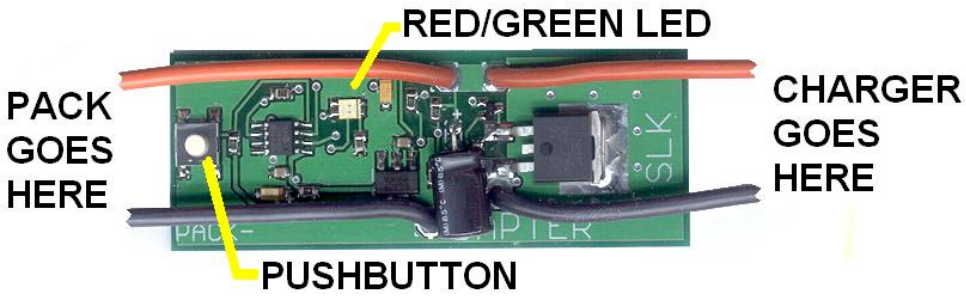
A123 Dapter Instructions



!!!! IMPORTANT !!!!

It's a good idea to observe your charger when you first use your *Dapter*. Most chargers have a voltage readout. These are generally not as accurate as a voltmeter, but will at least indicate if the charge is not going to terminate at 3.7V for A123 cells. You can also use an Astro Whattmeter to monitor. When charge is complete, check pack voltage with a digital voltmeter. Reading should be 3.4-3.7V.

Overview

A123 cells employ a different chemistry that is much safer than LiPo. ***Dapter*** monitors the pack voltage until it is 3.7V/cell and then abruptly disconnects the pack from the charger. After the charger is disconnected, the pack voltage "sags" over the next few minutes until the final value of roughly 3.4V/cell. This is nominally 90-95% of full capacity, with full capacity defined with a starting voltage of 3.5V.

Connectors

Attach connectors you need to mate with your charger and packs. Please get the polarity correct and the right connector on the right end. The end of ***Dapter*** with the pushbutton connects to your packs. NOTE: do not allow the charger end leads to touch each other with a pack connected. This can result in destruction of your pack and/or your ***Dapter***.

Connecting Everything

Plug your pack into the pushbutton end of the ***Dapter***. The unit will flash **RED** then **GREEN** then rapidly back and forth. 🔴🟢🔴
The unit will start to blink the cell count in **GREEN**.
A **3S** pack would be 🟢🟢🟢 🟢🟢🟢 🟢🟢🟢 etc.

It's possible that the number of blinks is less than your cell count for packs that are highly discharged. This is to make sure you pay attention. In this case, click the pushbutton and the blink count should increase by one. You must wait for another count sequence before you can push the button again. It's also possible that the number of blinks is more if your pack is overcharged. Disconnect your pack **immediately**. **Don't even think about "topping it off".** When the count is right, hold the pushbutton down until the LED flashes **RED** rapidly (about two seconds
The count should continue on the LED: 🔴🔴🔴 🔴🔴🔴 🔴🔴🔴
Your pack is now electrically connected to the charger connector. **Verify that the indicated count agrees with your pack**. If it is wrong, simply press and hold the button until ***Dapter*** resets. Plug ***Dapter*** into your charger and adjust your current for desired charge rate. You can charge A123 M1 cells at the maximum current your charger can supply, up to 8 amps. VPX cells should be charged at 4 amps or less.
NOTE: always connect your charger to power source before connecting *Dapter*.

Charging Summary

- Connect charger to power source.
- Plug pack into ***Dapter***.
- Verify cell count by counting GREEN blinks.
- Hold down button until LED flashes RED rapidly, then release.
- Verify cell count by counting RED blinks.
- Plug ***Dapter*** into charger.

- Start charger and set current.
- **Don't leave the charging process unsupervised!**
- Charging is done when LED turns steady GREEN.

End of Charge

When your pack has reached the cutoff voltage, the electronic switch is opened, the LED stops blinking **RED**, and the LED turns steady **GREEN**.

Your charger will probably behave the same as if you had unplugged your NiCad pack before it was done charging. Nothing to worry about. Your pack should end up with roughly 3.7V/cell.

Early Charge Termination

If your charger shuts off without a steady **GREEN** indication, there are a number of possibilities:

- If the LED is still blinking **RED**, your charger probably timed out or somehow got fooled. Try starting it again.
- If the LED is blinking **GREEN**, ***Dapter*** got unhappy for some reason and reset itself. The pack is not electrically connected to the charger.
- If the LED stays on **RED**, ***Dapter*** is REALLY unhappy. The pack is not electrically connected to the charger. If this happens frequently, let us know.

If you want to terminate the charge via ***Dapter***, hold down the pushbutton until the LED flashes. The unit is reset and the pack is not connected to the charger. You can repeat the activation sequence without unplugging everything.

Cell Count

LiPo chargers employ either manual or automatic cell count selection or a combination. Every method has its pros and cons. ***Dapter*** uses an automatic detection algorithm based on the pack voltage. The thresholds are set so that the only way it can think the cell count is higher than it really is (***very bad***) is to connect a pack that has been overcharged (>> 3.7V/cell). This means that sometimes it will indicate a lower cell count (safe, but won't charge enough). This occurs when a pack has been highly discharged, and normally only for higher cell counts. It is your responsibility to increase the count manually and ***verify*** the correct count. ***Dapter*** decides the cell count the first time it blinks the count and does not change it's "mind" unless you tell it to. You should verify the "GREEN" count before going to "RED" mode, and then again in "RED" mode.

Capabilities/Charger Requirements

Dapter is designed to work with 2S to 10S M1 packs. It is rated for 8 amps charge current Keep your unit out of direct sunlight. If your charger can function well charging 24 NiCad cells, it should handle 10S A123 packs just fine. Astro 112Dx and Triton will handle 10S A123 packs. We're still learning which chargers work and which don't. ***Dapter*** should allow M1 cells to be charged with many LiPo chargers, but this is a whole new learning curve. Be sure to check our web site for a listing of chargers. If you have a "smart" charger, don't put it in a mode that can decide on it's own how much current to output. We have also found a situation where a user was running two different "smart" chargers off of the same power supply and this somehow made the ***Dapter*** nuts. Avoid this.

Warranty

- If your ***Dapter*** does not work properly with your charger or you're otherwise not satisfied during the first 30 days, return it undamaged and we will refund your money.
- If your ***Dapter*** fails during the first year (not due to obvious abuse) we will repair or replace it at our option free of charge.
- After the first year, repair or replacement will be at a flat fee of $20.00 including return shipping.
- We cannot be responsible for damaged packs.

www.SLKelectronics.com
(to view these instructions in color)

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