

## Solar Charge Controller Installation and Operation Manual

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Please read this manual carefully before you use this product!

## 1 PRODUCT INTRODUCTION

This solar charge controller uses the latest charging technology combined with state of charge monitoring enables optimal battery maintenance. A large display informs the user about all operating modes with the aid of symbols. The state of charge is represented visually in the form of a tank display. Data such as voltage, current and state of charge can also be displayed digitally as figures on the display.

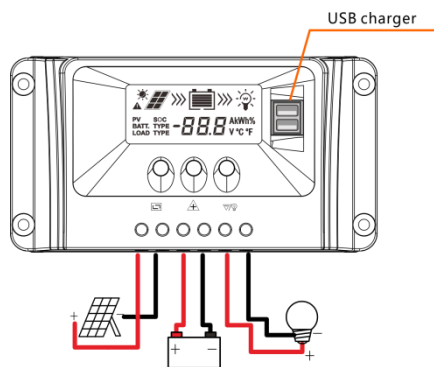
- ▶ Automatic detection of voltage
- ▶ PWM control
- ▶ Multistage charging technology
- ▶ Automatic load reconnection
- ▶ Temperature compensation

## 2 INSTALLATION

Only install the controller near the battery on a suitable surface. This surface should be solid, stable, even, dry and nonflammable. The battery cable should be as short as possible and have a suitable cable diameter size to minimize loss, e.g. 4 mm<sup>2</sup> at 20 A and 2m length.

If the solar battery will be operated in an environment with a large temperature range (winter/summer) the external battery temperature sensor should be used. A temperature compensated final charge voltage will extend the batteries lifetime and uses the optimum charge capacity. Do not install the controller to direct sunlight.

To ensure proper ventilation on each side keep a distance of 10 cm to the controller. The temperature at the installation site may never fall below or exceed the maximum permitted ambient temperature. Connect the individual components to the symbols provided.



Observe the following connection sequence during initial configuration.

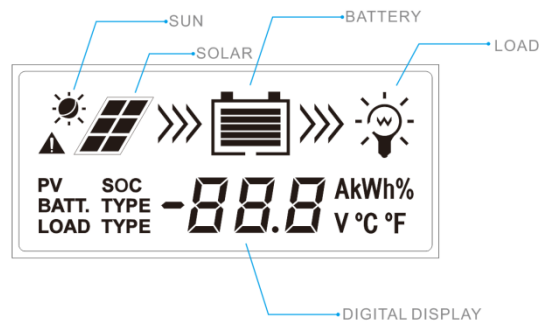
1. Connect the battery to the charge controller - plus and minus
2. Connect the photovoltaic module to the charge controller - plus and minus
3. Connect the consumer to the charge controller - plus and minus

**The reverse order applies when uninstalling!**

**Please observe that the automatic adjustment to 12V/24V systems do not function properly, if this sequence order is not followed. An improper sequence order can damage the battery!**

## 3 OPERATION

### 3.1 Description of LCD graphic symbol

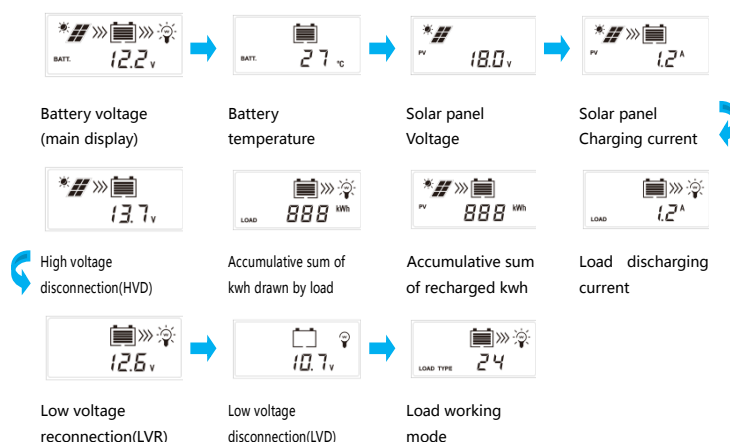


### 3.2 Description of Button function

- Button for Switching display windows to enter/exit the setting (long press for 5 seconds)
- Adjustment of parameters plus button restore factory setting in each parameter(long press for 5 seconds)
- Adjustment of parameters mins button click this button to switch the load in main display window

### 3.3 View and set the parameters

The controller will auto display the “battery voltage” main display after powering on correctly. This is the main display window. Use the button to switch between different display windows. If the parameter can be set, long press the button (>5 seconds, numbers start flashing) to enter the setting, then press the or to select the setting, after that, long press the button again to exit the setting (numbers stop flashing).



#### 3.3.1 Battery voltage(main display)

As shown on the right, it displays the battery voltage measured by the controller. Also, it displays the charge and discharge status, battery capacity.



#### 3.3.2 The load ON/OFF control

In the main display window, click the button to ON/OFF the load. The button doesn't have such feature in the other interface.



#### 3.3.3 Environment temperature

As shown on the right, it displays the ambient temperature of the controller, also it's used for temperature compensation on HVD function. The sensor must be plug in before using the controller.



#### 3.3.4 Solar panel voltage

As shown on the right, it displays the solar panel voltage measured by the controller.



#### 3.3.5 Solar panel charging current

As shown on the right, it displays the charging current from the solar panel.



#### 3.3.6 Load discharging current

As shown on the right, it displays the discharging current drawn by load.




#### 3.3.7 Accumulative sum of recharged Ah

As shown on the right, it displays the Accumulative sum of recharged Ah from solar panel. Press the button for 5 seconds to reset the meter to 0. Even when the battery is disconnected the value remains. When 9999Ah are reached, it will switch back to 0 Ah.



### 3.3.8 Accumulative sum of recharged Ah





As shown on the right, it displays the Accumulative sum of Ah drawn by load.

Press the button  for 5 seconds to reset the meter to 0. Even when battery is disconnected the value remains. When 9999Ah are reached, it will switch back to 0 Ah.



### 3.3.9 High voltage disconnection(HVD)





As shown on the right, it displays the values of HVD, when battery voltage reaches HVD voltage, the controller will start PWM control to keep the battery voltage at same level.

long press the button  (>5 seconds, numbers start flashing) to enter the setting, then press the  or  to select the setting, after that, long press the button  again to exit the setting(numbers stop flashing)



### 3.3.10 Low voltage reconnection(LVR)





As shown on the right, it displays the values for the LVR voltage. Under the LVD protection in the controller, when battery voltage is restored to higher voltage than LVR voltage, the controller will re-connect the load circuit.

long press the button  (>5 seconds, numbers start flashing) to enter the setting, then press the  or  to select the setting, after that, long press the button  again to exit the setting(numbers stop flashing)



### 3.3.11 Low voltage disconnection(LVD)

In the main display window, it displays the values for low LVD voltage. When the battery voltage is lower than this voltage, the controller will disconnect the load circuit to prevent battery over-discharge.

long press the button  (>5 seconds, numbers start flashing) to enter the setting, then press the  or  to select the setting, after that, long press the button  again to exit the setting(numbers stop flashing)







### 3.3.12 Load working mode

As shown on the right, it displays the load working mode. Different values represent different load working mode.

24h - normal mode, there is always output unless the battery voltage is too low.

1-23h - Light control with time control mode. Load will turn on after dusk and turn off according to the timer setting.

0h - light control mode, load will turn on after dusk and turn on before dawn.

long press the button  (>5 seconds, numbers start flashing) to enter the setting, then press the  or  to select the setting, after that, long press the button  again to exit the setting(numbers stop flashing)




## 4 COMMON FAULT AND HANDLING

### 4.1 LVD Protection and Treatment

Screen display as shown in the figure that the battery drops below the LVD protection voltage. The controller has entered the LCD protection state, load circuit has been disconnected. Use the solar panels recharge the battery or charger when the battery voltage reaches LVR voltage, the controller will resume on the load power supply, into the normal working state.




### 4.2 Over load Protection and Treatment

Screen display (see the figure) and flashing expressed load loop circuit current sustained 60seconds than 1.5times rated current, the controller has entered into overload protection state. After reduce the load, press the button  to restore power to the load.



### 4.3 Short Circuit Protection and Treatment


Screen display (see the figure on the right) and flashing expressed there is short circuit on the load loop circuit. The controller has enter into Short Circuit Protection state Check the load if there is damage or not, if there is cable short circuit or not, after trouble shooting short press  the button for restoration.



### 4.4 Solar Panel Fault and Treatment

Symbol flashing represent the controller was not detected solar panels within 24hours. Check if there is a connection from solar panel, check if there is an open circuit between solar panels with controller.

### 4.5 Load Shock Fault

Open load if the  flashing, that indicate the load impulse current is more than twice rated current of the controller. The controller is restarting the load in action many timers do.

Model	SCC10A PWM
Rated current	10A
Rated voltage	12/24V
Max solar voltage	<50V(12/24V)
Low voltage disconnect	10.7/21.4V
Low voltage reconnect	12.6/25.2V
Float charge	13.7/27.4V
Standby loss	<30mA
Material	ABS+Aluminum
USB output	5V/2A
Charging mode	PWM
Temp compensation	-4mV/Cell/°C
Operating condition	-20°C~+60°C
Size/Weight	167*87*37mm 220g

AIMS Power Warranty Instructions:

This product is designed using the most modern digital technology and under very strict quality control and testing guide lines. If however you feel this product is not performing as it should, please contact us:

techsupport@aimscorp.net or (775)359-6703

We will do our best to resolve your concerns. If the product needs repair or replacement, make sure to keep your receipt/invoice, as that will need to be sent back along with the package and RA# prepaid to AIMS. You have a full 1 year from date of purchase warranty.

This warranty is valid worldwide with the exception that freight and duty charges incurred outside the contiguous 48 United States will be prepaid by customer.

Except as provided above, AIMS makes no warranty of any kind, express or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose. In no event shall AIMS be liable for indirect, special or consequential damages. This warranty only applies to AIMS Power branded products. All other name brand products are warranted by and according to their respective manufacturer. Please do not attempt to return non-AIMS Power branded products to AIMS Power.

For additional products such as:

- Modified sine wave inverters
- Pure sine wave inverters
- Low Frequency Inverters
- Solar Charge Controllers
- Micro Grid Tied Inverters
- Inverter Chargers and Automatic transfer switches
- Converters AC-DC and DC-DC
- Custom cut cables
- Batteries
- Solar Panels & Racks

Please visit our web site: [www.aimscorp.net](http://www.aimscorp.net)

To find out where to buy any of our products, you may also e-mail: [sales@aimscorp.net](mailto:sales@aimscorp.net) or call (775)359-6703.