



BUZZARD MODELS
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BM 6A Brushless Speed Controller w/BEC

Amps: 6A continuous 8A burst

Cells: 2-4S Lipo Li-ion 5-12 Ni-MH NiCd

BEC Voltage: 5.0V

BEC Current: 0.5A In our experience this is plenty for up to 3 small (2-6g) digital servos.

BEC type: LBEC (linear BEC)

Size: 22x12x5.0mm

Weight: 6.4g (with wires and JST plug) 1.8grams without wires or heat-shrink.

A1. Normal startup procedures (first time plugging a battery in, receiver is not bound to the tx yet)

1. Start the process by removing all propellers and supporting the aircraft or motor.
2. Make all servo and ESC connections to the receiver.
3. Install bind plug on receiver, plug a 2S Lipo battery pack into the red JST power plug on ESC, the receiver should be in bind mode now, follow binding procedures for your transmitter.
4. Once the radio is bound, disconnect the battery.
5. Proceed to A2 throttle range calibration

A2. Throttle range calibration procedures (whenever you change a transmitter, a throttle range calibration is recommended.)

1. Start the process by removing all propellers and supporting the aircraft or motor.
2. Switch on the transmitter and center throttle trims and or subtrims.
3. Move the throttle stick to the top position.
4. Connect a battery pack to the ESC. Two "beep" sounds should be emitted, meaning the top point of throttle range has been confirmed and saved. Move the throttle stick to the bottom position within 2s, you will hear one additional short beep followed quickly by the normal startup sounds. The ESC is now ready to go.

Troubleshooting

- If the throttle stick is not fully at the bottom or top position when the ESC is powered up, or if the throttle range needs to be calibrated, the ESC will make rapid (approx 4 per sec) "beeping" tones.
- If the ESC does not recognize any throttle signal from the receiver when the ESC is powered up, the ESC will make slow (approx 1 per sec) "beeping" tones.
- Some transmitters such as Futaba need the throttle channel reversed, see transmitter instructions.

C. Programmable parameters

B1. Brake Setting: There are two options: OFF / ON. The default is OFF.

B2. Battery Type: Li-ion/Lipo or NiMH/NiCd, the default is Li-ion/Lipo

B4. Rotation Direction: There are 2 options: Normal / Reverse. The default is Normal.

B5. Soft Start Mode: two options: Normal / Soft, the default is soft.

B6. Cutoff Mode: There are two options: Soft-Cut and Cut-Off. The default is Soft-Cut. Soft-Cut option: Gradually reduces power to 31% of the current power when the voltage is lower than the programmed low-voltage protection setting (B3). Cut-Off Option: immediate motor shutdown when low-voltage occurs. When in low-voltage protection mode, pushing the throttle stick to the bottom and then to the top, the motor will be restarted.

B7. Timing Mode: There are three options: Automatic, Low: 7°, and High: 30°. The default is Automatic.. Low advance timing is recommended for high inductance and low KV motors. High advance timing is recommended for low inductance and high KV outrunner motors. For some high KV motors, if it shakes while rotating at high rpm, the High timing mode is recommended.

B8. Heli Governor Mode: Two options: OFF / ON, the default is OFF.

B9. Factory Reset: Resets all parameters to factory defaults.

D. Programming via Transmitter

Step 1: Entering programming mode: switch the transmitter on, push the throttle stick to the top position, power up the ESC, wait 2 seconds, you will hear two "beep" sounds which denotes that the max. throttle has been confirmed, keep holding the throttle stick at the top position until you hear three sets of two short beeps, meaning that you have entered the transmitter programming mode. The ESC will start "counting out" the program parameters.

Step 2: Select program parameters: You would hear 7 different indicating sounds which correspond to 7 different parameters. Pulling the throttle stick to the bottom position (full off throttle) within 2 seconds after hearing the correspondent sound will bring you to the correspondent parameter setting status. The indicating sounds will repeat in turn as follows.

Tones	Settings	1 short tone (beep)	2 short tones (beep-beep)	3 short tones (beep-beep-beep)
1 short (beep)	Brake Setting	OFF	ON	
2 short (beep-beep)	Battery Type	Li-ion/Lipo	NiMH/NiCd	
3 short (beep-beep-beep)	Cutoff Threshold	2.8V	3.0V	3.2V
4 short (beep-beep-beep-beep)	Rotation Direction	Normal	Reverse	
1 long (beep----	Soft Start Mode	Normal	Soft	
1 long & 1 short (beep----beep----	Cutoff Mode	Soft-Cut	Cut-Off	
1 long & 2 short (beep----beep-----beep-)	Timing Mode	Automatic	7°	30°
2 long (beep----beep----	Heli Governor Mode	OFF	ON	
2 long & 1 short (beep----beep-----beep-)	Factory Reset	Reset		*shaded cells indicate default

Step 3: Selecting program values: After pulling the throttle stick to the bottom immediately after the desired corresponding parameter setting status, continue holding the throttle stick at the bottom position. The ESC will count out the options in the same manner that it counts out the program selection parameters. After you hear the number corresponding to the desired parameter, push the throttle stick to the top position within 2 seconds, you should then hear a tune "♪3 2 1 ♪3 2 1", which means the correspondent value has been changed and saved. Hold the stick in the top position, return to the second step and continue programming.

Step 4: You can exit the programming mode at any time by cutting power to the ESC. You can also exit the program by pulling the throttle stick to the bottom position within 2 seconds after saving parameters.