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Genasun GVB-8-Li-28.4V

Genasun GVB-8-Li-28.4V MPPT Solar Charge Controller User Manual

Model: GVB-8-Li-28.4V | Brand: Genasun

1. INTRODUCTION AND OVERVIEW

The Genasun GVB-8-Li-28.4V is a voltage boosting Maximum Power Point Tracking (MPPT) solar charge controller designed for 8S LiFePO4 batteries (24V nominal). This controller efficiently harvests solar energy to charge your battery system, even in sub-optimal conditions.

- **High-Speed MPPT:** Tracks the Maximum Power Point 15 times per second for optimal energy harvesting.
- **Voltage Boosting:** Capable of boosting the voltage output from a solar panel to charge a battery with a higher nominal voltage, starting with a minimum input of 5V.
- **High Efficiency:** Achieves up to 98% peak efficiency with minimal self-consumption (5-7 mA).
- **Compact Design:** Features tiny dimensions and lightweight construction, without the need for a heat sink or fan.
- **Wide Operating Temperature:** Functions reliably from -40°C to 85°C (-40°F to 185°F).
- **Certifications:** ETL, CE, FCC, RoHS certified.

2. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your Genasun GVB-8-Li-28.4V charge controller. Always ensure all connections are secure and follow local electrical codes.

2.1. Components Overview



Figure 1: Front view of the Genasun GVB-8-Li-28.4V Solar Charge Controller.



Figure 2: Side view of the Genasun GVB-8-Li-28.4V Solar Charge Controller, showing connection terminals.

2.2. Wiring Diagram

The following diagram illustrates the typical wiring for the GVB-8-Li-28.4V charge controller. Ensure correct polarity for all connections.

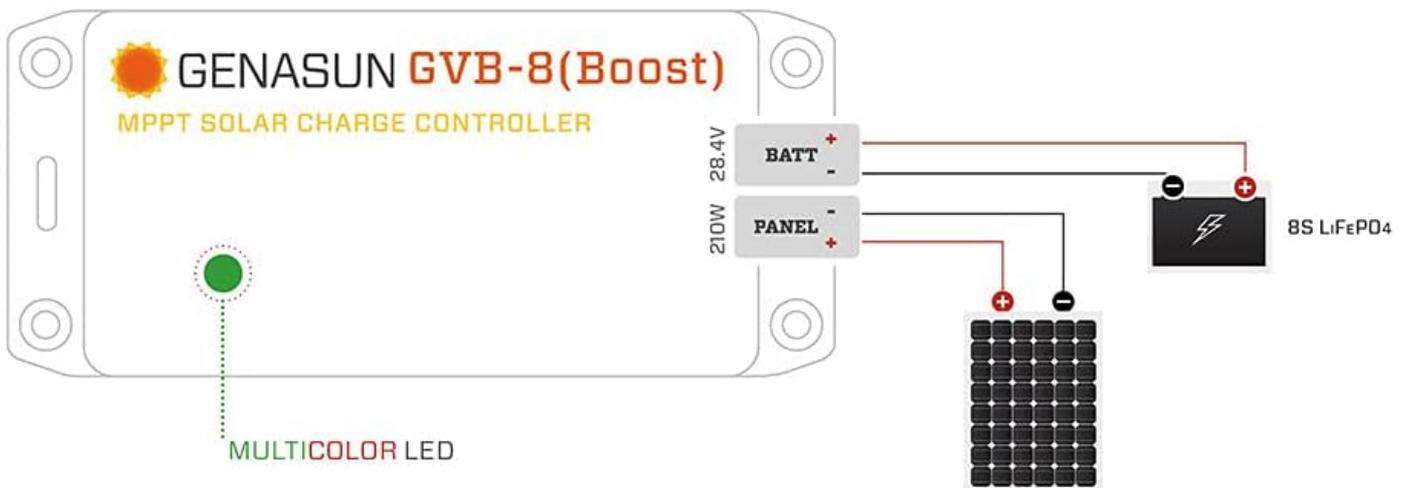


Figure 3: Wiring connections for the GVB-8-Li-28.4V controller, solar panel, and 8S LiFePO4 battery.

2.3. Connection Details

- **Solar Panel Connection:** Connect your solar panel to the 'PANEL' terminals. The GVB-8-Li-28.4V is designed for a 210W solar panel with a recommended current input of 8A.
- **Battery Connection:** Connect your 8S LiFePO4 battery (24V nominal) to the 'BATT' terminals. The controller is programmed with a charge voltage CC/CV at 28.4V (3.55V per cell).

- **Wire Gauge:** The standard version utilizes a terminal block that accommodates up to 10 gauge wires. The waterproof (WP) version features 16 gauge wires with an inline fuse for both PV input and battery output.
- **Water Ingress Prevention:** For non-waterproof versions, consider using drip loops as recommended in the manual to prevent water ingress.

3. OPERATING INSTRUCTIONS

3.1. LED Indicator

The multicolor LED on the controller provides visual feedback on the charge status, input current, and other relevant details. Refer to the manual for a detailed interpretation of LED patterns.

3.2. MPPT Functionality

The GVB-8-Li-28.4V employs high-speed MPPT technology, tracking the maximum power point 15 times per second. This ensures that optimal power is harvested from your solar array, even under varying light conditions such as early morning, late evening, or partial shading.

3.3. Trickle Charge Feature

This controller includes a trickle charge feature, particularly useful for lithium battery applications. If a battery's Battery Management System (BMS) has disconnected all loads due to a high depth of discharge, the trickle charge can gradually bring the battery out of protection mode, allowing the charge controller to resume optimal output.

4. MAINTENANCE

The Genasun GVB-8-Li-28.4V is designed for durability and minimal maintenance. However, periodic checks can ensure long-term performance.

- **Environmental Protection:** The fully potted waterproof GVB-8-Li-28.4V is IP68 rated, offering excellent protection against dust and water. The non-waterproof version is IP40 rated.
- **Operating Temperature:** The acceptable operating range is -40°C to 85°C (-40°F to 185°F).
- **Cleaning:** Keep the controller free from dust and debris. Use a soft, dry cloth for cleaning. Do not use harsh chemicals or abrasive materials.
- **Connection Checks:** Periodically inspect all wiring connections to ensure they are tight and free from corrosion.

5. TROUBLESHOOTING

If you encounter issues with your Genasun GVB-8-Li-28.4V, refer to the LED indicator status and the following common troubleshooting tips.

- **No LED Activity:** Check solar panel connections and battery connections for proper polarity and secure fit. Ensure the solar panel is receiving sufficient light.
- **Battery Not Charging:** Verify that the solar panel's voltage and current are within the controller's specifications. Check the battery's state of charge; if deeply discharged, the trickle charge feature should initiate.
- **Overheating:** Although designed for high efficiency without a heat sink, ensure the controller is installed in a location with adequate airflow, especially in high ambient temperatures.
- **Incorrect Battery Voltage:** Ensure the controller model matches your battery's nominal voltage (e.g., 28.4V for 8S LiFePO4).

For persistent issues, contact Genasun customer support.

6. SPECIFICATIONS

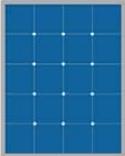
	GVB-8	Others Boost Controllers
 Minimum Input Voltage	>5 V	>15 V
 Fans	No	Yes
 Trickle Charge	Yes	No
 Self-Consumption	0.2-0.3 W	2-3 W

Figure 4: Comparison of GVB-8 features against other boost controllers.

Genasun GVB-8-Li-28.4V Specifications

Feature	Detail
Model	GVB-8-Li-28.4V
Battery Type	8S LiFePO4 (24V Nominal)

Feature	Detail
Charge Voltage (CC/CV)	28.4V
Recommended Panel Power	210W
Recommended Input Current	8A (up to 9A acceptable)
Minimum Input Voltage	5V
Peak Efficiency	98% (typical)
Night Consumption	5-7 mA (typical)
Operating Temperature	-40°C to 85°C
Protection	IP68 (Waterproof version), IP40 (Standard version)
Dimensions	9.5 x 5.7 x 2.2 cm (3.75 x 2.25 x 0.85 inches)
Weight	100g (3.5 oz)
Manufacturer	Genasun

7. WARRANTY AND SUPPORT

7.1. Warranty Information

The Genasun GVB-8-Li-28.4V comes with a standard factory **5-Year Warranty**. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

7.2. Customer Support

For any questions, technical assistance, or warranty inquiries, please contact Genasun customer support through their official website or the retailer where the product was purchased. You may also find helpful resources and FAQs on the [Genasun Store on Amazon](#).

Your browser does not support the video tag.

Video 1: Overview of Genasun GVB-8 and GVB-8-WP Boost MPPT charge controllers by RV Power (Seller).