

# Hercules Linear BEC

powered by **WR** ITEM# WRL-HBECLE

Congratulations on your purchase of the Hercules Linear Battery Eliminator Circuit. This new Battery Eliminator Circuit is a unique Linear BEC made to withstand high current loads of 10 Amps continuous integrated with a 2 Cell LiPo Battery Monitor similar to Western Robotics' Spectrum. The Hercules Linear BEC uses a high quality linear voltage regulator meaning it will produce no interference to any popular brands of R/C radio systems. It provides safe and consistent power to your R/C receiver and servo(s) that eliminates the need for a separate battery source. It also uses a unique ultra bright super flux wide angle LED that gives an advanced 6 level battery strength indication through its color spectrum. LIPO batteries are unlike other batteries and discharges on a non-linear curve, therefore it is important not to drain any LIPO batteries to minimum before charging as it can cause permanent damage. The Hercules Linear can prevent this by giving you an early indication of your LiPo battery strength and at the same time provide regulated consistent power. The Hercules Linear BEC is ideal for today's more demanding R/C aircrafts equipped with servos that require even higher current demands.

**Please read the entire manual before proceeding. Before installation, be sure your radio system uses center red or positive receiver/servo connections.**

#### Features:

- Compact high efficiency 5.4V and 6V selectable linear voltage regulator and battery monitor.
- Ideal for 2 cell Lithium Polymer battery applications. Input voltage range from 6V Min to 10V Max.
- High current capability of 10 Amps continuous, 15 Amp peak.
- Ultra Bright Super Flux LED status indicator gives visual 6 level spectrum feedback of battery strength.
- One time simple toggle mini switch to auto learn connected FULLY charged battery pack
- Easy one touch switch to select between 3 different LED indicator schemes.
- Protects against Thermal and Current overload.
- Optional On/Off Power Switch extension allows you to turn the Hercules output power on or off remotely. (Sold separately)
- Optional high decibel buzzer for audible low battery indicator (sold separately).
- Optional 2nd Ultra Bright Super Flux LED status indicator extension. (sold separately).

#### Package Contents:

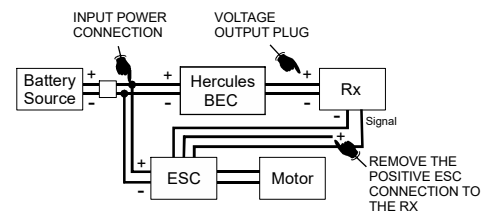
- Hercules Linear BEC unit
- User Instruction Manual

#### Installation

- WARNING! DO NOT EXTEND THE POWER WIRE CONNECTIONS. IF EXTENDING THEM OR HAVE CURRENT LOADS EXCESS OF 6 AMPS CONTINUOUS, REPLACE THE OUTPUT POWER WIRES TO A THICKER GAUGE WIRE TO AVOID VOLTAGE DROPS.**

Power Connections: **Please disconnect the battery from its terminal before soldering the power connections.** Connect the Hercules open input power wire connections by soldering the Red power wire to the positive (+) terminal of the battery source that is being used. Solder the Hercules Black power wire to the negative (-) terminal of the battery source.

#### Installation Cont'd:



2. Plug the Hercules voltage output plug into the battery slot of the receiver. Make sure the polarity is matching with the receiver slot before inserting the Hercules plug - **black wire negative (-) and red wire positive (+)**. Connect the ESC signal connection to Rx with the positive red wire removed.

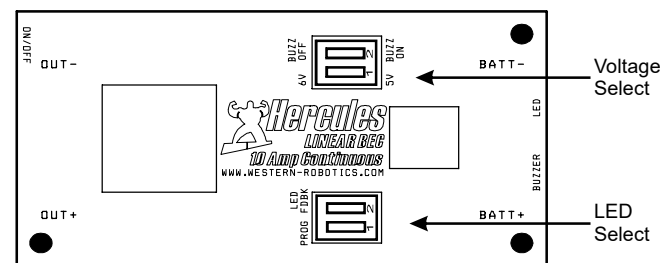
**3. Warning: Under heavy continuous current load, the Hercules unit will get extremely hot and cause burns when touched. Allow unit to cool before handling.**

**Caution: Current loads of 10A continuous should be used cautiously with forced cooled air ventilation directed at the Hercules. Ideally place the Hercules unit close to the aircrafts propeller for ventilation.**

Securely mount the Hercules unit on your R/C model away from the receiver and antenna if possible.

#### Setup:

1. With the Hercules unit installed and required servo(s) connected, turn on the transmitter without the battery connected.
2. Before connecting the battery to the circuit, please ensure that the proper output voltage settings are set for your particular application. To set the Hercules to output 5.4V or 6V set the appropriate switch's actuator towards the required voltage as shown below on the Hercules unit.



3. Make sure your transmitter has the throttle off before continuing. Now connect the fully charged battery into the circuit.  
Note: It is recommended to use a 2 cell lithium polymer battery pack.
4. The LED on the Hercules unit should turn on and greet with a spectrum of colors.
5. Now the Hercules is actively powering the RC receiver and servo(s). Follow the next steps for a one time programming of the LED feedback to suit your 2 cell LiPo battery pack if required.

#### Initial Programming and Setup for the LED Feedback:

1. Connect an appropriate **JUST FULLY CHARGED HEALTHY** 2 cell LiPo battery pack to the Hercules (Red wire to the Positive+ and Black wire to the Negative- battery terminal. The Hercules will greet with the LED displaying it's full spectrum of colors.
2. To allow the Hercules to learn the connected **fully charged healthy 2s LiPo battery pack (8.2-8.4V)**, simply toggle the DIP switch number 1 labeled **PROG** once and the Hercules will respond by flashing a magenta color rapidly momentary. This indicates programming is done and the Hercules will display the LED color according to the battery strength. **This is only required to be done once unless a custom earlier or later indication is required, refer to the troubleshooting section. The Hercules stores the value of your fully charged battery pack in it's memory.**
3. To display a different LED indicator scheme, simply toggle the DIP switch number 2 labeled **LED FDBK** once to scroll to the next scheme. Repeat to scroll through all 3 different schemes. 3 schemes include solid on, rapid flashing and intermittent flashing.

#### LED Status Function:

- BLUE - Fully Charged (8.2 - 8.4V)
- CYAN - Very Good
- GREEN - Good
- YELLOW/AMBER - Low Battery Warning
- RED - Battery Low ( Battery drained down to approximately 70% from programmed voltage - (6.2-6.4V) Stop Operation Immediately) MAGENTA or WHITE - Possible overload condition.

#### OPTIONAL OPTIONS:

**ON/OFF Power Switch Option:** Connect the 2 pin connection of the Power Switch to the right angle connector labeled ON/OFF on the Hercules unit, connect it to either direction as there is no polarity. (**Power Switch Extension sold separately**). Securely mount the power switch extension on the desired location.

**LED Extension Option:** Connect the 4 pin connection of the to the right angle 4 pin male connector labeled LED on the Hercules unit (**LED Extension sold separately**). Securely mount the LED extension on the desired location.

**Audible Buzzer Option:** Connect the 3 pin connection of the high decibel audible buzzer to the right angle 2 pin male connector labeled buzzer on the Hercules unit, match the color of the wiring with the label on the unit. (**Audible Buzzer (WRL-BUZZ) sold separately**). Securely mount the buzzer and direct the buzzer in the general direction of the user during operation. Select the Buzzer toggle switch on the Hercules unit towards the BUZZ ON position to enable the buzzer.

#### TROUBLESHOOTING:

- Q:** I want a 5.4V output and the Hercules gives a 6 Volt output and vice versa?  
**A:** Make sure the 5v/6v switch setting is set proper to output either a 5V or 6V output. Refer to the Setup instructions.
- Q:** The Hercules unit gets very hot during operation?  
**A:** This is normal when the Hercules it put under very heavy loads. Make sure the Hercules unit is air cooled ventilated to prevent thermal shutdown.
- Q:** The Hercules does not give a BLUE color indication (Very Good Level status) when I connect my fully charged battery pack?  
**A:** Make sure the Hercules has been programmed with your just fully charged battery pack with the toggle switch 1 PROG. Refer to Initial Programming and Setup instructions.
- Q:** The RED or YELLOW color level warning is still too late or early to my preference even if I programmed it with the ideal fully charged battery pack?  
**A:** Not a problem, the Hercules has a fully programmable input voltage feature. If you find the warning are **too early** simply program the Hercules with either a Power Supply or another battery pack that gives a slightly lower voltage than 12.4V. The lower the voltage respectively will give you a later warning. If you find the warning are **too late** simply program the Hercules with either a Power Supply or another battery pack that gives a slightly higher voltage. The higher the voltage respectively will give you an earlier warning. Try increments or decrements of 0.2V as a starting point from 8.2V (be sure not to exceed 10V).
- Q:** How does the LED flashing scheme work?  
**A:** If the LED scheme is selected to the Solid On or Intermittent Flashing, the LED scheme will change to the Rapid Flashing when it level reaches the Yellow/Red warnings. If the Rapid Flashing LED scheme is selected, then the LED scheme will change to Solid On respectively.
- Q:** How does the Audible Buzzer work?  
**A:** The Audible Buzzer will sound according to the Yellow/Red LED flashing warnings only.

## ITEM# WRL-HBECLE

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#### Limited Warranty (North America Only)

The Hercules Linear Battery Eliminator Circuit is guaranteed to be free from defects in material and workmanship for a period of 90 days from the date of purchase accompanied by the proof of purchase or invoice. Warranty does not cover damage due to improper use or incorrect installation. During the 90 day warranty period, if the product shows defects caused by abuse, accident or misuse, it will be repaired or replaced upon Western Robotics Ltd. sole discretion, at a service charge not greater than 40% of the current retail list price. Please ensure to include your contact information before any repair(s) or replacement(s) can be conducted. Under no circumstances or condition will the purchaser be entitled to consequential or incidental damages. In no case shall our liability exceed the product's original cost. We reserve the right to modify warranty provision without notice. Because Western Robotics Ltd. has no control over connection and use of this product, no liability may be assumed nor will be accepted for damage resulting from the use of this product, user accepts all resulting liability. If you attempt to disassemble, modify or repair this unit yourself, it may void the warranty. For warranty service on Western Robotics product(s) in, out or off warranty period, please email the below address before you send the defective unit(s) along with the proof of purchase and a description of the problem, postage paid, to the given address below.

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