

DJI 3270081

DJI Phantom 1 Part #06 ESC (Green) Instruction Manual

Model: 3270081

1. PRODUCT OVERVIEW

The DJI Phantom 1 Part #06 Electronic Speed Controller (ESC) is a genuine replacement component designed for the DJI Phantom 1 and FC40 quadcopters. This specific ESC features a green LED, which is important for maintaining the correct lighting configuration of your aircraft. The ESC is responsible for controlling the speed of the brushless motors, translating signals from the flight controller into precise motor rotations. Proper functioning of the ESC is critical for stable flight and responsive control.

2. SAFETY INFORMATION

Please read and understand all safety warnings before installation and operation. Failure to follow these instructions may result in damage to the product, property, or personal injury.

- **Static Electricity:** Always use anti-static precautions (e.g., a static strap) when handling electronic components to prevent damage from electrostatic discharge.
- **Power Disconnection:** Ensure the aircraft's battery is completely disconnected before performing any installation, maintenance, or repair.
- **Soldering Safety:** If soldering is required, work in a well-ventilated area. Use appropriate safety gear, including eye protection. Be aware of hot components and soldering iron tips.
- **Component Orientation:** Pay close attention to the orientation of components and wiring during installation to avoid incorrect connections.
- **Genuine Parts:** Use only genuine DJI parts to ensure compatibility and optimal performance.

3. PACKAGE CONTENTS

The package typically includes the following items:

- DJI Phantom 1 Part #06 ESC (Green)
- Mounting Screws (quantity may vary, typically 3-4)

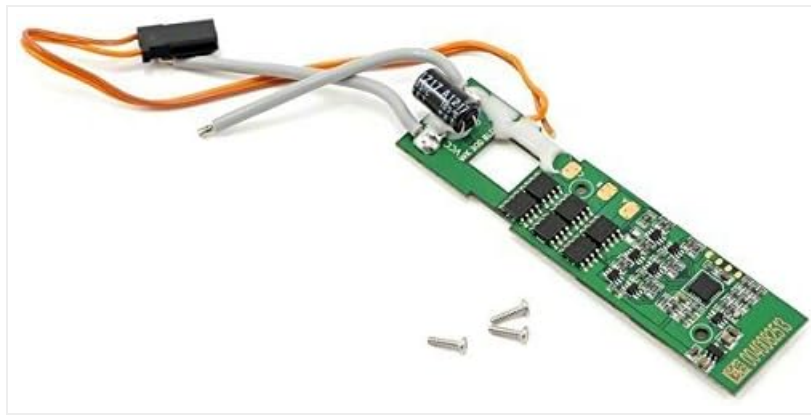


Figure 3.1: The DJI Phantom 1 Part #06 ESC (Green) module, showing the circuit board, attached power and signal wires, and three small mounting screws.

4. INSTALLATION GUIDE

This section provides instructions for replacing an existing ESC. If you are performing a new build, consult your aircraft's main assembly manual.

1. Prepare the Aircraft:

- Ensure the aircraft's battery is disconnected.
- Place the aircraft on a clean, stable, and anti-static work surface.
- Remove the top shell of the DJI Phantom 1 to access the internal components.

2. Identify the ESC:

- Locate the ESC that needs replacement. Note its position and the color of its LED (this replacement is green).
- Take a clear photograph of the existing ESC's wiring connections, especially the motor connections, before removal. This will serve as a reference for correct re-installation.

3. Remove the Old ESC:

- Carefully desolder the three motor wires connecting the ESC to the motor.
- Disconnect the signal wire from the flight controller.
- Disconnect the power wires from the power distribution board.
- Unscrew any mounting screws holding the ESC in place and remove the old unit.

4. Install the New ESC:

- Position the new DJI Phantom 1 Part #06 ESC (Green) in the correct location.
- Secure the ESC using the provided mounting screws.
- **Connect Power Wires:** Solder the power wires (typically red and black) from the new ESC to the corresponding pads on the power distribution board. Ensure correct polarity.
- **Connect Signal Wire:** Plug the signal wire into the appropriate port on the flight controller.
- **Connect Motor Wires:** This is a critical step. Refer to the photograph taken earlier. Solder the three motor wires from the new ESC to the motor. The order of these wires determines the motor's rotation direction. If the motor spins in the wrong direction after initial testing, swap any two of the three motor wires. Ensure the motor's rotation direction matches the original configuration (Clockwise or Counter-Clockwise).

5. Reassemble:

- Carefully reattach the top shell of the DJI Phantom 1, ensuring no wires are pinched.
- Double-check all connections before proceeding to the setup phase.

5. SETUP AND CALIBRATION

After installation, it is recommended to perform a basic setup and calibration to ensure proper functionality.

1. Initial Power-On:

- Connect the main flight battery. Observe the ESC's green LED for proper illumination.
- Listen for the ESC's initialization beeps. Consult the DJI Phantom 1 main manual for expected beep sequences.

2. Motor Direction Check:

- With propellers removed for safety, carefully test each motor at a very low throttle setting.
- Verify that each motor spins in the correct direction (clockwise or counter-clockwise) as per the Phantom 1's design. If a motor spins incorrectly, disconnect power, and swap any two of its three motor wires at the ESC.

3. ESC Calibration (if required):

- While DJI Phantom ESCs are often pre-calibrated, if you experience inconsistent motor speeds or unusual behavior, consult the DJI Phantom 1 flight controller manual for specific ESC calibration procedures. This typically involves setting the throttle range.

6. OPERATING PRINCIPLES

The Electronic Speed Controller (ESC) receives commands from the flight controller and converts them into electrical power to drive the brushless motor. It precisely regulates the motor's speed and direction, which is fundamental for the quadcopter's flight stability and maneuverability. The green LED on this specific ESC indicates its operational status and helps in identifying the correct arm of the aircraft.

7. MAINTENANCE

Regular inspection and basic maintenance can extend the lifespan of your ESC.

- **Visual Inspection:** Periodically inspect the ESC for any signs of physical damage, burnt components, or loose connections.
- **Cleaning:** Keep the ESC free from dust, dirt, and moisture. Use a soft brush or compressed air for cleaning. Avoid using liquid cleaners directly on the board.
- **Wire Integrity:** Check all wires for fraying, cuts, or damage. Repair or replace damaged wires promptly.
- **Heat Management:** Ensure the ESC is not overheating during operation. Proper airflow within the aircraft's frame is important.

8. TROUBLESHOOTING

If you encounter issues with your ESC, refer to the following troubleshooting steps:

- **Motor Not Spinning:**
 - Check all power and signal connections to the ESC.
 - Verify that the motor wires are securely soldered and not short-circuited.
 - Ensure the flight controller is sending a signal to the ESC.
 - Test the motor with a known working ESC, or test the ESC with a known working motor, if possible.
- **Incorrect Motor Direction:**
 - Disconnect power. Swap any two of the three motor wires connected to the ESC. Re-test.
- **ESC LED Not Illuminating:**
 - Check power connections to the ESC.
 - Ensure the ESC is receiving power from the distribution board.
- **Intermittent Operation or Jittering:**
 - Inspect for loose solder joints or damaged wires.
 - Check for electromagnetic interference (EMI) from other components.

- Perform ESC calibration if not already done.

9. SPECIFICATIONS

Brand	DJI
Model Number	3270081
Part Number	#06 ESC (Green)
Compatibility	DJI Phantom 1, FC40
Color	Green (LED indicator)
Product Dimensions	4 x 1 x 1 inches
Item Weight	0.32 ounces
ASIN	B00LJOUYY5
Date First Available	July 5, 2014


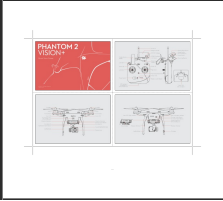
10. WARRANTY AND SUPPORT





For warranty information and technical support, please refer to the official DJI website or contact your authorized DJI dealer. Keep your proof of purchase for warranty claims.

DJI Official Website: www.dji.com

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