



Skyshark R/C Ultra 70B Brushless Speed Controller

Connection:

1. Use Rosin-core lead solder to solder female bullet connectors to the three black wires on the speed controller. (The motor will use male bullet connectors)
2. Solder or crimp your battery connector to the red (+) and black (-) wires. Insure that you maintain the correct polarity or you will burn out the controller when you connect the battery.
3. Connect the receiver lead to the throttle channel on your receiver. Be sure to maintain correct polarity.
4. Connect the three black wires in any order to the brushless motor. Later, if you notice your motor is running in reverse, you can either switch two black wires or program it to run in the correct direction using the programming instructions below.
5. Secure the speed controller to the aircraft. Make sure you have airflow over the controller so that it can cool properly. If you don't have enough airflow and find the controller gets very warm, you will need to use a larger controller to handle the heat.

Operation:

1. Follow the directions below to program your speed controller.
2. Insure your throttle is back all the way. (the controller will not operate unless the throttle is in the off position)
3. Connect the battery to the speed controller observing the correct polarity.
4. The controller will sound a tone to let you know that it is armed. Do not move the throttle until you hear the tone.
5. Once the tone has sounded, slowly advance the throttle and insure the motor is operating correctly. You are now ready to fly!

Do not leave the controller armed unless you are on the runway and everyone is clear of the prop.

If you are having trouble getting the speed controller to function correctly, make sure your throttle channel is set to 100% and the trim is lowered all the way. Also check to see if the throttle channel is set for normal (not reverse) operation. You may also want to try a different model number if you have a computer radio.

Features:

- 70 amp continuous 80 amp burst
- 5A BEC (5 volts)
- For use with 12-24 NiMH or 4-8 LiPo
- Heat sink for more efficient cooling
- Programmable for cell number, cell type, motor direction, timing, throttle, brake and pulse width
- 2 year warranty
- 2 year crash free guarantee



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If you are using an external BEC or receiver battery, you can disconnect the onboard BEC by removing the RED wire from the receiver plug (or cutting the RED wire).

Programming your Ultra 70B Brushless Speed Controller:

1. Connect your speed controller to the motor and receiver.
2. Turn on your transmitter and move the throttle to the full position
3. Connect your main battery and you will hear a starting musical tone. After 3 seconds, the controller will start beeping in the sequence of tones indicated on the Options menu below. Each sequence of tones will repeat three times.
4. Wait until you hear the required series of tones as shown in our options chart, then move the throttle stick to **half** position to enter the sub-menu. At that time, you will hear a sequence of tones from the appropriate sub-menu.
5. When you hear the correct sequence for the setting you want, move the throttle back to **full** position. The controller will save the setting and confirm it with a long beep. The controller will then return to the options menu.
6. To complete the programming and save all options, move the throttle to the off position once you have set all the options. The controller will save all options and re-initialize in running mode so you can start your motor.

Options Menu		
Tone sequence	Tone	Sub-menu
🎵 _	Music Tone +1 beep	Type & Number of Cells
🎵 _ _	Music Tone +2 beeps	Throttle Setting
🎵 _ _ _	Music Tone +3 beeps	Brake Setting
🎵 _ _ _ _	Music Tone +4 beeps	Motor Direction & Cutoff
🎵 _ _ _ _ _	Music Tone +5 beeps	Timing Menu
🎵 _ _ _ _ _ _	Music Tone +6 beeps	Pulse Menu

Type & Number of Cells Menu		
Tone sequence	Tone	Description
• _	1 Short, 1 Long	NiMH/NiCD Auto Cell Count .8v/cell cut-off
• _ _	1 Short, 2 Long	8S LiPo 24v cut-off
• _ _ _	1 Short, 3 Long	7S LiPo 21v cut-off
• _ _ _ _	1 Short, 4 Long	6S LiPo 18v cut-off
• _ _ _ _ _	1 Short, 5 Long	5S LiPo 15v cut-off
• _ _ _ _ _ _	1 Short, 6 Long	4S LiPo 12v cut-off

Move throttle from full to half in order to access the sub-menus from this chart

To exit the options menu, move the throttle to the "off" position

* Indicates default setting

Throttle Setting Menu		
Tone sequence	Tone	Description
•• _	2 Short, 1 Long	Auto throttle setting *
•• __	2 Short, 2 Long	1.1ms to 1.8ms
•• ___	2 Short, 3 Long	Hard start *
•• ____	2 Short, 4 Long	Soft start

Use this option to control the speed at which the prop starts turning. For warbirds and other torque sensitive airplanes, we suggest using the soft start mode.

Brake Setting Menu		
Tone sequence	Tone	Description
••• _	3 Short, 1 Long	No Brake
••• __	3 Short, 2 Long	Soft Brake *
••• ___	3 Short, 3 Long	Medium Brake
••• ____	3 Short, 4 Long	Hard Brake

Brake setting controls how fast the prop will remain spinning once throttle is in "off" position.

When "no brake" option is selected, the prop will spin freely.

The "hard brake" option will stop the prop from spinning completely.

Motor Direction & Cut-off Menu		
Tone sequence	Tone	Description
•••• _	4 Short, 1 Long	Clockwise Rotation *
•••• __	4 Short, 2 Long	Counter-clockwise Rotation
•••• ___	4 Short, 3 Long	Soft Cut-off
•••• ____	4 Short, 4 Long	Hard Cut-off *

Soft cut-off will reduce power once battery voltage lowers to 3V per cell.

Hard cut-off will cut power until the throttle is pulled back to the off position. Power will then resume when throttle is advanced.

Timing Menu		
Tone sequence	Tone	Description (degrees)
••••• _	5 Short, 1 Long	1 - for 2-4 Pole Inrunner Motors *
••••• __	5 Short, 2 Long	7 - For 6-8 Pole Motors
••••• ___	5 Short, 3 Long	15 - For 10-14 Pole Outrunner Motors
••••• ____	5 Short, 4 Long	30 - for 10-14 Pole High RPM Outrunner Motors

Use the 15 degree setting for Skyshark Lightning motors

Pulse Menu (Pulse Width Modulation PWM)		
Tone sequence	Tone	Description
•••••• _	6 Short, 1 Long	For low RPM and low pole count motors *
•••••• __	6 Short, 2 Long	For most outrunner motors

Manufacturer's Warranty

This product is warranted against manufacturer's defects in materials and workmanship for a period of 2 years from the date of purchase. Products covered by this warranty will be replaced at no charge upon inspection of the defective item. Not covered under this warranty are defects resulting from misuse, abuse, modification, alteration or any type of damage. See our website for complete warranty details.