

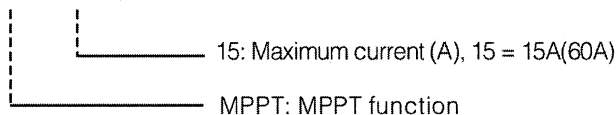
MPPT SOLAR CHARGE CONTROLLER

MPPT15—MPPT60 USER MANUAL

Thank you for purchasing our MPPT solar charge controller. Please Read this manual Before Proceeding.

Our controller named as follow: (Please specify the item No before you place order)

MPPT 15(60)



1. SAFETY

Full consideration to the safety of persons and property has been given when designing the products. However the incorrect connection may cause the system breakdown or even safety accident. For your safety and benefits, the following rules must be complied during the operation.

- Installation of this product shall be under the guidance of the professionals in this field.
- Prevent this controller from water, humidity and insects, to avoid short-circuit.
- Keep children and incapable persons away from the controller.
- Keep the controller away from electrical heater, heating machine and other high temperature electrical appliances; avoid the controller suffering from insolation directly.
- Please check the rated voltage of solar panel, battery, and loads before connection. 12V rated voltage is 12V, 24V rated voltage is 24V, 48V rated voltage is 48V.
- Make sure connections between positive and negative poles of Solar panels, Battery and Loads are correct.
- The diameter of connecting cable must be matched with the requirements of the current. Do not use thinner diameter cable, the thinner diameter, the larger resistance, this will cause higher temperature and output power decreasing.
- The total rated current of solar panel and loads must be smaller than the rated current of the controller.
- Components of system must be correctly and firmly connected. Prevent the terminals from oxidation and moldy, to avoid connection trouble.

2. FEATURES

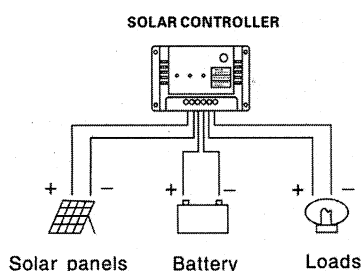
- MPPT solar charge controller MPPT10-60: Compared with normal solar charge controller, this MPPT controller could increase efficiency by 10%-30%.
- This controller can charge and discharge at the same time.
- This MPPT controller has perfect SOC function, control charge current, and supply power to the loads.

Function:

- Always keep the battery on full voltage condition.
- Prevent the battery from over-charging.
- Prevent the battery from over-discharging.
- Prevent the battery from reverse charging to solar panels during nights.
- Reverse Polarity Protection for Battery
- Reverse Polarity Protection for Solar panels
- When the battery voltage is low, the controller will automatically cut off the load from the system. If the voltage of battery is back to normal and the load will restart working.
- Thunder protection
- According to the battery voltage grade, the controller can automatically set charge-off voltage, the load-off voltage, the load-restore voltage. (The parameter is default under 25°C condition, locked by the CPU procedure, cannot adjust.)
- The controller will automatically compensate the temperature of the charging voltage according to the changes of ambient temperature

3. CONNECTION

As shown in the following diagram of connection, there are 6 terminals on the controller with clear sign.



Warning:

Before connecting to the solar panel, please connect the controller to the battery, do not use solar panel supply power to the loads directly.

Notes:

Do not use lamplight to charge the solar panel (lamplight is too weak to charge)

DC power source to replace the solar panel will cause troubles to controller. Choose the suitable wire which diameter should not be too small, please refer to the parameter.

4. INDICATE LIGHT AND BUTTON

- When Red LED(CHARGE) is on, battery is charged up strongly; When Red LED is flickering, battery is MPPT charged up in constant voltage; when Red LED is off, charge off.
- When Green LED(LOAD) is on, loads are working; when Green LED (LOAD) is off, loads stop working.
- Three Color-changing LED(BATTERY), When light is red, it indicates low voltage, green indicate battery full charged, orange indicate normal status.

Color-changing LED working voltage indicate area:

Color-changing LED	12V	24V	48V
Red LED	10.5V-11V	21V-22V	42V-44V
Orange LED	10.5 ~ 11V-13.7V	21 ~ 22V-27.4V	42 ~ 44V-54.8V
Green LED	≥ 13.7V	≥ 27.4V	≥ 54.8V

5. PARAMETERS

Specification	MPPT15	MPPT15	MPPT30	MPPT30	MPPT60	MPPT60	MPPT60
Rated Voltage	12V / 24V / 48V						
Max Load current	10A	15A	20A	30A	40A	50A	60A
Input voltage range	12V ~ 20V / 24V ~ 40V / 48V ~ 80V						
Length ≤ 1m Charge loop drop	<250mV	<250mV	<250mV	<250mV	<250mV	<250mV	<250mV
Length ≤ 1m Discharge loop drop	<50mV	<50mV	<50mV	<50mV	<50mV	<50mV	<50mV
Full charge cut	13.7V ~ 14.4V / 27.4V ~ 28.8V / 54.8V ~ 57.6V (data under no load condition)						
Low voltage cut	10.5V ~ 11V / 21V ~ 22V / 42V ~ 44V						
Temperature compensation	-3mv / °C / cell						
No load loss	≤ 10mA	≤ 10mA	≤ 20mA	≤ 20mA	≤ 30mA	≤ 40mA	≤ 45mA
Efficiency	95% - 97%	95% - 97%	95% - 97%	95% - 97%	95% - 97%	95% - 97%	95% - 97%
Max wire area	2.5mm ²	2.5mm ²	4mm ²	6mm ²	8mm ²	10mm ²	12mm ²
Ambient temperature	-25°C ~ 55°C						

6. TROUBLE SOLUTION

Phenomenon: Green LED off, battery indicator LED is red.

Reason: Low voltage of battery

Solution:

A: Cut off the power, disconnect the load, reconnect the load after the charge become normal.

B: Battery charge problem: Increase the solar panel power or change the battery.

Phenomenon: Battery indicator LED is orange and Load indicator LED is green, the loads cannot work.

Reason: Over load or short-circuit causes the controller inner fuse cut off

Solution: 10-20 minutes after eliminated the malfunction, the fuse will automatically back to working.