



Hercules Super Mini BEC G2

powered by **WR**

ITEM# WRL-HBECM2

Congratulations on your purchase of the Hercules Super Mini Battery Eliminator Circuit G2. This new Battery Eliminator Circuit is the first most compact and robust ever designed and made that can withstand outstanding high current loads of 20 Amp Peak, 10 Amps continuous with voltage source of up to 8s LiPo battery (36V Max). The Hercules Super Mini Battery Eliminator Circuit G2 is a glitch free high efficiency, high power switching voltage regulator designed to work with all popular brands 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 G2 has a new boost mode feature that provides protection against system brown outs as it maintains the selected regulated voltage even if the input voltage (4.5V Min.) drops below the output voltage. 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:

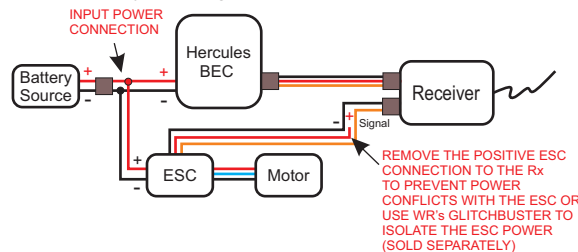
- Super compact high efficiency 5.3V, 6V, 7.3V and 8.2V selectable voltage regulator.
- Wide input voltage range from 4.5V to 36V (2 to 8 LiPo Cells).
- New boost mode feature protects against system brown outs. Maintains regulated voltage even if input voltage drops below the regulated voltage.
- High current capability of 10 Amps continuous, 20 Amp peak with proper ventilation. In boost mode, 4 amp continuous max.
- Shut Down enable pin for remote shut down. Optional shut down switch sold separately.
- Protects against Current overload and Reverse Battery connections.
- LED status indicator gives visual feedback.

Package Contents:

- Hercules Super Mini BEC G2 unit
- User Instruction Manual

Installation

1. **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



Western Robotics Copyright 2013

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. The second output plug can be shared with one of the servo connections if required. Make sure the polarity is matching with the receiver slot before inserting the Hercules plug - **black wire negative (-) and red positive(+)**. Connect the ESC signal connection to Rx with the positive red wire **isolated**.

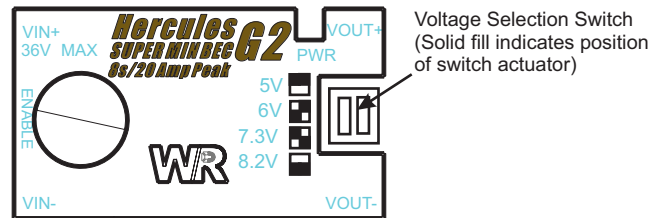
3. **CAUTION!: Long duration of current loads of 10A continuous MUST BE used cautiously with forced cooled air ventilation directed at the Hercules. Ideally place the Hercules unit close to the aircrafts propellor for ventilation.**

Do not operate the unit in Boost Mode at current loads above 4A continuous. In boost mode, the regulated selected voltage is still maintained even when the input voltage drops down to 4.5V. This is a safety protection feature for system brown outs only and not recommended for normal operation.

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, 7.3V or 8.2V, set the switch settings on the Hercules unit as shown below respectively. It is recommended to double check the output voltage with an aid of voltmeter to ensure the right voltage is selected.

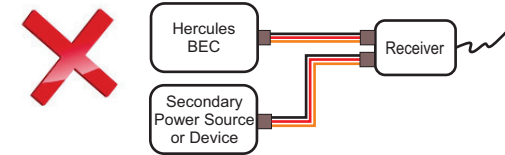


3. Make sure your transmitter has the throttle off before continuing. Now connect the fully charged battery into the circuit.
4. The LED on the Hercules unit should turn on.
5. Now the Hercules is actively powering the RC receiver and servo(s). To further isolate noise from the ESC to Receiver and Servo(s), consider purchasing Western Robotics Glitch Buster that optically isolates them.
6. To remotely turn off the Hercules unit, you can short the two pin connection labelled enable on the left side of the unit. An optional power switch can be inserted to turn off the unit remotely (sold separately).

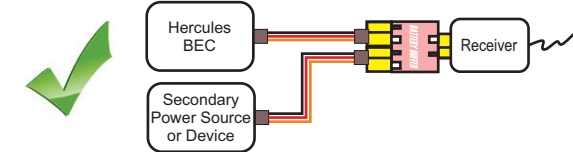
It is recommended to perform a range check with your radio systems to prevent possible interferences between electronic devices.

Western Robotics Copyright 2013

DO NOT CONNECT ANY POWER SOURCE IN PARALLEL DIRECTLY WITH THE BATTERY ELIMINATOR CIRCUIT. THIS CAN CAUSE PERMANENT DAMAGE!



ONLY CONNECT AN ALTERNATE POWER SOURCE IN PARALLEL TO THE BATTERY ELIMINATOR CIRCUIT WITH AN BATTERY BUFFER PROTECTION CIRCUIT (SOLD SEPARATELY) IN BETWEEN



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: 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: Can I install the BEC in a multi-cell pack system such as a 12s battery pack?

A: It is not recommended to install any BEC to a multi-cell battery pack that has a voltage rating higher than the BEC's maximum voltage input. Due to the different battery chemistries in the market, with the introduction of back electro-magnetic interference (EMI) cause from the main ESC motor, this can cause any cell within the multi-cell pack to reach to the full voltage rating of the entire battery pack. For example, in a 12s battery pack (50.4V Peak) of 2 x 6s (25.2V peak) cells tied in series, once EMI is introduced to the battery, it is possible for either of the 6s cell to reach the full 12s voltage rating (50.4V). Therefore, if you attached a BEC (rated only for 6s or 8s) only on one of the 6s cells and not across the entire 12s pack, this still can cause permanent damage to the BEC because of the potential of 12s pack voltage. It is recommended only to use a BEC that is rated enough to handle the entire multi-cell battery pack regardless of configuration.

Western Robotics Copyright 2013