Engine UAV-170

UAVOS

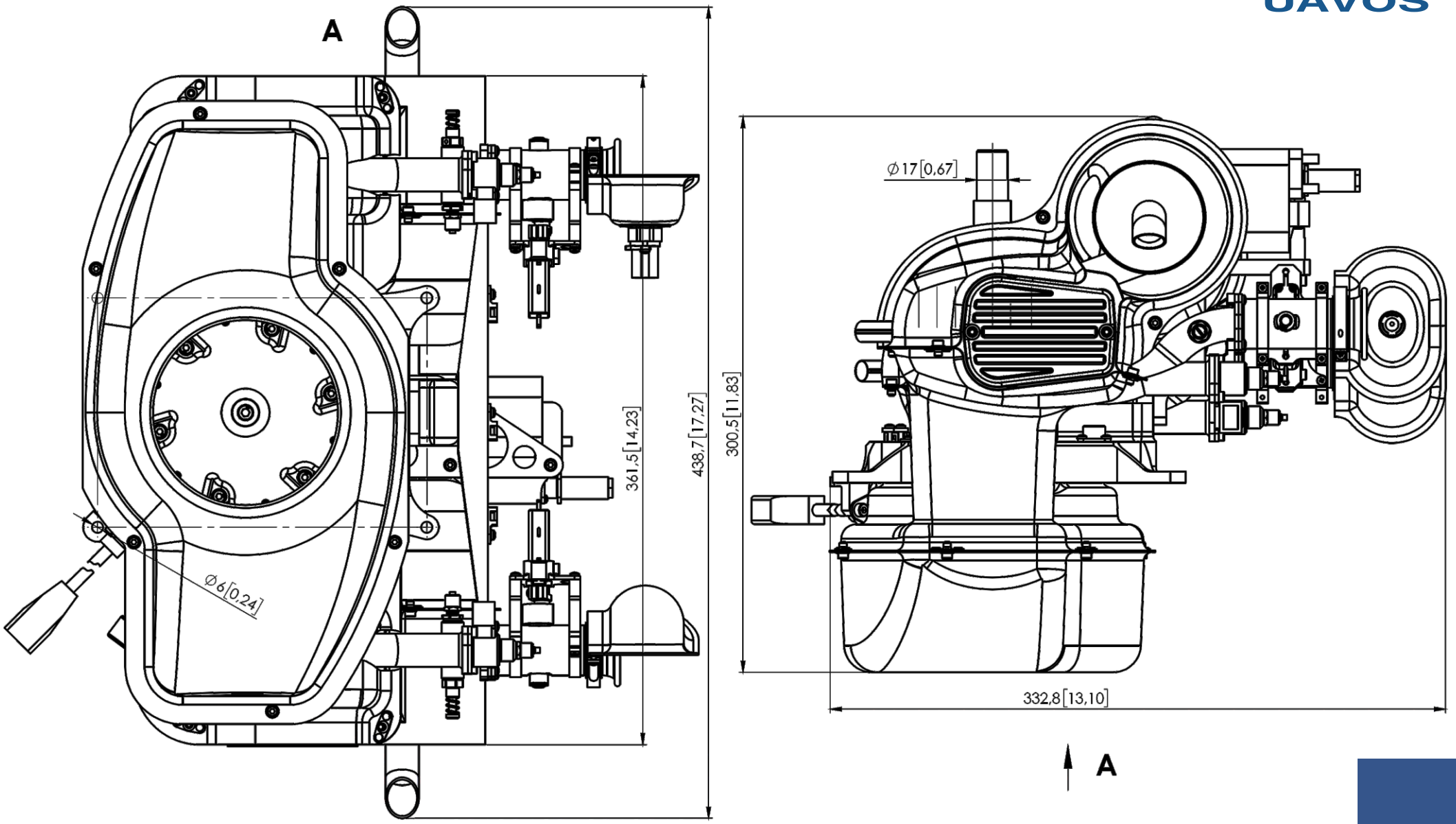
- **4-stroke** gasoline engine*
- The engine is equipped with a fuel injection system
- 95-octane petrol + Valvoline 2T SynPower 30:1
- Maximum engine power: **9.3 HP** (6.8 kW)
- Nominal engine power: **6.1 HP** (4.5 kW)
- Fuel consumption: **320 g/kWh**
- Forced air-cooling
- Equipped with starter-generator, 27V 3-phase AC motor. Generator power **500W** up to **4800 rpm**
- Total engine weight with ECU (engine control unit): 8.5 kg
- Maximum CHT operating temperature: 165 °C

* based on FM 170 – B2 - FS engine https://vrtule-fiala.cz/en/for-model-planes/fm-170-b2-fs-107.html

MOTOR inside Fiala PROP company PROPELLER outside

www.uavos.com

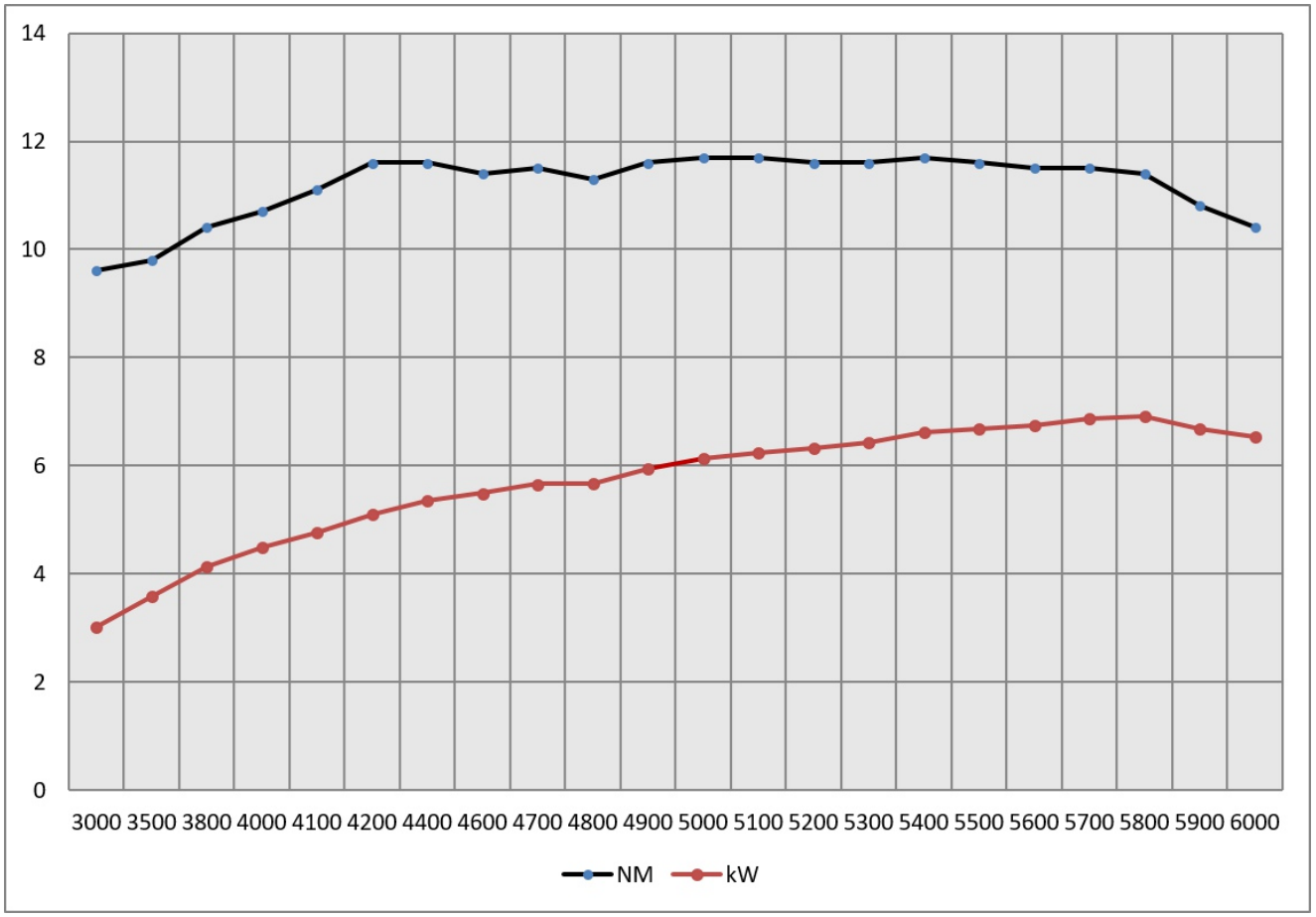
General Dimensions



Power vs Torque

Power to Torque relationship plot (OAT 15 °C, Atm.pressure 1013 mbar).

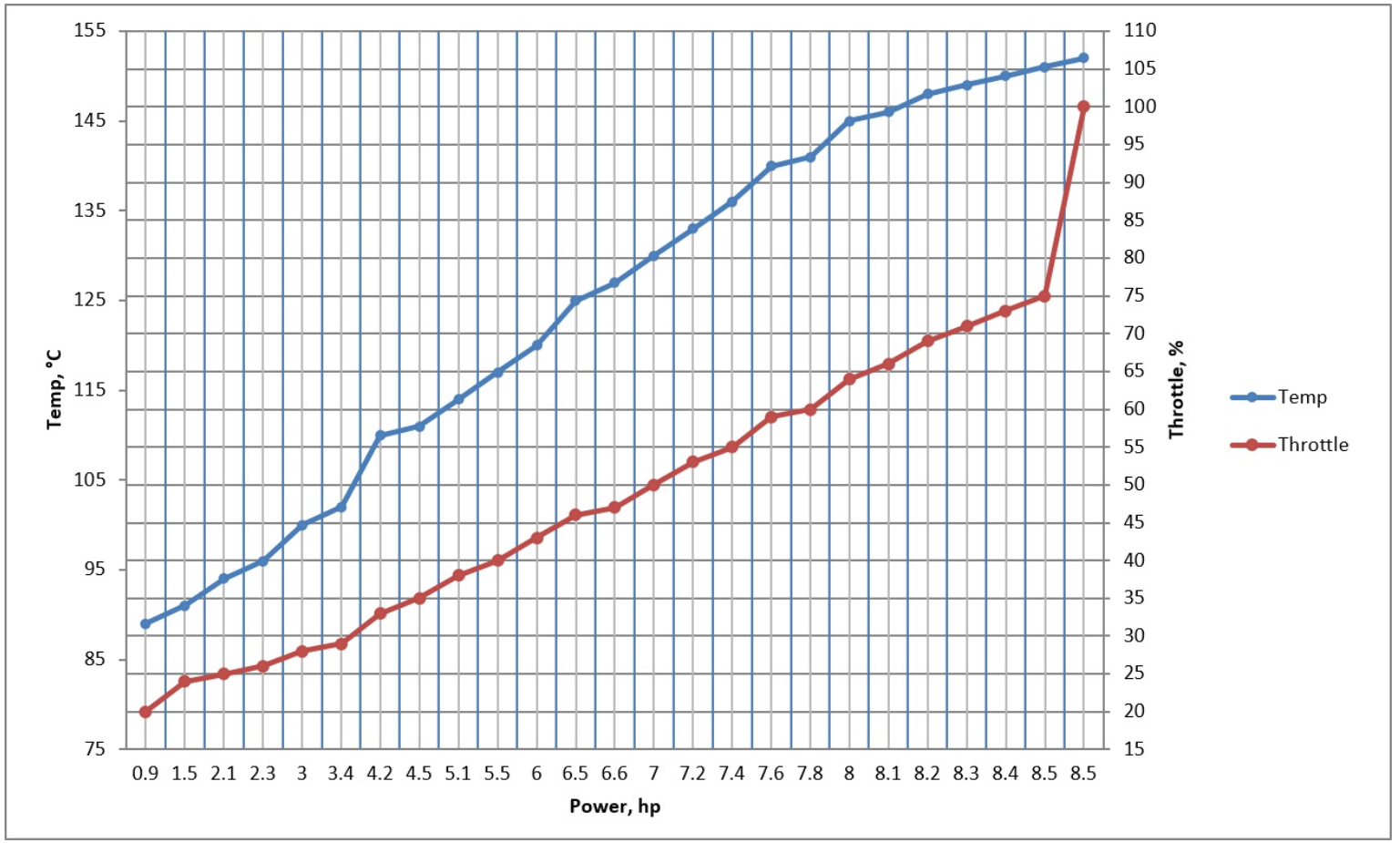
Power HP	Power KW		RPM	Torque NM
4.102	3.016		3000	9.6
4.885	3.592		3500	9.8
5.629	4.139		3800	10.4
6.096	4.482		4000	10.7
6.482	4.766		4100	11.1
6.939	5.102		4200	11.6
7.269	5.345		4400	11.6
7.469	5.492		4600	11.4
7.698	5.660		4700	11.5
7.725	5.680		4800	11.3
8.095	5.952		4900	11.6
8.332	6.126		5000	11.7
8.498	6.249		5100	11.7
8.591	6.317		5200	11.6
8.756	6.438		5300	11.6
8.998	6.616		5400	11.7
9.087	6.681		5500	11.6
9.172	6.744		5600	11.5
9.336	6.865		5700	11.5
9.417	6.924		5800	11.4
9.075	6.673		5900	10.8
8.887	6.535		6000	10.4



Temperature vs Power

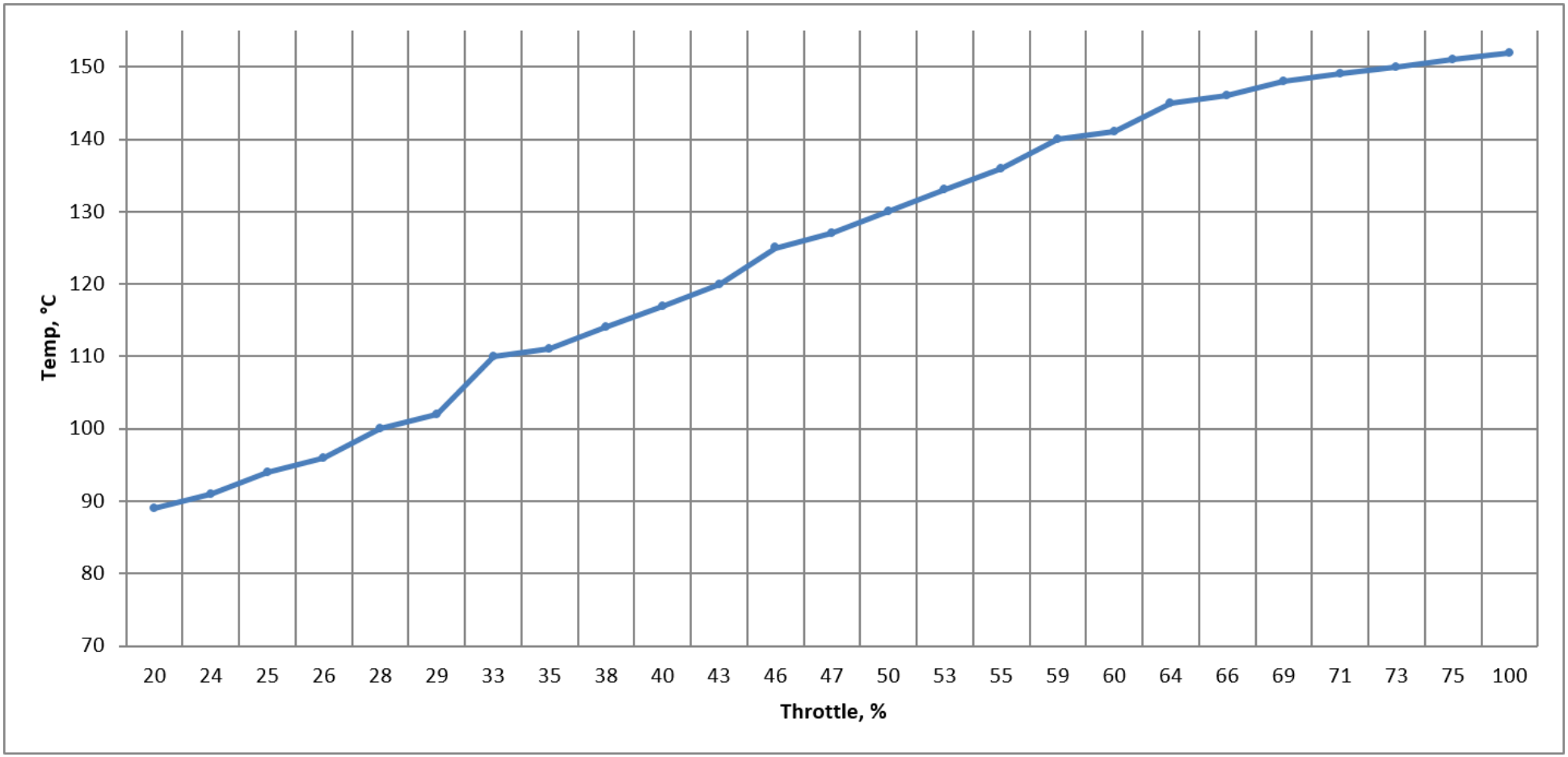
CHT to Power relationship plot at nominal RPM (OAT 15 °C, Atm.pressure 1013 mbar).

power_hp	throttle_%	temp_°C
0.9	20	89
1.5	24	91
2.1	25	94
2.3	26	96
3	28	100
3.4	29	102
4.2	33	110
4.5	35	111
5.1	38	114
5.5	40	117
6	43	120
6.5	46	125
6.6	47	127
7	50	130
7.2	53	133
7.4	55	136
7.6	59	140
7.8	60	141
8	64	145
8.1	66	146
8.2	69	148
8.3	71	149
8.4	73	150
8.5	75	151
8.5	100	152



Temperature vs Throttle

CHT to Throttle Position relationship plot at nominal RPM until overheating (OAT 15 °C, Atm.pressure 1013 mbar).



Engine Control Unit

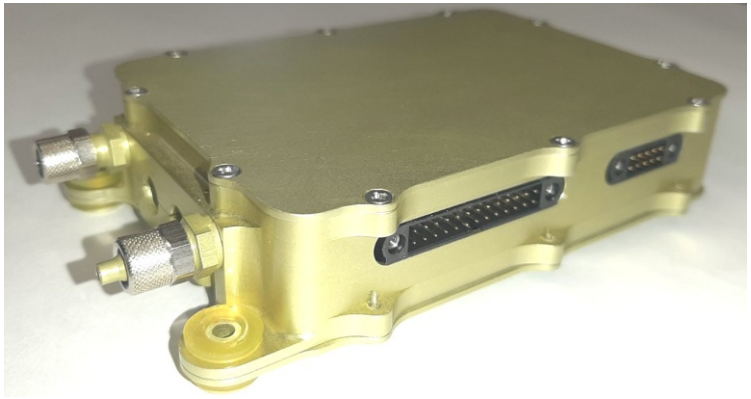
Engine is equipped with Engine Control Unit (ECU) UV01.6401.06.63.00
This unit is intended for processing information from sensors:

- calculates the optimal amount of the fuel input;
- determines the moment of ignition (based on the operating conditions of the engine and its mode).

The unit is equipped with a digital data line, which allows the flight controller to transmit sensor readings, as well as receive ignition commands and gas levels.

The main functions of the Engine Control Unit (ECU) UV01.6401.06.63.00:

- adjustment of the amount of fuel input;
- ignition timing adjustment;
- power supply control of the fuel pump;
- temperature measurements EGTx2, CHTx2, AT;
- the formation of control pulses of the gas servo drive;
- data exchange with a software navigation system.



The electrical characteristics of the engine control unit are shown in table below.

Supply voltage	12 ± 0.5 V
Consumption current (no more) (excluding nozzle current and fuel pump)	0.5 A
Ambient temperature	from (– 40°C) to +60°C
Relative humidity	up to 98% at +25°C
Data transmission channels	CAN bus, discrete signal management