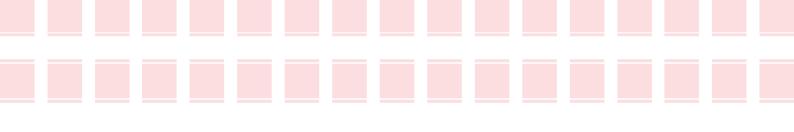


Users Manual



Solar Power Generator

Introduction

This manual contains the contents of the installation, operation and how to use equipment;

Please read carefully before equipment installation. The machine must be installed by trained personnel;

Please take good care of this manual.

Explanation

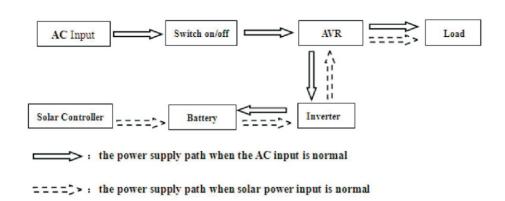
The rated capacity of the solar power system (built -in inverter, solar controller, battery) 3000W or 6000W.

The attachment of the equipment includes; user manual and warranty card, please carefully check if the components are in good condition and complete; The Technical Parameters of the solar power system is in" Technical Specifications Appendix One and Appendix Two".

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STRUCTURE



solar power system Structure Diagram

FEATURES:

Pure sine wave output

CPU control technology; SCM control

Strong ability of impact resistance

Have UPS function and AC charger

Wide input voltage range; 145-275V; three step AVR (two step -up, one step -down)

Protection against overload, short-circuit, overvoltage, under-voltage and over-temperature, etc.

Anti reverse connection protection and high-low voltage protection(option) Special overload protection; when it is overload, it will lock the unit automatically when it restores, it will restart the unit automatically again.

Strong inverter ability. It can change frequency immediately and it is able to drive the inductive load such as air conditioner, refrigerator, motor, etc.

LCD display

Can choose working mode by yourself

SECURITY EXPLAINS

EQUIPMENT

- 1. Please read the user manual carefully, do not exceed the rated load;
- 2. Before connecting the equipment, please connect the ground line, and all the load switch is turned off;
- 3. When have a equipment failure, quickly cut off the power and contact your dealer;
- 4. When the equipment around the fire, please cut off the power at the first time, turned off the machine, and the use of dry powder fire extinguishers;
- 5. Do not allow container filled with liquid placed on top of the appliance, so as not to cause an internal short circuit, resulting in electric shock or fire hazard;
- 6. Do not attempt to open the open main case, there is the risk of electric shock;
- 7. Equipment high pressure inside, to avoid harming the personal security, if any questions, please consult your dealer professionals;
- 8. This series product is a Class A the interference radio products, Do not go near the equipment sensitive to electromagnetic interference (such as the transmitter, receiver, radar, metal detectors).

BATTERY

- 1. The in-build or external batteries containing electrolyte. Under normal circumstances, should keep the battery dry. When battery damaged, electrolyte may leak out, it is hazards to the human eye, skin. If such an event occurs, immediately rinse with plenty of water and consult a doctor1;
- 2. Avoid battery positive and negative terminal short circuit, otherwise it will lead to electric shock or fire;

3. Maintenance-free batteries are sealed batteries, store or use no more than six months need to charge the battery (even before charge sufficient), otherwise it may cause battery failure. Requested to open the equipment for charging.

△ WARNING

Personal safety of users is the most important position, so user or operator must be read carefully before using the machine and in strict compliance with use rules. Even if all the switches disconnected, there is still a danger of high voltage in the equipment. Movement and open the shield of the operation must be completed by the authorized technical staff.

TRANSPORT AND STORAGE

TRANSPORT

Goods have been thoroughly checked before sending, after the receipt of the goods, check the packaging whether damaged, if it is damaged or missing objects must be notification dealer within 7 days after receiving;

OPEN PACKIAGE

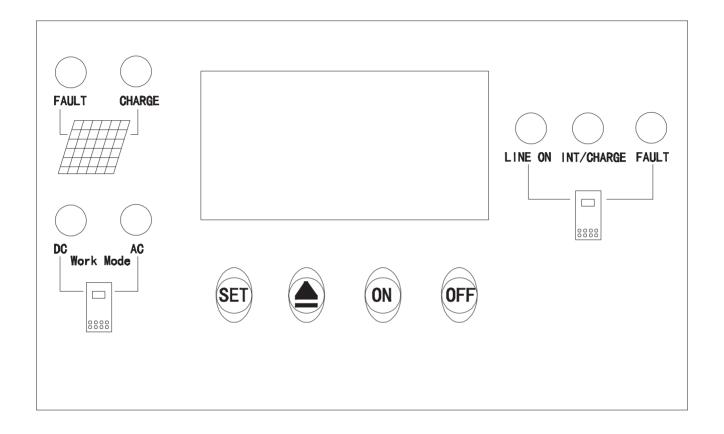
Should be especially careful to avoid damage to the equipment, check all packaging materials intact or not;

STORAGE&CARRY

If it will not be used within seven days after received equipment, please storage in accordance with the storage conditions. Must be ensure that stored in a clean, dry environment, temperature in (-10 $^{\circ}$ C -55 $^{\circ}$ C);

The equipment must be kept upright and carry carefully, fall or crash may damage the equipment.

FRONT PANEL VIEW



- 1.1. Notice; ① "ON" and "OFF" When you want to Start the inverter press the "ON" and Shut down the inverter press "OFF" for more than 5 second
 - 2 = " Page Turn machine displays information query
 - 3 "SET" Work mode selection

1.2 Inverter LED instructions

- ① LINE ON (Green) ; city power input normal, device works normal
- ② INT/CHARGER(Yellow): If the yellow light flash, indicate the city power to charges the battery. If the yellow light will keep lighting, indicate the inverter is using battery power
- ③FAULT(Red); device have fault

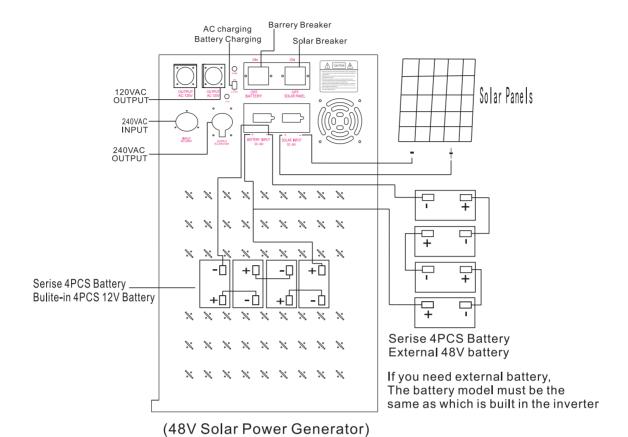
1.3 Solar LED instructions

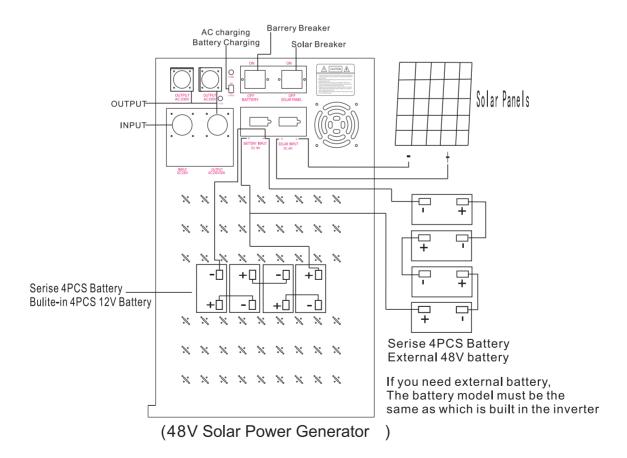
- ①FAULT(Red); solar panel input has fault or has not solar input
- ②CHARGE(Green): solar input normal, solar power to charges the battery

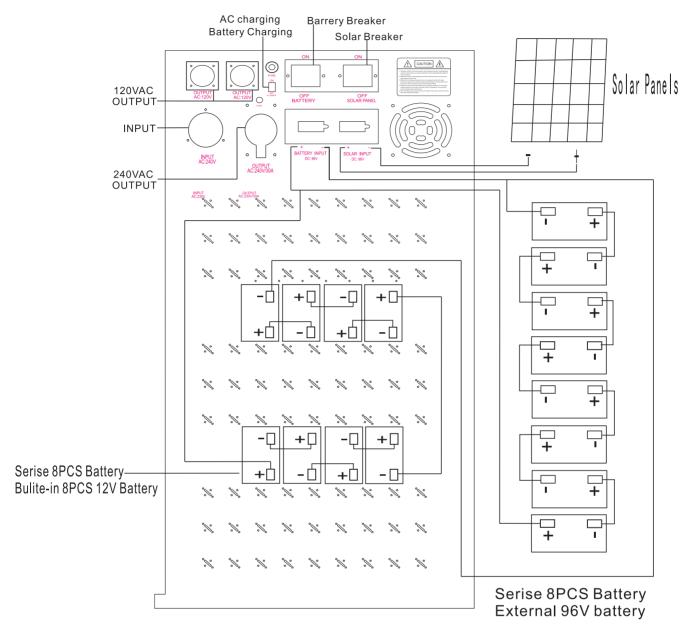
1.4 Work Mode LED instructions

①DC(Yellow); Solar power priority (when it have solar power, solar power charges the battery and take the load, when it does not have solar power, inverter will use battery power take the load, when battery power is lower, inverter will automatically use ups function to supply power to load and charge the battery) ②AC (Green) The city power priority(when city power is available, the inverter will work AC output, city power will supply to load; when have both city power and solar power, inverter will charges 2 kinds power to battery(city power charges or not can choose by yourself, in back panel has a switch), when city power failed, solar power charges the battery and use battery power talk the load.

CONNECTION DIAGRAM

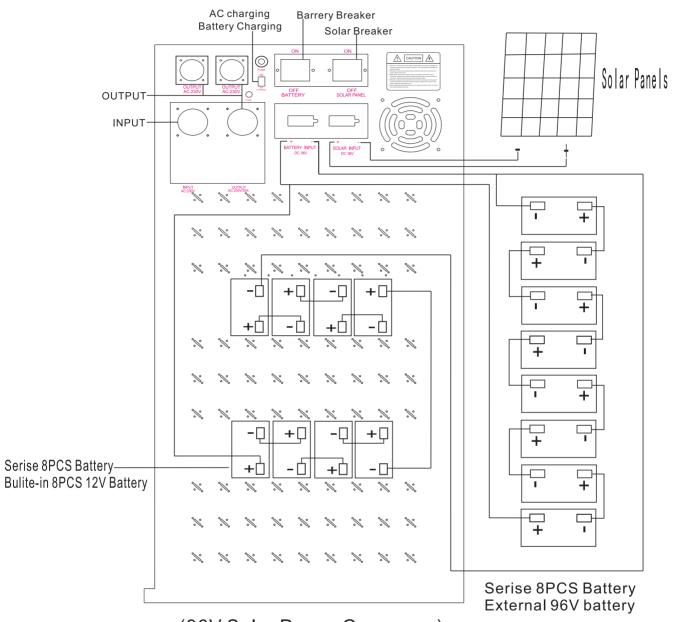






(96V Solar Power Generator)

If you need external battery, The battery model must be the same as which is built in the inverter



(96V Solar Power Generaror)

If you need external battery, The battery model must be the same as which is built in the inverter

INSTALLATION

MWarning

Installed by qualified technicians and reference to the relevant safety standards.

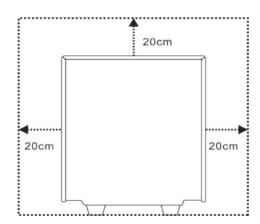
ENVIRONMENT

- 1. The equipment must be installed vertically in a horizontal shelf or on the ground, the temperature and humidity must be suitable. Do not pile up on the equipment;
- 2. Equipment working ambient temperature is the range of $-10~^{\circ}\text{C}$ to $55~^{\circ}\text{C}$, the ideal et mperature is 15 $^{\circ}\text{C}$ to 25 $^{\circ}\text{C}$. Battery life defined in 20 $^{\circ}\text{C}$, for each additional 10 $^{\circ}\text{C}$ will reduce the life expectancy of 25 $^{\circ}\text{C}$ from the start of the 20 $^{\circ}\text{C}$.

SPACE SIZE

1. Equipment placement

Leaving a space of 20 cm in the upper part of the equipment and around to ensure air circulation;



- 1. Avoid direct sunlight;
- 2. Avoid overheating;







- 3. Avoid moisture and contact with the liquid;
- 4. Avoid dust.

CURRENT AND CONNECTING CABLE WIRE DIAMETER

The maximum current of the solar power system can be as 1.5 times as the rated current. The minimum wire diameter of the connecting cable can be work out according to the relevant standard.

EXTERNAL PROTECTOR

The product external devices use suitable circuit breaker or fuse.

Attention

When external battery case, you must let the external battery box near the equipment, and configure the appropriate circuit breaker or fuse.

EQUIPMENT OPERATION

Please read the manual carefully before operate the machine. The machine should be take charge of the professional persons to ensure the machine work normally.

- 1. When the solar power system connected to the utility power, even though you did not start the unit, the output port will be on the state of electric;
- 2. If the solar power system happens short-circuit or overload, please turn off the solar power system immediately, cut the power, check the loading and remedy of the trouble then start the unit.

i ATTENTION

- 1. Please interrupt all the loading before you start the solar power system;
- 2. If you did not comply with the instructions fully, the unit will maybe have problem when they working.

START STEP

- 1. Start the solar power system with utility power
- 1.1 After connecting the battery and utility power, solar power system will start automatically:
- 1.2 At first the solar power system will be self-checking, and at that time the utility power indicator flashes. And then the inverter /charger indicator keeps lighting. Subsequently the utility power indicator is off .At that moment the solar power system has started and haven output. The solar power system is in battery mode. And if the utility is normal, the solar power system transforms into utility power mode and charges the battery. At this moment the utility power keeps lighting and the inverter/charger indicator flashes.
- 2. Start the solar power system without utility power
- 2.1 After connecting the battery, press the "ON" for more than 5 second. At first the solar power system will be self-checking, and at that time the utility power indicator flashes. And then the inverter/charger indicator keeps lighting. Subsequently the utility power indicator is off. At that time the solar power system has started and haven output. The solar power system is in battery mode.

SHUT DOWN STEP

- 1. Shut down the solar power system with utility power
- 1.1 Press the "OFF" for more than 5 second, all indicators will be off. The charger and output is shut down. The solar power system has shut down.
- 2. Shut down the solar power system without utility power

2.1 Press the "OFF" for more than 5second, all indicators will be off. The output is shut down. The solar power system has shut down.

RUNNING MODE

- 1. Line mode
- 1.1 When the solar power system is in utility power mode,; the utility power indicator will keep lighting; the inverter/charger indicator will flash .After finishing charge the battery ,the indicator will be off;
- 2. Battery mode
- 2.1 When the solar power system is in battery mode, the inverter /charger indicator will keep lighting;
- 2.2 When the battery voltage go down to warning level ,the buzzer will beep every second to tell user that the battery capacity is not enough ,if the utility power is normal ,the solar power system will be transferred to line mode otherwise the solar power system will cut off the output;
- 2.3 When the battery voltage is low and solar power system automatically shut down output, the inverter/charger indicator keeps light, the machine is on standby when the battery voltage is recovery, the output will be on, when the battery voltage continues going down, the machine will shut down.
- 3. Abnormal mode
- 3.1 During the running of the solar power system, if the fault indicator is light, it means the solar power system is on abnormal mode, you can refer solar to: power system lighting and sound alarm in chapter 14. Trouble removal.

CARE AND MAINTENANCE

When the solar power system is in the utility power mode, it will charge battery all the time and protect it against overcharge;

In the normal condition the battery's service life is three to five years. Once batteries fault, the battery should be replaced in time;

It is important to replace the battery by the professionals;

Batteries are not suitable to replace individual, when all the batteries needing replace should observe the battery supplier's instruction;

Normally, charge and discharge the battery for every 4 to 6 month. Discharge the battery till the solar power system was shut down, and then charge the battery. The solar power system charge standard do not less than 12 hour.

Attention

Please make sure the solar power system, the battery and the utility power were shut down before connect or replace the battery;

Take off the ring, watch and metal goods and so on. Wear insulating gloves; Use the screw which handle is insulated, do not put the tools and other metals on the battery;

When connects the battery cable, ensure it correct and tight;

Must not connect the battery anode and cathode in reverse or together.

TROUBLE REMOVAL

When you contact with serviceman please provide following materials; MODEL NO., SERIAL NO;

the date of the problem happen;

Complete problem explanation (including the display of panel indicating light, sounds, electric power situation, load capacity, battery provide situation).

In the event of fault of the solar power system, please refer to the following table to check the fault and take corresponding solution. If the problem cannot be properly handle, please contact the distributor.

The failure indicator on, shows the solar power system check the fault;
Buzzer beeps, prompt to pay attention to the solar power system;
Other corresponding indicator on, to help the user to make a decision.
solar power system lighting and sound alarm

Phenomenon	Reason	Solution	
Solar LED light keep lighting (Red)after connected with solar panel	The solar panel connection open circuit, short circuit, or reverse connected	Please check the cable of solar panels if they are correct connection and firmly.	
Solar power system can't normal working after connected with battery	Battery Low	Please confirm the voltage of battery reconnect the inverter with battery firmly and correctly.	
Fault indicator beeps every second(Red)	Output Overload	Check the load and reduce the nonessential equipment, and check if the load's problem;	
Utility power indicator on(Green), Inverter/charger indicator flash(Yellow)	solar power system charge battery	It is normal and there is no need to deal with. After finish the charge, the inverter/charger indicator will be off;	
Fault indicator(Red) and Inverter/charger indicator on(Yellow), solar power system beeps urgently	Battery voltage abnormal	Check the battery voltage whether it corresponds to solar power system voltage If the fault has not been solved, please contact the distributor;	
Inverter/charger indicator on (Yellow), solar power system beeps every second	the solar power system is in low battery voltage	solar power system will be transferred to utility power mode or shut down the output automatically;	
The discharge time of the battery is too short	battery recharge is not enough	Charge the battery again;	
battery ageing, the capaci	ty is fall	Replace the battery;	
Press the ON, but the solar power system cannot start	The time for pressing ON too short	Press ON more than 1 second;	
	solar power system did not connect the battery or battery capacity is not enough and with the load when start the solar power system	If the battery capacity is not enough, Connect the battery and open the machine without any load, then connect the load;	
solar power system internal	Please contact the distributor;		

	Model	■ 3000W	■ 6000W	
Rate	ed capacity	■ 3000W	■ 6000W	
Input	Commercial Power range (VAC)	220/230/240(+25%;-35%)	220/230/240(+20% ¹ -25%)	
	Frequency(Hz)	50/60 ± 10%		
	Waveform	Pure sìne wave		
	Frequency(Hz)	Utility power mode: Synchronized with the power grid; Battery mode: 50/60±0.5		
Output	AVR voltage range (VAC)	Utility power mode: 220/230/240 ± 10% (self-regulation) Battery mode: 220/230/240 ± 2%		
	Transfer time	4ms(self-regulation)		
Protection	Overload	When load is over 105%-130%, after 30s, the machine will be closed to protect itself automatically		
	Type	Sealed, maintenance-free lead acid		
	Battery protection	Automatic self-test, discharge protection, over-charge protection, smart management system.		
Battery	City power charging current	25A (Maximum)		
	DC voltag	48VDC	96VDC	
	Quantity & Capacity	4PCS*250AH	8PCS*250AH	
		(Maximum)	(Maximum)	
Size	External Size(mm) (L*W*H)	650*600*1030mm	900*600*1285mm	
Front pa	nel view instructions	Page 5 ~6		
connection diagram	Solar panel input AC Input wiring diagram Output wiring diagram Battery connection diagram	Page 8	Page 9	
Remarks	Specifications subject to change without prior notice			
1/emains	Our company accept customized special specifications products			

APPENDIX TWO; SOLAR CONTROLLER TECHNICAL SPECIFICATIONS

System voltage	■ 48V	■ 96V
System current	■ 60A	■ 60A
	3000W	6000W
No-load loss	<30mA	
Solar energy input max voltage	100V	200V
Over charge voltage	56V±1%	112V ± 1%
Over charge return voltage	52V±1%	105V ± 1%
Float charge voltage	55.2V±1%	110V ± 1%
Over discharge protection voltage	44V±1%	86V±1%
Over discharge return voltage	50.4V±1%	98V±1%
Temperature compensation	°C/2V -4	.0mv/
Charge voltage drop	0.7V	
Discharge voltage drop	0.2V -10℃to+55 ℃	
Work temperature		
Protection degree	IP30	