

The Volt Vette Project

Chapter 49

Battery Management

When I first met Lee Hart in 2007 he told me many interesting things about electric cars.

One of the most enlightening was about battery management and his way of dealing with it.

At that point, I knew nothing about battery management.

Lee told me that when you have a string of batteries powering an electric car, the batteries could get out of step and drain at different rates. Since a pack is only as strong as its weakest battery it's desirable to balance the pack so there is as little difference as possible in the state of charge between the weak and the strong. In other words, if ten batteries are 80% full and one is 20% full, the car will drive like all the batteries are at 20% !

To get all the batteries back on the same page, during charging, a regular battery management system, BMS for short, burns off the excess electricity.

Lee's BMS battery balancer looks inside each cell and shuts off the electricity going to a fully charged cell and moves the juice to cells that are not yet completely charged.

Also, I have heard that Lee's BMS will also balance the batteries while the car is being driven.

Neat trick, I thought as I ordered his BMS.

Lee said it would cost \$1200. and thought I should buy something cheaper and easier to use.



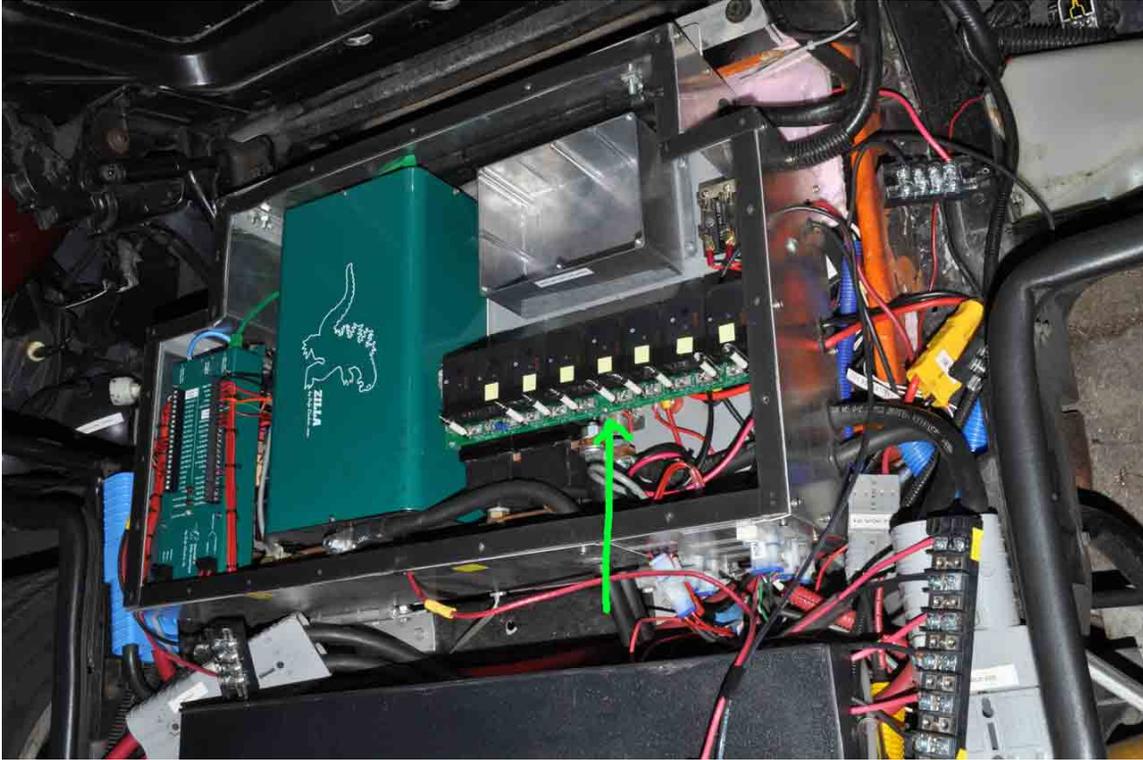
The simplest is a thin wire with a flashlight bulb and a resistor. You put one of these on each of your lead batteries.



When the battery starts to get overcharged, the electricity forces its way past the resistor and lights up the tiny bulb. This uses up some of the excess electricity. The dimness of the bulbs in the photo above

hint that those batteries are full but not seriously over charged.

Yeah I know, but it's better than nothing.



For a number of reasons it takes about 3 years before I get the first pieces of the Lee Hart BMS. The green arrow points to the regulator board. It can tend up to 8 batteries simultaneously. The metal box was for the “brains” of the system, which Lee is still refining.

But the lithium batteries are here, and I need a battery management system right now.

Kurt, Stew, Chris, and I decide to all get the BMS that was made by the same company that made our batteries. It looks like it will be easy to install and not too expensive.

We place a group order and send in our money.

A few weeks later we get a letter from the company. They are having “problems” and do not know when their BMS will be ready to ship, and so they return our checks.

I thought it was nice that they were up front and honest with us.

But now what do we do?

Next Chapter: What we do.

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