

# 500W PV MPPT Charge Controller User Manual



## Import Safety Instructions

|  |  |
|--|--|
|  | <p><b>WARNING</b><br/>Improper handling may cause a very hazardous situation resulting in personal injury or loss of life.</p> |
|  | <p><b>CAUTION</b><br/>Improper handling may cause personal moderate/minor injury or equipment damage.</p>                      |

## General Safety Instructions

- Please follow all the instruction and warning markings in this manual and on the controller.
- Do not remove or bypass grounding pin. Make sure the surface of the controller is connected to earth.
- Please check the appearance of controller before installation. Contact your sales agent if there is any obvious damage.
- Please keep the controller from moisture.
- Do not leave any heavy item on the top of the controller
- To reduce the chance of short-circuits, use insulated tools when installing or working with the controller.
- This controller should ONLY be installed and maintained by qualified professionals.
- Please keep this manual for your future reference.

## Check the Controller and Parts

The package should include a charge controller and user manual. Please contact your local dealer if there is any damage on the appearance of the charge controller or missing page in the manual.

## Specification

| Spec.  | 12V                         | 24V        |
|--|-----------------------------|------------|
| Input Voltage Range                                    | 10V~44V DC                  | 20V~68V DC |
| Stand By Current                                       | ≤0.1A                       | ≤0.1A      |
| Rated Input Current                                    | 13A                         | 9A         |
| Input High Voltage Protection                          | 44V                         | 68V        |
| Recommended Photovoltaics Devices Open Circuit Voltage | ≤44V                        | ≤68V       |
| Output Voltage Range                                   | 9V~16V DC                   | 18V~32V DC |
| Output Low Voltage Protection                          | 9V                          | 18V        |
| Maximum Outputing Current                              | 28A                         | 25A        |
| MPPT Efficiency  | 92%                         | 94%        |
| Over-Temperature Protection                            | 70°C                        |            |
| Restore Operating Temperature                          | 55°C                        |            |
| Size   | 222(L) x 143(W) X 51 (H) mm |            |
| Weight   | 1424g                       |            |

## Basic Product Layout

|  |          |                                       |
|--|----------|---------------------------------------|
|  | <b>1</b> | PV -                                  |
|  | <b>2</b> | PV +                                  |
|  | <b>3</b> | LOAD -                                |
|  | <b>4</b> | LOAD +                                |
|  | <b>5</b> | Red LED Light (Protection Indication) |
|  | <b>6</b> | Green LED Light (Operating)           |
|  | <b>7</b> | Charging / Load Switch                |
|  | <b>8</b> | Battery Type Switch                   |

## ■ Charging Control Switch

|  |   |    |                          |
|--|---|----|--------------------------|
|  | 7 | 1  | BATT: Battery charging   |
|  |   | ON | LOAD: DC Loading         |
|  | 8 | 2  | LEAD: Lead Acid Battery  |
|  |   | ON | DEEP: Deep Cycle Battery |

## ■ LED Status Indicator

The LED lights indicate MPPT charging, discharging, and protection status. Table 1 shows the relation between the LED lights and protection status.

| LED Indication                 |                              |
|--------------------------------|------------------------------|
| Operating Indication           | Green Light On               |
| Input High Voltage Protection  | Red Flashing Once            |
| High Temperature Protection    | Red Flashing Twice           |
| Output Low Voltage Protection  | Red Flashing Three Times     |
| Output High Voltage Protection | Red Flashing Four Times      |
| Output Short-Circuit           | Red Flashing Five Times      |
| Operating Temperature          | Nature Cooling               |
| Output, Input Terminal         | 44.0mm 4PIN Barrier Terminal |

## ■ Wiring

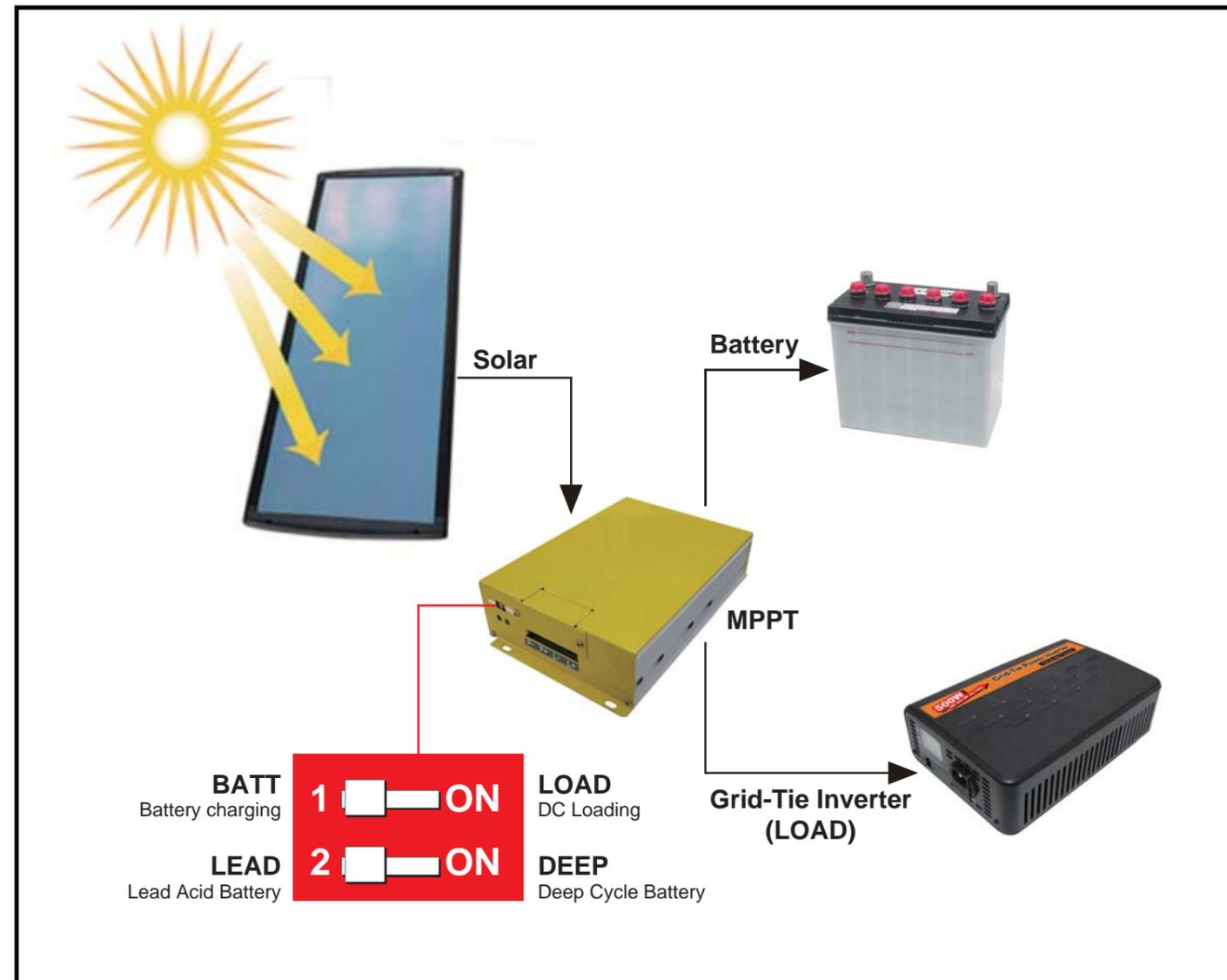
### Wiring Instructions:

PV+ / PV- Line : connect the output of solar panel to the PV+ / PV- lines of the controller  
---(10AWG, RED(+)/ Black (PV-)1)

L+ Line : connect to the positive polarity (+) of a DC Load or a battery  
---(10AWG, RED(+))

L- Line : connect to the negative polarity (-) of a DC Load or a battery  
---(10AWG、BLACK(-))

## ■ How It Works



## ■ Cautions

- The charge controller should be installed in a cool, dry, and well ventilated area without any flammable items.
- If the PV panel is not wired correctly to the controller, e.g. the positive/negative poles are wired reversely, a short circuit could happen or the fuse could burn out.
- Recommended Battery specification :12V/200Ah above or 24V/100Ah above
- The length of battery wires should be shorter than 5 meters.

## ■ Protection

### Surge Protection:

Advanced MPPT charger protection from noise and surge.