

# Operating Manual

----> EFLC505

E-flite Intelligent 1 - 5-Cell Balancing Charger

## Features:

- Microprocessor Controlled high-performance balancing charger
- Charges LiPo or Li-ion batteries
- Cell voltage balancer
- Temperature controlled (optional) auto shut-off from 20 to 80 degrees Celsius
- Capacity controlled auto shut-off charge from 100 to 9900mAh
- Time controlled auto shut-off from 0 to 720 minutes
- Selectable voltage input alarm if input drops below 10-11V
- Selectable number of cells from 1 to 5
- Adjustable charge rate setting from 0.1A to 5.0A
- Uses constant voltage and limited current charging model for maximum battery performance.
- Alarmed protection for:
  - Battery temperature over limit
  - Charge time over limit
  - Charge capacity over limit
  - Reverse voltage connection
  - Input voltage error
  - Connection breakdown
  - Short circuit
  - Voltage differences during charge



## Charger Layout

### A. Temperature Sensor Input

This sensor can be used to monitor the temperature of the battery and stop charging if the temperature exceeds a preset value. Control temperature is set through the charger control setup.

### B. DC Input

Connection for a 12V car battery or hobby grade power supply. Input voltage should be between 11–18V.

### C. Stop Button

Pressing stops charging and is used to return from program mode.

### D. - Button

Pressing decreases value shown in display.

### E. + Button

Pressing increases value shown in display.

### F. Start/Enter Button

Pressing starts charging and is used to navigate/confirm program settings.

### G. LCD Display

Large 64 x 14.5mm display presents charger's functions and programming options.

### H. Cell Balance Connector

6-pin connector to balance charge batteries.

### I. Charge Lead Output Connection (+)

Positive output lead plugs in here; uses standard banana plug socket.

### J. Charge Lead Output Connection (-)

Negative output lead plugs in here; uses standard banana plug socket.

## Charger Control Setup

By following the sample LCD screens below you will be able to control the functional settings of the charger. Use the - / + buttons to select values. Press STOP key to enter Setup then proceed below:

Beginning LCD display

USER SET  
PROGRAM →

Press START/ENTER to access setup parameters. Select ON and set the cutoff temperature in Celsius. A Fahrenheit to Celsius conversion table is shown below for your convenience.

°F	°C	°F	°C
125	52	95	35
120	49	90	32
115	46	85	29
110	43	80	27
100	38	75	24

TEMP CUT OFF  
ON(OFF) --C

Time limit to prevent overcharging a battery if other controls were to fail; set time in minutes for maximum charge time.

SAFETY TIMER  
ON(OFF) ---MIN

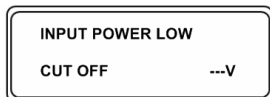
Set the maximum charge capacity before charging to prevent overcharging if other controls were to fail; set the capacity in mAh.

CAPACITY CUT OFF  
ON(OFF) --mAh

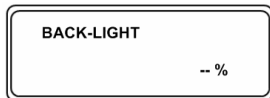
Control sounds when pressing keys and the buzzer for audible alerts. Individually select each as desired.

KEY BEEP ON(OFF)  
BUZZER ON(OFF)

If the input voltage is below this value the charger will stop operations.



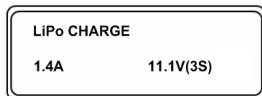
Adjust for the brightness of the charger's LCD display here.



## ----> Charging Operations

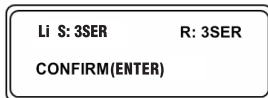
### Charging Without Balancer

1. Connect the charger to a 12V car battery or DC hobby grade power supply (11–18VDC), using the input connector on the left side of the charger.
2. Connect the battery to be charged, using the output connectors on the right side of the charger. Take care to ensure the output polarity matches the battery lead polarity.
3. The following display will be shown.



Confirm the charging current by pressing "START." The charge current value being displayed will blink. Using the + and - buttons, adjust charge current to desired value. Press "START". Using the + and - buttons, set the Voltage (number of cells).

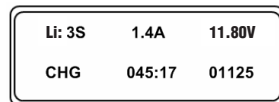
4. Press and HOLD the "START" button for several seconds; the charger will beep and the display will change to the following:



On the display, the "S" is the Cell count you selected on the previous screen, "R" is the Cell count the charger determined. If both values are the same, press "START" to begin the charge. If both values are NOT the same, press the "STOP" button and return to the previous screen to make changes.

5. The following display will show the charge status:

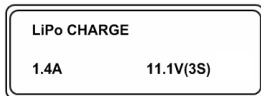
Li3S – LiPo 3-cell  
1.4A – Charge current  
11.80V – Battery pack voltage  
45:17 – Charge time  
1125 – Charge capacity in mAh



6. If required, you may adjust the charge current during the charge. Begin by pressing and holding the "START" button. You will see the charge current blinking and then, using the +/- buttons, raise or lower the rate. Never exceed 1C (1 x Capacity) or fire may result. Press the - button once to check the input voltage, twice to check the set temperature cutoff and external temperature probe measurement (when connected).
7. When your battery is fully charged the charger will make a beeping sound. Please disconnect the battery from the charger.

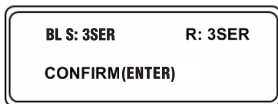
## Charging With Balancer

1. Connect the charger to a 12V car battery or DC hobby grade power supply (11–18VDC), using the input connector on the left side of the charger.
2. Connect the battery to the charger using the output connectors on the right side of the charger as well as the balance connector. Take care to ensure the output polarity matches the battery lead polarity. Note: See separate diagram for balance connector connection.
3. The following display will be shown.



Confirm the charging current by pressing "START." The charge current value being displayed will blink. Using the + and - buttons, adjust charge current to desired value. Press "START". Using the + and - buttons, set the Voltage (number of cells).

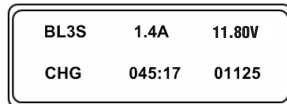
4. Press and HOLD the "START" button for several seconds; the charger will beep and the display will change to the following:



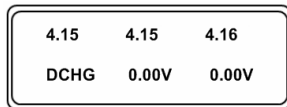
On the display, the "S" is the cell count you selected on the previous screen; "R" is the cell count the charger determined. If both values are the same, pressing the "START" button will begin the charge. If you need to change the cell count, press the "STOP" button and return to the previous screen to make changes.

5. The following display will show the charge status:

BL3S – LiPo 3-cell  
 1.4A – Charge current  
 11.80V – Battery pack voltage  
 45:17 – Charge time  
 1125 – Charge capacity in mAh



6. Press the + button to check the individual cell voltage status. The top line begins with cell one; then to the right, the second and third cells (with the second line showing status, then cells four and five). In the below example there are three cells.



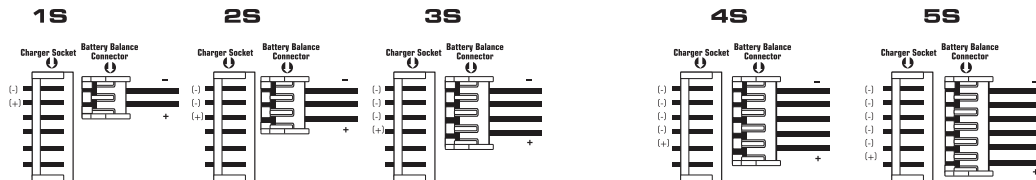
7. If required, you may adjust the charge current during the charge. Begin by pressing and holding the "START" button. You will see the charge current blinking and then, using the +/- buttons, raise or lower the rate. Never exceed 1C (1 x Capacity) or fire may result.
8. When your battery is fully charged the charger will make a beeping sound. Please disconnect the battery from the charger.

## Balance Connector:

**CAUTION:** proper insertion of the balance connector is required for safety and for proper operation of the balancing function.

Please pay attention to the following two points:

1. The positive lead on the balance connector wires of E-flite® and ParkZone® Li-Po batteries is colored red. The balance connector should always be inserted with the RED wire toward the **BOTTOM**, when viewing of the face of the charger.
2. The balance connector on the battery is to be inserted all the way to the **TOP** of the balance connector on the charger, when viewing the face of the charger. This alignment is required for all batteries, for all cell counts. Please see the following drawings for reference.



## Cautions / Precautions:

- Read all safety precautions prior to use
- Do not drop
- Do not charge NiCD / NiMH / or lead acid batteries
- Do not attempt to charge dead or damaged batteries
- Do not attempt to charge a battery pack containing different types of batteries
- Ensure proper polarity for connection to charger
- Ensure proper polarity at battery connection
- Keep away from moisture, rain, direct sunshine, dropping or vibration
- Keep away from flammable objects
- Ensure program settings are correct to prevent battery damage or fire
- Input jack (DC input) should not be connected to AC power
- DC input must be 11–18V
- DC input cannot be more than 18V or fire may result
- Before charging, check battery type for LiPo or Lithium Ion, and number of cells

## Warranty Period:

Exclusive Warranty- Horizon Hobby, Inc., (Horizon) warrants that the Products purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase by the Purchaser.

### Limited Warranty

(a) This warranty is limited to the original Purchaser ("Purchaser") and is not transferable. REPAIR OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER. This warranty covers only those Products purchased from an authorized Horizon dealer. Third party transactions are not covered by this warranty. Proof of purchase is required for warranty claims. Further, Horizon reserves the right to change or modify this warranty without notice and disclaims all other warranties, express or implied.

(b) Limitations- HORIZON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, ABOUT NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OF THE PRODUCT. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

(c) Purchaser Remedy- Horizon's sole obligation hereunder shall be that Horizon will, at its option, (i) repair or (ii) replace, any Product determined by Horizon to be defective. In the event of a defect, these are the Purchaser's exclusive remedies. Horizon reserves the right to inspect any and all equipment involved in a warranty claim. Repair or replacement decisions are at the sole discretion of Horizon. This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product. This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Horizon. Return of any goods by Purchaser must be approved in writing by Horizon before shipment.

### Damage Limits:

HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCT, WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the Purchaser or user are not prepared to accept the liability associated with the use of this Product, you are advised to return this Product immediately in new and unused condition to the place of purchase.

**Law:** These Terms are governed by Illinois law (without regard to conflict of law principals).

### Safety Precautions:

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) 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 ½ 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.

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

Horizon Service Center  
4105 Fieldstone Road  
Champaign, Illinois 61822

All other Products requiring warranty inspection or repair should be shipped to the following address:

Horizon Product Support  
4105 Fieldstone Road  
Champaign, Illinois 61822

Please call 877-504-0233 with any questions or concerns regarding this product or warranty.

# E-flite Li-Po Charger Warning!

Lithium Polymer (Li-Po) batteries are significantly more volatile than other rechargeable batteries used in RC applications. Failure to read and follow these instructions and safety precautions may result in fire, personal injury and damage to property. E-flite, Horizon Hobby, Inc., its retailers, and any other representatives, assume absolutely no liability for use of this product or failure to comply with these instructions and precautions.

If you are not prepared to accept complete liability for the purchase and/or use of this product, you are advised to return it new and unused to the place of purchase immediately.

Never ship batteries without the expressed permission of the recipient. Batteries carrying 25% or more charge cannot be shipped safely. Batteries which are damaged cannot be shipped safely. Damage or loss due to unsafe shipping is the legal responsibility of the person who shipped the product.

## Usage Guidelines, Warnings and Safety Precautions

- Always inspect batteries before charging.
- Never charge or use a Li-Po battery or pack that shows any damage or disfigurement of any kind. Swelling is a sign of internal damage. Any breach of protective cover, wiring or plugs is also reason to discontinue use. See manufacturer's instructions for proper disposal of Li-Po batteries.
- Never charge around or in the area of any flammable or combustible materials.
- Always charge Li-Po batteries in or on fire resistant materials or containers.
- Do not store or charge Li-Po batteries with or around other batteries or battery packs of any type, including other Li-Pos.
- Never leave battery and charger unattended while in use. Improper charging or discharging of Li-Po batteries could result in fire.
- Constantly monitor the temperature of the battery pack while charging. If the battery becomes hot to the touch discontinue charging immediately. Disconnect the battery from the charger and observe it in a safe place for approximately 15 minutes.
- If at any time you see a battery starting to balloon or swell up, discontinue charging immediately. Disconnect the battery from the charger and observe it in a safe place for approximately 15 minutes.
- Do not allow children to charge Li-Po battery packs.
- This charger is designed for 1, 2, 3, 4, or 5 cell Lithium-Polymer batteries ONLY. It MUST NOT be used to charge other size Li-Po batteries, Ni-MH or Ni-CD battery packs.
- Never attempt to dismantle the charger.
- Always disconnect the charger from the power supply after charging the battery.
- Disposal of Li-Po batteries requires special care. Follow manufacturer's instructions for safe disposal.



### 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.