

MPPT SOLAR CONTROLLER FOR MODELS:

S3-30A, S3-40A, S3-50A, S3-60A

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 and input PV polarity reverse protection

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

Can be mounted easily

PV Requirement

Models: S3-30A, S3-40A, S3-50A, S3-60A		S3-30A	S3-40A	S3-50A	S3-60A
Maximum PV input power	12V system	400W	480W	600W	720W
	24V system	720W	960W	1200W	1440W
	36V system	1000W	1400W	1800W	2100W
	48V system	1200W	1700W	2200W	2800W
PV open circuit voltage requirement (Make sure the Voc of PV meeting the requirement as right. Voc is 1.5 or 2 times than battery, then it's best efficiency.)	12V system	DC20V~DC80V			
	24V system	DC37V~DC105V			
	36V system	DC50V~DC160V			
	48V system	DC72V~DC160V			
Maximum PV open circuit voltage (Voc)	12V/24V/36V/48V system	DC190V (The controller can't work at this voltage of long duration that will break controller. Please refer to input voltage from PV.)			

Air Circuit Breaker and Wires Requirement

P/N	S3-30A	S3-40A	S3-50A	S3-60A
Wire(copper)	≥4mm	≥6mm	≥8mm	6mm*2PCS
Air circuit breaker	63 A	63 A	63A	100A

Reminder

For S3-30A, S3-40A and S3-50A, you can use one wire to one PV+ and another wire to one PV-.

For S3-60A, it's better to use two wires to two PV+ and another two wires to two PV-.

For two BAT+ and two BAT- connection, it's same way to use wires.

Warning

Be aware that only qualified professionals should install controller. Please read all instructions before installing this controller.

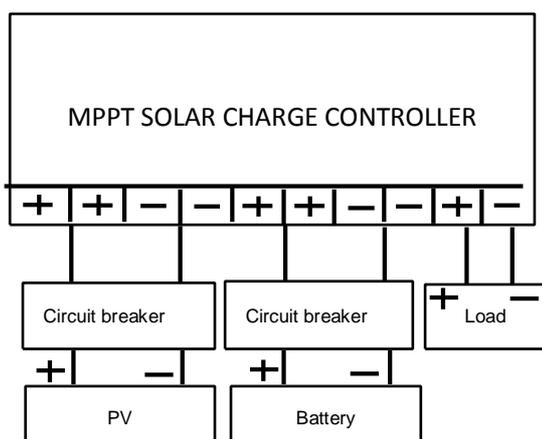
- 1) Stay controller away from water. Don't use wet towel wiping controller.
- 2) Keep controller in an atmospheric temperature environment from 10°C~50°C. Avoid direct sunlight and vents sheltered.
- 3) Ensure the smooth flowing of air vents and keep good heat dissipation.
- 4) Use the appropriate type of wire and connect the PV and battery positive and negative correctly.
- 5) The load terminal is only for lamp such as 12V system less 60W, 24V/36V/48V system less 100W. Please ignore it if no need lamp.

6) The battery voltage should be more than 12V, then the controller can boot up.

7) Please don't set any parameter if you are not professional since the controller still can work fine in default condition.

Installation steps

1. Install air circuit breaker between controller and batteries. Connect batteries to controller with correct polarity.
2. Install air circuit breaker between controller and PV Array. Ensure the panel positive and negative correct again. Test the PV Array Voc (open-circuit voltage) and this voltage should be meeting in the range of controller. Keep the circuit breaker off, then connect wires between PV Array and controller.
3. Turn on the air circuit breaker between controller and batteries.
4. Turn on the air circuit breaker between controller and panels.
5. The controller enters the self-test mode. The controller LCD will check itself and full parameter displayed if all is correct. The backlight will turn on, and RUN lamp (under the fan inside of case) will flash every one second. If something is wrong, the controller will be no response, and you need to recheck them in accordance with the above steps. If you still can't install it successfully, please contact us for help.
6. Select the battery type by different voltage, and the parameters can be set up by buttons.



LCD content displaying

Item	Content display	Meanings
1	PV	Photovoltaic cell Voltage
2	PV	Photovoltaic cell current
3	BAT	Battery voltage
4	3.0	Standby mode, photovoltaic cell Voltage less battery voltage
5	4.0	MPPT mode
6	7.0	Absorption mode Maximum battery voltage constant
7	8.0	Floating mode (Battery maintains constant voltage after it's charged)

Troubleshooting

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

Basic Parameter

MPPT controller	12V system	24V system	36V system	48V system
Overcharging protection voltage	15V	30V	45V	60V
System voltage automatic recognition	DC9V~DC15V	DC18V~DC29V	DC30V~DC39V	DC40V~DC60V
Max efficiency	≥98.1% (Voc is 1.5 or 2 times than battery, then it's best efficiency)			
PV utilization	≥99%			
Protection function				
Temperature Protection	75°C			
Fan-on temperature	>40°C			
Fan-off temperature	<35°C			
Properties				
Size (mm)	214x115x50			
Net weight(Kg)	1.1			
Gross weight(Kg)	1.2			

Manual Setting



Caution! All steps must be carried out under the solar panels are disconnected to controller.

The controller will work fine without any setting or any confirmation.

Please ignore all as below if you are not professional of our controller.

Step 1: D00

Press the button PRG, then LCD displays number D00, this is setting for load working time (Default is 24 hours). Press ENT until numbers flashes, then press UP/DOWN to set up time that you want, long press ENT to confirm it. This terminal power is same as battery voltage. The load is only for small lamp, never connect other loads that will burn the controller. If no load, just ignore it.

Step 2: D01

Press the button UP, LCD shows 13.8. This is default value of floating charging. Press ENT until numbers flashes, 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 multi batteries in series, the controller will multiply it 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 press the button UP, LCD shows 14.5. This is highest charging voltage of battery. Press ENT until numbers flashes, 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 multi batteries in series, the controller will multiply it 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 14.5, the charge voltage will be 4x14.5 automatically, but the LCD only displays 14.5).

Step 4: D03

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

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

Step 5: D04

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

If it's for lithium battery. Then press ENT until numbers flashes, then press UP/DOWN to choose what you want, long press ENT to confirm it. Step 2 is no useful when you choose 01 for lithium battery. And the voltage that step 3 sets will be highest charging voltage for lithium.

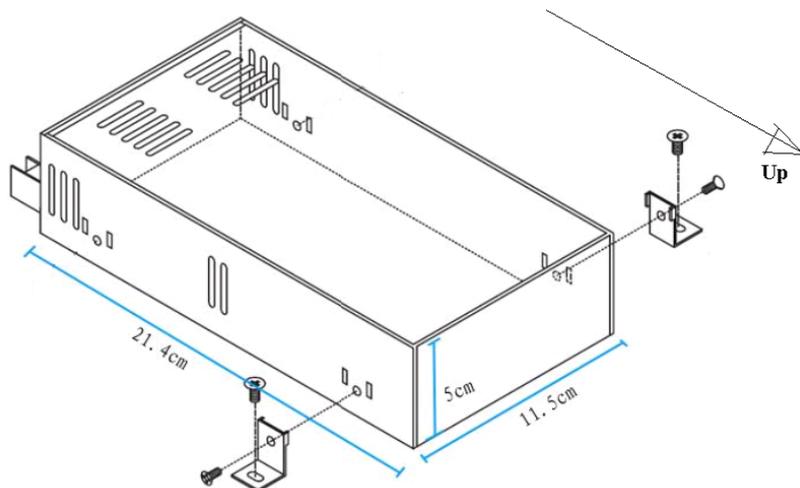
Press ESC to exit the setting menu and LCD displays current voltage and other parameters.

Reminder: When you set up all steps, please disconnect battery. And reconnect controller to see if all setting is successful or not. When it's successful setting, then connect PV 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
Other	Defined by user (Set up by buttons)					

Dimension



Notes: Please use our screws in the package only since it may damage the internal PCB if using other screws. Please use proper torque to push the screws into shell since it may damage the internal PCB by strong torque.

Content Included

- 1 Controller
- 2 Screws for controller shell
- 2 Corner connections
- 1 English manual