

# Solar charge controller manual



1. Solar panel Positive Connection
2. Solar Panel Negative Connection
3. Battery Positive Connection
4. Battery Negative Connection
5. DC Load Positive Connection
6. DC Load Negative Connection
7. Battery Charge Gauge
8. Power Out Light
9. Temperature Sensor

## ***Connecting the solar charge controller***

Make your connections in the following order:

- i) Batteries
- ii) Solar Module
- iii) DC Load

Reverse this order for disconnecting.

Connect the positive and negative leads from your solar panel(s) to 1 and 2 on the controller. Connect your battery(s) to 3 and 4 on the controller and put the temperature sensor, 9, in contact with your batteries. Connections 5 and 6 are for running a small DC load, such as a light. **Do Not** connect an inverter here. The solar controller will automatically shut off the power to this load and shut off the “Power Out Light” when the battery voltage gets below 10.8 volts. Power will resume when the batteries are above 12.3 volts.

## **Usage**

When charging the Charge Gauge will sequentially blink from the bottom to the top. This will also indicate charge as the current charge level will remain lit. For example if the batteries are 50% charged the bottom two lights will remain lit while the top two blink for charging.

## **Troubleshooting**

Problem	Remedy
Power indicator is off, no power	Check the fuse, maybe it is blown
“CHARGING” indicator is flashing	Batteries are connected wrong or not connected at all.

## **Warnings**

1. Do not connect any power supplies or chargers to the solar module screw connectors, otherwise the unit will be damaged.
2. Ensure the solar module screw connectors and battery screw connectors are right, and not reversed polarity.
3. Do not touch any “+” “-“ screw connectors of SL2410, SL2420, SL4820 at the same time, it is dangerous.

## Protection Function

Protection function	Details
Batteries reverse polarity	Batteries reverse polarity may result in the blowing of fuse, repair as necessary and replace the fuse with an equivalent.
Solar module reverse polarity	If the solar module is connected reverse polarity, the unit will function after correction.
Load over-current and short circuit protection	If the load draw current exceed max. discharge current or load short circuit, fuses will blow. Repair as necessary and replace the fuse with an equivalent.
Batteries open-circuit working protection	When solar module are charging, if the batteries are open-circuit, the solar controller will limit voltage, so that the load will not be damaged.

## Technical Specifications

Model no.		SL1205	SL1210	SL1220	SL2410	SL2420	SL4820
Parameters							
Rated Voltage (V <sub>DC</sub> )		12	12	12	24	24	48
Rated Current (A)		5	10	20	10	20	20
Max. input Voltage (V)		25	25	25	50	50	100
Over-Charge (V)	Protection	14.4 ±0.1	14.4 ±0.1	14.4 ±0.1	28.8 ±0.2	28.8 ±0.2	57.6 ±0.4
	Floating	13.8 ±0.1	13.8 ±0.1	13.8 ±0.1	27.6 ±0.1	27.6 ±0.1	55.2 ±0.1
	Resume	13.2 ±0.1	13.2 ±0.1	13.2 ±0.1	23.6 ±0.2	23.6 ±0.2	52.8 ±0.4
Over-Discharge (V)	Cut-off	10.8 ±0.1	10.8 ±0.1	10.8 ±0.1	21.6 ±0.2	21.6 ±0.2	43.2 ±0.2
	Resume	12.3 ±0.1	12.3 ±0.1	12.3 ±0.1	24.6 ±0.2	24.6 ±0.2	49.2 ±0.4
Over-Loaded	Cut-off	16.5	16.5	16.5	33.0	33.0	66.0
	Resume	15.0	15.0	15.0	30.0	30.0	60.0
Voltage Drop (V)	Between input and batteries	0.4	0.4	0.4	0.6	0.6	0.6
	Between batteries and load	0.3	0.3	0.3	0.4	0.4	0.4

No Load Current Draw (mA)	<5	<5	<5	<5	<5	<5
Ambient Temperature	-10°C ~ 55°C					
Height (m)	≤ 5500					
Size	118 X 110 X 35 mm (L x W x H)					
Weight	0.39Kg					
Temp. compensated factor	From -4mV/°C to -6mV/°C per unit (Optional)					
Electric discharge self-setting	The controller adjust over-discharge voltage and protected voltage according batteries discharge rates. (Optional)					
MPPT	Max. power point of tracking (Optional)					

### Solar Panels wired in Parallel

