

FLYCOLOR EDF64-ESC50A

FLYCOLOR EDF 64mm 3500KV 4S RC Jet Ducted Fan with 50A ESC User Manual

Model: EDF64-ESC50A

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your FLYCOLOR EDF 64mm 3500KV 4S RC Jet Ducted Fan with 50A ESC. This unit is designed for remote-controlled aircraft, offering high performance and reliability. Please read this manual thoroughly before installation and use to ensure proper function and to prevent damage.

The product integrates a 64mm Electric Ducted Fan (EDF) with an 11-blade design, a 3500KV brushless motor, and a 50A Electronic Speed Controller (ESC) with a built-in 5V/3A BEC. Each unit undergoes dynamic balance testing to ensure smooth operation and excellent acoustic characteristics.

2. SAFETY INFORMATION

Always observe the following safety precautions:

- Keep hands, face, and loose clothing away from the rotating fan blades.
- Ensure all connections are secure before applying power. Loose connections can cause arcing and damage.
- Use only recommended battery types (3S or 4S LiPo) and ensure they are fully charged and in good condition.
- Operate in a well-ventilated area to prevent overheating of components.
- Never attempt to disassemble the motor or fan housing, especially the screws, as this will destroy the factory balance.
- Store the unit in a dry, cool place away from direct sunlight and moisture.

3. PRODUCT OVERVIEW

The FLYCOLOR EDF unit combines a high-performance ducted fan, a powerful brushless motor, and an efficient ESC. The ESC features a built-in Battery Eliminator Circuit (BEC) to power your receiver without additional components.



Figure 3.1: FLYCOLOR 50A ESC with 5V/3A BEC Output. This ESC provides a stable 5V/3A output to power your receiver, eliminating the need for a separate power source.



Figure 3.2: Dimensions of the FLYCOLOR 50A ESC. The compact design measures approximately 65mm in length, 26mm in width, and 15.5mm in height.



Figure 3.3: Technical drawing showing the dimensions of the 64mm EDF unit. Note the detachable guide ring design for adaptability to various models. It is crucial not to open the screws, as this will compromise the factory-tested balance of the unit.

4. SPECIFICATIONS

Key parameters for the 64mm EDF with 3500KV 4S motor and 50A ESC:

| Model | Max Voltage | Max Current | Max Thrust | Max Power | Set Weight | Housing Weight | Motor Weight | Recom. Battery | Recom. ESC | Banana Connector |
|-----------------------|-------------|-------------|------------|-----------|------------|----------------|--------------|----------------------|------------|------------------|
| 64mm 4S- 3500KV | 16.8V | 52A | 1460g | 874W | 150g | 48g | 102g | 4S 2600MAH 35C | 50A | Φ3.5 |

- **Motor:** 3500KV Brushless Motor
- **EDF Diameter:** 64mm
- **Blades:** 11
- **ESC:** 50A (2-4S) with 5V/3A BEC
- **Material:** High-quality engineering materials (fan), Copper (wire)
- **Continuous Current (3S):** 33A (Max Thrust: 900g)
- **Continuous Current (4S):** 52A (Max Thrust: 1460g)

5. SETUP

Follow these steps to connect your EDF unit:

1. **Connect Motor to ESC:** The motor wires are pre-soldered with banana plugs. Connect the three motor wires to the three output wires of the ESC. The order of connection determines the rotation direction.
2. **Connect ESC to Receiver:** Plug the signal cable from the ESC (typically a three-wire servo connector) into the throttle channel (CH3) of your RC receiver.
3. **Connect Battery to ESC:** Connect your LiPo battery (3S or 4S, as recommended in specifications) to the power input connector of the ESC. Ensure correct polarity.
4. **Initial Test:** With the propeller removed for safety, power on your transmitter, then connect the battery. Slowly advance the throttle to check motor rotation.
5. **Adjust Wind Direction:** If the fan's wind direction is incorrect (i.e., not pushing air backward for thrust), reverse any two of the three motor-to-ESC wire connections. This will change the motor's rotation direction.

6. OPERATING

Once installed and connected, operate the EDF unit with care:

- Always perform a range check with your RC system before flight.
- Gradually increase throttle to avoid sudden surges that can stress components.
- Monitor battery voltage and temperature during operation. Avoid over-discharging your LiPo battery.
- Ensure adequate cooling airflow to the ESC and motor, especially during high-power operation.

7. MAINTENANCE

Regular maintenance ensures longevity and performance:

- **Cleaning:** Keep the EDF unit free from dust, dirt, and debris. Use compressed air or a soft brush to clean the fan blades and housing.
- **Inspection:** Periodically check all wiring and connectors for signs of wear, fraying, or corrosion. Ensure the fan blades are free from cracks or damage.

- **Storage:** When not in use, store the unit in a clean, dry environment.

8. TROUBLESHOOTING

If you encounter issues, consider the following:

- **Motor not spinning:** Check battery connection, ESC signal cable to receiver, and transmitter throttle settings. Ensure the ESC is armed (usually a series of beeps upon power-up).
- **Incorrect fan rotation/wind direction:** Reverse any two of the three motor-to-ESC wire connections.
- **Motor stutters or runs rough:** Check for loose motor or ESC connections. Ensure battery is adequately charged and capable of delivering the required current. Inspect fan blades for damage or obstructions.
- **ESC overheating:** Ensure adequate airflow around the ESC. Reduce continuous high-throttle operation if possible. Verify the battery and propeller are within recommended specifications.
- **Loss of power/thrust:** Check battery charge level and health. Inspect fan blades for damage or foreign objects.

For further assistance, please contact FLYCOLOR customer support.