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## Axisflying Argus ECO 60A+F405 STACK

# Axisflying Argus ECO 60A+F405 STACK FPV Flight Controller and ESC Manual

Model: Argus ECO 60A+F405 STACK

## 1. INTRODUCTION

The Axisflying Argus ECO series represents a line of electronic components designed for FPV (First Person View) drones, including Electronic Speed Controllers (ESC) and Flight Controllers (FC). The Argus ECO 60A+F405 STACK is engineered to provide stable and precise control while minimizing overall weight, making it suitable for FPV racing and freestyle applications.

This manual provides essential information regarding the features, specifications, setup, operation, and maintenance of your Argus ECO 60A+F405 STACK.

## 2. PRODUCT FEATURES

- **Lightweight Design:** The Argus ECO is designed to be significantly lighter compared to other models, contributing to reduced overall drone weight.
- **Integrated Stack:** Combines a 60A ESC and an F405 Flight Controller into a compact unit.
- **Motor Output Support:** The Flight Controller supports up to 4 motor outputs, facilitating standard quadcopter builds.
- **Status Indicators:** Equipped with corresponding status indicator lights for quick assessment of the FC's operational status.
- **Open Circuit Board:** Features an open circuit board design, allowing for direct soldering connections without specialized equipment.

## 3. FUNCTIONAL OVERVIEW

The Argus ECO 60A+F405 STACK integrates key components for FPV drone control:

- **ESC:** 60A 6S BIHeli-S Electronic Speed Controller for robust motor power management.

- **FC:** Axisflying F405 Flight Controller, providing advanced flight processing capabilities.
- **Gyroscope:** Utilizes an ICM 42688P Gyro for precise motion sensing.
- **Blackbox:** Includes 16MB Blackbox memory for flight data logging and analysis.
- **UART Ports:** Features 5 UART ports for connecting peripherals such as GPS, VTX, and receiver.
- **Video Support:** Supports both HD and Analog video systems.
- **GPS Support:** Capable of integrating GPS modules for advanced navigation features.

## 4. SPECIFICATIONS

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### Argus ECO 60A ESC

**Current Rating:** 60A continuous

**Input Voltage:** Up to 6S LiPo

**Firmware:** BIHeli-S

**Dimensions:** 36 x 36 x 15.95 mm (L x W x H)

**Weight:** 13.5g

**Mounting Holes:** M3 - 30.5 x 30.5 mm

### Axisflying F405 FC

**Processor:** STM32F405

**Gyro:** ICM 42688P

**Blackbox:** 16MB

**UARTs:** 5

**Video Support:** HD/Analog

**GPS Support:** Yes

### Physical Dimensions and Weight

**Product Dimensions (Overall):** 1.42 x 1.42 x 0.63 inches (36 x 36 x 16 mm approx.)

**Item Weight (Overall):** 0.476 ounces (13.5 grams)

**Material:** Metal components, PCB

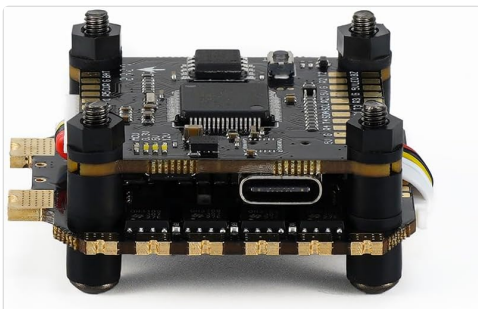


Figure 4.1: The assembled Axisflying Argus ECO 60A+F405 STACK, showing the flight controller mounted above the electronic speed controller.



6. **GPS/Other Peripherals:** If using GPS or other peripherals, connect them to available UARTs or I2C pads as per the FC's pinout.
7. **Firmware Flashing:** Connect the FC to your computer via USB. Use a compatible configurator software (e.g., Betaflight Configurator) to flash the latest firmware for the F405 Flight Controller.
8. **Configuration:** Configure the FC settings within the configurator software, including PID tuning, motor protocols (e.g., DShot), receiver type, OSD settings, and flight modes.
9. **Motor Direction Check:** After initial setup, carefully test motor directions (without propellers) to ensure they spin correctly according to your drone's configuration.

***Important:** Always double-check all connections before applying power to prevent damage to components. Incorrect wiring can lead to permanent damage.*

## 6. OPERATING INSTRUCTIONS

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Once the Argus ECO stack is correctly installed and configured, follow these general operating guidelines:

1. **Pre-Flight Check:** Before each flight, visually inspect all components for damage, ensure propellers are securely attached and in the correct orientation, and verify battery voltage.
2. **Power On:** Connect the flight battery. Observe the status indicator lights on the FC. A steady light typically indicates successful initialization.
3. **Arming:** Arm the drone using the designated switch on your radio transmitter. Ensure you are in a safe, open area away from people and obstacles before arming.
4. **Flight:** Operate the drone smoothly, making gradual control inputs. Monitor battery voltage and flight time.
5. **Disarming:** Disarm the drone immediately after landing or in an emergency.
6. **Post-Flight:** Disconnect the battery. Review Blackbox logs if necessary for performance analysis.

## 7. MAINTENANCE

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Regular maintenance helps ensure the longevity and reliability of your Argus ECO stack:

- **Cleaning:** Periodically clean the boards with compressed air or a soft brush to remove dust, dirt, and debris. Avoid using liquids directly on electronics.
- **Inspection:** Regularly inspect solder joints for cracks or cold joints. Check for any signs of physical damage to components or wires.
- **Firmware Updates:** Keep the FC and ESC firmware updated to the latest versions to benefit from performance improvements and bug fixes. Always back up your configuration before updating.
- **Environmental Protection:** If flying in damp or dusty conditions, consider applying conformal coating to the electronics for added protection.

## 8. TROUBLESHOOTING

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This section addresses common issues you might encounter:

- **No Power/No Lights:**
  - Check battery connection and voltage.
  - Inspect main power leads for continuity and correct soldering.

- Verify no short circuits on the board.
- **Motors Not Spinning:**
  - Ensure the drone is armed.
  - Check motor wiring to the ESC.
  - Verify ESC calibration and firmware.
  - Confirm motor protocol settings in the FC configurator.
- **No Receiver Input:**
  - Check receiver wiring to the FC (RX, TX, 5V, GND).
  - Ensure the correct receiver protocol is selected in the FC configurator.
  - Verify receiver is bound to the transmitter.
- **Unstable Flight:**
  - Check for loose propellers or damaged motors.
  - Review PID tuning settings in the FC configurator.
  - Ensure the FC is soft-mounted to reduce vibrations.
  - Check for correct motor direction and propeller orientation.
- **USB Connection Issues:**
  - Try a different USB cable and port.
  - Ensure necessary drivers are installed on your computer.
  - Try connecting the FC while holding the BOOT button (if applicable) to enter DFU mode for firmware flashing.

*For more detailed troubleshooting, consult online FPV communities, official Axisflying support channels, or the documentation for your chosen flight controller firmware (e.g., Betaflight documentation).*

## 9. WARRANTY AND SUPPORT

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This product is manufactured by Axisflying. For warranty claims, technical support, or further assistance, please contact the retailer where you purchased the product or refer to the official Axisflying website for their support contact information.

Please retain your proof of purchase for any warranty-related inquiries.