

Manual of Sensorless Brushless Motor Speed Controller

Features:

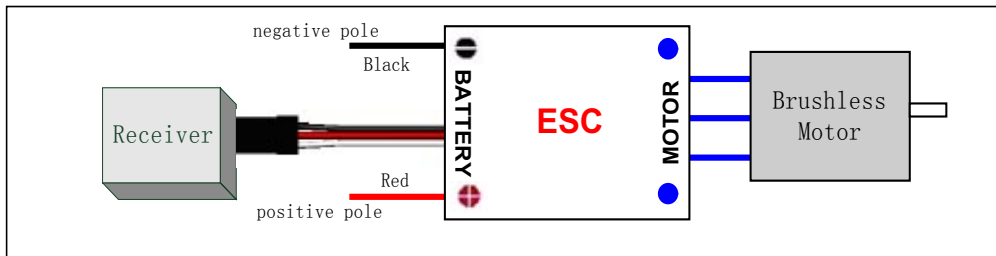
- Very easy to use, very suitable for fixed wing aircrafts.
- Smooth and accurate speed control, excellent throttle linearity.
- Full protection features: Low-voltage cutoff protection / over-heat protection / throttle signal lost protection
- Throttle range can be configured, fully compatible with all market available transmitters.
- Safe "Power On" arming program ensures motor will not accidentally turn on.
- Microprocessor uses separate voltage regulator IC, with good anti-jamming capability.
- Supported highest motor speed: 210000 RPM (2 poles), 70000 RPM (6 poles), 35000 RPM (12 poles).

Specification:

Class	Model	Continues Current	Burst Current (10seconds)	BEC Output	Battery Cell		Flight Model	Weight	Size L*W*H
					2-Apr	5-Dec			
20A	Thunder-20A	20A	24A	5V/2A	2-Apr	5-Dec	4 modes	19g	45*24*11
25A	Thunder-25A	25A	35A	5V/2A	2-Apr	5-Dec	4 modes	22g	45*24*11
30A	Thunder-30A	30A	40A	5V/2A	2-Apr	5-Dec	4 modes	25g	45*24*11
40A	Thunder-40A	40A	55A	5V/2A	2-Apr	5-Dec	4 modes	32g	55*28*12

BEC Output Capability	BEC(5V/2A)		
	2cells Lipo	3cells Lipo	4cells Lipo
Maximum number of servos can be driven	5	4	3

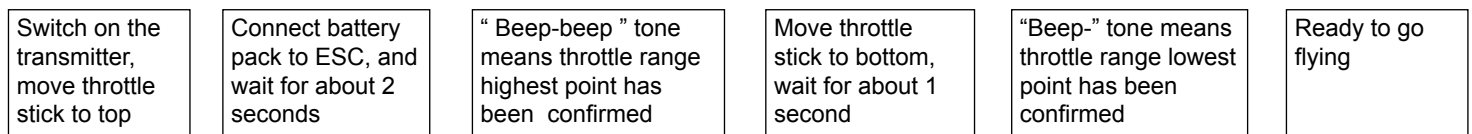
Wiring Diagram:



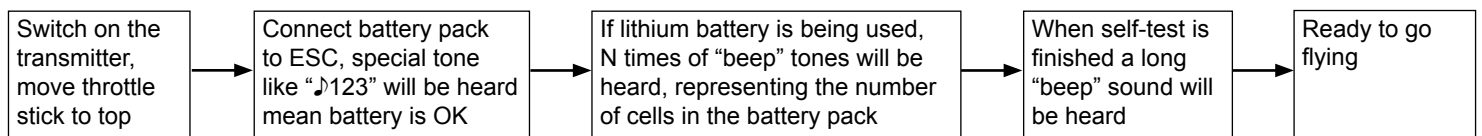
Flight Modes:

Flight mode	Configuration	Remark
Mode 1	Brake off, Lipo battery, Auto low-voltage cutoff	Low-voltage cutoff threshold: 3.0V × cells number
Mode 2	Brake on, Lipo battery, Auto low-voltage cutoff	
Mode 3	Brake off, NiMH/NiCd battery, Auto low-voltage cutoff	Low-voltage cutoff threshold: 50% of initial voltage of battery pack when power on
Mode 4	Brake on, NiMH/NiCd battery, Auto low-voltage cutoff	

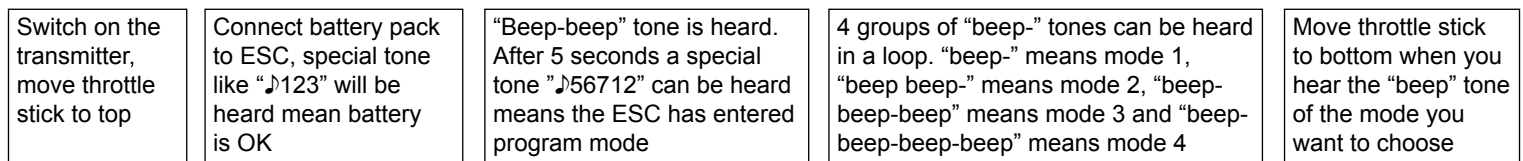
Throttle range setting: (Throttle range should be reset when a new transmitter is being used)



Normal startup :



Program the flight mode:



Alert Tone:

1. Input voltage abnormal alert tone: The ESC begins to check the voltage of battery pack when power on, if the voltage is not in acceptable range, such an alert tone will be emitted: "beep-beep-, beep-beep-,beep-beep-" (every beep-beep-" has a time interval about 1 second.)
2. Throttle signal abnormal alert tone: "beep-, beep-, beep-". (Every "beep-" has a time interval about 2 seconds)
3. Throttle stick not in bottom or throttle range is too narrow alert tone: When the throttle stick is not in bottom (lowest) position, a very rapid alert tone will be emitted: "beep-, beep-, beep-". (Every "beep-" has a time interval about 0.25 second.)