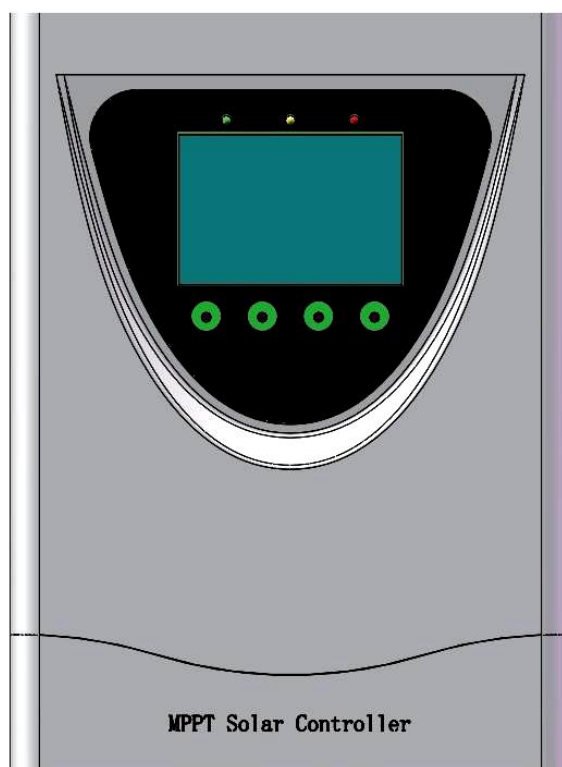


MPPT Solar Charge Controller Manual



Product manual

Dear user: Thank you very much for choosing our products! Before using the product, please read the manual carefully, the manual includes important information and suggestions including installation, use, troubleshooting, etc., so please keep this manual properly!

Contents

- 1. Product features**
- 2. Cautions**
- 3. Installation**
- 4. Connection**
- 5. MPPT Operating instructions**
- 6. Troubleshooting and Solutions**
- 7. Technical parameter**

1.Product features

- Efficient MPPT controller algorithm, overall efficiency>98%
- Three-stage charging method: constant current, constant voltage, floating charge, extending battery lifetime
- Battery type (lead-acid battery, gel battery, LifePo4, ternary lithium) and charging current can be selected, charging parameters can also be customized to charge other types of batteries
- With current limiting charging function, when the PV power is too high, the controller automatically maintains the charging power, and the charging current will not exceed the rated value;
- Operating data and working status can be read on the LCD display in real time
- Rs485 communication, convenient for integrated management and secondary development

2. Cautions

- Folding inspection: Please check the product accessories when opening the package of the equipment, including: a controller and a manual
- Check whether the device is damaged during transportation. If damage or missing accessories, please do not turn on the device and inform the carrier and dealer
- When the equipment is not used for a long time, the battery and photovoltaic switch should be turned off

3. Installation

3.1 Installation place

- Install on solid surface
- Installed in a position that can be removed at any time
- The environment temperature should be $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}$ to ensure the best working environment
- Do not install the charge controller in a place exposed to direct sunlight to avoid power loss due to overheating
- Do not install on flammable building materials; do not install on highly flammable material accessories; do not install in potentially explosive areas;
- Do not install the charge controller in a place exposed to direct

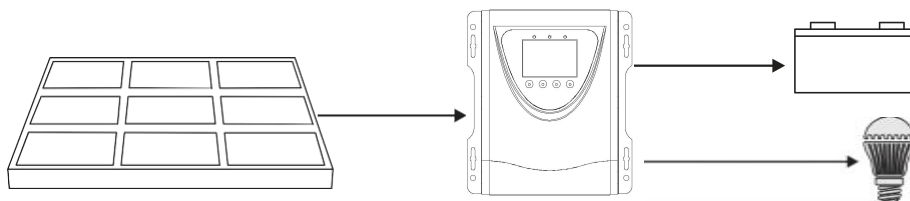
sunlight to avoid losses caused by overheating of electricity

3.2 Installation Cautions

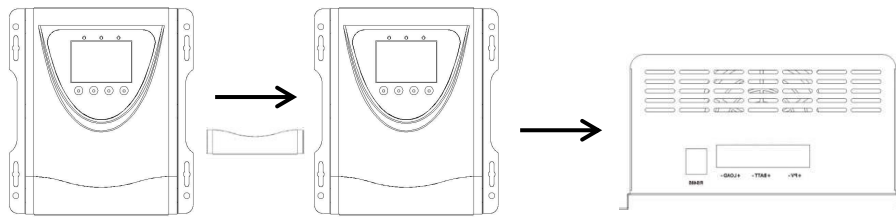
- The input line and output line should be distinguished to prevent wrong connection
- Installation of equipment should be operated by professionals, or assisted by local distributors
- The positive and negative poles of the battery must be correct, and the battery voltage must be consistent with the machine parameters
- Do not expose the device to harsh environments such as humidity, flammable, explosive, or a large amount of dust; do not cover or block the vents, and reserve an air circulation gap of more than 10 CM around the device; for good heat dissipation

4. Connection

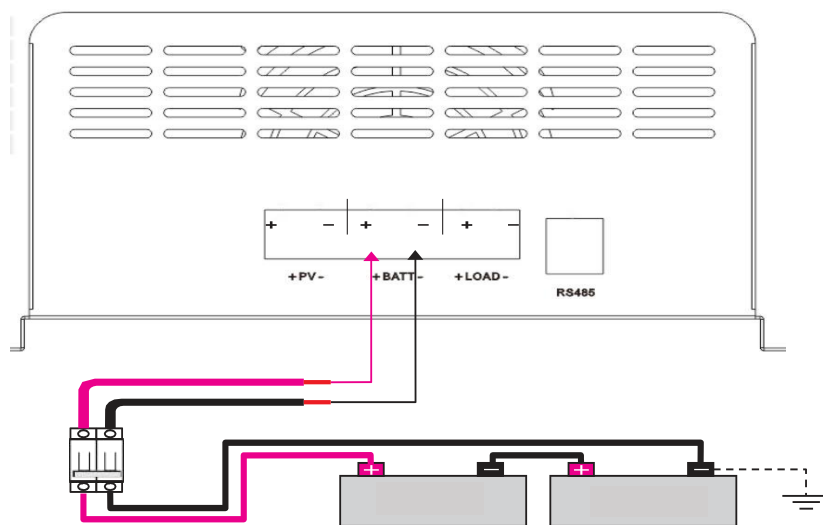
4.1 Solar Charging System / DC Input/Charging/ DC Load



4.2 Connection / Remove the cover/ Loosen the terminal screws



4.3 Battery Connection

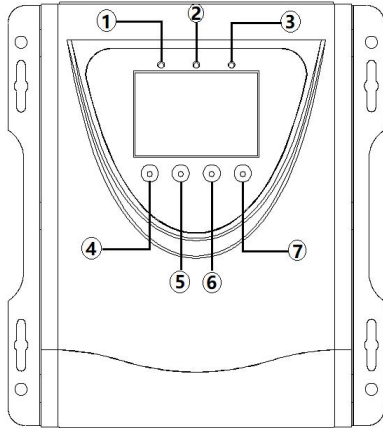


Warning: Short circuit between the positive and negative terminals of the battery and the wires connected to the positive and negative terminals may cause fire or explosion, please be careful

Note: Connecting the battery pack must be done with the circuit breaker disconnected

5.MPPT Operating instructions

5.1 Operating instructions

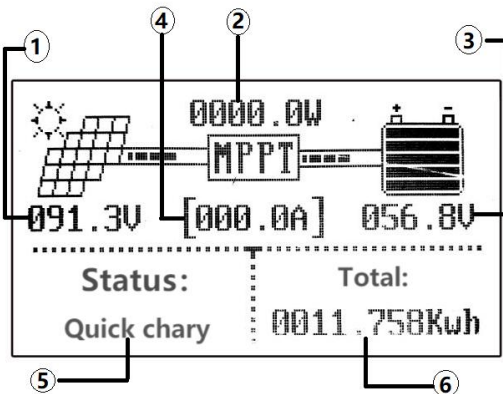


NO.	Description	NO.	Description
1	PV indicator	5	BACK
2	DC output indicator	6	UP
3	FAULT	7	DOWN
4	LCD	8	SET

5.2 LCD display description

5.2.1 Main interface description

In the default main interface state, press UP or DOWN to scroll through the screen



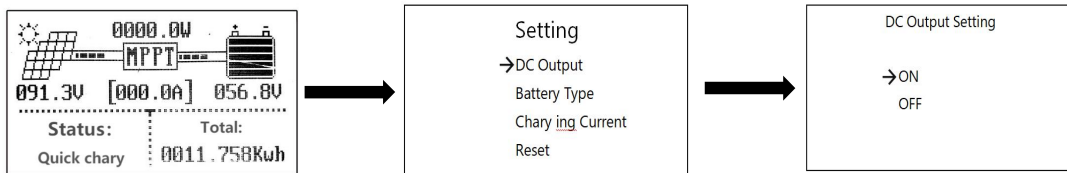
System Info	
Battery Type: Lead Ac id	7
Rated Volt.: Auto	8
Charg Volt.: 055.2V	9
Charg Curr.: 050.0A	10
LVD. : 040.0V	11

No.	Description	No.	Description
1	PV Voltage	7	Battery Type
2	PV Power	8	Charging Mode
3	Battery Voltage	9	Set charging voltage
4	Charging Current	10	Set charging current
5	System Status	11	DC discharge minimum voltage
6	Total power generation of solar panels		

5.3 DC Output Setting

In the default main interface state, press and hold the SET button for 3S to enter the setting interface; press the UP or DOWN button to select the DC output setting, press and hold the SET button to enter the DC output setting interface, press the UP or DOWN button to select on or off the DC output , Long press the SET button to confirm the modification

5.4 Battery type setting



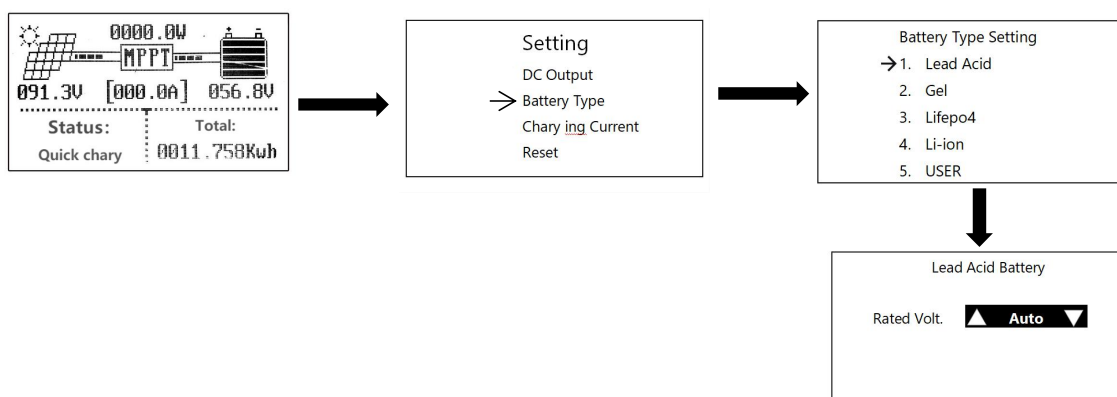
5.4.1 Battery parameter selection

The controller is set to lead-acid battery by default and automatically recognizes battery voltage. The selection of various battery parameters is as follows, please choose according to the system configuration.

Battery Type	parameter setting
Lead Acid	Auto recognize 12V/24V/36V/48V/60V/72V/84V/96V
Gel	12V/24V/36V/48V/60V/72V/84V/96V
LifePo4	3.2V*N in series (N=2~45)
ternary lithium	3.7V*N in series (N=2~45)
Customize	Floating charge voltage, equalizing charge voltage, discharge limit

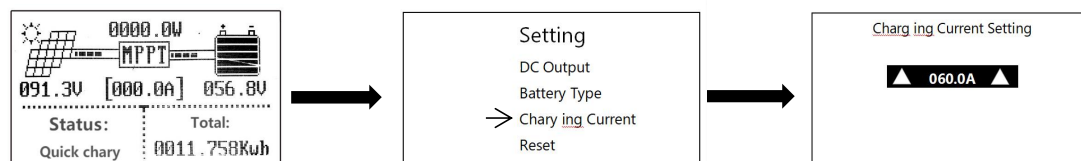
5.4.2 Setting Steps

In the default main interface state, press and hold the SET button for 3S to enter the setting interface; press the UP or DOWN button to select the battery type setting, press and hold the SET button to enter the battery type setting interface; press the UP or DOWN button to select the battery type according to the system ; Press the SET button again to enter the setting; after the setting is completed, long press the SET button to confirm the modification.



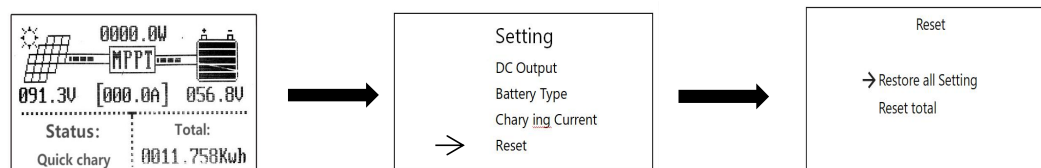
5.5 Charging Current Setting

In the default main interface state, long press the SET button for 3S to enter the setting interface; press the UP or DOWN button to select the charging current setting, long press the SET button to enter the charging current setting interface; press the UP or DOWN button to adjust the charging current; set After completion, long press the SET button to confirm the modification.



5.6 Reset

In the default main interface state, long press the SET button for 3S to enter the setting interface; press the UP or DOWN button to choose to restore factory settings, and long press the SET button to enter the restore factory settings interface; press the UP or DOWN button to select restore factory parameters (The default lead-acid battery, automatic identification) or clear the power generation; after setting, long press the SET button to confirm the modification



6. Troubleshooting and Solutions

Failure phenomenon	possible reason	solution
Connect to battery, no display on LCD	The battery is connected reversely or the battery is damaged	Check the wiring or replace the battery
The fault indicator lights up and the LCD displays "DC overload"	DC load exceeds rated current	Reduce DC load power
The fault indicator lights up, and the LCD displays "module over temperature"	Overheating inside the machine	Connect the solar panel after the standby unit has cooled
The fault indicator lights up, and the LCD displays "photovoltaic input too high"	PV Input voltage too high	Check whether the solar panel voltage is too high
The fault indicator lights up, and the LCD displays "photovoltaic input too low"	PV Input voltage too low	Check whether the solar panel voltage is too low
The solar panel is connected, voltage is not displayed	Reversed solar panels connection	Check the wiring and connection

7. Technical parameter

Model		MPPT-20	MPPT-30	MPPT-40	MPPT-50	MPPT-60	
Basic parameters	controller type	Controller with maximum power point tracking (MPPT) function					
	Efficiency	$\geq 98\%$					
	No-load loss	2~4W					
	System Volt.	Automatic recognition/manual adjustment					
	Cooling method	Wind cooling					
Input characteristics	PV Voltage Max.	DC150V					
	Start charging voltage point	3V 3V higher than battery voltage					
	Input over voltage protection point	DC150V					
	Maximum power of solar panel	12V	280W	420W	560W	600W	720W
		24V	560W	840W	1123W	1200W	1440W
48V		1120W	1685W	2246W	2400W	2880W	
96V		2240W	3370W	4493W	4800W	5760W	
Output characteristics	Applicable battery type	Lead-acid battery, gel battery, lifePo4, ternary lithium, custom					
	Rated charging current	20A	30A	40A	50A	60A	
	charging method	Three-stage charging: constant current, constant voltage, floating charge					
load characteristic	Rated load current	30A					
	LOAD control	Normally open normally closed mode					
Others	Display	LCD display					
	Language	English					
	Communication	R485					
	Protection	DC overload protection Input and output over voltage protection, anti-reverse connection protection, high temperature protection					
	Working temperature	-20℃~60℃					
	Maximum wiring size	10m ²		20m ²			
	Product Size	247*218.4*98.8 (mm)					