### 车船用有刷电子调速器使用说明书





感谢您购买有刷电子调速器!错误的使用可能造成人身伤害和设备损 坏。请在使用设备前仔细阅读说明书,严格遵守规定的操作程序。我 们不承担因使用本产品而引起的任何责任,包括但不限于对附带损失 或间接损失的赔偿责任;同时我们不承担因擅自对产品进行修改所引 起的任何责任。我们有权在不经通知的情况下变更产品设计、外观、 性能及使用要求。

# 02 注意事项

- •电调与相关连接部件连接前,请确保所有电线和连接部件绝缘良好,短路将会毁坏电调;
- •使用此电调前,请认真查看各动力设备以及车架说明书,确保动力搭配合理,避免因错误的动力搭配导致电机超载,最终损坏电调;
- •若需对电调的输入输出线、插头做相关焊接时,为保证焊接牢靠,请使用至少60W功率的焊接设备进行焊接;
- •为了你和他人的安全考虑,请在车子悬空的情况下进行接线调试;
- •勿使电调外部温度超过90℃/194℃, 高温将会毁坏电调并且可能导致电机损坏;

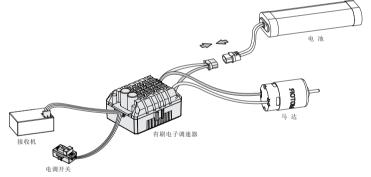
### 03 产品特色

- •全防水设计,适应各种气候环境; (注:浸水工作后尽快将电调洗净吹干,防止插头氧化);
- •内置强大的开关模式BEC, 持续电流达到8A, 瞬间达到10A, 且支持 6V和7.4V 切换, 轻松驱动各种强力舵机及高压舵机;
- •非常细腻的拖刹力度以及拖刹加速度调节,满足不同的车型、不同的场地以及不用的操控习惯;
- •比例式刹车:9段初始刹车力度调节、9段最大刹车力度调节、9段拖刹力度调节;
- •多重保护功能: 电池低压保护、过温保护;
- •具有独立的参数设定接口,连接参数设定卡时无需将电调控制线从接收机中拔出,使用更为方便;

### **04** 产品规格

型 묵	
持续/峰值电流	80A/400A
支持电机类型	有刷电机(540/550/775级电机)
主要适用车型	1:10攀爬车、大脚车、卡车、越野、平跑、1/8攀爬车
支持电机T数	2节锂电或6节镍氢: ≥12T或RPM低于 30000 @7.4V 540或550、590尺寸电机 3节锂电或9节镍氢: ≥16T或RPM低于 20000 @7.4V 540或550、590尺寸电机
电池节数	2-3S Lipo 或 5-9 Cell NiMH
BEC输出	6V/7.4V @ 8A (开关稳压模式)
插头	XT60/Φ4子弹头
尺寸/含线重量	50.0 x 42.9 x 26.5 mm / 58.5g
参数设定接口	独立编程口/风扇供电

# 05 连接电子调速器





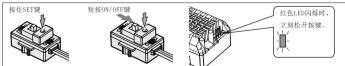
空的情况下开启电调上的 控制开关! 电调开关处于关闭状态, 按下图接线,复查无误后 进入下一步。

- 连接马达:
- 电调与电机相连无线序要求,电调的两根输出线与电机的两根线可以随意对接,若出现转向相反,将两条电机线互换位置即可。
- 连接接收机:
- 把电调的油门控制线插入接收机的油门通道(即THROTTLE通道)。电调油门控制线亦输出6V/7.4V的电压给接收机及舵机,故请勿给接收机额外供电,否则可能损坏电调。
- 电调的输入线有极性之分,插入电池时,请确保电调的(+)极与电池的(+)相连,(-)极与(-)相连。如果电调接反电,电调将会损坏。因电源接反而导致电调损坏是不享有保修服务

# 06 设置电子调速器



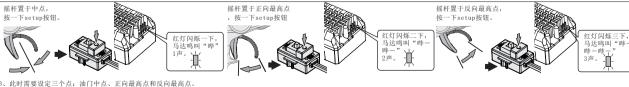
电调第一次使用或遥控器更改过油门"TRIM"微调、D/R、EPA等参数后,均需重设油门行程,不然可能会导致无法使用或误动作。另外我们强烈建议同时开 启遥校器的失校保护功能,将遥控器油门通道的无信号保护("F/S")功能设置为关闭输出方式或将保护值设置为中点位置,使得当接收机无法收到遥控器 信号后, 电机能够停止运转。油门校调步骤如右上角图片所示:



1、 打开遥控器, 将油门通道的 "D/R"、 "EPA"、 "ATL" 等参数调到100% (如遥控器无显示屏,则将对应旋钮调到最大位置), 油门通道的中点微调 "TRIM"调为0(如遥控器无显示屏,则将对应旋钮调到中间位置)。 FUTABA 及类似的遥控器需要将油门通道方向设为"REV",其它品牌遥控器的油门通道方 向应设为"NOR"。 请务必关闭遥控器自带的ABS刹车功能。

2、电调关机状态,持续按住SET按键不松开,短按ON/OFF 调上红色LED立即开始闪烁(同时马达鸣叫备注1),立即松开按键(如果未在3秒内及时松开按键, 电调将进入参数设定模式, 此时需 从步骤1重新开始操作)

备注1: 马达鸣叫声音可能较小,在这种情况下,观察LED状态即可



- · 油门摇杆留在中点位置,按一下SET键, 红灯闪烁1次, 马达鸣叫"哔"1声, 表示已存储中点位置
- 油门摇杆打到正向最高点,按一下SET键,红灯闪烁2次,马达鸣叫"哔-哔-"2声,表示已存储油门正向最高点 油门摇杆打到反向最高点,按一下SET键,红灯闪烁3次,马达鸣叫"哔-哔-哔-"3声,表示已存储油门反向最高点;
- 、油门行程校调完毕, 三秒钟后, 电机即可正常操作。

- 1、开关机说明:
- 关机状态下短按ON/OFF键开机; 开机状态下长按ON/OFF键关机。
- 2、开机鸣音说明: 在正常情况下开机(即不按住SET键的情况下开机): 若电池类型设置为锂电时,电机会发出几声"哔"鸣音表示锂电节数。例如: "哔哔"表示2节锂电池, "哔哔哔"表示3节锂电,检测完锂电节数后电机会再鸣叫一声表示确认OK可以运行了;若电池类型设置为镍氢时,电机会鸣叫一次,表示镍氢模式,然后再鸣叫一次表示 确认OK可以运行了。

以下黑底白字的选项为可编程项目的默认参数值

编程项目	选项1	选项2	选项3	选项4	选项5	选项6	选项7	选项8	选项9
1. 运行模式	正转带刹车	正反转带刹车	直接正反转	船模式					
2. 电池类型	锂电	镍氢							
3. 低压保护值	OV/Cell	2.8V/Cell	3.0V/Cell	3.2V/Cell	3.4V/Ce11				
4. 初始启动力度	0%	2%	4%	6%	8%	10%	12%	14%	16%
5. 最大前进力度	25%	50%	75%						
6. 最大倒车力度	25%	50%	75%	100%					
7. 最大刹车力度	0%	12.5%	25%	37.5%	50%	62.5%	75%	87.5%	100%
8. 拖刹力度	0%	5%	10%	50%	60%	70%	80%	90%	100%
9.油门中点宽度	0.02ms	0.02ms	0.04ms	0.05ms	0.06ms	0.07ms	0.08ms	0.10ms	0.12ms
10. 油门曲线	1	2	3	4	5	6	7	8	9
11. BEC电压	6V	7.4V							

选项1:正转带刹车 此模式下, 车辆仅能前进和刹车, 但不能倒车, 该模式通常用于竞赛。

选项2:正反转带刹车

此模式则提供了倒车功能,通常用于训练。"正反转带刹车"模式采用双击式倒车方式,即油门摇杆在第一次从中点区域推至反向区域时,电机只是刹车,不会产生倒车动作;当油 门摇杆快速回到中立点区域并第二次推至反向区域时,如果此时电机已停止,则产生倒车动作 ,如果电机未停止,则不会倒车,仍是刹车,需要再次将油门回到中点并推向反向区, 此 时如果电机已经停止才会倒车,这样做的目的是防止车辆行驶过程中因多次点刹而造成误倒车。

此模式采用单击式倒车方式,即油门摇杆从中点区域推至反向区域时,电机立即产生倒车动作,该模式主要用于攀爬车。

**选项4:**船模式

该模式为直接正反转无刹车模式, 主要适用于船模, 在该模式下, 低电压, 温度保护都只会半功率输出, 不会截止 2、电池类型 (Battery Type)

本电调提供锂电和镍氢两种电池类型选择,请根据实际使用情况设置,设置不同的电池类型对应不同的低压保护值。

这项功能主要是防止锂电池过度放电而造成不可恢复的损坏。电调会时刻监视电池电压,一旦电压低于设定的阈值,将切断动力输出。当进入电压保护后,红色 LED 会以"☆一,

洗项1: 0V 选择此参数后,电调不会因为电池低压而切断动力,请留意车子动力的变化,一般车子动力大幅下降时,电池电压则较低了,请停止使用该电池。

**选项2:** 2.8V

**选项3:** 3.0V

**选项3:** 3.2V 选项4: 3.4V

指模型车从零油门启动时的初始力度,设置合适的启动力度可有效防止小油门时可能因动力不足导致的溜车现象。

5、最大前进力度 (Max. Forward Force)

指油门处于正向最大时的力度,该值分四段可调,出厂默认值为100%。若因在复杂地形操控攀爬仿真车型而对最大速度要求较低时可以适当降低此值,便于更好的操控。

6、最大倒车力度 (Max. Reverse Force): 选择不同的参数值可以产生不同的倒车速度(一般情况下推荐使用比较小的倒车速度)。

7、最大刹车力度 (Max. Brake Force): 本电调提供比例式刹车功能,刹车力度的大小和油门摇杆的位置相关,最大刹车力是指油门摇杆处于刹车极限位置时所产生的刹车力。非常大的刹车力度会缩短刹车时间,但会对齿

轮造成损坏。请根据车辆的具体情况及个人的使用习惯,选择合适的最大刹车力参数。 8、拖刹力度 (Drag Brake)

拖利是指当油门摇杆从正向区域转入中点区域内时,对电机产生一个微量的刹车力(值得注意的是,拖刹会消耗比较多的电量,选择合适的拖刹力度即可)。 9、油门中立点区域宽度 (Neutral Range):

油门中立点区域,请根据个人习惯进行调整。有些品质欠佳的遥控器中点位置容易漂移,导致车子缓慢前进或后退,出现此现象时, 请把区域宽度设成更大值。

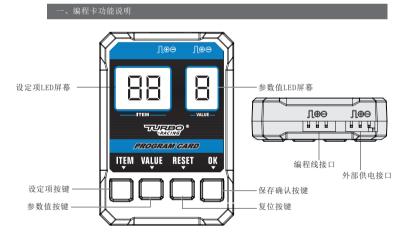
10、油门曲线 (Throttle curve) 此功能主要适用于模型在不同的应用场地,相当于遥控器上的EXP功能。

11、BEC输出电压 (BEC Voltage):

适用于普通舵机;若使用高压舵机,请勿设为此项,否则可能出现电压不足无法正常工作。

适用于高压舵机: 若使用普通舵机, 请勿设为此项, 否则可能因电压太高而烧坏舵机。

### 参数设置方法(有以下两种方法对电调进行参数项设置)



该款电调标配有一款专用设定卡, 体积小巧, 适 合外场使用。其界面直观,参数读取和设定过程 十分简单快捷。调整参数时,需用一条两端带JR 公头的排线(白红黑PVC线)将电调和设定卡连 接,排线一端连接电调上的独立编程口,另一端 连接设定卡右上角标注着"一+"的接口,然 后给电调接上电源,最后打开电调开关,数秒后 该电调的各项参数即可显示出来。利用编程卡上 的"ITEM"和"VALUE"按键即可快速选择编程 项目和参数值, 然后按"OK"键后, 新参数即可 存入电调中。



### • 重量: 40g

• 工作电压: 5.0V-8.0V • 外形尺寸: 38.9x12.0x55.9mm

# 5 恢复出厂参数设定

1、利用LED参数设定卡恢复出厂设定

设定卡与电调连通后,按下"RESET"键,然后再按下"OK"保存,即可恢复出厂设置。

### $oxed{07}$ 电调状态指示灯(LED)说明如下

- ·油门摇杆处于中点区域,红色LED熄灭。
- •前进时,红色LED闪烁; 当油门处于正向最大(100%油门)时,红色LED变成恒亮。
- •刹车时,红色LED闪烁;当油门处于反向最大且最大刹车力度设为100%时,红色LED变成恒亮。 •倒车时,红色LED闪烁;当油门处于反向最大且最大倒车力度设为100%时,红色LED变成恒亮。

### 08 保护功能说明

- 电压保护: 当电调连续2秒检测到电池电压低于保护阈值后,将进入低压保护状态(通常情况下,电调有两级低压保护,第一级是降低输出功率,第二级则彻底关闭输出),且电调上的 红灯会持续闪烁。
- 2. 过温保护: 当电调内部温度高于100°C时将会降低功率直至切断输出(发生过温保护时,电调不会突然切断输出,以免突然停车造成意外)。停止后绿灯将闪烁,待温度低于80°C后 则恢复正常的输出功率。
- 备注:设为船用模式时,进入低压保护后电机输出功率减半。LED快速闪烁,请立即靠岸停船。

### 09 故障快速处理

故障现象	可能原因	解决方法
上电后指示灯不亮,电机无法启动	1、电池电压没有输入到电调 2、电调开关损坏	1、检查电源输入通路是否有焊接不良情况,并重新焊好; 2、更换开关。
上电后红色LED闪烁,电机无法启动	电调油门线插反或通道插错或油门不在中点	将电调的油门排线按正确方向插到接收机的"油门(TH)"通道(Throttle,通常为CH2);或者重新设置油门行程。
油门处于中点位置时车子缓慢前进或后退	油门行程没校准好	重新设置油门行程或使用控的油门微调校准中点
遥控器正向加大油门,车子反而倒退	<ol> <li>1、电调输出线和电机线连接的线序错误</li> <li>2、遥控器油门通道方向设置错误</li> </ol>	1、将电调输出两根线互换位置 2、将遥控器油门通道反向,从原 "NOR"换为"REV"或从原 "REV"换为"NOR"。
电机转动过程中,突然停转或功率输出显著降低	1、接收机遇到干扰 2、电调进入电池低压保护状态 3、电调进入过温保护状态	<ol> <li>检查接收机出现干扰的原因。检查按射机器电池电量。</li> <li>红灯持续闪烁为电压候护。请更换电池。</li> <li>3、绿色灯持续闪烁为温度保护。请等电调温度降低后继续使用。</li> </ol>
前进正常,但无法倒车	遥控器油门通道中点偏离到刹车区域。	重新校调油门通道中点,使遥控器油门摇杆置于中位时,电调上的指示灯不亮

### **Brushed Electronic Speed Controller**

# 01 Introduction



Congratulations and thank you for your trust in our ESC.Please take your time and read the following instructions carefully before you start using your speed control. We are not liable for any liability arising out of the use of the product, including but not limited to liability for incidental or indirect losses;At the same time, we do not assume any responsibility caused by unauthorized modification of the product. We have the right to modify our product design, appearance, features and usage requirements without

# 02 Attentions

Ensure that all wires and connections must be well insulated before connecting the ESC to related devices, short circuits will ruin the ESC.

Read through the manuals of all power devices and chassis and ensure the power configuration is rational before using this unit to avoid overload of motor due to wrong power combination, and

Please use a soldering iron with the power of at least 60W to solder all input/output wires and connectors to ensure solder reliable

•For the your own and others safety, please conduct wiring debugging when your car is suspended; -Stop immediate usage once the casing of the ESC exceeds 90  $^{\circ}$ C/194  $^{\circ}$ I, high temperature may cause damages to both the ESC and motor

Fully waterproof design for all conditions. (Note: please clean and dry it after use for avoiding rusty connectors)

-Built-in powerful switch-mode BEC, The continuous current reaches 8A and the instantaneous current reaches 10A, with switchable voltage of 6V/7.4V, easy to drive all kinds of high torque and high

 $\bullet \textbf{Tunable drag brake and drag brake rate for different vehicles, grounds and control feels. } \\$ 

•Proportional brake:9 levels of initial brake force,9 levels of maximum brake force,9 levels of drag brake force.

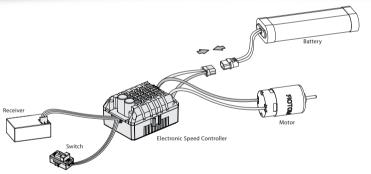
•Multiple protection functions: low voltage protection, overtemperature protection

•With independent parameter setting connector, it is more convenient to connect the parameter setting card without unplugging the ESC control line from the receiver

# 04 Spectifications

Cont. / Peak Current	80A/400A
Motor Type	tor (540 / 550 / 775 size motors)
Applications	1:10、1/8crawler、Big foot、buggy、off-road、on-road
Motor Limit	Brushed Motor Limit with 2S LiPo / 6S NiMH: ≥12T or RPM<30000@7.4V (540/550/590 size motors)  Brushed Motor Limit with 3S LiPo / 9S NiMH: ≥16T or RPM<20000@7.4V (540/550/590 size motors)
LiPo / NiMH Cells	2-3S LIPo / 5-9 NIMH
BEC Output	6V/7.4V @ 8A(Switch-mode)
Size / Weight	50.0 x 42.9 x 26.5 mm / 58.5g
Programming Port	Separate Port/Fan power supply

### 05 Begin to Use a New Brushed ESC





For your safety and the safety of those around you,please turn on the control switch or the ESC with the wheels in the air!When the ESC switch is off, and the wiring is as shown below. After the correct

There is no polarityon the M+/M- two ESC-to-motor wires, hence, do not worry on how you connect them initially. You may find it necessary to swap two wires if the motor runs in reverse

Plug the throttle control cable on the ESC into the throttle (TH) channel on receiver. The throttle control cable will output the voltage of 6V/7.4V to the receiver and steering servo. Hence, no

separate battery can be connected to the receiver. Otherwise, your ESC may be damaged

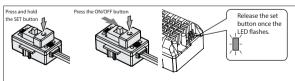
Proper polariy is esential. Please ensure positive (+) connects to positive (+), and negative (-) connects to negative (-) when plugging in the battery! When reverse polarity is applied to your ESC from the battery, it WILL damage your ESC. This WILL NOT be covered under warrranty!

# 06 ESC Setup





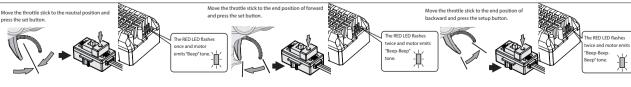
Begin using your ESC by calibrating with your tramister. We strongly recommend Hobbywing users to use the "Fail Safe" function on the radio system and set (F/S) to "Output OFF" or Neutral Position". Example of calibrating Neutral range and Endpoint.



1. Turn on the transmitter, ensure all parameters (D/R, Curve, ATL) on the throttle channel are at default (100%). For transmitter without LCD, se turn the knob to the maximum, and the throttle "TRIM" to 0. Please also turn the co

itter on and the ESC turned off but connected to a battery. Holding the SET button and press the ON/OFF button to turn on the ESC, the RED LED on the ESC starts to flash (Note: the motor beeps at the same time), and then release the SET button immediately(The ESC will enter the programming mode if the SET button is not released in 3 seconds, please restart from step 1.).

Note: Beeps from the motor may be low sometimes, and you can check the LED status instead.



Leave transmitter at the neutral position, press the SET button, the RED LED flashes 1 time and the motor beeps 1 time to accept the neutral posi-

Pull the throttle trigger to the full throttle position, press the SET button, the RED LED blinks 2 times and the motor beeps 2 times to accept the full throttle endpoin

### Power ON/OFF & Warning Tones

(Start with the ESC turned off), press the ON/OFF button to turn on the ESC (Start with the ESC turned on) press and hold the ON/OFF button to turn off the ESC.

Warning Tones:

With the ESC is turned on in the normal way (that is turn it on without pressing and holding the SET button): if you set the "Battery Type" to "LiPo", the motor will beep N (number) beeps to indicate the number of LiPo cells you have plugged in (i.e. 2 beeps indicates a 2S LiPo, 3 beeps indicates a 3S LiPo.) and then a long beep to inform you that your ESC is ready to work. If you set the "Battery Type" to "NiMH", the motor will only beep a beep to indicate the ESC is in NiMH mode and then another beep to inform you that your ESC is

Those "black background and white text" options are the factory default settings.

Programmable Item	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9
1.Running Mode	F/B	F/B/R	F/R	BOAT					
2.Battery Type	NiMH	Lipo							
3.Cutoff Voltage	0V/Ce <b>II</b>	2.8V/Ce <b>ll</b>	3.0V/Cell	3.2V/Cell	3.4V/Cell				
4.Initial Start Force	0%	2%	4%	6%	8%	10%	12%	14%	16%
5.Max. Forward Force	25%	50%	75%	100%					
6.Max. Reverse Force	25%	50%	75%	100%					
7.Max. Brake Force	0%	12.5%	25%	37.5%	50%	62.5%	75%	87.5%	100%
8. Drag Brake	0%	5%	10%	50%	60%	70%	80%	90%	100%
9.Neutral Range	0.02ms	0.02ms	0.04ms	0.05ms	0.06ms	0.07ms	0.08ms	0.10ms	0.12ms
10.Throttle curve	1	2	3	4	5	6	7	8	9

### 11.BEC Voltage 1、Running Mode:

Option 1: Forward with Brake

It's a racing mode. It has only forward and brake functions no reverse functions

Option 2: Forward/ Reverse with Brake

This option is known to be the "training" mode with "Forward/ Reverse with Brake" functions. It has adopted the "DOUBLE-CLICK" method, that is your vehicle only brakes on the 1st time you push the throttle trigger forward (brake) (1st push). The motor stops when you quickly release the throttle trigger and then re-push the trigger quickly (2nd push), only then the vehicle will reverse. The reve function will not work if your car does not come to a complete stop. The vehicle only reverses after the motor stops. This method is for preventing vehicle from being accidentally reversed.

This mode is often used by special vehicles (rock crawler). It adopts the "SINGLE-CLICK" method. The vehicle will brake immediately when you push the throttle trigger forward (brake). Option 4:Ship mode

This mode is "Forward/ Reverse with no Brake" mode, mainly use for ship model. Low voltage, temperature protection will only be half power output, it will not stop under this mode.

2、Battery Type

This ESC offers two type of batteries,LiPo and NiMH battery,please set different cutoff voltage for different battery types according to the actual usage

3、Cutoff Voltage Sets the voltage at which the ESC lowers or removes power to the motor in order to either keep the battery at a safe minimum voltage (for LiPo batteries). The ESC monitors the battery voltage all the

protection is activated. Option1: 0V

The ESC does not cut the power off due to low voltage. Please pay attention to the power change of your vehicle. In general, the battery voltage gets pretty low when your vehicle is severely losing

time; it will immediately cut off the output when the voltage goes below the cutoff threshold. The RED LED will flash a short, single flash that repeats (🔅 -, 🔅 -, 🔄 -) to indicate the low-voltage cutoff

power, then you should stop using that pack Option2: 2.8V

Option3: 3.0V

Option3: 3.2V

Option4: 3.4V 4、Initial Start Force

It's the initial force when you pull the throttle trigger from neutral position toward non-throttle throttle position. A suitable start force can effectively prevent vehicle from sliding when you apply a low throttle amount.

It's the force when throttle trigger is at the full throttle position. It's adjustable among 25%, 50%, 75% and 100% (by default). You can lower down the value for better driving feel/control when you drive a crawler (simulation model) over difficult terrains (and don't have any requirement against the maximum speed)

### 6、Max. Reverse Force:

Different reverse amount will bring different reversing speed. For the safety of your vehicle, we recommend using a low amount.

7、 Max. Brake Force

The ESC provides proportional braking function; the braking effect is decided by the position of the throttle trigger. It sets what percentage of available braking power when full brake is applied.

n the braking time but it may damage your pinion and spur. Please select the most suitable brake amount as per your car condition and your preference.

### 8. Drag Brake

Drag brake is the braking power produced when releasing the throttle trigger from full speed to neutral zone. Attention! Drag brake will consume much power, so apply it cautiously.

9. Neutral Range:

As not all transmitters have the same stability at "neutral position", please adjust this parameter as per your preference. You can adjust to a bigger value when this happens

### 10. Throttle curve:

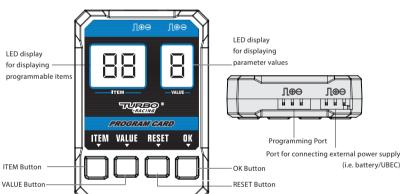
This function is mainly applicable to the model in different application sites, which is equivalent to the EXP function on the transmitter. 11、BEC Voltage:

Option 1: 6.0V.

It's applicable to ordinary servos. Do not use this option with high voltage servos; otherwise your servos may not function normally due to insufficient voltage

It's applicable to high voltage servos. Do not use this option with ordinary servos; otherwise your servos may be burnt due to high voltage





A standard LED program card is also included in the programming easy and quick.Before the program you need to connect your ESC to the program card via a White/Red/Black PVC cable with two JR male connectors (one end of the cable to the separate programming port on the ESC and the other end to the port marked with "-/+/S" on the program card), and then turn on the ESC, all programmable items will show up a few seconds later. You can select the item by choosing via "ITEM" & "VALUE" buttons on the program card. Press the "OK" button to save all new settings to your ESC.



- Working Voltage:5.0V-8.0V
- Size:: 38.9x12.0x55.9mm
- · Weight:: 40g

### **Factory Reset**

1. Restore the default values with a LED program card.

After connecting the LED program card to the ESC, press the "RESET" button and the "OK" button to factory reset your ESC.

### **U** Explanation for LED Status

· The Red LED dies out when the throttle trigger is in throttle neutral zone

• The Red LED flashes when your vehicle runs forward and it turns solid Red when you pull the throttle trigger to the full throttle endpoint.

•The Red LED flashes when your vehicle brakes and it turns solid Red when you push the throttle trigger to the full brake endpoint and set the "maximum brake force" to 100%. • The Red LED flashes when your vehicle runs backward and it runs solid Red when you push the throttle trigger to the full brake endpoint and set the "maximum reverse force" to 100%.

The receiver was influenced by some foreign interferent
 The LVC protection was activated.
 The ESC thermal protection was activated.

# 08 Protection functions

The motor suddenly stopped or significantly reduced its output in operation

The vehicle could run forward but could not reverse

1. Voltage protection: when the battery voltage is lower than the protection threshold for 2 seconds, the battery will enter the low-voltage protection state (normally, there are two stages of low-voltage protection in the electric regulation, the first stage is to reduce the output power, and the second stage is to completely shut down the output), and the red light on the ESC will flash continuous

2. Overtemperature protection: when the ESC internal temperature is higher than 100°C, the power will be reduced until the output is cut off (When overtemperature protection occurs, the ESC will not suddenly cut off the output, so as to avoid sudden stop and cause accidents.). The green light will flash after the stop and return to normal output power when the temperature is below 80°C. half power output Note:When it is on ship mode, the motor will be half power output when enter low voltage protection.LED flash quickly,please stop the boat immediately.

# 09 Troubleshooting

The throttle control cable was reversely plugged in or in the wrong channel on the receiver. The throttle range was not calibrated properly. The vehicle ran backward when you pulled the The ESC-to-motor wiring order was incorrect.
 Incorrectly set the direction of the throttle channel.

 $Please\ recall brate\ the\ throttle\ range\ or\ fine-tune\ the\ neutral\ position\ on\ the\ transmitted$ 

Swap motor wires.
 Change the direction of the throttle channel from "NOR" to "REV" or "REV" to "NOR".

 Check all devices and try to find out all possible causes, and check the transmitter's battery voltage.
 The Red LED keeps flashing indicating the LVC protection is activated, so please replace your battery page.
 The Red LED keeps flashing indicating the ESC thermal protection is activated, please let your ESC cool down before using it again. The throttle neutral position on your transmitter was actually

Recalibrate the throttle neutral position. No LED on the ESC will come on when the throttle trigger is at the neutral position.