USER MANUAL FOR SOLAR CONTROLLER
(PLEASE READ CAREFULLY BEFORE USING!)

1. Features and Functions:

- Adopts industrial degree MCU SCM and specially software, reach intelligent control.
- PWM charging control mode, charge in high efficient.
- Battery reverse connection, over-voltage and low-voltage protections.
- Load output resume, output over-current, and output short-circuit protections.
- Solar panel short-circuit protection
- Battery open circuit protection
- High precision voltage recognition function
- LED indication for battery capacity

2. General Introduction

SC-12Vxx series solar charge controller is optimum designed by industrial degree MCU SCM with high-performance and excellent quality. SC-12Vxx series controller is designed for home solar power system and solar power station.

Functions:

1) Battery management function:

Over-charge protection and over-discharge protection ensure the normal using and prolong the life of battery.

2) Temperature compensation function:

Auto. adjust the setting data of battery management program control parameters to avoid the battery "under-voltage" in winter and "over-charge" in summer.

3) Multi-protections:

Battery reverse connection, over-voltage and low-voltage protections, solar panel short-circuit protection, auto. Resume output, and output short-circuit protections.

3. Technical Parameters

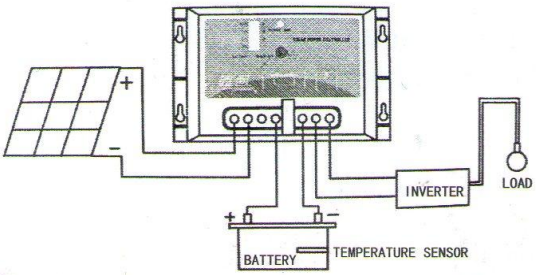
Model / No. Parameters		SC-12V0 05	SC-12V0 10	SC-12V0 15	SC-12V0 20	SC-12V0 30
Rated Voltage		12V				
Rated Current		5A	10A	15A	20A	30A
Over-Charge Protection		14.4 ± 0.3 Vdc				
Over-Discharge	Cut-off	11 ± 0.3 Vdc				
	Resume	12 ± 0.3 Vdc				
Over-Voltage	Cut-off	16.5 Vdc				
	Resume	15.0 Vdc				
Voltage Drop	Between input and batteries	0.5 Vdc				
	Between batteries and load	0.2 Vdc				
No Load Current Draw		<5mA				
Ambient Temperature		-10~ +55℃				
Altitude		≤5500m				
Size (L*W*H: mm)		164*100*48				
Weight (Kg)		0.39				
Temp. Compensated factor		28~32 mV/cell.℃				

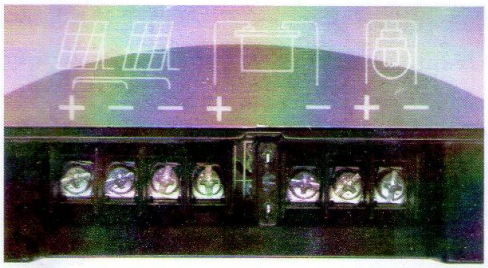
4. Connections

1) Connecting all parts correctly according to the following drawing, to be sure polarity is right. The order is follows: Attention:

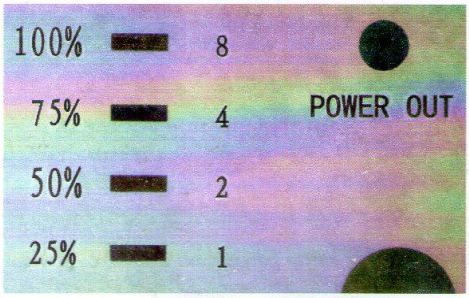
a) Connect to the controller: connect the battery first, then connect the solar panel, finally connect

b) Disconnect from the controller: disconnect the load first, then solar panel, finally disconnect the batteries.
c) When connect the lines, make sure the "+" and "-" are not reverse connected.
d) Do not connect the line of battery to the solar panel terminal.
e) Do not connect any regulated power supply or charger to the solar panel terminal.





5. Status Indication



5.1 If the connections are correct, the number of red LEDs will show correct battery capacity, the output indicator (POWER OUT-see left image) will light on.
5.2 The LED will light in cycle during charging status (25%~100%).
5.3 All the LEDs will stop shinning and light on when the battery is fully charged.
5.4 In over-discharge status, LED1 (25%) will be flashing quickly to warn the user to charge the battery at once.
5.5 Output indicator light on or out, shows that output has or doesn't have.

6. Protection Function

Protection item	Details
Batteries reverse polarity	The buzzer will warn when reverse connected.
Solar module reverse polarity	If the solar module reverses polarity, the unit will be function after correction.
Load over-current and short circuit protection	If the load draws current exceed max. Discharge current or load short circuit, fuses will be blow. Repair as necessary and replace the fuse with an equivalent.
Batteries open-circuit working Protection	When solar module are charging, batteries is open-circuit, the solar controller will limit voltage, so that the load will not destroyed.

7. Trouble Shooting Guide

SC-12VXX series controllers are good quality, if you have any trouble or problem, please check the units as follows or contact the suppliers.

Problem	Remedy
Indicator is power off, without output	Check the fuse, maybe it is blown
"CHARGING" indicator is flashing	Batteries connected is wrong, correct it

8. Models Of The Controller

Model No.	Rated Voltage	Rated Current	Connections of solar panel			Fuse model
			+	-	-	
SC-12V005	12V	10A	√	*	*	10A/32V
SC-12V010	12V	15A	√	*	*	15A/32V
SC-12V015	12V	20A	√	*	*	15A/32V
SC-12V020	12V	30A	√	*	*	20A/32V
SC-12V030	12V	30A	√	*	*	30A/32V

Note: there are two "-" terminals on the controller, "√" means okay for connection of "+", "*" means ok for connection of "-".