & compatible in all ways!

Made with Hi-Power Selenium technology which makes it almost self-sustainable battery (Low maintenance) and more durable (Low self-discharge current). All of smartens batteries are solar panel compatible. It protects you from the suffering of buying a new battery whenever you wish to switch to solar.



Hi-power selenium technology



More backup, more reliability



Ultra low maintenance



Low self discharge



Long life

Sl. No.	Capacity @C20	Volts	Initial Charging Current (Amps)	Dimensions (HxWxL) mm
1.	150 Ah	12	15A	503 x 193 x 412
2.	160 Ah	12	15A	503 x 193 x 412
3.	170 Ah	12	15A	503 x 193 x 412
4.	180 Ah	12	15A	503 x 193 x 412
5.	200 Ah	12	15A	503 x 193 x 412
6.	220 Ah	12	15A	503 x 193 x 412
7.	250 Ah	12	15A	503 x 193 x 412
8.	350 Ah	12	15A	503 x 193 x 412



TUBULAR & TALL TUBULAR BATTERY

40 Ah - 180 Ah

Worry not, lets boom!

No worry for long power cuts! Boom tubular inverter battery for home offers complete satisfaction during power cuts. These inverter batteries are leak proof tower type polypropylene container with relatively more electrolytes. Tubular plates are custom designed for uninterrupted power delivery during long power cuts. They are 100% safe to use & reliable for every home.



Low self discharge



Superior high rate discharge feature



Long cycle life



Level indicator for easy maintenance

Sl. No.	Capacity @C20	Volts	Initial Charging Current (Amps)	Dimensions (HxWxL) mm
1.	40 Ah	12	15A	240 x 170 x 405
2.	120 Ah	12	15A	503 x 193 x 412
3.	140 Ah	12	15A	503 x 193 x 412
4.	160 Ah	12	15A	503 x 193 x 412
5.	180 Ah	12	15A	503 x 193 x 412
6.	220 Ah	12	15A	503 x 193 x 412



PRIME+
12V-24V/50Amp
24V-48V/50Amp

PRIME
72V-180V/50Amp

MPPT BASED SOLAR CHARGE CONTROLLER



30% more efficient



Grid control for saving the electricity bill

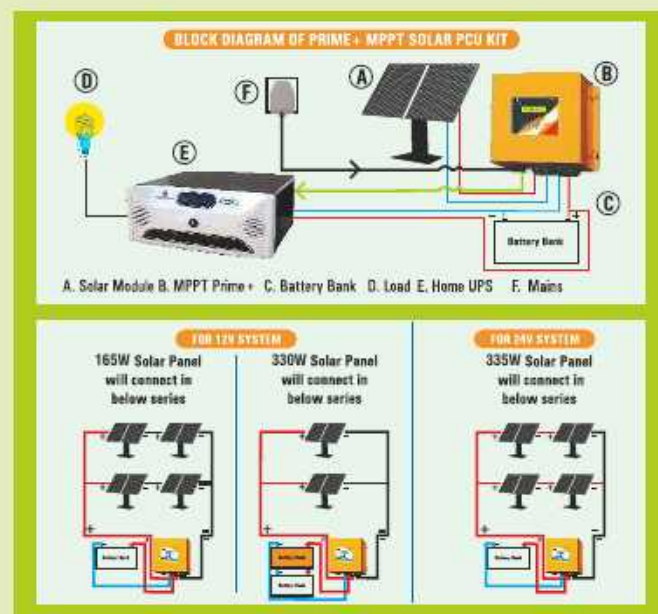


DOD, can set four battery discharge levels.
(20%, 30%, 40%, 50%)



Smart auto detect battery function

A device to convert your simple Inverter into Solar Inverter using advance MPPT technology. The device comes with wall mounting option & can connect 24V panel on single battery. This comes with user friendly LCD that displays important information like battery charging status, charging source, total units savings etc. Also has world class MCB ensures your UPS and connected loads stay protected from short circuits. Other advantages are in terms of complete protection, reverse PV, battery deep discharge, battery over charging and high temp.



TECHNICAL SPECIFICATIONS

		MPPT 12-24 automatic		MPPT 24-48 automatic					
MODEL		12V	24V	24V	48V	72V	96V	120V	180V
ELECTRICAL									
Battery Type		LA/Tubular/SMF							
Technology		Digital Processor Based High Efficiency Design							
Max. BATTERY Current Rating		50AMP							
Max. PV Voltage Rating		60V±0.5V	85V±1V	100 V±1V	120V±2V	200V±0.5V	250V±1V	350V±1V	450V±1V
High PV Voltage		>60V	>85V	>100V	>120V	>200V	>250V	>350V	>450V
Max. Panel Install		up to 750W	up to 1500W	up to 1500W	up to 3000W	up to 5000W	up to 6500W	up to 8000W	up to 12000W
Battery Qty.12V 100-220AH		1	2	2	4	6	8	10	15
Boost Charging Voltage For Tubular And SMF Battery		14.5V±0.2V	29V±0.2V	29V±0.2V	58V±0.2V	87V±1V	116V±1V	145V±1V	217.5V±1V
Boost Charging Voltage For LA Battery		14V±0.2V	28V±0.2V	28V±0.2V	56V±0.2V	84V±1V	112V±1V	140V±1V	210V±1V
Bulk/ Absorption Voltage		14.8V±0.2V	29.6V±0.2V	29.6V±0.2V	59.2V±0.2V	88.8V±1V	118.4V±1V	148V±1V	222V±1V
DOD level (Depth of Discharge)	20% - if battery voltage is	12.5V	25.0V		50.0v±0.2V		DOD function is not available in this segment		
	30% - if battery voltage is	12.0V	24.0V		48.0v±0.2V				
	40% - if battery voltage is	11.5V	23.0V		46.0v±0.2V				
	50% - if battery voltage is	11.0V	22.0V		44.0v±0.2V				
Mains Connect if Solar Power Not Available		At any Stage of Battery Voltage					Mains Connect disconnect function is not available		
Mains Disconnect		If battery reaches boost level then after <10 minutes mains will be disconnect							
D.O.D (Depth of Discharge)		Mains will be connect when battery voltage reach at defined value of the battery voltage							
MPPT To PV Power Connection Time		<15 Sec.							
Peak Efficiency		>94%							
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 WUPS mode		285VAC ± 10VAC							
Input Frequency Range		40Hz to 60Hz							
Voltage Output in Mains Mode		Same as input							
Frequency Output in Mains Mode		Same as input							
Panel configuration (NTC)		375W 2P	250W 2S 3P/300W 5P	250W 2S 3P/300W 5P	250W 3S 4P/ 330W 3S 3P	330W 4S 4P	330W 5S 4P	330W 6S 4P	330W 10S 4P
Panel configuration VOC (NTC)		39.75V	74V/ 44V	74V/ 44V	111V/132V	180V	225V	270V	450V
PROTECTIONS									
Reverse Battery		Yes							
Reverse PV Protection		Yes							
Reverse Current Flow to PV		Yes							
High PV Voltage		Yes							
Over Current		Yes							
Thermal Protection		Yes							
MCB		MCB ensures your UPS and connected loads stay protected from short circuits							
DISPLAY PARAMETERS									
Display Type		LCD Display							
Display Messages		Welcome, Smarten Website Address, System Capacity, Mains available, Battery Priority, PV Current, Battery Current, PV Voltage, Battery Voltage							
SCC Fault/Protection Status		Reverse PV/High PV voltage /High Temp.							
ENVIRONMENT									
Operating Temperature		0°C To 40°C							
Storage Temperature		0°C To 50°C							
Fixing		Wall Mounted							
Operating Relative Humidity		90% Non-Condensing							





TEJAS
DC LOAD SOLAR CHARGE
CONTROLLER 12V-20A
DC MPPT SOLAR PCU



100% shock proof



**Inbuilt USB
mobile charger**



MPPT Technology
(Upto 20% more power saving)



**Upto 24hrs
back-up***

The device comes with wall mounting option & can connect 24V panel on single battery. The product has digital Processor based high efficiency design also give option to charge mobile phone. A user friendly LCD that displays important information like battery Charging Status, Charging Source, etc. Other advantages are in terms of Complete Protection, Reverse PV, Battery Deep Discharge, battery over charging and High Temp.



TECHNICAL SPECIFICATIONS

MODEL: 12V/20A DC MPPT SOLAR PCU

Battery Volt	12V
Battery Type	Lead Acid / Tubular
Technology	Digital Processor Based High Efficiency Design
Max. Battery charging Current	20 Amp.
Charge controller Rating	20 Amp.
Max. Solar VOC	50V
Min. Solar VOC	20V
PV High Cut	>50V
PV High Cut Recovery	45V
Max. Panel Install	260W
Low Battery Cut	10.6V
Battery Boost Voltage LA Mode	14.0V
Battery Boost Voltage Tub Mode	14.5V
Battery Float Voltage	13.7V
Battery High cut	15V
DC load Rating	15 Amp.
Mobile Chraging	500 mAMP.
DC load ON/OFF	BY Power Switch
MPPT To PV Power Connection Time	15 Sec.
Peak Efficiency	>94%
SCC Type	MPPT

PROTECTIONS

Battery Low	Yes Provided, It Will show on display
High PV voltage	Yes Provided, It Will show on display
Reverse PV Protection	Yes Provided, it will also show on display
Reverse Current Flow to PV	Yes Provided
Reverse Battery Protection	Yes provided, System is not ON in Reverse Battery
load short circuit protections	Yes, provided, it will show on display
Load overload Protection	If DC load connect more then 15 Amp. System show on display, after 3 retries load will be shutdown

DISPLAY PARAMETERS

Display Type	LCD Display
Display Parameters	Reverse PV/High PV voltage /High Temp./DC Load overload, DC load short circuit, Battery voltage, Battery Current, PV voltage, PV current, Low Battery, DC load Voltage, DC load Current, Solar power available/Not Available

SAFETY

HV Test Input to Earth	Leakeage current <5MAmp. when 1.5KV Applied for 1 Min.
HV Test Output to Earth	
IR Test Input to Earth	<5MΩ between @500V DC
IR Test Output to Earth	

ENVIRONMENT

Operating Temperature	0°C To 40°C
Storage Temperature	0°C To 50°C
Operating Relative Humidity	90% Non-Condensing

WEIGHT AND DIMENSIONS

Dimensions in mm (LxWxH)	305x300x180
Weight (Kg)	3.2



SAVIOR PWM BASED SOLAR CHARGE CONTROLLER 12V/120V-50A

A device to convert your simple Inverter into Solar Inverter using PWM Technology. The device comes with wall mounting option with user friendly LCD that displays important information like battery Charging Status, Charging Source, Total units savings etc. Also has world class MCB ensures your UPS and connected loads stay protected from short circuits. Other advantages are in terms of Complete Protection, Reverse PV, Battery Deep Discharge, battery over charging and High Temp.

-  **DOD, can set four battery discharge levels.** (20%, 30%, 40%, 50%)
-  **Grid control for saving the electricity bill**
-  **Smart auto detect battery function**
-  **Convert normal inverter to solar inverter**

TECHNICAL SPECIFICATIONS

	12V	12V	24V	48V	72V	96V	120V
Battery Type	LA/Tubular/SMF						
Technology	Digital Processor Based High Efficiency Design						
Max. PV Current Rating	25 AMP	50 AMP					
Max. PV Voltage Rating	25V	25V	55V	90V	132V	265V	265V
Max. Panel Install	500 Watt	1000 Watt	1500 Watt	3000 Watt	4500 Watt	6500 Watt	8500 Watt
Float Charging Voltage	13.7V±0.2V	13.7V±0.2V	27.4V±0.2V	54.8V±0.2V	82.2V±0.2V	109.6V±0.2V	137V±0.2V
Boost Charging Voltage For Tubular And SMF Battery	14.5V±0.2V	14.5V±0.2V	29V±0.2V	58V±0.2V	87V±0.2V	116V±0.2V	145V±0.2V
Boost Charging Voltage For LA Battery	14V±0.2V	14V±0.2V	28V±0.2V	56V±0.2V	84V±0.2V	112V±0.2V	140V±0.2V
Bulk/Absorption Voltage	14.8V±0.2V	14.8V±0.2V	29.6V±0.2V	59.2V±0.2V	88.8V±0.2V	118.4V±0.2V	148V±0.2V
Solar Charge Controller To PV Power Connection Time	<15 Sec.						
Peak Efficiency	>90%						
SCC Type	PWM (Pulse With Modulation)						
PROTECTIONS							
Reverse PV Protection	Provided						
Reverse Current Flow to PV	Provided						
High PV Voltage	Provided						
Over Temperature	Provided (If heat sink temperature goes above 100°C, system will shut down)						
DISPLAY PARAMETERS							
Display Type	LCD Display						
Display Messages	Welcome, Smarten Website Address, System Capacity						
SCC Fault/Protection Status	Reverse PV/DC Load Overload/High PV voltage / High Temp.						
ENVIRONMENT							
Operating Temperature	0°C To 40°C						
Storage Temperature	0°C To 50°C						
Operating Relative Humidiv	90% Non-Condensing						



Kranti PV CHANGER

A POWERFUL PV CHANGER TO MAKE YOU ENERGY-INDEPENDENT

YOU CAN USE THE PANEL MOUNTED ON THE SOLAR PUMP BY KRANTI PV CHANGER IN YOUR HOME AS PER YOUR REQUIREMENT

- Can use solar pump panels to run house load.
- Can use same unit from 12V PCU to 120V PCU.
- Avoid the hassle of frequently changing the panel connections.
- Selectable rotary switch to change Pump to PCU-PCU to Pump.
- Diagram and panels connection method depend on existing pump panel connections.

Note: This is only a panel voltage change over not to run AC load directly. This will give only DC voltage to PCU as per required.





SOLAR PANEL

DCR & NON-DCR BIFACIAL | TOPCon | MONOCRYSTALLINE | POLYCRYSTALLINE

With the highest quality materials and based on the latest solar technology, Smarten Solar Panels are completely immune to India's extreme heat, cold, dust and heavy rainfall. Whatever the weather, these panels are cared to serve you reliably for 25 years or more.

Authentic, durable, with the highest efficiency of solar cells,

Smarten Solar Panels offer the best performance in cloudy weather, and don't even get damaged in winds of 120 km/hr.

Smarten Solar Panels help you cut down your electricity bills and also friendly to the environment. We urge you to invest in this very best of investments, both for yourself and your planet.

TECHNICAL SPECIFICATIONS

	Polycrystalline Panels		Monocrystalline Panels						TopCon
PV Module	40W/12V	50W/12V	100W/12V	165W/12V	240W/12V	500W/24V	545W/24V BIFACIAL	550W/24V BIFACIAL	600W/24V
Maximum Power (P _{max} ± 2%)	40 W	50 W	100 W	165 W	240 W	500 W	545 W	550 W	600 W
Maximum Power Voltage V _{mp} (V)	20.84 V	18.88 V	18.02 V	18.80 V	18.18 V	39.99 V	43.92 V	42.05 V	44.68 V
Open Circuit Voltage V _{oc} (V)	24.01 V	21.88 V	21.12 V	21.95 V	21.69 V	44.98 V	49.54 V	49.88 V	52.58 V
Maximum power current I _{mp} (A)	1.96 A	2.65 A	5.38 A	8.78 A	13.27 A	12.51 A	12.41 A	13.08 A	13.43 A
Short Circuit Current I _{sc} (A)	2.02 A	3.04 A	5.98 A	9.36 A	13.90 A	13.43 A	13.48 A	14.11 A	14.46 A
Maximum System Voltage	1000 V	1000 V	1000 V	1000 V	1500 V	1500 V	1500 V	1500 V	1500 V
Specification: STC: 1000W/m ² irradiance AM 1.5; 25°C cell temperature, Electrical specification is 0/±3%									
Module Mechanical Details									
Module Length (mm) ±2mm	665	400	770	1085	1450	2093	2280	2278	2280
Module Width (mm) ±2mm	435	765	775	765	765	1134	1135	1134	1135
Module Efficiency (%)	14.7	17.5	16.5	19.9	21.7	21.07	21.5	21.29	23.22
Mounting Hole Pitch X axis in mm ±2mm	220	385	395	735	735	1094	990	1087	1090
Mounting Hole Pitch Y axis in mm ±2mm	640	375	745	545	730	1675/1175	1400	1675/1175	1880/1140
Module Weight (Approx in Kg)	3.1	3.4	6.3	9	12.25	23	28	30	29
Packing Type	1 in 1	1 in 1	1 in 1	1 in 1	1 in 1	1 in 1	1 in 1	1 in 1	1 in 1
Power Tolerance -0/+3%, Electrical Parameters Tolerance ±5%									

*Conditions apply



2.5-10 Sq. mm, HRFR-105 UV GRADE
TIN COATED

FEATURES

- Heavy duty wire
- Designed for solar application
- Compatible from -20°C to 105°C
- Electron beam cross linked compound
- Fire retardant, low smoke
- UV, ozone, temperature & hydrolysis resistant
- Excellent encapsulation
- Very long/service life >25 years



Available in:
Single Core & 2 Core | 100 mtr.





**LITHIUM EV
RICKSHAW CHARGER
51.2V/25A**

**SCOOTER CHARGER
48-72V/10A**

5 Stage FLC Charging Technology

Compatible for Lithium &
Lead Acid Battery

Reliable Charging

Compact Size Charger



TECHNICAL SPECIFICATIONS

MODEL NAME	SMARTEN EV CHARGER				
CHARGER RATING	51.2V/25A	72V/10A	72V/3.3A	60V/4A	48V/5A
Battery Pack	51.2V, Lithium	72V, Lithium	72V, Lead Acid	60V, Lead Acid	48V, Lead Acid
Nominal Input Voltage	230V				
Nominal Input Current (RMS)	9A	3.5A	2.55A ± 15%		
Input Operation Voltage	190-265V	160-300V	125-300V		
Input Power Factor	>0.98	>0.97	>0.5		
Max. Input Power	1500W	910W	320W ± 10%		
Input Frequency Range	50-60Hz				
Battery Type	Li-Ion	Li-Ion	Lead Acid/VRLA		
DC Output Voltage Range	43.2V to 58.4V	60V to 84V	63V to 87V	52.5V to 72.5V	42V to 58V
Battery Quantity Required 12V/Cell	16S	24S	6	5	4
Float Charging Voltage	NA	NA	81.6V ± 0.5V	68.0V ± 0.5V	54.4V ± 0.5V
Boost Charging Voltage	NA	NA	87.0V ± 0.5V	72.5V ± 0.5V	58V ± 0.5V
Battery Charging Current	25A	10A ± 0.5A	3A ± 0.3A	4A ± 0.3A	5A ± 0.3A
PROTECTIONS					
Short Circuit Protection	Yes, Provided				
Over Temperature	Yes provided, if Mosfet heat sink temperature goes above 110°C System will decrease the charging current				
Reverse Battery	Red LED will glow				
DISPLAY PARAMETERS					
LED	Charging LED, Charged LED, Reverse Battery LED, Battery connected				
SAFETY					
HV Test Input to Output	Leakage current <5mA when 3.75kV applied for 1 min				
ENVIRONMENT					
Operating Temperature	0°C to 50°C				
Storage Temperature	0°C to 50°C				
Operating Relative Humidity	90% Non-Condensing				



Smarten Service: Quick & Easy

For any Complaints, Warranty & Solutions

With Customer first motto, we have specialized Service team to solve all queries & complaints. To make it more effective Fast-track Service campaign has been launched to cater you more quickly. One can register online to get quick response.

01

To register a
warranty/complaint

Type "Hi" and send it to
9319699755 on WhatsApp
(Only "Hi" works - not hello/hey/hii)

02

03

Follow the options & link,
fill details & submit

You'll get instant confirmation
+ SMS with complaint number

04

05

You can also call on the
same number to register
your complaint