SOLAR PLOTOVOLTAIC SYSTEM CONTROLLER

6V & 12V
2A

（SC-07.A）

Special for four channels solar traffic lights products
Compatible with a series of solar lights products

INSTRUCTION MANUAL

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一、 Introduction

Thank you for choosing our products. To make this product maximally effective, you get more satisfactory results, please read the following instructions. All of the series' controllers adopt Microchip's MCU as a brain; all actions are controlled completely by software and to make the controller have higher accuracy and higher stability. The function of Automatic recognition let you save a consideration of the system voltage. Infrared instructions downloader will bring infinite convenience to your construction. Intelligent battery management will prolong the whole system service life. It's more convenient to your system integration that indicator light and 35MM guide rail are installed.

二、 Functions

Automatic identification: this controller can automatically identify 12V and 24V. (To make the identification function normal exertion, please certainly first connect the battery). We use different management methods to different battery. It's convenient your purchase and use.

Infrared instructions download: set the control functions of controller through infrared instructions downloader. It's more flexible to use. Also avoid the inconvenience of switch settings and the problems of safety.

Prevent reverse charge protection: to prevent the power of battery discharge to solar cells when evening or cloudy or no sun light. (It's often said to reverse charge). The function also avoids wasting energy or damaging the system.

Overcharge protection: stop the battery to charge when it's filled. If it overcharged, then the internal chemical composition of battery will cause other chemical reactions, NI battery will crystallization, lead to directly influence of your battery capacity and service life.

Over discharge protection: stop the battery to discharge when it is low power, the capacity and life of battery will be affected if excessive discharge.

Restore interval: the recovery interval is offer to overcharge or over discharge protection. To avoid resistance or battery automatic recovery features caused the working wobble of load.

Temperature compensation: Monitor the temperature of the battery and automatically adjust the number of charging and discharging, let the battery work at an ideal situation.

Light control: mainly used for automatic lamps and lanterns, when environment enough light. Controller will automatically shut off the output, then the load is automatically opened when the environment is dark down again. To achieve automatic control functions. (Optional function)

Time control: use the time to control the load, opening it and timing starts when meet the happening conditions, turn off it when reach a set time, so as to reduce the cost. (Optional function)

Other protections: this controller also has battery reverse connection protection, lightening protection, etc.

三．Indicator instruction

1．Both charge light and discharge light flashing twice: self-check when controller is power on, it recognizing system voltage.

2．Two lights flashing at the same time: Infrared instructions errors. The controller don't understand

3．Two lights flashing alternately: the controller receives infrared instructions or the instructions of power on or off.

4．Charging light: solar panel voltage is higher than battery voltage, it may charge to battery.

5．Discharging light: battery voltage is normal, it can discharge. The light isn't influenced by light control.

四. Infrared instructions download

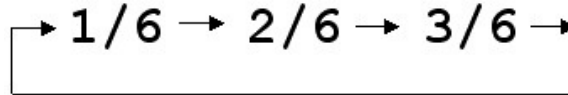### 1. Master switch: open or shut the load.

Press button switch in the controller.

The default is open.

总开关

2. Duty ratio setting:

Use "duty ratio key" to change the light or dark time ratio of the light.

占空

→ 1/6 → 2/6 → 3/6 →

The default is 3/6.

3. Lightness setting：

Use "brightness key" to change the brightness of the light.

亮度

→ 50% → 100% →

The default is 100%.

4 .Light and time control setting：

Use to set the mode of load.

户用   **Set for 24H work mode.**

光控   **Set for night work mode.**

光时8h   **Set for night timing mode (8H).The default is light control.**

The light reacting when you input an instruction. It means that it received the instruction.

Power up default: Lane mark

Mode	Description
Caution light	**L4 quick-flash 10 times, L3 quick-flash 10 times.L4 and L3 shining one time normally.**
Pilot light	**L4 shining first, L3 shining second and then L2 shining, L1 shining at last. They all go out finally.**
Lane mark	**L4slow flash 1 time，L3L2 slow flash 1 time，L4flash 1 time，L3L2 flash 10 times。**
Show yellow light and slow word alternately	**L2L3 slow flash 1 time， L2L4 slow flash 1 time。**
Circulation of quick-flash	**L4 quick-flash 10 times， L3 quick-flash 10 times， L2 quick-flash 10 times， L1 quick-flash 10 times。**
Circulation of flash	**L4flash 2times， L3 flash 2times， L2 flash 2times， L1 flash 2times。**
Reserve	**Can be reserved for customers make special setting.**
Synchronization	**Some versions are not in use.**

五、Performance parameter

Itme	2A
Battery voltage	**6V** **12V**
maximum power	**12W** **24W**
No-load currant	**<5mA**
Voltage down / **Solar panel and battery**	**0.4V**
Battery and load	**0.1V**
over-charge / **Protection**	**7.2±0.1V** **14.4±0.2V**
Resume	**6.9±0.1V** **13.8±0.2V**
Over discharge / **Off**	**5.4±0.1V** **10.8±0.2V**
Resume	**6.3±0.1V** **12.5±0.2V**
Light control / **Off**	**4±0.1V** **8±0.2V**
Resume	**1±0.1V** **1.8±0.2V**

Item	Value	Item	Value
Recognition time	<20s	Received command	simplex
Ambient temperature	-15~60℃	Time control	0~20h
Operational humidity	10%~90%	optional function	Light control, time control, temperature control
maximum input voltage	30V	Altitude	<5000m
Shell	ABS	overload capacity	50%　12H
Storage humidity	10%~80%	service life	within a year

六． Installation and notice：

1. Open the package, please fix the controller on a suitable location (please avoid direct sunlight and damp places).

2. Please first connect the battery (In order to the function of automatic identification don't make a mistake), then we connect solar panel when it finished the identifying (the indicator shows electric quantity), finally we connect the load line when it shut off.

Notice: For your safe, please don't use over load or don't add solar panel too large; you can charge for the battery by power instead of solar panel. Please charge the solar panel when it is removed, electric current is also not too big.

Please note that the battery positive and negative.

The default of switch is open, you don't consider it if you don't use it in long-distance transport.

七、 Troubleshooting Methods

1．**Output light shining but the load doesn't work.**
   ① **Light control during the day.**
   ② **Check the connection**
   ③ **The switch doesn't open.**

2．**At the beginning ,load can work, but a few days later it don't work：**
   ①solar panel connection is wrong.
   ②solar battery is not connected.

3．**Don't light control:**   ① solar panel connection is wrong.
                     ②Don't set up the function, please setting again.

4．**The controller can work, neither light control nor time control.**
   ①Don't set up the function, please setting again.
   ②The surround lighting of solar panel is not enough.

5． **Both lights don't shine:** ①The power of battery is not enough
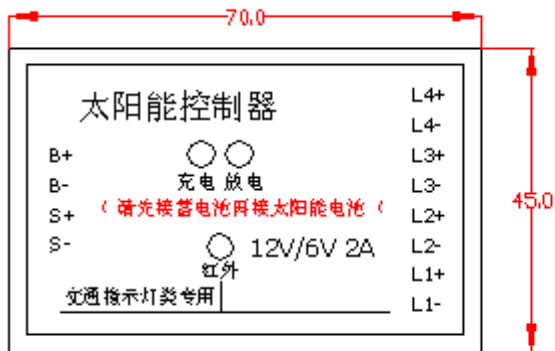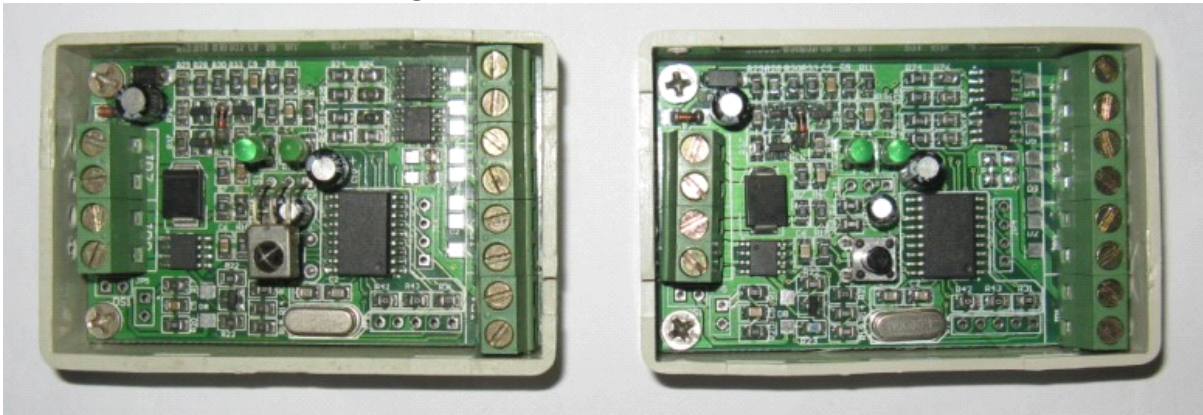   ② Check the connection.
                     ③Remove all of lines and repeat installation,
   let the controller recognition again.

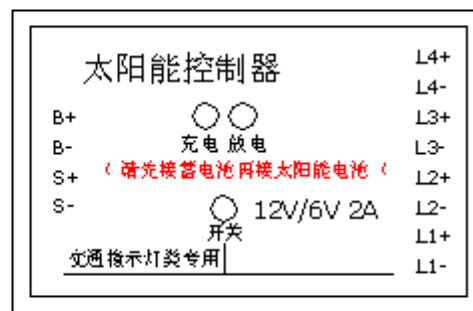6． **Infrared instructions downloader doesn't work:**
   ①Please make sure that the controller has the function and the
downloader battery has power.

八、 The structure diagram of Solar controller

Infrared version   **Manual version**

   If you have any other questions, or we have careless omissions, we hope that you could tell us. We will heartfelt thanks for your support. Your satisfaction is our greatest achievement!

   Note: If there are any changes, please forgive no notice.