USER MANUAL

HYBRID SOLAR INVERTER

350W-1200W

Inverter & AC Charger

M-HSI-010-220-EN-A01

Contents

Chapter 1 Safety Precautions

Safety Of Operation

1.Please read this instruction carefully before use this inverter to ensure correct installation and safe operation.

2.Please pay attention to any warnning signs and unusual when using this inverter.

3.Please don't place this inverter under direct sunlight,rain or moisture environment.

4.Please don't install this inverter near heat/heaters/furnaces etc.

5.Please Install this inverter in a safe and empty space to ensure ventilation and heat dissipation , also easy to maintenance.

6.Please use dry and insulating rag to clean.

7.In the case of fire,please use a dry powder fire extinguisher to put out fire. Liquid fire extinguisher is prohibited.

8.Please choose a right space for the inverter installation and Battery pack powerful enough for the inverter.

9.Please make sure the appliances and battery capacity matches inverter rated power.

Prohibition

1.Please don't open the inverter shell if without authorization. The inverter inbuilt with high voltage component. If failed to follow instruction,there will be possibilities for electric shock and void of warranty.

2.If your appliances as follow,please consult with your local dealer or distributor before you install this inverter about its application/set-up/management and maintenance.

1) Precision industrial/seientiffic and medical instruments or equipment.

2) Elevators and other equipement that may endanger personal safety.

3) Equipment that start up with large current and generating negative work.

3.Don't place the battery into fire to avoid explosion.

Safety Of Electric

1.Please make sure inverter been properly grounded and all cable connect in the correct socket,also the battery polarity in the right position.

2.To protection your battery , please place a circuit breaker with over-current protection between inverter and battery.

3.If need reconnect the inverter cable,please make sure inverter is completely shut down and input breaker /battery switch is off,failed to follow this procedure ,there will be possibilities for electric shock.

Safety Of Battery

1.The life span of the battery will be shortened if environment temperature increases.Replace the battery regularly will make sure inverter working normally and ensure enough backup power.

2.The replacement and maintenance of battery must be made by authorized battery expertise. Must be same type of batery and same capacity with the same quantity.

3.There will be possibilties for electric shock and short-circuit, in order to avoid that, please follow below instruction.

A.Please remove your watch/ring/earing or any metal accessory.

B.Please use insulated tools.

C.Please wear rbber shoes and gloves.

D.Please don't place any metal tools or any metal compoment on the battery.

E.Please shut down all appliances before remove battery terminals.

F.Non-professionals please don't disassemle battery or demage battery,battery contain dangerous acid which could cause damage to the skin and eyes. If touch accidentally,please wash it off with water and go to hospital for more medical examination.

G.Please second confirm the battery cable positive and negative terminals before connect to battery.

H.Please install circuit breaker on abttery to prevent fire and electrial shock.

Operation And Maintenance

1.The operation and storage environment is concerning the inverter life span and reliability. Therefore,please do not place the inverter in following environment:

A.Temperature/humidity exceed Inverter working environment standard. Inverter sould work in be 0-55°C、0-95% humidity environment with no condensation.

B.Any place where will be vibration and collision.

C.Any place where metallic dust/corrosive substances/salt and flammable gasses.

2.Inverter must storage in dry environment if not use for certain amount of time.

3.The environment temperature must increase above 0°C for 2 hours before start up the inverter.

4.Please keep the inverter ventilation holes open,so inverter could ventilize. Insufficient of air will cause inner temperature go up and shorten inner component life span so does the inverter.

5.If not use battery for long time , pls recharge battery for every 3 months.

Chapter 2 Installation

2.1 Inspection For Unpacking

1. Open the package,carton should included following item:

1) Inverter one set

2) User manual one unit

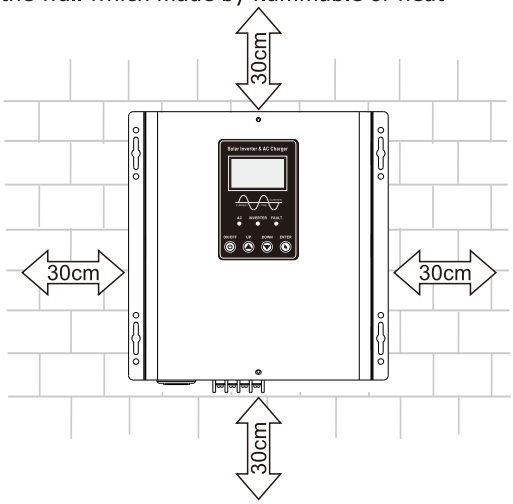
2. Before openning the inverter pacage,please check and confirm if the inverter is demaged during transportation. If any demanged or missing parts, please contact local dealer or distributor.

Recycling: The carton packing is reussable , please don't throw away.

2.2 Installation Requirements

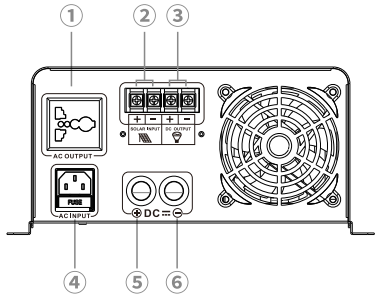
1. Please make sure it's professional electrician install this inverter. With following instruction:

- 1) Please do not place anything on top of the inverter.
- 2) The installation space should match the inverter size.
- 3) Please do not install the inverter on the wall which made by flammable or heat-resistant material.
- 4) Please install the inverter as pictutre show for easy inspection and maintenance.
- 5) Please do not install the inverter under direct sunlight.
- 6) Install environment humidity should be 0-95% with no condensation.
- 7) Environment temperature should be 0-55°C.
- 8) Please leave enough space between the inverter as picture shown.



Above mentioned only suitable for ground mounted or other non-flammable surfaces.

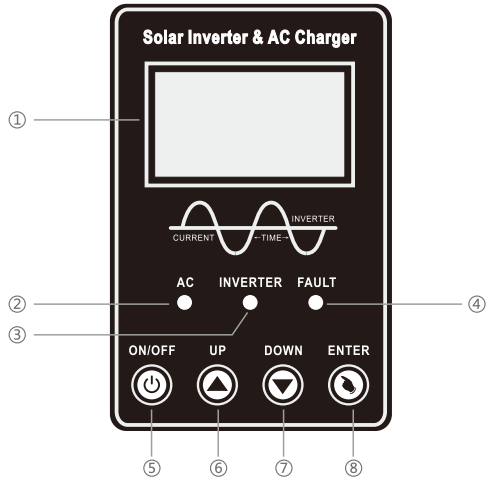
2.3 Product Overview



1. AC Output 10A(MAX)
2. Solar Input
3. DC Output
4. AC Input
5. Battery+
6. Battery-

Chapter 3 Operating

3.1 Inverter Screen Function



- **Indicator status**

Identification	Indicator light name	Status
②	AC	AC Normal
③	Inverter	Battery inverter power supply
④	Fault/Warning	Warning/work abnormal

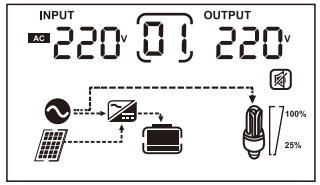
- LCD Display—— ① : Detailed display information

- Navigation keys: selection, opening, obtaining information, modifying system parameters, etc.

Identification	Navigation keys	Function
⑤	Turn On/Off	Turn on or turn off the inverter
⑥	UP	Page turning; switching options; adding settings value
⑦	Down	Page turning; switching options; minus setting values
⑧	Enter	Return to the previous interface menu or exit the settings interface (do not save the settings)

3.2 Explaination For Screen Icon

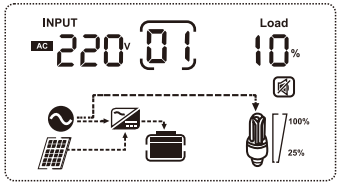
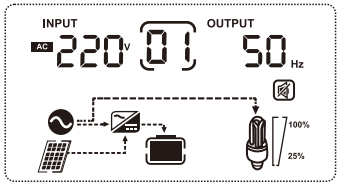
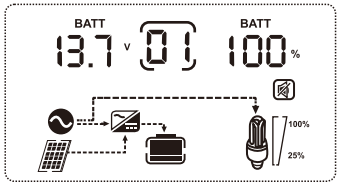
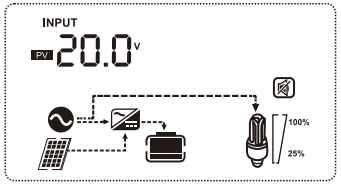
The main interface as shown.

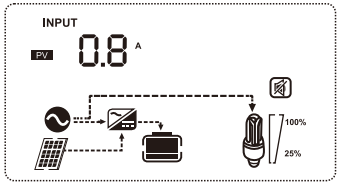
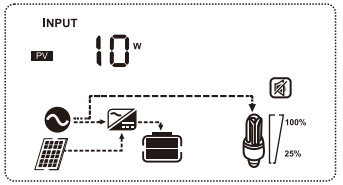


Icon	Function Description
Input Source Information	
	Indicates the input voltage
Output Information	
	Indicates the output voltage
Battery Information	
	The battery capacity status is 0-10%, 10-20%, 20-40%, 40-70% and 70-100%
Load Information	
	The battery capacity status is 0-10%, 10-35%, 35-60%, 60-85% and 85-100%
Mode Operation Information	
	Indicates operating mode
	Indicates AC input
	Indicates the AC/DC inverter circuit is working
	Indicates unit alarm is disabled
	Indicates solar module

3.3 Display Setting

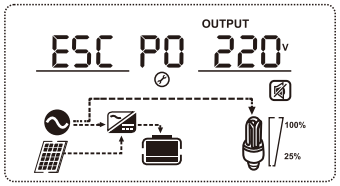
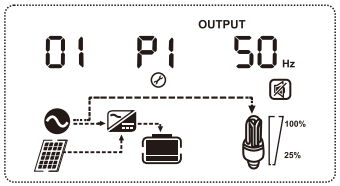
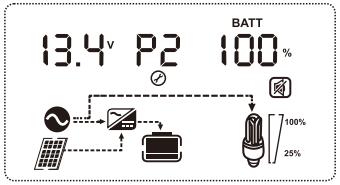
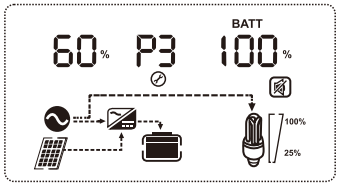
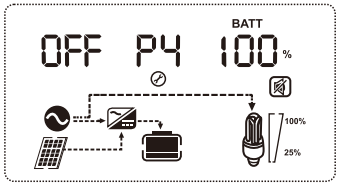
The LCD display information will be switched in turns by pressing "UP" or "DOWN" key.The selectable information is switched as below order:

Icon	Parameter Interface	LCD Display
①	Load Percentage	
②	Output Frequency	
③	Battery Percentage	
④	Solar Input Voltage	

Icon	Parameter Interface	LCD Display
⑤	Solar Charging Current	
⑥	Solar Charging Power	

3.4 Display Data

In the default main interface, long press "ENTER" button for 5s to select setting programs. Press "UP" or "DOWN" key the selectable information .

Icon	Parameter Interface	LCD Display
①	Back To Interface (Press the "ENTER" key twice to return to the main interface or automatically return after 20 seconds)	
②	Mode Setting	
③	Battery Type Setting	
④	AC Charging Current Setting	
⑤	Buzzer Switch	

3.5 Mode Setting

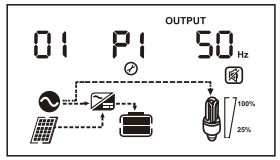
In the default main interface, long press the "ENTER" key for 5 seconds to select the setting program. Press the "UP" key to select the P1 interface, and then press the "ENTER key" to select the selected parameter. And then press the "UP" or "DOWN" keyto set the mode. After the parameter is confirmed, the blinking stops.

01 AC Priority Mode - The AC input(utility power/city grid) will supply power to AC output (applianes/load) first, and auto charge battery at the same time. Inverter will auto stop charging when battery been fully charged. When there is no AC input, inverter will auto switch to battery power supply.

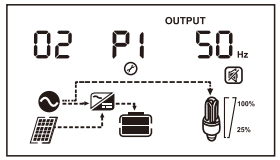
02 ECO Mode - Similar to AC priority mode. When AC input(utility power/city grid) is off, the inverter will auto enter standby status when appliances capacity under 5% inverter capacity.Inverter will keep auto switch between on and standby status in order to detact if AC output (applianes/load) capacity over 5% of the inverter capacity.If the AC output capacity over this above mentioned limit,inverter will auto switch from standby status to inverting status.

03 Battery Priority Mode - The battery power will supply power to AC output (applianes/load).When battery voltage reach low voltage limit, if AC input is on, inverter will auto switch to AC input supply; If AC input is off,inverter will auto shut down.When battery fully charged,inverter will auto switch back to battery supply.

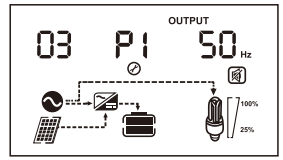
04 Unattended Mode - Similar AC priority mode. When AC input (utility power/city grid) is off, battery voltage is too low, the inverter will auto shut down AC output and enter STANDBY status. Once battery been charged it back to the restore voltage point, the inverter will restart the AC output.On the other hand,when AC input back on, inverter will auto restart AC output as well.



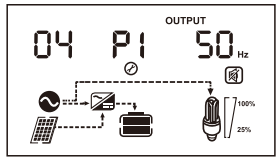
AC Priority Mode



ECO Mode



Battery Priority Mode

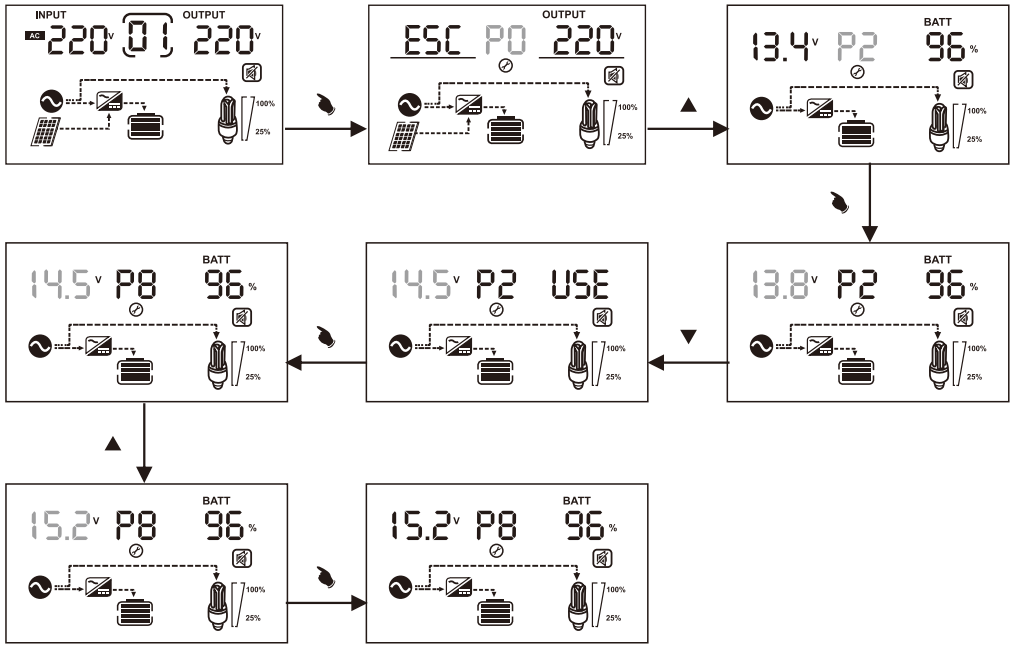


Unattended Mode

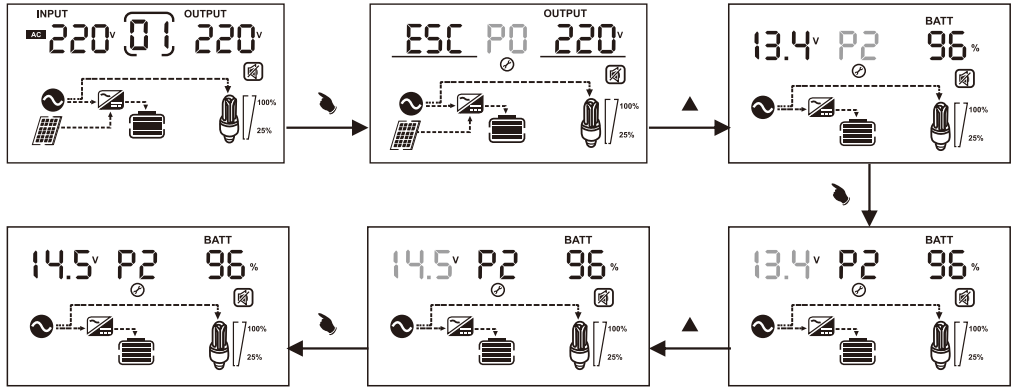
3.6 Battery Type Setting

In the default main interface, long press the "ENTER" key for 5 seconds to select the setting program. Press the "UP" key to select the P2 interface, and then press the "ENTER key" to select the selected parameter. And then press the "UP" or "DOWN" key to set battery type. After the parameter is confirmed, the blinking stops.

Battery Type	Charging Current (24V*2;48V*4;96V*8;108V*9;120V*10)
A.G.M.1	13.4V
Sealed Lead Acid / Calcuim(Open)	13.6V
GEL U.S.A. / A.G.M.2	13.7V
Gel European / Open Lead Acid	13.8V
De Sulphation Cycle	14.5V
USE	Custom set charging voltage



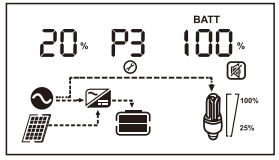
NOTE:The light font represents flashing.



NOTE:The light font represents flashing.

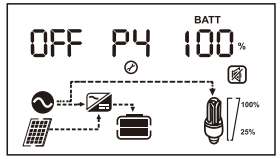
3.7 AC Charging Current Setting

In the default main interface, long press the "ENTER" key for 5 seconds to select the setting program. Press the "UP" key to select the P3 interface, and then press the "ENTER key" to select the selected parameter. And then press the "UP" or "DOWN" key to set charging current.After the parameter is confirmed, the blinking stops.

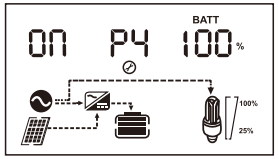


3.8 Buzzer Switch

In the default main interface, long press the "ENTER" key for 5 seconds to select the setting program. Press the "UP" key to select the P4 interface, and then press the "ENTER key" to select the selected parameter. And then press the "UP" or "DOWN" key to set buzzer switch.After the parameter is confirmed, the blinking stops.



Turn off the buzzer



Turn on the buzzer

Chapter 4 Trouble Shooting

The following faults may be encountered during the use of the inverter. Please refer to the following methods for simple fault analysis.

Fault Code	Failure Event	Solution
E01	Inverter overcurrent	Check if there are power surge from big capacity appliances , if so ,please shut down or reduce the appliances capacity. If done above mentioned, still showing this error code , please contact local dealer or distributor.
E02	Output short circuit	Check if there are power surge from big capacity appliances , if so ,please shut down or reduce the appliances capacity. If done above mentioned, still showing this error code , please contact local dealer or distributor.
E03	Inverter overload	Please shut down or reduce the appliances capacity. If done above mentioned, still showing this error code , please contact local dealer or distributor.
E04	Inverter over temperature	Please check if the fan working normally, or the ventilation holes whether been blocked . Please keep the inverter away from high temperature environment.
E05	Battery high voltage	Please lower the battery voltage or check if the battery protection limit setting is too low.
E06	Battery low voltage	Please check if the battery protection limit setting is too low.
E07	Abnormal phase sequence	Please check if all the cable been connected correctly.
E08	Output low voltage	The output voltage is too low , but the appliances capacity is too high for the inverter.
E09	ECO mode work	The energy saving function been activated. AC output been turned off waiting for bigger capacity of appliances.

Chapter 5 Protection And Cleaning

Check The Heat Dissipation

Please check environment temperature around the inverter. Make sure there is no clogging of the vents.

Cleaning the inverter will improve the heat dissipation of the inverter.

Cleaning The Inverter

Please turn off AC input first, shut down inverter ,then turn off the DC switch. Make sure all of them are completely off.

You could wipe the inverter with dry and insulated rag. Please don't use water and any liquid such as solvent or abrasive liquid.

Check Connection

Please check all cables or breakers regularly to see if there is abnormal heat. If there any demage of the cable and breaker, pls shut down all of component and contact a professional electrician for inspection.

Chapter 6 Removal

How To Remove The Inverter

- Shut down AC input.
- Shut down inverter.
- Shut down DC breaker.
- Remove all cables off the inverter.
- Carefully remove the inverter.

Inverter Packaging

Please keep the inverter original packaging in case of delivery. If you can't find the original packaging ,please use strong box with correct size to contain this inverter.

Inverter Processing

Please do not throw this in the garbage. In case of dispose of this inverter, please follow local regulations about electronic component recycling.

Chapter 7 Technical Data Sheet

Model			350W	500W	700W	800W	1000W	1200W
Capacity	Rated Power		350W	500W	700W	800W	1000W	1200W
	Peak Power		1050W	1500W	2100W	2400W	3000W	3600W
Solar Charging	PV Open Circuit Voltage		25V for 12V / 50V for 24V					
	Rated Current		20A / 30A					
	PV Open Circuit Voltage	20A	280W / 560W for 12V					
		30A	420W / 840W for 24V					
Input	Battery Voltage		12V	24V	12V	24V	12V / 24V	
	DC Input Voltage		10.5-15VDC@12V / 21-30VDC@24V					
	AC Input Voltage		165-275VAC@220V / 173-288VAC@230V / 180-289VAC@240V					
	AC Input Frequency		50Hz / 60Hz±5Hz					
Output	Efficiency		⩾85%					
	Output Voltage		(Inverter Mode) 220V / 230V / 240VAC±3%					
	Output Frequency		(Inverter Mode) 50Hz / 60Hz±0. 5Hz					
	Output Waveform		Pure Sine Wave					
AC Charging	AC Charging Current		0-15A	0-10A	0-15A	0-10A	0-15A	
Protection	Battery High Voltage Warning		＞15V for 12VDC / ＞30V for 24VDC					
	Battery High Voltage Protection		＞17V for 12VDC / ＞34V for 24VDC					
	Battery Low Voltage Warning		＜10.5V for 12VDC / ＜21V for 24VDC					
	Low Voltage Battery Shutdown		＜10V for 12VDC / ＜20V for 24VDC					
	Overload,Over Temperature,Short Circuit Protection		Automatic Shutdown					
Other	Switch Time		⩽8ms					
	Display		LCD					
	Cooling System		Intelligent cooling system, auto control speed of the fan.					
	Operating Mode		AC Priority Mode / ECO Mode / Battery Priority Mode / Unattended Mode					
Working Environment	Temperature		0~55℃					
	Humidity		0~95%(No Condensation)					
Exterior	Dimensions(mm)		290 x 258 x 125					
	N.W.(Kg)		5.8	6.3	6.9	7.4	7.8	8.4

The technical specifications of this document are subject to change without any notice