



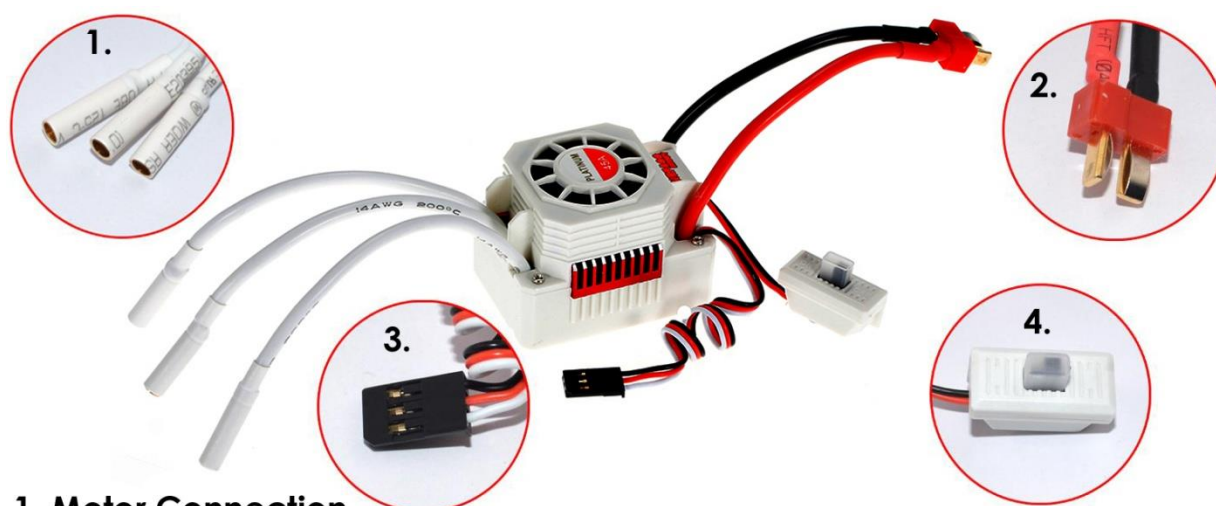
## SMD SENSORLESS BRUSHLESS SPEED CONTROLLER AND MOTOR COMBO USER MANUAL.

**\*\*\*Read the data sheet for 3S compatibility\*\*\***

This is Electronic Speed Controller and motor combo is designed for use in an RC car. Used incorrectly this system could cause damage or harm so please read this manual carefully. No liability shall be assumed nor accepted for any damages, losses or costs resulting from the miss use or poor installation of this product.

### Features.

1. Splash proof and dust-proof for all-weather (Note, the speed controller internal electronics are actually waterproof but the cooling fan can be damaged by excess water, no RC car chassis is waterproof and drive line and bearing damage is inevitable in water, it's unlikely the rest of your electronic components are waterproof so we strongly recommend that you don't use your model in water)
2. Specially designed for RC car with excellent start-up, acceleration and linearity features.
3. Compatible with sensorless brushless motor.
4. Multiple protection features: Low voltage cut-off protection for nimh battery / (with the optional LED programmer LIPO Low voltage can be selected) Over-heat protection / Throttle signal loss protection / Motor blocked protection.
5. Easily programmed and compatible with pocket-sized program card. (NOT INCLUDED)



### 1. Motor Connection

(if the motor moves in the wrong direction swap over any two *motor* wires).

2. Battery connection (always use the supplied connectors).

3. Receiver connection, please note the wire orientation when plugging into your rx.

4. On/Off Switch.

## Instructions Speed Controller

1. Connect BEC wires with the receiver (Number 3 in the diagram previous)
2. Connect motor wires with ESC (Number 1 in the diagram previous)
3. Turn on the transmitter (the hand held device that came with your car)
4. Connect battery pack with ESC then switch on the ESC. (Number 2 in previous Diagram)
5. When the connection of motor and battery is finished, the motor emits "Beep-Beep" tone.
6. When the throttle stick is in the neutral position, the motor re-emits "Beep-Beep" tone.
7. The ESC is now ready.

## Instructions Motor

1. Install motor in the car taking care to use motor screws that are not too long or internal winding damage could occur. We cannot give a recommended screw length due to the variable thickness of RC car motor mounting plate. As a rule of thumb a motor screw that when inserted into the motor plate without the motor should not protrude more than 5mm.
2. Install the pinion gear onto the motor. We recommend that the pinion size is reduced compared to the standard brushed motor included with the car. So if the car came with a 20t pinion we suggest trying an 18t as an example. We cannot suggest a pinion size as car drive trains and chassis weight vary so much. If in doubt install a small pinion and work your way up to larger pinion to avoid potential over heating problems.

## Trouble shooting

1. If after powering on, the motor does not work and no sound is emitted, please check the connections between battery pack and motor.
2. If after powering on the LED flashes, please check the voltage of the battery pack, which should be from 5V~13v (lithium battery should be above 6.2v (2S Battery) 9.3v (3S Battery)).
3. If the motor emits a "Beep-Beep" tone only, please check all the connections: BEC wires, transmitter and receiver, throttle signal wires, etc. please check the transmitter TH.TRIM and adjust it to the motor re-emits "Beep-Beep" tone
4. If the car can't be speed up, please check either voltage of the battery pack is too low or the temperature of ESC is too high. If the voltage of the battery pack is too low, please replace the battery pack. If the temperature of ESC is too high, please check all connections. If not, please push the button EPA on your remote control.
5. If the car stops suddenly while in working state, please check the motor's connections, and the roadblock.
6. If the car runs in the opposite direction, which the transmitter is available, please swap two wire connections between the ESC and the motor.

## Adjustments with the optional LED program card.\* (available separately)

**Plug the receiver lead "3" into the optional LED programmer and switch the speedo "ON".**



- 1 : Low Voltage Cut-Off: The function is mainly to prevent a lithium battery pack from over discharging. The Speed controller is delivered with a 3.1v cut off per cell for lithium batteries. This setting may mean that an early shut down is possible when using NIMH, Ni cad or other batteries. (Setting can be changed with the LED Program card which is optional).
- 2 : 3 start modes (Also called "Punch") from "soft" to "very aggressive" (default value Medium)
- 3 : Maximum brake force: 25%, 50%, 75%, 100% (default value 50%)
- 4 : Maximum reverse force: 25%, 50%, 75%, 100% (default value 25%)
- 5 : Neutral range: 9% (narrow), 6% (Normal), 12% (Wide) (default value 9%)



**SMD Brushless Speed Controller Data sheet. (showing 45amp and 60amp version)**

Model	45A	60A
Cont. Current/ Burst Current	45A/ 240A	60A/ 360A
Motor Type	<p>Sensorless Brushless Motor</p> <p><b>2S Lipo/6 nimh</b></p> <p>2S/6 Cell NIMH On Road 1/10<sup>th</sup> type car Motor must be less than 4000kv. Off-road 1/10<sup>th</sup> type car motor must be less than 3600kv</p> <p><b><u>For 3S Lipo</u></b></p> <p>1. On-road 1/10<sup>th</sup> type car KV must be less than 3400.</p> <p>2. Off-road / Buggy / Monster 1/10<sup>th</sup> scale motor must be less than 2600</p>	<p>Sensorless Brushless Motor</p> <p><b>2S Lipo/6 nimh</b></p> <p>2S/6 Cell NIMH On Road 1/10<sup>th</sup> type car Motor must be less than 5000kv. Off-road 1/10<sup>th</sup> type car motor must be less than 4100kv</p> <p><b><u>For 3S Lipo</u></b></p> <p>1. On-road 1/10<sup>th</sup> type car motor must be less than 4000kv.</p> <p>2. Off-road / Buggy / Monster 1/10<sup>th</sup> motor must be less than 2800kv</p>
Suitable Car	1/10 car	1/10 car
Resistance	0.0014oh	0.0007ohm
Battery	<p>2~3 cells Lipo</p> <p>4~9 cells NiMH</p>	
BEC Output	<p>5.8V/3A</p> <p>(switch mode)</p>	
Dimensions / Weight	<p>51.5*38.5*38.5mm /76g</p>	

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