Congratulations for purchasing HOBBYWING electronic speed controller (ESC). The brushless power system for RC model can be very powerful and dangerous, so please read this manual carefully. Since we have no control over the installation, application, use or maintenance of this product, in no case shall we be liable for any damages, losses or costs. Besides, we have the rights to change the design, appearance, functions and operational requirements without any notifications.

Features
- Water-proof and dust-proof for all-weather races.
- Note: please uninstall the cooling fan before using this ESC in water. Clean and dry it soon after the use for avoiding the connectors get rusty.
- External programming port, easy to connect to the Program Card when setting the ESC.
- Proportional brake with 4 steps of brake force adjustment and 8 steps of drag brake force adjustment.
- 9 steps of acceleration (punch) adjustment from “soft” to “very aggressive” to fit for different kinds of models, tires and tracks.
- Multiple protections: Low voltage cut-off protection / Over-heat protection / Throttle signal loss protection / Motor lock-up protection.
- One-button (the “SET” button) on the ESC, and easy to reset all parameters to the factory default settings.
- Compatible with the optional device — the portable Digital LED Program Card, especially convenient for outdoor use.

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Continuous Current/Peak Current/Resistance</th>
<th>Motor Type Supported</th>
<th>Car Applicable</th>
<th>Motor Limit</th>
<th>Battery</th>
<th>BEC Output</th>
<th>Dimensions/Weight</th>
<th>External Program Port</th>
<th>Working Voltage of Fan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30A/180A/0.002Q</td>
<td>Sensorless Brushless Motor (compatible with sensored motor but not in sensored operating mode)</td>
<td>1:11 to 1:16</td>
<td>For 2S Lipo or 6 cells NiMH:</td>
<td>4-9 Cells NiMH, 2-3S Lipo</td>
<td>61/8V/10W/100W/38H/38L/90g</td>
<td>Not Available</td>
<td>Available</td>
<td>No cooling fan</td>
</tr>
<tr>
<td></td>
<td>60A/360A/0.001Q</td>
<td></td>
<td></td>
<td>For 2S Lipo or 6 cells NiMH:</td>
<td>4-9 Cells NiMH, 2-3S Lipo</td>
<td>59.5(L)×48(W)×42(H)/178g</td>
<td></td>
<td></td>
<td>From battery directly without regulating</td>
</tr>
<tr>
<td></td>
<td>150A/950A/0.0005Q</td>
<td></td>
<td></td>
<td>For 4S Lipo or 12 cells NiMH:</td>
<td>9-18 Cells NiMH, 3-6S Lipo</td>
<td></td>
<td></td>
<td></td>
<td>The stock fan can work with 2S and 3S Lipo</td>
</tr>
<tr>
<td></td>
<td>4S Lipo or 12 cells NiMH:</td>
<td></td>
<td></td>
<td>For 4S Lipo or 12 cells NiMH:</td>
<td>4-9 Cells NiMH, 2-3S Lipo</td>
<td>6V/2A Linear Mode</td>
<td></td>
<td></td>
<td>From BEC (6V)</td>
</tr>
<tr>
<td></td>
<td>For 4S Lipo or 12 cells NiMH:</td>
<td></td>
<td></td>
<td>For 4S Lipo or 12 cells NiMH:</td>
<td>9-18 Cells NiMH, 3-6S Lipo</td>
<td>6V/3A (Switch Mode)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For 3S Lipo or 9 cells NiMH:</td>
<td></td>
<td></td>
<td>For 3S Lipo or 9 cells NiMH:</td>
<td>4-9 Cells NiMH, 2-3S Lipo</td>
<td>6V/1A Linear Mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For 3S Lipo or 9 cells NiMH:</td>
<td></td>
<td></td>
<td>For 3S Lipo or 9 cells NiMH:</td>
<td>9-18 Cells NiMH, 3-6S Lipo</td>
<td>6V/2A Linear Mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:10 On-road/Off-road/Buggy/Monster</td>
<td></td>
<td></td>
<td>For 4S Lipo or 12 cells NiMH:</td>
<td>Not Available</td>
<td>48.5L×38W×38H/90g</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:18 On-road/Off-road/Buggy/Monster</td>
<td></td>
<td></td>
<td>For 3S Lipo or 9 cells NiMH:</td>
<td>Not Available</td>
<td>59.5(L)×48(W)×42(H)/178g</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Begin to Use a New Brushless ESC

According to the following steps.

Features
- Working voltage of Fan
- No cooling fan
- From battery directly without regulating
- The stock fan can work with 2S and 3S Lipo
- From BEC (6V)

Step 3: Check the LED Status in Normal Running

1) In general, if the throttle stick is in the neutral range, neither the Red LED nor the Green LED lights.
2) The Red LED solidly lights when the car is running forward or backward and it will blink quickly when the car is braking.
3) The Green LED solidly lights when the throttle stick is located at the top point of the forward zone (that means full throttle is applied).

Troubleshooting

1) Turn on the transmitter, and set parameters (of the throttle channel) like “DIR, EPA, ATL” to 100% (if there is no LCD display on the transmitter, please adjust the corresponding knob to its limit). Set the throttle trim to 0 (if there is no display, then adjust the knob to the neutral position). For FUTABA and similar transmitters, set the throttle direction to “REV”, while the throttle direction of others to “NOR”. Please disable the built-in ABS brake function in your transmitter.

2) Hold the SET button while sliding the switch to the ON position, and then release the “SET” button the moment when the Red LED starts to blink. (If you don’t release the “SET” button in 3 seconds, the ESC will enter the program mode, in such a case, please switch off the ESC and re-initialize the throttle range again from Step 1. Refer to the picture on the left side.

3) Set the 3 points according to pictures on the left side.
   - The neutral point
   - The end point of the forward direction
   - The end point of the backward/brake direction

When the process of calibration is finished, the motor can be started after 3 seconds.
<table>
<thead>
<tr>
<th>Programmable Items</th>
<th>Option 1</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
<th>Option 5</th>
<th>Option 6</th>
<th>Option 7</th>
<th>Option 8</th>
<th>Option 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Running Mode</td>
<td>Note 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Drag Brake Force</td>
<td>0%</td>
<td>5%</td>
<td>10%</td>
<td>20%</td>
<td>40%</td>
<td>60%</td>
<td>80%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>3. Low Voltage Cutoff</td>
<td>2S LiPo</td>
<td>3S LiPo</td>
<td>4S LiPo</td>
<td>5S LiPo</td>
<td>6S LiPo</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Start Mode (Punch) Level 1</td>
<td>Level 2</td>
<td>Level 2</td>
<td>Level 4</td>
<td>Level 6</td>
<td>Level 7</td>
<td>Level 8</td>
<td>Level 9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Max. Brake Force</td>
<td>25%</td>
<td>50%</td>
<td>75%</td>
<td>100%</td>
<td>Disable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Max. Reverse Force</td>
<td>25%</td>
<td>50%</td>
<td>75%</td>
<td>100%</td>
<td>Disable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Initial Brake Force</td>
<td>drag brake force</td>
<td>0%</td>
<td>20%</td>
<td>40%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Throttle Range  6% (Narrow)</td>
<td>9% (Normal)</td>
<td>12% (Wide)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Timing</td>
<td>3 deg</td>
<td>3.75 deg</td>
<td>7.50 deg</td>
<td>11.25 deg</td>
<td>15.00 deg</td>
<td>18.75 deg</td>
<td>22.50 deg</td>
<td>26.25 deg</td>
<td></td>
</tr>
<tr>
<td>10. Overheat Protection</td>
<td>Double</td>
<td>Note 3</td>
<td>Auto-identification</td>
<td>2S LiPo</td>
<td>3S LiPo</td>
<td>4S LiPo</td>
<td>5S LiPo</td>
<td>6S LiPo</td>
<td></td>
</tr>
<tr>
<td>11. Motor Rotation</td>
<td>CCW</td>
<td>CW</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Cell Count</td>
<td>Note 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Explanation of Each Programmable Item**

1. **Running Mode:** With “Forward with Brake” mode, the car can go forward and brake, but cannot go backward, this mode is suitable for competition. “Forward/Reverse with Brake” mode provides backward function, which is suitable for daily training.

2. **Drag Brake Force:** The brake force is provided when the throttle is located at the initial position of the backward zone.

3. **Low Voltage Cutoff:** The voltage threshold is set to 2.6V/Cell, so it will be considered as a 2 cells discharged LiPo battery pack.

4. **Start Mode (Punch):** Level 1 has very soft start acceleration, while Level 9 has very quick start acceleration. From Level 1 to Level 9, the start force is increasing. If you choose “Level 7” to “Level 9”, you should use good quality battery with powerful discharge ability, otherwise you cannot get the burst start effect as you want. If the motor cannot run smoothly (the motor is cogging), sometimes it is caused by the weak discharge ability, please use a better battery or increase the gear ratio.

5. **Maximum Brake Force:** The ESC provides proportional brake function. The brake force is related to the position of the throttle stick. Maximum brake force refers to the force when the throttle stick is located at the top point of the backward zone. A very large brake force can morter the brake time, but it may damage the gears.

6. **Maximum Reverse Force:** Sets how much power will be applied in the reverse direction.

7. **Initial Brake Force:** It is also called “minimum brake force”, which refers to the force when the throttle stick is located at the initial position of the backward zone. The default value is equal to the drag brake force, so the brake action can be very smoothly.

8. **Throttle Neutral Range:** Please refer to the picture at the lower left corner to adjust the neutral range.

9. **Timing:** This function can be used to limit the output power of the motor, the bigger the timing, the faster the motor runs or the larger output power of the motor. As the Boost Timing technology has been introduced into this ESC, so under the sensored mode, adjust the ESC timing can greatly increase the motor RPM. Therefore, please remember to enlarge the gear ratio of the chassis and carefully check temperatures of the motor and the ESC after increasing the timing.

10. **Over-Heat Protection:** If this function is activated, the output power will be cut off when the temperature is higher than the factory-set value for 5 seconds. When the protection happens, the Green LED will flash in such a way as “Beep— beep— beep— beep— beep— beep—”, and move the throttle stick to forward zone. If this programmable item is set to “CCW”, the shaft runs counter-clockwise; if it is set to “CW”, the shaft runs clockwise.

11. **Motor Rotation:** The motor rotation can be changed in neutral zone (except in the throttle calibration or parameters program process), and hold and press the “SET” key for over 3 seconds, the red LED and green LED will flash simultaneously, which means each programmable item has been reset to its default value.

12. **Auto-Identification:** This function can be used to fine-tune the output power of the motor, the bigger the timing, the faster the motor runs or the larger output power of the motor. As the Boost Timing technology has been introduced into this ESC, so under the sensored mode, adjust the ESC timing can greatly increase the motor RPM. Therefore, please remember to enlarge the gear ratio of the chassis and carefully check temperatures of the motor and the ESC after increasing the timing.

**Program the ESC**

1. **Program the ESC with the SET Button**

   - Press the SET key to choose the programmable value, the RED LED flashes for several times, the times presents the serial number of the value you are choosing.

2. **Program the ESC with the SET Button**

   - Enter the corresponding programmable item, the RED LED flashes for several times, the times presents the current value of this item.

   - Hold the SET key, Switch on the ESC

   - Press the SET key to choose the programmable value, the RED LED flashes for several times, the times presents the serial number of the value you are choosing.

   - Enter the NO. item

   - Press the SET key to choose the value, the flash times of RED LED means the serial number of the value (1 time means the 1st value, 2 times means the 2nd value…).

**Note:**

- In the programming process, the motor will emit “Beep” tone while the LED is flashing.
- If the “N” is bigger than the number “5”, we use a long time flash and long “Beep—” tone to represent “5”, so it is easy to identify the items of the big number.

For example, if the LED flashes as the following:

- “A long time flash + 1 short time flash” (Motor sounds “B—B”) — No. 6 item
- “A long time flash + 2 short time flash” (Motor sounds “B—B—B”) — Timing

- “A long time flash + 3 short time flash” (Motor sounds “B—B—B—B”) — No. 8 item, and so on.

2. **Set the ESC by the Program Card**

   - The Program Card is optional equipment which needs to be purchased separately. It has 3 digital LEDs to display the programmable items’ number and the option number (Please refer to the user manual of the program card for detail info).

   - Note 6: The QUICRUN-WP10BL60 and QUICRUN-WP8BL150 can only be connected to the program card via the external programming port.