

## How To Wire Up Multi Motored Brushless Aircraft

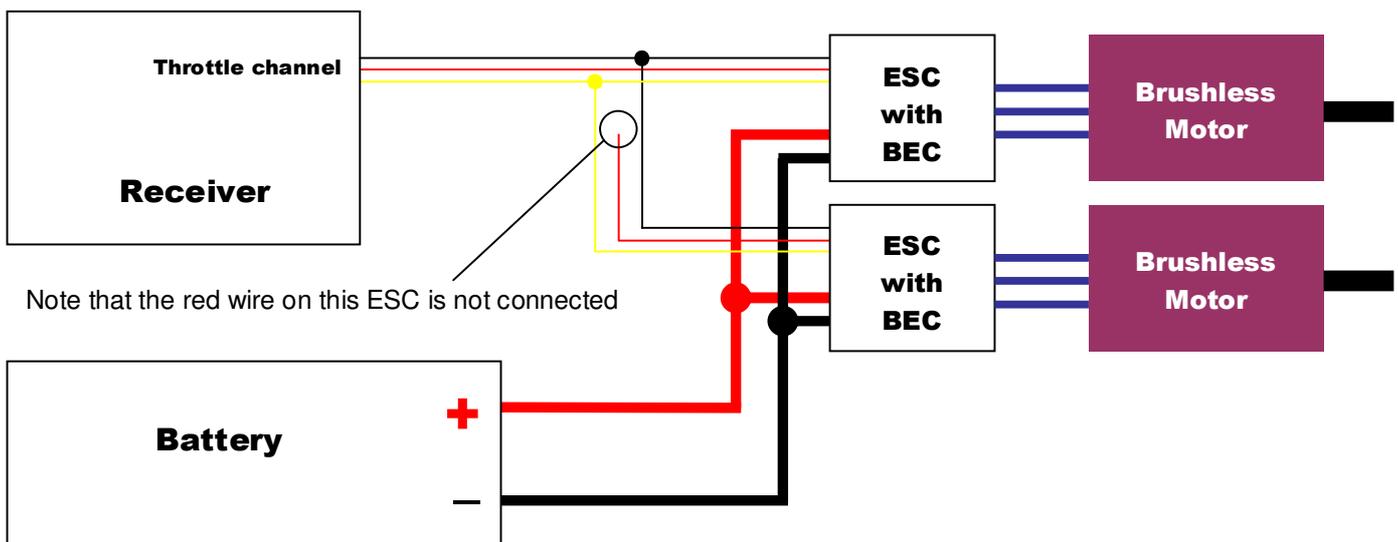
You need one brushless ESC (**E**lectronic **S**peed **C**ontroller) for every brushless motor.

Ideally both brushless ESC's should be from the same manufacturer and the exact same size and preferably purchased at the same time. This is because the throttle curve varies from manufacturer to manufacturer and from size to size and slightly from batch to batch. Any difference in the throttle curve will make the motors run at different speeds which will cause a yawing effect. In the very worst cases it could cause your model to spin, in most cases it will make your model horrible to fly.

If using a low voltage system for example 2S LiPo (7.4V) or 3S LiPo (11.1V) then you will need to disable the BEC (**B**attery **E**liminator **C**ircuit) in one of the ESC's. "Why?" I hear you ask. Well.... if you don't, one BEC will try to supply power to the other as the output voltages are never exactly the same and the higher output one will always try to supply power to the other one. This is not a good situation as one ESC will eventually overheat and possibly burn out. Therefore we need to disable one of them.

If using a high voltage system, 4S LiPo and above, the BEC's of all ESC's should not be used and all need to be disabled. A separate power source will need to be used to power the receiver and servos. This power source can be either a separate 4 or 5 cell NiMH receiver battery pack as used in traditional I.C. powered aircraft, or a separate UBEC (**U**niversal **B**attery **E**liminator **C**ircuit). A UBEC is a small electronic circuit that can accept a wide range of voltage input and output a steady lower voltage suitable for your receiver. For example our PP-UBEC5AHV-3 can accept any input voltage from 8.4V DC through to 42V DC and output 6V DC at 5A which is used to power your receiver and servos. If using an OPTO ESC then the centre wire should be left in place as it is needed for the ESC to work.

### Option 1 – Low Voltage System Using the BEC in one of the ESC's only.

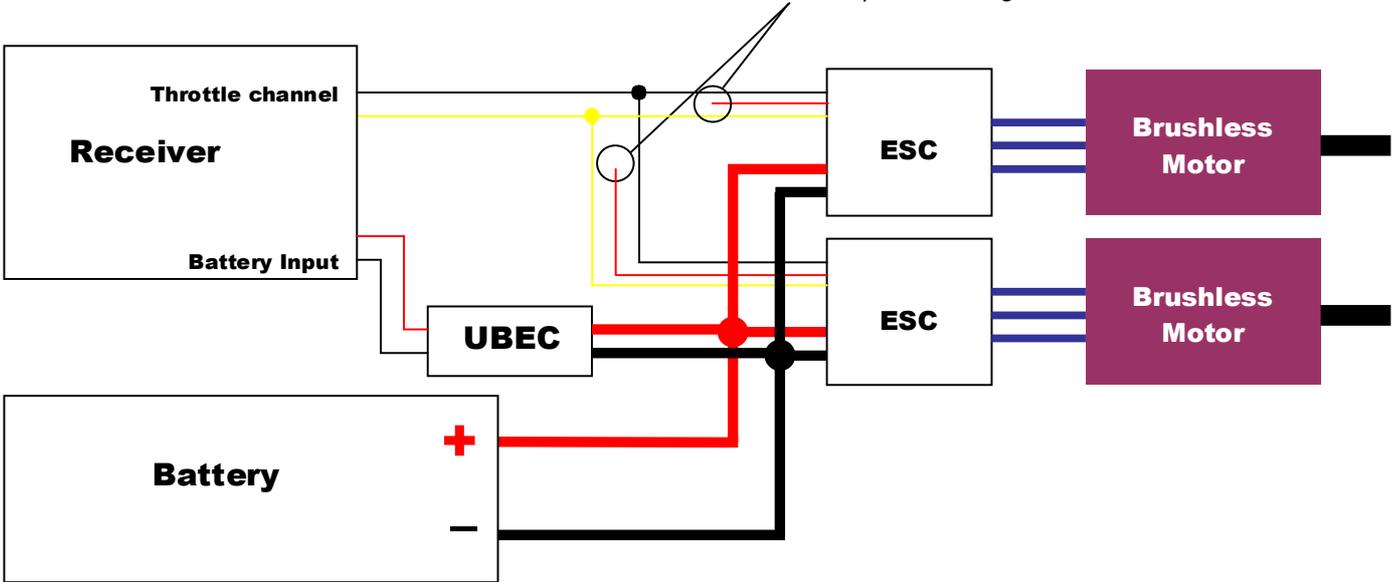


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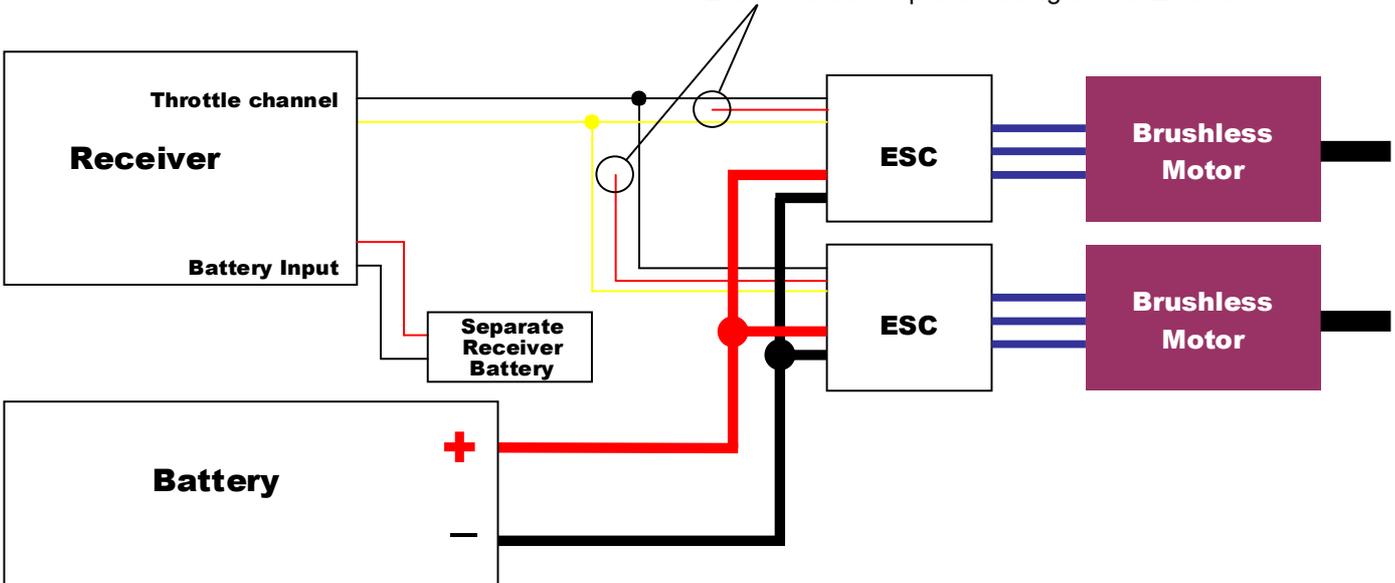
**Option 2 – High Voltage System Using a Separate UBEC.**

Note that the red wire on both ESC's are not connected. Leave the wire in place if using OPTO ESC's.



**Option 3 – High Voltage System Using a Separate 4 or 5 Cell NiMh Receiver Battery.**

Note that the red wire on both ESC's are not connected. Leave the wire in place if using OPTO ESC's.



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