Genasun GV-5-Pb-12V

Genasun GV-5-Pb-12V MPPT Solar Charge Controller for 12V Lead-Acid Batteries - Instruction Manual

Model: GV-5-Pb-12V | Brand: Genasun

1. Product Overview

The Genasun GV-5-Pb-12V is a high-speed Maximum Power Point Tracking (MPPT) solar charge controller designed for 12V lead-acid batteries. It features a 5A charging current and a 5A DC load output with Low Voltage Disconnect (LVD). This controller is built for efficiency and durability, offering advanced electronic protections and a multi-stage charge profile to optimize battery health and lifespan.

- Max. recommended panel power: 65 W
- Charging current: 5 A
- Multi-stage charge profile for Lead-Acid batteries
- High-Speed MPPT: 15 Hz (15 times per sec.) tracking speed
- Peak Efficiency: 99.85%
- Tiny night consumption: 0.125 mA
- DC Load Output: 5 A with LVD (low voltage disconnect)
- Advanced electronic protections for reverse panel and battery polarity
- 10-Year Warranty
- Made in the USA, conform to CE, FCC, RoHS

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Video 1: An unboxing and overview of the Genasun GV-5 Buck MPPT charge controller, highlighting its features, specifications, and applications. This video provides a comprehensive introduction to the product.

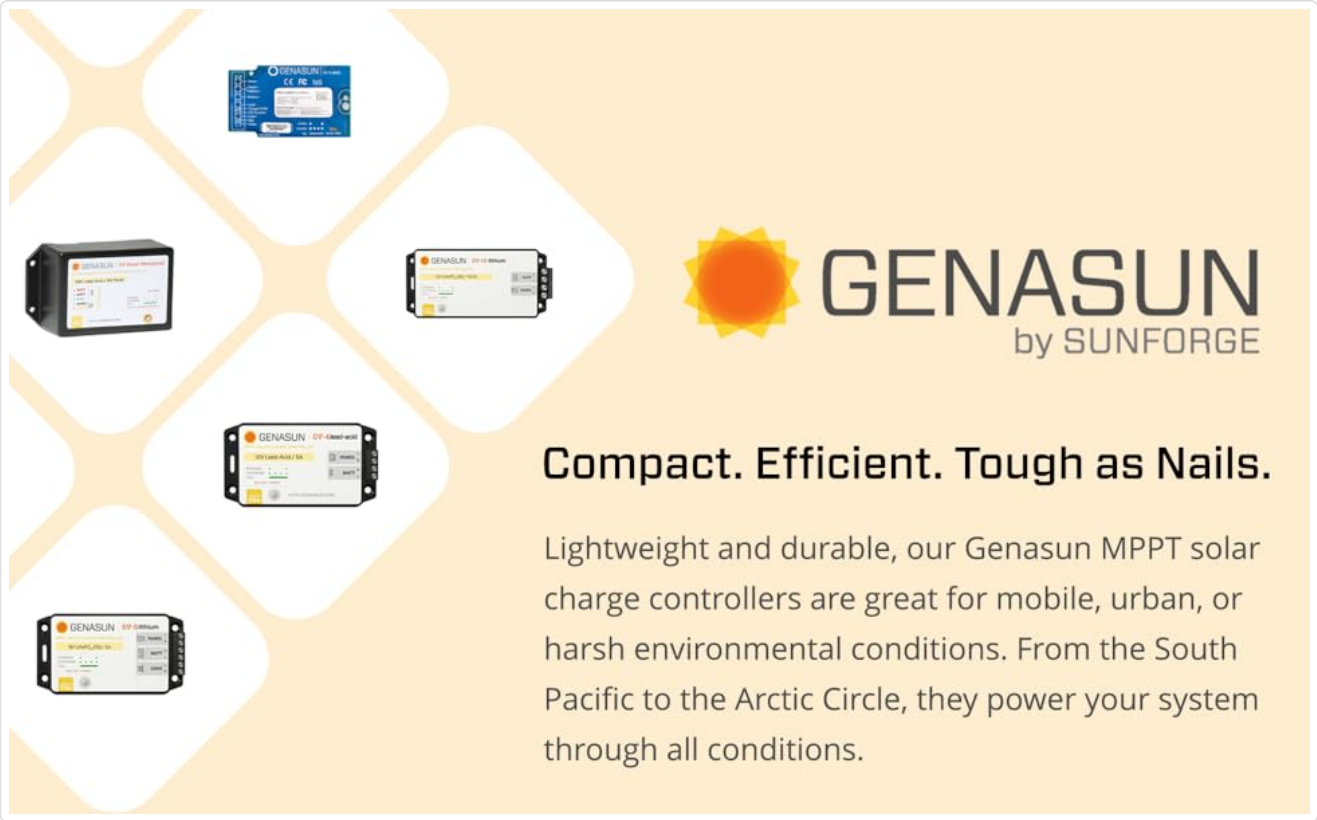

Figure 1: A comparison table illustrating the superior features of the Genasun GV-5, such as MPPT tracking speed, efficiency, trickle charge capability, low self-consumption, and radio frequency silence, compared to other controllers.

2. Safety Information

Please read all instructions carefully before installation and operation. Failure to follow these instructions may result in damage to the unit, battery, or solar panel, and may void the warranty. Ensure all connections are secure and correct polarity is observed.

- Always connect the battery to the charge controller FIRST.
- Always disconnect the solar panel from the charge controller FIRST before disconnecting the battery.
- Ensure proper ventilation around the charge controller.
- Do not expose the controller to water or excessive moisture unless it is a waterproof model.
- Use appropriate wire gauges for all connections to prevent overheating.

3. Setup and Installation

Follow these steps for proper installation of your Genasun GV-5-Pb-12V solar charge controller.

3.1 Wiring Diagram

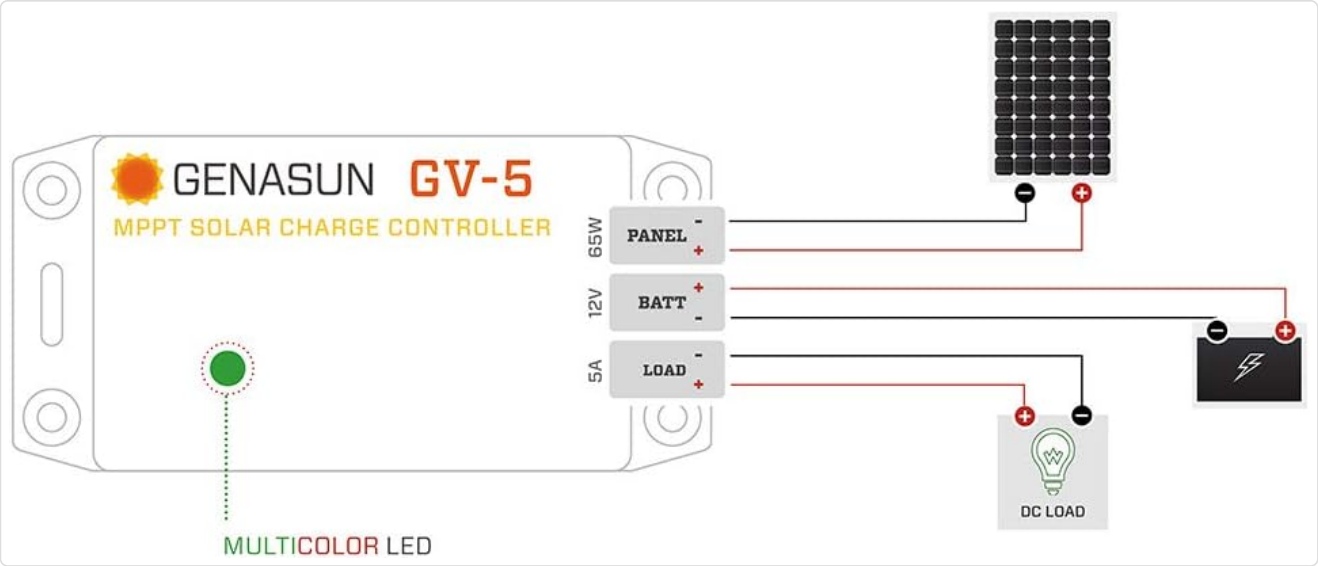

Figure 2: Wiring diagram showing connections for solar panel, battery, and DC load to the Genasun GV-5 controller. The multicolor LED indicates operational status.

This diagram illustrates the correct connection sequence for your solar panel, battery, and optional DC load. Ensure positive (+) and negative (-) terminals are correctly matched.

3.2 Connection Steps

1. **Connect the Battery:** First, connect the battery to the charge controller. Ensure correct polarity (positive to positive, negative to negative). The controller will power on and display the battery voltage.
2. **Select Battery Type:** If your controller has a battery type selection feature, press and hold the leftmost button until the battery type indicator flashes. Select the appropriate battery type (e.g., Lead-Acid, AGM, Gel). For Lead-Acid batteries, selecting AGM is often suitable.
3. **Connect the Solar Panel:** Next, connect the solar panel to the charge controller. Ensure correct polarity. The controller will begin charging the battery if sufficient solar power is available.
4. **Connect the DC Load (Optional):** If using the optional DC load output, connect your DC load (e.g., lights, fan) to the LOAD terminals. The controller's Low Voltage Disconnect (LVD) feature will protect the battery from over-discharge.

3.3 Visual Installation Guide

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Video 2: A step-by-step guide demonstrating the connection method for a solar charge controller to a battery, optional mobile phone charging, and a solar panel. This video provides a clear visual aid for the installation process.

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Video 3: This video illustrates the wiring process for a solar charge controller, showing how to connect the battery, solar panel, and DC load. It serves as a helpful visual reference for correct wiring.

4. Operating Instructions

Once correctly installed, the Genasun GV-5-Pb-12V operates automatically. The multicolor LED provides status indications:

- **Green LED:** Indicates normal operation and charging status.
- **Red LED:** Indicates an error or fault condition. Refer to the troubleshooting section for details.
- **Battery Voltage Display:** The integrated display shows the current battery voltage, allowing you to monitor the charge level.

The MPPT technology continuously tracks the maximum power point of your solar array to ensure optimal charging efficiency, even in varying light conditions.

5. Maintenance

To ensure optimal performance and longevity of your Genasun GV-5-Pb-12V solar charge controller, follow these maintenance guidelines:

- **Regular Inspection:** Periodically check all wiring connections to ensure they are tight and free from corrosion.
- **Cleaning:** Keep the controller clean and free from dust, dirt, and debris. Use a dry cloth for cleaning. Do not use harsh chemicals or abrasive materials.
- **Ventilation:** Ensure the area around the controller is well-ventilated to prevent overheating.
- **Battery Health:** Regularly check your battery's condition as per the battery manufacturer's recommendations.

6. Troubleshooting

If you encounter issues with your Genasun GV-5-Pb-12V, refer to the following common troubleshooting tips:

- **No Charging:**
  - Check all solar panel connections for correct polarity and secure fit.
  - Ensure the solar panel is receiving adequate sunlight.
  - Verify the battery is properly connected and has sufficient voltage (above the minimum operating voltage).
- **Red LED Indicator:**
  - A red LED typically indicates a fault. Check for reverse polarity on either the solar panel or battery connections.
  - Ensure the battery voltage is within the acceptable range for the controller.
  - Check for short circuits on the load output.
- **Load Not Working:**
  - Check connections to the DC load output.
  - Verify the battery voltage is above the Low Voltage Disconnect (LVD) threshold. The controller will automatically reconnect the load once the battery voltage recovers.
  - Ensure the load current does not exceed 5A.

If problems persist, contact Genasun customer support for assistance.

7. Specifications

Feature	Detail
Model Number	GV-5-Pb-12V
Max. Recommended Panel Power	65 W
Charging Current	5 A
Battery Type	12 V Lead-Acid Batteries
MPPT Tracking Speed	15 Hz (15 times per sec.)
Peak Efficiency	99.85%
Night Consumption	0.125 mA
DC Load Output	5 A with LVD
Operating Temperature	-40°C to 85°C
Product Dimensions	4.3 x 2.2 x 0.9 inches
Item Weight	2.88 ounces

Feature	Detail
Certifications	CE, FCC, RoHS

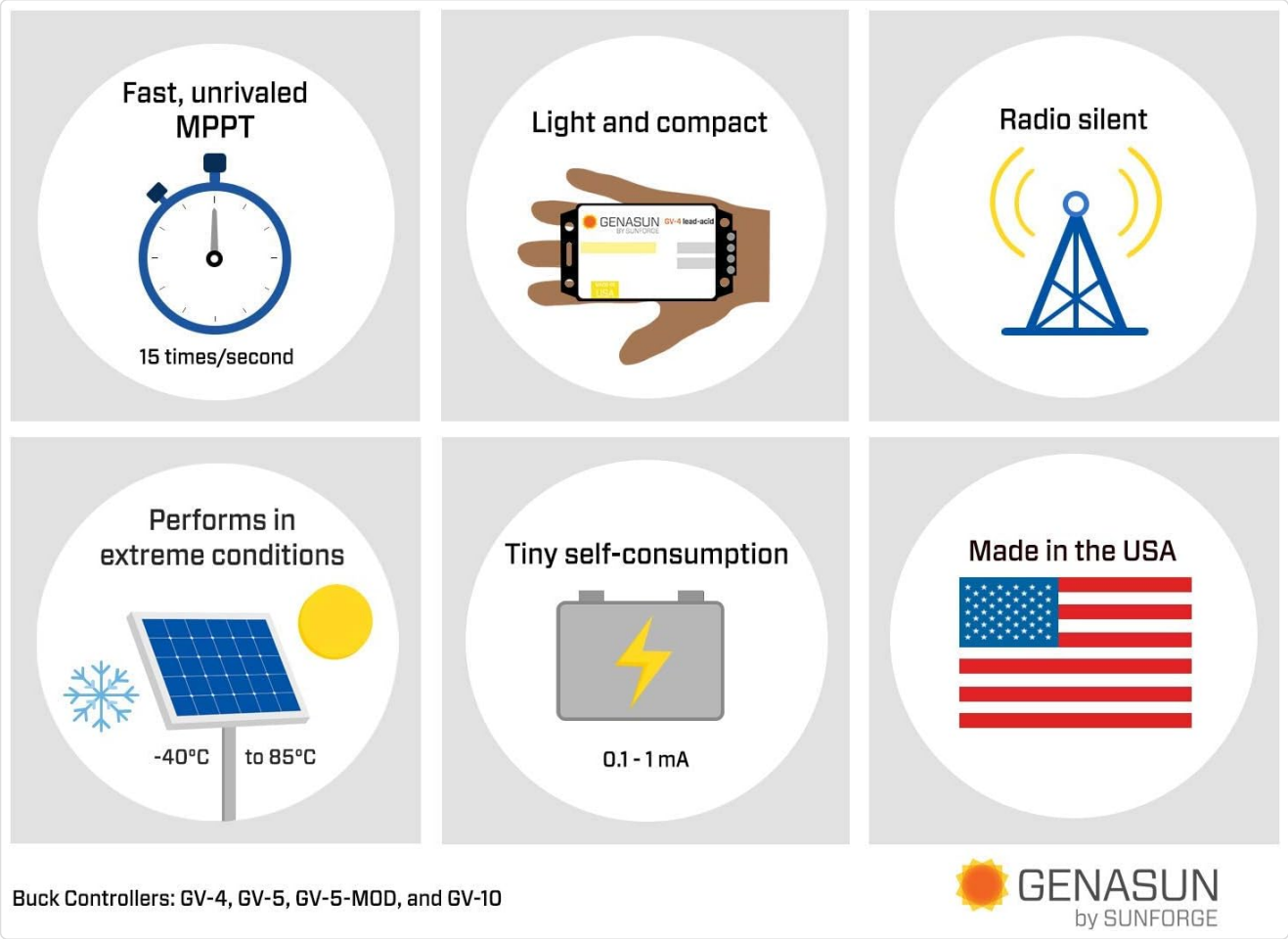

Figure 3: The Genasun GV-5-Pb-12V solar charge controller, highlighting its compact design and key features. This image provides a visual representation of the product.

8. Warranty

The Genasun GV-5-Pb-12V MPPT Solar Charge Controller comes with a **10-Year Warranty**. This warranty covers defects in materials and workmanship under normal use and service conditions. Please retain your proof of purchase for warranty claims. For detailed warranty terms and conditions, please refer to the official Genasun website or contact customer support.

9. Support

For further assistance, technical support, or warranty inquiries, please visit the official Genasun website or contact their customer service department. You can find more information and resources at www.genasun.com.