Shenzhen Isd Technology ESC70 Brushed Electronic Speed Controller User Manual

Contents

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Warnings and safety tips

To ensure your safety and good user experience, please read this description and warning before using this product.

1. Before connecting the ESC to related connecting parts, please make sure that all wires and connecting parts are well insulated. Short-circuit will damage your ESC.
2. Before using this ESC, please carefully check the manual to ensure all your motor/battery and your RC within our recommended specifications that the power mix is reasonable, and avoid the motor overload caused by the wrong power mix, poor connection and reverse polarity will damage your ESC.
3. If you need to solder your input and output cables or battery plugs of the ESC. Please use reliable soldering equipment with a power of at least 60W or above for soldering. If the wire is too hot to hold, please remove the solder joint and let everything cool and try again. Excessive heat can damage your ESC.
4. For your safety and the safety of others, we strongly advise keeping the RC unit in the air or on a Stand when you power on or ESC tuning or Calibrations.
5. Do not allow the external operating temperature of your ESC to exceed over 90°C/194°F. Doing so may permanently damage your ESC and may also cause damage to your motor.
6. Always remember to disconnect the battery from the ESC after use. If the battery is not disconnected, the ESC will continue to consume power until your battery will eventually be completely discharged even if your ESC switch is turned off. Long Connection will cause the battery or the ESC to malfunction.

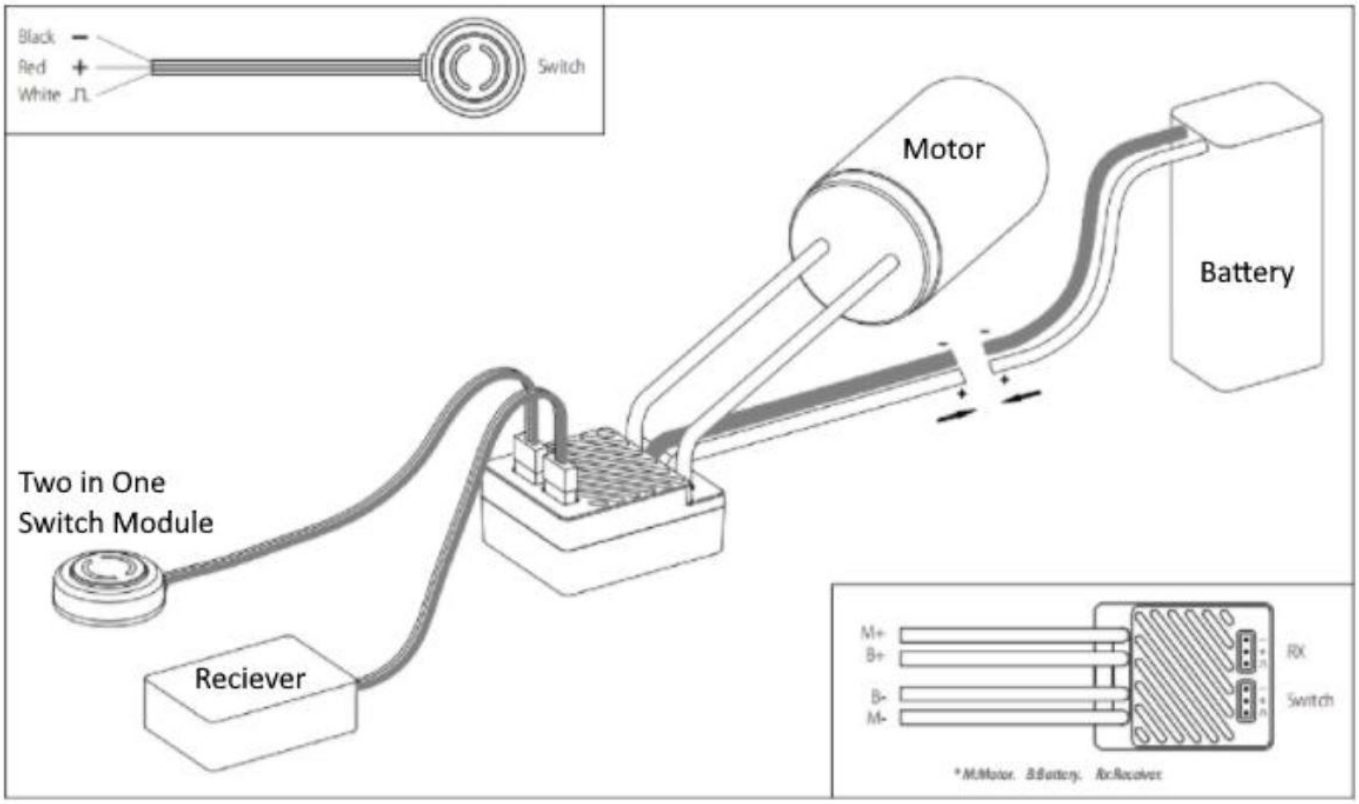
Features

1. Fully waterproof design for all conditions. (Note: please clean and perform maintenance after use for avoiding corrosion)
2. Advanced electronic switch and Bluetooth two-in-one module, Support real time operating parameters and status via the ISD Go APP.
3. Built-in BEC with adjustable output features; outputs continuous current up to 3A, and support 5V to 7.5V with 0.1V adjustment via ISD Go APP. Support various powerful rc applications and high-voltage servos.
4. Adjustable PWM frequency and advanced synchronous function provide ideal throttle curve and outstanding performance for different vehicles, conditions.
5. Adjustable Active drag brake function and adjustable Brake force or initial braking.
6. Multiple protection functions: battery low-voltage protection, over-temperature protection, throttle out-of-control protection, BEC over-voltage and under-voltage protection;
7. Infinitely adjustable throttle acceleration/punch and brake curves that can be set individually.
8. Customizable startup sound.
9. OTA upgrade firmware, ensure your ESC are up-to-date and functioning properly and enhanced user experience at all time.
10. Slope anti-skid locking function specially designed for RC Crawler that characteristics operating on the toughest terrain.

Specifications

Model	ESC70
Cont. / Peak Current	70/120A
Motor type	540/550/775 Brushed motor
Applications	1/8 or 1/10 Various models
LiPo / NiMH Cells	2~3S Lipo or 6~8 Cell NiMH
BEC output	5V~7.5V adjustable (step by 0.1V)
Wire/ Connectors	16AWG-200mm/ Without Plug
Dimension	38.6*31.6*17.15mm(Without Wire)
weight	about 49g/switch about 4.5g

Use a New Brushed ESC



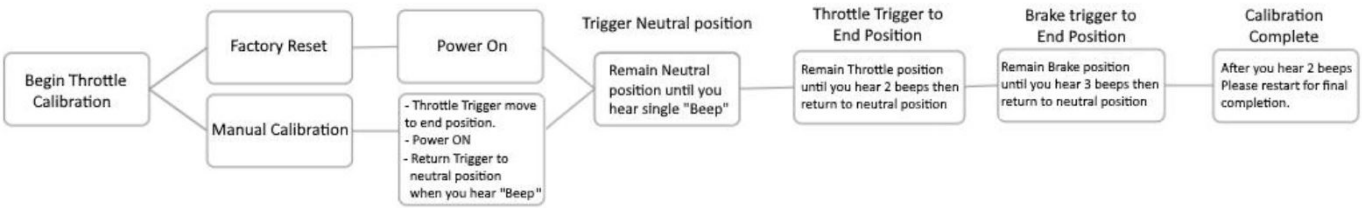
1. **Motor Wiring:**
   Connect the ESC to the motor. The two output wires of the ESC can be connected to either of two wires of the motor at will. If the direction of rotation is reversed, the two motor wires can be interchanged or change the direction of motor rotation can be adjusted via the APP.
2. **Connect ESC To Receiver:**
   Connect the throttle control cable of the ESC to the throttle channel of the receiver (ie Channel 1: Servo | Channel 2 ESC). Please be reminded the ESC throttle control port has BEC voltage adjustment function to the receiver and the servo, We Suggest DO NOT supply additional power to the receiver, otherwise, your ESC may be damaged.
3. **Connect to the battery:**
   Connect to the battery, please MAKE SURE that the (+) pole of the ESC is connected to the battery's (+) and the (-) pole is connected to the (-). If the ESC is connected reversely, your ESC will be damaged.

Note: For safety purposes, Be sure the ESC is switched off when connecting the wires to the motor and battery as the above diagram. Switch on the ESC by keeping the RC unit in the air or on a Stand when you power on.

ESC Setup

1. Calibrate the throttle stroke without two in one switch module If the electronic switch module (Switch) is not equipped, The electronic speed controller will be TURNED ON when it detects the battery.
2. Before Calibrate throttle range, ensure the ESC is connected to your receiver in channel 2 (CH2) , a fully charged battery is connected and a well-calibrated Radio is Ready.
3. Please adjust the throttle channel throttle/brake EPA parameters on your remote control to the default values and the midpoint to 0.

Note: The throttle must be calibrated in strict accordance with the following sequence, otherwise the car may engage laggy response and may run reversely with the remote control directives.



- Start to calibrate the throttle
- First calibration
- Calibration after restoring factory settings
- Recalibration

After the calibration is completed, the default operation mode is forward and reverse with the brake function.

Use APP (ISD GO) to set up

The ESC will be in low power consumption state after being powered on if two in one electronic switch modules have been inserted.

Turn on/off

- Turn on: Power on the electronic speed controller, white LED light will be shown on the switch module (Switch).
- Press and hold the button for one second, the white LED light will turn to steady green (no error message) or flashing red (with error message).
- Turn off: Press and hold the button until the LED light goes out.
- Bluetooth pairing
- In low power consumption state, press and hold the button until the blue LED light is indicated on the switch module
- LED Light blinking on the switch module will start Bluetooth pairing. The blue LED light will always be on after Bluetooth is connected successfully. And then the ESC can be set up in the ISD APP.

Throttle Calibration

- If the current throttle range of the ESC is not calibrated, the item “ Remote Calibration” at the top of the Configuration interface will display a red “ ! ”.mark Before start to calibrate the throttle range , please adjust the throttle channel parameters of the remote control to the default value and the midpoint of the throttle channel to 0.
- Begin by clicking the “Remote Calibration” and the throttle calibration window will pop up. Follow the instruction to complete the throttle calibration.

  Note:

  ● All other options cannot be set up BEFORE the throttle calibration is performed!

  ● Set the throttle midpoint dead zone. Keep the default value at “0” for most remote controls. If the motor rotates and the recalibration of the throttle range is invalid when the throttle is placed in the mid-position. You need to set a larger throttle mid-point dead zone.

Basic setup

Operation mode

- Forward with brake: In this mode, the vehicle can only move forward and brake.
- Forward /Reverse with brake: In this mode, the vehicle can forward, reverse and brake. This mode adopts double-click reversing mode, that is, when the throttle stick is pushed to the reverse zone for the first time, the motor only brakes. When the throttle is returned to the neutral position and pushed to the reverse zone for the second time, The car will be reversed if the motor has stopped rotating and the brake will still be applied if the motor is rotating.
- Forward and Reverse: In this mode, when the throttle is in the reverse zone, the motor will reverse immediately.

Low voltage protection

- This function is mainly to prevent the ESC from irreversible damage caused by lithium batteries being over-discharged. The ESC will constantly monitor the battery voltage and will cut off the power output once the voltage is lower than the set data.
- The low-voltage protection value can be set to automatic (according to the battery type) or manually specified from 5.0V to 12.0V.

BEC voltage

- The BEC voltage supports manual adjustment from 5.0V to 7.5V (0.1V step).
  Note:
  ● Wrong BEC voltage setting may lead to damage to the servo or other electrical equipment.

Motor rotation: This item can adjust the motor spinning rotation, moving to the left is the equivalent of the motor turning counter-clockwise, and moving right is clockwise..

Advanced

PWM frequency

- Adjust the frequency under this item. When ESC is set with A lower driving frequency. The motor output will be stronger, the throttle will feel more punchy due to the higher volume of torque; When ESC is set with higher driving frequency, the Motor will output smaller torque while being more defined and rotating smoother with lesser noise, but it leads to increased heating of the ESC and energy demand .

Starting Force

- Adjust the Starting force of ESC under this item. The larger the value, the higher sensitivity of throttle response and the motor increasing throttle output

Braking force

- Adjust the braking power under this item. The larger the value, the higher sensitivity of braking response/force.

Active drag brake level

- Adjust the Forward /Reverse mode under this item. Ensure A non-closed value and the throttle is in the neutral position, the ESC will automatically generate a forcethat hinders the movement of the motor. A bigger set value , the greater the force generated.

Ramp Anti-Skid lock

- Ramp Anti-Skid lock: In Forward/Reverse mode (climbing mode), the active drag brake level is set to a non-zero value to turn on the ramp anti-skid lock function.
- After this function is turned on, when accelerating movement from a throttle or braking position to a midpoint position, the motor will generate a torque force that is opposite to the current direction of movement to keep the vehicle stationary. This function can make the vehicle stop faster when the vehicle is driving on a flat road, and it can keep the vehicle still on the slope when driving on a steep road. The active drag brake level needs to match the weight of the vehicle. If the level is too high, the vehicle will not be stable in place, and if the level is too low, the vehicle will not be able to remain firmly on a steep slope

Active brake enable

This setting is only effective in forward and reverses with brake mode. When this value is set to on, it can produce greater braking force.

Other

- Throttle Curve
- Set the throttle curve for step-less adjustment under this item.
  Note:
  - In the default novice mode, the maximum power output is limited to 70%.

Brake curve

- Set the braking curve of stepless adjustment under this item.
  Note:
  - In the default novice mode, the maximum braking force is limited to 70%.

Brake curve

- Set the braking curve of stepless adjustment under this item.
  Note:
  - In the default novice mode, the maximum braking force is limited to 70%.

Custom start sound

- – Set the start-up sound under this item when the ESC is turned on.

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

  FCC Radiation Exposure statement

  This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

Documents / Resources

	Shenzhen Isd Technology ESC70 Brushed Electronic Speed Controller [pdf] User Manual ESC706080, 2A3R7ESC706080, ESC70 Brushed Electronic Speed Controller, Brushed Electronic Speed Controller

References

- ISDT
- ISDT