



# VoltMaster

## Battery Equalizers

**With the Vanner VoltMaster battery equalizer, you can run 12 volt loads from your 24 volt battery system. Perfect for transit buses, private coaches, tour & charter buses, heavy trucks, off-highway equipment and alternative energy applications!**

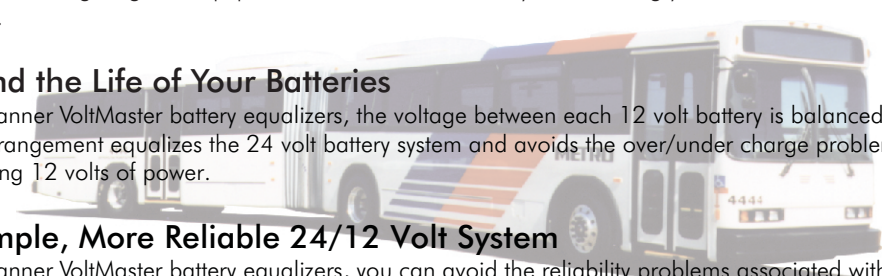


### 12 Volt DC Power from Your 24 Volt DC System

With Vanner VoltMaster battery equalizers, you can have an abundance of 12 volt DC power from your 24 volt battery system. Our equalizers allow operation of more reliable and less costly 12 volt lighting and equipment on 24 volt electrical systems, saving you time and money.

### Extend the Life of Your Batteries

With Vanner VoltMaster battery equalizers, the voltage between each 12 volt battery is balanced in a 24 volt series connected battery array. This arrangement equalizes the 24 volt battery system and avoids the over/under charge problems associated with other approaches to providing 12 volts of power.



### A Simple, More Reliable 24/12 Volt System

With Vanner VoltMaster battery equalizers, you can avoid the reliability problems associated with complicated and space consuming dual alternators on vehicles, or multiple battery chargers on renewable energy systems.

### Sizes for Any Application Need

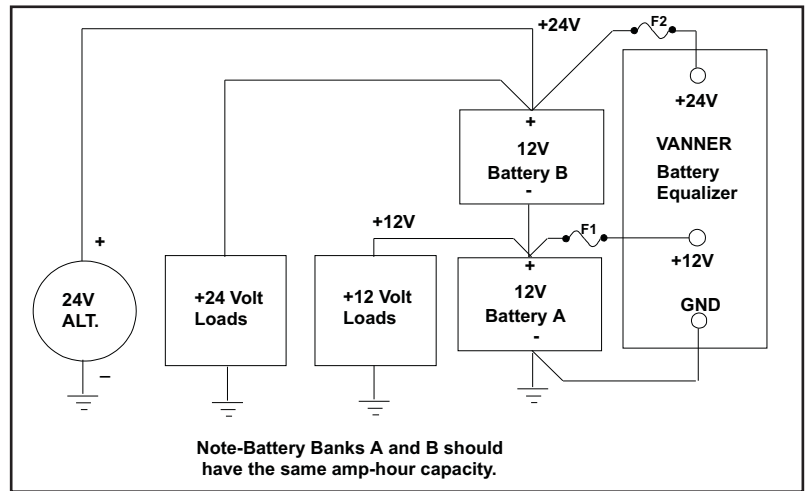
Whether you need just 10 amps to operate a two-way radio or 200 amps to support a fully loaded tour bus, Vanner has the right size equalizer to meet your application needs. Please see the back of this brochure for specifications.

### VoltMaster Equalizer Operation

In many 24 volt electrical systems, it is desirable to tap into the battery system to obtain power for 12 volt loads. This method, while seemingly simple, causes a charge imbalance resulting in Battery B (see diagram) being overcharged, and possibly boiling, while Battery A discharges.

To solve this application problem, the Vanner VoltMaster battery equalizer is connected to the battery system at the +24, +12 and ground points. The battery equalizer maintains the voltage balance and charge acceptance rate of each battery to within 0.1 volts under light loads and within 0.5 volts at full loads. When the voltage of Battery A is higher than that of Battery B, the battery equalizer is in standby mode - meaning it is not transferring power from its 24 volt input to its 12 volt

Photo courtesy of DOE/NREL and Steven Strong.



output. When a 12 volt load is present, and Battery A's voltage decreases to just below the voltage of Battery B, the battery equalizer activates and transfers sufficient current from Battery B to Battery A, satisfying the load and maintaining an equal voltage and charge in both batteries.

### Know What Your Battery System Is Doing

With Vanner Electrical System Monitors, you can monitor a number of critical functions on a 24/12 dual voltage system. These monitors indicate high or low battery voltage, battery voltage imbalance, alternator failure, or overloading of the 12 volt DC power.



# EXPERIENCE THE POWER.





**VoltMaster**

**Battery Equalizers**

Model	60-10B	60-20A	65-60	65-80	65-100
Input Voltage	20 to 35 Vdc	20 to 35 Vdc	18 to 32 Vdc	18 to 32 Vdc	18 to 32 Vdc
Efficiency	>91%	>92%	>97%	>97%	>97%
Max Input Current (24Vdc)	6 Amps	12 Amps	32 Amps	43 Amps	53 Amps
Output Voltage	————— ((Input Voltage/2) +/- 2%) —————				
Output Current (12Vdc)	0-10 Amps	0-20 Amps	0-60 Amps	0-80 Amps	0-100 Amps
Operating Temperature	-40C to +75C	-40C to +75C	-40C to +75C	-40C to +75C	-40C to +75C
Standby Mode Current @28.4V	—————		17 milliamps nominal	—————	
Storage Temperature	-54C to +95C	-54C to +95C	-54C to +95C	-54C to +95C	-54C to +95C
User Serviceable	Yes	Yes	No	No	No
Environmental Considerations	Anodized aluminum enclosure provides protection against salt, fungus, dust, water, fuel vapors and all fluids associated with commercial and off-highway vehicle operations. Exposure to splashes and spills is expected, but continuous exposure should be avoided.				
Mounting Location	Mounting location should be a flat surface close to the batteries to allow short battery cable runs. The location should be protected from as many adverse environmental conditions as possible, including battery fumes. Vertical mounting with terminals down is recommended.				
Weight	2.3 lbs	5.0 lbs	6.3 lbs	6.9 lbs	6.9 lbs
Dimensions (HWD in inches)	4.25 x 8.5 x 3.2	9.4 x 8.5 x 3.2	—————	9.8 x 8.5 x 2.5	—————

*Vanner's policy is one of continuous improvement. We reserve the right to change specifications without notice.*

**Your authorized Vanner distributor is:**

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 Bus photo on page 1 courtesy of Neoplan USA.



**800-AC POWER**

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