



UNMANNED PLATFORMS
AND SUBSYSTEMS



Unique features:

- Does not contain ITAR or EAR components
- Electronic fuel injection system with superior atomization
- Optimum performance under broad environmental conditions
- Integrated 100W onboard generator system
- Proprietary silent muffler as standard equipment
- Operator software for plug & play integration
- Best in class sound signature, non-detectable at 700 m distance

Datasheet V1.1

UAV28-EFI TURNKEY ENGINE SYSTEM

Maximum exportability



Description:

UAV28-EFI is a turnkey fuel injected engine system developed for small unmanned aircraft vehicles with up to 55 lbs takeoff weight. The engine is particularly suitable for the long endurance unmanned aircraft due to the excellent fuel consumption and very low acoustic signature.

UAV28-EFI system is a fully integrated and cost-efficient engine system targeted to replace carbureted engines and significantly enhance unmanned aircraft reliability, endurance, and performance as well as to expand operational conditions.

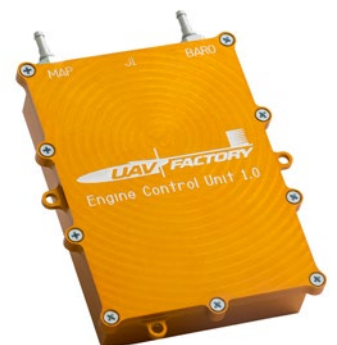
Simple integration with autopilots:

- Throttle control through PWM, Serial or CAN
- Standalone EFI monitor software works through serial passthrough with any datalink or autopilot
- Precise real-time fuel consumption and fuel amount data
- Seamless compatibility with Piccolo
- Protocol available for engine integrators

Fuel Injection Advantage:

UAV28-EFI system was developed to address deficiencies of small carbureted engines that are well known for low inherent reliability and large fuel consumption. Engine reliability is often a limiting factor in small unmanned aircraft vehicle reliability. Small carbureted engines are very difficult to tune and maintain- engine failure is a number one cause of unmanned aircraft loss.

UAV28-EFI utilizes automotive fuel injection processor with a miniature fuel injector capable of very fine atomization of fuel. Engine is controlled by purpose-developed ECU that takes into account Manifold Air Pressure, Manifold Air Temperature, RPM, Cylinder Head Temperature, Barometric pressure and Throttle Position to automatically calculate optimum fuel amount and spark timing. As result, UAV28-EFI does not need any tuning, operates efficiently and reliably. The time between maintenance is increased due the clean, efficient fuel burn.



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- Excellent fuel consumption with 30 % improvement over carbureted engines
- Smooth and stable operation
- -30 C cold weather starting
- Optional automatic cooling system
- Comes fully assembled, calibrated and tested
- Onboard telemetry logging on 4 Gb flash card
- Short lead time

Integrated Turnkey Engine System:

UAV28-EFI system is a turnkey solution that comes fully integrated with mature onboard generator system, high performance proprietary muffler system as well as fully automatic Temperature Control Duct (TCD). System includes generator power unit (GPU), Electronic Control Unit (ECU) as well as Fuel Pump Unit (FPU). The temperature control duct has a servo flap that is controlled by ECU in order to keep the engine at optimum operational temperature. Fuel filter unit and air filter unit are supplied with the system as standard option.

The engine comes fully calibrated and flight ready.

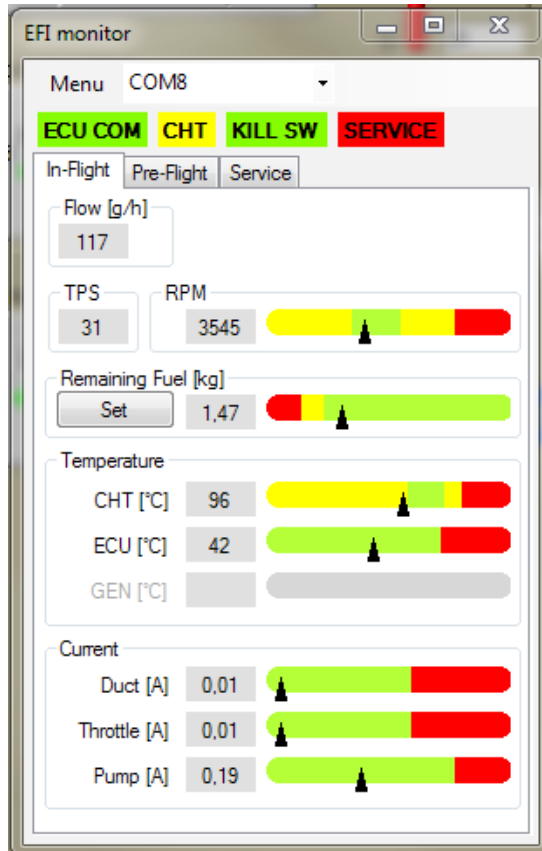
Simple Plug & Play Integration:

EFI monitoring software is included with the UAV28-EFI engine system. Software can be used as a part of the aircraft ground control software by simply connecting ECU with the operator computer, through a serial pass-through. EFI Monitor is compatible with any autopilot system and data link system that has a serial pass-through.

EFI Monitor displays visual bar indicators of all critical engine parameters. A color indication gives an operator a clear visual overview of the system status and allows troubleshooting potential issues during the flight, before the parameter would exceed safe value.

EFI Monitor software adds vital engine information to the standard ground control software without the need of custom software development.

EFI monitor provides very precise fuel flow as well as the amount of fuel available onboard in real time, therefore eliminating the need of a separate fuel level sensor. An operator can use this data to optimize the endurance of the system during the flight.



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Specifications:

UAV28-EFI specifications	
Engine type	Fuel Injected two-stroke, single cylinder, air cooled
Power	2.5 kW (3.4 hp)
Fuel Consumption	400 g/kWh in cruise
Fuel type	Automotive 95+ octane (RON)
Displacement	28 cc (1.74 cu in)
Speed range	1600-8500 rpm
Engine life	>500 hours ¹
Oil/gasoline ratio	1:50 / 2% mix
Recommended 2-bladed Propellers	16x10, 18x8, 18x10, 19x11, 20x8,
Recommended 3-bladed Propellers	16x8, 16x10
Engine weight (including generator, cooling system, servo, air filter)	1500 grams (3.3 lbs)
Muffler	Proprietary silent muffler
Muffler type	Combined reactive-dissipative
Sound level, measured from 30 m distance	59 dB
Detectability range @ 5000 RPM	<700 m (<2300 ft)

¹ depends on operational conditions. The maintenance program needs to be performed at prescribed intervals.

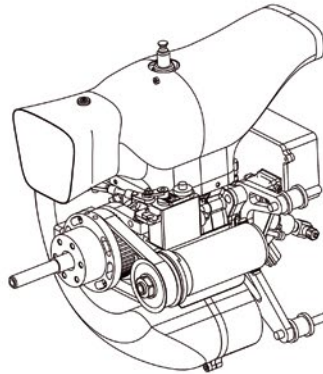
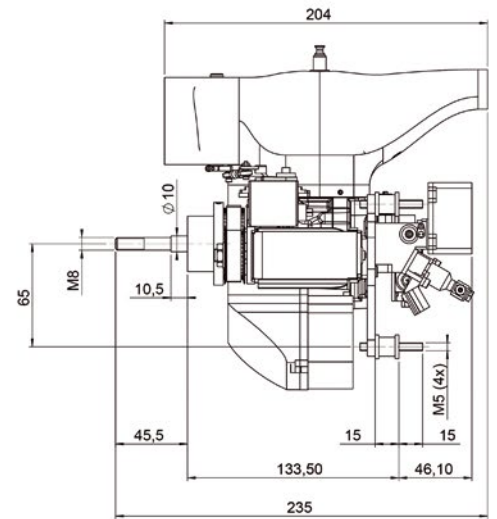
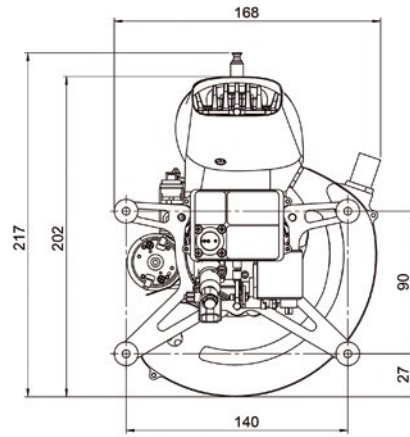
Fuel pump specifications	
Fuel pump life	Over 2000 hours
Fuel priming	Self-priming
Weight	70 grams (0.15 lbs)

Engine Control Unit (ECU) specifications	
Throttle control	Fuel Injected two-stroke, single cylinder, air cooled
Autopilot compatibility	Compatible with all autopilot systems
Pump control	Integrated pump controller
Temperature control	Integrated controller with PWM output
Weight	170 grams (0.37 lbs)
Input voltage	10-24V
Power (ignition module, ECU, pump, servo, injectors)	<15W @ maximum RPM
Environmental protection	Fully sealed, IP64

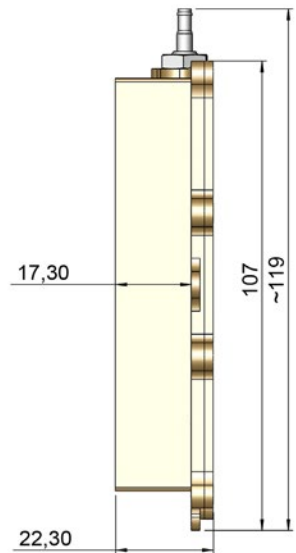
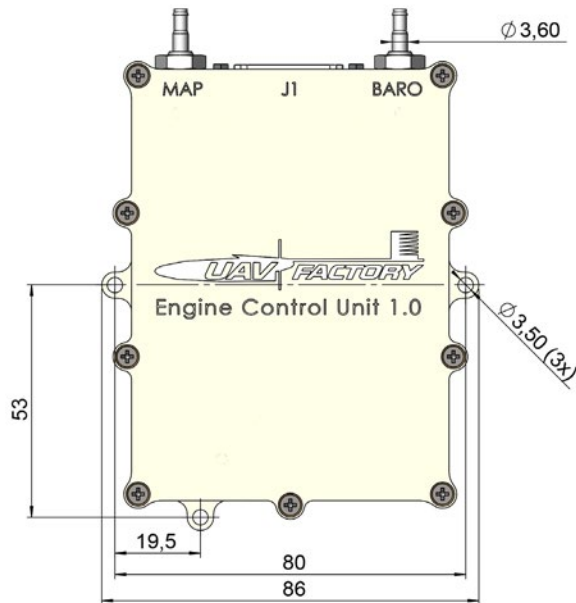
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Dimensions UAV28-EFI:



Dimensions ECU:



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