

PowMr MPPT SERIES MPPT SOLAR CHARGE CONTROLLER

FOR MODEL MPPT series: MPPT-30A, MPPT-40A, MPPT-50A, MPPT-60A

Reminder: The controllers can be installed indoor only.

Main Features

30A/40A/50A/60A MPPT solar charge controller

MPPT technology

Built-in DSP controller with high performance

Automatic battery voltage detection for 12V/24V/36V/48V

3-stage charging optimizes battery performance

Overcharge protection, Input PV polarity reverse protection, Output limited current protection, Over-temperature protection

Suitable for battery types such as sealed lead acid, vented gel and lithium battery, etc

Easy to be mounted

Warning and Caution

Be aware that only qualified professionals could install these controllers. Please read all manuals before installing them.

- 1) Keep controller away from water. Don't use wet towel to wipe controller.
- 2) Keep controller in an environmental temperature from -22°C~+55°C. Avoid direct sunlight.
- 3) Keep good heat dissipation.
- 4) Use the pure copper wires and connect all polarity correctly.
- 5) The load output is only for DC load less 5A current.
- 6) Please don't set any parameters if you are not professional since the controller can work fine in default condition except lithium battery.

PV Module Requirement

Models: MPPT-30A, MPPT-40A, MPPT-50A, MPPT-60A	MPPT-30A	MPPT-40A	MPPT-50A	MPPT-60A	
Maximum PV Array Power	For 12V Battery	400W	480W	600W	720W
	For 24V Battery	720W	960W	1200W	1440W
	For 36V Battery	1000W	1400W	1800W	2100W
	For 48V Battery	1200W	1700W	2200W	2800W
PV Array Open Circuit Voltage (Voc) @Operating Voltage	For 12V Battery	DC20V~DC80V			
	For 24V Battery	DC37V~DC105V			
	For 36V Battery	DC50V~DC160V			
	For 48V Battery	DC72V~DC160V			

Notes: Voc is 1.5 or 2 times than battery voltage, then it's best efficiency. Please choose the PV modules with right Voc.

Air Circuit Breaker and Wires Requirement

Models	MPPT-30A	MPPT-40A	MPPT-50A	MPPT-60A
Copper wires	6mm ²	6mm ²	6mm ² x2PCS	6mm ² x2PCS
Air circuit breakers	63A	63A	63A	100A

Reminder

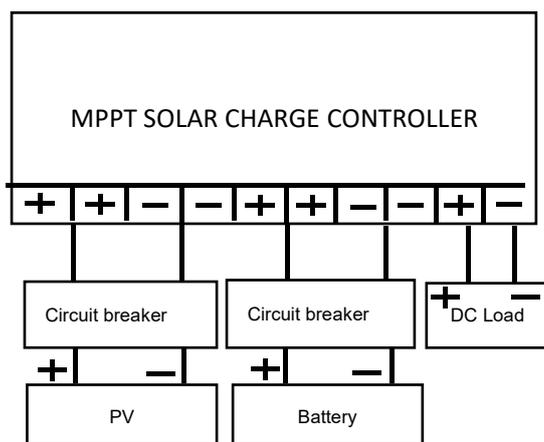
For MPPT-30A and MPPT-40A, you can connect one wire to one PV+ and another wire to one PV-.

For MPPT-50A and MPPT-60A, it's better to connect two wires to two PV+ and another two wires to two PV-.

For BAT+ and BAT-, it's same way to connect wires.

Installation steps

1. The battery voltage should be more than 12V, then the controller can boot up. Install air circuit breaker between controller and batteries. Turn off the circuit breaker, then connect batteries to controller with correct polarity.
2. Install air circuit breaker between controller and PV modules. Turn off the circuit breaker, and ensure the PV polarity correct, then connect wires between PV modules and controller.
3. Turn on the air circuit breaker between controller and batteries.
4. Turn on the air circuit breaker between controller and PV modules.
5. The controller goes into the self-test mode. Its LCD displays the parameters if all is correct. And RUN lamp (under the fan inside of casing) will flash every one second. If the controller is no response, please read full manual again for reinstalling or contact us for help.



LCD display

Item	Description
1	PV voltage / Output power
2	Battery voltage / Charging current
3	Working mode / Temperature
4	Protection mode

Working mode

3.0	Night mode, no charging
4.0	MPPT mode
7.0	Absorption mode
8.0	Floating mode

Troubleshooting

Code	Description	How to solve
18	Input PV voltage is low	Increase the PV voltage
60	Over-temperature protection	Fan will work and temperature reduction automatically
63	Battery voltage is high	Battery high voltage protection and wait for recovery
65	Battery voltage is low	Battery over-discharge and wait for recovery
71	Input PV voltage is high	Decrease the PV voltage
73	Over-charging current	Decrease the PV power

Basic Parameter

Models	MPPT-30A	MPPT-40A	MPPT-50A	MPPT-60A
Charging mode	3-stage: constant current(MPPT), constant voltage, floating			
Battery voltage automatic recognition: 12V Battery	DC9V~DC15V			
Battery voltage automatic recognition: 24V Battery	DC18V~DC29V			
Battery voltage automatic recognition: 36V Battery	DC30V~DC39V			
Battery voltage automatic recognition: 48V Battery	DC40V~DC60V			
Overcharging protection voltage	15V	30V	45V	60V
Limited current protection	31A	42A	51A	61A
Max efficiency	≥98.1%			
PV utilization	≥99%			
Protection function				
Temperature protection	75℃			
Fan-on temperature	>45℃			
Fan-off temperature	<40℃			
Properties				
Size (mm)	214x115x50			
Net weight(Kg)	1.1			
Gross weight(Kg)	1.2			
Electromagnetic compatibility	Accord to EN61000, EN55022, EN55024			
Enclosure	IP21			
Environmental temperature	-20℃ ~ +55℃			
Storage temperature	-40℃ ~ +75℃			

Manual Setting

Reminder: The controller will work fine under default setting except lithium battery.



Caution! All steps must be carried out when the PV modules are disconnected to controller.

Step 1: D00

Press the button PRG, then LCD displays D00. This is setting for load working time (Default is 24-hour). Press ENT until numbers flash, then press UP/DOWN to set up time that you want, long-press ENT to confirm it. This output voltage is same as battery. The load is only for small DC loads less 5A current. If no load, just leave it.

Step 2: D01

Press the button UP, LCD shows 13.8. This is default value of floating charging. Press ENT until numbers flash, then press UP/DOWN to set up voltage that you want, long-press ENT to confirm it.



Caution! This value is for one 12V battery. If there are many batteries in series, the controller will multiply them in proportion automatically and the LCD only displays the voltage of one battery (For example, if your battery is 4x12V, and if you set the voltage at 14.1, the charge voltage will be 4x14.1 automatically, but the LCD only displays 14.1).

Step 3: D02

Continue to press the button UP, LCD shows 14.5. This is highest absorption charging voltage for battery. Press ENT until numbers flash, then press UP/DOWN to set up voltage that you want, long-press ENT to confirm it.



Caution! This value is for one 12V battery. If there are many batteries in series, the controller will multiply them in proportion automatically and the LCD only displays the voltage of one battery.

Step 4: D03

Continue to press the button UP, LCD shows 10.0. This is protection value of battery discharge. Press ENT until numbers flash, then press UP/DOWN to set up voltage that you want, long-press ENT to confirm it.

It means it's protected when 12V battery is less 10.0V and there is no output power from OU+ and OU-.

Step 5: D04

Continue to press the button UP, LCD shows 00. 00 is default for acid batteries.

If it's for lithium battery, please press ENT until numbers flash, then press UP/DOWN to choose 01, long-press ENT to confirm it. Step 2 (D01) is no useful when you choose 01 for lithium battery. And the voltage set in step 3 (D02) will be highest charging voltage for lithium battery.

Press ESC to exit the setting menu.

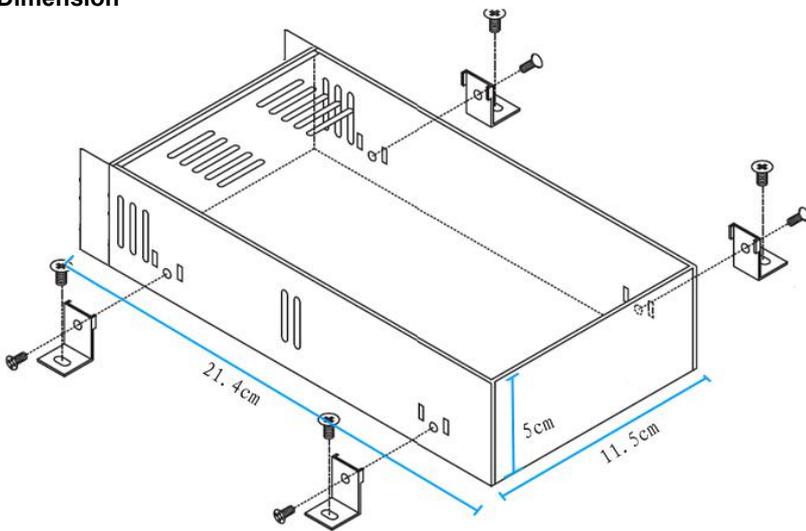
Reminder: When you set up all steps, please disconnect battery. And reconnect controller to see if all setting is successful.

When all setting is ok, then connect PV modules to controller.

Batteries charge voltage reference

Battery Type	Absorption Voltage (Constant voltage)			Floating Voltage		
	12V	24V	48V	12V	24V	48V
Vented	14.2V	28.6V	57.2V	13.2V	26.4V	52.80V
Sealed	14.4V	28.8V	57.6V	13.8V	27.6V	55.2V
Gel	14.4 V	28.8V	57.6V	13.8V	27.6V	55.2V
NiCd	14.2V	28.6V	57.2V	14.0V	28.0V	56.0V
Lithium or others	Defined by users					

Dimension



Notes: Please use our screws only since it may damage the internal PCB if using other screws.

Please use proper torque to push the screws into casing since it may damage the internal PCB by strong torque.

Content Included

1 Controller 1 English manual 4 Corner connections 4 Screws for controller casing

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