UPower Series
Inverter/Charger

Overview

UPower inverter /charger combines with solar & utility charging and AC output in one unit, which adopts a multi-core processor design and advanced MPPT control algorithm to realize intelligent management. The device is usually used in remote area where is lack of reliable utility but rich of sun shine.

UP as reliable industrial standard equipment has quick response speed and excellent high transfer efficiency.

Intelligent adjustment of total charging current from both solar and utility, automatic adjustment is realized via different working modes selection, which ensure to provide power energy supply maximally.

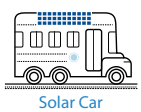
The PV charging module adopts the up-to-date optimized MPPT tracking technology, it can quickly track the maximum power point of the PV array in any environment even has the multi crest tracking ability. The MPP tracking speed and energy transfer efficiency is quite high. The PV and AC charge current can be adjusted manually, which can meet total charge current limit, and PV& utility charge current ratio distribution. Full electronic protection functions are available.

The AC-DC charging module adopts the advanced MPPT control algorithm, realize fully digitalized double closed-loop control for voltage and current, with high reliability and response speed. With wide AC input voltage range and charge current limitation volume can be set. This module has complete protection functions at input and output.

The DC-AC inverter module is based on full digital and intelligent design. It adopts the advanced SPWM technology, outputs the pure sine wave and converts 24/48VDC to 220/230VAC, which is suitable for AC loads of household appliances, electric tools, commercial units, electronic audio and video devices etc.

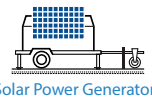
With Utility by-pass charging function, the utility module can provide power supply to loads directly, and charge the battery simultaneously. Under utility charge status, user can choose by-pass mode or inverter output mode. This characteristic is prefered in the area where the utility is not stable,user should choose inverter output mode to get stable output voltage to avoid the appliance damaged because of bad condition utility.

The display module is key for communication. The 4.2 inch LCD display presents system status and real time data, user can set work parameters easily the 4 buttons.


Solar Car


Solar Home


Solar Boat


Solar Power Generator

Features

- A new type of all-digital intelligent energy storage and management Inverter/charger
- Adjustment function of Utility & Solar charging ratio to meet various applications
- Advanced MPPT technology to achieve multiple wave crest maximum power point tracking and high tracking & conversion efficiency, Max. tracking efficiency 99.5 %, Max. DC-DC conversion efficiency 98.5 %
- The advanced all-digital control is adopted for AC-DC charging modules that realized wide voltage input, high efficiency, and high stability of Utility charging
- Adoption of the advanced SPWM technology, true pure sine wave output, with high efficiency up to 95 %① and full load efficiency of 93 % max①
- High output voltage stability: when full load working in the working voltage range of battery, output voltage
- 220V/230V±5%②, frequency 50/60±0.1 Hz; voltage& frequency optional
- Advanced voltage, current and power multi-loop control makes DC-AC unit has good dynamic response capability high resistance to surge power and high operational reliability
- With the function of Utility & Solar charging ratio selection, and total charging current setting
- Four charging mode: Utility priority, Solar priority, Utility & Solar and Solar only
- Two output mode: Battery and Utility
- Utility charging and inverter output can work at the same time, which avoids the impact of the unstable Utility voltage on the load
- Rich set of options: charging current, battery type, battery voltage threshold etc
- AC output one-key control, which can switch Utility or inverter output on and off, keeping the output off mode can make it
- convenient while wiring and maintaining on electric-distributions, reducing the standby loss
  Support cold start and soft start
- RS485 isolated communication interface with 5V 200mA output, it is easy to access communication devices such as Wifi module
- PC or mobile phone APP can be used for remote monitoring, management and setting to meet various remote use of users
- Optional back light and buzzer warning selection via PC software
- With PV reverse polarity, Charging power limit, short circuit, battery reverse polarity protections
- With Utility input/AC output over voltage, battery low voltage, power limit, over current and short circuit protections
- With battery low/over voltage protection and temperature compensation etc
- With internal over-temperature protection, and intelligent start-stop function of the fan
- Variety of accessories can be selected according to user's requirements

①UP1500 and above models: testing result under 25℃ environment temperature, rated input voltage, and resistive load

②In battery discharging mode Output tolerance is 220V ±5% or 230V -10%~+5% for 24V and 48V input; and 220V -6%~+5% or 230V -10%~+5% with 12V battery input

Technical Specifications

Model	UP1000-M3212	UP1000-M3222	UP1500-M3222	UP2000-M3322	UP3000-M3322	UP3000-M6322
Nominal battery voltage	12VDC	24VDC				
Battery input voltage range	10.8～16VDC	21.6～32VDC				
Inverter output						
Continuous output power	800W	800W	1200W	1600W	2400W	2400W
Output power (15min)	1000W	1000W	1500W	2000W	3000W	3000W
Overload power (5s)	1600W	1600W	2400W	3200W	4800W	4800W
Max. surge power	2000W	2000W	3000W	4000W	6000W	6000W
Output voltage range	220VAC±5%,230VAC(-10%～+5%)					
Output frequency	50/60±0.1 Hz					
Output mode	Single phase					
Output wave	Pure Sine Wave					
Load Power factor	0.2-1（VA≤continuous output power）					
Distortion THD	≤3%（12V,24V resistive load）					
Max.efficiency	91%	94%	95%	95%	95%	95%
Transfer time	0～20ms（resistive load）①					
Utility input						
Utility input voltage range	160VAC～280VAC（working voltage range） 170VAC～270VAC（Utility starting voltage range）					
Max. Utility charge current	20A	20A	20A	30A	30A	30A
Solar Charging						
Max.PV open circuit voltage	60V② 46V③	100V② 92V③				150V② 138V③
Max.PV input Power	390W	780W	780W	780W	780W	1500W
Max.PV charging current	30A	30A	30A	30A	30A	60A
Equalization voltage	14.6V	29.2V				
Boost voltage	14.4V	28.8V				
Float voltage	13.8V	27.6V				
Tracking efficiency	≤99.5%					
Max charging conversion efficiency	98%					

General						
Zero load consumption	≤1.2A	≤0.6A	≤0.6A	≤0.8A	≤0.8A	≤0.8A
Enclosure	IP30					
Relative humidity	< 95%（N.C.）					
Working environment temperature	-20℃～50℃（full input and output with no derating）					
Mechanical Parameters						
Dimension（LxWxH）	386×300×126mm			444×300×126mm		518×310×168mm
Mounting dimension	230mm					
Mounting hole size	Φ8mm					
Net Weight	7.3kg	7.3kg	7.4kg	8.5kg	9.2kg	14.9kg

Model	UP3000-M2142	UP3000-M6142	UP5000-M6342	UP5000-M8342	UP5000-M10342
Nominal battery voltage	48VDC				
Battery input voltage range	43.2～64VDC				
Inverter output					
Continuous output power	2400W	2400W	4000W	4000W	4000W
Output power (15min)	3000W	3000W	5000W	5000W	5000W
Overload power (5s)	4800W	4800W	8000W	8000W	8000W
Max. surge power	6000W	6000W	10000W	10000W	10000W
Output voltage range	220VAC±3%,230VAC(-7%～+3%)		220VAC(-5%～+3%),230VAC(-10%～+3%)		
Output frequency	50/60±0.1 Hz				
Output mode	Single phase				
Output wave	Pure Sine Wave				
Load Power factor	0.2-1（VA≤continuous output power）				
Distortion THD	≤3%（24V,48V resistive load）				
Max.efficiency	95%				
Transfer time	0～20ms（resistive load）①				

Solar Charging

Max.PV open circuit voltage	150V② 138V③			200V② 180V③	
Max.PV input Power	1040W	3000W	3000W	4000W	5000W
Max.PV charging current	20A	60A	60A	80A	100A
Equalization voltage	58.4V				
Boost voltage	57.6V				
Float voltage	55.2V				
Tracking efficiency	≤99.5%				
Max charging conversion efficiency	98%				
Temperature compensate coefficient	-3mV/℃/2V (Default)				

General

Zero load consumption	≤0.6A	≤0.6A	≤0.8A	≤0.8A	≤0.8A
Enclosure	IP30				
Relative humidity	< 95%（N.C.）				
Working environment temperature	-20℃～50℃（full input and output with no derating）				

Mechanical Parameters

Dimension（LxWxH）	444×300×126mm	518×310×168mm	614x315x178mm		
Mounting dimension	230mm				
Mounting hole size	Φ8mm				
Net Weight	7.3kg	14.7kg	16.6kg	17.5kg	17.8kg

①At the battery output mode, the transfer time is 0

②At minimum operating environment temperature

③At 25 C environment temperature

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