The **eFI** control unit has been designed and manufactured for drones under military specifications.

**Features**

- Specific control algorithms for two-strokes engines (also available for 4T and Wankel)
- Fuel injection and ignition advance with adaptive close-loop control depending on the operating conditions of the UAV and the engine (altitude, engine status)
- Protection against conditions outside its operational limits and monitoring of the health status of the powerplant (**Engine Health Monitoring**)  
  
  - Engine speed control under Flight Control System demand (**Fly-By-Wire**)  
  - Propeller pitch control  
  - Returnless dynamic control of fuel pressure  
  - Redundant control of fuel supply  
  - Diagnosis of the fuel supply systems (pump ageing, leakage in fuel hoses)  
  - Diagnosis of sensors and actuators with **fail-safe** control modes  
  - Up to 10 hours of parameters recorded in internal memory  
  - Automatic test cycles (running-in, endurance test,...)  
  - Hardware and software adaptable to customer specific needs

**Specifications**

- **Analog inputs**: BARO, MAP, IAT, 2x CHT, 2x EGT, TPS, Fuel Pressure, 2x Hall/VR sensors, BATT, ECU temp
- **Digital inputs**: 2x Engine Speed (hall or VR), Engine Desired Speed (**fly-by-wire**)  
  - **Digital Outputs**: 2x Fuel Pump (PWM or switch), Throttle Servo, 2x GPIO (oil pump, pitch actuator, temperature control vanes, heaters,...)  
  - **Injection**: 2x Low or high impedance injectors (sequential, batch, stage)  
  - **Ignition**: 2x Transistorized or CDI modules  
  - **Power supply**: 10÷30 VDC  
  - **Current consumption**: < 0,1 A @ 12 VDC  
  - **Weight**: <80 g (with aluminium EMI shielded enclosure)