

KiloVault® BE48 Battery Balancer Instructions

APPLICATION

The BE48 battery balancer is connected to a series of batteries to maintain equal voltage levels while charging or discharging. When batteries are connected in series, voltage may vary due to differences in cell chemical composition, temperature, or self-discharge rates. These voltage differences increase with each charge/discharge process, resulting in premature battery failure. It is suitable for use with a variety of batteries including:

- lead-acid batteries (VRLA)
- lithium iron phosphate batteries (LFP)
- nickel-cadmium secondary batteries (Ni/CD)
- nickel-metal hydride secondary batteries (Ni/MH)

OPERATION

The BE48 is an energy transfer balancer that compensates for voltage variables. When a 10mV difference between batteries is detected it will shunt current from the higher voltage battery to the lower voltage battery until equilibrium is achieved. The BE48 balancer can stay connected continuously and does not require manual maintenance.

The balancer begins operation when the voltage exceeds 2.4V and can be used in single cell batteries ranging from 2.4V to 12V. Each balancer can connect to a maximum of four batteries at a time. If connected to less than four batteries, the extra cable can be left unused; simply leave the protective tubes in place and arrange the positive and negative connectors to avoid contact with other systems. This does not affect the equilibrium.

TECHNICAL DATA

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Battery Nominal Voltage	4 X (2.4V / 3.6V / 6V / 9V / 12V)
Optimizing Current	0-10A
Quiescent Current	5mA (12V) 1.2mA (2.4V)
Dimensions	62x124x27 mm
Protection	Reverse polarity protection
Low Battery Disconnect	10V

INSTALLATION

Simply connect the red cables to the positive (+) terminals and the black cables to the negative (-) terminals. Be sure to connect all positive (+) connections before the negative (-) connections to avoid short circuits. Batteries may be connected in series or in parallel.

Note:

- If there are unused cables, leave the protective terminal tubes in place to avoid short circuits.
- Do not allow any of the eight terminals touch each other.
- Connect no more than one string of four batteries to one BE48.
- The more strings in parallel for each BE48, the less efficiently the BE48 will perform.
- To make the battery interconnections in the following diagrams, you will need 14 AWG (not included) wire.
- For a single string of batteries, use equal lengths of 14-gauge wire to connect the batteries as shown.
- For multiple strings in parallel, add equal length 14-gauge wire splices to connect the strings of batteries as shown.

Please make sure that the connections in your splices are tight, secure, and solid. Loose connections will cause equipment damage through heat.

CONNECTION EXAMPLES

Connect the battery balancer BE48 as shown in the following figures:

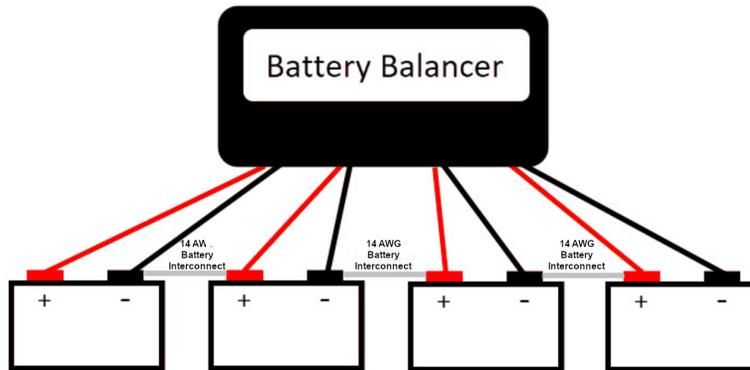


Figure 1: 4 X 12V Battery Bank Arrangement

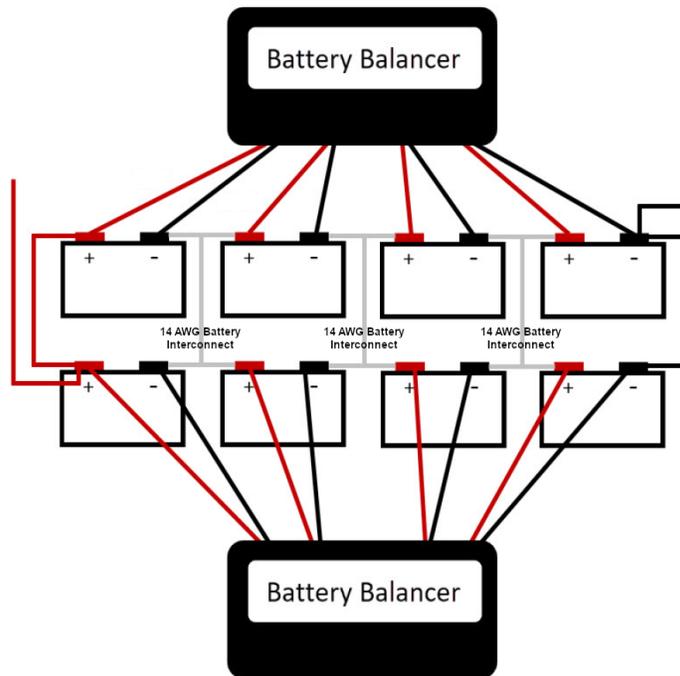


Figure 2: Multiple Battery Banks

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