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› Genasun GVB-8-Li-54.2V-WP MPPT Solar Charge Controller Instruction Manual

Genasun GVB-8-Li-54.2V-WP

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MODEL: GVB-8-Li-54.2V-WP

Introduction

The Genasun GVB-8-Li-54.2V-WP is a high-performance, waterproof voltage boosting MPPT solar charge controller. It is specifically designed for 13S Lithium batteries (4.17V per cell) with a programmed charge voltage of CC/CV at 54.2V. This controller is ideal for charging 350W solar panels/arrays with a recommended current input of 8A, making it suitable for eBikes, golf carts, and other electrical vehicles.



Image: The Genasun GVB-8-WP Solar Charge Controller, a compact black unit with a label indicating its specifications and wiring guide. Accompanying icons highlight its compatibility with Lithium batteries, 54.2V output, and eBike applications.

Key Features

- **Waterproof Design:** IP68 rated, making it ideal for outdoor and mobile applications like eBikes and golf carts.
- **High-Speed MPPT:** Tracks the Maximum Power Point (MPP) 15 times per second, ensuring optimal power harvesting from your solar array.
- **Exceptional Efficiency:** Achieves up to 99% peak efficiency with minimal power consumption (5-7 mA standby).
- **Voltage Boosting:** Designed to increase the solar panel's output voltage to effectively charge batteries with a higher nominal voltage.
- **Robust Construction:** Lightweight and durable, built for mobile, urban, or harsh environmental conditions.
- **Certifications:** CE, FCC, RoHS compliant.

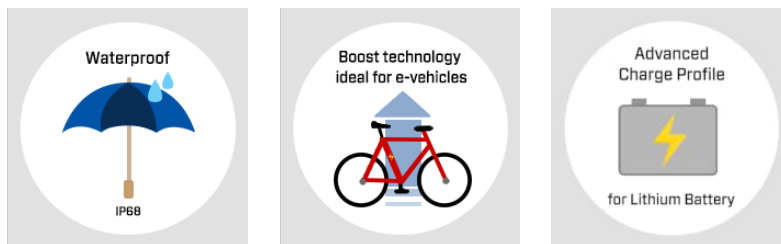


Image: Icons representing key features: Waterproof (IP68), Boost technology ideal for e-vehicles, and Lithium battery compatibility.

Setup & Installation

Proper wiring is crucial for the safe and efficient operation of your Genasun GVB-8-Li-54.2V-WP controller. Always ensure all connections are secure and correctly polarized before applying power.

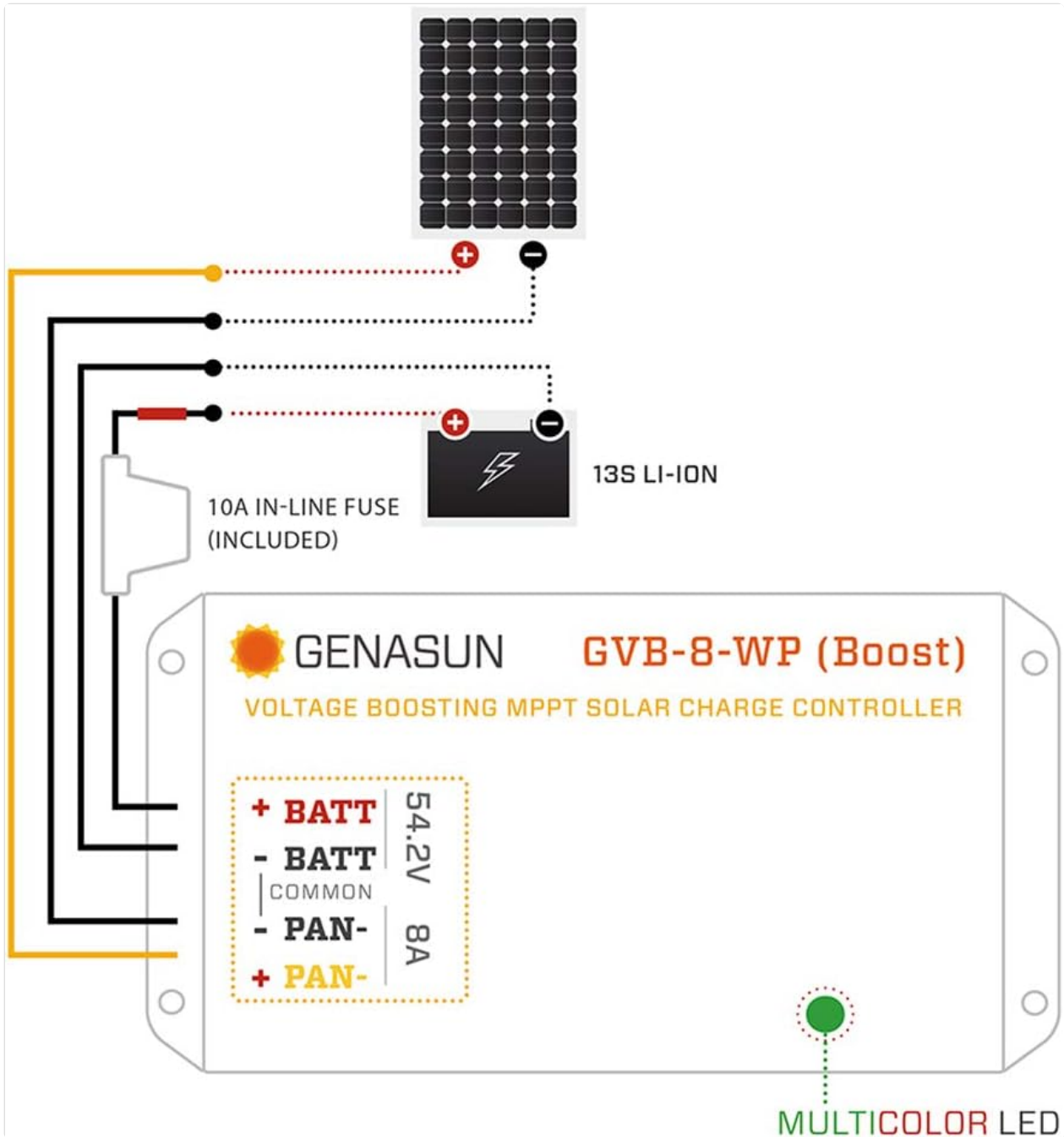


Image: A detailed wiring diagram for the Genasun GVB-8-WP. It shows connections from a solar panel to the controller (positive and negative panel inputs), and from the controller to a 13S Li-Ion battery (positive and negative battery outputs), with an inline 10A fuse included on the positive battery line. A multicolor LED on the controller indicates status.

1. **Connect to Battery:** First, connect the controller to your 13S Lithium battery. Ensure the positive (+) and negative (-) terminals are correctly matched. An inline 10A fuse is recommended on the positive battery line for protection.
2. **Connect to Solar Panel:** Next, connect your solar panel(s) to the controller's solar input terminals. Again, observe correct polarity (positive to positive, negative to negative).
3. **Verify Connections:** Double-check all connections for tightness and correct polarity to prevent damage to the controller or battery.
4. **Included Accessories:** The controller comes with necessary connectors and an inline fuse for ease of installation.

Operation

Once correctly installed, the Genasun GVB-8-Li-54.2V-WP controller will automatically begin charging your battery when sufficient solar power is available. The multicolor LED on the unit provides status indications:

- **Standby:** Indicates the controller is powered but not actively charging.
- **Charging:** Shows active power transfer from the solar panel to the battery.
- **Full:** The battery has reached its full charge capacity.
- **Error:** Indicates a fault condition; refer to the manual for specific error codes.

The controller features a trickle charge function, which is particularly useful for lithium batteries. If a battery's Battery Management System (BMS) has disconnected all loads due to high depth of discharge, the trickle charge can eventually bring the battery out of protection mode, allowing normal charging to resume.

Maintenance

The Genasun GVB-8-Li-54.2V-WP is designed for durability and minimal maintenance. Its waterproof (IP68) rating protects it from dust and water ingress. Periodically inspect all wiring connections for any signs of wear, corrosion, or looseness. Ensure the controller's surface is clean to allow for proper heat dissipation, although its high efficiency minimizes heat generation.

Troubleshooting

If your Genasun GVB-8-Li-54.2V-WP controller is not functioning as expected, consider the following basic troubleshooting steps:

- **No LED Indication:** Check all power connections from the battery and solar panel. Ensure the battery has sufficient voltage to power the controller.
- **Not Charging:** Verify that the solar panels are receiving adequate sunlight and are correctly connected. Check the inline fuse for continuity. Ensure the battery is not already full or in a protection mode that prevents charging.
- **Error LED:** If an error LED is illuminated, consult the detailed manual for specific error code interpretations and recommended actions.

Specifications

Attribute	Value
Model	GVB-8-Li-54.2V-WP
Input Current (Recommended)	8 A
Solar Panel Power (Max)	350 W
Battery Type	13S Lithium (4.17V per cell)
Charge Voltage (CC/CV)	54.2 V
MPPT Tracking Speed	15 Hz (15 times per sec)
Peak Efficiency	99%

Attribute	Value
Standby Consumption	5-7 mA
Waterproof Rating	IP68
Product Dimensions	5.5"L x 3.2"W x 2.2"H
Color	Black
Material	Composite
Display Type	LED
Manufacturer	Genasun
Origin	Made in the USA

Product Comparison

The Genasun GVB-8-Li-54.2V-WP offers superior performance compared to many other boost controllers on the market, particularly in terms of minimum input voltage, fanless operation, waterproof rating, self-consumption, and trickle charge capability.



GVB-8-WP



**Others Boost
Controllers**

	>5 V	>15 V
Minimum Input Voltage		
	No	Yes
Fans		
	Yes	No
Waterproof		
	0.2-0.3 W	2-3 W
Self-Consumption		
	Yes	No
Trickle Charge		

Image: A comparison table highlighting the advantages of the Genasun GVB-8-WP over other boost controllers. Key differences include a lower minimum input voltage (>5V vs >15V), no fans, waterproof design (Yes vs No), lower self-consumption (0.2-0.3W vs 2-3W), and the presence of a trickle charge feature (Yes vs No).

Official Product Video

Video: An official product video from RV Power, titled "Genasun GVB-8 and GVB-8-WP Boost MPPT charge controllers." This video provides an overview of the Genasun GVB-8 and GVB-8-WP models, detailing their features, benefits, and applications, including their high efficiency, waterproof design, and suitability for various battery types.

Warranty & Support

The Genasun GVB-8-Li-54.2V-WP comes with a **5-Year Warranty**, reflecting the manufacturer's confidence in its quality and durability. For any technical assistance, warranty claims, or further inquiries, please contact Genasun customer support directly.

Additional information and support resources may be available on the official [Genasun Store on Amazon](#).