

ELECTRONIC SPEED CONTROLLER

AIRDRONE ESC-G5-120A

Designed & Manufactured in France

- Multi-mission ready: ISR, interceptor, FPV
- High-Power Design - 120A class
- Enhanced Electrical and Thermal protection
- Wide input voltage range (6S-12S LiPo)





- Compact, Lightweight
- IP55 waterproof & anti-corrosion (optional)
- High-rate command and telemetry (1Khz)
- Advanced Motor Control (Torque & eRPM)

The Airmod ESC-G5-120A is a high-current Electronic Speed Controller designed and manufactured in France for demanding UAV applications.

Multi-mission ready for ISR, interceptor and FPV platforms, it is built to operate reliably in harsh outdoor environments.

FOC technology ready for efficient, accurate and steady motor control.

Its high-power design supports 120 A and a wide 6S–12S voltage range, with strong electrical and thermal protections ensuring safe and stable operation.

An IP55 enclosure with integrated heatsink is available upon request.

S930010 V1.2



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CORE HARDWARE

- **Number of motors:** 1
- **MCU :** STMG5 family
- **Firmware**: Airmod

MECHANICAL CHARACTERISTICS

- **Dimensions:** 100mm x 50mm x 25mm
- **Weight:** 150 g (excluding cables & casing)
- **Casing/Heatsink**: IP55 available upon request
- **Ambient temperature range:** -40°C to +85°C

POWER & PERFORMANCE

- **Continuous Current:** 120A
- **Burst Current:** 150 A (short duration)
- **Input Voltage:** 22-50V DC (6-12S LiPo)
- **Max eRPM:** up to 360K

PROTOCOLS & MONITORING

- **ESC Protocols:** DSHOT300-600 | Drone CAN
- **Message update rate:** commands and telemetry @ 1KHz

PROTECTION & POWER INTEGRITY

- **Over current protection:** Included
- **Over voltage protection:** Included
- **Under-voltage protection:** Included
- **Thermal protection:** Available
- **External capacitor:** 1000uF low-ESR capacitor

CONNECTIVITY

- **Battery Input:** XT90 (VBAT+, GND)
- **Motor Interface :** 3-phase output (U/V/W)
- **Drone CAN :** JST-GH-4-pin (CAN_H, CAN_L, GND, V+)
- **DSHOT :** JST-GH-3-pin (Signal, GND, V+)
- **Debug and Programming :** UART (TX/RX/GND)

MOTOR CONTROL

- **Outer control loop:** 1Khz (User command)
- **Inner control loop:** >20Khz (inside ESC)
- **Trapezoidal control:** Default control mode
- **FOC :** supported
- **Sensorless FOC:** High Frequency Injection
- **Target current (torque control):** Supported
- **Target RPM (speed control) :** Supported

TELEMETRY OUTPUT

- **Phase current:** Supported
- **Phase voltage:** Supported
- **Duty cycle / modulation index:** Supported
- **Motor speed:** eRPM
- **DC bus current:** Supported
- **ESC temperature:** Supported
- **Fault reporting:** Supported

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