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Tenergy TB6B Balance Charger (#752-00009)

The Tenergy TB6B is an all-in-one balancing charger for NiMH/NiCd/Li-ion/LiPo/LiFe/SLA battery packs.

This document provides directions for using this product with certain LiPo batteries carried by Parallax. Please read the manufacturer's user manual (a download from the 752-00009 product page at www.parallax.com) before charging your LiPo batteries, and before using the charger for any other purpose.

Features

- Can balance charge up to a 15S cell NiMH/NiCd pack, or a 6S cell Li-ion/LiPo/LiFe pack with a maximum current of 5A
- Capable of storing up to 10 different battery charging programs so you can customize how each of your batteries is charged
- LCD display allows you to adjust settings, view battery status, and view independent cell charge
- Included adapter cable supports HiTech, JST, Tamiya, Mini Tamiya, Deans, Traxxas, and EC3 charging connectors.

Specifications

- Maximum Charge Current: 5A
- Maximum Discharge Current: 1A
- Input Voltage: 100-120 VAC, 11-18 VDC
- Dimensions: 5.11 x 3.35 x 1.3 in (130 x 85 x 33 mm)

Precautions

Lithium Polymer (LiPo) batteries are volatile. Failure to read and follow the all safety instructions and warnings may result in fire, personal injury, and damage to property.

- Always store and charge batteries in a fireproof container; never in your model!
- Let LiPo Battery Pack cool down to ambient temperature before charging. Only charge batteries when the ambient, battery, and charger temperatures are between 32 and 113 °F (0 to 45 °C).
- Before connecting to charger, make a visual inspection of the pack. Look for any damaged leads, connectors, broken shrink, swelling of cells, or other irregularities. Do not use if you find any of the above issues with your pack.
- Do not charge batteries packs in series. Charge each battery pack individually. Failure to do so may result in incorrect battery recognition and charging functions.
- Always use balance charging when applicable. Do not charge multi-cell batteries without balancing; this will cause the cell voltages to become unbalanced; which may result in overcharging and damaging cells.
- Never charge batteries unattended or overnight. When charging LiPo batteries you should always remain in constant observation to monitor the charging process and react to potential problems that may occur.
- Keep charger and batteries away from children and animals at all times.
- Do not charge LiPo batteries above 4.2 Volts/cell. Overcharged batteries are extremely dangerous.

- Do not expose charger or batteries to wet or corrosive environments, extreme temperatures (below 0C or above 50C), flammable or volatile materials, or impact or any other damage.
- Do not connect or attempt to charge/discharge non-rechargeable or damaged batteries.
- Do not modify the charger, charger accessories, connectors, or batteries.
- **NOTICE OF RISK.** The Tenergy TB6B Balance Charger can at times involve substantial risk of injury, property damage, and other dangers. Dangers peculiar to such activities include, but are not limited to: fire, explosion, overheating, and electrical sparking & arcing. *By keeping & using this product, you assume these risks.*
- **DISCLAIMER OF LIABILITY:** In no event shall Parallax Inc. be liable for any direct, indirect, punitive, incidental, special consequential damages, to property or life, whatsoever arising out of or connected with the use or misuse of our products. Your purchase or use of this product constitutes your agreement to hereafter assume full and total responsibility for your subsequent utilization of the Tenergy TB6B and you agree to defend, protect, save harmless, and indemnify Parallax Inc., its officers, and employees relative to your potential use and misuse of this product.

LiPo Battery Charging Instructions

Examples reference Parallax's Gens Ace 3S LiPo batteries: 5300 mAh #752-00017, and 3300 mAh (#752-00010). **Your battery may differ.**

1. Determine the maximum charge rate for your LiPo battery by multiplying the charge rate multiplier by the capacity of your battery. *Do not use the discharge rate multiplier!*

$$1C \times 5300 \text{ mAh} \times \frac{1 \text{ Ah}}{1000 \text{ mAh}} = 5.3 \text{ A}$$

$$1C \times 3300 \text{ mAh} \times \frac{1 \text{ Ah}}{1000 \text{ mAh}} = 3.3 \text{ A}$$

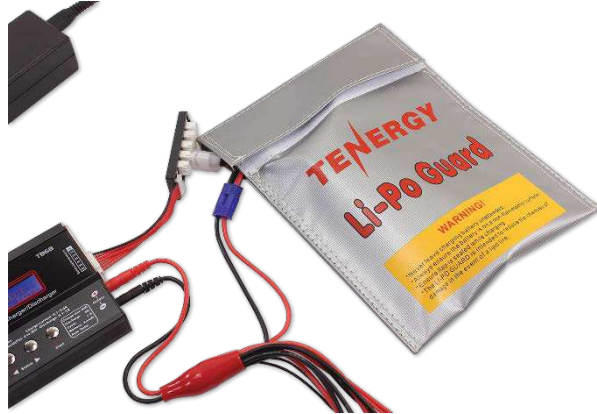
The maximum charge rate is 5.3 amps for our example 5300 mAh battery, and 3.3 amps for our example 3300 mAh battery. Remember that these are *maximum* ratings; they may be charged at a lower current, as is necessary if the max charge current of your charger is less than that of your battery.

2. With that information, you can now plug in your charger to a 120 V outlet with the included power supply.



3. After inspecting your battery for damage and making sure it is cool to the touch, connect it to the charge and balance leads of the charger.

- Place the battery in a fireproof container for charging, such as a Small LiPo Battery Bag (# 752-00015).



- From the charger's main menu, use the arrow keys to scroll to the *LiPo BATT* program and select it by pressing the *Enter/Start* key. (Section 5.1 of the User's Manual)



- From the LiPo sub-menu, use the arrow keys to select the *BALANCE* program and select it with the *Enter/Start* key. Always use this mode; it will balance & charge your battery. Note that you will have to make this selection every time you plug in your charger. (Section 5.3 of the User's Manual)

- To set the charge current, press the *Enter/Start* key. The charge current should begin to flash. Use the arrow keys to set the charge current. This example is for the 5300 mAh battery with a max of 5.3A, but the charger max is 5.0A, so we will use 5.0A. For the 3300 mAh battery, you would select a charge current below 3.3 A, such as 3.0A. Press the *Enter/Start* key again to save the value.

- The battery voltage (cell count) should now be flashing. Use the arrow keys to set the voltage; *11.1V(3S)* for both Parallax 5300 and 3300 mAh three cell batteries. Press the *Enter/Start* key again to save the value.



- Press and hold the *Enter/Start* key for at least two seconds. The charger will automatically check the battery and display the number of cells detected "R" and the number set by the user "S". If the two numbers are identical, it will prompt you to press *Enter/Start* to begin the charging process.



- As the battery is charged, the screen will display information about the charge status. The charger will notify you when the battery is fully charged.



Resources and Downloads

Check for the latest version of this document and for the manufacturer's user manual on the Tenergy TB6B Balance Charger product page. Go to www.parallax.com and search 752-00009.

Revision History

Version 1.0 – Initial Release