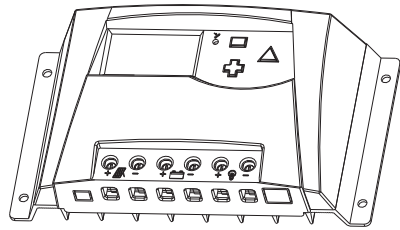


MPPT Solar Charge Controller User's Manual



10A/20A/30A

Please read this manual carefully before you use this product.

1. Product Introduction

This intelligent, multi-purpose solar charge and discharge controller has a very friendly interface of fixed LCD display. Various control parameters can be flexibly set, fully meet your various application requirements. It has following features:

- Vivid LCD graphic symbols
- Automatic Identification of System Voltage level
- Automatic Temperature Compensation
- Settable Operating mode of Load
- Battery Low Voltage Disconnection (LVD)
- Overcurrent protection
- Maximum efficiency 97%
- Increase output power 5%-30%
- Simple button operation
- Intelligent MPPT charging mode
- Adjustable charge-discharge control parameters
- Battery reverse-discharge protection
- Battery reverse connection protection
- USB output charger

2. Installation

2.1 Ready tools and cables. Right cables are recommended. Ensuring that the current density $4A/mm^2$, which is conducive to reducing the line voltage drop. Recommended 10A with $2.5mm^2$ cable. Check weather the installation sites compliance with the relevant safety requirements. Please avoid using or installing the controller in damp, dusty places or places with flammable, explosive and corrosive gases.

2.2 Install the controller into a fixed vertical plane. In order to ensure good ventilation and heat dissipation, please keep the instance over 10cm around the inverter and also between the backboard of the inverter and the wall.

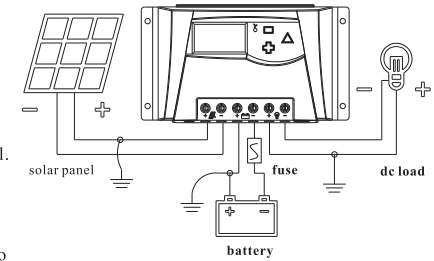
2.3 To connect the controller and the battery by cables with right polarity. The battery indicator light on the controller will be on if successfully connected, otherwise, to check and reconnect.

2.4 To connect the solar panel and the controller by cables with right polarity. If there is sunshine, the charge indicator light will be on in a circular manner to indicate right connection, otherwise, to check and reconnect.

2.5 To connect your load and the cables with right polarity and then connect with the load output port of the controller. Pay special attention to + - polarity to avoid reversed connection, otherwise, your load may be damaged.

Demolition: In case of any accident, please disconnect the solar panel, battery and load with controller in order.

Note: Reversed battery polarity will not damage the controller, but you may bear security risks on your load equipments.



3. Operation

1 Description of LCD graphic symbol

P1 : Digital parameters.

P2: Charging indication. This symbol indicates that the solar panel is charging the battery; without this symbol means solar panel can not charge the battery because of low voltage. If the symbol is flickering, means the battery is fully charged and has entered float charging state.

P3: Indication for solar panel. This symbol indicates that the connection of solar panel is detected by controller; without this symbol means the connection of solar panel can not be detected, or there is no sunshine on the solar panel.

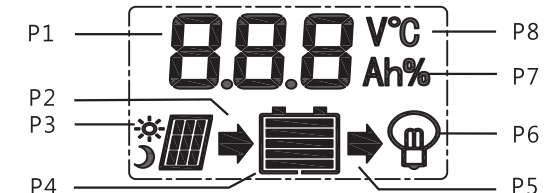
P4: 5 bars battery capacity indicator.

P5: Discharging indication. This symbol indicates that controller is in output state, otherwise not in the output state. The flickering of this symbol indicates the damages of internal control devices.

P6: Load indication. This symbol indicates that controller is in output state, otherwise not in the output state. The flickering of this symbol indicates overload or the damage of the load.

P7: A stands for the unit of current; h stands for hour.

P8: V stands for the unit of voltage.



2 Description of Button Function:

- +** : Interface loop switch button, use the button to cycle between pages in each switch cycle sequence shown in (figure 1). Moreover, this button can perform the function of “add” in the parameter setting state.
- : This button can open or shut off load in the main interface. It can perform the function of “minus” in the parameter setting state.
- ▲** : In main interface press this button can shut on/off the load, press and hold this button for 3s can enter into/exit from setup page.

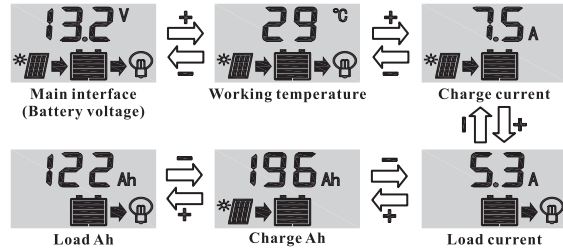


Figure 1

4

3 Viewing and setting the parameters:

The controller will default entry “battery voltage” interface after correct power-on. This is the main interface. Use the button **+** could in turn visit the following parameters interface. If the parameters in that interface could be set, long press the button **+ / ▲** (>3seconds, numbers start flashing) to enter the parameter setting interface; calling off the parameter interface after long press **+** or short press **▲** (The numbers stop flashing)

3.1 Overall unit state

This interface shows the overall unit state (pictured at right) It is the default interface after correct power-on, showing charging and discharging state, 5 bars battery power indication and the voltage of the battery.



3.2 Opening and shutting off the load

You can use the **- / ▲** button on the faceplate to open or shut off the load in the default interface.

Note: There is no such function for this button in other interface.



5

4. Common Fault and Handling

4.1 Under-voltage protection and treatment:

shows up and flash on the screen means the battery voltage is lower than the under-voltage protection voltage. The controller has enter the under-voltage protection state and the output has been stopped.

Solution: Using solar panel or battery charger to charge battery, when the battery voltage reaches the recovery value, the load will be on power again and enter normal working state.

4.2 Overload protection and treatment:

shows up and flash on the screen, it means the occurrence of overcurrent or short circuit. The controller will stop output and enter overload protection state.

Solution: After solving the problem of output short circuit and reducing the load, press the button.

4.3 Input overvoltage and handling:

shows up and flash on the screen means the battery input voltage of the controller is higher than rated input voltage, controller will stop output and enter overvoltage protection state.

Solution: 1. please choose battery with appropriate voltage grade to connect with controller; 2. other charger for the battery to be removed.

6

5. Technical data

| Rated Current | 10A | 20A | 30A | No Load Loss | 12mA(12V), 15mA(24V) | | |
|-------------------------------------|---------------------|-----|---------------------|--------------------------------|----------------------|---------------------|---------------------|
| System Voltage | 12V/24V auto | | | Discharge Voltage Drop | <0.25V | <0.3V | <0.2V |
| Open Circuit Voltage of solar panel | <75V | | | USB Output | 5V/ 1.2A | | |
| Float Voltage | 13.8V/27.6V | | | Specification of cable | ≤ 16mm ² | ≤ 16mm ² | ≤ 25mm ² |
| LVD | 10.8V/21.6V | | | Working Temperature | -20℃~55℃ | | |
| LVR | 12.6V/25.2V | | | Storage temperature | -30℃~65℃ | | |
| Boost Voltage | Sealed 14.4V/28.8V | | Duration 2 hours | Humidity | 10%-90%, NC | | |
| | GEL 14.2V/28.4V | | | Dimension (mm) | 178x101.4x45.5 | 196x111x54 | 188x133x59 |
| | Flooded 14.6V/29.2V | | | Diameter of mounting hole (mm) | 169×60 -Ø4.2 | 184×80 -Ø5 | 178×98 -Ø5 |
| HVD | 16.0V/32.0V | | | Weight | 346g | 526g | 989g |
| HVR | 15.5V/31.0V | | | | | | |

You will not be notified if there is any change of this product.

7