

**CMP (50A—110A)**

**Solar Charge Controller**

**USER'S MANUAL**



**Please read the manual carefully before you use our products!**

**Thank you to choose our Solar charge controllers and hope our service and products could satisfy you all along!**

## **1. Security**

**The security of the controller was fully considered during our design. But incorrect connection also could cause accident and fault. For your security, please do everything according to the following regulation:**

- Please contact the local agent before installation, which should be guided by professional
- Prevent any liquid from spattering on controller. Do not clean the controller with wet cloth
- Keep children and incapacity person away from controller
- Keep controller far away from electrical heater, warmer and other source of heat; avoid sunshine to the controller.
- Please check the rated voltage of solar panel, battery, and loads before connection. Their rated voltages all should be 48V.
- Pay more attention to connect the positive and negative pole among Solar panels, Battery and Loads correctly..
- The diameter of connecting cable should be fitted for the current Ampere in the system.
- The total rated current of solar panel and loads are kept lower than controller's rated current.
- Firmly and correctly connection among components.
- Forbidden for short circuit the battery with cables.

## **2. Feature**

**CMP (50A-110A) solar charge controller regulate the charge current an load current according the voltage of the battery. There is a CPU control function inside the controller., The following is the detailed performance:**

- Generally keep the battery on full voltage condition.
- Overcharge protection.
- Overdischarge protection.
- Reverse current protection
- Reverse Polarity Protection for Battery
- Reverse Polarity Protection for Solar panels
- When the current of load exceeds the rated one, the controller will turn into the self-protection state and it is automatically locked up, the screen shows "Overload".
- Situation of Short Circuit ; the Controller will turn into the self-protection state and is locked up, the screen show "Short circuit".
- Low voltage of battery, the controller will automatically separate loads from system. When the voltage of battery goes up, the loads will automatically restart to work.
- Protection from the lightning strike
- When Controller is normally working, the LCD Screen will show New Charging Current (a dash“-”before the numeral), Discharging Current and Voltage of battery every 5 seconds.
- Controller is always counting Charging Current Hours and Discharging Current Hours of the Battery
- When controller start up, according to the voltage level of battery, Controller will self-setup the Charging-off voltage, the Load-off voltage, the Load-on voltage. These datum is tacitly approved under the standard environment temperature 25°C.
- According to varies system temperature, the controller will automatically compensate the temperature of the charging voltage.
- Users could setup the Charge-on or off voltage, the load-off voltage, the Load-on voltage, etc, according to their requirements.
- To prevent battery from over discharging, Controller will automatically control the lowest Load-off voltage of the load, which is no less than 40V. If voltage of the battery is less than 40V, the button “-” will stop working.
- To recover its defaults, please keep pressing down the button “Menu” for over 5 seconds.

### 3. Connection

As the chart below:

On condition that both of two air-break switches on conforming faceplate are off, Then connect the equipment as the way below:

- Connect “+” and “-” poles of battery with the correct ports on the back of controller (the fifth and sixth ports from the left).
- Connect “+” and “-” poles of solar panel with the correct ports on the back of controller (the first and second ports from the left).
- Connect “+” and “-” poles of load with the correct ports on the back of controller (the third and fourth ports from the left).

#### Attention!

- Correctly connect the electrodes of solar panels, battery and loads!
- Choose the proper cable according to the current of the loads; The diameter could not be smaller. The cable 25m m<sup>2</sup> minimum is suggested!

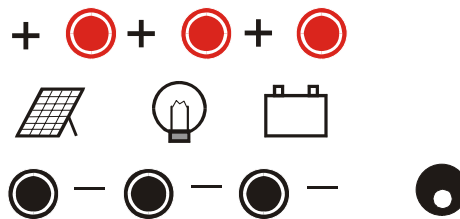
• IF some problem come out ,you should follow **(5.Fix the breakdown)** ,find out the reason, then must do as ( **The process of boot-strap** ) to re-setup it. **Please do not press the “RESET” button when your load is big!**

#### The process of boot-strap:

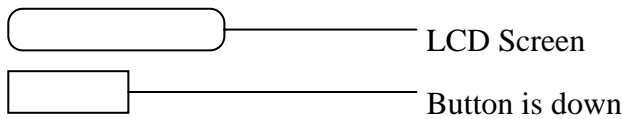
1. Make sure the “START” and “POWER” button off.
2. Make sure the battery, solar panel and the load have been connected accurately in the way hereinbefore, then turn “START” button on;
3. When the load begin to work normally, turn “POWER” button on. And then turn “START “button off, after that the system will be working normally.

At last, if you would set the parameter of the equipment, please consult the method of operation.

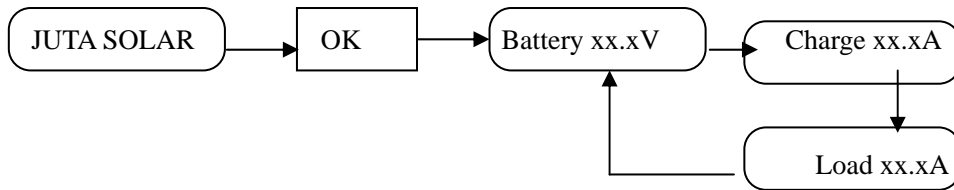
#### Sketch of Connection



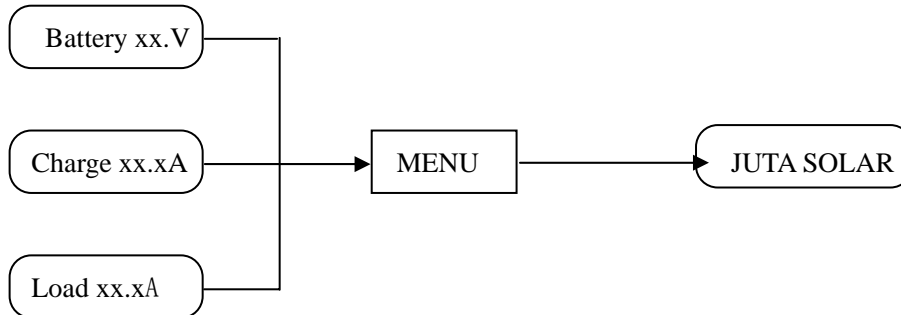
## 4. Operation



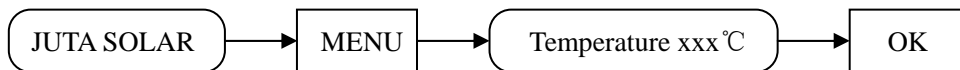
### • Startup



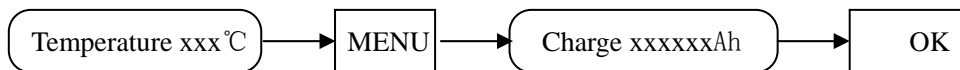
### • Menu



### • Check the system temperature



### • Check the charging current



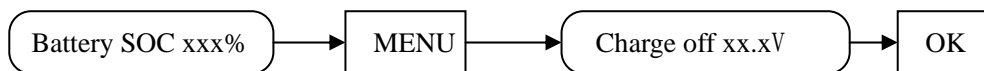
### • Check the discharging current



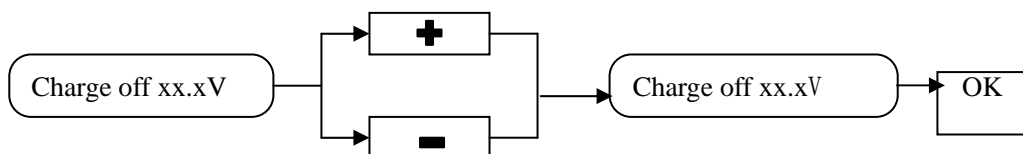
### • Check the battery capacitance



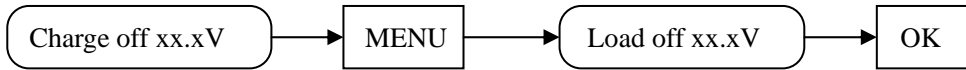
### • Check the charge-off voltage of battery



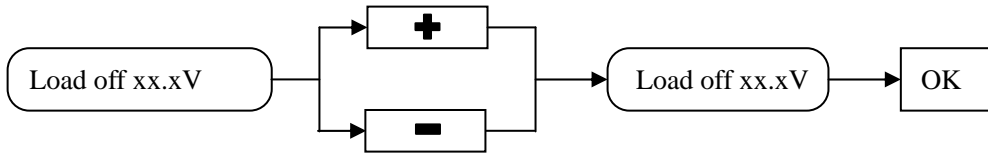
### • Setup the Charge off voltage of battery



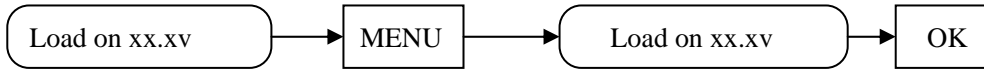
- **Check the load-off voltage of loads**



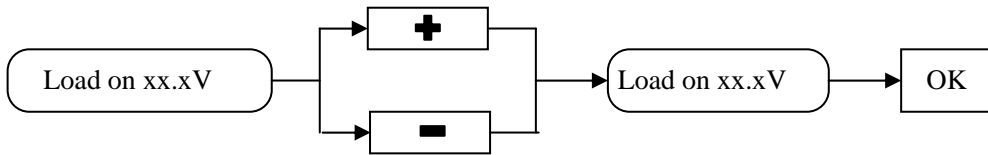
- **Setup the Load-off Voltage of loads**



- **Check the load-on voltage of loads**



- **Setup the load-on voltage of loads**



- **Adjust Charge-off voltage of Battery, Load-off Voltage of loads and Load-on Voltage of loads into the defaults**

Press down  for more than 5 seconds

## 5. Fix the breakdown

- **phenomenon:** Green light goes out, the loads stops working, and LCD Screen shows

**Reason:** Low voltage of battery

**Solution:** Charge up the battery or change the battery

- **phenomenon:** Green light goes out, the loads stops working, and LCD shows

**Reason:** Overload

**Solution:** Disconnecting the loads and then press Button

- **Phenomenon:** Green light goes out, the loads stops working, and LCD Screen shows

**Reason:** Short circuit is happening to loads.

**Solution:** Disconnecting the malfunction and then press the button

- **Phenomenon:** Green LED is light

**Reason:** Loads are normally working

- **Phenomenon:** Red LED is light

**Reason:** Normally, Battery is charged up rapidly

- **Phenomenon:** Red LED is flickering

**Reason:** Normally, Battery is in constant voltage (or floating) charged up

- **Phenomenon:** Green LED is light when the malfunction begin to work, and LCD Screen shows

**Solution:** Disconnecting the loads and then press Button

- **Phenomenon:** Red LED goes out

**Reason:** Charge-off of battery

**Solution:** This is the common phenomenon during nights. If it is so during days, please carefully check the connection among Solar panels, Controller and Battery.

## 6. Accessory Installation

- **Component:** near-distance thermoscope

**Installation:** Plug the thermoscope into the socket (right side) of controller before running of controller, and then connect batter with the controller. The thermoscope will normally work after one minute. (According to the fourth Chapter-Operation, the environmental temperature of controller will be available).

- **Component:** Long-distance thermoscope

Such thermoscope is suitable to the following condition—the location of battery is far away from the Controller. (please show us the length of cable between battery and controller for ordering the proper thermoscope)

**Installation:** Plug the thermoscope into the socket (right side) of controller before running of controller, and then connect batter with the controller. The thermoscope will normally work after one minute. (According to the fourth Chapter-Operation, the environmental temperature of controller will be available).

## 7. Technical datum

Type	CMP110
rated voltage	48V
maximum loading current	50A—110A
Load off voltage	42V Recognize tacitly、rest
Charge off voltage	54.8V Recognize tacitly、rest
resumed voltage of boot-strap	50.4V Recognize tacitly、rest
temperature compensation	-3mv/cell.
unloaded waste	≤60mA
minimum area of connection	25m m <sup>2</sup>
loop voltage drop	<600mv

▲environmental temperature : < 25°C