

# Battery Buffer

powered by  ITEM# WRL-BBFR

Congratulations on your purchase of the Western Robotics' Battery Buffer. This new Battery Buffer is the first compact design that is made with high quality components that can withstand outstanding high current loads of 24 Amperes continuous. The Battery Buffer is a high power protection circuit that allows two voltage sources to be paralleled safely. It is designed to work with any combination of battery packs and battery eliminator circuits that has an output voltage of up to 50 Volts. Paralleling connection of either battery packs or battery eliminator circuits is highly not recommended without the battery buffer. This can cause either your battery pack or battery eliminator circuit to be damaged even if there is a slight difference in voltage between the two sources. Battery packs will degrade or even burst in flames dependant on the battery chemistry if they are paralleled, and especially when there is a voltage difference between the two. The battery buffer can protect your battery pack and/or battery eliminator circuit by preventing voltage from feeding back to each other. The higher voltage of the two sources will be go through the output of the battery buffer circuit and if the higher voltage source ever drops below the second source, then the second source will take over and vice versa. The battery buffer is intended to provide redundant voltage source to power today's more demanding R/C models. With the battery buffer circuit you can have peace in mind with your redundant battery eliminator circuit and/or battery pack, if one fails the other will still keep your R/C model alive. The battery buffer is a must have unit for all R/C systems that uses redundant power sources.

Please read the entire manual before proceeding.

### Features:

- Provides safe redundant power by paralleling two battery packs or battery eliminator circuits or combination of the two.
- Protects voltage from feeding back to the connected voltage sources.
- High current capability of 24 Amps continuous with voltages up to 50 Volts. 60 Volts peak
- Low forward voltage drop from 0.2V to 0.5V from input to output.
- Protects against Reverse Battery connections.
- Three LED status indicators gives visual feedback.
- Ideal for all R/C model power redundancy applications.

### Package Contents:

- Battery Buffer unit
- User Instruction Manual

### Installation & Setup

1. Power Connections: Please disconnect the battery from its terminal before soldering any wires to input/output power terminals. There are two inputs and one output in the battery buffer unit. The two inputs connectors are located side by side (parallel) to each other while the single output is on the opposite end of the unit. Please refer to Figure 1 for the connector block layout. Connect the positive (+) terminal of your battery source to positive (+) (narrow) pin connection. Connect the negative (-) terminal of your battery source to the negative (-) (wide flat) pin connection. Make sure the polarity matches the polarity of the battery buffer input connection. Before connecting the input connections, make sure that on the output connection of the battery buffer is not shorted or have unintentional connections because once one of the two inputs are connected to a battery the output connection will be live. Connect your first voltage source into either input connection, once connected an LED closest to the input connection will light up to indicate that power is present. The output LED closest to the output connector of the battery

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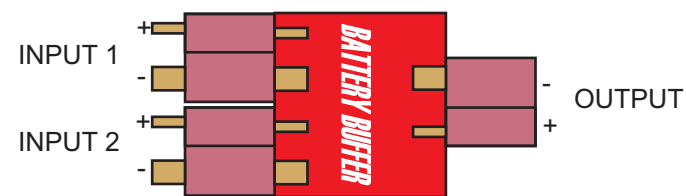
### Installation Cont'd:

buffer should light up to indicate output power is present. Connect the second voltage source to the remaining input connection of the battery buffer. The LED closest to the second input connector should light up, this indicate that power is present on this input. The output LED of the battery buffer should remain on. All three LEDs on the battery buffer should be lit up and this indicates that both input voltage sources are on and the battery buffer output should reflect the higher voltage input source.

2. Connect the output connection of the battery buffer to intended system or receiver to be powered. Double check that the polarity is correct that the narrow pin is positive (+) and wide flat pin is negative (-). Now the battery buffer is safely providing redundant power to your system.

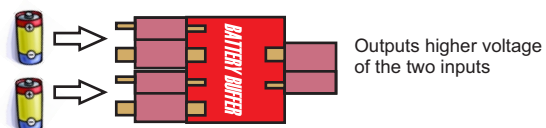
**CAUTION! The Battery Buffer is limited to current loads of 24A continuous. It must be used cautiously with forced cooled air ventilation directed at the battery buffer at such current loads. Ideally place the battery buffer unit close to the aircrafts propeller for ventilation.** Securely mount the battery buffer unit on your R/C model.

**NOTE: The battery buffer does not regulate the voltage and it simply passes through the input voltage to the output with minimal voltage drops as low as 0.2V.**

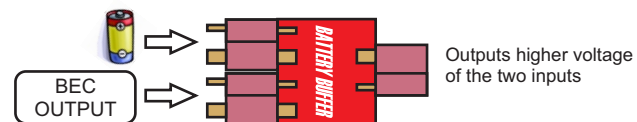


### Typical Applications:

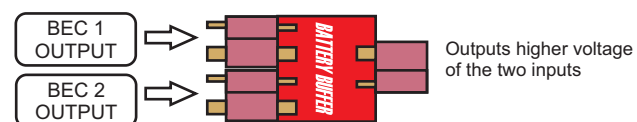
#### 2 Battery Pack Redundancy



#### 1 Battery Pack and 1 Battery Eliminator Circuit (BEC) Redundancy



#### 2 Battery Eliminator Circuit (BEC) Redundancy



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### TROUBLESHOOTING:

- Q:** The Battery Buffer input LED does not turn on when power is to the input(s)?  
**A:** Check if the power source connections are secured tightly with the correct polarity. Make sure there are no shorts on the output side.
- Q:** When I connect one of the power source to the input and I read a slight drop in voltage on the output of the Battery Buffer?  
**A:** This is normal and you will witness a slight voltage drop from 0.1V to 0.5V due to the protection circuitry. Make sure to have connections secured tightly and to have proper gauged wiring to handle your current demands to reduce voltage drops on the wire itself.
- Q:** Can I connect two voltage sources with a different voltages?  
**A:** Yes, the battery Buffer will prevent voltage from feeding back to the other voltage input source. Note, that the output will reflect the higher voltage input.
- Q:** When I connect two voltage sources with a different voltage, the Battery Buffer outputs the higher voltage source?  
**A:** This is normal operations as the battery buffer will output the higher voltage source, if the voltage source starts to drop below the second source, then the second source will take over. It will drain both voltage sources equally.
- Q:** Do I need both inputs to be connected to voltage sources?  
**A:** No, you only need to use one input if you have one voltage source, it will simply pass through the one voltage source to the output of the Battery Buffer.

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### Limited Warranty (North America Only)

The Battery Buffer 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 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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