

# Manual of Speed Controller for Brushed Motor

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, no liability shall be assumed nor accepted for any damages, losses or costs resulting from the use of the product. Any claims arising from the operating, 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:

- ◆ The ESC is controlled by advanced microprocessor.
- ◆ Compatible with lithium battery and nickel battery.
- ◆ Multiple protection features: Low-voltage cut-off protection / over-heat protection / throttle signal loss protection.
- ◆ Smooth, linear and precise throttle response.
- ◆ The brake function can be enabled or disabled by a jumper.

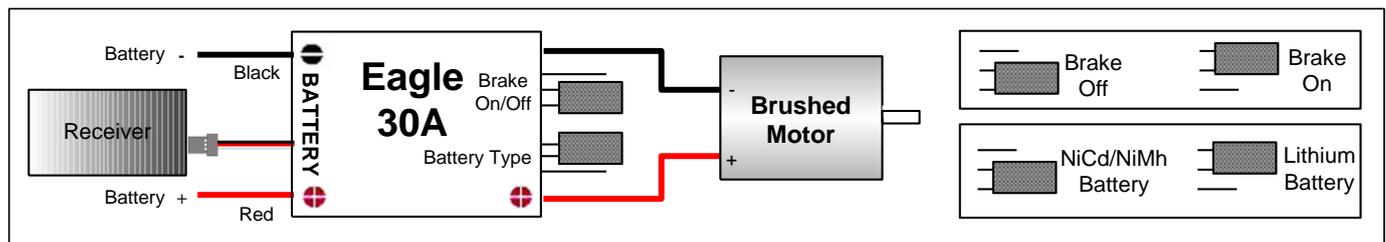
## Specifications:

Eagle Series									
Class	Model	Cont. Current	Burst Current (>10s)	BEC Mode	BEC Output	Battery Cell		Weight	Size
						Li-poly	NiMH		L*W*H
20A	Eagle-20A	20A	25A	Linear	5V/1A	2-3	4-10	17g	45*21*8
30A	Eagle-30A	30A	40A	Linear	5V/1A	2-3	4-10	21g	45*21*8
40A	Eagle-40A	40A	50A	Linear	5V/1A	2-4	4-12		
	Eagle-40A-E	40A	50A	Linear	5V/2A	2-4	4-12		
50A	Eagle-50	50A	60A	Linear	5V/1A	2-4	4-12		
	Eagle-50-E	50A	60A	Linear	5V/2A	2-4	4-12		

BEC Output Capability	Linear Mode BEC(5V/2A)		
	2S Li-Poly	3S Li-Poly	4S Li-Poly
Standard micro servos(Max.)	5	4	2

## Wiring Diagram:



## Features Explanation:

1. **Brake Settings:** The brake function can be enabled or disabled by a jumper.
2. **Battery Type:** The battery type can be chosen by a jumper.
3. **Low Voltage Protection Threshold:** For lithium batteries, the threshold for each cell is 3.0V. When the battery's voltage is less than the threshold, the ESC will gradually reduce the output power to prevent the battery from over discharging.
4. **PWM Frequency:** 2KHz.
5. **Over-heat protection:** When the temperature of the ESC is over 110 Celsius degree, the ESC will gradually reduce the output power.
6. **Throttle signal loss protection:** The ESC will gradually reduce the output power if the throttle signal is lost for 1 second, further loss for 2 seconds will cause its output to be completely cut-off.

## Begin To Use Your New ESC:

Please check all the connections before running your model aircraft, and please start the ESC in the following sequence:

1. Correctly set the 2 jumpers according to the aircraft and battery you are using.
2. Move the throttle stick to the lowest position, move the throttle trim to neutral position or lowest position, and then switch on the transmitter.
3. Connect the battery pack to the ESC with the correct polarity.
4. The ESC begins the self-test process, if a long "beep----" tone is emitted, that means the self-test is OK, the aircraft is ready to go flying.
5. Speed up smoothly and check the running direction of the motor, if it runs in the opposite direction, please swap the output wire connections with the motor.

## Alert Tone

1. Input voltage is abnormal: The ESC begins to check the voltage when the battery pack is connected, if the voltage is not in the acceptable range, such an alert tone will be emitted: "beep-beep----, beep-beep----,beep-beep----" (A short "beep-" + a long "beep--")
2. Throttle signal is lost: When the ESC can't detect the normal throttle signal, such an alert tone will be emitted: "beep--, beep--, beep--". (Every "beep--" has a time interval of about 1 second).
3. Throttle stick is not at the lowest position: When the ESC is powered up, if the throttle stick is not at the lowest position, such an alert tone will be emitted: "beep-, beep-, beep-". (Every "beep-" has a time interval of about 0.25 second).

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## Trouble Shooting

Trouble	Possible Reason	Action
After power on, the motor does not work, no sound is emitted	The connection between battery pack and ESC is not correct The connection between ESC and motor is not correct	Check all the connections. Replace the bad connector.
After power on, the motor does not work, such an alert tone is emitted: "beep-beep----, beep-beep----, beep-beep----"	Input voltage is too high or too low.	Check the voltage of battery pack Check the battery type setting jumper
After power on, the motor does not work, such an alert tone is emitted: "beep--, beep--, beep--". (Every "beep--" has a time interval of about 1 second).	Throttle signal is irregular	Check the receiver and transmitter Check the cable of throttle channel
After power on, the motor does not work, such a alert tone is emitted: "beep-, beep-, beep-". (Every "beep-" has a time interval of about 0.25 second)	The throttle stick is not at the bottom( lowest) position	Move the throttle stick to the lowest position
The motor runs in the opposite direction	The connection between ESC and the motor need to be changed.	Swap the wire connections between ESC and motor
The motor speed is gradually reduced, and cannot be speeded up again	The ESC is over-heat and begin to protect itself ESC has entered Low Voltage Protection mode	Land RC model as soon as possible, cool the ESC before the next flight Land RC model as soon as possible, replace the battery pack with a full charged one
The motor stop running	Throttle signal is lost	Check the receiver and transmitter Check the cable of throttle channel
Random stop or restart or irregular working state	Some Connections are not reliable	Check all the connections: battery pack connection, throttle signal cable, motor connections, etc.
	There is strong Electro - Magnetic interference in flying field.	Reset the ESC to resume normal operation. If the function could not resume, you might need to move to another area to fly.