Thanks for purchasing our Electronic Speed Controller (ESC). High power system for RC model can be very dangerous, so we strongly suggest you read this manual carefully. In that we have no control over the correct use, installation, application, or maintenance of our products, we shall not be responsible for any damages, losses or costs resulting from the use of the product. Any claims arising from the operation, failure or malfunctioning etc. will be denied. We assume no liability for personal injury, property damage or consequential damages resulting from our product or our workmanship. As far as is legally permitted, the obligation to compensation is limited to the invoice amount of the affected product.

Features:
- Extreme low output resistance, super current endurance.
- Multiple protection features: Low voltage cut-off protection / over-heat protection / throttle signal loss protection.
- 3 start modes: Normal / Soft / Super-Soft, compatible with fixed-wing aircraft and helicopter.
- Throttle range can be configured to be compatible with all transmitters.
- Smooth, linear and precise throttle response.
- Separate voltage regulator IC for microprocessor (except FLYFUN-6A and FLYFUN-10A) with good anti-jamming capability.
- Maximum speed: 21000 RPM (2 poles motor), 7000 RPM (6 poles motor), 35000 RPM (12 poles motor).

The pocket-sized Program Card can be purchased separately for easily programming the ESC at flying field.

With a program card, user can activate the music playing function of the ESC, and totally there are 15 rhythms can be selected.

Specifications:

<table>
<thead>
<tr>
<th>BeC</th>
<th>Output Power</th>
<th>Voltage Regulator IC for Microprocessor</th>
<th>for Microprocessor</th>
<th>Programmable</th>
<th>Weight</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>2S</td>
<td>5V/2.5A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3S</td>
<td>5V/2.5A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4S</td>
<td>5V/2.5A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5S</td>
<td>5V/2.5A</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Note:**
- **BeC** means the “Battery Elimination Circuit”. It is a DC-DC voltage regulator to supply the receiver and other equipments from the main battery pack. With the build-in BeC, the receiver needn’t be supplied with an additional battery pack.
- **IMPORTANT!** The ESC named “Switch Mode (DC-DC)" or "Switch Mode (DC-DC)/OPTO” do not have a built-in battery pack and an individual battery pack should be used to program the receiver. And an individual battery pack is needed to power the program card when programming such ESCs, please read the user manual of the Program Card for detail information.

Wiring Diagram:

Programmable Items:

1. **Start Mode**
   - Enabled / Disabled, default is Disabled

2. **Battery Type**
   - Li-ion/LiPo / NiMH / Nicd, default is Li-ion/LiPo

3. **Low Voltage Protection Threshold(Cut-Off Threshold)**
   - Soft Cut-Off (Gradually reduce the output power) or Cut-Off (Immediately stop the output power). Default is Soft-Cut-Off.

4. **Low Voltage Protection Threshold(Cut-Off Threshold)**
   - Low / Medium / High, default is Medium

   **Note:**
   - For lithium battery, the cells quantity of a battery pack is calculated automatically. Low / medium / high cutoff voltage for each cell is: 2.85V / 3.15V / 3.3V. For example: If 3 cells lithium pack, when “Medium” cutoff threshold is set, the cut-off voltage of this battery pack 3.15V / 3.3V.
   - For nickel batteries, low / medium / high cutoff voltages are 0% / 50% / 65% of the startup voltage (it means the initial voltage of a charged battery pack), and 0% is for the low voltage cut-off function is disabled. For example: For a 10 cells NiMH battery, fully charged voltage is 1.44V~1.44V. When “Medium” cut-off threshold is set, the cut-off voltage will be 1.44V / 1.44V.

Trouble Shooting:

<table>
<thead>
<tr>
<th>Trouble</th>
<th>Possible Reason</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>After power on, motor does not work, no sound is emitted</td>
<td>The connection between battery pack and ESC is not correct</td>
<td>Check the power connection. Replace the connectors.</td>
</tr>
<tr>
<td>Input voltage is abnormal, too high or too low.</td>
<td>Check the voltage of battery pack.</td>
<td></td>
</tr>
<tr>
<td>Throttle signal is irregular</td>
<td>Check the receiver and transmitter.</td>
<td></td>
</tr>
<tr>
<td>Check the cable of throttle channel.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
After power on, motor does not work, such an alert tone emits: “beep—beep—beep—”. (Every “beep” has a time interval of about 0.25 second)

After power on, motor does not work, a special tone “ JButton” emits after 2 beep tone “beep-beep-”

The motor runs in the opposite direction. The motor runs in the opposite direction

The motor stop running while in working state

The throttle stick is not in the bottom (lowest) position

Direction of the throttle channel is reversed, so the ESC has entered the program mode

The connection between ESC and the motor need to be changed.

Throttle signal is lost

ESC has entered Low Voltage

Land RC model as soon as possible, and then replace the battery pack

Move throttle stick to bottom and then switch on transmitter.

Connect battery pack to ESC, special tone like “ JButton” means power supply is OK

Several “beep” tones emits, which means the quantity of the lithium battery cells

When the self-test is finished, a long "beep—beep—" tone emits

Move throttle stick upwards to go flying

Switch on transmitter, move throttle stick to top

Connect battery pack to ESC, and wait for about 2 seconds

“Beep-Beep-” tone emits, which means throttle range highest point has been correctly confirmed

Move throttle stick to the bottom, several “beep” tones presents the quantity of battery cells

A long “Beep-” tone emits, means throttle range lowest point has been correctly confirmed

Normal startup procedure

Throttle range setting (Throttle range should be reset whenever a new transmitter is being used)

Program the ESC with your transmitter (4 Steps)

1. Enter program mode
2. Select programmable item
3. Set item value (Programmable option)
4. Exit program mode

1. Enter program mode
   1) Switch on transmitter, move throttle stick to top, connect the battery pack to ESC
   2) Wait for 2 seconds, the motor should emit special tone like “beep-beep-”
   3) Wait for another 5 seconds, special tone like “ JButton” emits, which means program mode is entered

2. Select programmable item
   After entering program mode, you will hear 8 tones in a loop with the following sequence. If you move the throttle stick to bottom within 3 seconds after one kind of tones, this item will be selected.

   1. “beep” brake (1 short beep)
   2. “beep-beep-” battery type (2 short beeps)
   3. “beep-beep-beep-” cutoff mode (3 short beeps)
   5. “beep-” startup mode (1 long beep)
   6. “beep-beep-” timing (1 long 1 short)
   7. “beep-beep-beep-” set all to default (1 long 2 short)
   8. “beep-beep-beep-” exit (2 long beeps)

   Note: 1 long “beep-” = 5 short “beep-”

3. Set item value (Programmable option)
   You will hear several tones in loop. Set the value matching to a tone by moving throttle stick to the top position when you hear the tone, then a special tone “ JButton” emits, means the value is set and saved. (Keeping the throttle stick at the top position, you will go back to step 2 and you can select other items; Moving the stick to the bottom position within 2 seconds will exit the program mode directly)

4. Exit program mode
   There are 2 ways to exit program mode:
   1. In step 3, after special tone “ JButton”, please move the throttle stick to the bottom position within 2 seconds.
   2. In step 2, after hearing “beep—beep—” tone (that means the item #8), move the throttle stick to the bottom within 3 seconds.

<table>
<thead>
<tr>
<th>Items</th>
<th>“beep”</th>
<th>“beep-beep-”</th>
<th>“beep-beep-beep-”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tones</td>
<td>1 short tone</td>
<td>2 short tones</td>
<td>3 short tones</td>
</tr>
<tr>
<td>Brake</td>
<td>Off</td>
<td>On</td>
<td></td>
</tr>
<tr>
<td>Battery type</td>
<td>Li-ion / LiPo</td>
<td>NiMH / NiCd</td>
<td></td>
</tr>
<tr>
<td>Cutoff mode</td>
<td>Soft-Cut</td>
<td>Cut-Off</td>
<td></td>
</tr>
<tr>
<td>Cutoff threshold</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
<tr>
<td>Start mode</td>
<td>Normal</td>
<td>Soft</td>
<td>Super soft</td>
</tr>
<tr>
<td>Timing</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
</tr>
</tbody>
</table>