

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

1. Features and Functions

- Adopts industrial degree MCU SCM and special software, reach intelligent control.
- PWM charging control mode, charge in high efficiency.
- 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

YC-1210 solar charge controller is optimally designed by industrial degree MCU SCM with high-performance and excellent quality. It 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 data setting of battery management program control parameters to avoid 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

Parameters	Model No.	YC-1210
Rated Voltage		12V
Rated Current		10A
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) Connect all parts correctly according to the following drawing, to make sure polarity is right. The order is as follow:

Attention:

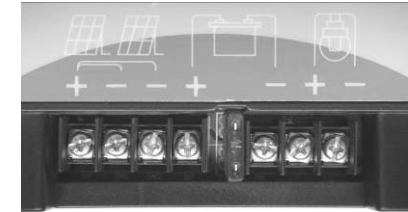
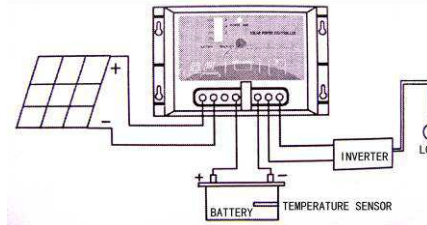
a) Connecting to the controller: connect the battery first, then connect the solar panel, finally connect the load.

b) Disconnecting from the controller: disconnect the load first, then solar panel, finally disconnect the batteries.

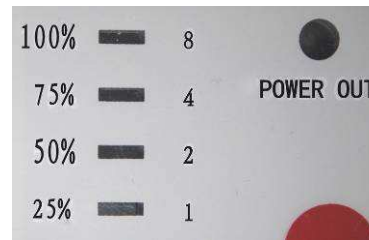
c) When connecting the lines, make sure the "+" and "-" are not wrongly connected.

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 shining 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 immediately.

5.5 Output indicator light on indicates presence of output and vice versa.

6. Protection Function

Protection item	Details
Batteries reverse polarity	The buzzer will warn when wrongly connected.
Solar module reverse polarity	If the solar module reverses polarity, the unit will function after correction.
Load over-current and short circuit protection	If the current drawn from the load 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 is charging, batteries are in open-circuit, the solar controller will limit voltage, so that the load will not be destroyed.

7. Trouble Shooting Guide

YC-1210 controller is of good quality, if you have any trouble or problem, please check the units as follows or contact the suppliers.

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

8. Model of the Controller

Model No.	Rated Voltage	Rated Current	Connections of solar panel			Fuse model
			+	-	-	
YC-1210	12V	10A	√	*	*	15A/32V

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