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B4721
CAR Brushless ESC Manual

Specification

1.Input Voltage:7.2V(NI-CD/MH) 7.4V(LI-PO) 6.6V(LI-FE)
2.Output:Rating 35A, Peak:100A
3.Out max power:35A/7.2V(MAX 260W)
4.Size/Weight:38mmX32mmX19mm/50g
5.BEC:6V 2A
6.P.W.M:9.5KHz
7.MOTOR:Support 540SS Brushless Motor/7.4V urder 3600KV

Over temperature protection

The motor will be intermittenly turned off when the temperature reaches around 95℃.Optional vent fan is available for selection to enhance the ESC ventilation.

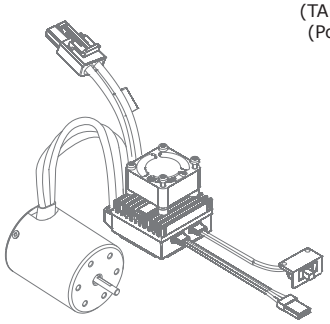
Low power auto-cut table

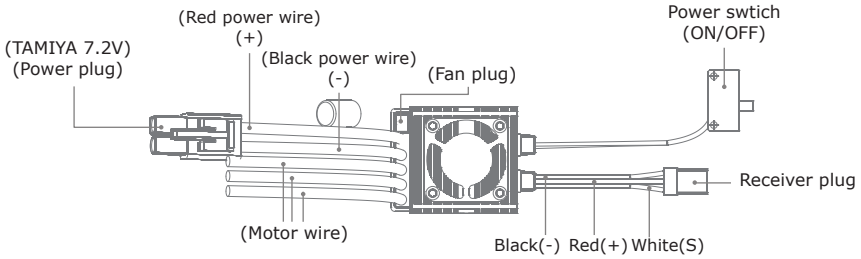
Battery Volt	7.2V	7.4V	6.6V
AUTO	Initial Detected voltage x70%		
NI-CD/NI-MH	5.4V		
LI-PO		6.0V	
LI-FE			4.8V

Warning

1.Avoid touching ESC heat sink or motor casing right after operation for not burning your boby or skin.
2.To avoid poor contact or overheat melting of connector and power abnormal cut off be sure to always use better current rated connector & wires while replacing the original ESC connector or elongating the connecting wires.
3.Connect the battery pack just before driving, disconnect & take it out of the car immediately after termination. Always make sure connecting the ESC to a proper power source that has correct voltage & polarity.Incorrect voltages or reversed polarity will damage the ESC.Don't solder ESC wires directly battery.A prpoer connector is a must to be used in between.
4. Please make sure turn off ESC power, when you use set-up card (B6090). And take the servo wire out of the receiver, then insert the set-up card according to the electrode sign on the card. You need to turn off ESC power when setting is done, then insert servo wire into the receiver.
5. This ESC is not for waterproofing; please letting ESC out of water when use. Or take the power plug out when it in water and use dryer to make ESC dried, then turn on power and test it again.

ESC wiring diagrm

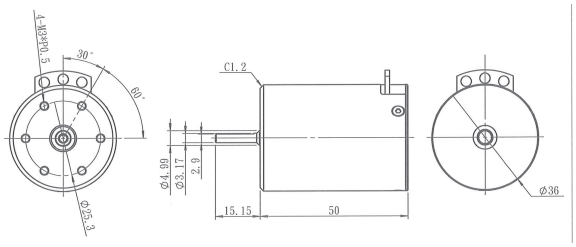




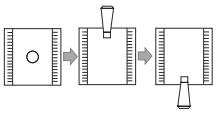
Receiver plug,plug into Ch2
Polarities only match with JR & Futaba receiver
Be careful to check for other brand receivers before plugging.

Motor Specification

1.Terminal resistance	21±1	mΩ
2.Terminal inductance	9 (ref.)	μH
3.KV (No load)	3600±100	rpm／V
4.Max operating current	30	A
5.Max operating speed	40000	rpm
6.Max efficiency	80％	ηmax.
7.Back-EMF-constant	0.2877	mv／3000rpm
8.Torque constant	28	g-cm／A
9.Weight	183	g



Test of throttle direction coincidence



Neutral→forward→backward

1 Wiring ESC according to above diagram.
2 Switch on the transmitter.
3 ESC denotes a sound and starts srtting neutral.
4 Denoted by another confirmation sound after succeed in setting neutral.

Refer to the left test sequence right above setting is completed Push the throttle trigger forwards, quickly pull the throttle trigger backwards & hold it. If the system keeps braking, the throttle direction test is ok.
Otherwise, if it drives reversely, the throttle and ESC forward direction does not coincide with each other.
Change the throttle reversing switch of the transmitter, turn off & then turn on the ESC power again will correct the problem.

Safe gear ratio test

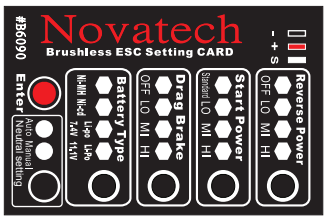
Input voltage	resistance	waste current
7.2V	0.18Ω	40A
11.1V	0.18Ω	61.6A

(V/R=1 7.2V/0.18Ω=40A)
(V/R=1 11.1V/0.18Ω=61.6A)

※Firstly, trial running starting with a small gear motor for 2~3 minutes, measure the temperatures of both Esc & motor. If both temperatures are close with each other, they are at good match. The gear ratio can then be properly adjusted to optimum according to the features of the courses. However, It's very important to always keep both temperatures under 100 °c, while adjusting the gear ratio. Otherwise the demagnetization of the motor will happen, the motor efficiency will drop dramatically & the temperature will also raise up very quickly. Most battery power is now wasted on heat nothing on motor efficiency.

※It's ok to replace a higher gear ratio or a higher KV motor while the temperature of the ESC is under 80 °c. But it should be done according to para 6 described, from small to bigger. Unless the KV value of the original motor is very low enough, It should replace a motor with lower kv value when the input battery voltage is changed to a higher level. The ESC will be burnt if the motor doesn't be properly changed while input voltage is changed. See example by the side of lest on the current changed inside motor while input voltage is changed.

1.set the battery type to " auto" if the Lipo battery used is over 11.1 volt
2.The setting parameters displayed after plugging on the programming board are the parameters programmed last time not the parameters inside current ESC.
3.Press down " Enter " button after setting all prarmeters, a sound of " Di Di Di (for Brushless ESC)" or " Di Di Di Di Di (for Brushed ESC)" indicates that setting is successfully completed.



Set process

1.Turn off the "ESC" power and take the servo wire out of the receiver, then insert the set-up card according to the electrode sign on the card, and then turn on "ESC" power.
2.The set-up card will transfer the last setting to ESC, a series of sound from motor to confirm the finish of the setting transfer. By pressing down the corresponded buttons of each parameter to change the setting level as required. Red led indicates level of parameter being selected. Press down the " Enter " button to transfer the new setting to ESC, another sound come out from motor indicates completed transfer.
3.Turn off the ESC power, plug servo line into receiver, & then turn on the ESC power. Followings are ESC parameters able to be set by programming board.

(Reverse Power) 4 set up levels, low, middle & high.

●○○○	○●○○	○○●○	○○○●
OFF	LO	MI	HI
Disable	Lower ←	Power	→ High

(Start Power) 4 set up levels from low to high.(power level from still to full speed)

●○○○	○●○○	○○●○	○○○●
Standard	LO	MI	HI
Lower	←	Power	→ High

※ The lower the setting, the more smoothly startup will be. The higher the setting the stronger respond of acceleration will be.

(Drag Brake) Set of brake strength while the throttle gets bach to the contra position.

●○○○	○●○○	○○●○	○○○●
OFF	LO	MI	HI
Disable	Lower ←	Drag Brake	→ High

(Battery Type)

Press down the right hand side button to select the battery type being used.

(Neutral Setting)

1.Auto –Esc default set at Auto, support transmitter with 50-50 or 70-30 throttle.
2.Manual- Adjust the throttle of transmitter to the factory default setting, insert the set-up card & press " manual" button. Plug the servo wire back into receiver. Turn on the ESC, sound of "Bi Bi" comes out. Move the throttle to the forward full, stay 2 second & get a sound of "Bi Bi". Move the throttle to the reverse full, stay 2 second & get a sound of "Bi Bi". Release the throttle to the central point, stay 2 second, & get a sound of "Do Re Mi". The manual set up of the ESC neutral is now completed. Be sure to strictly follow the set up steps at the sequence of forward full, reverse full & then neutral. Otherwise the manual set up can't work properly.
3.Once after press down the manual button, the set-up process should be completed within 15 sec, otherwise, the ESC will be reset to the auto-neutral detecting.

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