

EPEVER VS3024AU

EPEVER 30A 12V/24V Solar Charge Controller

MODEL: VS3024AU INSTRUCTION MANUAL

1. INTRODUCTION

The EPEVER VS-AU series controller is a common positive, PWM charge controller featuring a built-in LCD display and dual USB ports. Its multiple load control modes make it suitable for a wide range of applications, including solar home systems, traffic signals, solar street lights, and solar garden lamps. This manual provides detailed instructions for the safe and efficient operation of your VS3024AU solar charge controller.

2. SAFETY PRECAUTIONS

Please read all instructions and precautions in the manual before installation. Failure to do so may result in damage to the controller, battery, or other components, and may void the warranty.

- Ensure the battery has sufficient voltage for the controller to recognize the battery type before first installation.
- The charge controller is only suitable for regulating solar modules. Never connect another charging source to the charge controller.
- The controller will generate heat during operation. Please install it in a well-ventilated area.
- The controller is designed for indoor use. Avoid exposure to moisture, dust, or direct sunlight.
- Connect the battery first, then the solar panel, and finally the load. Disconnect in the reverse order.
- Ensure all wiring is secure and connections are tight to prevent loose connections and overheating.
- Use appropriate circuit breakers or fuses for the solar panel, battery, and load circuits.

3. PRODUCT OVERVIEW

3.1 Key Features

- 30A 12V/24V Auto Work, Dual USB design with Max. output 2.4A.
- LCD display for dynamically showing device's operating data and working condition.
- Three-stage intelligent PWM charging: Equalize, Boost, and Float.
- Supports Sealed, Gel, and Flooded battery types.

- Various electronic protections: PV reverse polarity, Battery reverse polarity, Battery over voltage, Battery over discharge, Battery overheating, Controller overheating, Load short circuit, Load overload.
- Humanized button settings for comfortable and convenient operation.
- UL and VDE certified Nickel plated copper terminals for safe and solid connection.

3.2 Components and Interface



Figure 3.2.1: Front view of the EPEVER VS3024AU Solar Charge Controller, showing the LCD display, Menu and Set buttons, dual USB ports, and terminal connections for solar panel, battery, and load.



Figure 3.2.2: Angled view of the controller, highlighting the heat sink fins on the bottom for efficient heat dissipation.



Figure 3.2.3: A different angled perspective of the controller, providing a clearer view of the terminal block layout and the overall compact design.



Figure 3.2.4: Bottom view of the controller, showing the product label with model number (VS3024AU), voltage (12/24V), and current (30A)

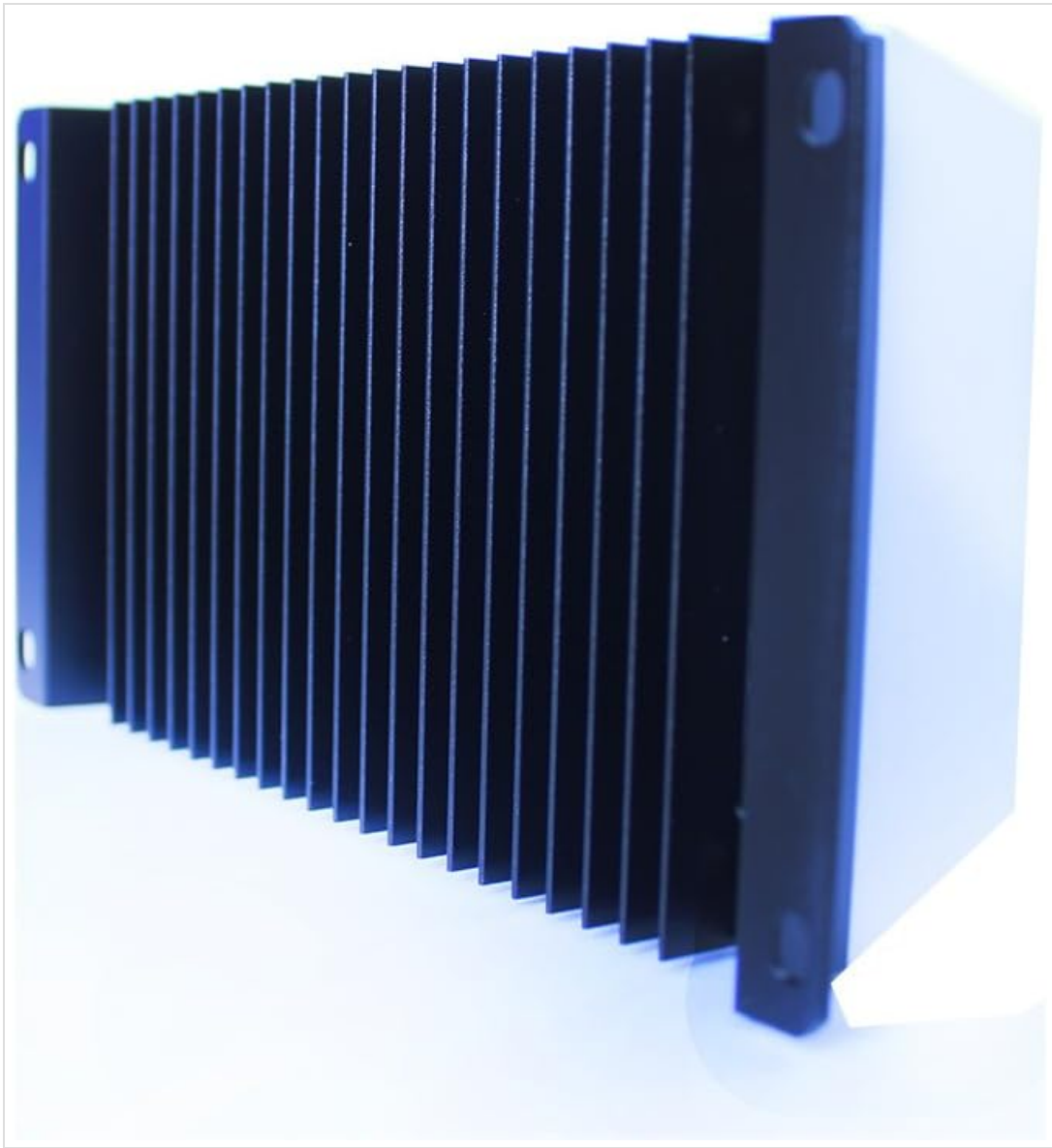


Figure 3.2.5: Side view of the controller, emphasizing the robust heat sink design for effective thermal management during operation.

4. SETUP AND INSTALLATION

4.1 Mounting

- Choose a dry, well-ventilated location away from direct sunlight, high temperatures, and water.
- Ensure there is sufficient air circulation around the controller for heat dissipation.
- Mount the controller vertically on a wall or flat surface using appropriate screws.

4.2 Wiring Connection Order

Follow the connection order strictly to ensure proper and safe operation. Incorrect wiring may damage the controller or other components.

1. **Connect the Battery:** Connect the battery to the controller's battery terminals (+ and -). The LCD will light up.
2. **Connect the Solar Panel:** Connect the solar panel to the controller's solar panel terminals (+ and -).
3. **Connect the Load:** Connect the load to the controller's load terminals (+ and -).

Disconnection Order: Disconnect the load first, then the solar panel, and finally the battery.

5. OPERATING INSTRUCTIONS

5.1 LCD Display

The LCD display shows various parameters and operating statuses. Use the 'Menu' button to cycle through different display screens.

5.2 Button Functions

- **MENU Button:** Short press to browse different screens. Long press to enter or exit setting mode.
- **SET Button:** Short press to increase values or switch options in setting mode. Long press to reset accumulated data.

5.3 Battery Type Selection

The controller supports Sealed (default), Gel, and Flooded battery types. To change the battery type:

1. Long press the 'MENU' button until the battery type icon flashes.
2. Short press the 'SET' button to select the desired battery type.
3. Long press the 'MENU' button again to confirm and exit.

5.4 Load Control Modes

The controller offers multiple load control modes for various applications. Refer to the detailed manual for specific settings and configurations.

6. MAINTENANCE

Regular maintenance ensures optimal performance and longevity of your solar charge controller.

- Periodically check all wiring connections for tightness and corrosion.
- Clean the controller's casing with a dry cloth. Do not use solvents or abrasive cleaners.
- Ensure the area around the controller is free from dust and debris to maintain proper ventilation.
- Inspect the battery terminals for any signs of corrosion and clean if necessary.

7. TROUBLESHOOTING

This section provides solutions to common issues you might encounter.

Problem	Possible Cause	Solution
No display on LCD	Battery not connected or low voltage; reverse polarity.	Check battery connections and voltage. Ensure correct polarity.
Load not working	Load short circuit; overload; battery low voltage; load control mode setting.	Check load wiring and current. Verify battery voltage. Adjust load control mode.
PV not charging battery	PV reverse polarity; open circuit; insufficient sunlight.	Check PV connections and polarity. Ensure adequate sunlight.
Controller overheating	Poor ventilation; excessive load/PV current.	Improve ventilation. Reduce load or PV input if consistently high.

8. TECHNICAL SPECIFICATIONS

Parameter	Value
Model	VS3024AU
Nominal System Voltage	12V/24V Auto Work
Battery Input Voltage Range	9~32V
Rated Charge/Discharge Current	30A
Max. PV Open Circuit Voltage	50V
Battery Type Options	Sealed (Default) / Gel / Flooded
Low Voltage Reconnect Voltage	Sealed/Gel/Flooded: 12.6V
Low Voltage Disconnect Voltage	Sealed/Gel/Flooded: 11.1V
Self-consumption	≤10mA
Temperature Compensation Coefficient	-3mV/°C/2V (25°C)
Grounding	Common Positive
USB Output	5VDC/2.4A
Overall Dimension	181 x 100.9 x 59.8mm
Terminals	6AWG (16mm ²)
Net Weight	0.55kg
Enclosure	IP30
Working Environment Temperature	-25°C ~ +55°C
Humidity Range	≤95% (N.C.)

8.1 Extensive Electronic Protections

- PV Reverse Polarity Protection
- Battery Reverse Polarity Protection
- Battery Over Voltage Protection
- Battery Over Discharge Protection
- Battery Overheating Protection
- Controller Overheating Protection
- Load Short Circuit Protection
- Load Overload Protection

9. WARRANTY AND CUSTOMER SUPPORT

EPEVER products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please contact your authorized EPEVER dealer or visit the official EPEVER website. Please have your product model number (VS3024AU) and purchase details ready when contacting support.

