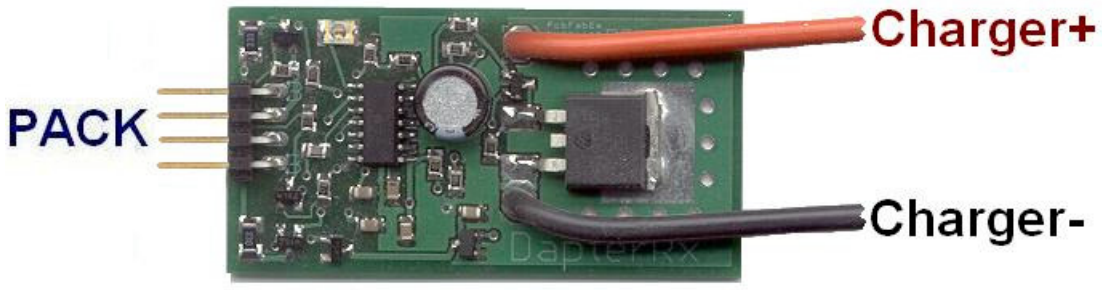
DapterRx Instructions



!!!! IMPORTANT !!!!

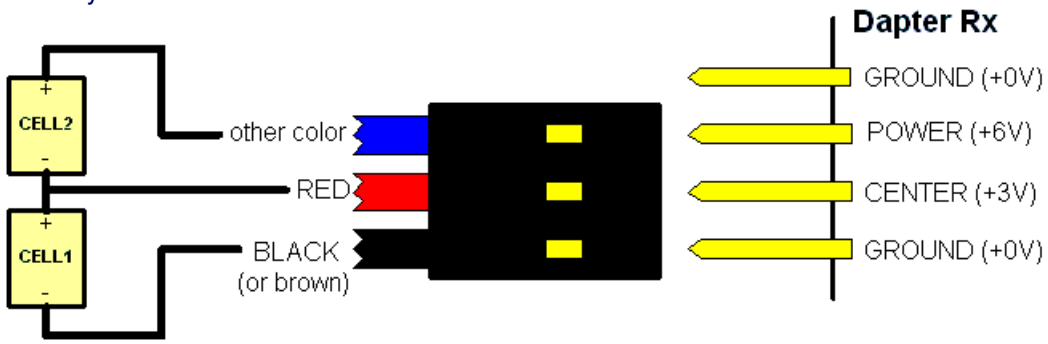
It's a good idea to observe your charger when you first use your *DapterRx*. Most chargers have a voltage readout. These are generally not as accurate as a voltmeter, but will at least indicate if the charge is not going to terminate at 7.4V for A123 receiver packs. You can also use an Astro Whattmeter to monitor. When charge is complete, check pack voltage with a digital voltmeter. Reading should be 6.7-7.4V.

Overview

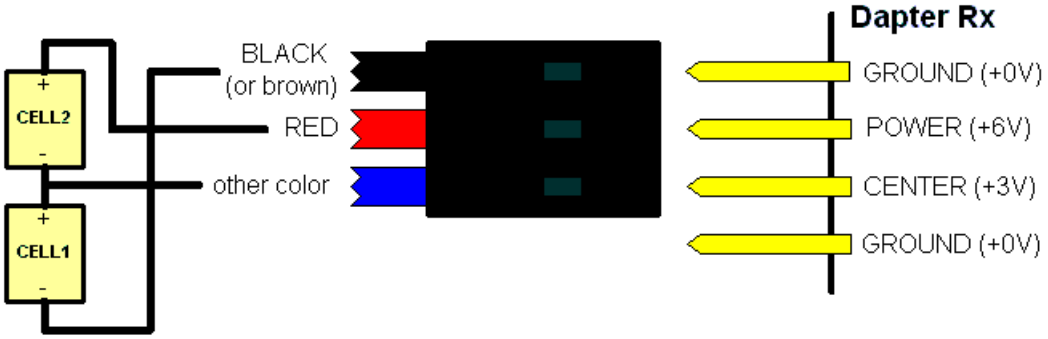
A123 cells employ a different chemistry that is much safer than LiPo cells. ***DapterRx*** uses the same charging technique proven over several years with the original ***Dapter***. This allows charging of A123 cells from NiCad, NiMH, and even LiPo chargers. ***DapterRx*** is specifically designed to charge AND balance 2-cell A123 (LiFePO4) receiver packs. ***DapterRx*** monitors the individual cell voltages until either cell reaches 3.7V 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 95% of full capacity. That last 5% adds substantial charge time on other chargers. If you are charging a receiver pack without a balancing tap, the ***DapterRx*** monitors the total pack voltage and cuts off at 7.4V. During and after the charging process, ***DapterRx*** continuously works to bring the cells into balance.

Connectors

DapterRx has a 4-pin pack connector that is compatible with standard servo and receiver pack connectors. The 4-pin connector is designed to accommodate two different wiring configurations. The first is wired compatible with balancers such as the Astro "blinky". This is shown below:



Unfortunately, some packs are wired in a way that is not compatible with balancers, but connects power and ground in the same way as a standard pack or servo connector. The center tap is wired to the remaining (servo signal) wire. This is accommodated as shown below:



. Packs without center taps can also be charged with ***DapterRx***, but there will of course be no balancing.

DapterRx requires a connector with 0.1" spacing. Standard servo connectors fall into this category. Some balance tap connectors are compatible, others are not. (e.g. Thunderpower, FMA). If you do not know how your tap connector is wired, you can determine this by plugging in your pack as shown in the first drawing above. ***DapterRx*** will check for proper wiring when it is plugged into your pack. If you connect backwards, the LED will not blink. Please get the polarity correct. If the two power leads (+3V, +6V) are not as shown in the first drawing, the ***DapterRx*** will detect this after a few seconds and the LED will remain on. You can clip off the unused pin to avoid confusion. If you plan to charge more than one type of pack, don't cut any pins.

NOTE: do not allow the charger leads to touch each other with a pack connected. This can result in destruction of your pack and/or your ***DapterRx***.

Connecting Everything

Plug your pack into the ***DapterRx***, observing polarity. The unit will flash rapidly four times ● ● ● ● then will start blinking roughly every two seconds. If the pack appears balanced, there will be a single short blink ●. Otherwise, it will indicate the state of imbalance as follows:

Imbalance	Cell 1 higher	Cell 2 higher
slight	▬ ●	● ▬
moderate	▬ ● ●	● ● ▬
high	▬ ● ● ●	● ● ● ▬

Connect and start your charger. NOTE: always connect your charger to power source before connecting ***DapterRx***. After a few seconds the charger should be detected and the blinking will change to two short blinks ● ● (or one long blink ▬ if your pack does not have a balancing tap}.

End of Charge

When your pack has reached the cutoff voltage, the electronic switch is opened, and ***DapterRx*** reverts to blinking the balance status. At this point, your charger might be complaining. This is normal. Your charger will probably behave the same as if you had unplugged your NiCad pack before it was done charging. Your pack is ready to go.

Balancing

Balancing is a relatively slow process. If you have a 2300-mah pack, a 1% unbalance would be 23 mah. This would take about 15 minutes to correct. Clearly, not much balancing can be done during a typical fast charge. Leaving ***DapterRx*** attached will allow further balancing. It is our opinion that under normal use an A123 receiver pack will maintain balance quite well. There is no chance of serious harm to a 2-cell pack, and using a pack as soon as the charger cuts off is safe. Any extended balancing can be done at home when there is no time pressure. This can be done without even attaching a charger. ***REMEMBER: DapterRx*** puts a slight drain on your pack. Don't forget to disconnect it. Overnight use is OK.

Capabilities/Charger Requirements

DapterRx is designed to work with 2S A123 packs. It is rated for 8 amps charge current, but the connection to the receiver pack is not designed to handle this. 3 amps should be fine. It should also be considered max for VPX (1100 mah) packs. At 5 amps, the servo connector gets noticeably warm. We recommend the use of heavy-duty cables, but the connector itself is a limiting factor. Keep your unit out of direct sunlight. 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.

Warranty

- If your ***DapterRx*** 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 ***DapterRx*** 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 $12.00 including return shipping.
- We cannot be responsible for damaged packs.

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www.SLKelectronics.com/DapterRx
(to view or print latest instructions in color)