

OOYCYOO 100 amp MPPT Solar Power Generation System Controller



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OOYCYOO 100 amp MPPT Solar Power Generation System Controller



Specifications

- Product: MPPT Solar Power Generation System Controller
- Temperature Compensation: -4mV / battery / °C
- Working Temperature: -10°C to 60°C
- Storage Temperature: -30°C to 70°C
- Supported Battery Types: Lead Acid, AGM, Sealed, GEL, Immersion, LiFePO4

First Use and Installation Steps

1. Prepare necessary tools: connecting wire, stripping pliers, screwdriver, disconnect switch, insulating gloves, and multimeter.
2. Install the controller securely on a chassis or wall with ample heat dissipation space.
3. Connect load (LED), battery, and solar panel to the corresponding ports on the controller.
4. Turn on the battery disconnect switch and verify the LCD display on the controller.
5. Turn on the solar panel and load switch after verifying correct readings.
6. Check LCD parameters for accuracy and ensure normal charging.

Installation Instructions

- **Wiring Sequence:** 6-5-4-3-2-1

Important Points

- Loosen screws counterclockwise when installing wires.
- Select appropriate cable to maintain current density below 4A/mm².
- Ensure installation site meets safety requirements and avoids hazardous environments.
- Mount the controller on a vertical surface with proper heat dissipation space.
- Do not operate with electricity; ensure circuit breaker or switch is connected.
- Exercise caution when handling batteries, especially lead-acid batteries.
- Maintain a gap of at least 150mm to 300mm for normal air circulation around the controller.

Frequently Asked Questions (FAQ)

1. Q: What types of batteries are supported by the solar charge controller?

A: The controller supports Lead Acid, AGM, Sealed, GEL, Immersion, and LiFePO₄ batteries.

2. Q: How should I wire the controller during installation?

A: The recommended wiring sequence is 6-5-4-3-2-1. Ensure to use appropriate cables and follow safety guidelines.

3. Q: What is the working temperature range of the controller?

A: The controller operates within a temperature range of -10°C to 60°C for optimal performance.

MPPT Solar power generation system controller

Dear Customers

Thanks for choosing our solar charge controller, please read carefully all the instructions and warnings in the manual before installation, it will help you to make full use of the advantages about the controller, can promote the performance of your solar system.

This series MPPT have such advantages:

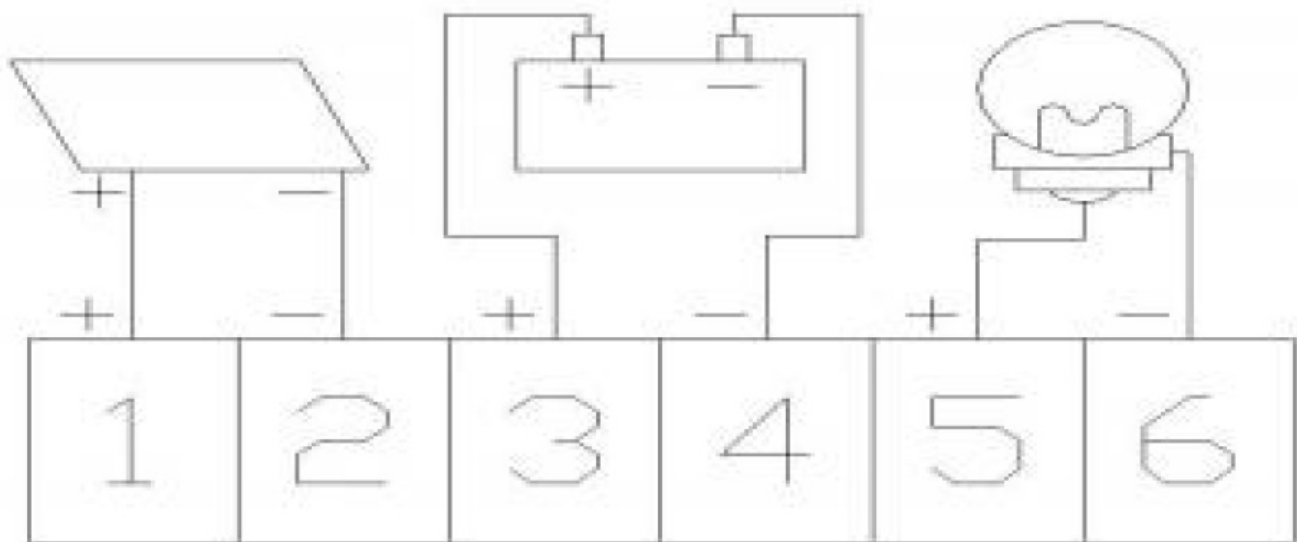
- A variety of protection measures to fully protect your battery pack for charging.
- Easy installation, easy setup, full intelligence.
- Full installation guidance and free technical support.
- Charging efficiency up to 99%, low static standby power consumption;
- USB 5V output is used for mobile phone charging .
- support wired remote display (optional or standard), and follow the sales link instructions;
- Application scenarios: home solar power generation system, monitoring system, base station, street lamp system, RV, yacht, ship and many other application scenarios are waiting for you to develop;
- Function key: switch the settable parameters, add or subtract the settable parameters, and store them automatically after 5 seconds;
- Temperature compensation: - 4mV / battery / °C, working temperature: - 10 °C ~ 60 °C; Storage temperature: - 30 °C ~ 70 °C

Simple setting reminder

for all rechargeable batteries, just set PV OFF= The battery is full charged voltage to work normally;
It supports 6 kinds of battery charging: Lead acid, AGM, sealed, GEL, immersion and LiFePO₄

First use: learn the installation steps

1. We need to prepare connecting wire, stripping pliers, screwdriver, disconnect switch, insulating gloves, multimeter and other auxiliary tools;
2. Install the controller and fix it on the chassis or wall, and leave enough heat dissipation space around it; Install battery disconnect switch, solar panel disconnect switch and load disconnect switch;
3. Connect the positive lead and negative lead of the load (LED) to the 5 / 6 port of the controller (load port, corresponding to the positive and negative ports of the LED);
4. Connect the positive and negative wires of the battery to the 3 / 4 port of the controller (corresponding to the positive and negative electrodes of the battery port);
5. Connect the positive and negative leads of the solar panel to the 1 / 2 port of the controller (corresponding to the positive and negative ports of the solar panel);
6. After the wiring is completed, turn on the battery disconnect switch, check whether the LCD display of the controller is turned on, and turn on the solar panel and the load switch in turn after the reading is correct;
7. Check whether the LCD parameters of the controller are correct, whether the charging is normal, and complete the installation



Installation instructions

- wiring sequence: 6-5-4-3-2-1

when installing the wire, first loosen the screw counterclockwise

Please select the appropriate cable to ensure that the current density is less than $4A / mm^2$, which will help reduce the pressure drop of the pipeline.

1. Check whether the installation site complies with relevant safety requirements and avoid damp, dust, flammable, explosive and corrosive environment
2. install the controller fixed on the vertical surface to ensure the installation aperture and hole spacing. To ensure good heat dissipation of the controller, 10cm space is reserved at the bottom of the controller
3. Be sure to connect the circuit breaker or switch, and do not operate with electricity
4. Warning: in order to prevent accidents (high pressure or high temperature), nonprofessional personnel are not allowed to engage in loading and unloading operations

5. Be very careful when installing batteries, especially lead-acid batteries filled with water. Please wear goggles and clean any place in contact with battery acid with fresh water.
6. Keep the battery away from any metal object that may cause short circuit of the battery.
7. A gap of at least 150 mm to 300 mm is required between the top and bottom of the controller to ensure normal air circulation. Ventilation and cooling fans are strongly recommended if installed in a sealed enclosure.

Parameter setting

First: switch button "+" "Set UP" "-" "Set down" The fourth key: reset key

1. Click the first button (switch button) to switch the settable parameters, cycle switching, and switch to the desired parameters.
2. In the setting state: set parameters by adding or subtracting.
3. Reset button: when the setting is wrong or the factory setting needs to be restored, you can press the fourth button for 5 seconds to restore the factory setting.
4. Manual load switch: to manually turn on or off the load, press the fourth key for 1 second;
5. Error or system failure, click this button to eliminate or eliminate "X".
6. Switch PV OFF→LOAD OFF→LOAD ON →Evening → Interval→ Dawn(Set order automatic cycle).
7. Network Line Interface (RS485) Indicator: Green light represents the battery, green light flashes, indicating that the load is working properly; yellow light indicates solar energy; yellow light flashes, indicating solar energy charging; The network interface is reserved for the interface and can be connected to a dedicated display (additional purchase).

MPPT protection device:

1. open circuit protection.
2. battery overcharge protection.
3. battery over discharge protection.
4. lightning protection.
5. positive and negative polarity reverse connection protection.
6. Three-stage charging mode, constant current, constant pressure and floating charging, fast, efficient and safe charging.

Let's learn about the controller display screen and the setting method

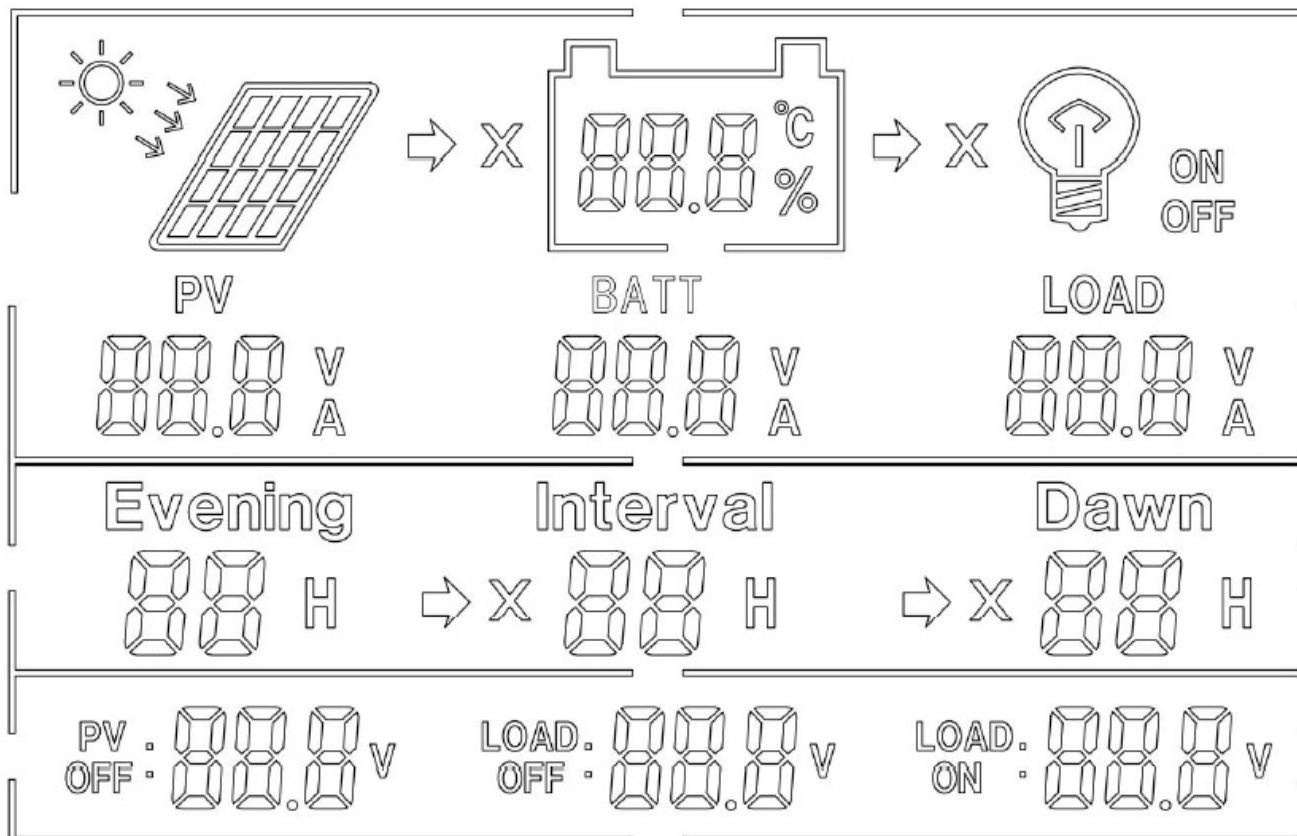






Image meaning

V :Voltage	PV OFF :  v PV OFF = FULL VOLTAGE :Fully charged battery voltage
A :Electric current	LOAD OFF :Battery undervoltage shutdown load
X :Fault or Error	LOAD ON :Turn on the load again after under-voltage charging
°C :Ambient temp	 ON OFF :load status
% :Battery capacity	Total kW ⇨  ⇨ or ⇨  ⇨ :Cumulative power of solar power generation

Evening

24 H Always on :Load always on

00 H Street light mode :Street lamp mode (Led on at dusk + dawn off LED)

01 H :street lamp mode + 1 hour (Led on at dusk + timed off LED)

05 H :street lamp mode + 5 hour (Led on at dusk + timed off LED)

01 H — 23 H : (01H-23H) It means that the LED works for several hours (Led on at dusk + timed off LED)

Interval

01 H :Street lamp mode (Street lamp mode (LED working time ends at dusk, 1 hours from the next time the street lamp is turned on))

05 H :Street lamp mode (Street lamp mode (LED working time ends at dusk, 5 hours from the next time the street lamp is turned on))

01H—23H :Street lamp mode (Street lamp mode (LED working time ends at dusk, 5 hours from the next time the street lamp is turned on))

Dawn

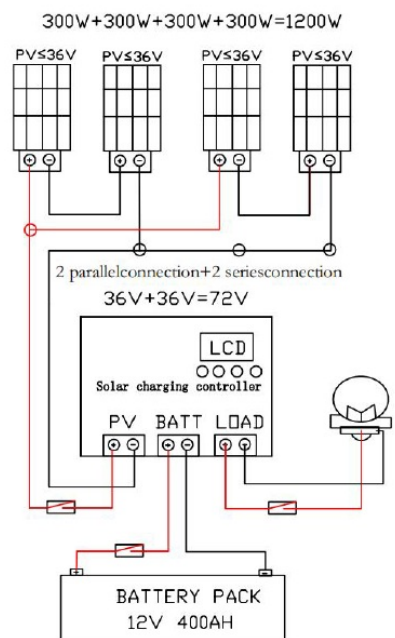
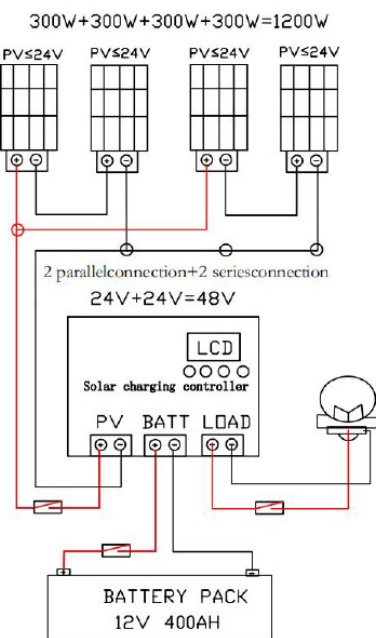
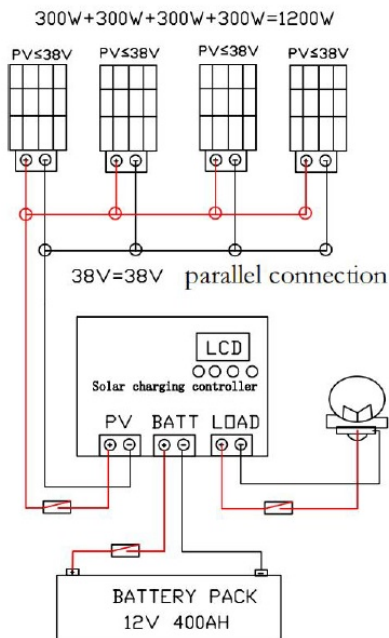
01 H :Street lamp mode (LED working time ends at dusk and the street lamp is turned on for 1 hour at dawn)

05 H :Street lamp mode (LED working time ends at dusk and the street lamp is turned on for 5 hour at dawn)

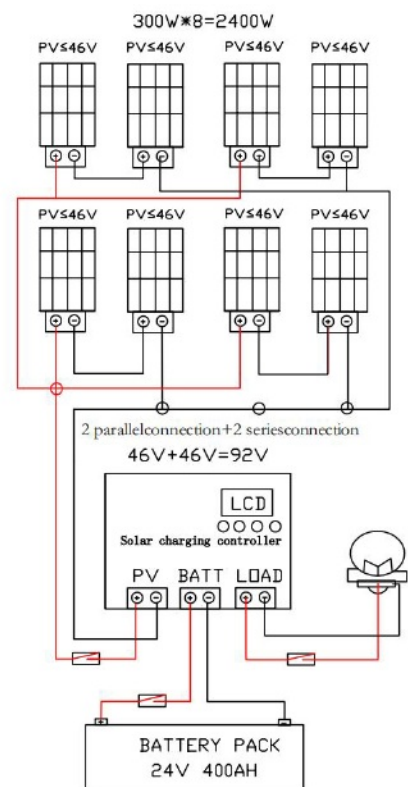
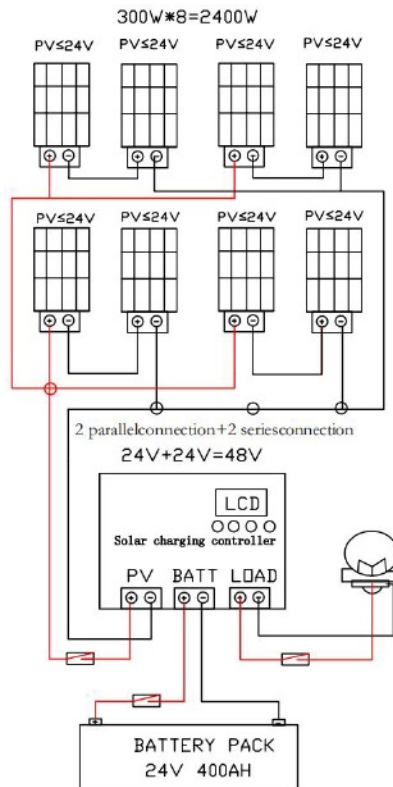
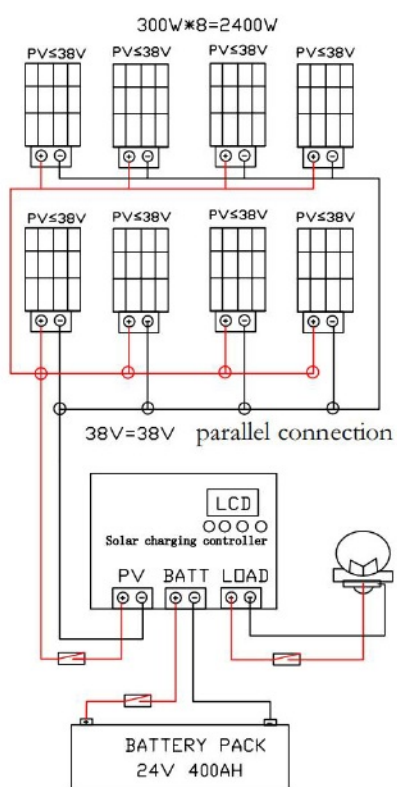
01H—23H :Street lamp mode (LED working time ends at dusk and the street lamp is turned on for 1 -23 hour at dawn)

Installation guidelines

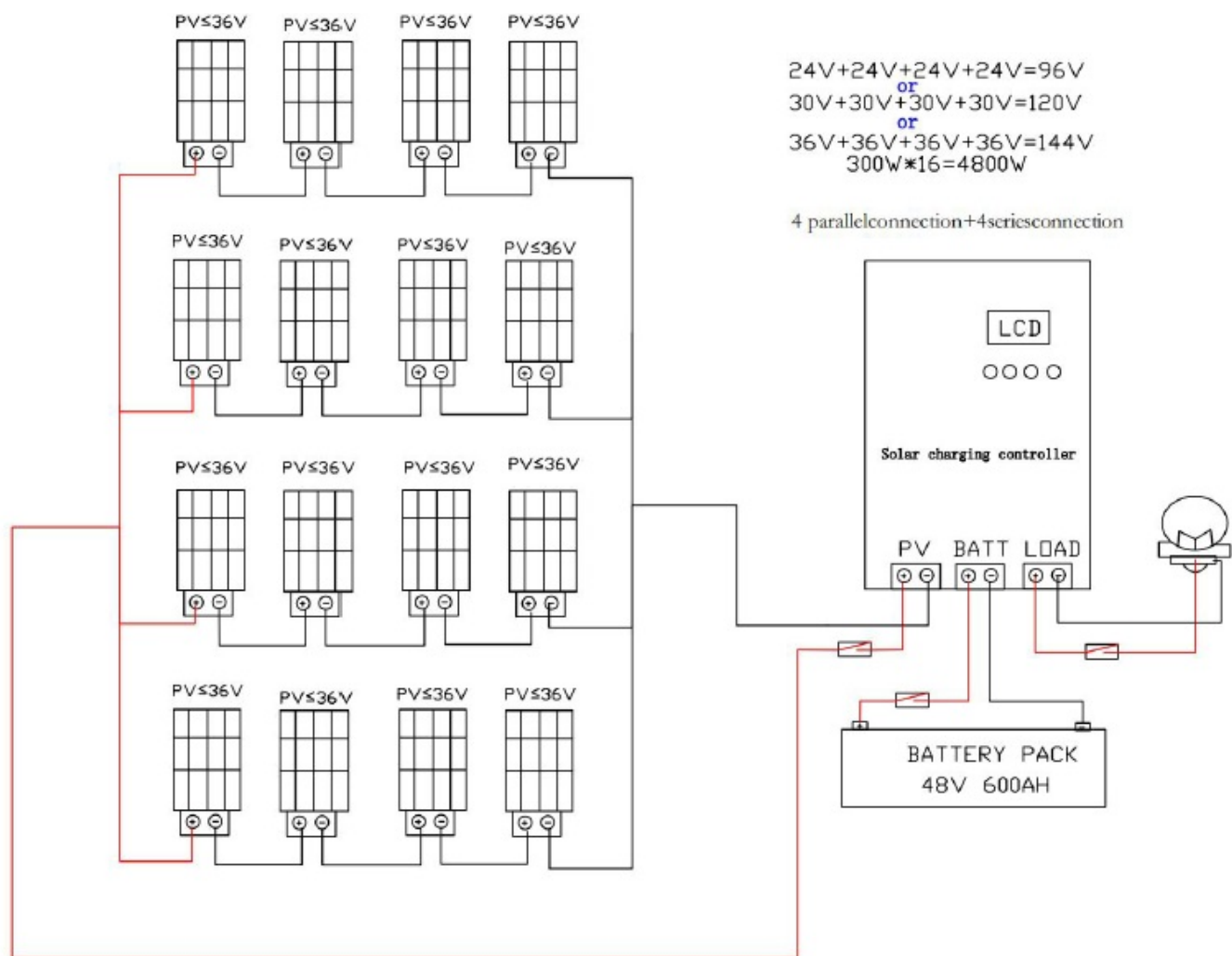
Please install according to the system voltage and the controller accessible maximum solar panel power:



Wiring mode of the 12V system



Wiring mode of the 24V system



Parameter details

Model	solar pan PO WER (12V system)	solar pan PO WER (24V system)	solar pan POWER (48V system)	Charging curren t	Load current LED
P10A	10W-130W	10W-260W	No, no support	8-12Amp	10Amp
P20A	10W-240W	10W-480W	No, no support	18-22Amp	20Amp
P30A	10W-360W	60W-700W	No, no support	25-32Amp	30Amp
P40A	60W-480W	60W-900W	No, no support	35-42Amp	40Amp
P60A	60W-720W	60W-1400W	No, no support	45-62Amp	40Amp
K80A	60W-1000W	60W-2000W	No, no support	60-80Amp	40Amp
K100A	60W-1200W	60W-2400W	No, no support	60-100Amp	40Amp
BOX-K2500 W	60W-1300W	60W-2500W	No, no support	80-100Amp	40Amp
BOX-K5000 W	60W-1300W	60W-2500W	60W-5000W	80-100Amp	40Amp

Model: BOX-K2500W/K100A-K20A, P60A- P10A

Original Value (12V/24V Auto)

Project	12V system	24V system
Battery float voltage	13.8V	27.6V
Battery under voltage) protection	10.6V	21.2V
Battery under voltage) recovery voltage	12.6V	25.2V
open circuit voltage of the solar panel (PV Voc)	18V-72V	36V-96V
Solar panels maximum open circuit voltage (Voc)	≤96V	≤96V
Battery AH	200AH	400AH

Model: BOX-K5000W

Original Value (12V/24V/48V Auto)

Project	12V system	24V system	48V system
Battery float voltage	13.8V	27.6V	55.2V
Battery under voltage) protection	10.6V	21.2V	42.4V
Battery under voltage) recovery voltage	12.6V	25.2V	50.4V
open circuit voltage of the solar panel (PV Voc)	18V-72V	36V-108V	72V-144V
Solar panels maximum open circuit voltage (Voc)	≤96V	≤108V	≤144V
Maximum input power of solar panel	1300W	2500W	5000W
Battery AH	200AH	400AH	600AH

It is recommended to use 6#-12#; cable to connect the battery;
Optional (wired remote display) external display RS485 (dedicated)

questions and answers

1. **Q: 12V system (battery 12V), how much V is the solar panel access voltage working normally?**

A: Solar panel open circuit voltage (PV Voc) 18V- 72V range works normally.

2. **Q: 24V system (battery 24V), how much V is the solar panel access voltage working normally?**

A: Solar panel open circuit voltage (PV Voc) 36V- 96V range works normally.

3. **Q: 48V system (battery 48V), how much V is the solar panel access voltage working normally?**

A: Solar panel open circuit voltage (PV Voc) 72V- 144V range works normally.

4. **Q: Can the inverter access to the controller load port?**

A: No, the inverter needs to be connected to the battery.

5. **Q: Can the DC water pump connect to the controller load port?**

A: The load port connection is not recommended because the instantaneous current will overload when the pump starts, and a DC pump of less than 200 watts can be tried.

6. Q:Need technical guidance to do how to contact?

Battery Charging Stage

The controller have 3 stages charge mode, Constant Current Charging, Constant Voltage Charging and Floating Charging for rapid, efficient, and safe battery charging.

Constant Current Charging (Bulk Charging)

In this stage, the battery voltage has not yet reached constant voltage (Equalize or Boost Voltage), the controller operates in constant current mode, delivering its maximum current to the batteries (MPPT Charging).

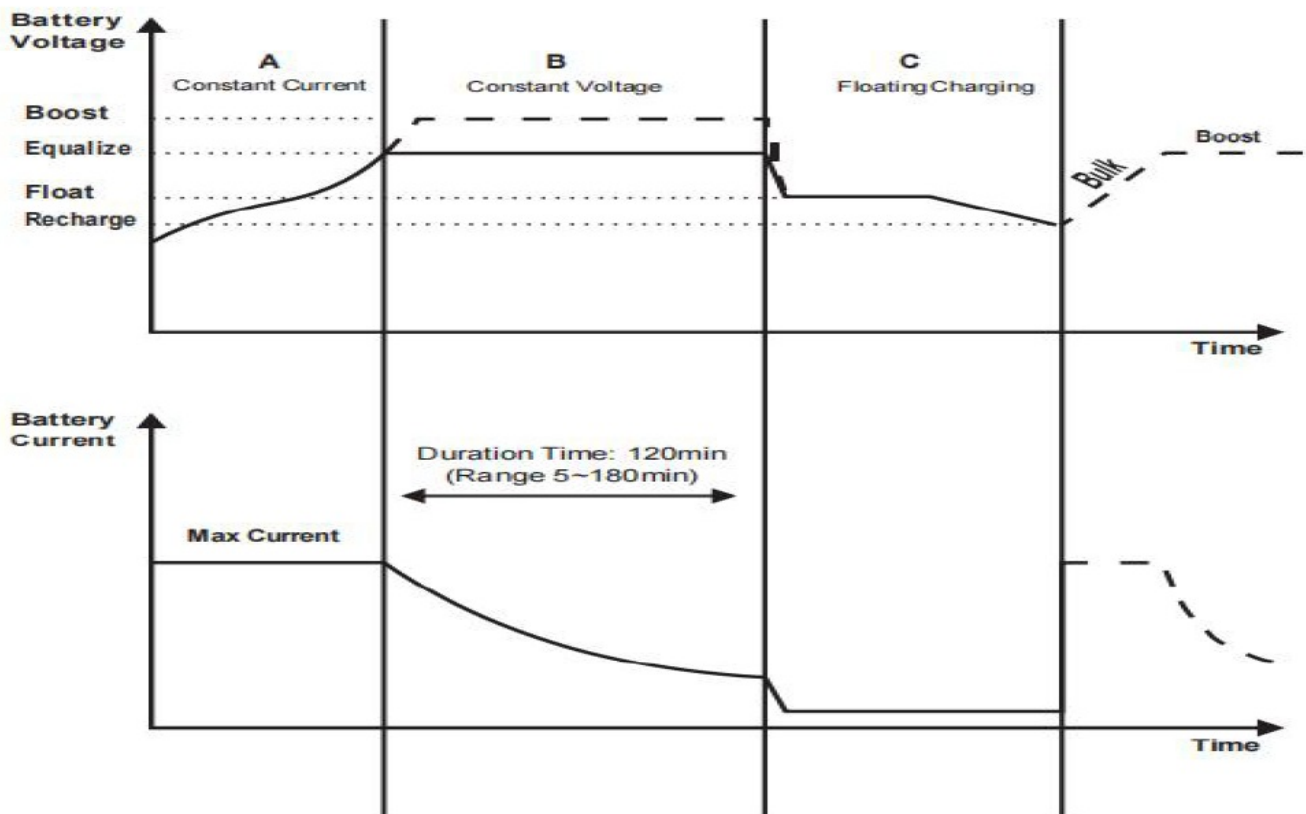
Constant Voltage Charging(Equalize and Boost Charging)

When the battery voltage reaches the constant voltage set point, the controller will start to operate in constant voltage charging mode, this process the charging current will drop gradually.

The Constant Charging has 2 stages, equalize and boost. These two stages are not carried out constantly in a full charge process, and its boost charging is start at 25th of each month

Floating Charging

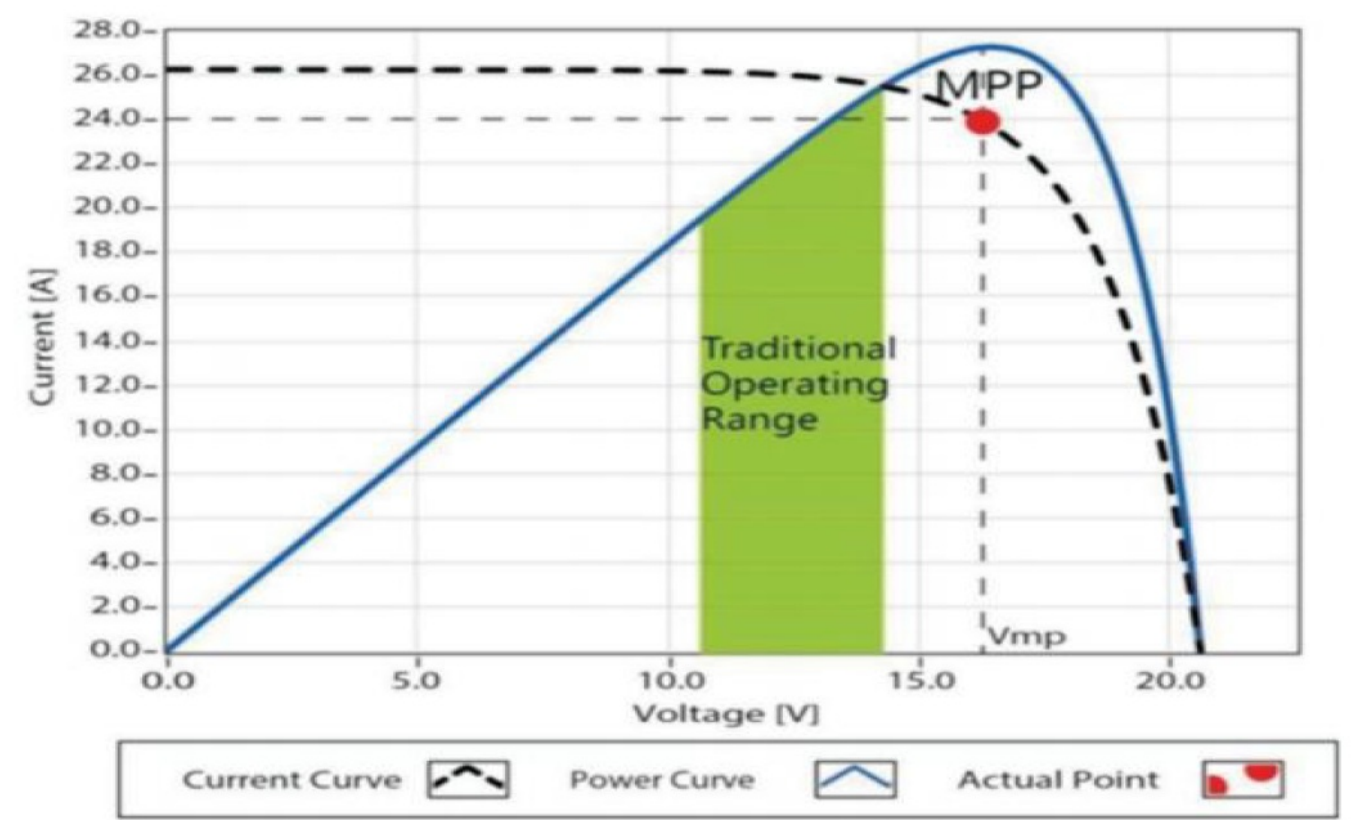
After the constant voltage stage, the controller will reduce charging current to maintaining the battery voltage on the Floating Voltage set point. Charging the battery with a smaller current and voltage on Floating Voltage stage, while maintaining full battery storage capacity. In Floating charging stage, loads are able to obtain almost all power from solar panel. If loads exceed the power, the controller will no longer be able to maintain battery voltage in Floating charging stage. If the battery voltage remains below the Recharge Voltage, the system will leave Floating charging stage and return to Bulk charging stage.



Battery Charging Stage Curve

Maximum Power Point Tracking Technology


This is a MPPT charge and discharge controller, With MPPT control algorithm, in any situation, products of this series can fast and accurately track out the best maximum power point (MPP) of a photovoltaic array, in order to obtain the maximum solar energy in time, which remarkably improves energy efficiency the maximum conversion efficiency can reach 99.5%; the maximum power point tracking is automatically traced, the charging efficiency is increased by 10% to 30% (compared with the controller without maximum power point tracking), with high efficiency/energy efficiency/intelligence.



Content Included

- 1X MPPT Solar Charge Controller
- 1X English User Manual

Documents / Resources

 <small>MPPT Solar power generation system controller</small>	OOYCYOO 100 amp MPPT Solar Power Generation System Controller [pdf] User Manual 100 amp MPPT Solar Power Generation System Controller, 100 amp MPPT, Solar Power Generation System Controller, Generation System Controller, System Controller
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References

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