HYBRID INVERTER

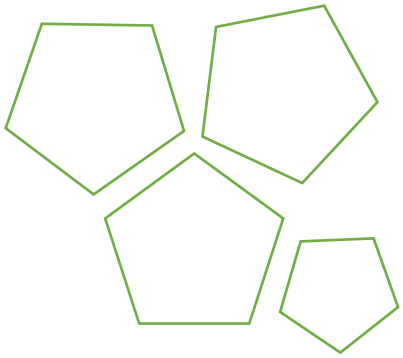
Manual

This user manual is applicable to the following models:

H501 H801 H102 H122 H202 H302 H402 H502 H602 H702 H802 H103

The product specifications or relevant information mentioned in this user's manual are subject to change without notice.

(VER1.2)



Dear users

Thank you very much for choosing our products.Before using the product, please read this manual carefully, which includes installation, use ,troubleshooting and other important information& Suggestions, please take good care of this manual!

Catalogue

XIV：warranty card

Warranty regulations	warranty card
Thank you for purchasing our products. During the warranty period, we will provide you with after-sales service in accordance with this warranty. All products purchased in the company, in the normal use process caused by the quality of their own equipment failure, in the warranty period, the company will give free warranty. 1. The warranty is sent for repair. You need to send the products to our designated maintenance center. Please bring this card and purchase invoice when sending for repair. 2. The following situations are not covered by the free warranty, and the maintenance personnel will charge a certain fee at their discretion. 1) Failure caused by unauthorized modification, disassembly and repair. 2) Causes of force majeure, such as accidents, floods, fires, lightning strikes, man-made damages, etc 3) Faults caused by improper handling and moving methods due to customers' own reasons. 4） Warranty card or valid invoice cannot be provided. 3. The company reserves the right of final interpretation of this Ordinance.	Product name：_____ serial number：_____ Purchase time：_____ Customer informatio name：_____ tel：_____ address：_____ Dealer information name：_____ tel：_____ address：_____

XIII：Certificate

Certificate of conformity

Product name: _____

Model: _____

Testing staff: _____

Date of inspection: _____

This product has passed the inspectionins and met the standard,and is allwed leave the factory.

I、Product features

- Double CPU intelligent control technology, excellent performance;
- The electric supply mode/energy-saving mode/battery mode can be set up and applied flexibly;
- Charging current/storage battery type can be set up, convenient, practical, safe and reliable;
- Using power frequency transformer, pure sine wave output, small loss, high efficiency, strong load capacity;
- Intelligent temperature controlled fan, safe and reliable;
- LCD+LED Real-time display of equipment parameters, operation state at a glance;
- Output overload, short circuit protection, all kinds of automatic protection and alarm.

Ⅱ、Installation instructions

(1) Open the package for inspection

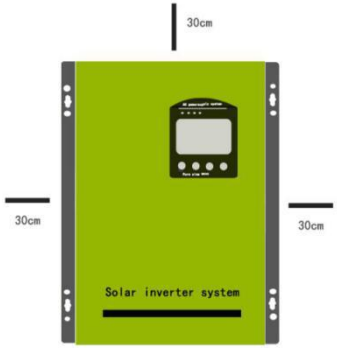
1. Open the package of the equipment, please check the accessories including one main machine and one user's manual.

2. Check whether the equipment is damaged during transportation. If any damage or missing parts are found, please do not start the machine and inform the carrier and distributor.

Notice:

- ◆ When the load is connected to the equipment, the load must be closed first, then connected line, and then opened one by one load.
- ◆ Connect the device to a special socket with overcurrent protection.
- ◆ The power socket used shall be connected to the protective ground end.
- ◆ Whether the input power line is plugged into power supply socket or not, the output of the inverter may be charged. Closing the device does not guarantee the internal parts of the machine no power. If the equipment has no output, please turn off all switches and cancel or turn off the power supply.
- ◆ When it is required to connect the inductive load such as motor, display, laser printer, etc., because of the starting power of the device is too large, during selecting equipment, the capacity should be calculated by the starting power, which is generally 3-7 times of the rated power

Ⅱ、Installation instructions



(2) Installation notice:

1. The area where the equipment is to be placed must be well ventilated and the environment temperature should be kept between 0℃ and 40℃.
2. It is not suitable to put on the side. The air outlet hole of the left panel fan and the air inlet hole of the right panel should be kept unblocked, and 30CM should be reserved.
3. Keep away from water, fire, flammable gases and corrosives and sunlight. Do not operate in wet, dusty conditions.
4. If the machine is disassembled and installed at a low temperature, there may be condensation of water droplets. It is necessary to wait for the machine to dry completely before installing and use, otherwise there is a danger of electric shock.
5. Please install the inverter near the power supply input socket or switch, so as to unplug the power supply input plug and cut off the power supply in case of emergency.
6. The equipment has no power supply on-off switch, it is recommended that users install an on-off switch suitable for equipment power adaption in front of using equipment, in case of emergency can disconnect the power supply in time.

XII：Communication

Demo of remote monitoring APP management

Monitoring Data: City voltage, output voltage, frequency, load percentage, battery percentage, battery voltage, status, pv voltage, pv power, pv power generation, remote switch management, etc. . (function matching)

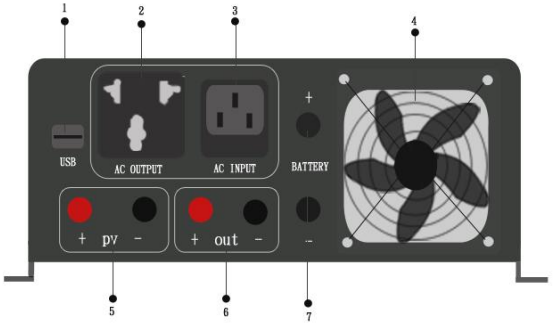
XI、7-10KW Technical Data Sheet

Product model: (H):		7000VA	8000VA	10000VA
continuous power:		7KW	8KW	10KW
Peak power:		14KW	16KW	20KW
DC INPUT	Nominal voltage	48V/60V/72V/96Vdc		
	Charge Current	0-20A 0-20%-40%-60%-80%-100%self-setting		
	cut-off voltage	10.5V*4*5*6*8		
	Discharge maximum current	Max 125A/150A/170A/210A		
	Battery type	Configurable (factory default lead-acid battery)		
ACINPUT	Power rid voltage range	175-265Vac		
	Input maximum current	Max 22A/26A/32A/36A/50A		
	Power rid frequency	45-65Hz automatic tracking		
	Power supply low voltage to battery mode point	175Vac±5%		
	Power supply mode low voltage recovery voltage point	185Vac±5%		
	Power supply high pressure to battery mode point	265Vac±5%		
	Power supply mode high voltage recovery voltage point	255Vac±5%		
AC OUTPUT	Voltage rage	110Vac/120Vac/220Vac/230Vac/240Vac;±5%(Inverter mode)		
	Frequency	50/60Hz±1%(Inverter mode)		
	Output waveform	Pure sine wave		
	Harmonic deformity	THD≦3% (Impedance load)		
	Transfer time	<5ms(Typical load)		
	Efficiency	>90% (88% Impedance load)		
	Overload	10-120%/30S;>160%/300ms;		
	Protect function	Battery overvoltage and undervoltage protection, overload protection, short circuit protection, overtemperature		
Storage environmenttemperature		-15℃~+50℃		
Running/Storage environment		0-90% No condensation		
External dimension: L*W*H (mm)		550*290*615mm/650*380*800mm		
Net weight/gross weight (Kg)		48Kg 54Kg 60Kg		

III、Equipment appearance drawings and instructions

(1) H350-1200W inverter/ reverse control all-in-one machine front view

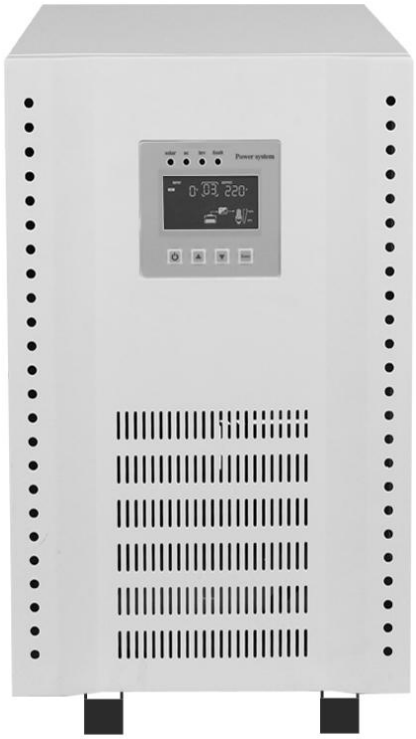
HU-350-1200W Front view



HP-350-1200W Rear view

Notiec:1).USB charger(Optional）2）.AC output 3).AC input 4).fan 5).PV input(Optional)
6).DC output(Optional)（5.6（ *This position is vacant for non-integrated machine）
7).BATTERY input

(2) H2000-7000W inverter/ reverse control all-in-one machine front view



H2000-7000W Front view

X、0.5-7KW Technical Data Sheet

Product model: (H):		500VA	1000VA	2000VA	3000VA	4000VA	5000VA	6000VA
continuous power:		500W	1KW	2KW	3KW	4KW	5KW	6KW
Peak power:		1KW	2KW	4KWW	6KW	8KW	10KW	12KW
DC INPUT	Nominal voltage	12/24Vdc		12Vdc/24Vdc/48Vdc			48/60/72/96Vdc	
	Charge Current	0-30A 0-20%-40%-60%-80%-100%self-setting						
	cut-off voltage	10.5V*1*2*4*5*6*8						
	Discharge maximum current	Max 35A/50A/85A/95A/120A						
	Battery type	Configurable (factory default lead-acid battery)						
ACINPUT	Power rid voltage range	165-265Vac						
	Input maximum current	Max 22A/26A/32A/36A/50A						
	Power rid frequency	45-65Hz automatic tracking						
	Power supply low voltage to battery mode point	165Vac±5%						
	Power supply mode low voltage recovery voltage point	175Vac±5%						
	Power supply high pressure to battery mode point	265Vac±5%						
	Power supply mode high voltage recovery voltage point	255Vac±5%						
AC OUTPUT	Voltage rage	110Vac/120Vac/220Vac/230Vac/240Vac;±5%(Inverter mode)						
	Frequency	50/60Hz±1%(Inverter mode)						
	Output waveform	Pure sine wave						
	Harmonic deformity	THD≦3% (Impedance load)						
	Transfer time	<5ms(Typical load)						
	Efficiency	>90% (88% Impedance load)						
	Overload	10-120%/30S;>160%/300ms;						
	Protect function	Battery overvoltage and undervoltage protection, overload protection, short circuit protection, overtemperature						
Communications (optional)		RS232 RS485 GRRS/WIFI Communications (optional)						
Storage environmenttemperature		-15 ℃~+50 ℃						
Running/Storage environment		0-90% No condensation						
External dimension: L*W*H (mm)		340*266*130mm		485*258*415mm			485*258*468mm	
Net weight/gross weight (Kg)		8Kg 10Kg		22KG 24Kg		30Kg 34KG		36KG

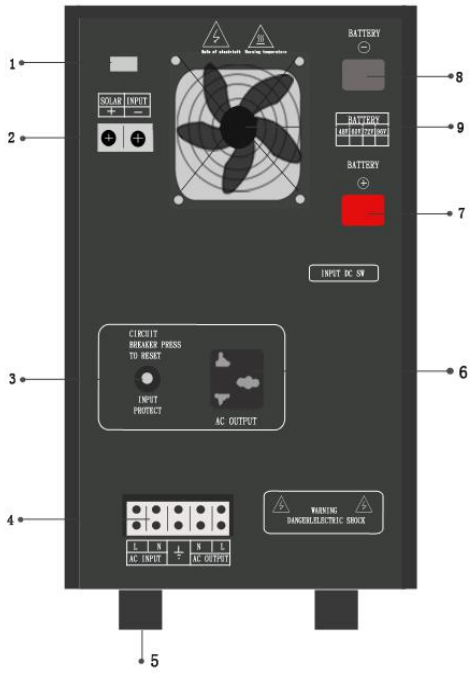
VIIII、Simple fault judgment and treatment

（2）Simple fault troubleshooting

Warning: high pressure inside the machine!Do not open by yourself, try to repair and maintenance, so as not to cause shock danger!

fault phenomenon	possible reason	solutions
Not in power supply	Resettable safety seat(SW)	Press reset insurance again(SW)
	Power supply voltage too high, undervoltage, abnormal etc	Wait power supply resume normal use
Machine load time reduced	Batter undercharge	Ensure the battery is fully charged
	The machine connection is overloaded	Remove non-critical loads
	The busbar wire diameter of the battery is too thin or not twisted	Replace the appropriate wire diameter or tighten it
	Battery aging , has not been able to fully charge	Replacement battery
Device not enabled	Power supply bad contact of input line or battery connection line	Check and reconnect
	Battery undervoltage	Enough battery power to start again
Turn on machine alarm	High battery power	Ensure the battery is fully charged
	Low battery	Check whether the voltage of the battery pack is normal or not
	Load overload	Remove non-critical loads
The buzzer ring in 2s and stops in 1s	Internal temperature too high alarm	Check whether the fan and cooling hole are blocked or not
The fan turns fast and slow	The internal temperature is higher than 45 degrees quick turn ,below 42 degrees slow turn.	normal phenomenon

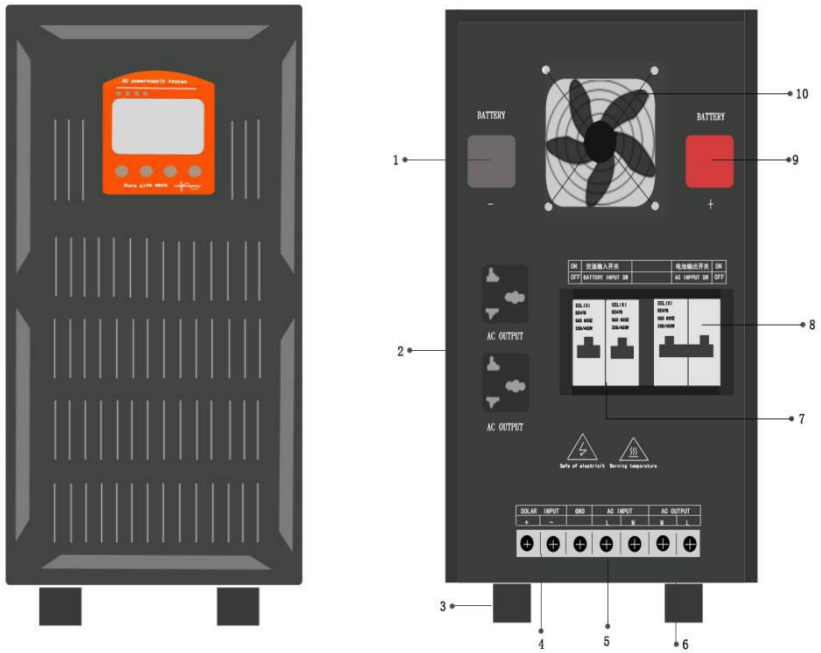
（3）HUL/HM2000-7000W inverter/ reverse control all-in-one machine front view



H2000-7000W

Notiec:1).Communications (optional) 2).PV input(Optional) 3).AC input overcurrent reset 4)AC input and output wiring row. 5).Cup/caster 6). AC output socket 7).Battery positive 8).Battery negative 9).fan

(4) HUL/HM7000-10KW inverter/ reverse control all-in-one machine front view



H-7000-10000W

Notiec： 1)Battery negative 2).AC output socket 3).caster 4)PV input(Optional) 5).AC Input 6).AC Output 7).Input SW 8).Battery SW 9).Battery positive 10).fan

VIII、Maintenance and servicing

1. This series of products need little maintenance, and the battery needs to be charged frequently to obtain its expected life. When connected to power supply, whether starting or not, always charge to the battery, and provide overcharge, overdischarge protection function.

2. If you do not use the device for a long time, it is recommended to charge it every 4 to 6 months. Under normal circumstances, the service life of the battery is 3-5 years, if found to be in poor condition, must be replaced early. Replacement of the battery must be carried out by a professional. The battery should not be replaced individually, and the battery supplier's instructions should be followed when replacing the battery as a whole.

3. When in normal use, the battery needs to be charged and discharged once every 4-6 months. Discharge till turn off the machine and then charging, and the standard charging time of the battery is not less than 12 hours. In the high temperature area, the battery is charged and discharged every two months, he standard charging time of the battery is not less than 12 hours.

4, before the replacement of the battery must close the equipment, and out of the power supply, close the battery switch. Remove metals such as rings and watches items. Use an insulated handle and screwdriver. Do not place tools or other metal objects on the battery pack.

5. When connecting the battery line, it is normal to have a small spark at the connection, which will not harm personal safety and equipment. Do not connect the battery positive or negative short or reverse.

◇ Fault code

ITEM	Fault code	Fault description	Solution
1	E01	MOS overcurrent	Depot repair
2	E02	Output short circuit	Check the load whether short circuit or not
3	E03	Load overload	Reduced load usage
4	E04	overtemperature	Check whether the fan is running or not
5	E05	Battery voltage is over voltage	Measure the battery voltage and charging voltage
6	E06	Battery voltage under voltage	Measure the battery voltage and charging voltage
7	E07	The amplifier line is connected in reverse	Correct the amplifier line
8	E08	Output undervoltage protection	Depot repair

VII：Solar input parameters

（1）PWM Reverse control all-in-one machine

PWM		20A	30A	40A	50A	60A
Input Voltage Range		12/24V(18VDC;30-36VDC) 48V(60-100VDC)				
Solar input power	12V	240W	350W	500W	600W	720W
	24V	500W	700W	1000W	1200W	1440W
	48V	1100W	1400W	2000W	2500W	3100W

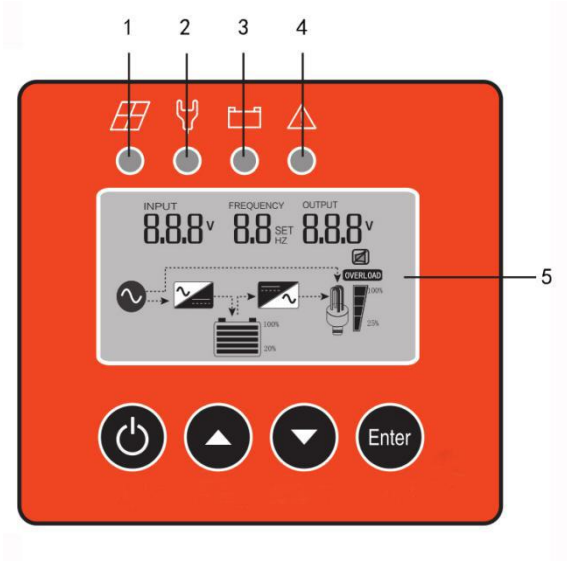
（2）MPPT Reverse control all-in-one machine

MPPT		30A	40A	60A	80A	100A
Input Voltage Range		12/24V(18-150VDC;34-150VDC) 48/96V(65-150VDC;144-220VDC)				
Solar input power	12V	400W	570W	820W	1100W	1380W
	24V	800W	1130W	1650W	2200W	2750W
	48V	1600W	2270W	3200W	4200W	5000W
	96V			6000W	8000W	10000W

IV、operating instructions

(1). Panel operation instructions

LCD display can display the working status of the equipment, such as: input/output voltage frequency display, power supply mode, inverter mode, storage battery capacity, load capacity, such as warning tips.

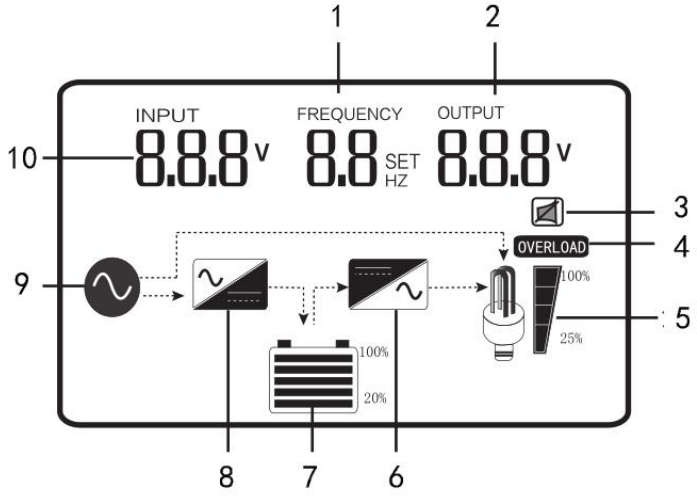


1：Photovoltaic normal, 2：Power supply normal, 3：Battery normal , 4：Fault indicator ,5：LCD display

button instruction		
	On/off button	Long press 3s to turn on/off
	Up	Cooperate with setting key to select the incremantal
	Down	Cooperate with setting key to select the decrement
Enter	Function setting button	Long press 5s to enter 4 function Settings

IV、operating instructions

⑵、LCD display instructions



SPV Series

1: Ac input frequency parameter, Device working mode selection, 2: Ac output voltage parameter, 3:Peak buzzer 4: overload icon, 5: Load icon, 6:DC to AC ico,7: Battery capacity icon, 8: AC to DC icon, 9: Power input icon, 10: Ac input voltage parameter

Query parameter

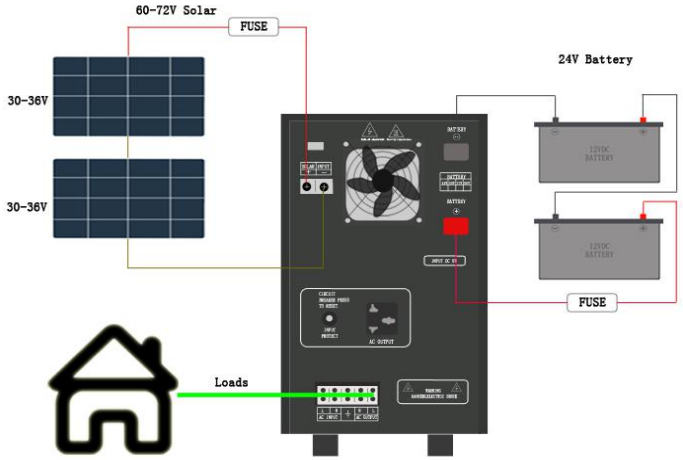
Light touch ▲ ▼ parameters followS

1. AC voltage 2.AC Frequency 3.Load capacity 4.Battery capacity

(SOLAR:1.PV voltage 2.PV Charging current 3.PV Real time power)

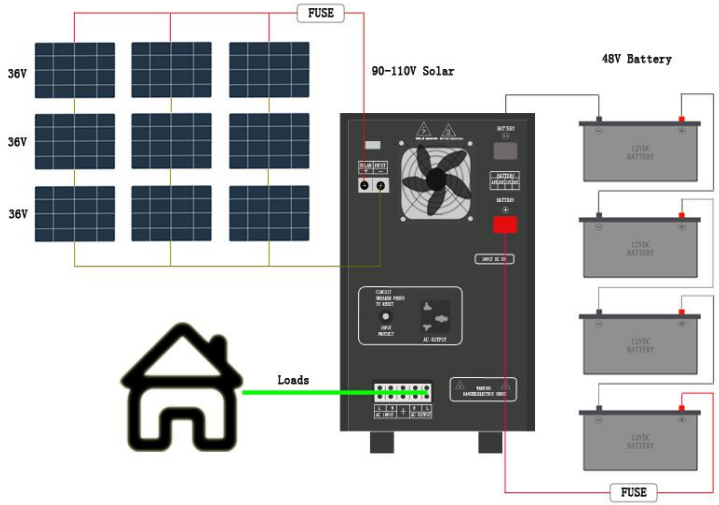
VI、All-in-one machine wiring

一、HM30224M All-in-one Machine Connection Diagram (MPPT)



Explanation: : 36V Solar panel *2S

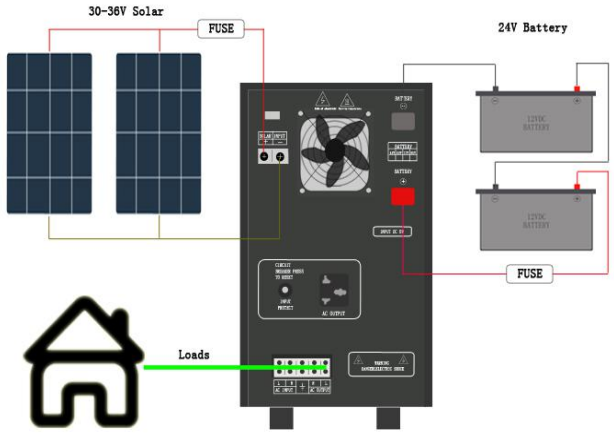
二、HM30248M All-in-one Machine Connection Diagram(MPPT)



Explanation: : 36V Solar panel *3S

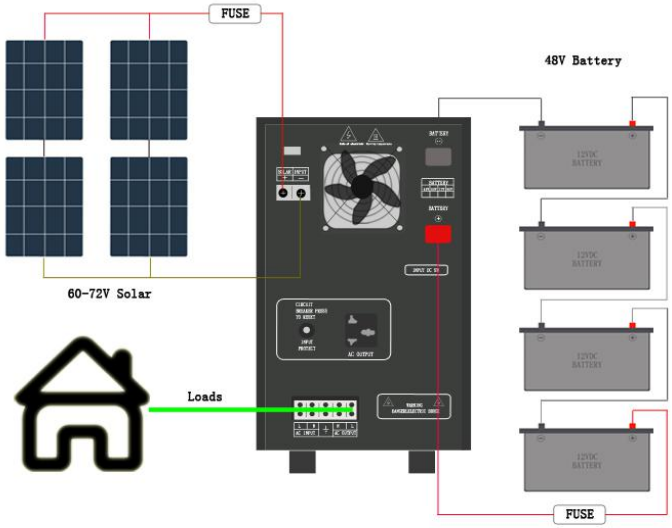
VI、All-in-one machine wiring

一、HM30224P All-in-one Machine Connection Diagram (PWM)



Explanation: : 30/36V Solar panel *2P

二、HM30248P All-in-one Machine Connection Diagram(PWM)



Explanation :30/36V Solar panel *2S2P

IV、operating instructions

(3) Function key setting

Long press the sett ings key 5s Enter → : Enter P0 setting interface→:Press the page turn key to select up and down ▲ ▼ →:4 functional Settings (P1 working mode setting, P2 battery type setting, P3 charging current setting, P4 silent setting)→: Short press the setting key to enter the next level of setting p1-p4→:Press the page turn key to select up and down ▲ ▼ →:Short press the Settings key to confirm Enter →:Press the page turn key to select up and down to the P0 interface ▲ ▼ →: The setting is completed, short press the setting key to confirm the exit Enter →:Short press the settings key to return to the main Enter interface

(4) Sound alarm prompt instruction

Normal operation of equipment	No buzzer	By default, the buzzer does not sound
	Turn on the buzzer	The buzzer will sound 4 times at an interval of 15 seconds to indicate that the device is running in the inverter state of the battery pack.
Battery pack high voltag alarm	The buzzer calls 4 times per second, indicating overvoltage (urgent sound)	
Low voltage alarm for battery pack	The buzzer calls twice a second, indicating low voltage	
The temperature alarm	The buzzer calls once every two seconds	

（五）P1-P4 four function description (SVP)

P1 operating mode	
01 Power supply mode	Priority is given to the use of power supply. The equipment supplies power to the load through the power supply bypass and charges the battery at the same time. When the power supply is cut off, the equipment automatically switches the battery to supply power to the
02 Energy-saving mod	Automatic detection of load, when the load is greater than 5% of the rated power, the equipment is started;When no load is detected, the device automatically returns to search mode, goes to sleep, and turns off the output.
03 PV mode	Priority is given to the use of PV power supply,when the PV reaches a low voltage, the power supply will be switched automatically and the battery will not be charged at the same time.When the battery is fully charged in the external charging device (such as solar charging), the device will automatically switch to storage power supply.

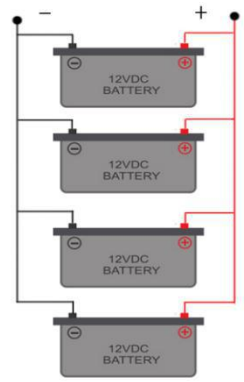
P2 Battery type setting			
GEL U.S.A	13.7V	colloid storage battery	13.8V
A.G.M1	13.4V	Open battery	13.8V
A.G.M2	13.7V	lead-acid storage battery	13.8V
Sealed battery	13.6V	Lithium battery	The factory is defined

P3 Charging current setting	
0-35A settable	0-20 %-40 %-60 %-80 %-100 %(The maximum charging current is different for different models

P4 silent settings		
	lighten	No buzzer
	extinguis	Turn on the buzzer

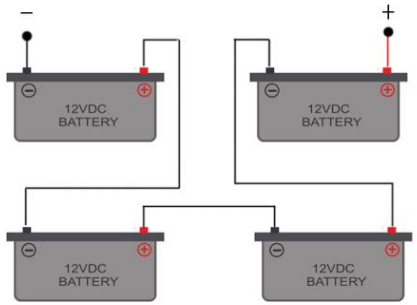
V、Storage battery connection diagram

（1）12V parallel battery diagram



Parallel connection: the positive pole is connected to the positive pole, and the negative pole is connected to the negative pole, (the constant voltage ,capacity increases exponentially).

（2）48V parallel battery diagram



Series: the positive pole is connected with the negative pole and eventually rises one by one (the voltage increases exponentially and the capacity remains unchanged).