

Manuals+

[Q & A](#) | [Deep Search](#) | [Upload](#)

manuals.plus /

- › [PowMr](#) /
- › [PowMr Battery Equalizer Voltage Balancer HA01 User Manual](#)

PowMr HA01

PowMr Battery Equalizer Voltage Balancer HA01 User Manual

Model: HA01

1. INTRODUCTION

The PowMr HA01 Battery Equalizer is designed to maintain the charge and discharge balance between multiple batteries connected in series. This device actively monitors the voltage of individual batteries within a series bank and shunts current from higher voltage batteries to lower voltage batteries. This process ensures that all batteries in the bank maintain a similar state of charge, which is crucial for prolonging battery life and optimizing system performance. It is suitable for 24V, 36V, 48V, and other n*12V lead-acid battery systems, including Gel, Flood, and AGM types.

2. PRODUCT OVERVIEW

The HA01 Battery Equalizer is a compact device with clearly labeled terminals for easy connection. It features LED indicators to show its operational status. The equalizer works automatically once connected, continuously balancing the battery voltages.



Image 2.1: Front view of the PowMr HA01 Battery Equalizer showing the main unit, wiring, and product label.



Image 2.2: The PowMr HA01 Battery Equalizer with its connection wires and terminals clearly visible, ready for installation.

3. FEATURES

- Maintains charge and discharge balance between two or more series-connected batteries.
- Compatible with 24V, 36V, 48V lead-acid battery systems (Gel, Flood, AGM).
- Compensates for battery voltage differences in both directions.
- Features reverse polarity protection to prevent damage from incorrect wiring.
- Includes low voltage disconnect to protect batteries and extend their lifespan.
- Designed for continuous connection to automatically maintain battery balance.
- Intelligent system for optimal battery health and extended service life.

4. SPECIFICATIONS

Parameter	Value
-----------	-------

Parameter	Value
Model	HA01
Battery Nominal Voltage	24V, 36V, 48V (n*12V)
Equalizing Current	0-10A (typical)
Low Voltage Disconnect	Yes
Reverse Polarity Protection	Yes
Dimensions	4.72 x 4.33 x 1.46 inches
Item Weight	7.8 ounces

5. SAFETY INSTRUCTIONS

- Always wear appropriate personal protective equipment (PPE), including safety glasses and gloves, when working with batteries.
- Ensure all connections are secure and properly insulated to prevent short circuits.
- Do not attempt to open or modify the equalizer unit. There are no user-serviceable parts inside.
- Install the equalizer in a well-ventilated area, away from flammable materials and direct sunlight.
- Verify battery polarity before connecting the equalizer to avoid damage to the device and batteries.
- Keep out of reach of children.

6. SETUP AND INSTALLATION

The HA01 Battery Equalizer is designed for easy installation. Follow these steps carefully to ensure correct and safe operation.

6.1 How the Equalizer Works

When two or more batteries are connected in series within your charge and discharge system, their individual voltages may become imbalanced over time. The HA01 Battery Equalizer detects voltage differences as small as 20mV between batteries. It then shunts current from the battery with the higher voltage to the battery with the lower voltage until their voltages are nearly equal. This continuous balancing action helps to prevent overcharging or undercharging of individual batteries, thereby extending the overall lifespan and efficiency of your battery bank.

LED Indicator

	LED A	LED B
$U(A)=U(B)$	Off	Off
$U(A)>U(B)$	Flash	Off
$U(A)<U(B)$	Off	Flash
$U(A)<10V$	On	Off
$U(B)<10V$	Off	On
$U(A/B)<10V$	On	On

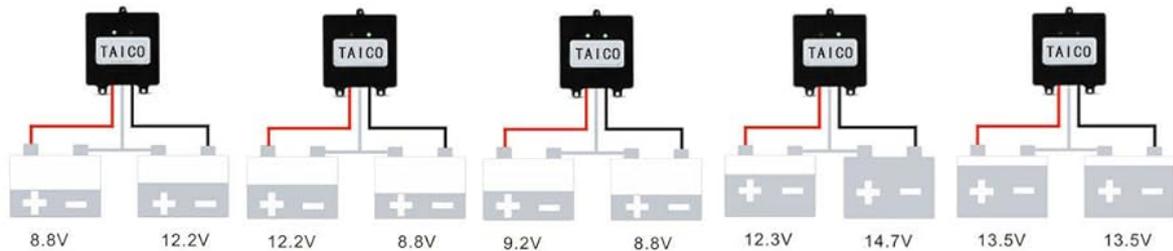


Image 6.1: Diagram showing the principle of operation for the battery equalizer, balancing voltage between two batteries.

6.2 Wiring Instructions

- 1. Identify Battery Terminals:** For a 24V system (two 12V batteries in series), identify the positive (+) terminal of the first battery, the negative (-) terminal of the second battery, and the connection point between the two batteries (where the positive of one connects to the negative of the other).
- 2. Connect Red Wire:** Connect the **RED** wire of the equalizer to the positive (+) terminal of the first battery (24V+).
- 3. Connect Black Wire:** Connect the **BLACK** wire of the equalizer to the negative (-) terminal of the second battery (24V-).
- 4. Connect White Wire:** Connect the **WHITE** wire of the equalizer to the center connection point between the two batteries. This is the point where the positive terminal of one battery connects to the negative terminal of the other.
- 5. Multiple Equalizers for Higher Voltages:**
 - For a 36V battery system (three 12V batteries), you will need 2 equalizers.
 - For a 48V battery system (four 12V batteries), you will need 3 equalizers.

Connect equalizers in series, ensuring each equalizer balances a 24V segment of the total battery bank. For example, in a 48V system, one equalizer would balance batteries 1 and 2, and another would balance batteries 3 and 4, with a third balancing the overall 48V system or specific 24V segments as per the diagram.

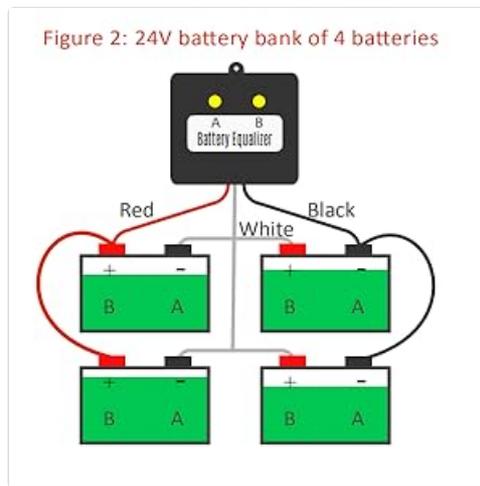


Image 6.2: Wiring diagram for a 24V battery bank (two 12V batteries) with one HA01 equalizer.

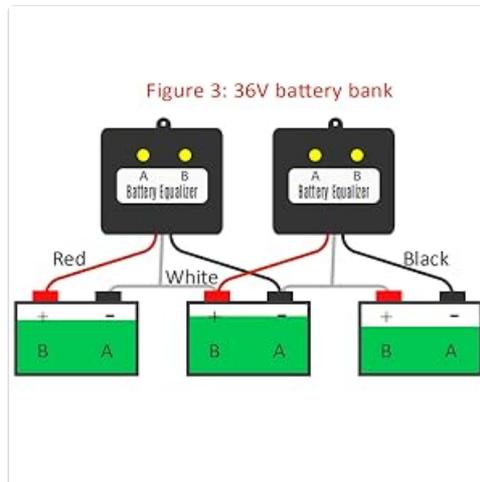


Image 6.3: Wiring diagram for a 36V battery bank (three 12V batteries) requiring two HA01 equalizers.

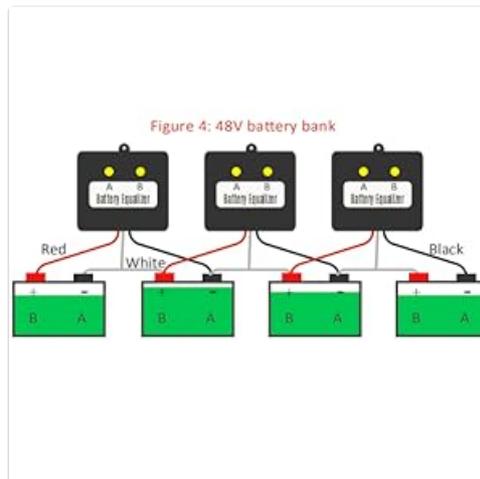


Image 6.4: Wiring diagram for a 48V battery bank (four 12V batteries) requiring three HA01 equalizers.

7. OPERATING INSTRUCTIONS

Once correctly installed, the PowMr HA01 Battery Equalizer operates automatically. It continuously monitors the voltage of the connected batteries and initiates balancing when a voltage difference is detected. There are no manual controls or settings required for its operation.

7.1 LED Indicators

The equalizer features LED indicators (A and B) to provide status feedback:

- **LED A (Red):** Indicates balancing activity for the first battery segment.
- **LED B (Green):** Indicates balancing activity for the second battery segment.

When the LEDs are lit, it signifies that the equalizer is actively shunting current to balance the respective battery segments. If no LEDs are lit, the batteries are already balanced, or the voltage difference is below the activation threshold.

8. MAINTENANCE

The PowMr HA01 Battery Equalizer requires minimal maintenance. Regular checks of your battery system are recommended to ensure optimal performance.

- **Connection Check:** Periodically inspect all wiring connections to ensure they are clean, tight, and free from corrosion.
- **Unit Cleanliness:** Keep the equalizer unit clean and free from dust or debris. Use a dry cloth for cleaning.
- **Battery Health:** Monitor the overall health of your battery bank. Even with an equalizer, batteries have a finite lifespan and may require replacement over time.
- **Environmental Conditions:** Ensure the equalizer is operating within its specified temperature range and not exposed to excessive moisture or extreme conditions.

9. TROUBLESHOOTING

If you encounter issues with your PowMr HA01 Battery Equalizer, consider the following troubleshooting steps:

- **Equalizer Not Working (No LED Activity):**
 - Verify all wiring connections are correct and secure according to the installation diagrams.
 - Check the voltage of individual batteries. If they are already well-balanced (within 20mV difference), the equalizer may not activate.
 - Ensure the total battery bank voltage is within the equalizer's operating range (e.g., 24V, 36V, 48V).
- **Persistent Voltage Imbalance:**
 - If a significant voltage difference persists despite the equalizer being connected, the current flow required for balancing might exceed the equalizer's capacity, especially with very large battery banks or severely imbalanced batteries.
 - One or more batteries in the bank may be faulty or nearing end-of-life. Test individual battery voltages and internal resistance.
- **Damage to Unit:** If the unit shows signs of physical damage or overheating, disconnect it immediately and contact customer support.

10. WARRANTY AND SUPPORT

For warranty information or technical support, please refer to the product packaging or contact PowMr customer service directly. Keep your purchase receipt as proof of purchase.

- **Online Support:** Visit the official PowMr website for FAQs and support resources.
- **Contact Information:** Refer to the contact details provided with your product or on the manufacturer's

website.