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Battery Balancer

Product Specifications

Introduction

In a battery system with many cells in series, one or more cells can be charged more than others. The capacity of the battery system is limited by the cell that holds the least charge. The Elite Power Solutions battery balancer is a small, sealed module that attaches to each cell in a series string of lithium batteries to assure that they are all charged the same amount.

Lithium battery chargers are designed to charge the cells to 3.60V per cell. The battery balancer will apply a small load (0.5A) as long as the cell voltage is above 3.55V. In this way, when the charger stops charging, the cells that are above 3.55V will be discharged until they all reach the same voltage point of 3.55V. Thus, they will all have the same charge. Because of the low discharge rate, it may take some number of hours to accomplish the discharging and multiple balancing cycles may be required. This low discharge rate prevents excessive heating in a sealed battery box.

Operation

There are two LEDs on the balancer. The green LED indicates that the battery is properly connected. It will light when the cell voltage is above about 2.5V. The red LED will light to indicate that the load is applied. It lights when the battery voltage is above 3.55V. The load is a constant current and does not vary with battery voltage. When not discharging, the balancer draws about .001A (1mA) of current which is not appreciably more than the self discharge rate of the battery.

Models Supported

The batteries supported and their load currents are as follows:

Battery Capacity (AH)	Load Current (A)	Load Power (W @4V)
20	0.50	2.00
40	0.50	2.00
60	0.50	2.00
100	0.50	2.00
200	1.00	4.00

Specifications

Nominal cell voltage: 3.2V

Load turn on voltage: 3.55V

LED: green - battery connected
red - discharging

