

MADE IN INDIA

Su-mak[®]
SOLAR
PURE SINE WAVE

BRAINY PLUS

SOLAR HYBRID UPS
POWER CONDITIONING UNIT
1600/24V

MPPT BASED
SOLAR CHARGE CONTROLLER



www.sumaksolar.com

Technical Specifications: 1600/24V

Model Name	Solar Hybrid UPS	
Capacity	1600/24V	
VA Rating	1280VA	
Type	Single Phase Solar Power Conditioning Unit (PCU)	
Technology	DSP Based PWM Technology	
Power Device	MOSFETs	
Input Parameters	24V	
Nominal I/P DC Voltage	21.0V - 28.8V $\pm$ 0.4V	
Input DC Voltage Range	22.4V $\pm$ 0.4V	21.6V $\pm$ 0.4V
Low Battery Warning User Selectable	22.0V $\pm$ 0.4V	21.0V $\pm$ 0.4V
Low Battery Cut Off User Selectable	Battery voltage should be 27.6V $\pm$ 0.4V	
Inverter Restart after low Battery when Mains is not Available	31.0V $\pm$ 1V < 20W	
High Battery Shutdown	Less than 20W	
No Load Power Consumption When Output is ON		
Output Parameters		
Waveform & Regulation	Pure Sine Wave, 220V $\pm$ 5%	
Frequency Regulation	50Hz $\pm$ 0.1Hz	
Efficiency (Typical)	$\geq$ 85% (80-100% Resistive Load)	
Total Load	1200W Bulb Load at unity PF @24Vdc	
Discharging Current	(50.0A $\pm$ 2.0A)	
Overload	150% for $\geq$ 10sec & Shut down with four retry	
THD (Linear Load)	$\leq$ 3%	
Crest Factor	$\geq$ 3:1	
Power Usage Priority	From PV Panel Array	
Grid Input Parameters		
Grid Power Usage Settings Setting-1: 26.0V $\pm$ 0.4V (GP) Setting-2: 24.4V $\pm$ 0.4V (SP) Setting-3: 23.0V $\pm$ 0.4V (SP) Not: When mains is back after selecting the specific priority, only then the setting will be display on LCD.	Automatic, if batteries voltage $\leq$ 26V $\pm$ 0.4V GP mode and $\leq$ 24.4V $\pm$ 0.4V in SP mode, and 23.0V $\pm$ 0.4V in SP After mode attaining float charge stage mains power will discontinue when PV power $\leq$ 20w	
Transfer Time	Typical <20msec / <40msec	
Grid I/P Voltage Range V-UPS Mode	85VAC to 290VAC $\pm$ 10V	
Grid I/P Voltage Range UPS Mode	185VAC to 265VAC $\pm$ 10V	
Charging Current User Selectable Setting	5A, 10A, 15A $\pm$ 1.5Amp	
Charging Current Enable/Disable	User Setting	
Current Sharing	When solar charging current is increasing from 1A-30A, Then grid charging current reduces from 15A, 10A, 5A to 0A	
Boost Voltage Grid Mode	28.8V + Temp Compensation	
Float Voltage Grid Mode	27.6V + Temp Compensation	

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SOLAR CHARGE CONTROLLER	
Maximum IP PV Voltage	SOV Per 36 cell Solar PV module
Solar Array	Single Array
Solar charge controller rating	1000Wp PV Module 30A current (typically)
Boost Voltage	29.2V + Temperature Compensation
Float Voltage	27.6V + Temperature Compensation
PROTECTION	Over Current, Battery over Charge Protection, PV Reverse Polarity, Reverse Current Flow, High Temperature, High Voltage
Automatic charger restart time after High Current	3.5 Minutes
High Temperature Cut- OFF inverter/SCC	102°C + 5°C
High Temperature SCC Charger Reconnect	85°C + 5°C
SCC Cooling fan ON	Current * 10A
SCC Cooling fan OFF	Current f15A

Protection messages:	
114AINS 11CBTRIP LIFT MCB	*ATTENTION* OVERLOAD> 100%
ATTENTION BATTERY LOW	OVERLOAD/HIGH TE14P SHUTDOWN
	SRT CKT/BACKFEED SHUTDOWN
	ATTENTION HIGH TEMPERATURE
Dielectric strength	2KV input/output with ground and 1.5KV between input & output
Operating Temp.	0°C to + 55°C
Storage Temp.	0°C to + 55°C
Acoustic Noise	60dB from one meter
Relative Humidity	0-95% Non-Condensing
IP RATING	IP-20
MASS OF THE EQUIPMENT	16.80Kg
OVERALL SIZE OF EQUIPMENT (WxDxH):f1 SMM	300mm(W) x 300mm(D) x 285mm(H)

*Specification can change without any prior notice.



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