

SOLAR DC LIGHTING KIT

This product is a solar power supply system. It transforms nature sunlight into DC electricity, which is then stored in the rechargeable battery. The battery can be used to power the provided LED light bulb, and other small DC applications, such as mobile phones..... This product is good for cottage, camping, outdoor activity, and those occasions where utility grid is difficult to access

Part list

Serial No.	Description of parts	Quantity
1	315X915mm dual junction 12W Thin film Solar Panel (6 meter lead wire with connecting rings that connect to the regulator)	1
2	Charge regulator (with 3V,6V,12V output socket)	1
3	12V/10Ah Sealed Lead Acid Battery	1
4	LED DC lamp with 10m cables and switch	2
5	Connecting wire between battery and charge regulator (Length: 2 meter)	1
6	Connecting wire between charge regulator and radio	1
7	Universal mobile phone charger+cigarette lighter socket with 1 meter wire	1+1

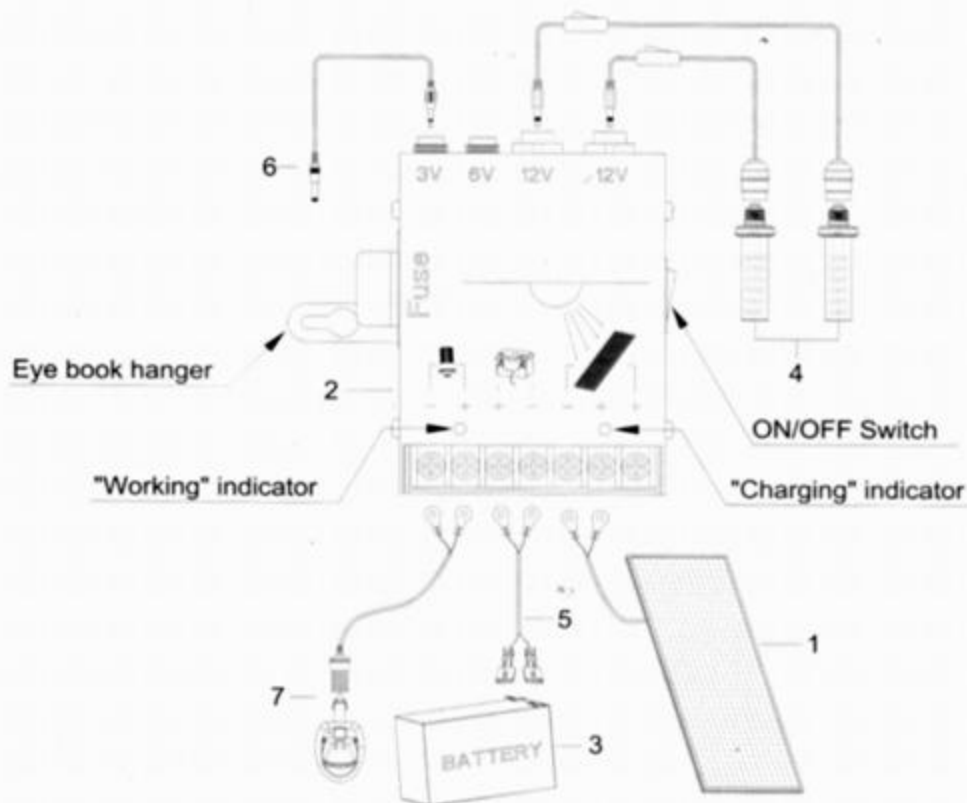


Fig. 1

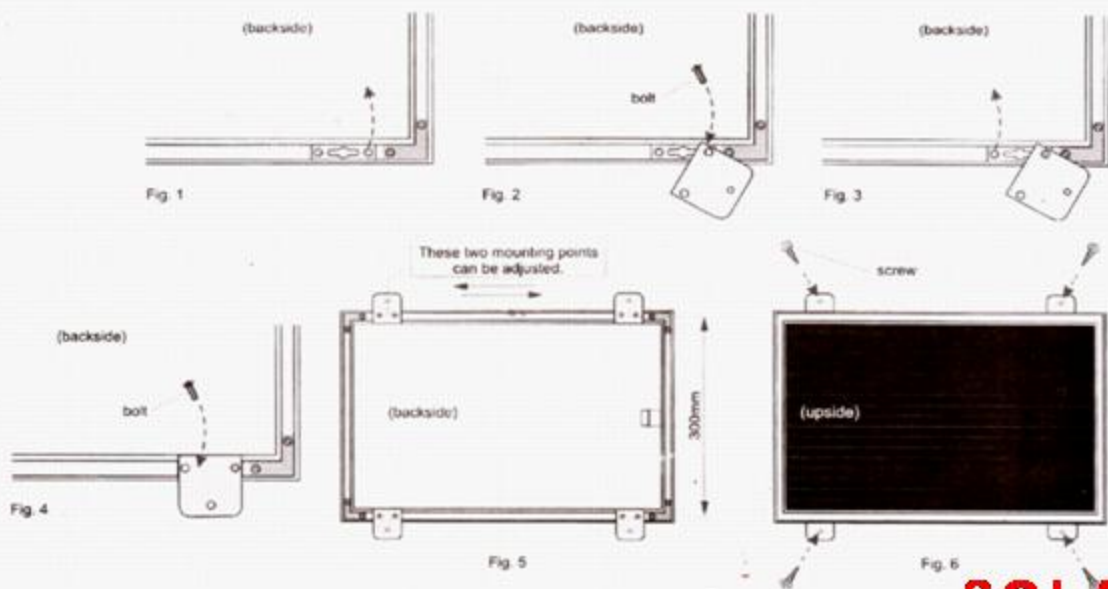
Caution

- Before using, carefully read and understand the instruction manual. And keep it for further reference.
- Please connect with right polarity to prevent damage. Red indicates positive(+), and black indicates negative(-).
- Do not short circuit any lead wires
- Always switch off charge regulator before connecting or disconnect.
- Please always connect with the sequence of: Battery → application (DC Lights....)→ Solar module
Please always disconnect with the sequence of: Solar module → application (DC Lights....) → Battery
- Max. output current from the charge regulator can not exceed 4A
- All the parts are not water proof, except for the solar module,
- Clean the surface of solar module periodically with a soft cloth.
- Use solar module to charge rechargeable battery for 3 days before the first operation.
- This product is not intended for use by young children or infirm person unless they are being adequately supervised by a responsible person to ensure that they can use the application safely.
- Do not expose the battery to fire or high heat it may explode. Do not dispose the battery of as waste.

How to use? (See Fig. 1)

1. Solar module:

- Place solar module at a position that can have direct contact with sunlight, face the black side to the sun. And make sure no shadow can be cast on the solar cell (Black surface).
- Solar module can be mounted using the provided Mounting bracket and screws (See Fig. below) When mounting solar module, best tilt the solar module at a proper angle for maximum sun exposure. Angle can be same as your local latitude.
- Connect the two ring connectors at end of the solar module lead wire to the "Solar" Terminal of charge regulator. Be sure to connect with right polarity. The "Charging" LED on the charge regulator should go on whenever the solar module is generating electricity.



2. Rechargeable battery :

- Connect the rechargeable battery to the "Battery"  Terminal of charge regulator, Use the provided lead wire (See Fig. 1)
* **Be sure to connect with right polarity.**

3. Charge regulator:

- The charge regulator provides following protections for the whole system
 - A. **Over-discharge protection** (Battery voltage < 11.0V ± 0.5V): When activated, "Working" (Green) indicator will go off, the charge regulator will shut off power output from battery to prevent damage to the battery. In such case, Please stop using any application, and charge the battery under good sunlight for 2-3 days .
 - B. **Over-charge protection** (Battery voltage > 14.5V ± 0.5V) When activated, "Charging" (Red) indicator will go off, the charge regulator will shut off power input from solar panel to battery. In such case, Please disconnect solar panel from the charge regulator.
 - C. **Over-load protection** (>4A): When output power goes too big, the fuse in the charge regulator will be melted to prevent damage to the controller itself. A Fuse (4A) has to be replaced in order to bring the charge regulator back to working condition in this case.
- * **The charge regulator has to be turned on in order to activate all the above mentioned protection**
- A foldable eye hook hanger is available at back of the charge regulator for each mounting

4. Universal mobile phone charger

- Fix the battery: according to the anode and cathode of the battery. Adjusting the shrapnel of the charger. Clip the battery to the charger. If the battery and charger touch well, the light turns green.
- Confirm the charging: connecting the lighter socket to the regulator firstly, then plug the universal mobile phone charger into the cigarette lighter socket, the light turn red when charging, while charging the colour if changing from red to orange, and then to light orange colour.
- Charge finish: when light turns green, it means that the battery is fully charged.

5. Applications

- One each 3V,6V, and two 12V outputs are available on top of the charge regulator for different applications. A cable is provided to connect between the charge regulator and radio. Choose the correct output(The 3V output is right for radio), and make sure that the application can be used with the preset polarity of these outputs: + ● - .
- Two provided DC LED light kits can be plug to the two 12V outputs to support lighting(See fig. 1). Duration time of the DC LED light may vary according to the amount of sunlight the solar module receives during day time. But a fully charged battery can support two LED lights for continuously 10 hours.

Installation:

- Connect the ring connectors at end of solar panel lead wire to the regulator, right below the sign of the solar panel on the regulator, and pay attention to the negative and positive poles. (Red indicates positive "+", black indicates negative "-")
- Connect the ring connectors to the rechargeable battery. The other end of the cable should be connected to the regulator, Please connect with correct polarity. Please note that the black lead

indicates negative (-) and the red lead indicates positive (+). All connection should be tight and with good contact.

- Plug the LED lamp into the 12V DC output socket on the regulator, two lamps can be connected at the same time.
- Then turn on the switch on the regulator, then you can enjoy the brightness from the free sunlight.
- Universal mobile phone charger can also be plugged into the lighter socket which connecting to the regulator. With which you can charge any type of mobile phone battery.

* **Do NOT charge application using solar module only, the provided battery (properly charged) has to be connected to the charge regulator at the same. Failure to do so could damage the application.**

* **Charge regulator has to be turned on in order to power applications. While charging, the cover of the charger and the face of the battery if a little bit warm, it's normal.**