

MPPT

Solar Charge Controller

User Manual MPPT3010

Thank you very much for buying our product , Please read thoroughly before using the prouct

Functions

1. Suitable for charging 12V lead-acid battery.
2. Mainly suitable for small off-grid solar power generation systems, such as: home solar power generation system, solar RV , ships, Communication base station.
3. Function of manually turning off device, which can prolong the life of battery and controller when the equipment is not in use.
4. Three-stage MPPT charging mode, Constant current charge-constant voltage charge-floating charge.
5. Multiple protection functions ensure that the system works properly.
6. This product uses intelligent single-chip microcomputer design, all workflows are controlled by software, can achieve high precision and high reliability.
7. The charging mode of high efficiency MPPT is adopted to ensure that the battery works in the best state and greatly prolong the service life of the battery.
8. With overcharge, overdischarge, overload protection, anti-reverse protection and other automatic control

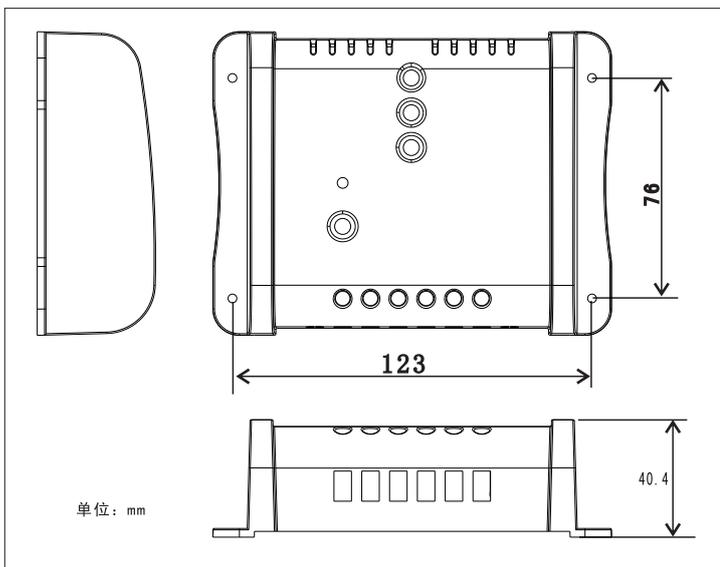
Attentions

The charge regulator is intended for use in photovoltaic systems with 12V nominal voltages, It shall be used with vented or sealed (VRLA) lead acid batteries only.

Safety Recommendations:

1. Batteries store a large amount of energy. Never short circuit a battery under all circumstances. We recommend connecting a use slow acting type, according to the nominal regulator current) directly to the battery terminal.
2. Batteries can produce flammable gases. Avoid making sparks, using fire or any naked flame. Make sure that the battery room is ventilated.
3. Avoid touching or short circuiting wires or terminals. Be aware that the voltages on specific terminals or wires can be up to double the battery voltage. Use isolated tools. Stand on dry ground and keep your hands dry.

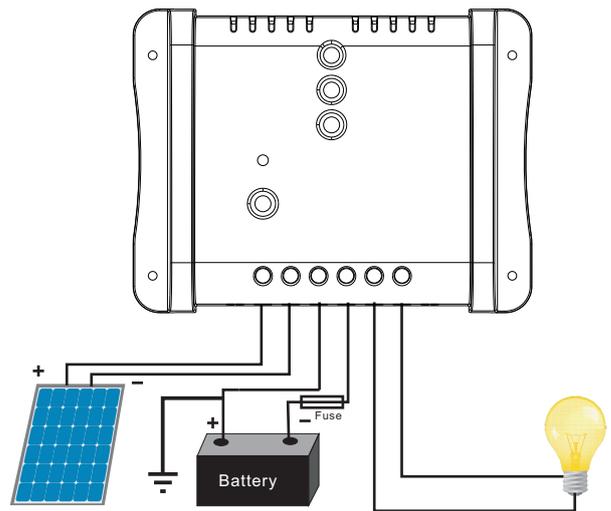
Installation



Please installed in the room, avoiding direct-clearance, do not install in the wet environment, if used outdoors, please note that waterproof moisture. Please controller and the batteries installed in the same place, the controller can be seized Measuring the battery temperature, charge voltage regulation.

Connecting

1. Connect sequence: battery --solar array --loads
2. Wire size: min 2.5mm²
3. Grounding the solar system: Be aware that the positive terminals of the SLD controller are connected internally and therefore have the same electrical potential. If any grounding is required, always do this on the positive wires.



Indicator status

Battery status (green+yellow)

Green ON: voltage normal
Green flash: battery full
Yellow: battery low

Charge status (green)

Green ON: charging
Green OFF: no PV or Evening
Green flash (1time/1s): PV overvoltage
Green flash (1time/2s): PV overpower

Load status (green)

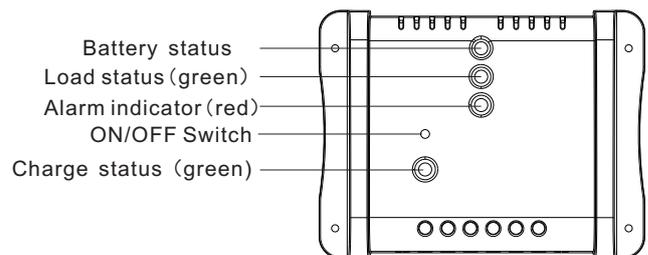
ON: Output normal
OFF: cut-off load

ON/OFF Switch

Press for 2 seconds: ON/OFF

Alarm indicator (red)

ON: Load short circuit or overload
Flash: Battery LVD (1 time/1s)
HVD (1 time/2s)
Overheating (1 times/3s)



Operation instruction

Turn on and Turn off the controller

1. When the user only connects to the battery and does not connect the solar panel, the controller is turned off. If you need to turn on the controller, you must press the button for 2 seconds.
2. When the user is connected to the battery and solar energy at the same time, the controller automatically starts charging, and the load is ON.
3. When the controller is working, after pressing the switch for 2 seconds, the controller is turned off, charging and discharge stop. If you need the controller to work again, you must press the key again for 2 seconds, otherwise, in all cases, the controller is off, including reconnect the battery and reconnect PV.

Automatic shutdown controller

When the controller is in the low voltage protection state (battery voltage < 11V) and is not in the charging state (at night or the PV is not connected), the controller automatically shuts down after 1 minute. When charging is resumed, the controller reopens automatically.

Two-stage charging

When the initial voltage of the battery is more than 12.6V, the controller will cancel the constant voltage charging, when the battery voltage rises to the constant voltage, it will directly start the floating charge stage.

Load overcurrent protection

1. 1.2 times overload : 12A, Turn off the load in 60 seconds
2. 1.5 times overload : 15A, Turn off the load in 20 seconds

3. load current>20A, The controller determines the load is short-circuited and turns off the load output directly.
4. If the load protection occurs, turn on the load switch again and again after 120s, if the overload phenomenon occurs more than 3 times repeatedly, turn off the load completely. Reset the machine before it can be reopened.

Warning: the load should not be short-circuited directly, which may cause damage to the controller

Overheating protection

The internal temperature of the controller is more than 80 °C, the controller stops charging, and when the temperature drops to 60 °C, resume charging. If the overheating protection is repeated three times, the charging will be stopped completely. If you need to recharge, you must reset manually or the next day before you can recharge.

Reverse protection

Polar panel reverse connection: no charging, the controller unaffected.

Battery reverse connection: the fuse burns out and the controller unaffected.

Load reversal: load damage, controller may be damage

PV overvoltage, overpower protection

PV overvoltage: >30V, stop charging

PV overpower: >130W, stop charging, Re-tested every 10 minutes

Parameter

| | |
|-------------------------------|---------------------------|
| Model | MPPT3010 |
| rated charging current | 10A |
| Max PV voltage | 30V |
| Max PV power | 130W |
| rated load current | 10A |
| system voltage | 12V |
| Battery type | Lead-acid(AGM,GEL,Sealed) |
| Over-voltage cut off load | 16V |
| Hight -voltage protection | 15.5V |
| Over-voltage recovery voltage | 13.7V |
| Equalizing charge | 14.5V |
| Boost charge | 14.4V |
| Float charge | 13.8V |
| Boost charge recovery | 13.2V |
| load reconnect voltage | 12.5V |
| Low voltage alarm | 11.5V |
| low-voltage protection | 11V |
| Working temperature | -20°C--50°C |
| Dimension | 135*105*37mm |
| Weight | 200g |

Liability Exclusion

The manufacturer shall not be liable for damages, especially on the battery, caused by use other than as intended or as mentioned in this manual or if the recommendations of the battery manufacturer are neglected. The manufacturer shall not be liable if there has been service or repair carried out by any unauthorized person, unusual use, wrong installation, or bad system design