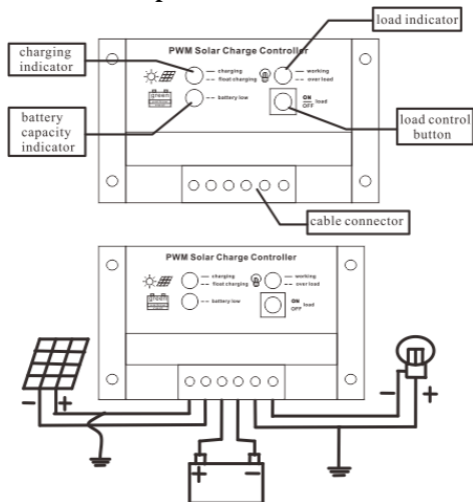


User's Manual for Solar Charge Controller




I. Features

- 1.Intuitionistic LED indicators show the system battery capacity, charging and discharging state of the battery.
- 2.Having the protection functions as overcharging,over discharging,overload,short-circuit and reversed connection.
- 3.Tandem type PWM charging makes the charging efficiency increase by 3% to 6%,compared with non-PWM charging.
- 4.The parameters of charging and discharging have been set during the production(special parameters need to be told in advance),so on need to adjust the parametes.
- 5.The woring mode of the load can be set.
- 6.USB charging function(optional).
- 7.Gird-complementary (optional function).
- 8.Remote telecommunications function equipped(optional function).
- 9.Prevent battery from discharging to battery at night.

II. Installation Explanation



III. LED Indicators Instruction

icon	Indicator	State	instruction
	Charging LED	Off	Not charging no connect of solar panels or weak sunshine
		On	Charging or elevated charging
		Flickering	Float charging battery is fully charged
	Battery capacity LED	Green LED on	Full battery capacity
		Yellow LED on	Normal battery capacity
		Red LED on	Low battery capacity
		Red LED flickering	Low voltage protection for battery
	Load LED	Off	Load on
		On	Load off
		flickering	Load closed output overload or short-circuit

IV. Load Working Mode Instruction And Setting

1. Normal mode: Controller is used as PWM charging controller without lighting and timer function. Controller is at this mode without special request.

2. Lighting and timer controlling mode: At this mode, the controller will star the load after darkness and will close the load after setting hours(or sunrise).

3. Lighting control mode: At this mode,when the solar panels voltage is lower then (2.5vfor 24v system,5vfor 48v system,10v), controller will start the load after 10 seconds.when the solar panels voltage is higher then 3.5v (for 24v system,7vfor 48v system,14v),controller will close the load after 10 seconds.

Normal mode setting: Press the button until the load LED indicator starts flickering,and release the button when it flickers 15 times.Then you finish the setting for PWM mode. The controller will preserve this setting and disconnect the connecting will not lose the setting.

Lighting control mode setting: Press the button until the load LED indicator stars flickering,and release the button when it flickers 14 times. Then you finish the setting for lighting mode. The controller will preserve this setting and disconnect the connecting will not lose the setting.

Lighting and time controlling mode: Press the button until the load LED stars flickering.One flicker of the load indicator means one hour is added to the load working time.Release the button when it reaches your setting hour (1-13h).

Then you finish the setting for lighting and timer controlling mode.The controller will preserve this setting and disconnect the connecting will not lose the setting.

Opening and closing load by manual: Pressing the button once shortly will close the load, and the load can be started again after you press the button shortly when the load is off. After starting the load, if it is at lighting and timer controlling mode, the load will be closed after setting time or the next sunrise.

Load working mode checking: Press the button 2 to 4 seconds and then release it, the load indicator will stop flickering after several flickers. The flickering times represent different working modes. Flickering 1 to 13 times means lighting and timer controlling mode; flickering 14 times means lighting control mode; flickering 15 times means PWM working mode.

V. Breakdown Disposal

Load LED indicator flickering: The output of the controller is overload or short-circuit. After removing the redundant load, the controller will eliminate the overload protection within two minutes.

Charging LED indicator off: No connecting of the solar panels. Please check whether the connect is right and firm.

Battery capacity LED indicator off: Please check whether the connection of the solar panels, battery and load is right.

USB power not work: Please check whether the battery voltage is higher than 12.0V (for 12V battery).

VI. Quality Assurance

1. Quality assurance should be carried out according to the following rules:

- The product is guaranteed of replacement, returning and repairing within 7 days after sale.
- The product is guaranteed of replacement and repairing within 1 month after sale.
- The product is guaranteed of repairing within 12 months after sale.

2. If it is not possible to identify the using date of the controller, we would refer to the ex-work date, and prescribe 18 month as the warranty period. We need to charge beyond the warranty period. The controller can be repaired for life no matter when and where you use it.

3. If the controller is damaged by the following causes, we need to charge even if it is in the guarantee period:

- Do not operate according to the user's manual.
- Use the controller under the condition which is beyond the using standard and technical requirements.
- Repair by yourself or reform by yourself.
- Any inappropriate environmental condition which can cause the breakdown and aging of the apparatus.
- Improper carrying or storage.
- Regarding to the service of replacement, returning and decide whether to

replace or repair after we make clear who should be responsible.

4. You will not be notified if there is any change of this product.

VII. Technical Data

System Voltage	12V/24V				No Load Loss	<13mA
Open Circuit Voltage	<50V				Voltage Drop of Charging Circuit	<0.2V
Rated Charging and Discharging Current	5 A	10 A	15 A	20 A	Voltage Drop of Discharging Circuit	<0.1V
Elevated Voltage	14.4V/28.8V				USB Power	5V/1A max
Float Charging Voltage	13.8V/27.6V				Cable Diameter	<6mm ²
Low Voltage Disconnecting	11.2V/22.4V				Installing Size	Φ4mm-159mm*68mm
Low Voltage Recovery	12.6V/25.2V				Dimension	168mm*88mm*34mm
Charging Mode	PWM				Storage Temperature	-35℃~70℃
Output Overload and Short-circuit Protection	Output >20A and 60s or >29A and 15s overload protection or >40A Short-circuit				Working Temperature	-25℃~60℃
					Humidity Requirement	≤90%
					Weight	225g
					Voltage Tolerance is ±0.1V	

VIII. Declaration

1. This controller can only be used to control the charging from solar panels to lead-acid battery. It can not be used to control other generating appliances to charge the battery.
2. The controller is equipped with solar panels and battery reversed connection function. But it does not have load reversed connection function. We will not afford free service or compensation for the damage caused by load reversed connection.
3. We will not notice you if there is any change of the product.