



Solar  
Technology  
International

Without boundaries

# PV Logic<sup>®</sup>

## User manual



## Solar Charger Controller

### Covering

10A charger control 12v/24v DC (STCC10)

15A charger control 12v/24v DC (STCC15)

20A charger control 12v/24v DC (STCC20)

---

Important: please  
read before first use.

Technical helpline  
**01684 774 000**

## **Installation and Operation Manual**

### **Specification Summary**

- Nominal system voltage: 12/24VDC\*
- Maximum PV input voltage: 40V DC

\* The controller will recognize the system rated voltage upon first connection. If the battery voltage is lower than 18V, it will recognize the system as 12V. If the battery voltage is greater than 18V, it will recognize the system as 24V. You can charge a 12v battery from a panel up to 40v (VOC).

### **Important Safety Information**

#### **General Safety Information**

- Read all of the instructions and cautions in the manual before beginning installation.
- There are no user serviceable parts inside the controller. Do not disassemble or attempt to repair it.
- Install external fuses/breakers as required.
- Disconnect the solar module and fuse/breakers near to battery before installing or adjusting the controller.
- Do not allow water to enter the controller.
- Confirm that power connections are tightened to avoid excessive heating from loose connection.

#### **General Information**

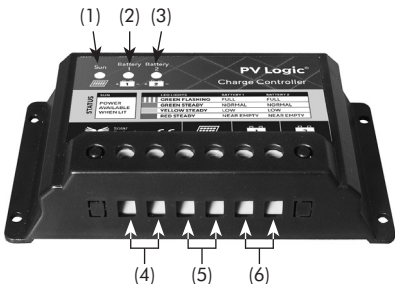
- 12/24V automatic recognition.
- Efficient Series PWM charging, increases battery lifetime and improves solar system performance.
- Unique dual battery charging function.
- Reverse current protection.

This controller is for off-grid solar systems and has the additional functionality that it can charge two batteries simultaneously. The charging process has been optimized for long battery life and improved system performance. The comprehensive self-diagnostics and electronic protection functions can prevent damage from installation mistakes or system faults.

Though the controller is easy to operate and use, please take your time to read this manual and become familiar with it. This will help you make full use of all the functions and improve your solar PV system.

This controller is designed to prioritise the battery connected to the 'Battery 1' connections first before then allowing a charge to the battery on the 'Battery 2' connections. In practise this means that battery 1 will be around 70% charged before the controller will start charging battery 2. It will then bring the batteries up evenly to a full charge.

## Product Features



1. Solar Charging status LED indicator
2. Battery 1 status LED indicator
3. Battery 2 status LED indicator
4. Solar Module Terminals, Connect solar module.
5. Battery Terminals, Connect to battery 1
6. Battery Terminals, Connect to battery 2

## Installation Instructions

**NOTE:** When mounting the controller, ensure free air through the controller heat sink (back plate). There should be at least 6 inches (150 mm) of clearance above and below the controller to allow for cooling. If mounted in an enclosure, ventilation is highly recommended.

**WARNING: Risk of explosion!** Never install the controller in a sealed enclosure along with batteries! Do not install in a confined area where battery gasses can accumulate.

1. Choose Mounting Location - Locate the controller on a vertical surface protected from direct sun, high temperature and water.
2. Check for Clearance - Place the controller in the location where it will be mounted. Verify that there is sufficient room to run wires and that there is sufficient room above and below the controller for air flow.
3. Mark and Drill Holes - Use a pencil or pen to mark the four (4) mounting hole locations on the mounting surface and drill pilot holes.
4. Secure Controller - Place the controller on the surface and align the mounting holes with the drilled holes in step 4.
5. Secure the controller in place using self tapping screws (not supplied).

## Wiring

**WARNING: Risk of explosion or fire!** Never short circuit battery positive (+) and negative (-).

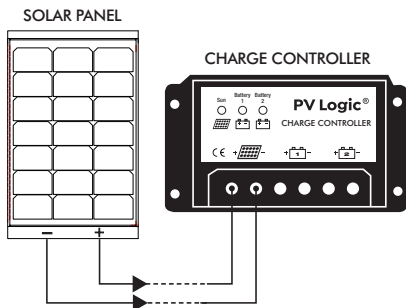
**WARNING: Risk of electric shock!** Exercise caution when handling solar wiring. The solar module(s) high voltage output can cause severe shock or injury. Cover the solar module(s) from the sun before installing solar wiring.

When installing a fuse and holder, make sure that the distance between the fuse holder and the positive terminal of battery is at most 150mm. Only install a fuse holder when setting up Do not insert a fuse at this time.

The controller can accept 12V or 24V nominal off-grid solar module(s).

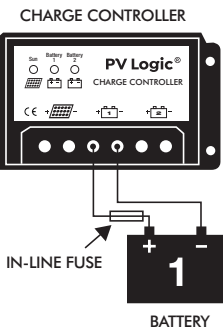
### Solar connection

- Connect the + and - from the solar panel to the solar inputs on the charge controller.



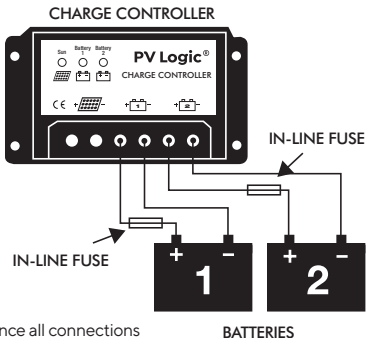
### Battery connection 1

- Connect the + and - from the 1st battery via a fuse (with fuse removed) to the 'Battery 1' output on the charge controller.



## Battery connection 2 (optional)

- Connect the + and - from the 2nd battery via a fuse (with fuse removed) to the 'Battery 2' output on the charge controller.



Once all connections are made please double-check the wiring. Confirm correct polarity at each connection. Verify that all four or six (if a second battery is being charged) terminals are tightened and then replace the fuse(s) back into the holders.

When battery power is applied and the controller starts up, the battery LED indicator will be green if sufficient charge is in the connected battery.

## Operation

### Solar charging status indicator

- **GREEN ON**=whenever sunlight is available for battery charging
- **GREEN (Fast) FLASHING**=in case of system over voltage (please disconnect solar module)

### Battery status indicators

- **GREEN FLASHING (Slow)**=battery is fully charged
- **GREEN ON**=battery is in good condition and charging over 50% charged
- **ORANGE ON**=battery is only 50% charged or lower
- **RED ON**=battery is LOW
- **RED FLASHING**=battery has Fault or is Under Voltage

## Troubleshooting

- Solar charging LED indicator off during daytime when sunshine falls on PV modules properly.
  - PV array disconnected
  - Check that PV and battery wire connections are correct and tight
- Green charging LED battery indicator fast flashing
  - Battery voltage higher than over voltage tolerance disconnect voltage
  - Check battery voltage
  - Disconnect the solar module

**Note:** If all LEDs are off. Measure battery voltage with multi meter. At least 6V is needed to start the controller.

**Note:** No charging status LED indicator with normal connection. Measure the input voltage of solar module, the input voltage must be higher than battery voltage!

## Technical specifications

Nominal System Voltage	12/24VDC (automatic system voltage recognition)
Battery Voltage Range	6-36V
Rated Battery Current	10A /15A/20A depending on model selected
Charge Circuit Voltage Drop	≤0.26V
Self-consumption	≤6mA
Temperature Compensation Coefficient	-30mV/°C/12V(25° ref)
Over Voltage Disconnect Voltage	16V/32V
Charging Limit Voltage	15.5V/31V
Equalize Charging Voltage	14.6V/29.2V
Float Charging Voltage	13.8/27.2V
Operating temperature	-35°C to +55°C
Overall dimensions	135 x 70 x 35mm
Mounting hole size (in case)	3.8mm
Terminals	6mm <sup>2</sup>
Net weight	155g

## Warranty

This Solar Charge Controller is supplied with a 12 month warranty. Should a failure occur during this time Solar Technology International Ltd will repair or replace any faulty part, at its discretion. Solar Technology International Ltd does not accept liability for any 3rd party damage how so ever caused or any costs associated with the return of faulty products. To make a warranty claim please telephone Solar Technology International Ltd on +44 (0) 1684 774000.

These warranty conditions in no way affect your statutory rights. A full set of Solar Technology International Ltd terms and conditions are available on request.

## Solar Technology International Ltd

We are manufacturers of some of the world's most advanced solar energy products from solar toys to full scale industrial solar modules. To find out more please visit [www.solartechnology.co.uk](http://www.solartechnology.co.uk)

If you have any questions about this product or regarding these instructions please contact the Solar Technology International Technical Help Line on +44 (0) 1684 774000 or alternatively please write to: Solar Technology International Ltd, Unit 6, Station Drive, Bredon, Nr. Tewkesbury, Glos. GL20 7HH, UK



RoHS ✓



Solar  
Technology  
International

Unit 6, Station Drive, Bredon, Glos. GL20 7HH

T 01684 774 000

[info@solartechnology.co.uk](mailto:info@solartechnology.co.uk)

F 01684 773 000

[solartechnology.co.uk](http://solartechnology.co.uk)