# USER MANUAL

## HYBRID SOLAR INVERTER

**2KW-10KW**

FOR SOLAR OFF-GRID SYSTEM

M-TG200-220-EN-A02

# 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 unusal 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/heater/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 possiblities 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 appliaction/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 right 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 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

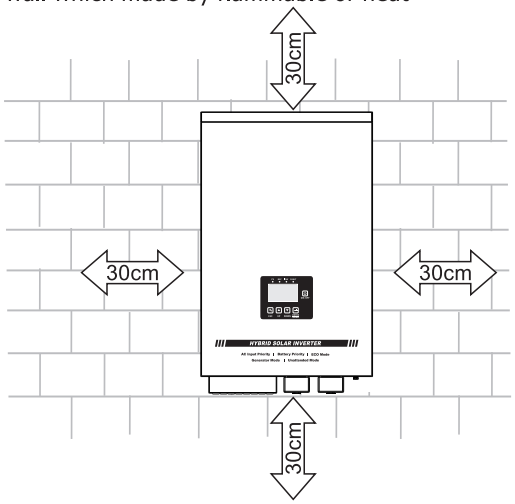
2. Before openning the inverter pacage,please check and confirm if the inverter demaged during transportation. If any demanged or missing parts, please contact local dealer or distributor.

**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 matach 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.





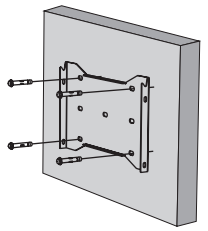
## 2.3 Equipment Installation

Remember that this inverter is heavy! Please be careful when lifting out from the package.

The inverter is suitable for mounting on concrete or other non-combustible surface only.

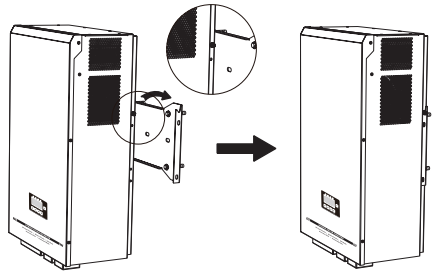
### Step 1

- Please use the mounting back plate as a template to drill 4 holes (diameter 8 mm,depth 60 mm)
- Use the random bolts in the accessory box to firmly fix the mounting back plate to thewall.(See Pic 1)



Pic 1

### Step 2

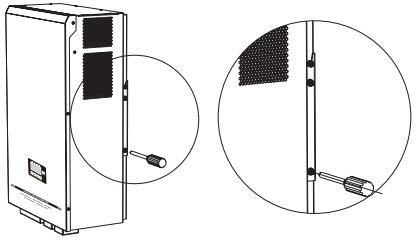


Pic 2

- Fix the bolts on the inverter. Do not tighten the screws.
- Two persons are required to hold the inverter and fix the inverter onthe installation backplane.(See Pic 2)

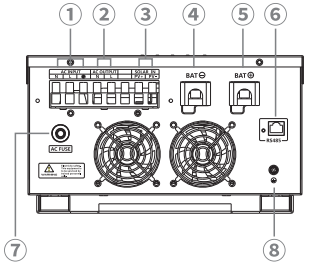
### Step 3

- Fix the inverter with the M5 screwsin the accessories.(See Pic 3)

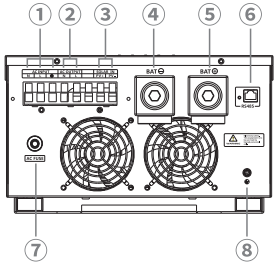


Pic 3

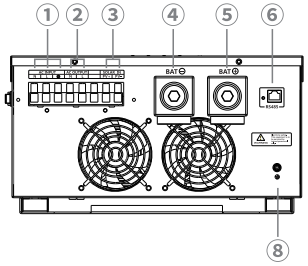
## 2.4 Product Overview



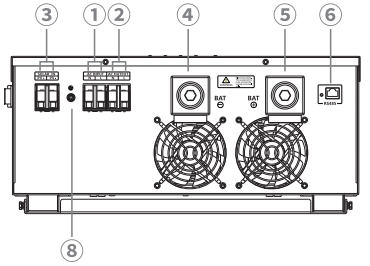

[ 2KW ]




[ 3KW ]



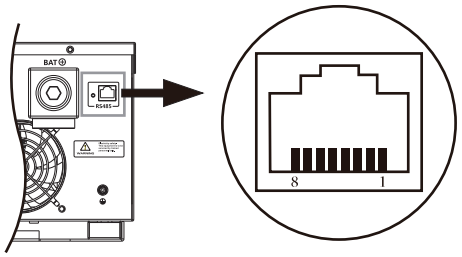

[ 4-6KW ]




[ 10KW ]

1. AC Input 2. AC Output 3.Solar In
4. Battery- 5. Battery+ 6. RS485 communication port
7. AC Fuse 8. GND

### 2.4.1 Communication Port




| Pin on Rj45 | Description |
|---|---|
| 1 | RS485-A |
| 2 | RS485-B |
| 8 | GND |





## 2.5 Battery Connection

**CAUTION:** For safety operation and requlation compliance it's requested to install a separate DC over-current protector or disconnect device between battery and inverter. It may not be requested to have a disconnect device in some applications, however, it's still requested to have over-current protection installed. Please refer to typical amperage in below table as required breaker size.

**WARNING!** All wiring must be performed by a qualified personnel.

**WARNING!** It's very important for system safety and efficient operation to use appropriate cable for battery connection. To reduce risk of injuryplease use the proper recommended cable as below.

**Recommended battery cable size:**

| Model | Battery Voltage | Cable | Circuit Breaker | Model | Battery Voltage | Cable | Circuit Breaker |
|---|---|---|---|---|---|---|---|
| 2KW | 12V | 25mm² | 250A | 4KW | 48V | 16mm² | 125A |
| | 24V | 16mm² | 125A | 5KW | 24V | 25mm² | 300A |
| | 48V | 10mm² | 63A | | 48V | 25mm² | 150A |
| 3KW | 12V | 25mm² | 300A | 6KW | 24V | 25mm² | 350A |
| | 24V | 16mm² | 150A | | 48V | 25mm² | 200A |
| | 48V | 16mm² | 110A | 10KW | 48V | 25mm² | 250A |
| 4KW | 24V | 25mm² | 250A | | | | |

## 2.6 AC Input/Ouput Connection

**CAUTION!!** Before connecting to AC input power source,please install a separate AC breaker between inverter and AC input power source. This will ensure the inverter can be securely disconnected during maintenance.

**CAUTION!!** Please do NOT mis-connect input and output connectors.

**WARNING!** All wiring must be performed by a qualified personnel.

**WARNING!** It's very important for system safety and efficient operation to use appropriate cable for AC input connection. To reduce risk of injuryplease use the proper recommended cable size as below.

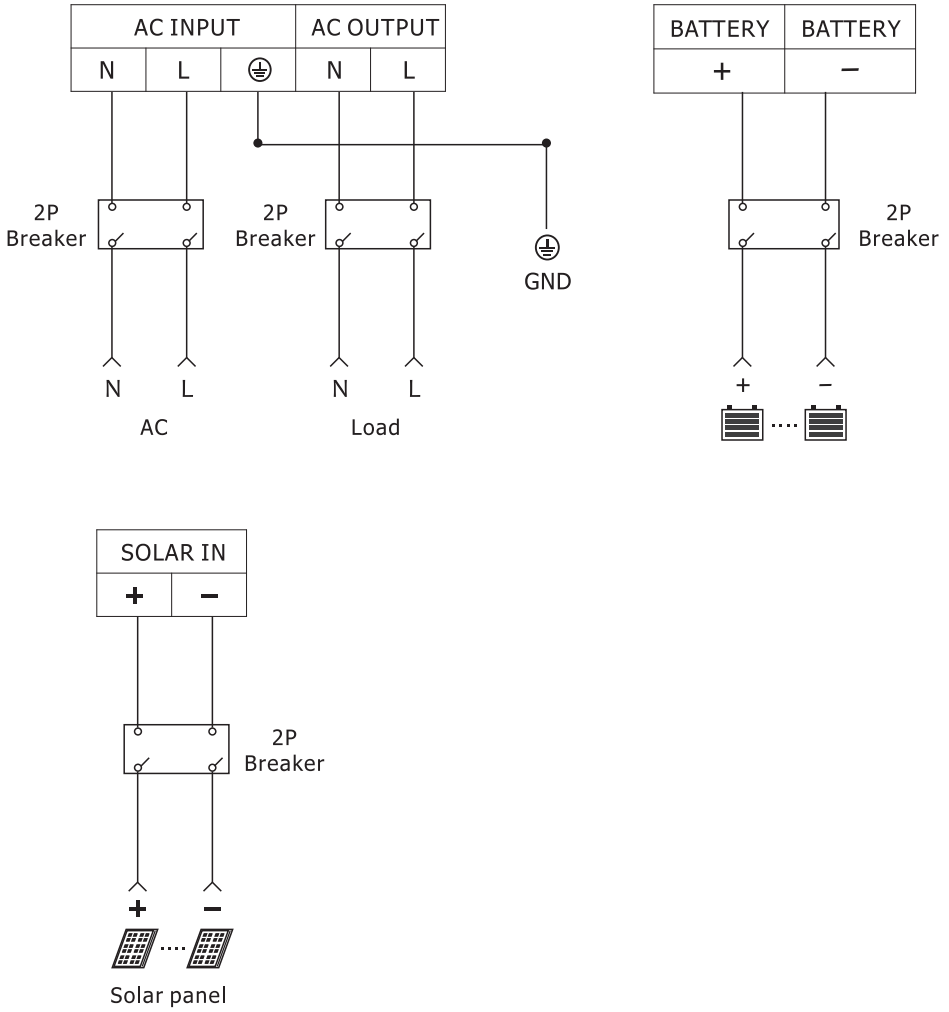
**Suggested cable requirement for AC wires:**

| Model | Gauge | Circuit Breaker | Model | Gauge | Circuit Breaker |
|---|---|---|---|---|---|
| 2KW | 12AWG | 16A 2P | 5KW | 10AWG | 50A 2P |
| 3KW | 12AWG | 32A 2P | 6KW | 8AWG | 63A 2P |
| 4KW | 10AWG | 32A 2P | 10KW | 8AWG | 63A 2P |

## 2.7 Inverter Circuit Diagram

The machine with relatively high power is connected to the mains input and load output through the terminal block. The load output is output in addition to the terminal block mode.

**Caveat! !** Please do not connect the output line to the "AC" terminal, and do not connect the AC to the "load" terminal.

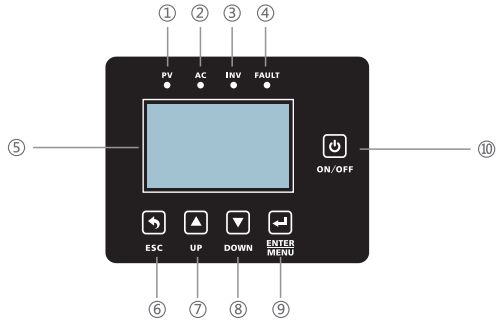







# Chapter 3 Operating

## 3.1 Inverter Screen Function




- **Indicator status**

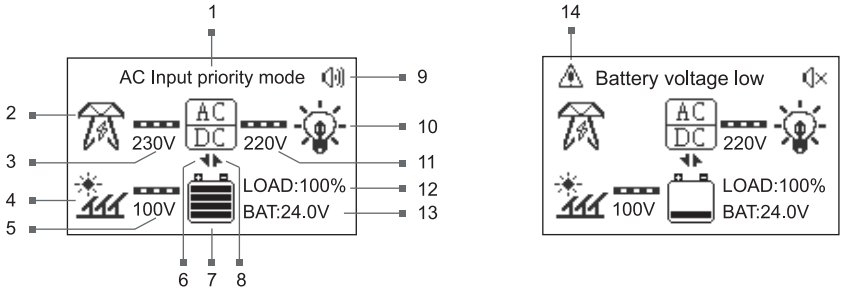
| Identification | Indicator light name | Status |
|---|---|---|
| ① | PV | PV Normal |
| ② | AC | AC Normal |
| ③ | Inverter | Battery inverter power supply |
| ④ | Fault/Warning | Warning/work abnormal |

- LCD Display—— ⑤ : Detailed display information
- Navigation keys: selection, opening, obtaining information, modifying system parameters, etc.

| Identification | Navigation keys | Function |
|---|---|---|
| ⑥ | Enter | Return to the previous interface menu or exit the settings interface (do not save the settings) |
| ⑦ | UP | Page turning; switching options; adding settings value |
| ⑧ | Down | Page turning; switching options; minus setting values |
| ⑨ | ESC | Press and hold for 5 seconds to enter the setting interface; short press to confirm save or set to enter the setting submenu |
| ⑩ | Turn On/Off | Turn on or turn off the inverter |

## 3.2 LCD Display Icons

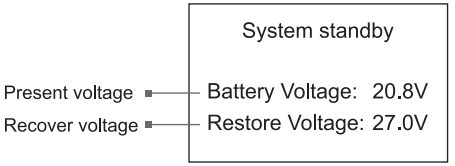
The main interface description is as shown.




| NO. | Description | NO. | Description |
|---|---|---|---|
| 1 | System Mode | 8 | Battery Inverter |
| 2 | AC | 9 | Alarm Status |
| 3 | AC Input Voltage | 10 | Load |
| 4 | PV | 11 | Output Voltage |
| 5 | PV Input Voltage | 12 | Load Capacity |
| 6 | AC Charging | 13 | Battery Voltage |
| 7 | Battery | 14 | Fault Info |

## 3.3 System Standby

In the unattended mode, the battery voltage will be too low to enter the system standby.








## 3.4 Display Data

In the default main interface, press the "UP" or "DOWN" button to scroll through the pages. Under the main page, long press the back and down keys to restore the factory settings.

| Icon | Parameter Interface | LCD display |
|---|---|---|
| ① | AC Input Parameter | AC Input parameter<br>Voltage: 222V<br>Freq: 50Hz<br>Status: AC input normal |
| ② | PV Parameter | PV Parameter<br>PV Voltage: 80V<br>PV Current: 80A<br>PV Status: PV loss |
| ③ | Engergy Parameter | Engergy Parameter<br>Daily Engergy: 744Wh<br>Total Engergy: 4.859KWh |
| ④ | Daily Engergy<br>MAX:00.00Wh(Recorded the highest power generation value for a day) | Daily Engergy MAX: 53<br>WH<br>1200<br>800<br>400<br>0<br>6 12 18 |

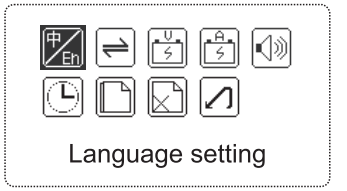
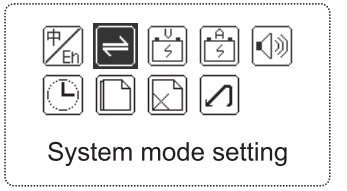
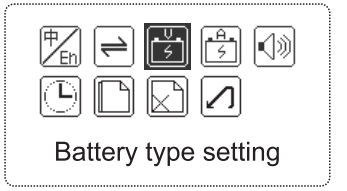
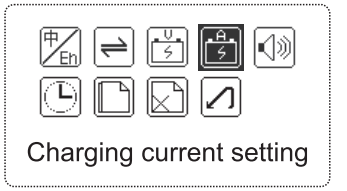
| Icon | Parameter Interface | LCD display |
|---|---|---|
| ⑤ | Battery Parameter | Battery parameter<br>Battery Voltage: 27.3V<br>Battery Capacity 100%<br>Charging Voltage : 27.4V |
| ⑥ | Output Parameter | Output Parameter<br>Voltage: 222V<br>Freq: 50Hz<br>Status: Output off |
| ⑦ | System Information | System Information<br>2021-06-19 08:57:00<br>Hardware Version: 1.00<br>Software Version: 1.00 |

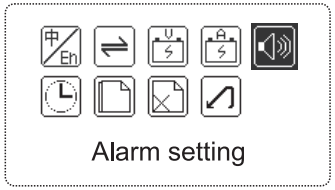
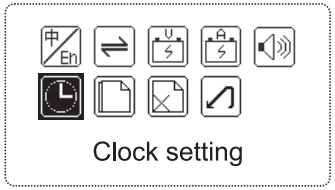
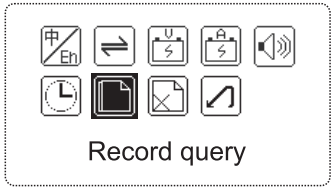
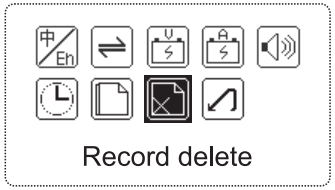




## 3.5 LCD Setting

In the default main interface, long press the "ENTER" for 5 seconds to enter the setup menu, press "DOWN" to scroll through the submenus. Set to battery priority mode, the default charge is off, you need to charge to the current settings page.

| Icon | Parameter Interface | LCD display |
|---|---|---|
| ① | Language setting |  |
| ② | System mode setting |  |
| ③ | Battery type setting |  |
| ④ | Charging current setting |  |

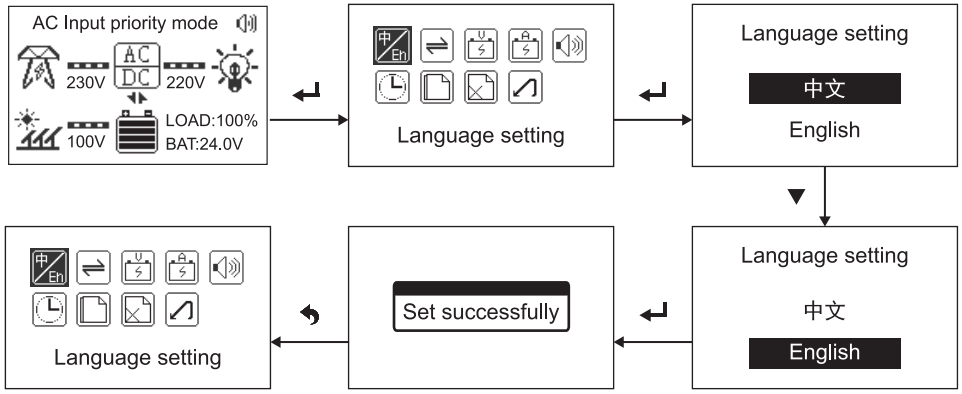
| Icon | Parameter Interface | LCD display |
|---|---|---|
| ⑤ | Alarm setting |  |
| ⑥ | Clock setting |  |
| ⑦ | Record query |  |
| ⑧ | Record delete |  |
| ⑨ | Factory recover setting |  |





## 3.6 Language Setting

In the default main interface, long press the "ENTER" for 5 seconds to enter the setup menu, press "DOWN" to select the language setting and press the "ENTER" to confirm, press the "ESC" to return to the menu or wait after the pop-up is successful. 2 seconds automatically returns to the menu.




## 3.7 System Mode Setting

In the default main interface, long press the "ENTER" for 5 seconds to enter the setup menu, press the "DOWN" to select the system mode setting and press the "ENTER" to confirm, enter the mode selection press "DOWN" to select the option, pop-up settings After success, press the "ESC" to return to the menu or wait for 2 seconds to automatically return to the menu.

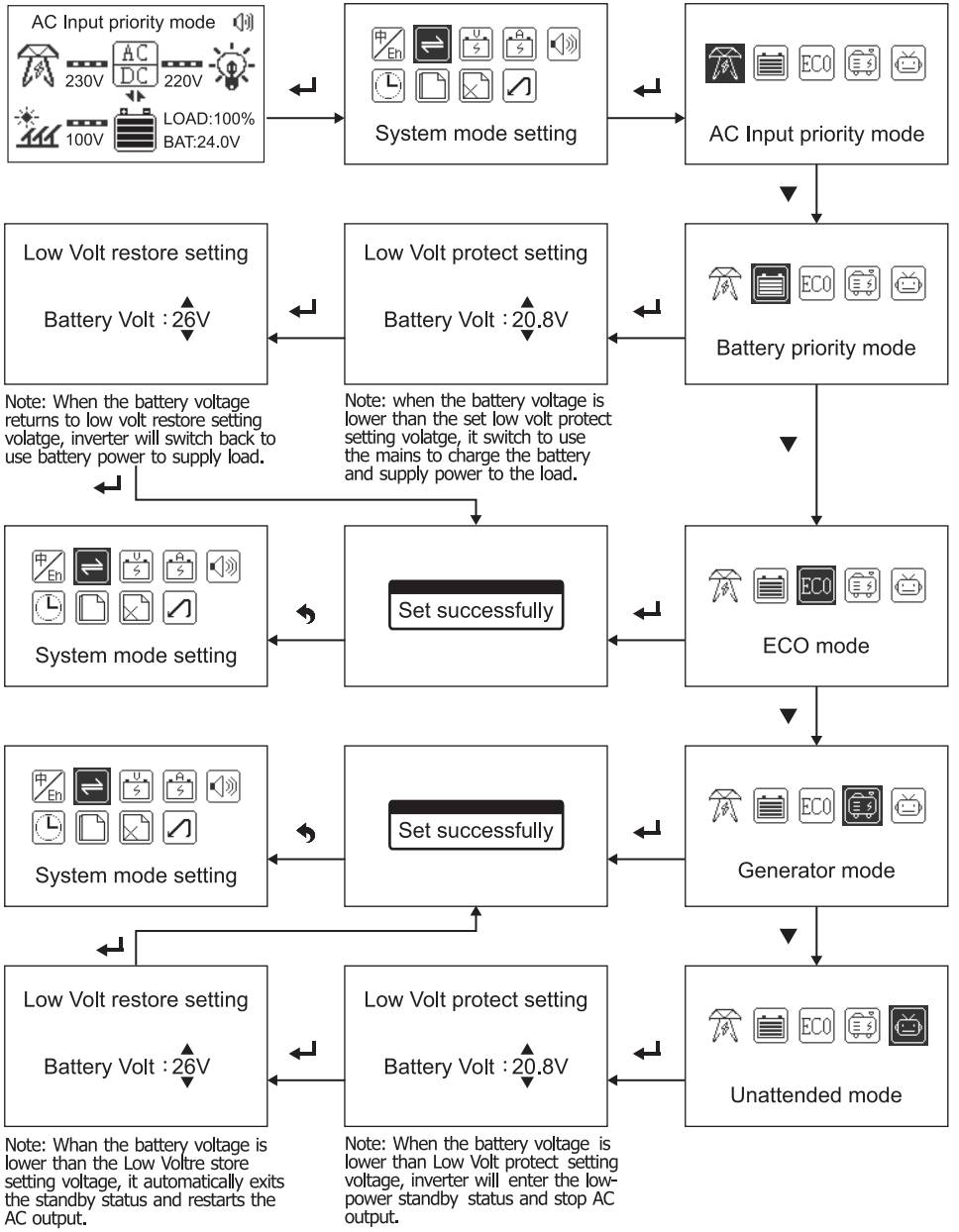
**AC Priority Mode** - The AC input(utility power/city grid) will supply power to AC output (applianes/load) first, and auto charge battery at the same time. Inverter will auto stop charging when battery been fully charged. When there is no AC input, inverter will auto switch to battery power supply.

**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.

**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.

**Generator mode** - use unstable generator to generate power, access the inverter AC input. through the inverter AVR regulator, automatic matching 50HZ/60HZ municipal frequency, output voltage regulator in the normal operating range.

**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.

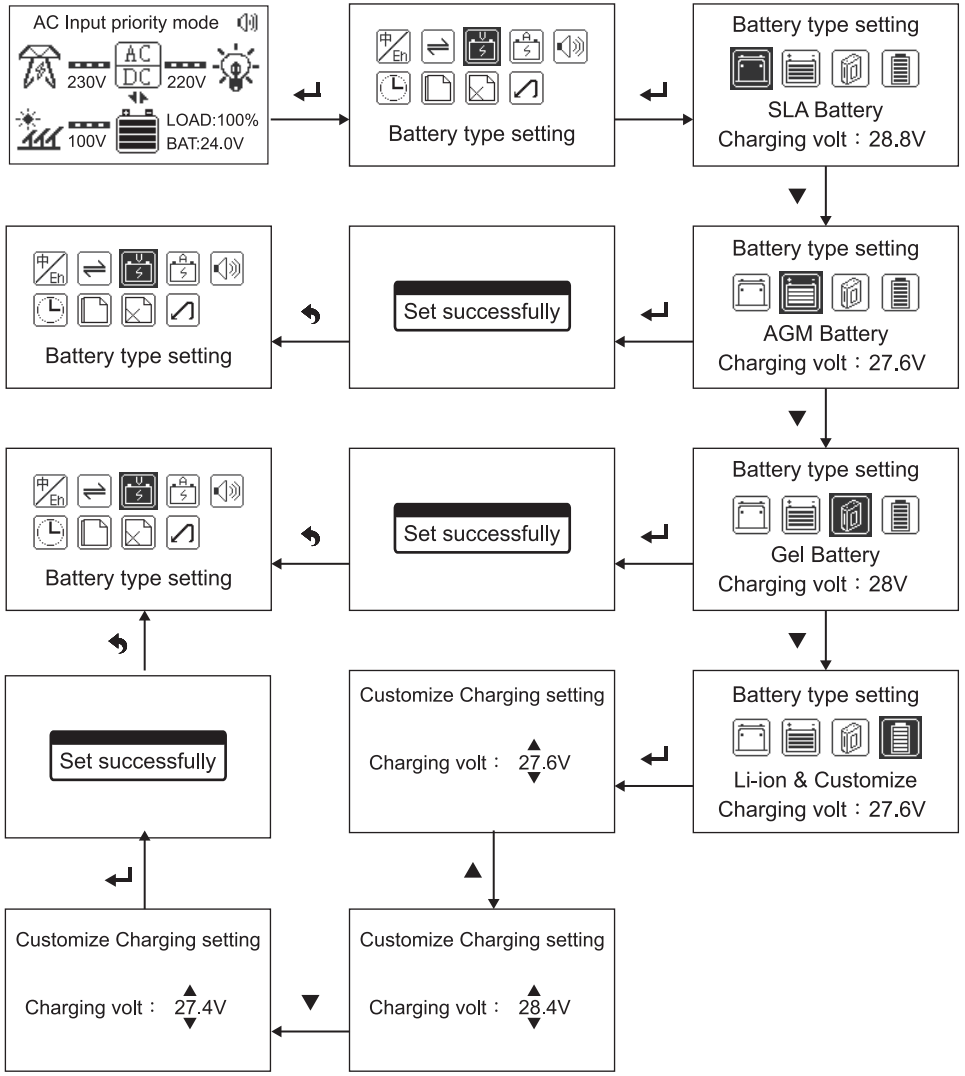







## 3.8 Battery Type Setting

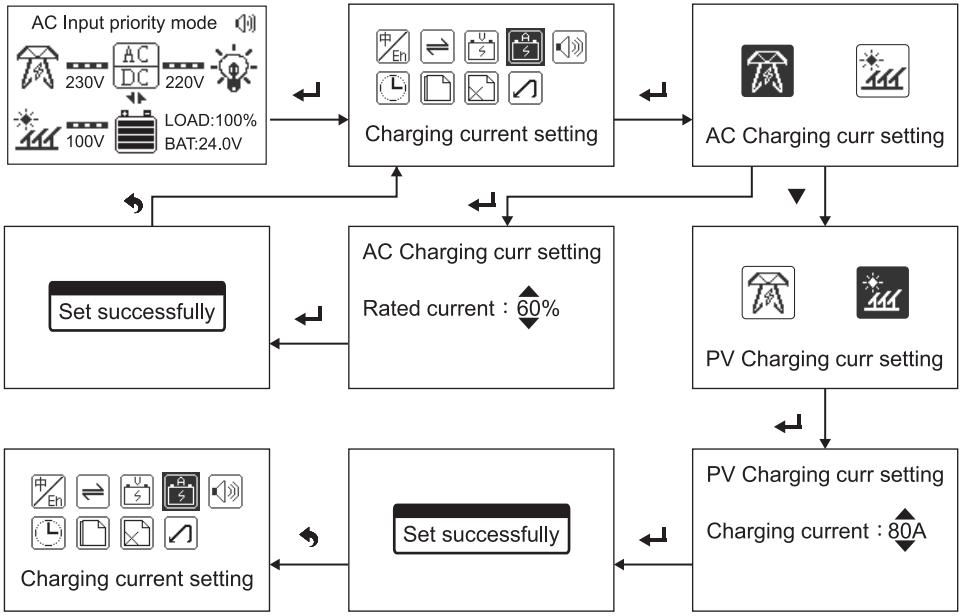
In the default main interface, the long press "ENTER" 5 seconds into the settings menu, press "DOWN" to select battery type settings and then press "ENTER" confirmation, enter mode select press "DOWN" selection option, Press "ESC" to return to menu or wait for 2 seconds to automatically return to menu.



## 3.9 System Mode Setting

In the default main interface, long press the "ENTER" for five seconds to enter the setup menu, press the "DOWN" to select the charging current setting and press the "ENTER" to confirm, press the "DOWN" to modify the value, confirm the value and press to "ENTER", press the "ESC" to return to the menu after the pop-up setting is successful or wait for 2 seconds to automatically return to the menu.

**Note:** Setting the value to 0% will turn off the charging function.

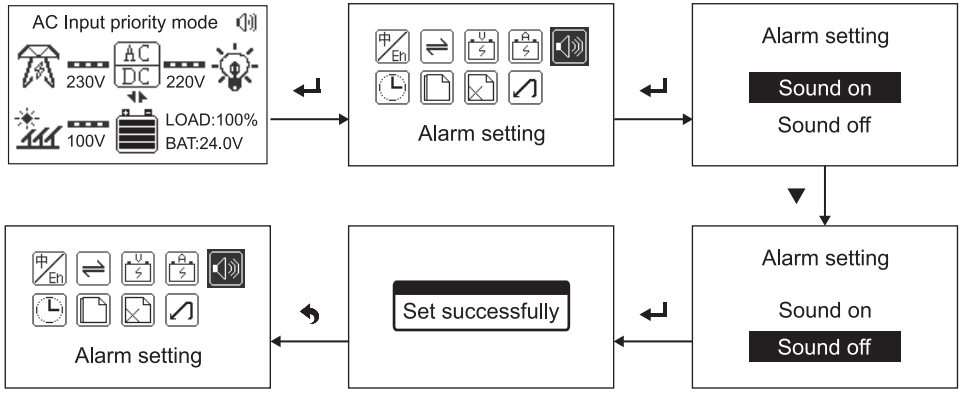






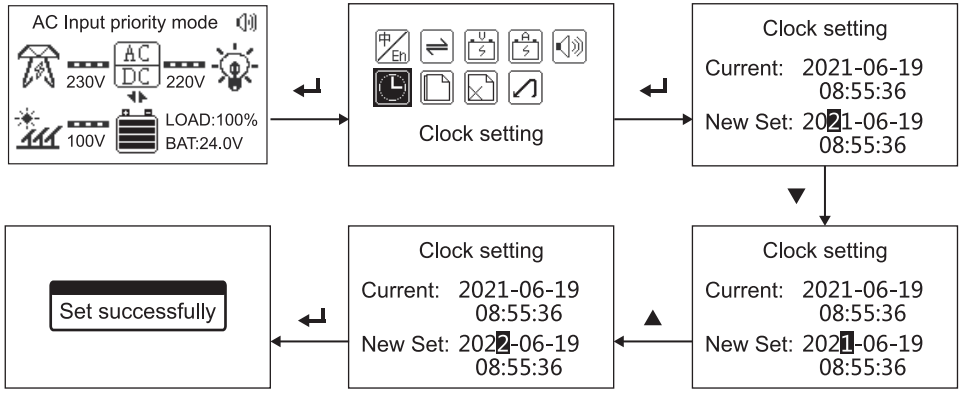

## 3.10 Alarm Setting

In the default main interface, long press the "ENTER" for five seconds to enter the setup menu, press the "DOWN" to select the alarm tone setting and press the "ENTER" to confirm, press the "ESC" to return to the menu or Wait 2 seconds to automatically return to the menu.



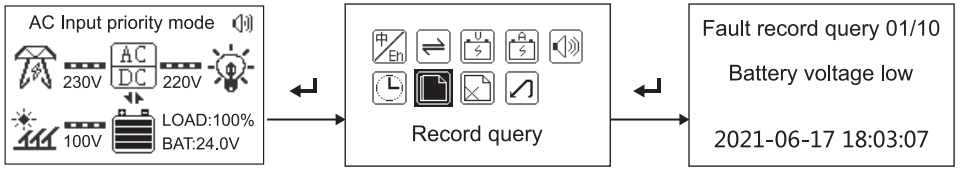

## 3.11 Clock Setting

In the default main interface, long press the "ENTER" for five seconds to enter the setup menu, press the "DOWN" to select the clock setting and press the "ENTER" to confirm, press the "ESC" to return to the menu or Wait 2 seconds to automatically return to the menu.



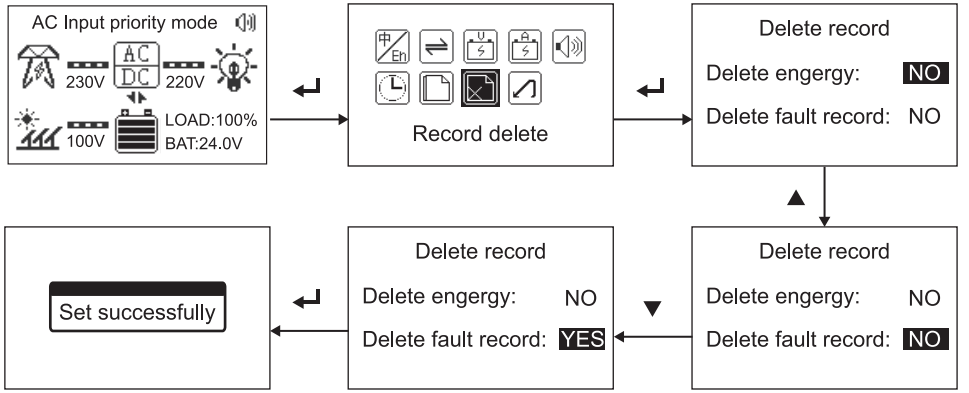
## 3.12 Record Query

In the default main interface, the long press "ENTER" 5 seconds into the settings menu, press "DOWN" to select record query and then press "ENTER" confirmation, Press "ESC" to return to menu or wait for 2 seconds to automatically return to menu.




## 3.13 Record Delete

In the default main interface, the long press "ENTER" 5 seconds into the settings menu, press "DOWN" to select record query and then press "ENTER" confirmation, Press "ESC" to return to menu or wait for 2 seconds to automatically return to menu.

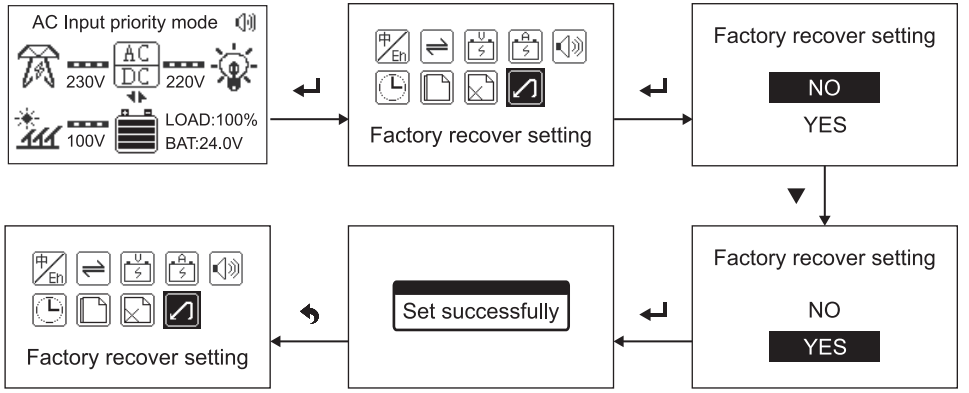







## 3.14 Factory Recover Setting

In the default main interface, long press the "ENTER" for five seconds to enter the setup menu, press the "DOWN" to select the factory recover setting and press the "ENTER" to confirm, press the "ESC" to return to the menu or Wait 2 seconds to automatically return to the menu.



# Chapter 4 Trouble Shooting

When the inverter is not working properly, we recommend the following solutions to eliminate common faults. The table below helps the technician understand the problem and take action.

| Problem | LCD/LED/Buzzer | Explanation / Possible cause | What to do |
|---|---|---|---|
| Unit shuts down automatically | No indication or buzzer beeps continuously and red LED is on | The battery voltage is too low | 1. Re-charge battery.<br>2. Replace battery. |
| Fan stop or slow running | No indication | Fan intelligent speed regulation or fan fault | 1. A rise in temperature or load capacity will increase the running speed.<br>2. Replace the fan. |
| Output turns on for 1 second and then stops, repeating | ECO mode | This mode shuts off output when the load is less than 5% | 1.The load > 5% will run continuously.<br>2.Change mode settings. |
| No response after power on | No indication | 1. The battery voltage is far too low.<br>2. Battery polarity is connected reversed. | 1. Check if batteries and the wiring are connected well.<br>2. Re-charge battery.<br>3. Replace battery. |
| Mains exist but the unit works in battery mode | Input voltage is displayed as 0 on the LCD | Input protector is tripped | Check if AC breaker is tripped and AC wiring is connected well. |
| | Input voltage is displayed in the normal range on the LCD | Insufficient quality of AC power. (Shore or Generator) | 1. Check if AC wires are too thin and/or too long.<br>2. Check if generator (if applied) is working well or The input frequency is unstable or out of range. |
| | Green LED is lighten | Set “Battery priority mode” as the system mode | System mode is not set to “Battery priority mode”. |
| Buzzer beeps continuously and red LED is on | Over current | Over current or surge | Reduce the connected load ,Restart the unit, if the error happens again, please return to repair center. |
| | Output short | Output Short or surge | |





| Problem | LCD/LED/Buzzer | Explanation / Possible cause | What to do |
|---|---|---|---|
| Buzzer beeps continuously and red LED is on | Over load | Over load error. The inverter is over load 110% and time is up | Reduce the connected load by switching off some equipment. |
| | Over temperature | Internal temperature of inverter component is over 80°C | Check whether the air flow of the unit is blocked or whether the ambient temperature is too high. |
| | Batterry volt. high | Battery is over-charged.The battery voltage is too high | 1. Check the setting of charger.<br>2. Check if spec and battery quantity of requirements. |
| | Battery voltage low | The battery voltage is too low | 1. Re-charge battery.<br>2. Replace battery.<br>3. Check if spec and battery. |
| | Output voltage low | Output abnormal | 1. Reduce the connected load.<br>2. Return to repair center. |

# 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 is 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 this inverter, please follow local regulations about electronic component recycling.

# Chapter 7 Technical Data Sheet

| Model | | 2KW | 3KW | 4KW | 5KW | 6KW | 10KW |
|---|---|---|---|---|---|---|---|
| Capacity | Rated Power | 2KW | 3KW | 4KW | 5KW | 6KW | 10KW |
| | Peak Power | 6KW | 9KW | 12KW | 15KW | 18KW | 30KW |
| Input | Battery Voltage | 12V/24V/48V | | 24V/48V | | | 48V |
| | DC Input Voltage | 10.5-15VDC@12V / 21-30VDC@24V / 42-60VDC@48V | | | | | |
| | AC Input Voltage | 165-275VAC@220V / 173-288VAC@230V / 180-289VAC@240V | | | | | |
| | AC Input Frequency | 50Hz/60Hz±5Hz | | | | | |
| Output | Effectiveness | ⩾85% | | | | | |
| | Output Voltage | (Inverter Mode) 220V/230VAC/240VAC±3% | | | | | |
| | Output Frequency | (Inverter Mode) 50Hz/60Hz±0. 5Hz | | | | | |
| | Output Waveform | Pure Sine Wave | | | | | |
| AC Charging | Type Of Battery | SLA Battery/AGM Battery/GEL Battery/Lithium Battery | | | | | |
| | AC Charging Current | 0-35A | | | | | |
| Protection | Battery High Voltage Warning | >15VDC for 12V/>30VDC for 24V/>60VDC for 48V | | | | | |
| | Battery High Voltage Protection | >17VDC for 12V/>34VDC for 24V/>68VDC for 48V | | | | | |
| | Battery Low Voltage Warning | >10.5VDC for 12V/>21VDC for 24V/>42VDC for 48V | | | | | |
| | Low Voltage Battery Shutdown | >10VDC for 12V/>20VDC for 24V/>40VDC for 48V | | | | | |
| | Overload, High Temperature,Short Circuit Protection | Automatic Shutdown | | | | | |
| Other | Swithtime | ⩽5ms | | | | | |
| | Display | LCD | | | | | |
| | Cooling System | Forced Air Cooling, Intelligent Speed Regulation | | | | | |
| | Operating Mode | AC Input Priority Mode / Battery Priority Mode / ECO Mode / Generator Mode / Unattended Mode | | | | | |
| | Communication | RS-485 | | | | | |
| Working Environment | Temperature | 0~55℃ | | | | | |
| | Humidity | 0~95%(No Condensation) | | | | | |
| Exterior | Product Size(mm) | 507x293 x167 | 538x326 x193 | 596x363x193 | | | 725x444 x197 |
| | N.W.(Kg) | 19 | 24 | 26 | 31 | 36.3 | 49 |

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





## MPPT Specifications

| Model | | 2KW | 3KW | 4KW | 5KW | 6KW | 10KW |
|---|---|---|---|---|---|---|---|
| Charging Mode | | Constant Current/Floating Charge/MPPT | | | | | |
| Overall Unit Efficiency | 12V/24V/48V | ⩾96.5% | | | | | |
| Photovoltaic Module Utilization | 12V/24V/48V | ⩽99% | | | | | |
| Solar Input Open Circuit Voltage | | ≤175V | | | | | |
| Solar Input Operating Voltage | | ≤150V | | | | | |
| Maximum PV Charging Current | | 30A/40A | 50A/60A | 50A/60A/80A/100A | | | 80A/100A |

| Maximum PV Charging Current | | 30A | 40A | 50A | 60A | 80A | 100A |
|---|---|---|---|---|---|---|---|
| Maximum PV Array Power | 12V | 420W | 560W | 700W | 840W | — | — |
| | 24V | 840W | 1120W | 1400W | 1680W | 2240W | 2800W |
| | 48V | 1680W | 2240W | 2800W | 3360W | 4480W | 5600W |

## Solar Panel Configuration Requirements

| Rated Voltage (V) | Rated Current (A) | PV Module Load Voltage (Recommended Value) | Open Circuit Voltage 43V | | | | |
|---|---|---|---|---|---|---|---|
| | | | Max. Input Voltage(V) | Optimal Number Of Series | Max. Number Of Series | Minimum Number Of Series | Number Of Parallel Groups |
| 12V | 30A | 18V~60V | 100V | 2 | 3 | 1 | Configured According To Power Consumption |
| 12V | 40A | 18V~60V | 100V | 2 | 3 | 1 | |
| 12V | 50A | 18V~60V | 100V | 2 | 3 | 1 | |
| 12V | 60A | 18V~60V | 100V | 2 | 3 | 1 | |
| 24V | 30A | 36V~72V | 100V | 2 | 3 | 1 | |
| 24V | 40A | 36V~72V | 100V | 2 | 3 | 1 | |
| 24V | 50A | 36V~72V | 100V | 2 | 3 | 1 | |
| 24V | 60A | 36V~72V | 100V | 2 | 3 | 1 | |
| 24V | 80A | 36V~72V | 100V | 2 | 3 | 1 | |
| 24V | 100A | 36V~72V | 100V | 2 | 3 | 1 | |
| 48V | 30A | 72V~144V | 150V | 3 | 3 | 2 | |
| 48V | 40A | 72V~144V | 150V | 3 | 3 | 2 | |
| 48V | 50A | 72V~144V | 150V | 3 | 3 | 2 | |
| 48V | 60A | 72V~144V | 150V | 3 | 3 | 2 | |
| 48V | 80A | 72V~144V | 150V | 3 | 3 | 2 | |
| 48V | 100A | 72V~144V | 150V | 3 | 3 | 2 | |

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