

# GENASUN

## **Solar Charge Controllers with Maximum Power Point Tracking**

### **GV Boost Models GVB48-8, GVB36-8, GVB24-8, GVB12-8, GVB24-6, GVB12-6**

#### **Introduction**

Congratulations on your purchase of the Genasun Maximum Power Point Tracking Solar Charge Controller! Genasun's controllers are the most compact and advanced controllers available for small solar installations.

Your tracking controller works by operating your solar panel at the voltage where it can produce the most power, resulting in increases of 10% up to 30% depending on your panel, battery state of charge, and lighting conditions. Genasun's controllers also prevent overcharging by throttling back the panel power as your batteries reach full charge. In order to get the most from your charger, please follow these instructions.

#### **Connections and Installation**

On the left side of your solar charge controller are four labeled wire terminals for the solar panel and battery connections. Connections may be made in any order. Be sure to observe the polarity of both the solar panel and the battery when connecting.

It is necessary to mount your controller where it will not become wet, as it is not waterproof. Avoid mounting it in an engine compartment or near other sources of heat.

For highest efficiency and best performance near full-charge, mount your Genasun controller as close to your battery as possible, and use heavy gauge wire (12 or 14 gauge is preferable; 16 gauge is acceptable for runs up to a few feet).

For a single panel installation, a blocking diode is not necessary and would only

reduce efficiency. Multiple panels may be connected in parallel up to the maximum power limit of the controller, with a blocking diode used for each panel. For optimum performance, the panels should be of the same model and facing the same direction. When this is not possible, it is recommended to use a separate controller for each panel.

When the battery circuit is completed, a small spark may occur (as the capacitor in the charge controller charges). This is expected and is not a malfunction.

If the panel is disconnected while charging, then reconnected, it may take about one minute for the controller to begin charging again. This feature prevents repeated restarts and reduces power consumption as charging begins in the morning.

If the battery is connected with reverse polarity, the internal fuse will blow, but the controller will not be damaged. The fuse is accessible by removing the four screws in the bottom of the controller, and should be replaced by a fuse of the same current and an equal or higher voltage rating.

## Status Lights

The Genasun Maximum Power Point Tracking Solar Battery Charger has a status LED. When you first connect your charger to the battery, the LED will blink red and then green for approximately one second, so that you can confirm that the LED is operational. During operation, the LED blinks green to indicate that your charger is powered and charging, and the LED may blink red to indicate errors.

### Green LED:

Short blinks every 2 seconds: .....Battery connected, Standby  
Short blinks every half second: .....Charging with low current  
Long blinks, on 30% of the time: .....Charging with medium currents  
Long blinks, on 80% of the time: .....Charging with high currents  
Long blink-short blink .....Overload, limiting current  
Constant on: .....Battery is Fully Charged

### Red LED:

Two Blinks: .....Over-Temperature  
Three Blinks: .....Over-Current  
Four Blinks: .....Battery Under-Voltage  
Five Blinks: .....Battery Over-Voltage  
Two Long Blinks  
followed by short blinks: .....Internal Error

## Electrical Specifications

Maximum Input Voltage .....	Panel Voc must be lower than 63 V
Minimum Input Voltage for Charging .....	5 V
Maximum Input Current GVB36-8, GVB48-8.....	8 A
(max panel current) GVB12-8, GVB24-8.....	8 A
GVB12-6, GVB24-6.....	6 A
Battery Float Voltage GVB12-6/8.....	13.8 V
GVB24-6/8.....	27.6 V
GVB36-8.....	41.4 V
GVB48-8.....	55.2 V
Absorption Voltage GVB12-6/8.....	14.2 V
GVB24-6/8.....	28.4 V
GVB36-8.....	42.6 V
GVB48-8.....	56.8 V
(Custom voltages and charge profiles are available for lithium batteries.)	
Battery Temperature Compensation .....	-28mV/C per 12V nominal
Night Consumption GVB12-6/8.....	7 mA
GVB24-6/8, GVB36-8.....	6 mA
GVB48-8.....	5 mA
Electrical Efficiency (typical).....	94% - 98%
Tracking Efficiency (typical).....	99%
Operational Temperature .....	- 40°C – 85°C

## Physical Specifications

Weight .....	6.5 oz. (185 g)
Size.....	5.5x2.5x1.2" (14x6.5x3.1 cm)

## Warranty and Service

Your Genasun product comes with a limited lifetime warranty against defects and malfunctions. This warranty does not cover damage caused by incorrect connections, water, operation outside of the specified ranges, or other abuse. To obtain technical support, repairs, or to request a return authorization, please email us: [support@genasun.com](mailto:support@genasun.com) or call: +1 (USA) 617-369-9083. Thank you for your purchase; we hope you enjoy your GV Boost Solar Charge Controller.

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