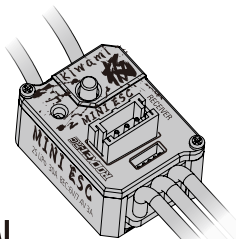


MINI ESC Sensored Brushless ESC

INSTRUCTION MANUAL



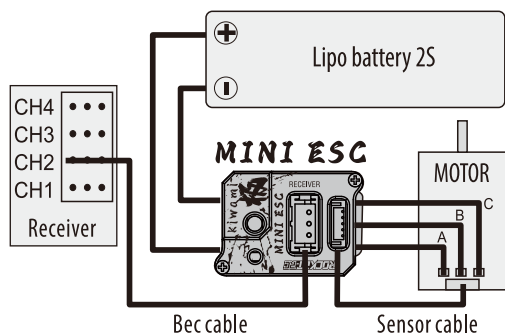
FEATURES

- Small size:** Tiny size, design for MINI class
- Extremely high output:** Current 30A, powerful output support
- Extremely light:** Greatly reduced vehicle weight
- Multi setting:** Multi adjustable parameter items support, created for competition
- Excellent heat dissipation:** Full metal CNC housing, perfect combination of shaped and function

SPECIFICATION

Size(L x W x H) : -----21(L) x 13.8(W) x 11(H)mm
 Weight:-----7.6g(including wires)
 Voltage Input: -----2S LiPo (6V-8.4V)
 Peak Current: -----80A
 Continuous current : -----30A
 Motor Type:-----Sensored brushless motors for MINI RC car
 B.E.C.:-----6V/7.4V 3A
 Waterproof: -----NO
 Car Applicable: -----1/28th and 1/27th

INSTALLATION & CONNECTORS



1. Connect build in BEC wire(100mm) between the receiver connector and ESC.
2. directly to the motor or use your favorite connectors. Match the label of the ESC Output (A, B, C) to the Tablabels on the motor when soldering. Avoid soldering each joint for longer than 5 seconds. Prior to operation make sure you have not created a short by either eating a wire bridge or solder bridge on the solder tabs on the motor. **(WARNING! Improper wiring may damage the ESC and void the warranty.)**

Note: This ESC is electronic switch, it will still draws current even switch OFF. So please disconnect the battery after use.

DECLARATION

This is Electronic Speed Controller (ESC) for car. High power system for RC model is very dangerous, so please read this manual carefully. Since we can't control over the correct use, installation, application, or maintenance of our products, we've 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 of malfunctioning etc. will be denied. We assume no liability for personal injury, consequential damages resulting from our product or our workmanship.

RADIO & ESC SETUP

Transmitter Settings:

- ◆ Throttle Travel Maximum / 100%
- ◆ Brake Travel Maximum / 100%
- ◆ Throttle Exponential Start with 0%
- ◆ Throttle Neutral Trim Center / 0
- ◆ Throttle Servo Reverse (Futaba, KO, Sanwa)

The initial set-up of the throttle end-points of the ESC:

1. Connect the power wires of the ESC to a fully charged
2. Bind your receiver and transmitter first if your radio requires you to do so.
3. Press and hold the ESC set button and then switch on the ESC, release the button unit the led change to blue and flash from red, you can listen to two beeps sound from motor at the same time.
4. Keep the throttle in the neutral position and then press the set button, the neutral position already memory on ESC when listen to a beep sound.
5. Full throttle and then press once the set button, the maximum throttle position already memory on ESC when listen for two beeps sounds.
6. Full brake and then press once the set button, the maximum brake position already memory on ESC when listen for three beeps sounds.
7. A beep will then sound, Signifying that the ESC endpoints have been successful.

LED Status in Driving Mode:

1. Normal Running :

Throttle in the neutral position: The green LED lights, red LED off. In Zero Timing, the green LED flashes slowly. (Boost 0°, Turbo 0°) Compliant with ROAR competition rules

Moving forward: The green LED off, the red LED flashes from slowly to quickly as the throttle move forward; The red LED lights when move forward to top point of maximum throttle. (100% throttle)

Braking/Backward: The green LED off, the red LED flashes from slowly to quickly as the throttle move backward; The red LED lights when move brake/backward to top point of maximum brake/backward. (100% brake/backward)

2. Protection Function:

When the ESC does not detect the throttle signal: The orange LED lights.

Abnormal battery voltage: The orange LED flashes once.

When the ESC is in low voltage protection status: The orange LED flashes twice.

When the ESC is in temperature protection status: The orange LED flashes three times.

When the ESC disconnect with the sensor cable: The orange LED flashes four times.

CUSTOMIZING THE ESC

To begin, connect the ESC battery wires to a charged battery, then connect the BEC wire 3pin wire to the program card "S+~" port (3pin port). Turned on the ESC, the programming card will automatically read the ESC settings, and the setting items of the programming card will display 1 to 15 successively, indicating that the connection is successful. You can start programming ESC. (if it is not displayed, it means that the connection is unsuccessful, please try to turn off ESC repeatedly, reconnect the programming card and turn on ESC again until it is successful)

TIPS! Program card is done using the 4 buttons below on the led, The function of each button start from right hand side are ITEM, VALUE, OK and RESET.

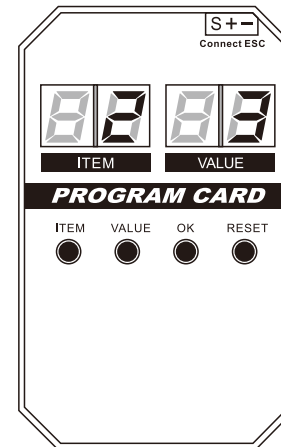
Please refer to the menu below to program the function settings you need.

"ITEM" button-----go to next item to select.

"VALUE" button-----go to next value select.

"OK" button-----go to confirm your select.

"RESET" button-----go back to factory setup.



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Program Manual

Low Voltage Cut-Off: The function is mainly to prevent the lithium battery pack from over discharging. When using lithium battery pack, please set the suitable value for low-voltage protection as your like. **WARNING:** Never use the default value "Non-protection" for lithium battery!

Item \ Value	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.Low Voltage Cut-off	3.1V Slow	2.9V Slow	2.7V Slow	Disable	3.4V Slow	3.1V Stop	2.9V Stop	2.7V Stop	3.4V Stop
2.Start Mode(Punch)	Level 3	Level 1	Level 6	Level 2	Level 4	Level 5			
3.Max. Brake Force	50%	25%	75%	100%	Disable				
4.Max. Reverse Force	25%	50%	75%	100%					
5.Neutral Range	9%	6%	12%	1%	3%				
6.Motor Overheat Protection	120 °C Stop	135°C Stop	150°C Stop	120°C Slow	135°C Slow	150 °C Slow	Disable		
7.ESC Overheat Protection	105°C Stop	95°C Stop	105°C Slow	95°C Slow	Disable				
8.Running Mode	Forward/ Reverse/ Brake	Forward/ Brake	Forward/ Reverse						
9.Drag Brake Force	0%	5%	10%	20%	30%				
10.Boost Timing	0° - 60°								
11.Turbo Timing	0° - 60°								
12.PWM Frequency	8K	2K	4K	12K	16K	24K	32K	48K	
13.Brake PWM Frequency	1KHz	400Hz	600Hz	800Hz	2K	4K			
14.Motor Rotation	CCW	CW							
15.BEC Voltage	6V	7.4V							
16.Model	Drift	Racing							

Underscore letter indicate factory default settings, (No.1-9) are applicable to brushless ESC, (No.1-16) are applicable to sensored ESC (No.6 exclude). The program card are common use, this ESC do not have the function of "6. Motor Over-heat Protection"

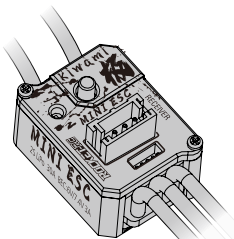
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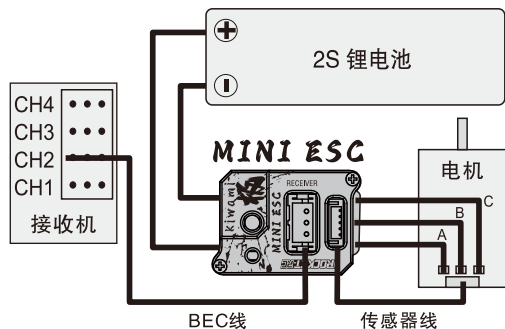
特点

小体积：极致的体积，为MINI量身定制
大功率：30A持续电流，强劲输出
轻重量：减轻整车重量，轻装上阵
多选项：丰富的功能参数选项，为竞赛而生
散热快：全金属CNC外壳，外观与散热完美结合

参数

输入电压：2S LiPo (6-8.4V) 重量：7.6g(含线材)
峰值电流：80A 防水：不防水
连续电流：30A 电机类型：MINI车用有感电机
BEC输出：6V/7.4V 3A
电调尺寸：21x13.8x11mm 适用车型：1/28th、1/27th

电调使用连接图



- 在接收器连接器和电调之间连接内置BEC线(100mm)。
- 将3根电调线连接到电机上；您可以将电线直接焊接到电机上，也可以使用您喜欢的连接器。焊接时，将电调输出的(A、B、C)线与电机上的(A、B、C)焊片相匹配。避免焊接每个接头超过5秒，导致流锡形成短路。

(警告！接线不当可能会损坏电调并使保修失效)

注意：电调采用电子开关，在开关OFF时，仍然会消耗少许电流，使用后请断开电池连接线。

声明

这是车用电子速度控制器(ESC)，RC模型的大功系统非常危险，因此请仔细阅读本手册。由于我们无法控制产品的正确使用、安装、应用或维护，因此对于使用产品造成的任何损害、损失或成本，我们不应承担或接受任何责任。因操作、故障等引起的任何索赔将被拒绝。我们不承担人身伤害、产品或艺造成的相应损害的责任。

发射器和电调设置

发射器设置：
油门最大行程 / 100%
最大制动行程 / 100%
油门指数从 0% 开始
油门中立点区域/0

电调对油门行程的初始设置：

- 将电调的电源线连接到已充满电的电池，连接时注意极性正确。
- 如果摇控器和接收机未配对请先完成配对。
- 按住电调电源按钮不松开，LED亮红灯，等待2秒以上，LED灯转蓝灯(电机发出哔…提示音)，这时松开电源按钮，
- 将油门在中点位置保持不动，然后按一次电源按钮，电机哔一声，电调已存储油门中立点值。
- 全油门保持不动，然后按一次电源按钮，电机哔哔二声，电调已存储全油门最高点值。
- 全刹车保持不动，然后按一次电源按钮，电机哔哔哔三声，电调已存储最大刹车油门值。
- 完成油门设置，可以正常使用了。

电调状态LED指示灯说明

1、正常使用阶段：

油门摇杆处于中点区域：绿色LED恒亮，红色LED熄灭。如果Boost进角和Turbo进角加起来总共为0度(即Zero Timing)，则绿色LED慢闪，以便符合ROAR的竞赛规则。

前进时：绿色LED熄灭，红色LED随着油门位置加大由慢到快的闪烁；当油门处于正向最大(100%油门)时，红色LED恒亮。

刹车/倒车时：绿色LED熄灭，红色LED随着油门位置加大由慢到快的闪烁；当油门处于反向最大(100%油门)时，红色LED恒亮。

2、保护阶段：

电调未检测到油门信号时：橙色灯恒亮。

电池电压范围异常：橙色灯闪烁1次。

电调进入电池电压低电保护：橙色灯闪烁2次。

电调进入温度保护：橙色灯闪烁3次。

电调未接入电机感应线：橙色灯闪烁4次。

编程电调

首先，将电调电池线连接到已充电的电池，然后将BEC线3针线连接到编程卡“S+”插口(3插口)。打开ESC电源开关，编程卡将自动读取ESC设置，编程卡设定项依次显示1到15表示连接成功，您可以开始对ESC进行编程设计。(如果未显示表示连接不成功，请重复尝试关闭ESC,重新连接编程卡再打开ESC直到成功)

编程方法：编程卡是使用4个按钮完成的，每个按钮的功能从左侧开始是“编程项目(ITEM)、值(VALUE)、确定(OK)、重置(RESET)”。

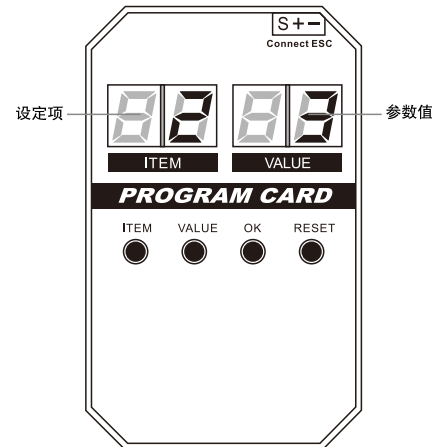
“编程项目(ITEM)”按钮----按下转到下一个编程项目。

“值(VALUE)”按钮-----按下转到下一个值。

“确定(OK)”按钮-----按下以确认您的设置。

“重置(RESET)”按钮-----按下恢复出厂设置。

请参照下面功能表编程您需要的功能设置。



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编程卡功能表

低电压保护：其功能主要是防止锂电池组过度放电。使用锂电池组时，请将适合的低压保护值设置为您喜欢的。
警告：切勿使用锂电池的默认值“非保护”!

选项 \ 值	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1.低电压保护	3.1V 慢车	2.9V 慢车	2.7V 慢车	无效	3.4V 慢车	3.1V 停车	2.9V 停车	2.7V 停车	3.4V 停车
2.加速度	<u>Level 3</u>	Level 1	Level 6	Level 2	Level 4	Level 5			
3.最大刹车力度	<u>50%</u>	25%	75%	100%	无效				
4.最大倒车力度	<u>25%</u>	50%	75%	100%					
5.油门中立点范围	<u>9%</u>	6%	12%	1%	3%				
6.电机温度保护	<u>120°C 停车</u>	135°C 停车	150°C 停车	120°C 慢车	135°C 慢车	150 °C 慢车	无效		
7.电调温度保护	<u>105°C 停车</u>	95°C 停车	105°C 慢车	95°C 慢车	无效				
8.运行模式	<u>前进 倒退 刹车</u>	前进 刹车	前进 倒退						
9.拖刹力度	<u>0%</u>	5%	10%	20%	30%				
10.Boost 进角	0° - 60°								
11.Turbo 进角	0° - 60°								
12.驱动频率	<u>8K</u>	2K	4K	12K	16K	24K	32K	48K	
13.刹车频率	<u>1KHz</u>	400Hz	600Hz	800Hz	2K	4K			
14.电机转向	<u>CCW</u>	CW							
15.BEC 电压	<u>6V</u>	7.4V							
16.模式	<u>Drift</u>	Racing							

注：1、带下划线“—”表示出厂默认值，1-9项适用无感无刷电调、1-16项适用有感无刷电调(6项除外)。
2、编程卡是多款电调通用产品，这款电调没有项目6电机温度保护功能。

