

Bioenno Power SC-122420JUD CC/CV Series User Manual

CC/CV SOLAR CHARGE CONTROLLER FOR LFP

THIS CONTROLLER IS FOR USE WITH LITHIUM IRON PHOSPHATE BATTERIES AND SLA/AGM BATTERIES ONLY



OVERVIEW

Thank you for choosing the Bioenno Power SC-122420JUD Series CC/CV Solar Charge Controller. Your product comes in 20A Maximum Load Current and is designed to be used with Lithium Iron Phosphate (also commonly known as LiFePO₄ or LFP) batteries only. The controller uses our proprietary CC/CV Constant Current/ Constant Voltage circuitry to ensure maximum compatibility and performance with the Bioenno Power battery. Your Solar Charge Controller comes equipped with an LCD display with a visual presentation of usage status for your solar system and additionally features our smart technology chipset which allows your Solar Charge Controller to automatically function at the correct mode of operation as well as the ability to manually adjust between different modes of operation and load power delivery.

SPECIFICATIONS

Rated Voltage: 12V/24V

Maximum Load Current: 20A

Input Voltage Range: <50V*

Float/Absorption: 14.4V~27.6V

Load Disconnect: 10.7V/21.4V

Efficiency: 95%~97% (In optimum conditions)

Operation Temperature: -4°F ~ 122°F (-20°C ~ 50°C)

Dimensions: 6.5 in. x 3.46 in. x 1.5 in. (166 mm x 88 mm x 38 mm)

Weight: 0.59 lbs. (0.27 kg)

*Note: This solar charge controller can accept any voltage under 50V but it will not boost the voltage if the panel voltage is less than the battery voltage. Make sure your panel voltage is higher than your battery voltage for optimum performance.

OPERATION PROCEDURE ORDER

- 1) Make sure the total rated current of the Solar Panel Array and Load are less than the rated current of your Solar Charge Controller – in this case your maximum current is 20A
- 2) Make sure the polarity of the wiring from your Solar Panel Array, Battery and Load are correctly matched to prevent the risk of a short circuit which may damage unprotected devices
- 3) Mount your Solar Charge Controller to your selected surface and fasten it securely using screws
- 4) Check whether the Battery voltage and Solar Panel Array voltage is within the requested range
- 5) Loosen the screw terminals on your Solar Charge Controller – there are 6 screw terminals total from left to right in this order: Solar Panel Positive, Solar Panel Negative, Battery Positive, Battery Negative, Load Positive and Load Negative
- 6) Connect the Battery's input to your Solar Controller using the two screw terminals in the middle marked with the Battery pictogram, you may need an adapter – attach the wiring securely but do not over-torque your Solar Charge Controller's terminals
- 7) Connect your Load to your Battery's output using the Battery as the buffer between the Solar Panel Array and the Load (we DO NOT recommend using the Load Terminals for most uses) – attach the wiring securely but do not over-torque your Solar Charge Controller's terminals
- 8) Connect the Solar Panel Array to the Solar Panel Input on your Solar Charge Controller using the two screw terminals on the left marked with the Solar Panel pictogram – attach the wiring securely but do not over-torque your Solar Charge Controller's terminals
- 9) Your Solar Charge Controller should assume standard operation herein

To charge AGM batteries, you have to setup an override in the controller as follows:

The solar controller has an override feature to charge LiFePO4, SLA and AGM batteries. Attach the battery first to the controller, then see below:

- 1) The 1st screen is the battery voltage also known as the "home" screen.
- 2) Push the left red button. The second screen is the float voltage of the solar panel to the battery (13.8VDC).
- 3) The 3rd screen is the charge voltage of the battery (14.4VDC).
- 4) The 4th screen is the regulated voltage to the load (12.6VDC)
- 5) Screen 5 is the cutoff voltage (10.8VDC)
- 6) Screen 6 is a timer screen that is not implemented
- 7) Screen 7 is the battery type. By default "b00" is for Lithium Iron Phosphate batteries. To charge SLA/AGM batteries, hold the left button for 6 seconds, and the "b00" display will start flashing, then push the right button to change to "b01".

Screen 2, 3, 4, 5, 6 are hard-coded (hard-programmed) -- there's nothing that you would change on those screens.

STATUS CODES

INDICATOR	STATE	DESCRIPTION	MEANING
CHARGE/ PANEL	No Icons	PANEL OFF, FUNCTION ICON OFF	No Solar Panel detected
	Panel Icon On Function Icon Off	PANEL ICON ON, FUNCTION ICON NOT INDICATING	Solar charging stopped
	Panel Icon On Function Icon On	PANEL AND FUNCTION ICON ON, BATTERY ICON IS SCROLLING	Solar Panels are charging Battery
LOAD	Function Icon On Light Bulb Icon On	BOTH INDICATORS ARE ON SOLID	Load is ON
	Function Icon Flashing Light Bulb Icon On	LOAD INDICATOR ON, FUNCTION INDICATOR FLASHING	Load is OFF
BATTERY	Battery Icon Empty	NO BARS	Battery requires charging
	Battery Icon Scrolling	SCROLLING BARS	Battery is charging
	Battery Icon Full	FULL BARS, NO SCROLLING	Battery is fully charged

INDICATOR ICONS

Solar Panel: Solar Panel (icon may be solid or flashing depending on current usage or situation)

Battery: Battery (icon may be solid, scrolling or empty depending on current usage or situation)

Load: Light Bulb (icon may be solid or flashing depending on current usage or situation)

Function: Arrow (icon may be solid or flashing depending on current usage or situation)

FAULTS AND REMEDIES

FAULT	PHENOMENON	REMEDY
Battery voltage is too low	Battery Symbol Flashing Empty	Detach Load, check the battery voltage and manually recharge the battery if necessary
Excessive load current/ Short circuit*	Load Symbol (Light Bulb) Flashing	Reduce the load current at the load output Check if there is a short circuit in the load or wing

***Note:** In the event of a short circuit, your Solar Charge Controller trip an auto-reset fuse – disconnect load immediately, let it stand for 10-20 minutes, the internal fuse will automatically reset during this period. Before resuming operation, confirm your load does not exceed the 20A Maximum Load Current of your Solar Charge Controller.