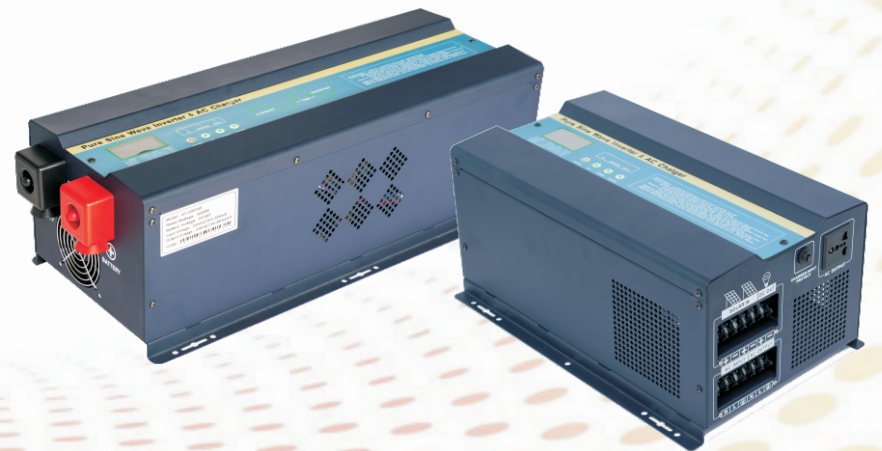


Low Frequency Pure Sine Wave Inverter

Operational Manual



Content

I .Operating Instruction-----	1
II. Outlook drawing of inverter-----	2
III. Description of front board-----	2
IV. Function setting and meaning of the button-----	3
V. Connection way of input & output-----	5
VI. Battery wiring diagram-----	7
VII. Soalr module wiring diagram-----	11
VIII. Care and maintenance-----	23
IX. Convenient method of maintenance & fixing--	23
X. Technical Data-----	24

I. Operating Instruction

1-1. Open-package inspection

- 1). After opening the package, please check the attached parts and components, including operation manual and checking whether the inverter is in good condition?

If found any inverter broken or components missing, do not turn on the machine, feedback to the carrier or supplier.

Note:

- 1). Please keep the box and packing materials in case the use in future.
- 2). The product is very heavy (check attachment as reference), please be careful to carry.

1-2. Installation notice:

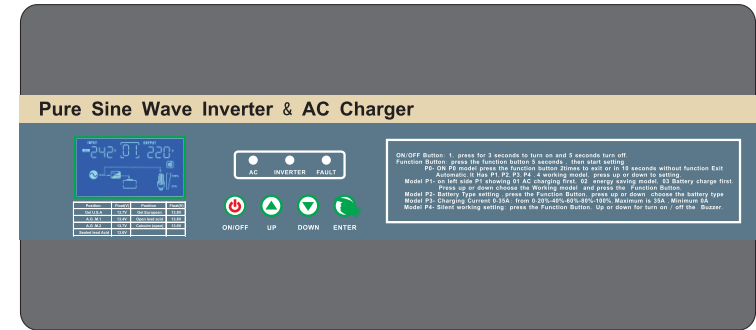
- 1). The products should be well-ventilated, away from water and the corrosive and combustible gases.
- 2). Do not set it in a corner, ensure the bottom of the front panel, the rear panel fan outlet and the side of the machine are well-ventilated.
- 3). The environment temperature should remain 0 – 40 °C.
- 4). If the machine operates under low temperature environment, it would cause water condense, only in a absolute dry condition can the machine would work normal, otherwise there will be a electric shock.
- 5). Install the inverter near the mains input socket or nearby the switch, to draw out plugs then cut off mains supply once there is an emergency.

Attention:

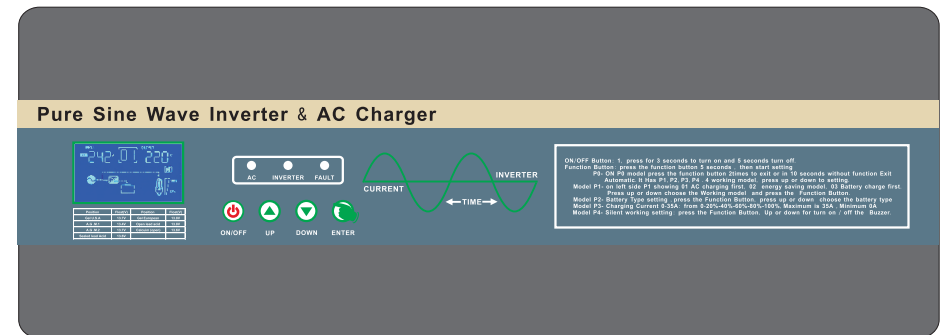
- 1). Load should be turned off before connecting to inverter and turned on one by one after connecting completed.
- 2). The inverter should be connected to a socket with a corresponding current protection.
- 3). All power sockets should link with ground protection.
- 4). No matter input power cable inserts to mains socket or not, the inverter will also continue outputing possibly, turning off the inverter can not guarantee there is no current inside the machine. In order to make sure to cut off the output of inverter, you should turn off all the switches then turn off the main supply.
- 5). To load inductive appliances such as electromotor, displayer and laser printer, inverter capacity should be twice as loading machine's rated power at least.

II. Outlook drawing of inverter

1.1000-3000W Series

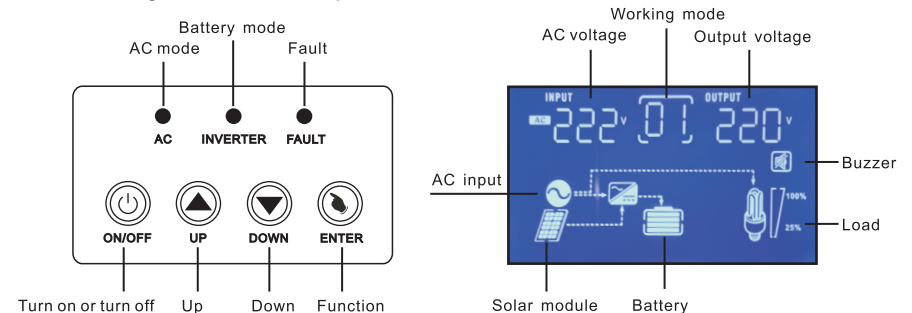


2.4000-6000W Series



III. Description of front board

Meaning of indicate lamp&button



Note: Restart the inverter after each setting.

IV. Function setting and meaning of the button

ON/OFF Button: 3 sec. → ON 3 sec. → OFF

Press this button to display the data below:

Output voltage 220V, Battery capacity 100%,
 Output frequency 50Hz, Load capacity 17%, solar input voltage 53.3V,
 Solar charging current 0.0A, Solar charging power 0.0W.

Function Button :

5 sec. → setting(P0),
 → (P1 Working mode, P2 Battery type choose, → OK
 P3 Charging current adjust, P4)
 or press two times can back to the main interface.

Model P1: → (01,02,03) first 01: AC 02:Auto 03: Battery → OK

01 Normal Mode - AC input priority to supply the load and batteries, battery supply the loads without AC input.

02 Saving Mode - AC input advanced to supply the load and the battery, battery supply the loads without AC input. But the load must >5% of the inverter capacity. otherwise the machine will continue to startup and shutdown.

03 Battery Mode - Battery priority to supply the load, when battery is low of power or voltage, will automatically switch to AC mains supply, when the battery full of charge, automatically transfer to the battery supply.

Model P2: → Type → OK

Battery type	Charging current (24V*2;48V*4;96V*8;108V*9;120V*10)
GEL U. S. A.	13. 7V
A. G . M. 1	13. 4V
A. G . M. 2	13. 7V
Sealed Lead Acid	13. 6V
Gel European	13. 8V
Open Lead Acid	13. 8V
Calcuim (Open)	13. 6V
De sulphation cycle	14. 5V

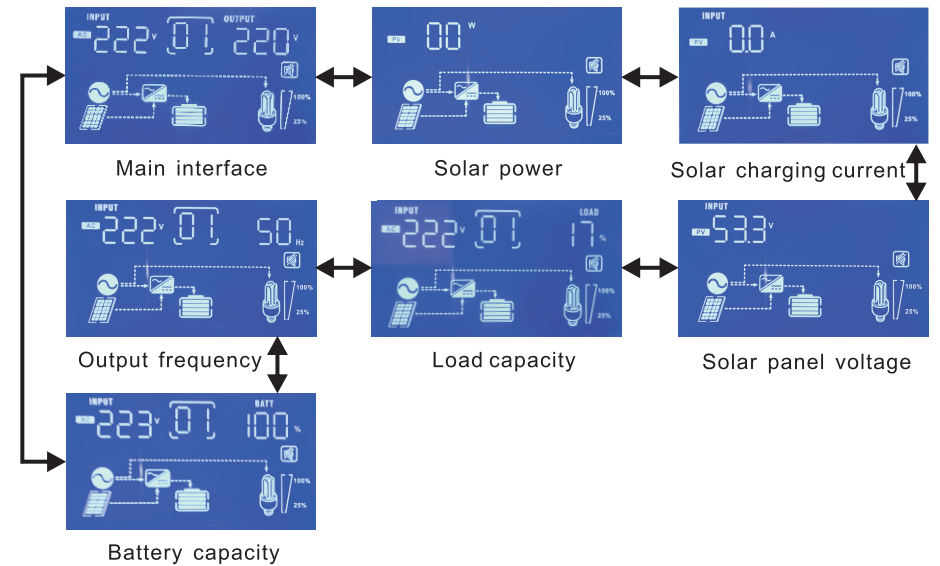
Model P3: → 0- 35A → OK

Note: (The Max. charging current is 35A, from 0% to 100%)

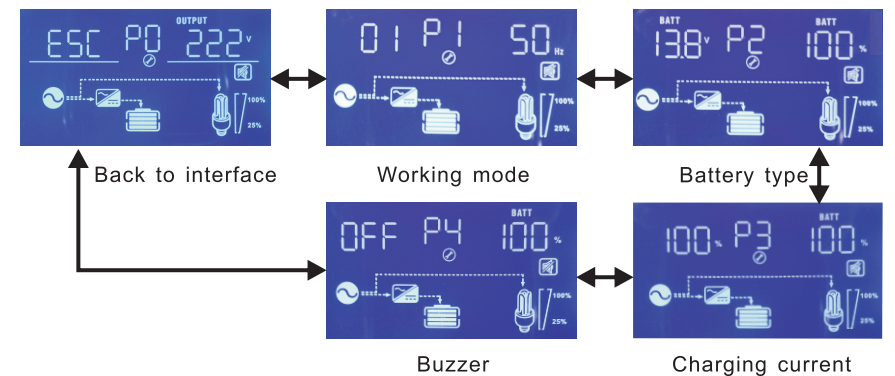
Model P4: → or → OK

Note: Restart the inverter after each setting.

1. Main interface data:



2. Function setting interface:



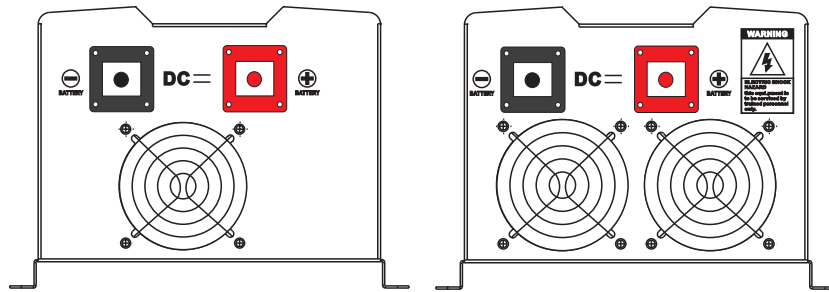
V. Connection way of input & output

Connect with AC input and load output by connecting terminal, load output can connect both by terminal blocks and output plug.

Note: Output plug only can connect with each load less than 1500W.

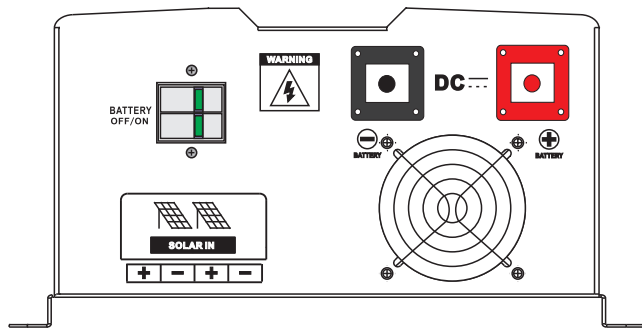
Back panel illustration

DC ⊖	Battery negative polarity connection
DC ⊕	Battery positive polarity connection
AC INPUT	AC input connection
AC OUTPUT	Universal socket output pr connection terminal output
USE ONLY WITH 250V FUSE	AC input and output over current protection
DC OUTPUT	DC output terminal
SOLAR IN	Solar panels and connection

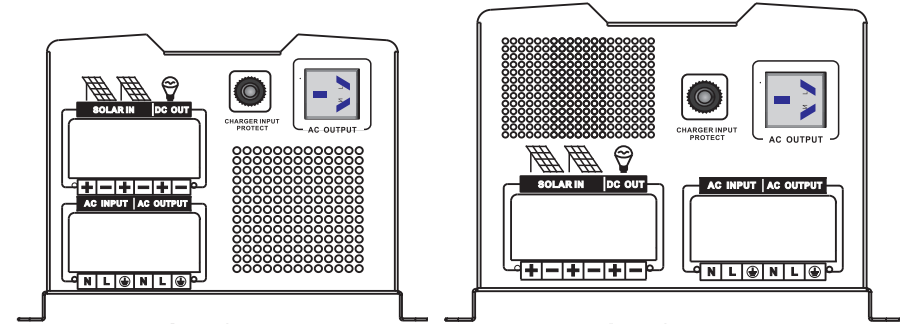


1K-3KW

4K-6KW

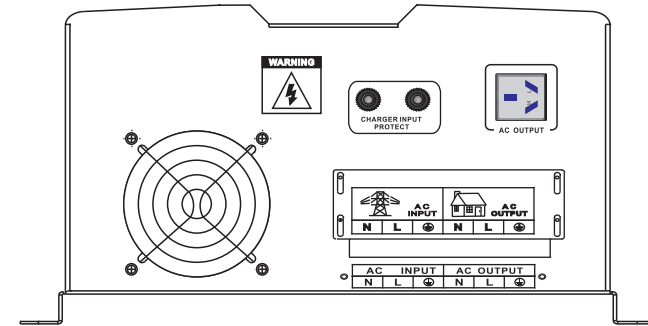


7K-10KW



1K-3KW

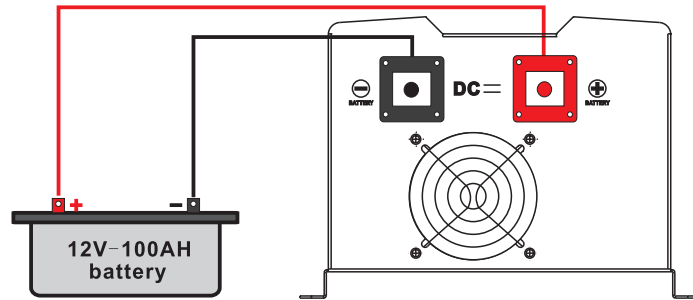
4K-6KW



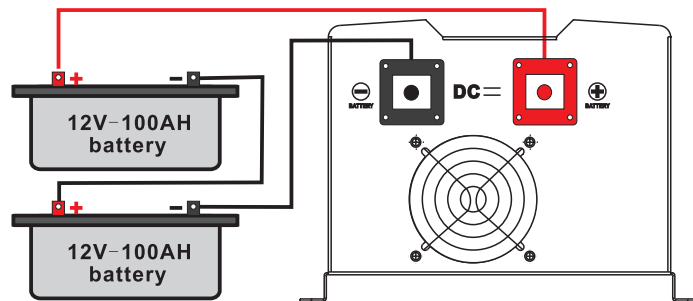
7K-10KW

VI. Battery wiring diagram:

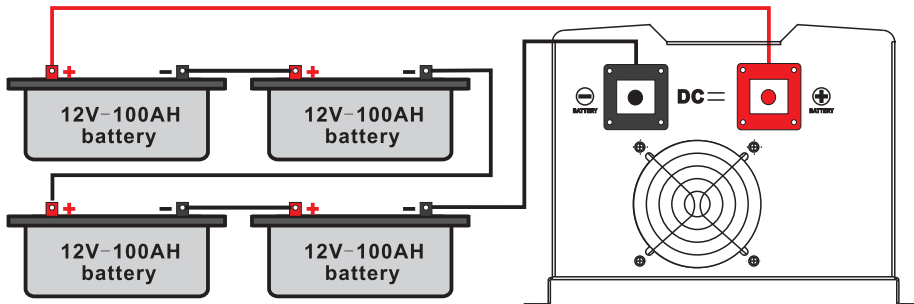
1. 12V series battery wiring diagram
1000-3000W Inverter



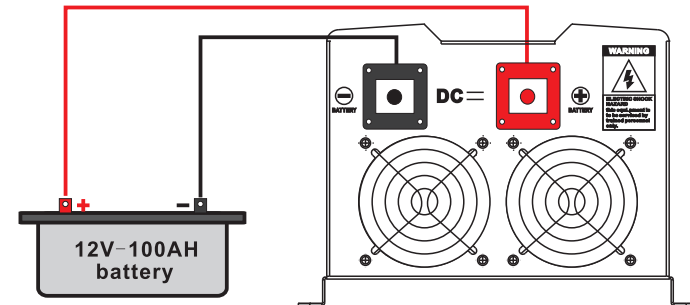
2. 24V series battery wiring diagram
1000-3000W Inverter



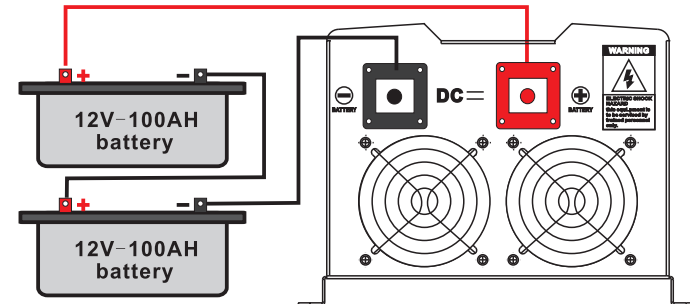
3. 48V series battery wiring diagram
1000-3000W Inverter



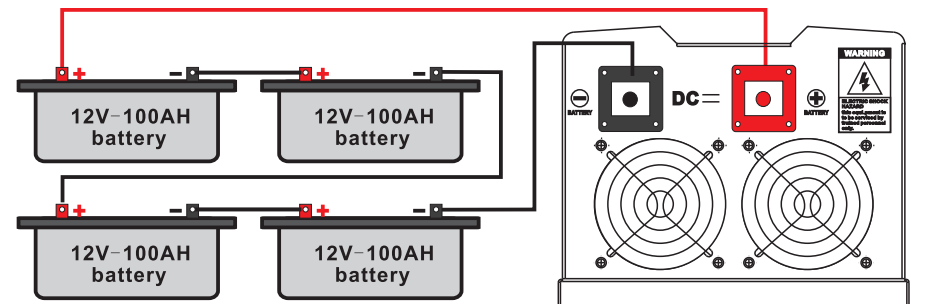
4. 12V series battery wiring diagram
4000-6000W Inverter



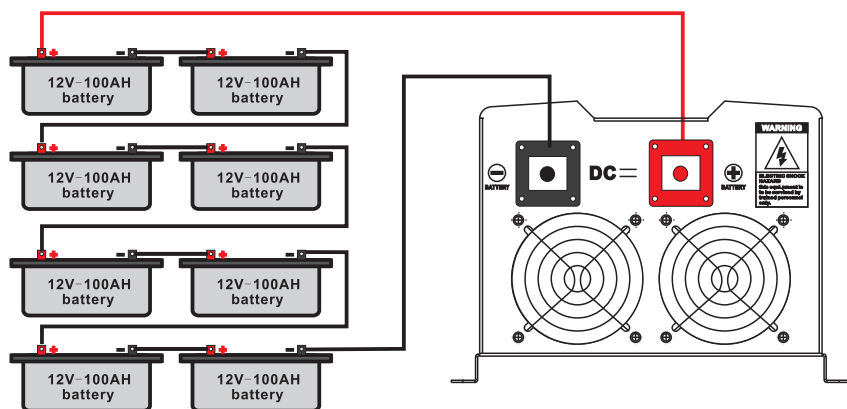
5. 24V series battery wiring diagram
4000-6000W Inverter



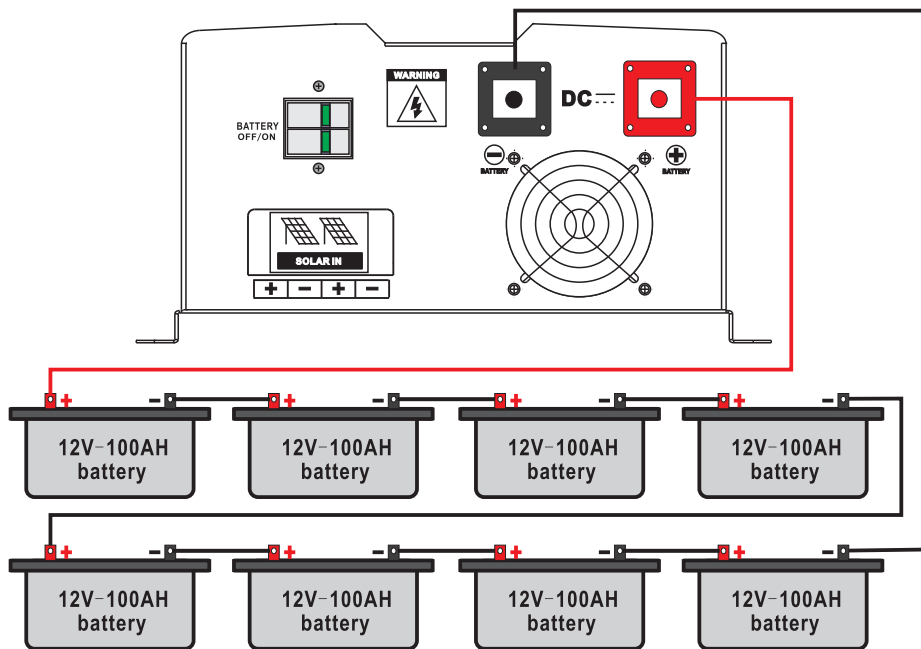
6. 48V series battery wiring diagram
4000-6000W Inverter



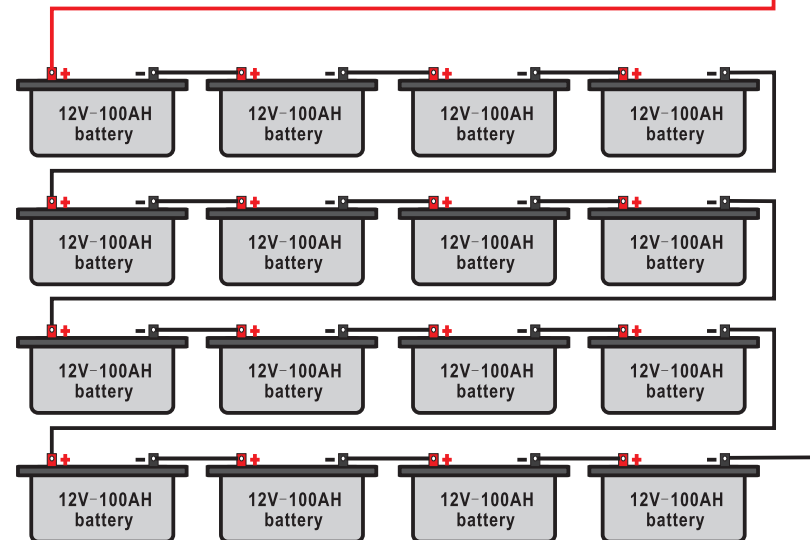
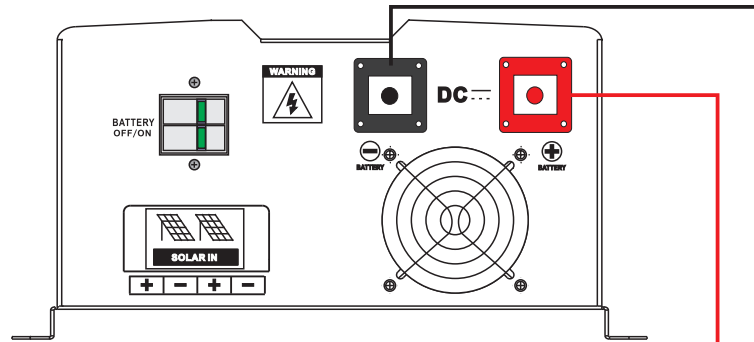
7. 96V series battery wiring diagram
4000-6000W Inverter



8. 96V series battery wiring diagram
7000W Inverter



9. 192V series battery wiring diagram
7000W Inverter

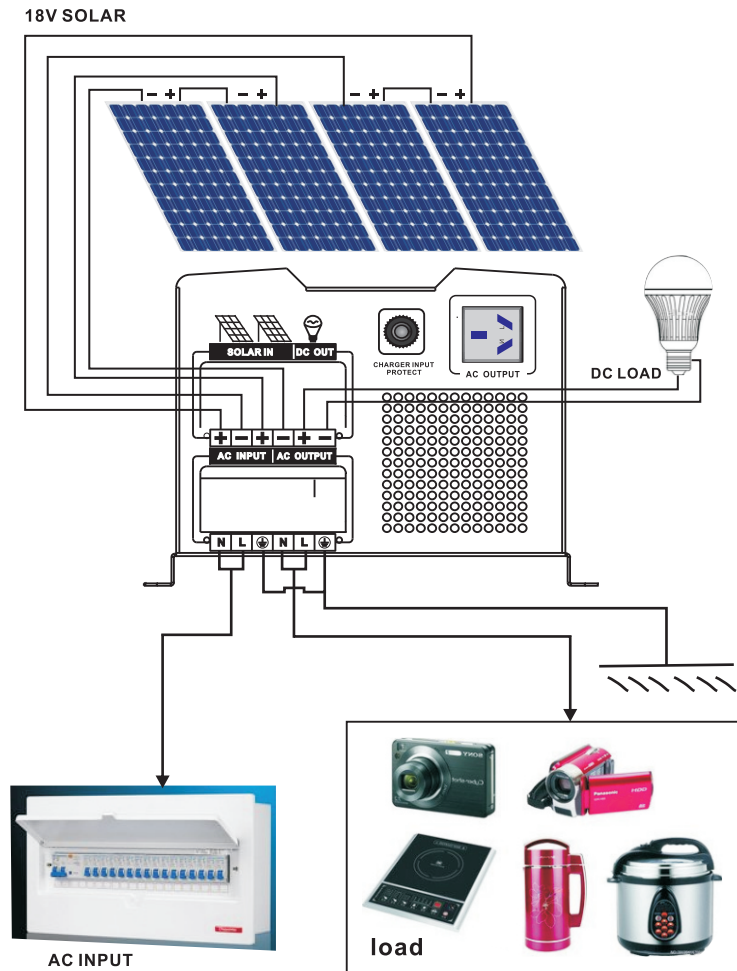


VII. Solar module wiring diagram:

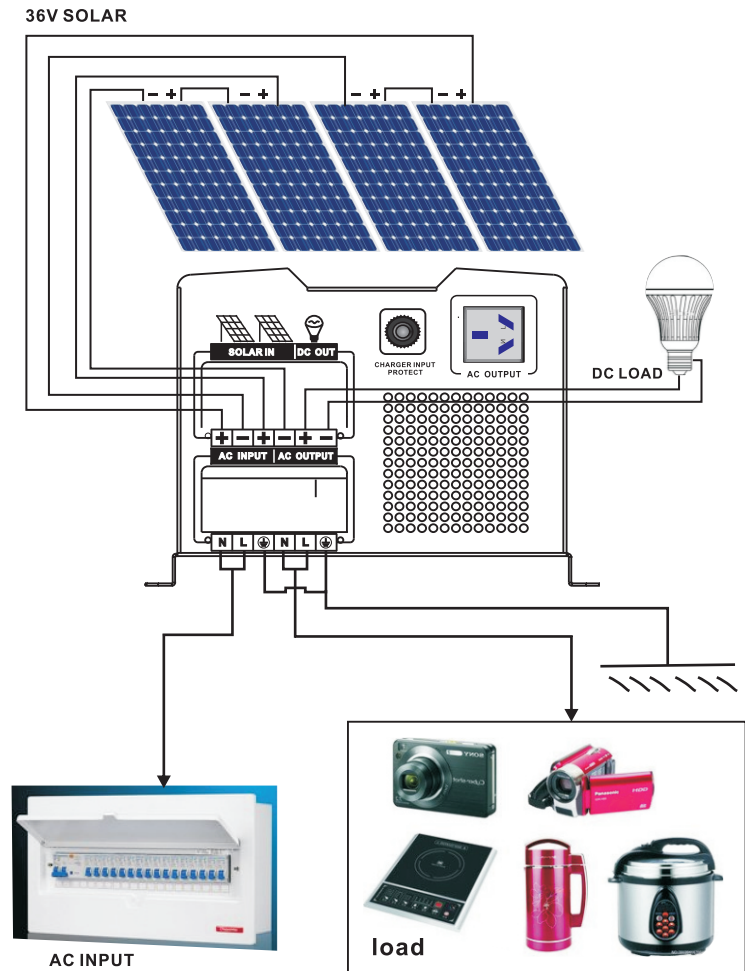
MPPT system wiring

1. 1000W-3000W Inverter

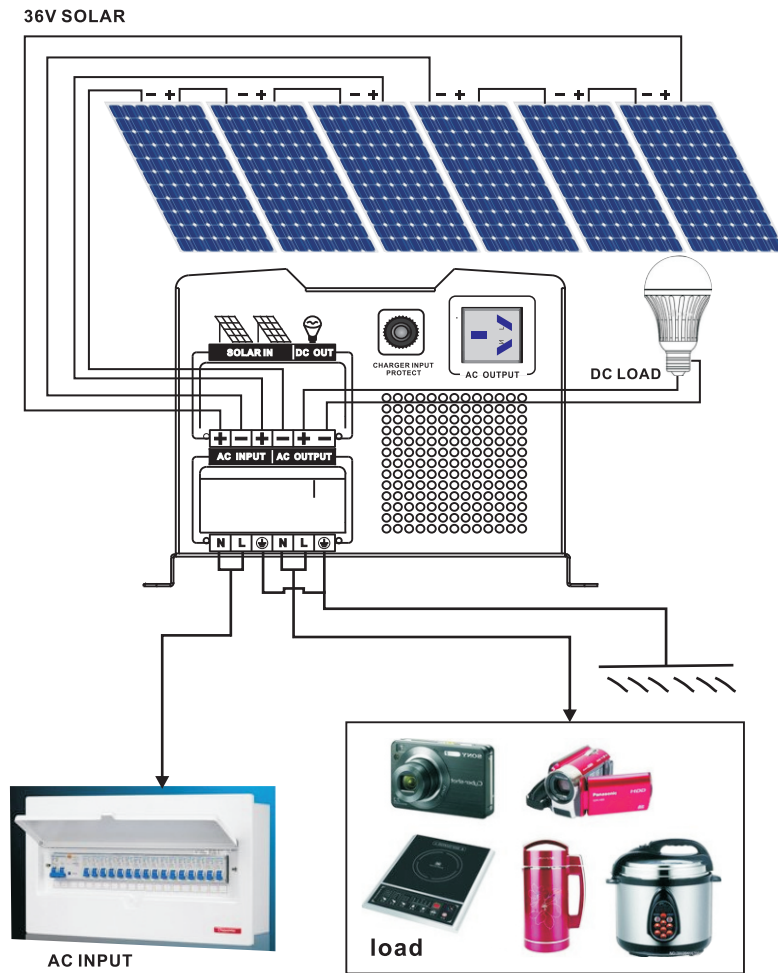
1-1. 12V MPPT system wiring



1-2. 24V MPPT system wiring

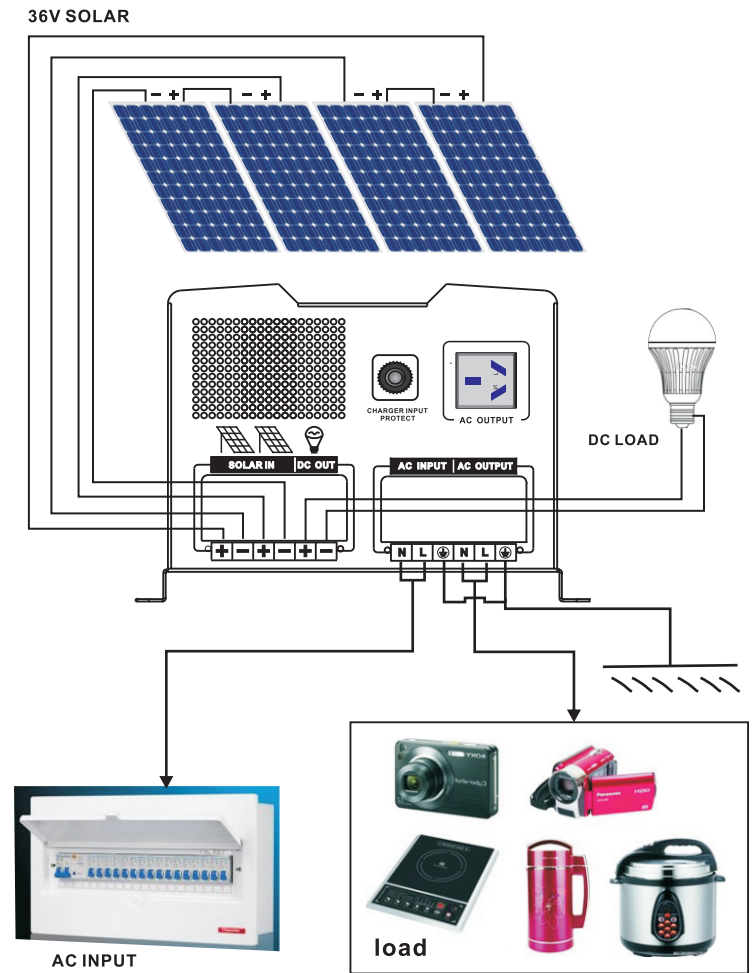


1-3. 48V MPPT system wiring

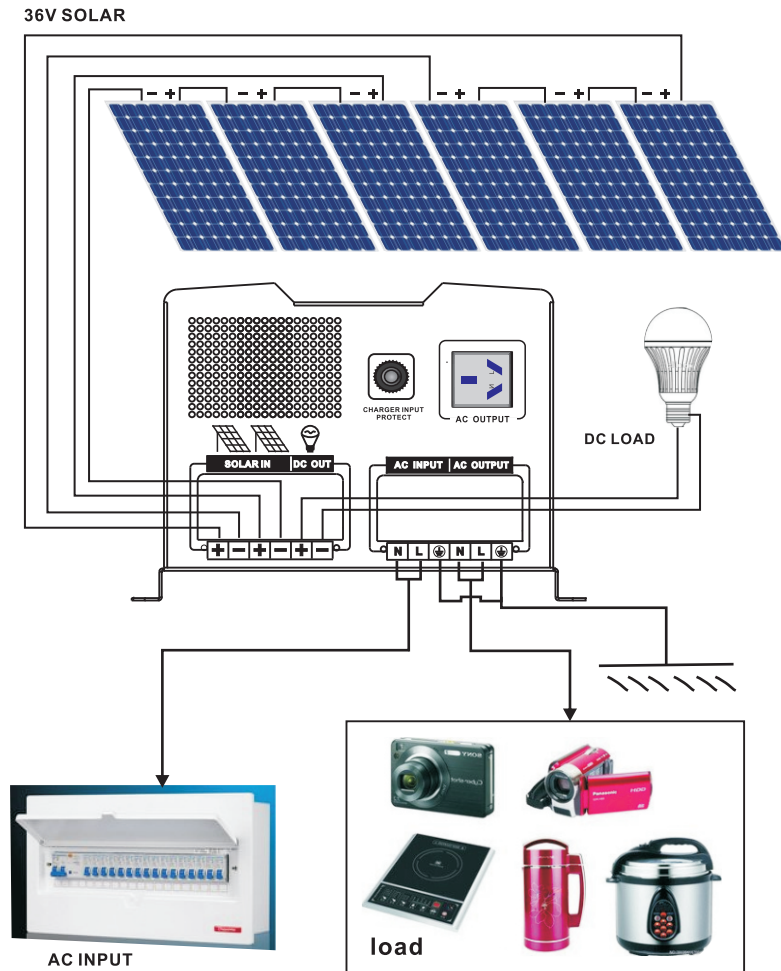


2. 4000W-6000W Inverter

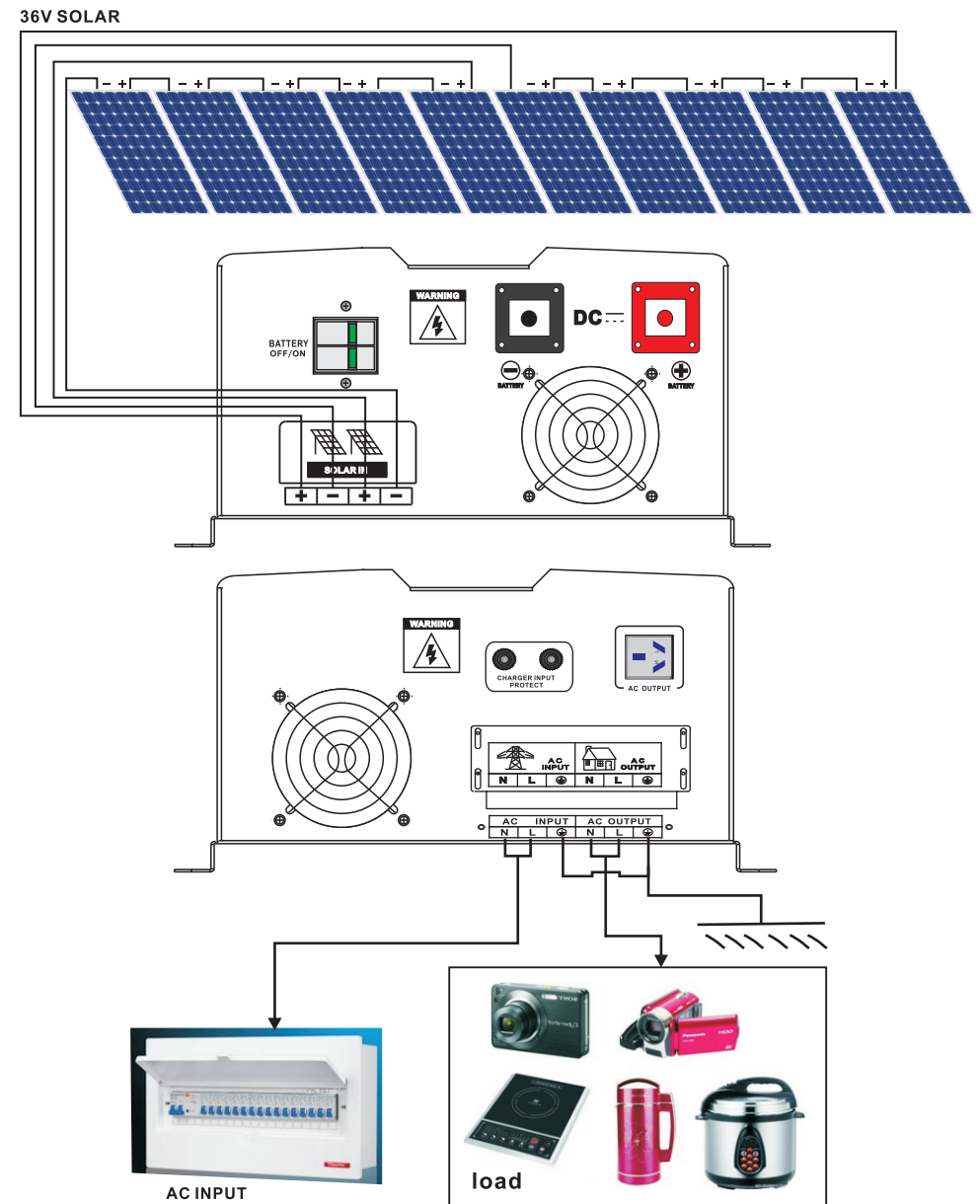
2-1. 24V MPPT system wiring



2-2. 48V MPPT system wiring



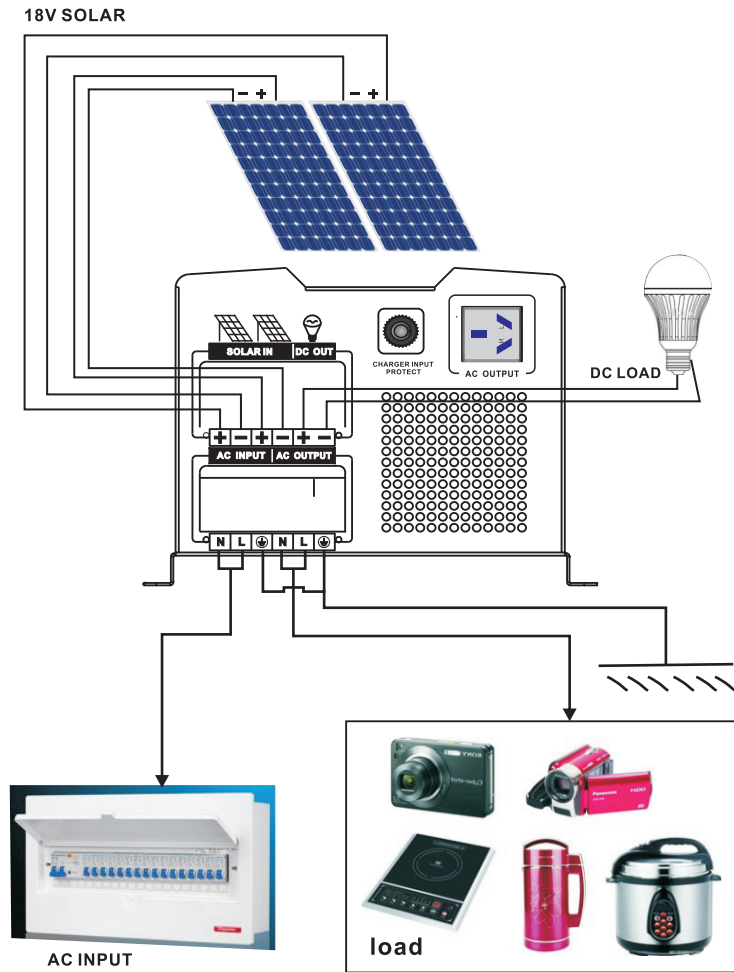
3. 7000W Inverter 3-1. 96V MPPT system wiring



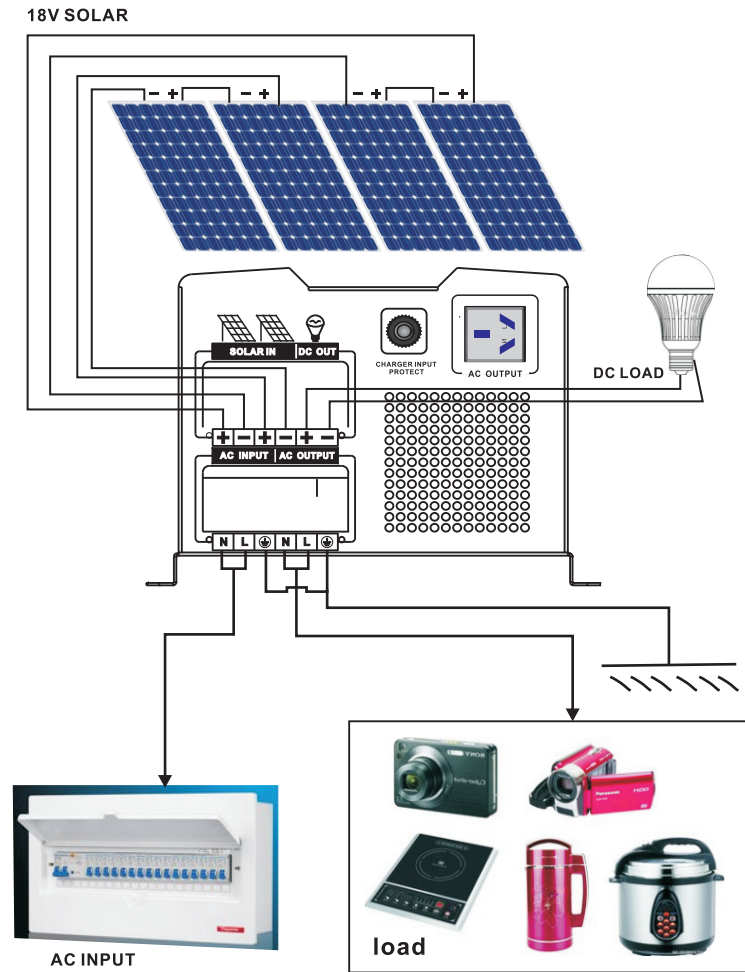
PWM system wiring

1. 1000-3000W Inverter

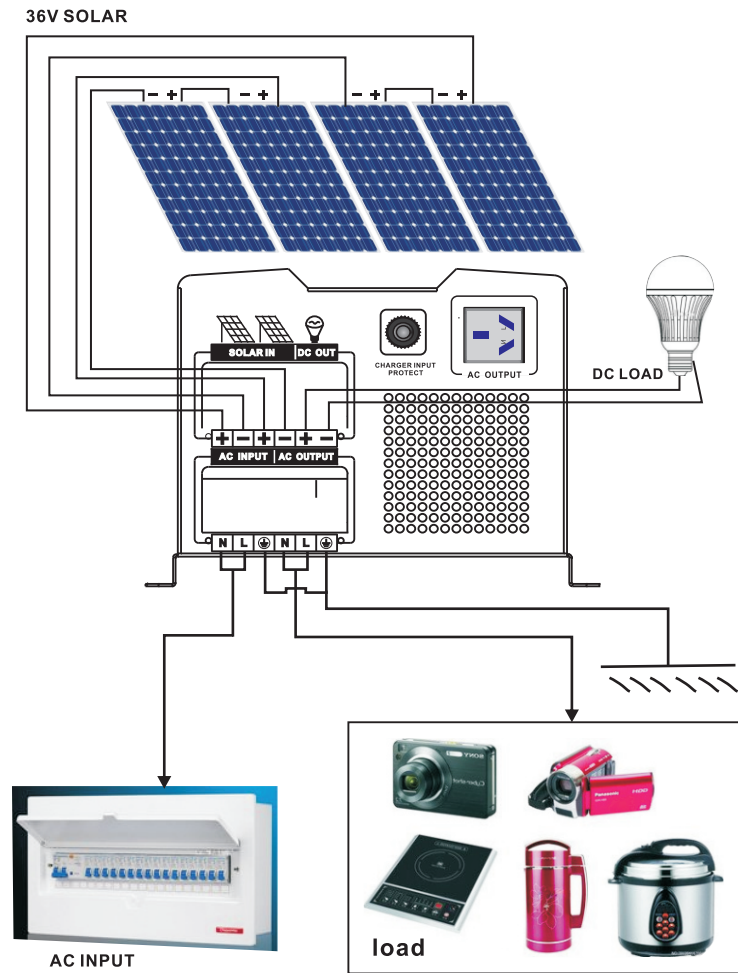
1-1. 12V PWM system wiring



1-2. 24V PWM system wiring

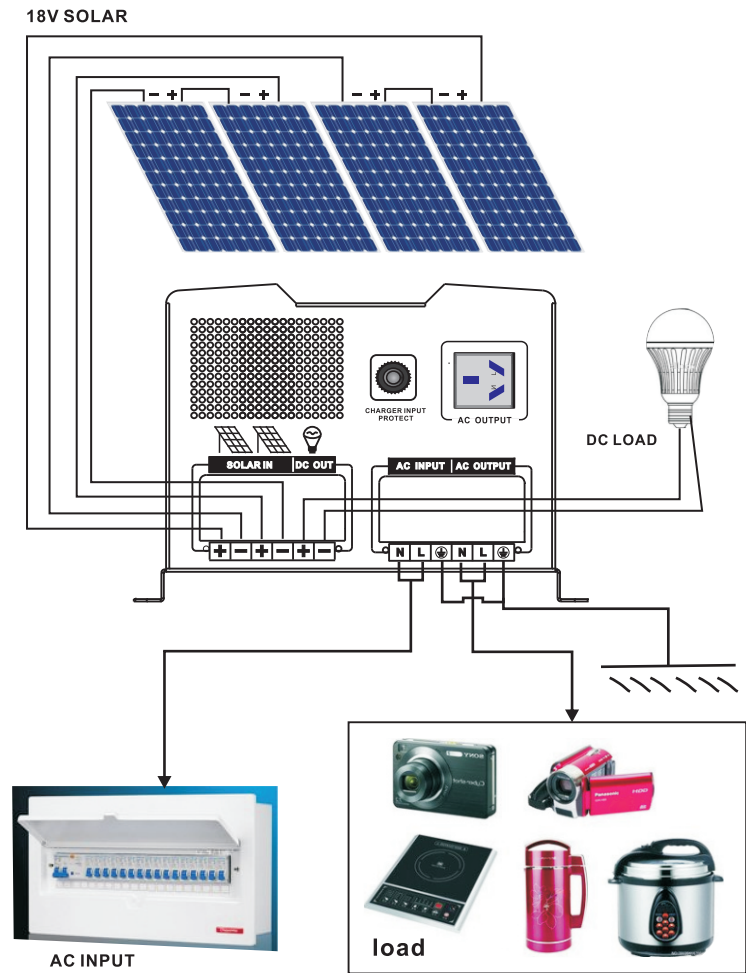


1-3. 48V PWM system wiring

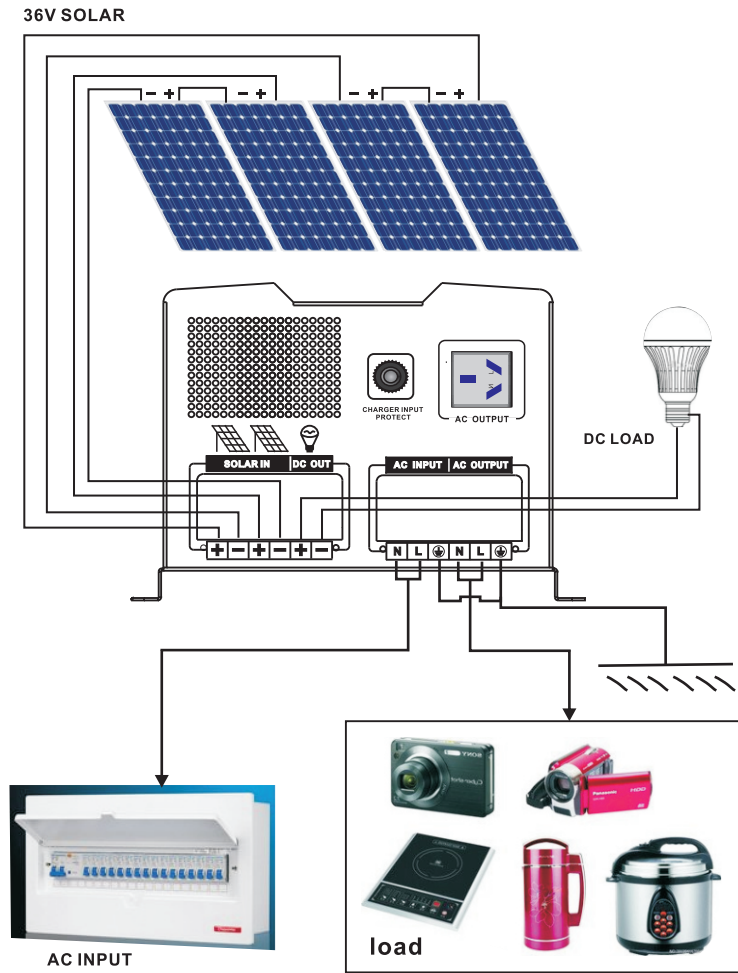


2. 4000-6000W Inverter

2-1.24V PWM system wiring

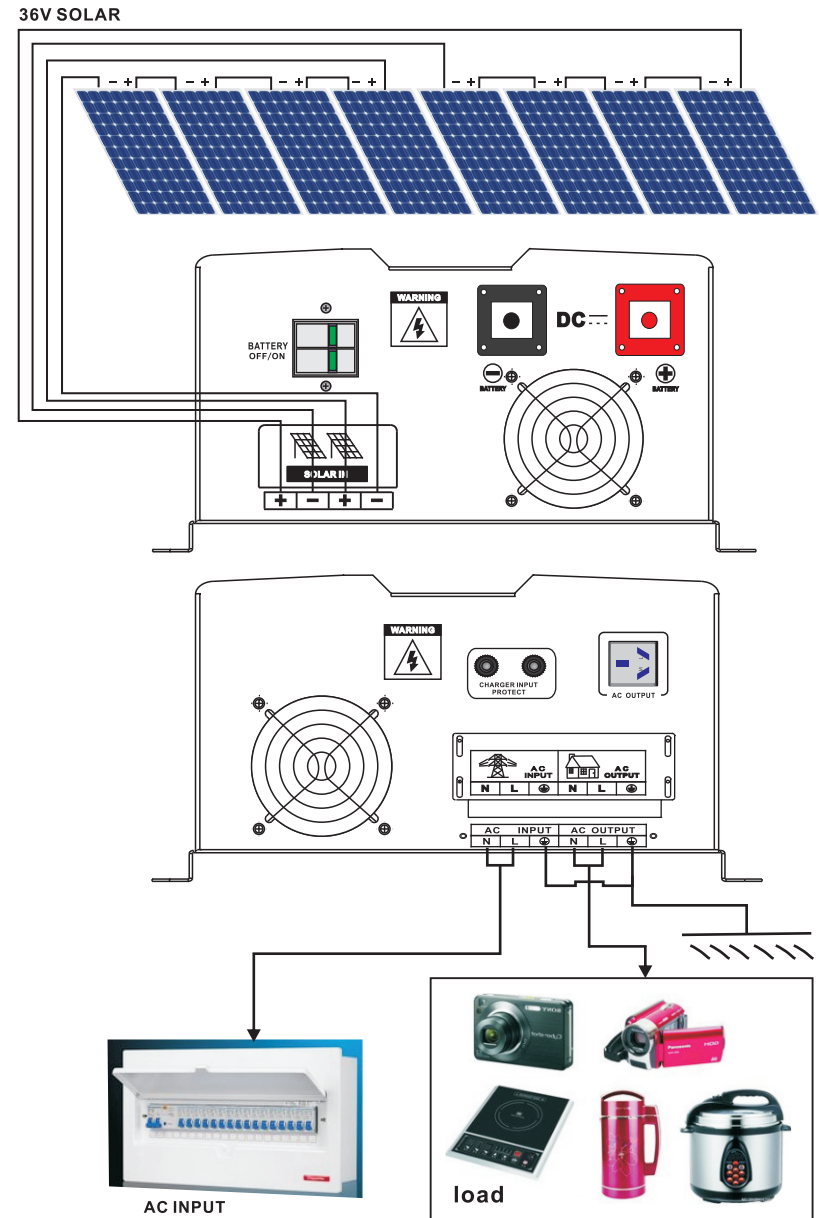


2-2. 48V PWM system wiring



3. 7000W Inverter

2-1. 96V PWM system wiring



VIII. Care and maintenance

- 1). This series of products seldom need to be fix. The standard model battery is like a adjusting tap. Low maintenance, ensuring better life only by charging often. When connecting to mains supply, no matter whether the inverter is on or not, it still keeps charging for battery, and provides over charge, over discharge protection.
- 2). If there has been long time no using the inverter, it would be better to charge on after four to six months.
- 3). The normal working life of battery is 3 or 5 years, if it doesn't work, please change as early as possible by professionals.
- 4). Don't change the single battery , changing the battery should according to the suppliers instructions.
- 5). In normal, the battery should discharge then recharge after working each four or six months , start to charge and finish discharge, standard charging time should be more than 12 hours.
- 6). In high temperature area, the battery should be charged and discharged every 2 months and the standard charging time is more than 12 hours.

Note:

- 1). Before changing battery, must turn off inverter and disconnect the mains supply.
- 2). Remove metal object like ring, watch etc.
- 3). Please don't put the metal objects on the battery.
- 4). It is a normal phenomenon that the wire will appear a small spark when connecting to the inverter, but it will not does harm to the people or the inverter.
- 5). Be attention to do not reverse connecting between the positive pole and the negative pole.

If connected to the generator, the following steps should be required.

- 1).To start the generator till it runs steadily, then connect the generator output to the inverter input terminal. And turn on the inverter step by step according to the operating instruction. After the inverter starts, connect the load one by one to the inverter.
- 2).Please select the inverter capacity two or three times over than the capacity of the generator.

IX. Convenient method of maintenance & fixing :

Fault	Cause	Solution
No city power input	Recoverable fuse popup	Press fuse back
Terminal heating	Fault or loose connection	Fasten again
Switch off with loads	Battery no energy or overload	Charge battery or reduce loads
Switch on failure	Fault connection with city power or battery	Check connection with battery or connect again
Alarm when switch on	Battery no energy or overload	Charge battery or reduce loads
Buzzer scream 2 secs every 1 sec stop	Over temperature alarm (85 alarm-90 shut down)	Check if fan heat dissipation hole jammed
Fan twirls sometimes fast as well as slowly	Fan twirls fast when inside temperature reaches 45 degree, twirls slowly when 42 degree	Normal phenomenon, fan is under intelligent control
Without solar data display	Solar panel loose connection or reverse connection	Check the cables, or the positive and negative pole reverse connection
No solar charging	Battery full charged or wrong installation	Check the data of the battery or the installation of the panels

X. Technical Data

Model	FSI-	FSI-	FSI-	FSI-	FSI-	FSI-	FSI-
Rated capacity	1000W	2000W	3000W	4000W	5000W	6000W	8000W
Input	Voltage	(170-275)VAC					
	Frequency	45-65Hz					
Output	Voltage	AC220V±2% (battery mode)					
	Frequency	50/60Hz±1% (battery mode)					
Output waveform	Sine wave						
Efficiency	>87%						
Solar input voltage	(MPPT)<200VDC - 48V(PWM)<100VDC - 24V(PWM)<50VDC - 12V(PWM)<25VDC						
Solar charging current	20A/30A	50A	50A	50A/100A			
Battery	Optional						
Battery rated voltage	12/24/48VDC	24/48/96VDC	48/96VDC	96/192VDC			
Max AC charging current	0~30A (optional)						
Protect	Overload, short circuit, battery high and low voltage and AC input high and low voltage protection						
Conversion way	Interactive						
Capacity of overload	110%~120% turn to bypass after 30secs, 160% maintain 300ms and then shut down						
Communication port	RS-232						
Operating environment	-20~+75°C						
Humidity	10%-90%						
Size: L*W*H (mm)	430*280*200mm	600*280*200mm	650*440*240mm				
N.W/G.W (kg)	14.2kg	17.2kg	18.5kg	26.1kg	28.4kg	32.1kg	55kg

Above parameter revision change without notification.