

Product Description

The miniature Engine Control Unit (ECU) provides a complete monitoring and control solution for small fuel injected engines. It can be calibrated to provide optimum performance over a wide range of engines, in a variety of configurations and sizes.

Small Design

The tiny, compact design of this ECU makes it a perfect choice for integration into small UAV platforms. It is of aerospace quality, and offers an extremely robust engine control solution perfectly suited for use in the UAV industry.

Mature, Reliable Control Algorithms

The engine control algorithms implemented in the ECU are based on the very mature Autronic SM4 platform. This platform uses a patented control strategy specifically targeted for use on multi-throttled and low-manifold vacuum engines, with excellent performance achieved for two stroke engines. The Autronic code base has been used successfully in the automotive market for many years, with thousands in the field. It has been proven across all types of engines, and provides a well developed, sophisticated and reliable engine control solution.

Seamless UAV Integration

This established ECU platform is complemented by the UAV-specific functionality developed by Currawong. This includes barometric pressure sensing, a complete throttle position and pump control solution, and UAV-targeted telemetry available on both serial and CAN (Controller Area Network) interfaces. The ECU features plug and play compatibility with Cloud Cap Technology Piccolo avionics.

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Single Power Supply

The ECU provides a complete single-supply solution, with integrated high-power injector and ignition drivers, servo control of throttle position, closed-loop fuel pump control and a 6V supply for use with throttle servos and ignition units. All sensors and control systems connect directly to the ECU, which also includes high-power drivers for added GPIO (General Purpose Input Output) ports.

Powerful Control Interface

Communication with the ECU for in-flight monitoring and control is simple, with both serial and CAN interfaces providing real-time engine telemetry and engine control command set. Calibration of the ECU for a specific engine is achieved using a powerful interface which allows customisation of all elements of ECU operation.

A Complete Solution

With this ECU, Currawong provides a complete engine management system which is designed to meet the demanding requirements of fuel-injected UAV platforms. Featuring a full complement of sensors and integrated power electronics, this miniature ECU offers a powerful solution which is ready to integrate into your UAV platform.



Dimensions

Length:	66 mm	(2.6")
Width:	61 mm	(2.4")
Height:	16 mm	(0.6")
Weight:	85 g	(2.5 oz)

Dimensions include custom aluminium enclosure.

Inputs

- Crank sensor
- Engine RPM
- Throttle position
- Manifold temperature
- Cylinder head temperature
- Fuel pressure
- Manifold pressure
- Barometric pressure

Control Systems

The ECU provides direct control of a number of key engine management systems, including:

- Servo control of throttle position
- Fuel pump control loop – pressure regulation
- Fuel injection timing
- Spark ignition timing
- Fully configurable engine parameter tables

Specifications

Voltage:	8 – 20 V operation
Power:	< 8W at full operation*

**Power required to run ECU, injectors, ignition, pump system, throttle control and all sensors*

Features

- Extremely small design
- Lightweight, rigid enclosure machined from aluminium
- Single power supply solution
- Suited for wide range of engines
- Integrated power circuitry for driving entire engine management system
- Support for up to 2 injector drivers – with expansion to 8
- Features GPIO for custom applications
- Based on mature, proven automotive ECU system
- Engine management functionality targeted specifically for UAV industry
- Full complement of sensors provides full engine monitoring capabilities
- Electronic interface, both serial and CAN
- Complete low level calibration of ECU operation
- Real time engine telemetry data
- Integration with Piccolo avionics