



## Operating Manual

### Smart Balancer

Lithium Polymer 2-5 series cells **EFLC500**

The E-flite Li-Po smart balancer provides high precision balancing performance and safer charging for your Li-Po battery packs. It is important for users to read the manual and use the balancer correctly.



#### Features:

- Automatically detect and display battery balance status for any 2 to 5 Li-Po cells in series.
- Connectors for E-flite, ParkZone and Align Li-Po packs
- Connects to Thunder Power packs with Adapter Cables for THP Battery to EFL Balancer (EFLA229-sold separately)

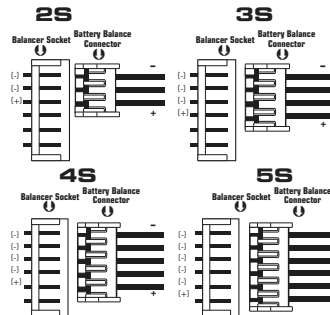
**Note:** The balance connector is compatible with JST XH-style connectors only. Other style connectors will need an adaptor.

- LED(s) show imbalance voltage status
- LED(s) display each cell in balancing
- LED shows low voltage status
- Reverse polarity protection
- 20mV balancing precision

#### Battery connection and balance status:

1. Using connection drawing to the right for reference, properly connect the balance connector of your battery to the JST XH 6-pin header located on right side of the balancer.

2. Wait 2–3 seconds; the balancer LED(s) will display the following three status codes:



**Status A:** The battery pack cells are balanced (the voltage difference of the cells in series is less than or equal to 20mV). The battery can be charged as normal.

Status A is visually indicated by the following LED blinking code:

The blue LED flashes (on for 0.5s and off for 0.5s), the red LED(s) is off.

**Status B:** The battery pack cells are not balanced (the voltage difference of the cells in series is above 20mV. In this status, the balancer will start the balancing routine.

Status B is visually indicated by the following LED blinking code:

The blue LED is off, the red LED(s) blink (on for 7s and off for 3.5s). When the cells are balanced the blue LED will blink (on for 0.5s and off for 0.5s), and the red LED(s) are off. The cells are now balanced and can be charged as normal.

**Status C:** When a cell(s) is 3V or less, the blue LED blinks slowly indicating low cell voltage. In this status the cell(s) voltage is very low and the pack is in questionable condition.

#### Charging while balancing:

1. The balancer can be used in conjunction with a charger. If the balancer is used while charging, it is recommended that the charge rate be set no higher than 0.2C of the connected battery packs rated capacity when the battery

is out of balance more than 100mV or no higher than 0.5C when the battery is out of balancer less than 100mV. Status indications A, B and C function exactly the same as when balancing without a charger.

#### Cautions:

- Do not connect 2 balancers to a single battery pack
- Do not incorrectly connect a battery with the balancer
- Do not use under direct sunlight
- Do not use when ambient temperature is more than 105° F (40° C) when the battery is out of balance more than 100mV or more than 140° F (60° C) when the battery is out of balancer less than 100mV
- Use and store in a dry place
- Disconnect the battery from balancer when not in use

#### Limited Warranty Period

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This is a sophisticated hobby Product and not a toy. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this Product in a safe and responsible manner could result in injury or damage to the Product or other property. This Product is not intended for use by children without direct adult supervision. The Product manual contains instructions for safety, operation and maintenance. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or injury.

**Questions, Assistance, and Repairs:**

Your local hobby store and/or place of purchase cannot provide warranty support or repair. Once assembly, setup or use of the Product has been started, you must contact Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please direct your email to [productsupport@horizonhobby.com](mailto:productsupport@horizonhobby.com), or call 877.504.0233 toll free to speak to a service technician.

**Inspection or Repairs**

If this Product needs to be inspected or repaired, please call for a Return Merchandise Authorization (RMA). Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. A Service Repair Request is available at [www.horizonhobby.com](http://www.horizonhobby.com) <<http://www.horizonhobby.com>> on the "Support" tab. If you do not have internet access, please include a letter with your complete name, street address, email address and phone number where you can be reached during business days, your RMA number, a list of the included items, method of payment for any non-warranty expenses and a brief summary of the problem. Your original sales receipt must also be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

**Warranty Inspection and Repairs**

To receive warranty service, you must include

your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be repaired or replaced free of charge. Repair or replacement decisions are at the sole discretion of Horizon Hobby.

**Non-Warranty Repairs**

Should your repair not be covered by warranty the repair will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for repair you are agreeing to payment of the repair without notification. Repair estimates are available upon request. You must include this request with your repair. Non-warranty repair estimates will be billed a minimum of 1 hour of labor. In addition you will be billed for return freight. Please advise us of your preferred method of payment. Horizon accepts money orders and cashiers checks, as well as Visa, MasterCard, American Express, and Discover cards. If you choose to pay by credit card, please include your credit card number and expiration date. Any repair left unpaid or unclaimed after 90 days will be considered abandoned and will be disposed of accordingly. Please note: non-warranty repair is only available on electronics and model engines.

Products requiring inspection or repair should

be shipped to the following address (freight prepaid):

Horizon Service Center  
4105 Fieldstone Road  
Champaign, Illinois 61822  
United Kingdom

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Hobby UK  
Units 1 to 4 Ployters Road  
Staple Tye  
Southern Way  
Harlow  
ESSEX CM18 7NS  
ENGLAND

Please call +44 (0) 1279 641 097 or email [sales@horizonhobby.co.uk](mailto:sales@horizonhobby.co.uk) with any questions or concerns regarding this product or warranty.

**Germany**

Electronics and engines requiring inspection or repair should be shipped to the following address:

Horizon Technischer Service  
Hamburger Strasse 10  
25335 Elmshorn  
Germany

Please call +49 4121 46199 66 or email [service@horizonhobby.de](mailto:service@horizonhobby.de) with any questions or concerns regarding this product or warranty.

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Instructions for Disposal of WEEE by Users in the European Union

This product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or where you purchased the product.

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