



THE "GO TO" GUYS IN ELECTRIC POWER

# BALANCE PRO INSTRUCTIONS

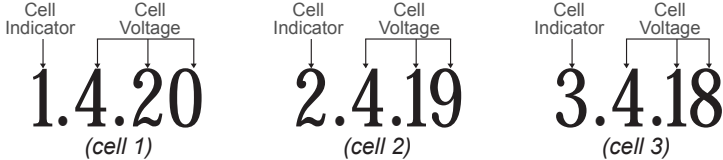
## 2-6 CELL LITHIUM POLYMER BATTERY PACK BALANCER AND VOLTAGE TESTER

The Balance Pro has two major functions - to identify the voltage of each cell in a Lithium Polymer battery pack and to bleed voltage off the higher voltage cells until they are equal to the lower voltage cells. When used as a balancer during charging, this "bleeding voltage" process slows the charging rate of the higher voltage cells so the lower voltage cells can "catch up" to the higher voltage cells.

This unit will also read the individual voltages of the cells in your Lipo pack. It has 2.5mm pin spacing, which is used by Common Sense RC as well as almost all other Lipo manufacturers. If your battery pack has 2mm spacing (used by Thunder Power and CellPro), you will need to use our Part# TP2UB adapter to convert the spacing to 2.5mm.

### Features

1. The Balance Pro is designed to balance the voltages of the individual cells in a Lithium Polymer pack comprised of 2-6 cells.
2. The Balance Pro's functions include: displaying Lipo battery cell voltages, determining whether "fast charge" or "slow charge" rate is needed and performing balance functions to protect battery pack life and safety.
3. You can use the Balance Pro before charging to balance and check the voltages of individual cells.
4. The Balance Pro can be used for balancing during charging by plugging the Balance Pro into the charge/balance connector at the same time that you are charging the pack through the battery's discharge leads (preferred method).
5. The Balance Pro has six discharging indicator LED's, one for each cell in the pack. When the LED is lit for a specific cell, that cell is being discharged at a rate of 150mAh.
6. The Balance Pro's display cycles through the individual cell voltages. The first number on the display indicates which cell is being checked. The next three numbers show that cell's voltage. See below for examples.



### Operation

**Connection** - The Balance Pro has positive (Red) and negative (Black) symbols marked clearly on the circuit board near the connection pins. Always attach the balance connector on the battery pack to the Balance Pro with the negative wire on the battery balance connector (typically the black one on the end) positioned closest to the negative sign on the Balance Pro circuit board, as shown in the example below.

You can attach the Balance Pro to your battery pack prior to charging. When you first plug the Balance Pro into your pack, all cells that are 3.2 volts or higher will have their corresponding LED lit for 5 seconds. Look at the cell voltage readings and determine whether slow charging (below .3 amps) is required (any cell is less than 3.2v). If all cells are at more than 3.2v, it is OK to charge at a "normal" charge rate of up to 1C.

If there is no imbalance (cells are within .05 volts of each other), proceed to charge at a "normal" charge rate of up to 1C. (Common Sense RC Lipos can be charged at a 2C rate).

If an imbalance condition exists, plug the Balance Pro back into your pack and let it perform its balancing function during charging. During balancing, the discharge LED(s) for the higher voltage cells will stay lit or cycle on and off, indicating that the Balance Pro is reducing the voltage of those cells. When the pack is balanced, all the discharge LEDs will be off and only once in a while will an LED light up.

To test packs with more than six cells, simply start at the negative port on the balancing plug, and once you have checked the first six cells with ports 1-7 on the balance connector, move the checker up the balance plug so that pin 1 (negative pin) on the checker is plugged into port 7 on the balance plug. Repeat as necessary, moving the checker up 6 pins each time.

When you're done checking voltages and balancing, be sure to disconnect the Balance Pro to prevent it from slowly discharging your pack.

