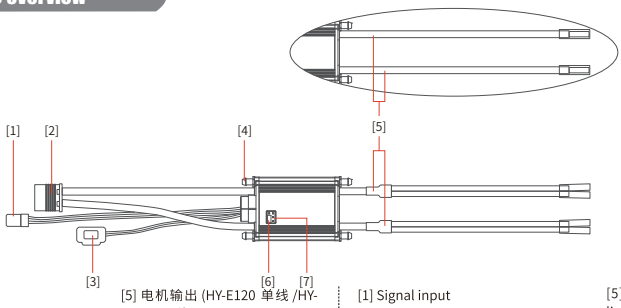
产品介绍 Introduction

HY-E120/E120B 是一款车船用有刷电子调速器。具备水冷散热、运行模式切换、电池类型切换、高温保护、低电压保护等功能，可适配 120A 及以下电流的多种类型车船使用。

HY-E120/E120B is a brush Electronic Speed Controller (ESC) for vehicles and boats. It features water-cooled heat dissipation, operation mode switching, battery type switching, high temperature protection, and low voltage protection. It is applicable to many types of vehicles and boats with the current equal to or smaller than 120A.

电调概览 ESC overview



[1] 信号输入
[2] 电源输入
[3] 开关
[4] 水冷散热接口
[5] 电机输出 (HY-E120 单线 /HY-E120B 双线)
[6] 模式切换接口
[7] 指示灯 (LED)

[1] Signal input
[2] Power input
[3] Switch
[4] Water-cooled heat dissipation interface
[5]Motor output(HY-E120 single line/HY-E120B double line)
[6]Mode switching interface
[7]Indicator(LED)

产品规格 Product specification

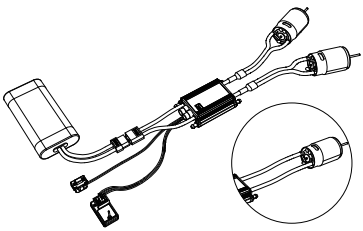
- 产品型号：HY-E120 HY-E120B
- 持续 / 峰值电流：正转 120A/400A 反转 80A/300A
- 支持电机类型：550、755 有刷电机
- 电池节数：Lipo（2~3S）/NiMH(4~9Cell)
- BEC 输出：6V/3A
- 插头：XT60/ϕ4 子弹头
- 温度范围：-10°C ~ +60°C
- 湿度范围：20% ~ 95%
- 防水等级：PPX7
- 外形尺寸：72mm*42mm*17.5mm
- 机身重量：90g
- 认证： CE-EMC/ 安规，FCC SDOC，ICES

- Product Name：HY-E120 HY-E120B
- Continuous / Peak Current：SF120A/400A SR 80A/300A
- Motor Type：550、755 brush motor
- Input Power：Lipo（2~3S）/NiMH(4~9Cell)
- BEC Output：6V/3A
- Plug：XT60/ϕ4 Bullet plugs
- Temperature Range：-10°C ~ +60°C
- Humidity Range：20% ~ 95%
- WaterProof：PPX7
- Dimensions：72mm*42mm*17.5mm
- Weight：90g
- Certification： CE-EMC/Safety，FCC SDOC，ICES

电调功能使用说明 ESC function instructions

1. 连接相关设备：

- 连接前请确认电调电源开关处于关闭（OFF）状态，将电机与电机 M+/M- 接口相连接，舵机接到 3Pin 排针接口上（"-""+""S " 相对应），电池与电机输入正负极对应相接。



2. 正常开机，识别油门中点：

- 上面第一步相关设备连接好后，先打开发射机，并将发射机　置于中点位置（自然状态）。最后一步打开电调开关，电调会根据模式切换接口上短路帽短连的情况自动识别电池类型和运模式，约 1 秒后电机会“滴—”长鸣一声表示自检完成，方可运行。

注：

1. 电调功能必须等到开机自检完成后方可运行（大约 3 秒），否则可能无法正常动作；
2. 若开机后无动力输出，且电调红色 LED 快闪，说明发射机实际油门不在中点位置。请查看发射机油门微调是否置于“0”位置，微调油门中点直到电调红色 LED 不闪即可；
3. 若运行时发现电机转向不对，将电调接电机的两根线互换位置即可；
4. 为了一切正常，请养成先开发射机再接收机通电以及先接收机断电再关闭发射机的习惯。

3. 行驶过程中指示灯（LED）状态说明：

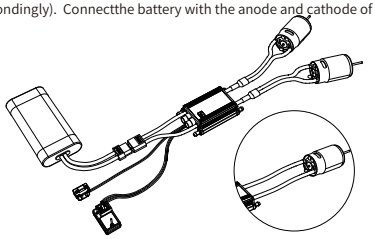
- 油门扳机处于中点区域时，电调红色 LED 熄灭；
- 前进时，电调红色 LED 快闪；当油门处于正向最大（100% 油门）时，红色 LED 变成常亮；

电调功能使用说明 ESC function instructions

- 倒车时，电调红色 LED 快闪。

1. Connect related equipment:

- Make sure the ESC is off before connection. Connect the motor with M+ and M- of the receiver. Connect the steering servo to the 3Pin interface marked with “ST”（- + S connected correspondingly). Connectthe battery with the anode and cathode of the receiver correspondingly.



2. Normal boot, identification throttle midpoint:

- After connecting related equipment as step 1, turn on the radio first, move the throttle trigger to the neutral position. Turn on the Power switch of the ESC at last. When the battery of ESC is LiPo, the motor will emit “beep-beep” twice if use 2s LiPo; When the battery of ESC is NiMH cells, the motor will emit “beep” only once. After about 1 second, the motor will long emit “beep” sound, indicating self-inspection is finished, then can run it.

Notes:

1. The ESC can be run after completing self-inspection (about 3 seconds) if power on, otherwise it cannot be operated normally.
2. If there is no power output and the red LED of ESC flashes quickly after power on, it means that the actual throttle trigger of the transmitter is not at the neutral position, move the throttle trigger to the neutral position until the red LED of ESC does not flash.
3. If the rotation direction is not correct during running, exchange the two wires connecting the motor and the receiver.
4. To make sure everything is ok, please turn on the transmitter first and then the receiver, turn off the receiver first and then the transmitter.

3. Description of LED status during driving:

- The red LED of ESC extinguishes when the throttle trigger is at the neutral position.
- The red LED of the ESC quickly flashes when the vechel moves forward; the red LED of the ESC is solid on when the throttle is at the end position of forward(100% throttle).
- The red LED of the ESC quickly flashes when reversing.

电调模式切换 ESC Mode Switching

- 采用短路帽方式切换电池类型和运行模式：

1. 电池类型：

- 支持 4-9 节镍氢电池和 2-3 节锂聚合物电池，采用短路帽短接电调模式切换接口上排 3PIN 排针中的 2PIN 来区分 (短路帽短接后需要重新上电)：

短路帽短接上排左侧 2PIN 排针 , 连接镍氢电池后上电 ,LED 闪一下 , 电机“滴，长鸣滴”一声 , 此时已切换为镍氢电池模式。

短路帽短接上排右侧 2PIN 排针 , 连接两节锂电池后上电 ,LED 闪两下 , 电机“滴、滴，长鸣滴”一声 , 此时已切换为两节锂电池模式 ,6.2V 会启动低电压报警；连接三节锂电池后上电 ,LED 闪三下 , 电机“滴、滴、滴，长鸣滴”一声 , 此时已切换为三节锂电池模式 ,9.5V 会启动低电压报警。

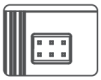
注：低电压报警同时油门量减低一半。

2. 运行模式：

- 支持双向模式、船模式及攀爬模式，采用短路帽短接电调模式切换接口下排 3PIN 排针中的 2PIN 来区分：

短路帽短接下排左侧 2PIN 排针，连接电池后上电后切换为双向模式。此模式有前进、倒车、刹车无拖刹。

短路帽短接下排右侧 2PIN 排针，连接电池后上电后切换为船模式。此模式有前进、倒车、无刹车无拖刹。



不接短路帽，连接电池后上电后切换为攀爬模式。此模式有前进、倒车、无刹车带拖刹。

电调模式切换 ESC Mode Switching

- Switch the battery type and operation mode with the short-circuiting cap.

1.Battery type:

- It supports four to nine pieces of NiMH batteries and two or three pieces of Li-Polymer batteries. They are distinguished by using a short-circuiting cap to short-circuit 2PINs of 3PINs in the upper row of the ESC mode switching interface. The power-on is required again after the short-circuiting cap is short-circuited:

Use the short-circuiting cap to short-circuit 2PINs on the left side in the upper row. Connect to NiMH battery and power it on. The LED flashes once. The motor beeps once, and then beeps for seconds. At this time, it is switched to NiMH battery mode.

Use the short-circuiting cap to short-circuit 2PINs on the right side in the upper row. Connect to two pieces of lithium batteries and power it on. The LED flashes twice. The motor beeps twice, and then beeps for seconds. At this time, it is switched to two pieces of lithium batteries.For 6.2V, it gives the low voltage alarm. Connect to three pieces of lithium batteries and power it on. The LED flashes three times. The motor beeps three times and then beeps for seconds. At this time, it is switched to three pieces of lithium batteries. For 9.5V, it gives the low voltage alarm.

Note: When there is a low voltage alarm, the throttle volume is reduced by half.

2.Operation mode:

- It supports two-way mode, boat mode, and crawl mode. They are distinguished by using a short-circuiting cap to short-circuit 2PINs of 3PINs in the lower row of the ESC mode switching interface:

Use the short-circuiting cap to short-circuit 2PINs on the left side in the lower row. Connect to the battery and power it on. In this case, it is switched to the two-way mode. This mode includes forward, reverse, and brake without brake drag.

Use the short-circuiting cap to short-circuit 2PINs on the right side in the lower row. Connect to the battery and power it on. In this case, it is switched to the boat mode. This mode includes forward, reverse, and no brake without brake drag.

The short-circuiting cap is not connected. Connect to the battery and power it on. In this case, it is switched to the crawl mode. This mode includes forward, reverse, and no brake with brake drag.

注意事项：

- 使用前必须确保本产品与模型安装正确，否则可能导致模型发生严重损坏。
- 请查看各动力设备以及车架说明书，确保动力搭配合理，避免因错误的搭配导致动力系统损坏。
- 勿使系统的外部温度超过 90°C /194 °F，高温将会毁坏动力系统。
- 关闭时，请务必先关闭接收机电源，然后关闭发射机。如果关闭发射机电源时接收机仍然在工作，将导致遥控设备失控。失控保护设置不合理可能引起事故。
- 使用完毕后，若长时间不玩车，切记断开电池与电调的连接。如电池未断开，即使电调开关处于关闭状态，电调也会一直消耗电能（只是非常小），长时间连接电池最终会被过放，进而导致电池或电调出现故障。我们不对因此而造成的任何损害负责！
- 确保接收机安装在远离电机或电子噪声过多的区域。
- 接收机天线需远离导电材料，例如金属棒和碳物质。为了避免影响正常工作，请确保接收机天线和导电材料之间至少有 1 厘米以上的距离。
- 准备过程中，请勿连接接收机电源，避免造成不必要的损失。

Attention:

- Make sure the product is installed and calibrated correctly, failure to do so may result in serious injury.
- Please carefully check each power device and car frame instructions to ensure the power matching is reasonable before use. Avoid damaging power system due to incorrect matching.
- Do not let the external temperature of the system exceed 90°C /194 °F , because high temperature will damage the power system.
- Make sure the receiver's battery is disconnected before turning off the transmitter, failure to do so can result out of control. Unreasonable setting of the Failsafe may cause accidents.
- After use, remember to disconnect the battery and the ESC. If the battery isn’ t disconnected, the ESC will consume electric energy all the time even if it is off. It will discharge completely if connect the battery for a long time, thus resulting in the failure of the battery or the ESC. We are not responsible for any damage caused by this!
- Make sure the receiver is mounted away from motors or any device that emits excessive electrical noise.
- Keep the receiver's antenna at least 1cm away from conductive materials such as carbon or metal.
- Do not power on the receiver during the setup process to prevent loss of control.

认证相关 Certification

FCC Compliance Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning: changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to

认证相关 Certification

provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-- Reorient or relocate the receiving antenna.

-- Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-- Consult the dealer or an experienced radio/TV technician for help.

EU DoC Declaration

Hereby, we declares that the Radio Equipment [HY-E120 E120B] is in compliance with RED 2014/53/

RF Exposure Compliance

The distance between user and products should be no less than 20cm.

Environmentally friendly disposal

Old electrical appliances must not be disposed of together with the residual waste, but have to be disposed of separately. The disposal at the communal collecting point via private persons is for free. The owner of old appliances is responsible to bring the appliances to these collecting points or to similar collection points. With this little personal effort, you contribute to recycle valuable raw materials and the treatment of toxic substances.

CE