

User Manual

Portable Inverter/UPS

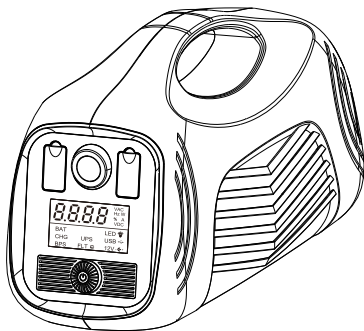


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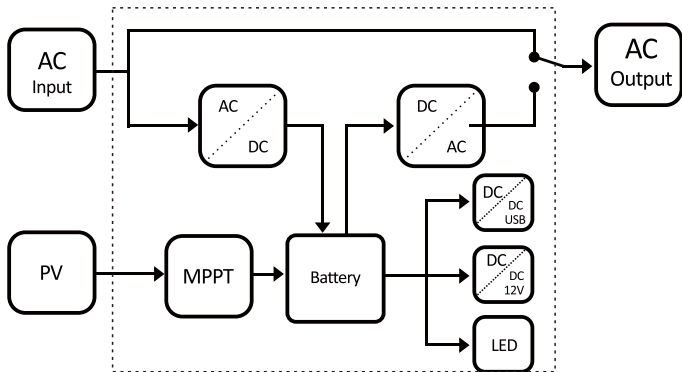
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SAFETY INSTRUCTIONS

Please strictly observe the following operations before using the machine to ensure your safety

- (1) Please read the user manual carefully before using this product
- (2) Note the panel DC12V output polarity  +
- (3) Avoid constant overload of the machine
- (4) When the inverter fails, please cut off the power immediately; contact the technical center or dealer
- (5) Keep the machine away from the following environments
 - Keep away from flammable, combustible, corrosive gases and substances, and a lot of dust
 - Ambient temperature is too high or too low (higher than 45 degrees or lower than -10 degrees), humidity is above 90% in direct sunlight, or near heating equipment.
 - Avoid violent vibration
 - Avoid getting water into the machine
- (6) Please connect the solar photovoltaic panel correctly, do not connect the DC power supply
- (7) In an emergency, please cut off the mains and PV connection lines immediately and turn off the inverter control switch.
- (8) **Warning:** Non-professionals do not disassemble the machine
- (9) Waste disposal, the machine must be recycled separately to avoid leakage of harmful substances
- (10) Prevent strong collision and strong squeeze
- (11) When turning on the LED flashlight, please avoid direct eye contact with the LED flashlight to prevent flashing

PRODUCT PRINCIPLE



Two AC Output Modes

- 1.AC Bypass output mode
- 2.Battery inverter output mode , output AC 220V 50Hz or 60Hz

NOTE:

The inverter output frequency automatically follows the mains input frequency, which is determined by the frequency at which the mains was plugged in the power off state last time. The inverter outputs 50Hz by default.

Two Charge Mode

- 1.Solar power charge mode (Solar charge priority)
- 2.AC charge mode

PRODUCT FEATURES

- Real power 600W
- Built-in high efficiency MPPT charge controller
- Battery capacity 300Wh
- Pure Sine wave
- Auto restart and charge while AC recovering
- Overload, overtemperature and short circuit protection
- Intelligent charging design to extend battery life
- Built-in MPPT solar charge controller , Turn on and charge automatically after connecting solar panel
- Cold start function
- LCD digital display
- High capacity lithium batteries
- Constant voltage and current limit output
- LED lighting
- International standard SOS lamp
- Fashionable and exquisite appearance

INTRODUCTION

The product is used outdoors, the temperature should be $-10^{\circ} \sim 45^{\circ}$, humidity $<90\%$, no condensation, altitude below 2000M. Outdoor use can be used as an inverter to power AC equipment, mobile phones and other portable mobile chargers, can also be used for emergency lighting. Can be used with 30V ~ 75V photovoltaic panels to charge the product.

Select the UPS OFF mode, connect to the normal range of city power, output by the city power bypass, and charge the machine. When the utility power is out of range, the inverter will have no AC output.

It can also be set to UPS uninterruptible power supply mode to easily deal with power outages. Connected to the normal range of utility grid, bypassed by the city power, and charge the machine. When the utility power is out of range, the built-in lithium battery will invert the output.

The product has a built-in lithium battery. Please charge it immediately after discharge to avoid deep discharge.

If the product is not used for a long time, the machine should be charged / discharged at least once a month.

After the machine is discharged with high power, (1) please let the machine cool down for a period of time before shutting down. (2) the machine may not be charged until one hour later if you connect charging cable directly.

PV CONNECTION

PV Module Selection:

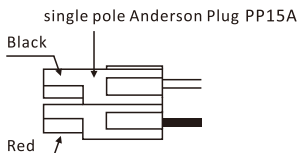
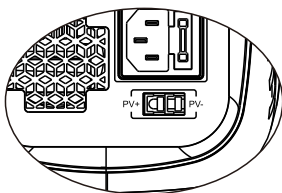
When selecting proper PV modules, please be sure to consider below requirements first:

- 1: Open circuit Voltage(Voc) of PV modules not exceeds max.PV array open circuit voltage of the unit.
- 2: Max. Power Voltage(Vmpp) of PV modules should be close to best Vmp of the unit or within Vmp range to get best performance.
- 3: **WARNING!** It's very important for system safety and efficient operation to use appropriate cable for PV module connection .To reduce risk of injury, please use the proper recommended cable size as below.

INVERTER/UPS SF-600W	
Solar Charging Current	5A
Battery Voltage	24VDC
Battery Voltage Range	18-25VDC
Max.PV Array Open Circuit Voltage	75V
PV Operating Voltage Range	36V-40V
Cable Gauge	18AWG

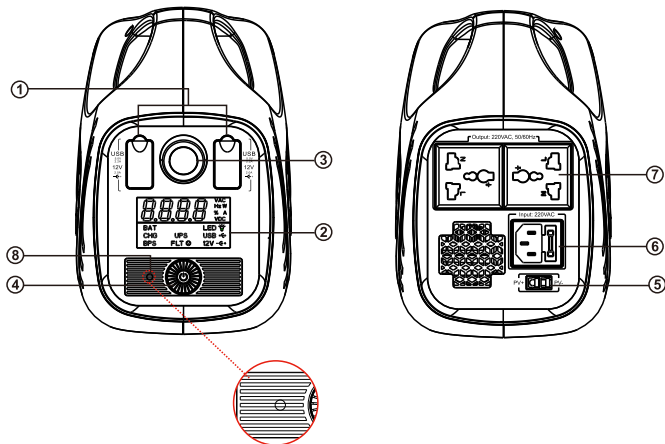
Please follow below steps to implement PV module connection :

- 1: Check correct polarity of connection cable from PV modules and PV input connectors. Then connect positive pole(+) of connection cable to positive pole (+) of PV input connector. connect negative pole(-) of connection cable to negative pole (-) of PV input connector.
- 2: Make sure the wires are security connected.



PRODUCT OPERATION

Product Overview

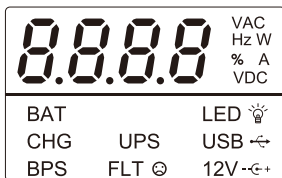


- 1.USB/12V
- 2.LCD Display
- 3.LED lighting
- 4.Power Switch
- 5.PV Input
- 6.AC Input
- 7.AC Output
- 8.Emergency Shutdown(Long press)

NOTE:

When the ups can not turn off because the switch do not work , Please find the place left side of the switch , press the into the gap between fifth and sixth crossband. UPS will be forced turn off after key inside is contacted slightly

Product Display Panel



ICON	FUNCTION DESCRIPTION
Display items	
VAC	output voltage
W	Output power watt
%	Battery capacity
A	Charging current
VDC	Battery voltage
8.8.8.8	Voltage, watt, percentage, current, displayed value, auxiliary function and fault code
Status information	
CHG	State of charge, mains or PV charging
Mode information	
UPS	UPS mode. At this mode, Connecting mains power , if mains power voltage in the AC input range, AC bypass output meanwhile charging battery. If the mains power voltage out of AC input range of unit, then Lithium Battery built-in the unit will provide power output.
FLT ☹	When unit enter Fault mode, if battery capacity is full , it will keep alarm. If battery capacity is lower than battery low voltage shutdown point, the unit will shut down automatically . Please contact local distributor to get solution in this case
Accessibility information	
LED 💡	LED lighting brightness, blinking on and off
USB ↔	USB mode on or off (5.0V 2.2A *4)
12V -⎓+	DC ouput mode on or off (12.0V 2.0A *2)

Power On/Off Operation

Item	Operation method and description
Manual turn on	Simply press power switch to turn on the unit
Auto power on	Auto Power On when connecting on PV and Utility power
Manual turn off	Press and hold power switch more than 3 seconds to turn off the unit
Auto shut-down	1. When the machine has no inverter output, no USB / 12V output, no LED light, and no mains electricity, no PV charging, no key operation, the machine will automatically shut down after ten minutes. 2. The machine is in UPS mode, the load is less than 30W, no USB / 12V output, no LED light, and there is no commercial power, no PV charging, no key operation, the unit automatic shutdown after 4 hours of continuous work

LCD Display Setting

Item	Display content	Operation method and description
Load Power	(Default) 	Turn on and enter the default display page automatically. Switching pages automatically in 5 seconds by default or turn the power switch clockwise manually
Battery Voltage		
Battery Capacity		
Charging Current		
AC Output	(Inverter voltage) 	
	(Bypass voltage) 	
LED lighting		At the default display page, turn the power switch counterclockwise twice to light on the LED lighting and turn again into SOS mode, turn one more time to light off the LED lighting

USB and 12Vdc operation		Press switch , turn switch clockwise twice and press switch again to enter the “USB and 12V “operation display page. “ off” icon flashing , turn the switch clockwise or counterclockwise , then “on” icon will flashing , press switch to confirm setting. Then “USB and 12V “mode on
		
UPS Mode		Press switch , turn switch clockwise once and press switch again to enter the “UPS” operation display page. “ off” icon flashing , turn the switch clockwise or counterclockwise , then “on” icon will flashing , press switch to confirm setting. Then “UPS”mode on

SPECIFICATION

Working Mode:

1. UPS OFF Mode: Do not switch to battery mode when power failure, no AC output and lower idle consumption
2. UPS ON Mode: the unit enter to battery mode when power failure, still have AC output and keep providing power to appliances (Note: no need restart unit after mode switching)

MODEL	SF-600W
Rated Output Power	600VA/600W
Input	
Bypass voltage range	176VAC~264VAC
Frequency Range	40Hz~70Hz
Output	
Rated output voltage	220VAC
Output frequency	50Hz/60Hz
Peak power	1100VA
Overload capacity	630VA-700VA, Turn off the output after 30s; 700VA-800VA ,Turn off the output after 5s; 800VA-900VA, Turn off the output after 2s;
Conversion efficiency	91%
Waveform	Pure sine wave
USB/12V	USB 5.0V 2.2A*4; 12V 2.0A*2
Battery	
DC voltage	18V~25V(24V)
Recharging current	5A±10%
Battery capacity	13.2Ah
Overvoltage	25.5V±1%

Overvoltage recovery point	23.9V±1%
Low battery alarm	19V±2%
Battery low voltage shutdown	18V±2%
Protection	Overcharge protection, overtemperature protection, overload protection battery overvoltage protection, output short circuit protection
Solar charge	
PV input voltage (VOC)	30V~75V
MPPT Voltage	Battery Voltage+4V~60V
Charge Current	5A±10%
MAX.Conversion efficiency	95%
Environment	
Humidity	0%~90%(No condensation)
Temperature	-10℃~45℃
Altitude	<2000m
Cooling	Wind cooling
Fan noise	≤26dB (A)
Feature	
DxWxH(mm)dimension	327x138x178
N.W (kg)	3.9kg

TROUBLE SHOOTING

Alarm code	Fault description	Solution
001	Low battery	1.Removing the load 2.Turn off and restart, check the battery voltage displayed on the front panel. If the battery voltage is too low, please charge it in time, and connect it to PV or utility 3.If the alarm "001" still appears after charging for a period of time, please contact the supplier
002	Soft start failed	1.Removing the load,remove PV and utility 2.Shut down and restart, check the front panel display battery voltage 3.If the alarm "002" still appears after charging for a period of time, please contact the supplier
003	Battery high voltage failure	1.Removing the load,remove PV and utility 2.Shut down and restart, check the front panel display battery voltage 3.If the alarm "003" still appears after charging for a period of time, please contact the supplier

004	AC output overload	1.Removing the load,remove PV and utility 2.Turn off and restart, check the front panel display load power and AC output voltage 3.If the alarm "004" still appears after charging for a period of time, please contact the supplier
005	AC inverter output overvoltage or undervoltage	1.Removing the load,remove PV and utility 2.Shut down and restart, check the front panel display battery voltage and AC output voltage 3.If the alarm "005" still appears after charging for a period of time, please contact the supplier
006	AC output short circuit	1.Removing the load,remove PV and utility 2.Shutdown and restart, check whether the fault is removed and the AC output voltage is displayed on the front panel 3.If the fault is resolved after restarting, please check if the load is short-circuited 4.If the alarm "006" still appears after charging for a period of time, please contact the supplier
007	BUS failure	1.Removing the load,remove PV and utility 2.Shut down and restart, check the front panel display battery voltage 3.If the alarm "007" still appears after charging for a period of time, please contact the supplier
008	BUS overvoltage protection	1.Removing the load,remove PV and utility 2.Shut down and restart, check the front panel display battery voltage 3.If the alarm "008" still appears after charging for a period of time, please contact the supplier
009	Over temperature protection	1.Make sure that it is not overloaded, the vents are not blocked, and the ambient temperature is not too high 2.disconnect loads, restart after cooling inside of the machine 3.If the alarm "009" still appears after charging for a period of time, please contact the supplier

When the unit is charging,if there is no charging current display on LCD,please check if the temperature of the unit is too high.If so,please wait for a while and charge after the unit cools down.



技术要求:

- 1: 材质:封面:157克铜版纸,CMYK彩色印刷,内页:80克书写纸,黑白印刷;
- 2: 装订后成品尺寸:105*148.5MM(公差+/-2MM);
- 3: 印刷效果:图片、字体、线条需清晰,无重影,无毛边,无多余杂点;
- 4: 拼版时请注意,封面封底背面为空白,无印刷内容;