



GENASUN

GV-Boost Waterproof Manual

Waterproof Voltage Boosting Solar Charge Controllers with
Maximum Power Point Tracking

For models:

GVB-8-Pb-36V-WP: 36V Lead-Acid/AGM/Gel/Sealed/Flooded

GVB-8-Pb-48V-WP: 48V Lead-Acid/AGM/Gel/Sealed/Flooded

<http://genasun.com>

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8A Input

GENASUN GV-BOOST WP(ALL MODELS) MANUAL, REVISION 1.0 | 5.2013

IMPORTANT SAFETY INSTRUCTIONS | SAVE THESE INSTRUCTIONS

Safety Instructions:

This manual contains important instructions for the GV-Boost GVB-8-Pb-**V-WP solar charge controllers that shall be followed during installation and maintenance. Various models of the GVB-WP are available to charge different battery types as follows:

- **GVB-8-Pb-36V-WP:** 36V Lead-Acid/AGM/Gel/Sealed/Flooded
- **GVB-8-Pb-48V-WP:** 48V Lead-Acid/AGM/Gel/Sealed/Flooded

Consult your battery charging specifications to ensure that the GVB is compatible with your chosen batteries.

Carefully follow these instructions.

CAUTION for the GVB-8-Pb-V-WP:**

INTERNAL TEMPERATURE COMPENSATION. RISK OF FIRE, USE WITHIN 0.3 m (1 ft) of BATTERIES. Lead-acid batteries can create explosive gases. Short circuits can draw thousands of amps from a battery. Carefully read and follow all instructions supplied with the battery.

DO NOT SHORT CIRCUIT the solar array when plugged into the controller. **DO NOT MEASURE SHORT CIRCUIT CURRENT** of the array while connected to the controller. This will **DESTROY** the controller, and such damage will not be covered under warranty.

DO NOT USE WITH LITHIUM BATTERIES. See our GVB-Li series for lithium applications.

Grounding is not necessary for operation and is at the user's discretion. If the GVB-WP is to be used with a solar array electrically connected to earth ground, please note the following: **WARNING: THIS UNIT IS NOT PROVIDED WITH A GFDI DEVICE.** Consult Article 690 of the National Electrical Code (or the standards in force at the installation location) to determine whether a GFDI is necessary for your installation.

Use only copper conductors suitable for a minimum of 60 degrees C. If operation at high power or at high ambient temperatures is expected, wire with a higher temperature rating may be necessary.

Inspection & Maintenance

Inspect the controller at least once per year to ensure proper performance.

- Check for animal or insect damage.
- Inspect for corrosion / water damage.
- Inspect the security of all connections.
- Ensure the solar array does not exceed the maximum input voltage.
- Repair and clean as necessary.

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Installation & System Connections:

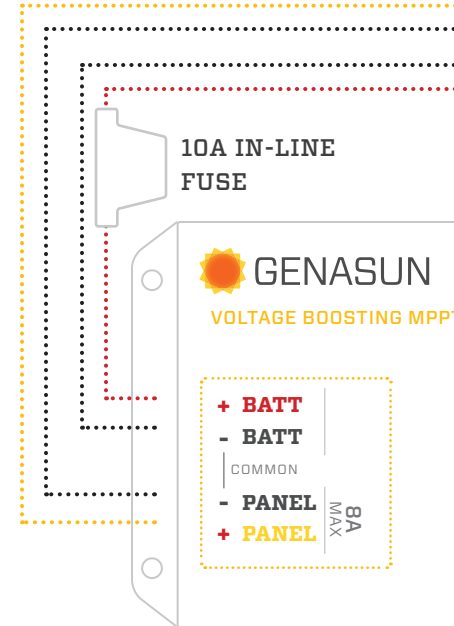
- Connections should be made according to Article 690 of the National Electrical Code (NFPA 70) or the standards in force at the installation location.
- Electrical connections may be made in any order; however the sequence below is recommended.

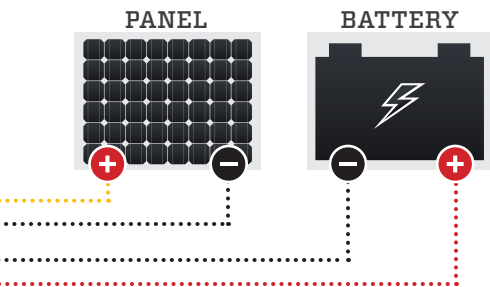
1 MOUNTING

Mount the controller near your battery securely using the holes provided on the enclosure's flanges or with a means appropriate to the application.

- Mount near battery.
- The GVB-WP can be mounted in any orientation.
- Do not mount in direct sunlight or near a source of heat.
- Allow adequate airflow around the controller to achieve maximum output capability.

Note: Make sure to inspect the controller at least once per year to ensure proper performance. Please see the Inspection & Maintenance section in this guide.





N GV-Boost Waterproof

MPPT SOLAR CHARGE CONTROLLER

The GVB-WP has a **MULTICOLOR** LED. Learn about this indicator on the following page.

2 CONNECTING THE SOLAR PANEL

Connect the solar panel to the +PANEL and -PANEL terminals.

- In most applications, the panel should be connected only to the GVB-WP.
- The LED may blink red until a battery is connected.
- Do not use blocking diodes for single-panel installations. The GVB-WP prevents reverse-current flow.
- If multiple panels are being used in parallel, blocking diodes are recommended in series with each panel, unless the panel manufacturer recommends otherwise.
- Solar panel voltage rises in cold weather. Check that the solar panel open circuit voltage (Voc) will remain below the maximum input voltage of the GVB-WP at the coldest possible expected temperature.

3 CONNECTING THE BATTERY

Connect the battery to the +BATT and -BATT terminals.

- A small spark while connecting the battery is ok.
- Any loads should be connected directly to the battery. The GVB-WP does not provide protection against over-discharge.

CAUTION, RISK OF FIRE OR EXPLOSION: Do not make the final battery connection near lead-acid batteries that have recently been charging.

Status Indication:

The GVB has a **MULTICOLOR** LED



LED RUN/CHARGE INDICATION

Standby: The battery is connected properly and ready to charge when solar panel power is available.

2 SEC. BETWEEN BLINKS 

Charging (low current, input current less than ~3.5A):

FAST & SHORT BLINKS 

Charging (high current, input current more than ~3.5A):

LONGER BLINKS 

Charging (current limit): charging at current limit.

The GVB is overloaded and limiting input current. Check that the solar panel rating is within the GVB's input specifications.

LONG, THEN SHORT BLINKS 

Battery Charged: The battery is in the absorption or float charging stage.

SOLID LED 



LED ERROR INDICATION

Overheat: The controller's internal temperature is too high.

SETS OF 2 RED BLINKS. 

Overload: The GVB has been overloaded.

This could be caused by changing the solar panel connections while the controller is operating.

SETS OF 3 RED BLINKS. 

Battery voltage too low: The controller cannot begin charging due to low battery voltage. Charge the battery by some other means before use.

SETS OF 4 RED BLINKS 

Battery voltage too high: Check that the correct GVB has been selected for the nominal system battery voltage. If the nominal battery voltage is correct, check the functioning of other chargers that may be connected to the system. This error can also be caused by a disconnected battery or blown fuse.

SETS OF 5 RED BLINKS. 

Internal Error: Contact your dealer for assistance.

2 LONG BLINKS, FOLLOWED BY ANY NUMBER

OF SHORT BLINKS. 

Troubleshooting

If the LED indicator does not light with a battery connected, or blinks the over-battery-voltage error, or the controller does not charge, the fuse may be blown. The GVB-WP fuse is located in a black waterproof in-line fuse holder in the positive battery line. If the fuse is blown, replace it with a 10A fast-acting ATO or ATC fuse rated for at least 58V. Automotive fuses are typically rated to 32V, and are not acceptable. We recommend Littelfuse part number 142.6185.5102, rated to 58V.

The most common causes of blown fuses are:

- Connecting the GVB-WP to the battery backwards
- Shorting the solar panel input while the GVB-WP is charging. In this case, there may be other internal damage to the controller.

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Specifications:

GVB-8-Pb-36V-WP **GVB-8-Pb-48V-WP**

Rated Panel (Input) Current:	8A	
Minimum Panel Voltage for Charging:	5V	
Minimum Battery Voltage for Operation:	9.5V	
Absolute Maximum Panel Open-Circuit Voltage (Voc):	63V	
Nominal Battery Voltage:	36V	48V
Maximum Recommended Panel STC Maximum Power Voltage (Vmp):	41V	43V
Maximum Recommended Panel Power (8A Panel w/-155mm cells):	325W	350W
Bulk Voltage:	43.2V	57.6V
Absorption Voltage:	42.6V	56.8V
Absorption Time:	2 Hours	
Float Voltage:	41.4V	55.2V
Battery Temperature Compensation:	-84mV/°C	-112mV/°C
Electrical Efficiency:	96% - 98% typical	96% - 99% typical
Night Consumption:	6mA	5mA
Tracking Efficiency:	99+% typical	
MPPT Tracking Speed:	15Hz	
Environmental:	Waterproof	
Connection:	Flying Leads, 16 AWG tinned wire, pre-stripped	
Weight:	10.3oz (290g)	
Dimensions:	5.5x3.2x2.2", (14x8.1x5.5cm)	
Warranty:	2 years	