

# Hercules Super Mini BEC

powered by  **ITEM# WRL-HBECM**

Congratulations on your purchase of the Hercules Super Mini Battery Eliminator Circuit. This new Battery Eliminator Circuit is the first most compact and robust ever designed and made with high quality components that can withstand outstanding high current loads of 10 Amps continuous. The Hercules Super Mini Battery Eliminator Circuit is a glitch free high efficiency, high power switching voltage regulator designed to work with all popular brands of 2.4 GHz R/C receivers and servos. It provides safe and consistent power to your R/C receiver and servo(s) that eliminates the need for a separate battery source. The Hercules Super Mini will boost performance on your R/C model by reducing the overall weight while maintaining a high current output from high voltage sources up to a 6s LiPo battery (25V). The Hercules Super Mini is ideal for today's more demanding R/C aircrafts equipped with digital servos that require even higher current demands without sacrificing with additional weight.

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

### Features:

- Super compact high efficiency 5.3V, 6V, 8.4V and 9.0V selectable voltage regulator.
- Wide input voltage range from 9V to 25V (9-16 NiCd/NiMH or 3-6 LiPo Cells). Minimum 13V input for 8.4/9.0V applications.
- High current capability of 10 Amps continuous, 16 Amp peak with proper ventilation.
- High power output that handles multiple servos including digital servos.
- Protects against Current overload and Reverse Battery connections.
- LED status indicator gives visual feedback.
- Ideal for R/C model 2.4GHz radio systems.

### Package Contents:

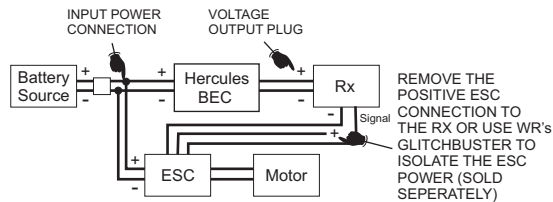
- Hercules Super Mini BEC unit
- User Instruction Manual

### Installation

1. **CAUTION!** Do not extend power wire connections. If extending the wire or have current loads of excess of 6 Amps continuous, replace the output wires with a thicker gauge to prevent voltage drops from the wire.

**WARNING!** DO NOT OPERATE THE HERCULES WITHOUT DIRECTED FORCED AIR VENTILATION AND DO NOT CONNECT THE UNIT BETWEEN BATTERY PACKS. DOING SO, WILL RESULT IN OVERHEATING/OVERVOLTAGE LEADING TO POSSIBLE PERMANENT DAMAGE OR FIRE!

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



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### Installation Cont'd:

power wire to the positive (+) terminal of your battery source. Solder the Hercules Black power wire to the negative (-) terminal of the battery source.

2. Plug the Hercules voltage output plugs into the battery slot to an available slot of the receiver. Both output plugs from this Hercules are recommended to be connected to the receiver to reduce voltage drops through the plugs when large current loads are applied. 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 **isolated**.

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.

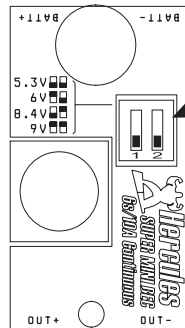
**CAUTION!** Long duration of current loads of 10A continuous **MUST BE** used cautiously with forced cooled air ventilation directed at the Hercules. Ideally place the Hercules unit close to the aircrafts propellor for ventilation.

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 5.3V, 6V, 8.4V or 9V, set the switch settings on the Hercules unit as shown below respectively.

**CAUTION:** It is recommended to double check the output voltage with a voltmeter to ensure proper voltage selection. Do not switch the voltage selection when power is applied, power must be disconnected before changing the voltage selection. Doing so may damage the unit and connected loads.



Voltage Selection Switch (Solid fill indicates position of switch actuator)

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 battery source with a minimum of either 3 LiPo or 8 NiCd/NiMH cells, 4 LiPo cells for 8.4V/9V operation.
4. The LED on the Hercules unit should turn on.
5. Now the Hercules is actively powering the RC receiver and servo(s). To further isolate noise from the ESC to Receiver and Servo(s), consider purchasing Western Robotics Glitch Buster that optically isolates them.

**It is recommended to perform a range check with your radio systems to prevent possible interferences between electronic devices.**

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### TROUBLESHOOTING:

- Q:** The Hercules LED does not turn on when power is applied?  
**A:** Check if the power source is at least within the operation input voltages and the connections are secured tightly with the correct polarity. Make sure there are no shorts on the output side.

- Q:** I want a 5V output and the Hercules gives a 6 Volt output and vice versa?

- A:** Make sure the voltage selection switch is set properly to output either a 5V, 6V, 8.4V or 9V output before connection. Refer to the Setup instructions.

- Q:** The Hercules unit gets very hot during operation?

- A:** This is normal when the Hercules is put under very heavy loads. Make sure the Hercules unit is air cooled ventilated to prevent overheating and failure.

- Q:** The wire leads are getting warm?

- A:** This is normal when operating with higher currents. Make sure not to operate the unit beyond the specified voltage ratings.

- Q:** There is a visual spark when I connect the battery to the Hercules unit?

- A:** This is normal when large voltage sources are connected because the increase in potential that causes arcing during the initial connection. Consider using an electronic switch to avoid such spark.

- Q:** When I install the Hercules into my radio system and perform a range check, it reduces the range between my transmitter and receiver?

- A:** The Hercules have been tested with various radio systems and been found to be interference free to most receivers. However, due to the unlimited supply of new different radio systems in the market, an odd model of radio system might be more sensitive to electronic devices. If this is the case, try mounting and/or EMI shielding the Hercules away from the radio's receiver or using an alternative radio systems at a different frequency.

- Q:** I have a 72MHz radio system, will this work for me?

- A:** If a 72MHz radio is to be used, a range check must be performed before operation. Some 72MHz radio systems might be more sensitive to other electronic devices, if it fails the range check it is recommended not to use the Hercules with that particular 72MHz radio system.

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