Stack F405 V3 ICM42688 AM32 65A

User manual

PILOTIX™

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1. Product overview

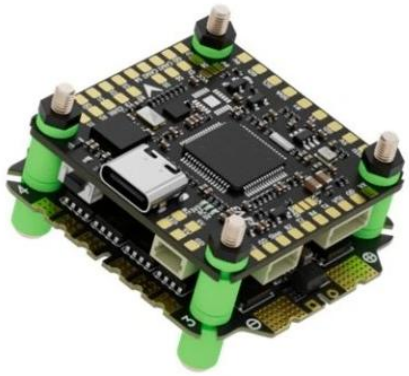

Fig.1. Pilotix F405 V3 ICM42688 AM32 65A

The F405 V3 ICM42688 AM32 65A is a flight controller that integrates an STM32F405 microcontroller and supports the PILOTIXF405V3 firmware, along with Betaflight firmware for enhanced operational capabilities. It features an ICM42688-P gyro and includes a built-in accelerometer and magnetometer, providing necessary motion sensing functions, while also incorporating a SPL06 barometer for altitude measurement. The device operates within an ambient temperature range of -20°C to 40°C and requires passive cooling through natural airflow to maintain optimal performance. Additionally, it has compact dimensions, with a weight of 25.4 grams, facilitating easy integration into various FPV applications.

2. ESC Installation & Wiring

The ESC is designed to handle high current loads. Pay close attention to the power leads.

Wiring Steps:

1. Power Input: Solder high-quality XT60/XT90 leads to the "+" and "-" pads. Ensure the polarity is correct.
2. Capacitor: Solder a high-voltage capacitor to the power pads. This is mandatory for 3S-8S builds to filter voltage spikes.
3. Motor Pads: Solder motor wires to the pads on the left (3 & 4) and right (1 & 2).
4. Link to FC: Connect the 8-pin harness to the socket on the top edge. This transmits power, motor signals (S1-S4), and telemetry to the FC.

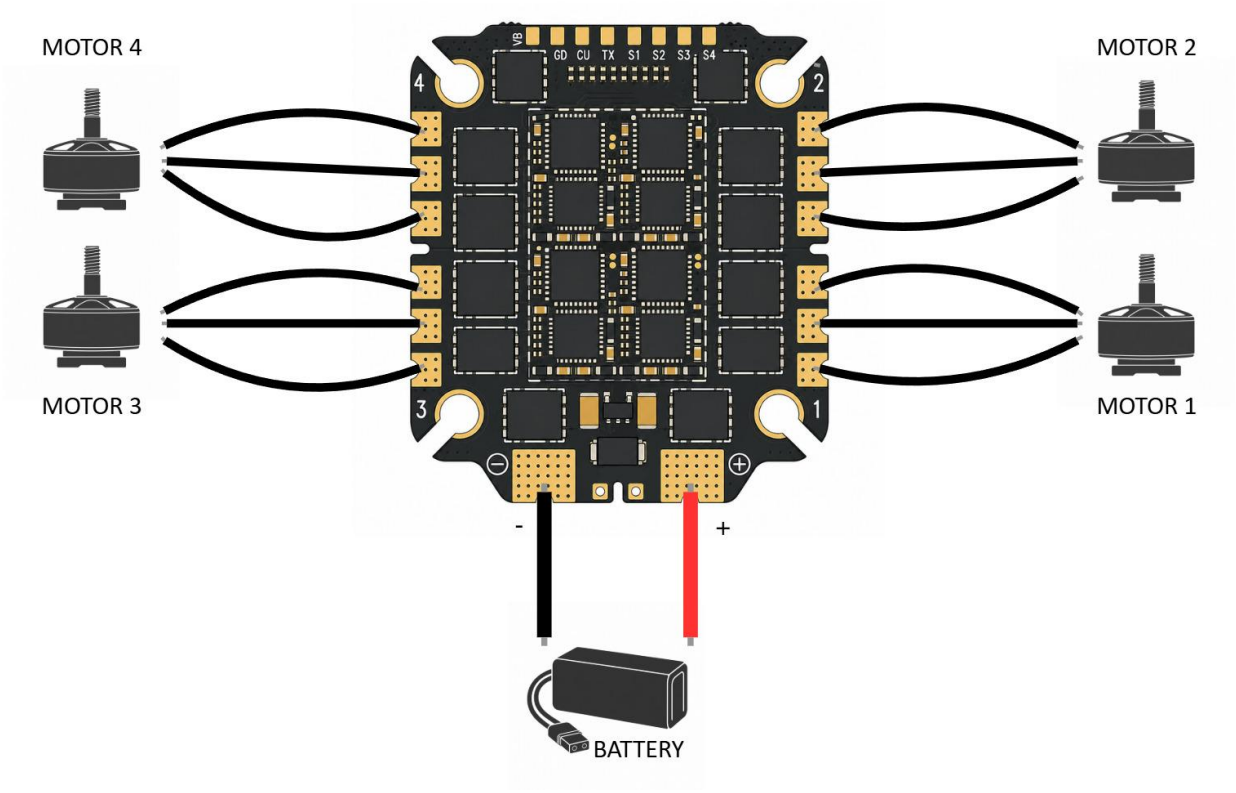

Fig.2. ESC installation & wiring

3. Flight Controller (FC) Wiring

The F405 V3 FC offers a "Plug-and-Play" experience for many peripherals.

Receiver & Serial Ports (UARTs):

- UART 1: Dedicated for GPS (TX to R1, RX to T1).
- UART 2: Primary Receiver port (ELRS/CRSF).
- UART 3: ESC Connection / Telemetry.
- UART 4: VTX Control.
- UART 5: Internal Bluetooth.

Video & Cameras:

- Dual Camera Support: Connect Camera 1 and Camera 2 to the CAM1 and CAM2 pads.
- VTX Voltage Selection:
  - Solder the jumper to VCC for 3-4S setups.
  - Solder the jumper to 9V for 6S-8S setups (recommended to protect VTX from high voltage).
- Digital Systems: For DJI O3 or Walksnail, use the dedicated SBUS/TX4/RX4 pads or connector.

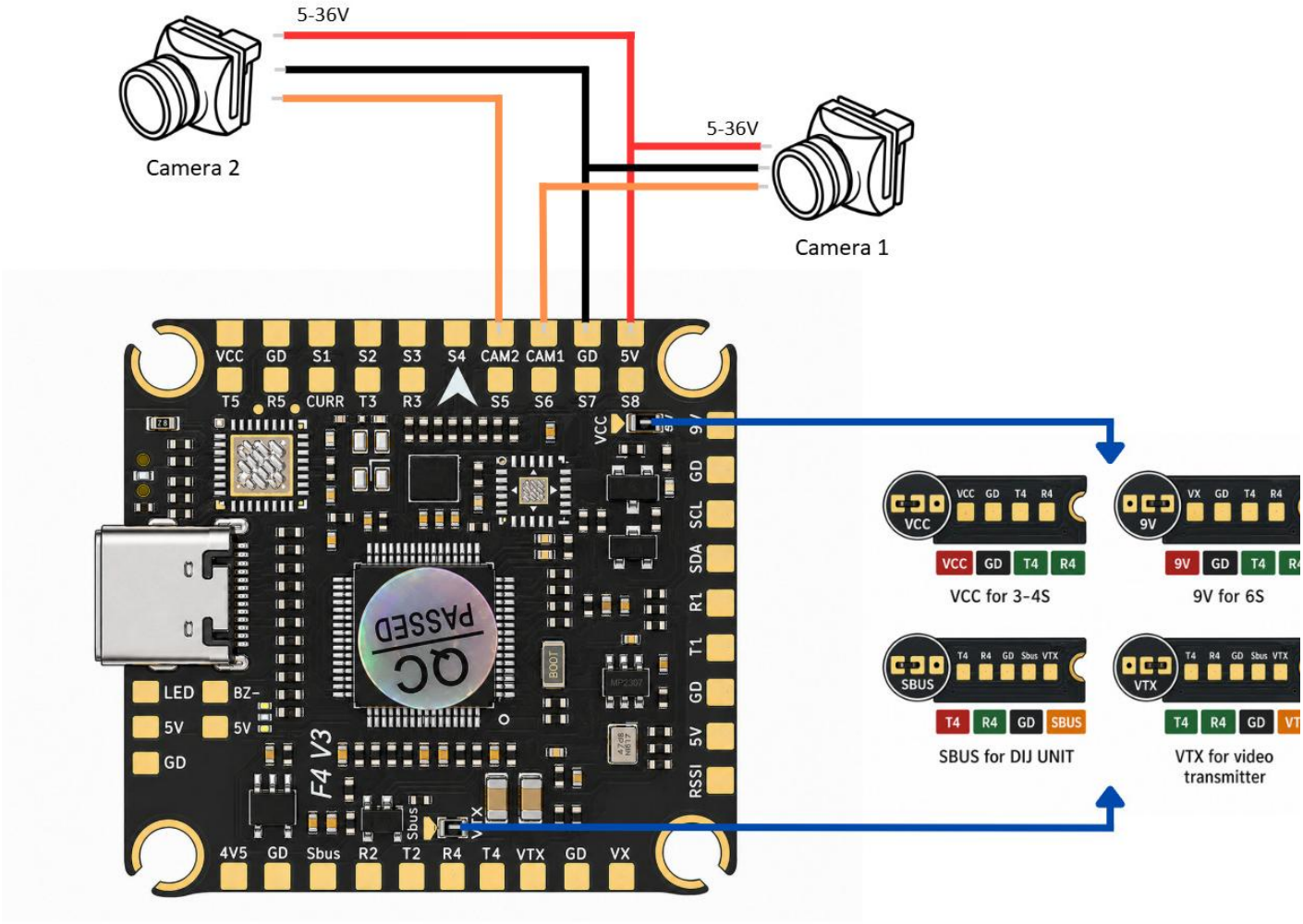

Fig.3. FC wiring diagram

4. Safety & Usage Rules

1. **Voltage Check:** Before connecting your VTX, verify the voltage jumper (9V vs VCC). Connecting a 5V/9V VTX to VCC on an 8S battery will cause immediate failure.
2. **Smoke Stopper:** Always use a current-limiting device for the first power-on.
3. **Firmware Updates:** Use esc-configurator.com for the AM32 ESC.
4. **Mounting:** Use the provided anti-vibration grommets. High-current ESCs create electromagnetic noise; keep the FC physically separated by at least 2-3mm from the ESC.
5. An 65A ESC generates significant heat. Do not mount the stack in an enclosed, unventilated space.

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