

**01 Features**

- Special care program for multicopter controllers greatly improves throttle response.
- All settings except the timing are preset, making the usage really simple, highly intelligent and adaptive.
- The twisted-pair design of the throttle signal cable effectively reduces the crosstalk produced in signal transmission and makes flight more stable.
- Compatible with various flight-contollers and supports a signal frequency of up to 621Hz. (Notes: all throttle signals over 500Hz are non-standard signals.)

**02 Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>Con. Current</th>
<th>Peak Current (10s)</th>
<th>BEC</th>
<th>Lipo</th>
<th>Programmable Item</th>
<th>Weight</th>
<th>Size</th>
<th>Applications (For reference)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XRotor 8A</td>
<td>8A</td>
<td>12A</td>
<td>No</td>
<td>2-5</td>
<td>Timing (High/Intermediate)</td>
<td>7g</td>
<td>44.2x12.9x9.2 mm</td>
<td>200/250 Class (Multi-rotor)</td>
</tr>
<tr>
<td>XRotor 10A</td>
<td>10A</td>
<td>15A</td>
<td>No</td>
<td>2-3.5</td>
<td>Timing (High/Intermediate)</td>
<td>6.5g</td>
<td>36.8x15.6x8 mm</td>
<td>380 Class (Multi-rotor)</td>
</tr>
<tr>
<td>XRotor 20A</td>
<td>20A</td>
<td>30A</td>
<td>No</td>
<td>3-4.5</td>
<td>Timing (High/Intermediate)</td>
<td>14g</td>
<td>52.4x21.5x7.5 mm</td>
<td>330/450 Class (Multi-rotor)</td>
</tr>
<tr>
<td>XRotor 40A</td>
<td>40A</td>
<td>60A</td>
<td>No</td>
<td>2-6.5</td>
<td>Timing (High/Intermediate)</td>
<td>25g</td>
<td>68x35x7.7 mm</td>
<td>550/650 Class (Multi-rotor)</td>
</tr>
</tbody>
</table>

**03 User Guide**

**Throttle Calibration & ESC Programming**

- Users need to calibrate the throttle range when they start to use a new XRotor brushless ESC or another transmitter.
- Users can change the Timing setting when some abnormality occurs in the ESC during the dc-type motor or need the motor to reach a higher RPM. (Note: Intermediate Timing is the default setting.)

**1 Motor Wiring**

- Electronic Speed Controller
- Battery
- Receiver
- Motor

**2 Throttle Range Calibration**

- Turn on the transmitter, move the throttle stick to the top position.
- Connect the receiver to the battery, ensure the transmitter and receiver are well bound, and then turn on the ESC.
- After the motor emits two short “Beep-beep” and the throttle stick is moved to the bottom position 3 seconds after you hear the corresponding beeps, then the programming of that item is complete.

**3 ESC Programming**

- Connect the receiver to the battery and ensure the transmitter and receiver are well bound, and then power on the ESC.
- The motor will keep different tones circularly.

Generally speaking, intermediate timing is applicable to most motors and it brings higher efficiency but less heat to the motors and speed controllers. High timing can increase the RPM of the motor, but it also increases the motor temperature. Please perform a test flight on the ground and ensure everything is functioning properly first, then fly your aircraft into the sky.

**4 Normal Start-up Process and Protections**

- Turn on the transmitter and move the throttle stick to the bottom position.
- The motor will emit a long “Beep” — 1 second after the system is connected to the battery indicating the ESC is armed and the multi-rotor is ready to go.

**Start-up Protection:** The ESC will shut down the motor if it fails to start the motor normally within 2 seconds by increasing the throttle value. In this case, you need to move the transmitter throttle stick back to the bottom position and restart the motor. (Possible causes of the problem: poor connection/disconnector between the ESC and motor wires, propellers are blocked, etc.)

**Over-load Protection:** The ESC will cut off the power output when the load suddenly increases to a very high value. Normal operation will not resume until the throttle stick is moved back to the neutral position. The ESC will automatically attempt to restart when the motor and the ESC are out of sync.

**Throttle Signal Loss Protection:** When the ESC detects loss of signal for over 0.25 second, it will cut off the output immediately to avoid an even greater loss which may be caused by the continuous high-speed rotation of propellers or rotor blades. The ESC will resume the corresponding output after normal signals are received.

**05 Trouble shooting**

<table>
<thead>
<tr>
<th>Trouble</th>
<th>Warning Tone</th>
<th>Possible Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>The ESC was unable to start the motor</td>
<td>&quot;Beep, beep, beep...&quot; (The motor keeps rapidly)</td>
<td>The throttle signal is not at the bottom position.</td>
<td>Move the throttle stick to the bottom position or recalibrate the throttle range.</td>
</tr>
<tr>
<td>The ESC was unable to start the motor</td>
<td>&quot;Beep, beep, beep...&quot;</td>
<td>No output signal from the throttle channel on the receiver.</td>
<td>Check if the transmitter and receiver are well bound. Check if the throttle wire has been properly plugged into the throttle channel on the receiver.</td>
</tr>
<tr>
<td>The ESC was unable to start the motor</td>
<td>&quot;BB, BBB, BBBB&quot; (These tones are played circularly)</td>
<td>The motor is not out of sync.</td>
<td>Refer to the transmitter instructions and correctly set the “Normal / Reverse” direction of the throttle channel.</td>
</tr>
</tbody>
</table>

Thank you for purchasing this HOBBYWING product! Brushless power systems can be very dangerous. Any improper use can cause personal injury and damage to the product and related devices. We strongly recommend reading through this user manual before use. Because we have no control over the use, installation, or maintenance of this product, no liability may be assumed for any damage or losses resulting from the use of the product. We do not assume responsibility for any losses caused by unauthorized modifications to our product. We, HOBBYWING, are only responsible for our product cost and nothing else as a result of using our product.