

Instruction Manual

SKYRC FuriaX Supa 60A Brushless ESC

SK-300080-01
V.45

INTRODUCTION

Thank you for purchasing SkyRC FuriaX Supa 60A Brushless ESC. Please read the Instruction Manual thoroughly before you use the product. These operating instructions are designed to ensure that you quickly become familiar with its features and functions and make full use of this product.

⚠ SAFETY NOTE

- It is not a toy and suitable for users older than 14 years old.
- Never allow water, moisture, oil or other foreign materials to get inside ESC, motor, or on the PC Boards. It may damage the ESC completely.
- Never disassemble the ESC and modify the components on the PC Boards.
- Never run the ESC without load at full throttle and it may damage the bearings and other moving parts.
- Please make sure the location where to fix the ESC has good airflow ventilating so that the heat could dissipate quickly.
- To avoid short circuit, please keep the ESC connectors far away from other metal parts.
- Never connect the battery in polarity in reverse.
- Please remove the pinion gear before performing calibration with this system. Please keep your hands, hair, cloth, clear from the gear train and wheels
- Before you switch on the ESC, please make sure all the cables are well solder with the connectors (It is easy to get loose when running). What's more, make sure the cables not touch the moving parts.
- To avoid signal interference, please always turn on the transmitter first THEN turn on the speed control. Do the opposite when powering it off.
- Never use faulty accessories, e.g. faulty motor which may damage the ESC. Always insulate exposed wiring with heat shrink tubing or electrical tape to prevent short circuits, which can damage ESC too.
- Always disconnect the battery pack from the speed control when not in use to avoid short circuits and possible fire hazard. When the ESC is switched off, there is still small current and it may cause over discharge of the battery after some time.
- This ESC can support 6-9 Cell NiMH 2-3S LiPo battery.

Note: We will not be responsible for any damage caused by non-compliance with above instruction.

SETUP

1. ESC Placement

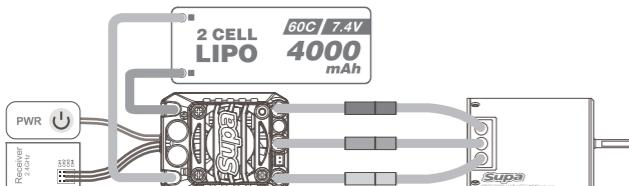
Mount the ESC in a location protected from debris and impact. To avoid interference with the wireless receiver system, keep the ESC as far away from the receiver as possible, and keep the battery wires as short as possible. Choose a well-ventilated spot—the ESC performs more efficiently when cooled by airflow.

2. Secure the ESC

Use double-sided tape to fix the ESC to the car (do not use instant glue).

3. Wiring

Connect the ESC's BLUE, YELLOW & ORANGE silicone wires directly to the motor wires of the corresponding colors, and connect the signal wire properly to the receiver.



CAUTION:

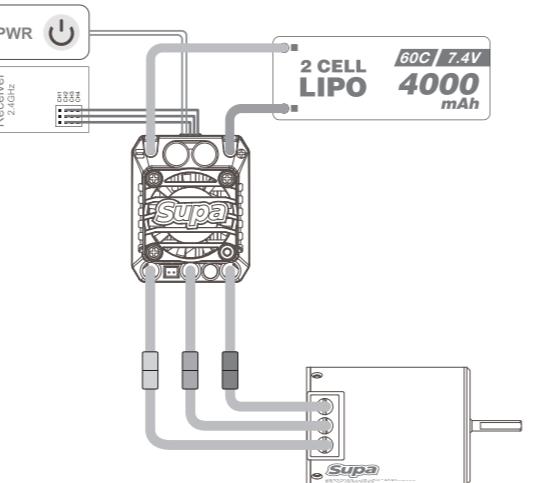
When connecting to a sensorless brushless motor, if the forward/reverse rotation is incorrect, swap any two of the wires, or change the rotation direction setting on the transmitter. This controller supports sensorless brushless motor.

CALIBRATION

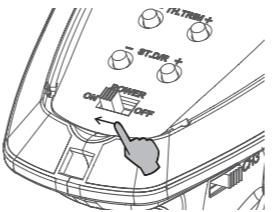
Calibration is required when using the ESC for the first time, or whenever it is paired with a new or different transmitter. Each transmitter may have slightly different signals for full throttle, full brake, and neutral. Proper calibration ensures the ESC works precisely with your transmitter.

How to calibrate:

1. Connect the ESC to the battery and motor. Make sure the ESC is OFF.



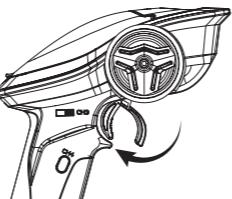
2. Turn on the transmitter.



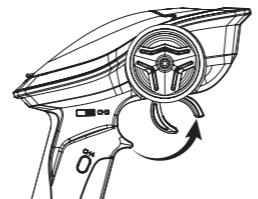
3. Long press the power button of the ESC until you hear a beep, then release. The purple LED lights on, entering calibration mode.



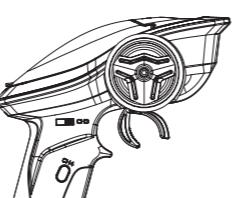
4. Pull the throttle trigger to full throttle and hold it until you hear one beep, indicating that the full throttle calibration is complete.



5. Move the throttle trigger to full brake and hold it until you hear two beeps, indicating that the full brake calibration is complete.



6. Release the throttle and leave it in the neutral position until you hear three beeps, indicating that the neutral position calibration is complete.



7. After calibration is completed, the LED will flash blue slowly, and the system will automatically enter standby mode.



POWER ON/OFF AND LED STATUS

1. POWER ON/OFF

- Short-press the power button to turn on the ESC. After a red flash, the LED will slowly flash blue, indicating standby mode.
- Long-press the power button for 2s to turn off the ESC. The red & purple LEDs will turn off.

NOTICE

- 1: While the device is on, long press the power button for 2 seconds until the red & purple LEDs turn off, then release the button after the red LED lights up again. This will restore the ESC to factory settings.
- 2: After restoring factory settings, reconnect in the app using the default password "0000."

2. LED Indicator

- Forward: Flashing Blue, the flashing speed increases with the throttle; Steady Purple at full throttle
- Reverse: Flashing Blue, the flashing speed increases with the throttle; Steady Red at full throttle

3. LED Status Indicators

Problem	LED Indicator
Low Voltage Cutoff	Flash alternately in blue, red, and purple, in sequence.
Thermal Cutoff	Flash alternately in blue, red, and purple, in sequence.
Transmitter Connection Error	Flashes blue TWICE every second

OTA Upgrade

No programming card or extra module needed. Connect with the RC Gears app on your smartphone to adjust all settings with ease. The app will notify you of firmware updates to keep your ESC running at its best.

Scan the QR code to download the app and get started.



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App Store
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Google Play

Programming and Description

ESC Settings	Running Mode	Forward/Brake
		Forward/Brake/Reverse (Default)
		Forward/Reverse
	Start Mode/Punch	Soft/Smooth/Aggressive (Default: Smooth)
	Drag Brake Force	0, 20%, 40%, 60%, 80%, 100% (Default: 0)
	Max. Forward Force	25%, 50%, 75%, 100% (Default: 100%)
	Max. Reverse Force	25%, 50%, 75%, 100% (Default: 100%)
	Throttle Mid	6%, 9%, 12% (Default: 6%)
	Low Voltage Cutoff	auto/0(OFF)/3.0V/3.2V, (Default: auto)
	Cutoff Thermal	Unprotected/85°C/105°C/125°C (Default: 105°C)
	Motor Poles	2P/4P (Default: 4P)
	BEC Output	6.0V, 7.4V (Default: 6.0V)

*When the Low Voltage Cutoff is set to "AUTO" mode, the default cut-off voltage is 3.3V/S, for example, the cut-off voltage of a 2S battery pack is 3.3Vx2=6.6V in AUTO mode.

Explanation of Parameters

Running Mode

- Forward/Brake: Supports only forward and brake functions.
- Forward/Brake/Reverse (Default): Supports forward, brake, and reverse. This is the most common mode.
- Forward/Reverse: Supports forward and reverse. The brake function may be integrated into the reverse operation or relatively weaker.

Start Mode/Punch

This parameter controls the motor's explosiveness or smoothness during startup and acceleration phases, essentially adjusting the current rise slope when the motor starts. Explanation: It describes the responsiveness of the vehicle when accelerating from a standstill or low speed. A well-tuned "punch" setting allows your remote-controlled car to achieve optimal traction at launch, rather than spinning in place or lurching forward abruptly.

Curve Description

- **Soft:** Current and power output increase gradually, resulting in a very gentle vehicle launch that minimizes wheel spin. Ideal for beginners or low-traction surfaces. Acceleration will feel more subdued.
- **Smooth:** Strikes a middle ground between smooth and aggressive, offering a relatively even acceleration curve with a decent burst of power without being too abrupt. Suitable for most scenarios and driving styles.
- **Aggressive:** Current and power output ramp up extremely quickly, delivering the most intense acceleration and explosiveness. Best for high-traction racing surfaces or situations requiring instant acceleration to break free. However, excessive aggressiveness may cause the vehicle to lose traction or become difficult to control.

Drag Brake Force

- This parameter sets the braking force automatically applied when the throttle returns to neutral.
- **0% (Default):** No drag brake; the vehicle will coast freely when the throttle is released.
- **20% – 100%:** Higher values increase the automatic braking force when the throttle is released.

Maximum Brake Force

- Defines the maximum braking strength the ESC can provide when you pull the throttle trigger (or press the brake).
- **25% – 100%:** Higher values deliver stronger braking. The default 100% provides the maximum brake force.

Maximum Reverse Force

- Specifies the maximum reverse power the ESC can provide when the throttle trigger is pushed to full reverse.
- **25% – 100%:** Higher values deliver stronger reverse power. The default 100% provides the maximum reverse force.

Throttle Neutral Range

- Defines the range within which the ESC recognizes the throttle as neutral (no forward or reverse).
- **6% (Default), 9%, 12%:** A larger range makes the ESC more tolerant of slight transmitter stick deviations, reducing the chance of unintended starts. However, too large a range may affect throttle response sensitivity.

Low Voltage Cutoff (LVC)

- Protects LiPo batteries from over-discharge, helping to extend battery life.
- **Auto (Default):** The ESC automatically sets an appropriate cutoff voltage based on the connected battery type (typically by detecting the number of LiPo cells).
- **Off:** Disables low voltage protection. Note: This may damage LiPo batteries. This option is intended for NiMH batteries.
- **3.0V / 3.2V per cell:** Specifies the minimum voltage threshold for each LiPo cell. When the voltage drops below this value, the ESC will limit motor output (usually to half power) or shut down completely to protect the battery.

Thermal Protection

- When the ESC's internal temperature exceeds the set threshold, it will automatically reduce output power or shut down to prevent overheating damage.
- **No Protection:** Disables thermal protection.
- **85°C / 105°C / 125°C:** Sets the temperature threshold for overheat protection. Default: 105°C is a common and recommended setting.

Motor Pole Count

- **2P / 4P:** Refers to the number of magnetic pole in the motor. Brushless motors come in different pole configurations.
- **2P:** Corresponds to a 2-pole motor.
- **4P (Default):** Corresponds to an 4-pole motor.

Selecting the correct pole count ensures better matching between the ESC and motor for optimized performance.

BEC Output Voltage

- The BEC (Battery Eliminator Circuit) is a built-in regulator in the ESC that powers the receiver and other electronic devices (such as servos) without requiring a separate battery.
- **6.0V (Default):** Supplies 6.0V to the receiver and connected devices.
- **7.4V:** Supplies 7.4V to the receiver and connected devices.
- Select the voltage according to the operating requirements of your receiver and servos.

SPECIFICATION

Constant/Burst Current	60A/360A
Supported Motors	Brushless Sensorless Motor
Applicable Vehicles	1/10 Touring Car, Buggy, Short Course Truck
Battery Cell Count	2-3S LiPo/6-9S NiMH
BEC Output	6V/7.4V
Low Voltage Cutoff	Auto / Off / 3.0V / 3.2V (Default: Auto)
Thermal Protection	Unprotected/85°C/105°C/125°C (Default: 105°C)
Cooling	Airflow / Fan / Heatsink
Protection Rating	IPX4
Dimensions	48×38×38.5 mm (with fan)
Weight	100g (with encapsulation)

WARRANTY AND SERVICE

Start Mode/Punch

This ESC is designed to be used only with the battery and motor types listed in these operating instructions. We are unable to ensure that you follow the instructions supplied with the ESC, and we have no control over the methods you employ for using, operating, and maintaining the device. For this reason, we are obliged to deny all liability for loss, damage, or costs that are incurred due to the incompetent or incorrect use and operation of our products, or which are connected with such operation in any way. Unless otherwise prescribed by law, our obligation to pay compensation, regardless of the legal argument employed, is limited to the invoice value of those SkyRC products which were immediately and directly involved in the event in which the damage occurred.

Warranty and Service

We guarantee this product to be free of manufacturing and assembly defects for a period of one year from the time of purchase. The warranty only applies to material or operational defects, which are present at the time of purchase. During that period, we will repair or replace free of service charge for products deemed defective due to those causes.

This warranty is not valid for any damage or subsequent damage arising as a result of misuse, modification, or as a result of failure to observe the procedures outlined in this manual.

Note:

The warranty service is valid in China only.

If you need warranty service overseas, please contact your dealer in first instance, who is responsible for processing guarantee claims overseas. Due to high shipping costs, and complicated custom clearance procedures to send back to China, please understand that SkyRC can't provide warranty service to overseas end users directly.

If you have any questions which are not mentioned in the manual, please feel free to send an email to support@skyrc.com

Manufactured by SKYRC TECHNOLOGY CO., LTD.

The manual is subject to change without notice; please refer to our website for the latest version!

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