

航模无刷电机调速器使用说明书 (锂电池版)

一、功能特点介绍

1. 电压适应范围: 输入电压6V~16.8V (2~4节锂电池) ;
2. 工作电流: 20A电调持续电流20A, 瞬间工作电流25A;
30A电调持续电流30A, 瞬间工作电流40A;
40A电调持续电流40A, 瞬间工作电流50A;
3. BEC (Battery Eliminate Circuit) 输出能力: 5V 1A ;
4. 通过调节马达电线可实现正转和反转;
5. 采用先进的启动算法, 满足不同磁铁极数电机的要求;
6. 安全通电功能, 接通电源时无论遥控器的油门摇杆在任何位置均不会立即启动电机;
7. 遥控信号丢失保护, 发射机、接收机传递讯号不良或讯号不稳定时导致失控, 信号丢失保护程序在4秒后缓慢降低马达转速, 这4秒内如果信号恢复则继续按原状态工作;
8. 当温度达到105℃时以限制功率方式实现降温, 如果限制功率后温度继续上升则缓慢切断马达电源, 此时只有等温度降低后重新加电才能正常工作;
9. 锂电池保护功能, 当单节电池电量低于3.1V时则缓慢切断马达电源, 电量恢复后将油门关闭再打开就可以继续工作;
10. 过载保护功能, 启动时出现负载过大时立刻切断马达电源, 重新加电才能正常工作;
11. 堵转保护功能, 如果桨被卡住则限制最大输出功率为39%。

二、使用说明

使用时要求散热良好, 固定可靠。

电调自动检测锂电数量, 根据电池数量选择判断电压。如: 当检测到是2节锂电时, 关断电压为6.2V, 当程序检测到3节锂电时, 其关断电压为9.3V。

油门设定: 初始最大油门位置为1850us, 初始最小油门位置为1170us
可按下列顺序配置最大行程和最小行程:

1. 将油门扳到最大, 上电, 等10秒, 响一声长音, 记录油门最大行程。
2. 将油门扳到最小, 等3秒, 响一声长音, 记录油门最小行程。
3. 发出一串响声, 此时可以正常操作了。

三、异常说明

异常情况发生时, 会缓慢关断马达动力然后报警, 具体说明如下:

1. 推油门, 电机无反应
处理方法: 检查接收机输出是否正常, 是否受发射机控制。
2. 信号丢失报警: 1秒响1下
处理方法: 检查接收机输出是否正常, 是否受发射机控制。检查发射机油门(包括微调)是否打到最低位置, 油门输出是否反向。
3. 瞬间电流过大报警: 1秒响2下
处理方法: 检查线路连接是否正确, 检查电机是否良好。
4. 温度过高报警: 1秒响3下
处理方法: 检查电机是否良好, 检查电调是否离电机等发热物体太近。
5. 电池电量低报警: 2秒响1下
处理方法: 检查电池电量, 更换电池。说明书里说明一下, 如果客户对这种设置感觉不太习惯或者使用时出现油门打不开或者无法启动, 可以自行按照说明书设置。

Operating Manual of Brushless Motor Controller for Aero Modeling (Li-Po batteries)

Functions & Features

1. Power voltage scope: Input voltage 6V~16.8V (2~4 cells Li-Po batteries),
2. Working current:
For 20A controllers: Continuous service current: 20A, instant working current: 25A
For 30A controllers: Continuous service current: 30A, instant working current: 40A
For 40A controllers: Continuous service current: 40A, instant working current: 50A
3. BEC (Battery Eliminate Circuit) output scale: 5V 1A
4. Achieve positive rotation and rollback through regulating motor wires.
5. Advanced heuristic algorithm applied to meet the requirements for motors with different number of magnetic poles.
6. Secure galvanization Function
Once electrified, the motor won't be started immediately no matter where the throttle rocker on remote controller is put.
7. Lost remote controlled signal protection
When the signal transmitted between emitter and receiver is bad or instable, the aero model may be out of control. The protection program will be started after 4 seconds, and make the motor slow down. If signal recovered in the 4 seconds, it will work in previous condition.
8. Cooling down can be achieved by limiting the power when it's reaching 105 ℃. If cooling down failed, the power supply will be cut off gradually. Now, you have to wait the temperature dropping back to normal and galvanize again to have the normal service.
9. Battery protection
Power supply will be cut off gradually when the electric quantity on singular battery is found less than 3.1V, When power quantity is recovered, turn off the throttle and resume it to have normal service again.
10. Overload protection
Power supply will be immediately cut off when an instant high-current appears at starting. You can galvanize again to resume the normal service.
11. Halted run protection
If propeller is locked, the max power output is limited at 39%.

Instruction

The good cooling function is required when using it to enhance its stability and reliability. ESC will automatically detect the number of Li-Po battery, and accordingly select and determine the right using voltage, Such as: When ESC detected 2 cells Li-Po battery, the cut off voltage turns to be 6.2V; when detected 3 cells Li-Po battery, the cut-off voltage is 9.3V .
Throttle settings: Default max: 1850us default min: 1170us

The following steps tell you how to make the max and min throttle settings

1. Put the throttle on the highest position, galvanization, keeping it for 10 seconds, a long beep comes to record the max throttle settings.
2. Put the throttle on the lowest position, keeping it for 3 seconds, a long beep comes to record the min throttle settings.
3. Seriate beeps come to indicate normal operations are available.

Abnormal note

If unusual reaction happened, it will cut off the motor power and then give an alarm. The specific instruction is below:

1. The motor don't work when pushing the throttle.
Solution: Check whether output of receiver is in a normal condition and whether it is controlled by transmitter
2. Losing signal: sound one time per second.
Solution: Check whether output of receiver is in a normal condition and whether it is controlled by transmitter Check whether throttle of transmitter (trim included) is in the lowest position and whether the output of throttle is reverse.
3. Too much spark: sound 2 times per second
Solution: Check whether the connection of circuitry is right and whether the motor can work.
4. Too high temperature: sound 3 times per second.
Solution: Check whether the motor can work and whether the speed controller is too close to the heated objects.
5. Low capacity for battery: sound one time per two seconds
Solution: Check the battery capacity or change the battery.. More details pls see the manuals for reference.