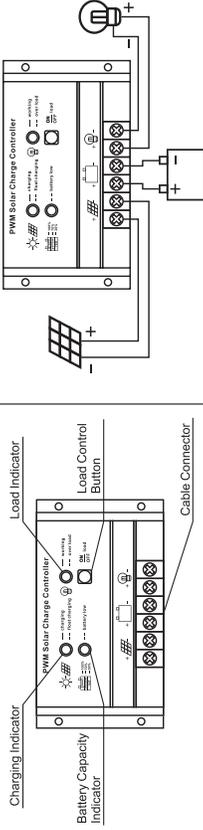


Thank you for choosing the Solar Charge Controller. Please read this manual carefully before use to ensure correct, safe and effective product operation. Please keep this manual in a safe place for future reference.

Features

- LED indicators show the system status at all times including:
 - a. Battery capacity
 - b. Charging and discharging state of the battery/system.
- Electronic Protections:
 - a. Reverse Polarity
 - b. Short Circuit
 - c. Battery Over-Charge and Over-Discharge (At night)
 - d. System Overload (Loads exceed the system parameters)
 - e. **NO REVERSE POLARITY LOAD PROTECTION.** Incorrect load connection can cause permanent system and/or component damage. Be very careful when connecting loads to ensure the correct polarity.
- Outstanding battery charging performance utilizing PWM technology, increasing charge efficiency between 3% - 6% as compared with non-PWM charging.
- Charging parameters are preset, no adjustment is required.

Installation Instructions



Controller Layout

Wire Connections

- **Connecting the System:**
 - Install controller in a well ventilated and protected environment.
 - Unit is not waterproof, keep away from water and moisture.
 - Keep away from flammable liquids and gases.
 - Recommend suitable multi-core cables. Make sure that the current density is 4A/mm² or less, which can reduce the voltage drop of line (11AWG cable is recommended for 10A controller and 9AWG cable is recommended for 20A controller)
 - **Connect the Battery First.** The battery capacity LED will light up as soon as you connect the Battery. If it does not light up the battery is likely connected in reverse.
 - **Connect the Solar Panel next.** When connecting the Solar Panel the Charging LED will flicker twice to indicate a good connection and the system is working. If the LED does not light up the Solar Panel is likely connected in reverse.
 - **Finally connect the Load** (Light, Fan, etc) to the load output terminal of the controller. Pay close attention to the polarity. Connecting incorrectly may result permanent damage to your load.
- Disconnecting the System:**
Disconnect the panel first, then the battery and finally the load.
- Notice:**
Voltage and capacity of the battery as well as voltage and current of solar panel must match voltage and current of controller.

LED Indicators Instruction		
Icon	Indicator	State Instruction
	Charging LED	Off On Flickering Float charging, battery fully charged
	Battery Capacity LED	Green Led On Yellow Led On Red Led On Red Led Flickering
	Load LED	Load on Off Load off Load closed, output overload or short-circuit

FAQ & Troubleshooting Guide

Problem	Display	Possible Reason	Corrective Action
No power getting to the load	Battery Capacity LED Off	Capacity of battery is insufficient. Voltage at the terminal of battery is too high. Wire connection of battery is loose.	Battery will be connected to the load automatically after charged. Resolve the fault and re-connect the battery. Check the wiring of battery.
	Load LED Flickering	Overload or short-circuit.	Shut off all loads and resolve the fault. Controller will try to release the protection mechanism automatically in two minutes, or operator can press the load switch to reset the output.
Battery power of short duration	Load LED Off	Capacity of battery has been very limited, likely old or damaged.	Battery likely requires replacement.
Battery charges too quickly	Charging LED Flickering	Battery I.R. high, capacity low, connecting wire is possibly too thin and too long.	Battery likely requires replacement, shorter / thicker connecting wires should be installed.
	Charging LED Off	Solar module polarity reversed. Wire connection of solar panel is loose or damaged. There is no sunshine or sun is covered. Solar panel is damaged.	Check the connections and correct the polarity. Check the wiring of solar panel. It is normal. Replace the solar panel.

Warranty

The Solar Charge Controller has a warranty of 1 year from date of invoice. Please read these instructions very carefully. The manufacturer shall not be liable for damages to the controller, including:

- The installation is not completed according to the instructions in this user's manual.
- The controller is used in conditions outside of the environmental and technical requirements, such as wet and damp conditions.
- Instances of natural disasters (Acts of God) out of our control which can cause the breakdown, damage and aging of the controller.
- Improper transportation or storage.
- The warranty is immediately void if batch numbers, serial numbers or identification-marks are manipulated or are unidentifiable.
- The controller is equipped with solar panel and battery reverse connection protection, but it **DOES NOT HAVE LOAD REVERSED CONNECTION PROTECTION.** We are not liable for damage caused to loads due to incorrect, reversed connection of loads.
- This controller can only be used to control the charging from a solar panel to a lead-acid battery. It cannot be used to control power generated from any other type of device such as a Gasoline Generator to charge the battery. Misuse waives the controller warranty.

LED Indicators Instruction	
Rated Current	10A
Rated Voltage	12V/24V
Absorption Voltage	14.4V/28.8V ± 0.2 V (2 hours)
Float Voltage	13.8V/27.6V ± 0.2 V
Low Voltage Disconnection	10.7V /21.4V ± 0.2 V
Low Voltage Reconnection	12.6V /25.2V ± 0.2 V
Over-Voltage Disconnection	15.5V /31 V
Over-Voltage Reconnection	15.0V /30 V
Loop Voltage Drop	<0.3 V
Self-consumption	<15 mA
Operating Temperature	-25 ~ +55 °C
Storage Temperature	-30 °C ~ +70 °C
Humidity Requirement	≤90%, no condensation
Mounting Hole Spacing	Φ4mm - 159mm x 68mm
Size	168 x 88 x 34 mm
Terminal (recommended)	≤4mm ²
Weight	210g
	20A
	275g

User's Manual

for Solar Charge Controller

Product features & specifications are subject to change without notice.

ISO 9001: 2008



Subject to change without notice!

Version: M1306



Made in P.R.C