

1.0 Introduction

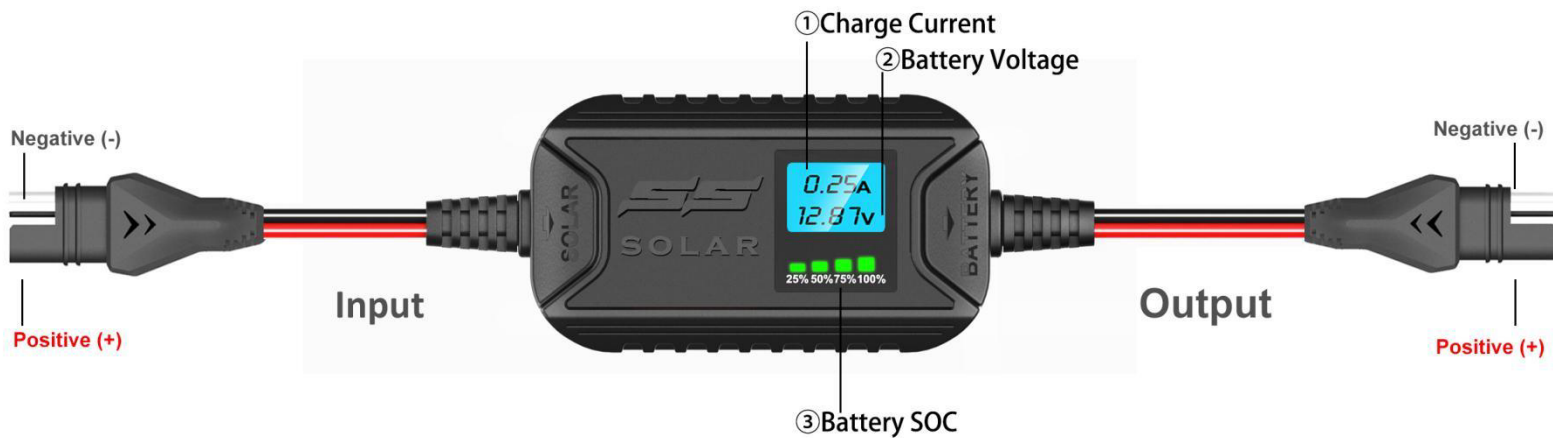
This manual provides safety and installation instructions for charge controller. SS Solar assumes no responsibility for loss, damage or expense resulting from improper installation, handling, or use.

2.0 Safety Precautions

Before installing this product, read all safety instructions in this document.

- All installations must be performed in compliance with any applicable local codes.
- Batteries must be the same type, make, and age when connecting multiple batteries in parallel or in series.
- Avoid exposing the solar panel to partial sunlight or shade. Partial sunlight can cause hot spots on the solar panel.
- Ensure the input voltage does not exceed 30 VDC to prevent permanent damage.
- The charge controller is solar-powered. The minimum solar panel voltage is 15V.
- Designed for 12V batteries. Do not use with a 6V or 24V battery. (Two 6V batteries may be used if connected in series; multiple 12V batteries may also be used if connected in parallel).
- Do not attempt to recharge non-rechargeable batteries. Consult your battery dealer for more information before use.
- Ensure the polarity is correct when connecting the charge controller to the battery and solar panel.

3.0 Feature



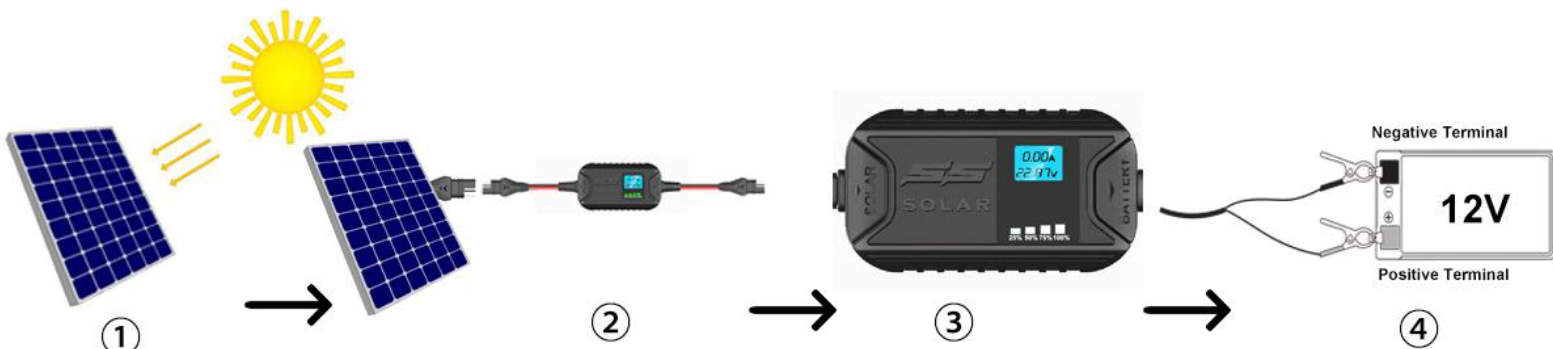
①**Charge Current:** Indicates solar charge current.

②**Battery Voltage:** Indicates battery voltage/ Open Circuit voltage of solar panel

③**Battery Stage of Charge (SOC):** Indicates the connected battery/batteries state-of-charge.

4.0 How to Use

Identify the correct polarity of the solar panel and battery terminals, the positive battery terminal is typically marked by these letters or symbol (POS,P,+). The negative battery terminal is typically marked by these letters or symbols (NEG,N,-). Do not make any connections to the carburetor, fuel lines, or thin sheet-metal parts.



1) Place the solar panel in full sun without shade.

2) Connect the solar panel to the charge controller. The LED screen will illuminate and initially display only the open-circuit voltage of the solar panel (No charge current or stage of charge will be displayed). The solar panel's open-circuit voltage will switch to the battery voltage once the controller detects the battery and activates charging.

3) Connect the charge controller to battery terminals and wait 5–10 seconds. The charge controller will enter charging mode once it recognizes the battery and activates charging. The Stage of charge, battery voltage, charge current will illuminate, indicating the charging process has started.

4.2 Understanding Charge LEDs.

LED	SOC	Explanation
	25% Green LED	The 25% Charge LED will slowly pulse on/off when the battery is less than 25% fully charged. When the battery is 25% charged, the Green Charge LED will be solid.
	50% Green LED	The 50% Charge LED will slowly pulse on/off when the battery is less than 50% fully charged. When the battery is 50% charged, the Green Charge LED will be solid.
	75% Green LED	The 75% Charge LED will slowly pulse on/off when the battery is less than 75% fully charged. When the battery is 75% charged, the Green Charge LED will be solid.
	100% Green LED	Pulsing Green LED-Bulk charge complete, optimizing battery for extended life. Solid Green LED - When the battery is 100% charged, the Charge LED will be solid green.
	Maintenance Green LED	After the battery is fully charged, the charger will continue monitoring the battery, and provide ongoing maintenance and optimization. The 100% Charge LED will pulse on/off slowly during these cycles. The charger can be left connected to the battery indefinitely.

5.0 Technical Parameters

Electrical Parameter	Battery Parameters
Rated Current	10A
Battery system Voltage	12V
PV Input Voltage	15V-30V
Starting Voltage	15.5V+/0.1V
Max PV Input	120W
Boost Charge Voltage	14.4V+/0.1V
Float Charge Voltage	13.8V+/0.1V
Boost Charge Recovery	12.8V+/0.1V
Boost Duration	2 Hours
Electronics Protections	Reversed battery polarity, Reverse PV polarity, PV over voltage, battery over-voltage, PV over-current, Battery over-current.
Battery Type	12volt Wet Cell, Gel Cell, Flooded, Maintenance-free, AGM, Lithium-ion, Lithium Iron
Controller Terminals	1.5mm2/16AWG
SOC	25%-50%-75%-100%
Standby Current	≤0.5mA
Operation Temperature	-40 °C -80°C
Temp Compensation	-3mV/°C/2V
Storage Humidity	10%-90%, No condensation
Dimension	
Protection Level	IP54
Weight	

6.0 Status Troubleshooting

Description	Explanation	Troubleshooting
LED screen doesn't illuminate.	Insufficient Sunlight	The charge controller is powered by solar energy, if the sunlight is weak, the charge controller would not light up. Simply expose the solar panel to full sun.
	No Solar Input	Check if the solar panel delivers any output, the voltage of a solar panel in full sun should be 20V or higher.

LED screen doesn't illuminate.		Check if the polarity is correct, a polarity adapter is required if the polarity of solar panel doesn't match the charge controller.
	Input and Output Wrongly Connected	Connect solar panel to charge controller through input instead of output, LED screen will not illuminate when wrongly connected.
LED screen illuminates, no charge current and battery percentage.	No Battery Is Detected	Check if the polarity is correct when connecting charge controller to battery terminals.
		Check if the fuse is blown or not.
		Check if the battery connection is loose.
Battery percentage indicator is solid red.	Polarity Reversed	Check if the wire on battery terminals is reversed.

7.0 Warranty

Thank you for purchasing this solar system, should you experience any defects due to the manufacturing of this product, you are entitled to get a replacement or refund. If you have any questions, feel free to send us an email at: support@SSSolar.net