

## FLIPSKY 75100 Pro V2.0

# FLIPSKY 75100 Pro V2.0 Speed Controller User Manual

**Brand:** FLIPSKY | **Model:** 75100 Pro V2.0

75V 100A with Aluminum PCB with Key Switch Based on VESC for Electric Skateboard/Scooter/Ebike Speed Controller

## INTRODUCTION

The FLIPSKY 75100 Pro V2.0 is an advanced Electronic Speed Controller (ESC) designed for a wide range of electric vehicles and robotics applications. This includes electric skateboards, scooters, electric bicycles, robots, and various DIY off-road vehicles. It is built upon the VESC 75 series architecture, offering robust performance with features such as overheat and overcurrent protection, and regenerative braking capabilities. The controller features an aluminum PCB for efficient heat dissipation, ensuring stable operation even under demanding conditions. It supports a maximum working voltage of 84V (suitable for 4-20S battery configurations) and provides a continuous current of 100A. The integrated Bluetooth module allows for convenient parameter adjustment and real-time data monitoring via the VESC TOOL application, eliminating the need for external modules. A key switch is also included for power on/off functionality.

## PRODUCT OVERVIEW

The FLIPSKY 75100 Pro V2.0 ESC is a compact and powerful unit, designed for seamless integration into your projects. Below are visual representations and descriptions of the product and its components.



**Figure 1:** The FLIPSKY 75100 Pro V2.0 ESC controller, shown with its integrated key switch and various wiring harnesses for connection to battery, motor, and control signals.

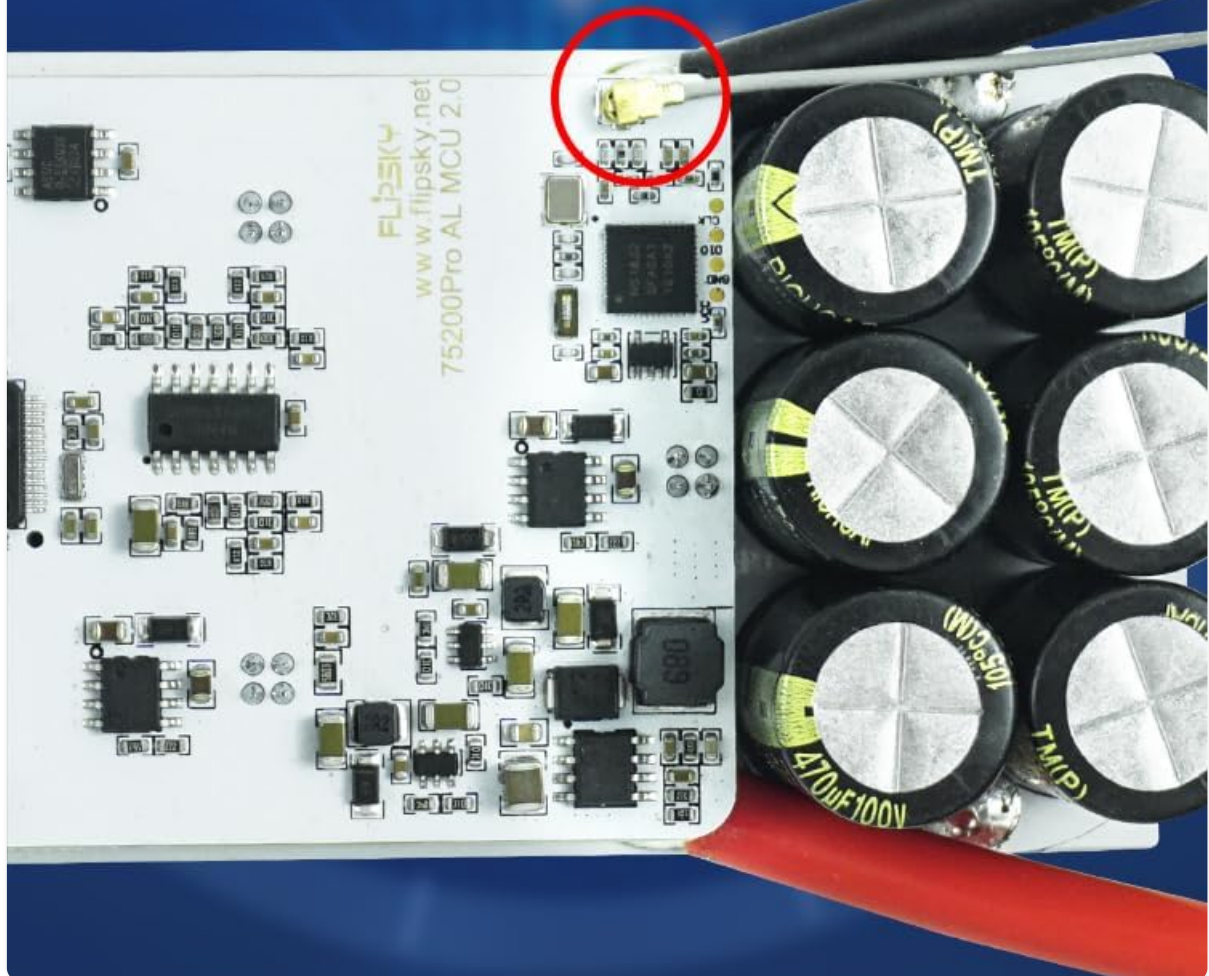


**Figure 2:** Physical dimensions of the ESC unit. The controller measures L103mm x W58mm x H27.7mm, indicating its compact design for various installations.



# Bluetooth module function upgraded

No external Bluetooth module is needed.  
Bluetooth connection parameter adjustment and  
real-time data reading are more convenient.



**Figure 3:** Detail showing the upgraded Bluetooth module function. No external Bluetooth module is required, simplifying setup and enabling convenient wireless parameter adjustment and real-time data reading.



**Figure 4:** Examples of applications for the ESC, including electric skateboards, scooters, ebikes, and other DIY electric vehicles, highlighting its versatility.

## SPECIFICATIONS

Feature	Description
Firmware	6.02 (firmware update supported)
Size	L103mm*W58mm*H27.7mm
Voltage Range	14-84V (4-20S)
Continuous Current	100A
BEC	5V@1.5A
Supported Modes	BLDC square wave mode control and FOC sine wave mode
ERPM	150000

Control Interface Ports	USB, CAN, UART
Supported Sensors	ABI, HALL, AS5047, AS5048A
Input Set Support	PPM, ADC, NRF, UART
Wire Size	10AWG (75100 Pro)
Programmable	Yes
Regenerative Capacity	Yes
Phase Filter	Yes
Power Switch Button	Red

## SETUP

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Before using the FLIPSKY 75100 Pro V2.0, it is crucial to properly configure its parameters using the VESC TOOL. The factory firmware version is 6.02. Ensure you use the correct firmware version for your application to prevent potential damage to the ESC.

**Important:** Except for Apple computers, other computer firmware can be downloaded from our official website. Apple computer users may need to purchase the VESC TOOL application from the Apple App Store. Always refer strictly to the provided wiring diagram for safe product use.

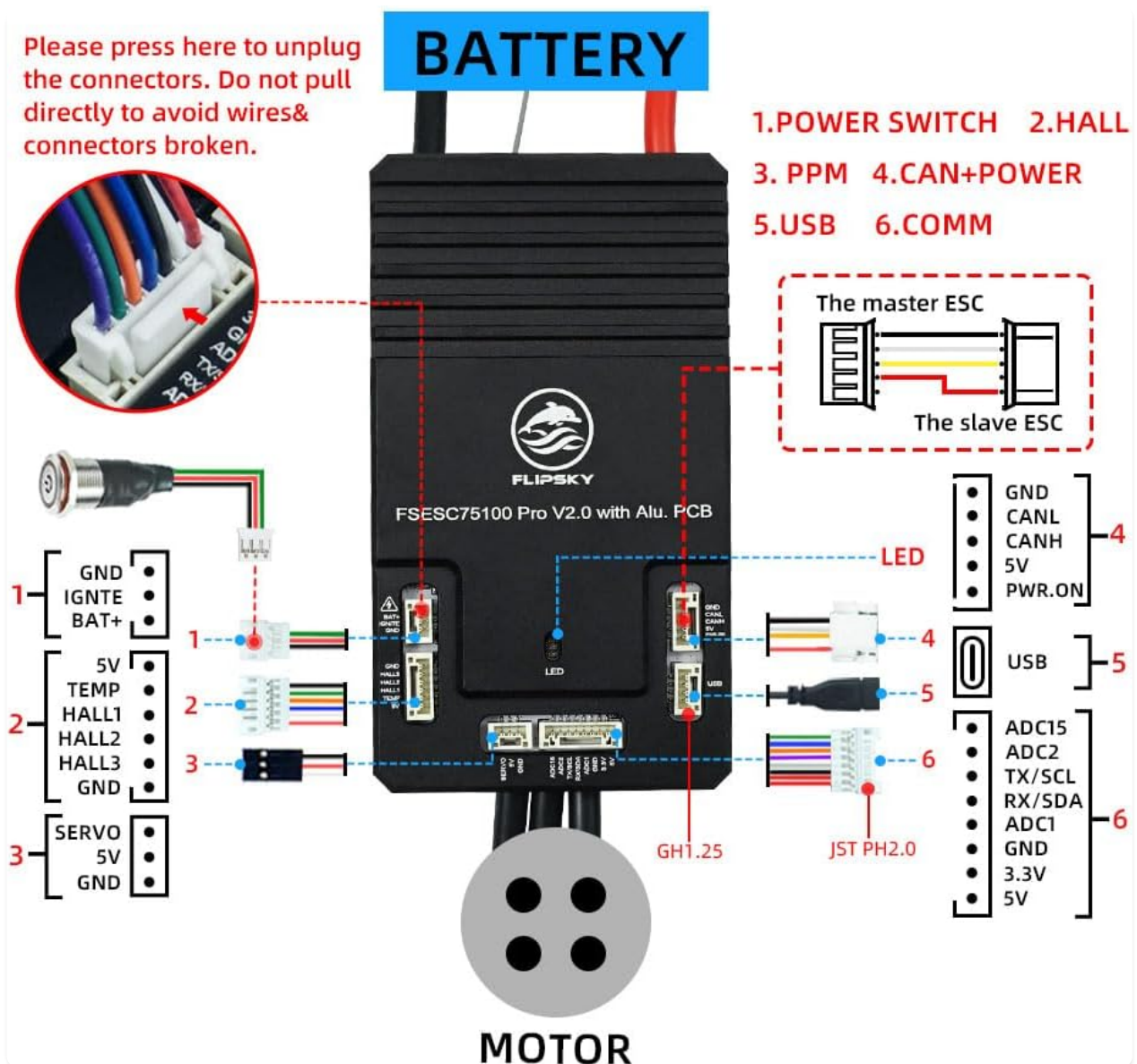
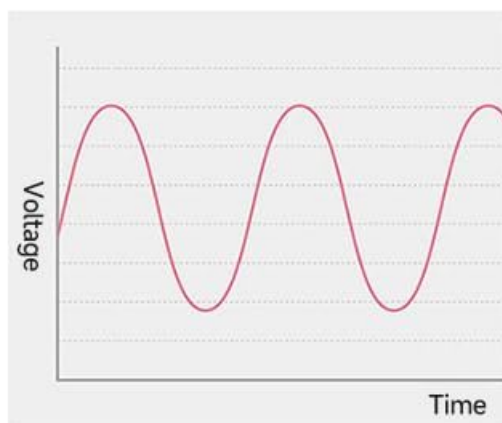
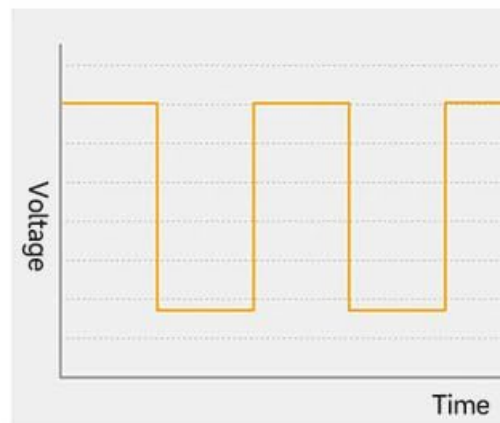


Figure 5: Detailed wiring diagram for the ESC, showing connections for battery, motor, power switch, Hall sensors, USB, and communication ports. Pay special attention to 3.3V and 5V connections to avoid short-circuits.

## Support multiple control modes



Sine Wave



Square Wave

How to choose an ESC?

As long as the motor speed does not exceed the speed of the ESC, they can be matched

Speed calculation formula: battery voltage \* motor KV value

Motor stator speed calculation formula: motor KV value \* battery voltage \* number of motor pole pairs

The maximum speed of the V4 series ESC is 60000 ERPM

The maximum speed of the V6 series ESC is 150000 ERPM

If the maximum speed of the motor exceeds the speed of the ESC, you can also use the method of reducing the motor working voltage to match the speed of the ESC, but it is not recommended because it does not really play the role of the motor.

## How to choose parameters?

When adjusting parameters, fill in the corresponding parameters according to the type of motor and the type of electric adjustment in the store. The latest version has simplified many steps. You only need to fill in some corresponding parameters such as: battery type, number of battery cells, whether the motor is an inner rotor or an outer rotor, whether it is a profile motor or a belt motor, and the gear ratio of the belt motor; after the first selection is completed, the system will automatically match the corresponding parameters. You only need to adjust the starting force according to your personal preferences to complete the parameter adjustment.

## What is the difference between V4 and V6?

In addition to the speed mentioned above, the current sampling of V4 uses 2-Shunt (2 manganese copper resistors), while the current sampling of V6 uses 3-Shunt (3 manganese copper resistors), so the current sampling accuracy of V6 is higher, and there will be no current ripple. VESC6 has a smooth linear acceleration from 0 to full speed, which is mainly because it uses three shunts.

**Figure 6:** Illustration of supported control modes (Sine Wave and Square Wave) and guidance on choosing an ESC and adjusting parameters within the VESC TOOL.

### Firmware Update and Parameter Adjustment

When connecting the controller for the first time, the VESC TOOL may indicate inconsistent firmware versions. It is essential to update the firmware to a consistent version before proceeding with parameter adjustments. Different firmware versions can lead to parameter discrepancies and potentially damage the ESC. For detailed instructions on using the VESC TOOL for setup and parameter adjustment, please refer to the following official videos:

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**Video 1:** A comprehensive guide to setting up and configuring the 75100 Pro V2.0 using the VESC TOOL. This video demonstrates the process of selecting motor types and adjusting various parameters for optimal performance.

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**Video 2:** This video provides additional insights into the setup of the 75100 Pro V2.0, focusing on specific configurations and advanced settings within the VESC TOOL for different applications.

## OPERATING INSTRUCTIONS

The FLIPSKY 75100 Pro V2.0 operates within a voltage range of 14-84V (safe for 4-20S battery configurations). It provides a continuous current of 100A. The integrated BEC (Battery Eliminator Circuit) outputs 5V at 1.5A, ensuring stable power for your receiver. Ensure the receiver's current draw does not exceed 1.5A.

When using any throttle handle under ADC control, always ensure that the positive pole of the power supply is connected to the 3.3V pin, not the 5V pin, to prevent damage.

***Continuous: 100A Continuous  
don't exceed this voltage.***



**Figure 7:** Visual representation emphasizing the 100A continuous current rating. It is critical not to exceed the specified voltage range to prevent damage to the ESC.

## MAINTENANCE

Proper maintenance ensures the longevity and reliable performance of your FLIPSKY 75100 Pro V2.0 ESC. Adhere to the following guidelines:

- **Handle with Care:** The ESC seat is designed for secure connections, but avoid excessive force when

plugging or unplugging connectors to prevent them from falling off or damaging wires.

- **Secure Connections:** Ensure that all battery and motor ports are firmly welded. Loose connections can lead to intermittent power, overheating, and potential damage to the ESC or connected components.
- **Regular Inspection:** Periodically inspect all wiring and connections for signs of wear, fraying, or corrosion. Address any issues promptly.
- **Cleanliness:** Keep the ESC clean and free from dust, dirt, and moisture. While the aluminum casing aids in heat dissipation, excessive debris can hinder cooling.

## TROUBLESHOOTING

If you encounter issues with your FLIPSKY 75100 Pro V2.0 ESC, consider the following common problems and solutions:

- **Firmware Inconsistency:** If the VESC TOOL displays a pop-up indicating inconsistent versions upon connection, you must update the firmware to a consistent version before adjusting parameters. Failure to do so can lead to incorrect operation or damage.
- **ESC Burnout:** Operating the ESC outside its specified voltage range (14-84V) can cause it to burn out. Always verify your battery voltage is within the safe operating limits (4-20S).
- **Short-Circuiting:** Incorrect wiring, especially short-circuiting the 3.3V and 5V pins, can damage the ESC. Double-check all connections against the wiring diagram before powering on.
- **Motor Malfunction:** If the motor is not functioning correctly, ensure all Hall sensor and phase wires are properly connected and securely welded. Incorrect motor parameters in VESC TOOL can also cause issues; re-run motor detection if necessary.

If problems persist, refer to the official support resources or contact FLIPSKY customer service.

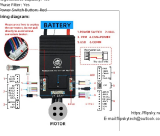
## WARRANTY AND SUPPORT


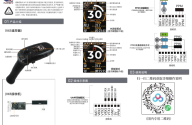
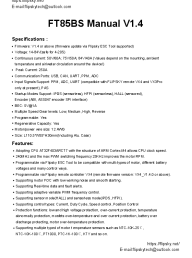


The FLIPSKY 75100 Pro V2.0 comes with a **2-month warranty** from the date of purchase. Please retain your proof of purchase for warranty claims.

For further assistance, technical support, or if you require additional guidance beyond this manual, please utilize the following resources:

- **Official Website:** <https://flipsky.net/>
- **Email Support:** [flipskytech@outlook.com](mailto:flipskytech@outlook.com)
- **Video Resources:** Additional instructional videos are available online. If you still have questions after reviewing the manual and available videos, please contact us for relevant video support.

## Related Documents - 75100 Pro V2.0

<div><p>flipsky.net © 2024 Flipsky Technology Co., Ltd.</p><p><b>75100 Pro V2.0 with Alu. PCB Manual</b></p><p>ESC (Electronic Speed Controller) is a device that controls the speed and direction of a motor. It is used in various applications, including robotics, drones, and RC cars. The 75100 Pro V2.0 ESC is a high-performance ESC that is designed for use with 75 series motors. It features a variety of advanced features, including a built-in motor protection system, a programmable throttle, and a variety of control interfaces. This manual provides detailed information about the 75100 Pro V2.0 ESC, including its specifications, wiring diagram, and troubleshooting information.</p><p><b>Key Features:</b></p><ul style="list-style-type: none"><li>• 75 Series Motor Support (Up to 75A)</li><li>• Built-in Motor Protection System</li><li>• Programmable Throttle</li><li>• Multiple Control Interfaces (PWM, I2C, UART)</li><li>• High Voltage Support (Up to 84V)</li><li>• Low Voltage Cutoff (LVC)</li><li>• Overcurrent Protection (OCP)</li><li>• Thermal Protection</li><li>• Hall Sensorless Motor Support</li><li>• Brushed Motor Support</li><li>• Brushless Motor Support</li><li>• Hall Sensor Motor Support</li><li>• I2C Control Interface</li><li>• UART Control Interface</li><li>• PWM Control Interface</li><li>• Low Voltage Cutoff (LVC)</li><li>• Overcurrent Protection (OCP)</li><li>• Thermal Protection</li><li>• Hall Sensorless Motor Support</li><li>• Brushed Motor Support</li><li>• Brushless Motor Support</li><li>• Hall Sensor Motor Support</li><li>• I2C Control Interface</li><li>• UART Control Interface</li><li>• PWM Control Interface</li></ul><p><b>Wiring Diagram:</b></p></div>	<p><a href="#">Flipsky 75100 Pro V2.0 ESC with Aluminum PCB - Technical Datasheet</a></p> <p>Detailed specifications and wiring diagram for the Flipsky 75100 Pro V2.0 Electronic Speed Controller (ESC) with an aluminum PCB, featuring VESC 75 series compatibility, high voltage support, and multiple control interfaces.</p>
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	<p><a href="#">Flipsky VX4 Pro Remote Controller User Manual</a></p> <p>Comprehensive user manual for the Flipsky VX4 Pro remote controller, detailing its features, wiring diagrams for PPM and UART control modes, and operation instructions for electric skateboards.</p>
	<p><a href="#">Flipsky VX5 Waterproof Remote Controller User Manual</a></p> <p>User manual for the Flipsky VX5 waterproof remote controller, detailing its features, wiring diagrams for PPM and UART control modes, and screen display icon explanations.</p>
	<p><a href="#">Flipsky FT85BS ESC Manual V1.4</a></p> <p>Detailed specifications, features, and wiring diagram for the Flipsky FT85BS ESC (Electronic Speed Controller) V1.4, designed for electric vehicles and robotics.</p>
	<p><a href="#">Flipsky FT85BS V2.0 ESC: Technical Specifications and Features</a></p> <p>Detailed technical specifications, features, and application fields for the Flipsky FT85BS V2.0 ESC, an electronic speed controller for electric vehicles and robotics.</p>
	<p><a href="#">FLIPSKY VX5 Waterproof Remote Controller User Manual - Features, Wiring, and Operation</a></p> <p>Comprehensive user manual for the FLIPSKY VX5 waterproof remote controller. Details features, button layouts, display screen information, wiring diagrams for PPM and UART modes, and operational guidance.</p>