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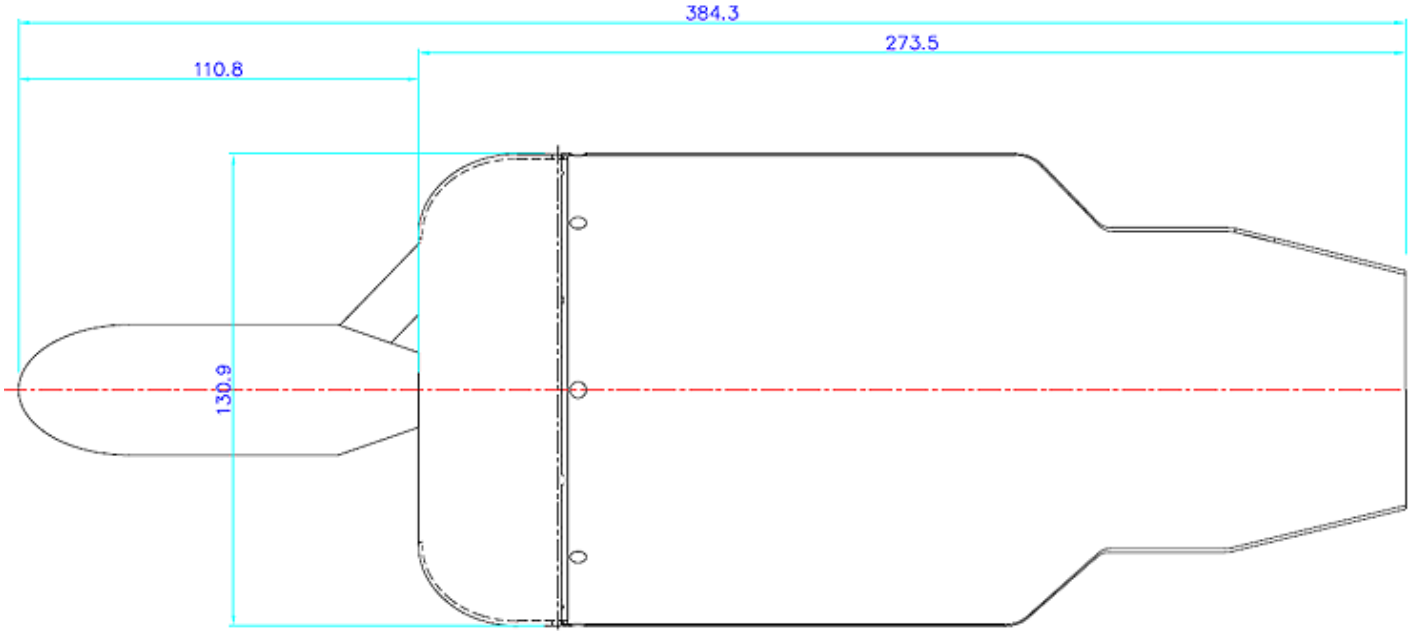
April 2012

Olympus HP gas-turbine. **(direct kerosene start)**

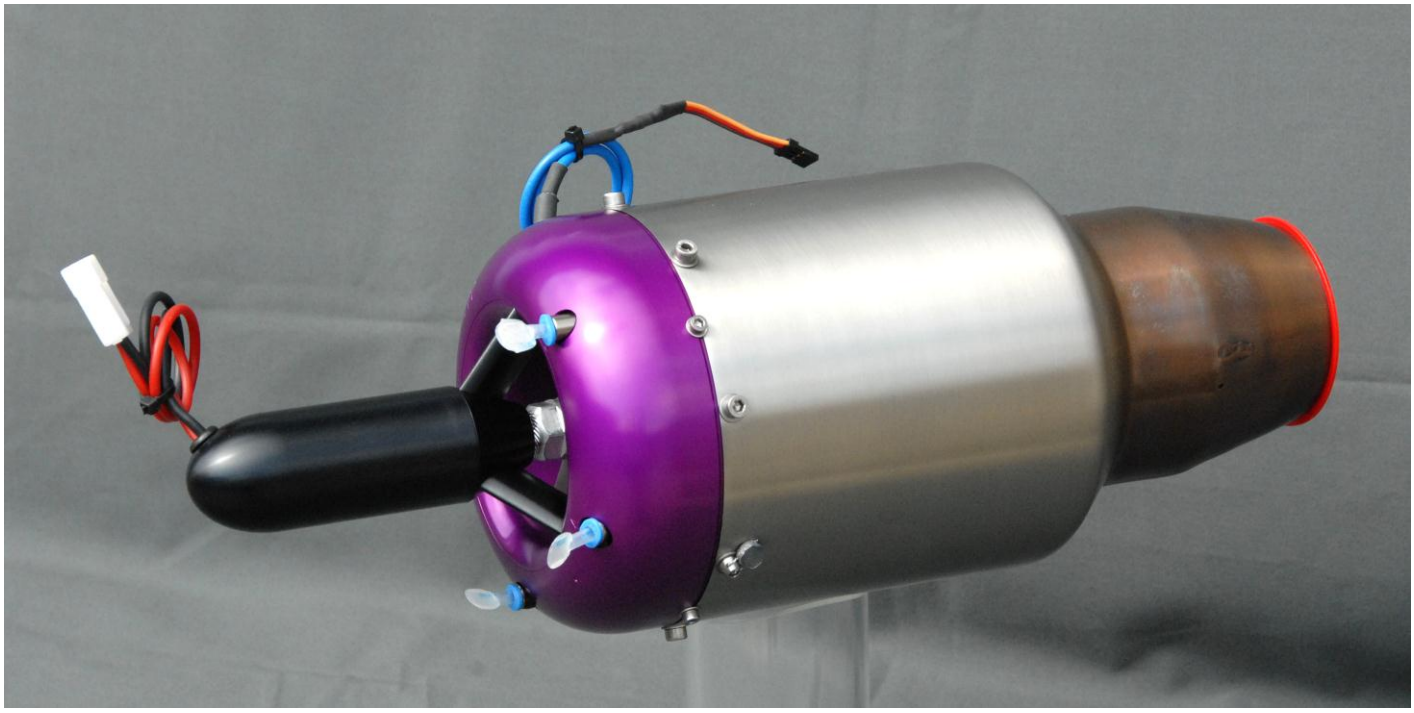
	E-start system		Air-start system	
Diameter	131	mm	131	mm
Length	384	mm	273	mm
Turbine weight	2875	gram	2525	gram
System weight *	3820	gram	3175	gram
Thrust @ max. rpm	230	N	230	N
Thrust @ min. rpm	13	N	13	N
Maximum RPM	108,500		108,500	
Idle RPM	36,000		36,000	
Pressure ratio @ max. rpm	3,8 :1		3,8 :1	
Mass flow @ max. rpm	450	gr/sec.	450	gr/sec.
Normal EGT	700	C	700	C
Maximum EGT	750	C	750	C
Fuel consumption @ max. rpm	640	gr/min.	640	gr/min.
Fuel	JP-4/petroleum/Jet A1			
Oil	4,5% aeroshell 500 mixed with fuel.			

***** System airborne weight. (complete system)
Engine, ECU, pump, battery, thermo sensor, mounting straps.

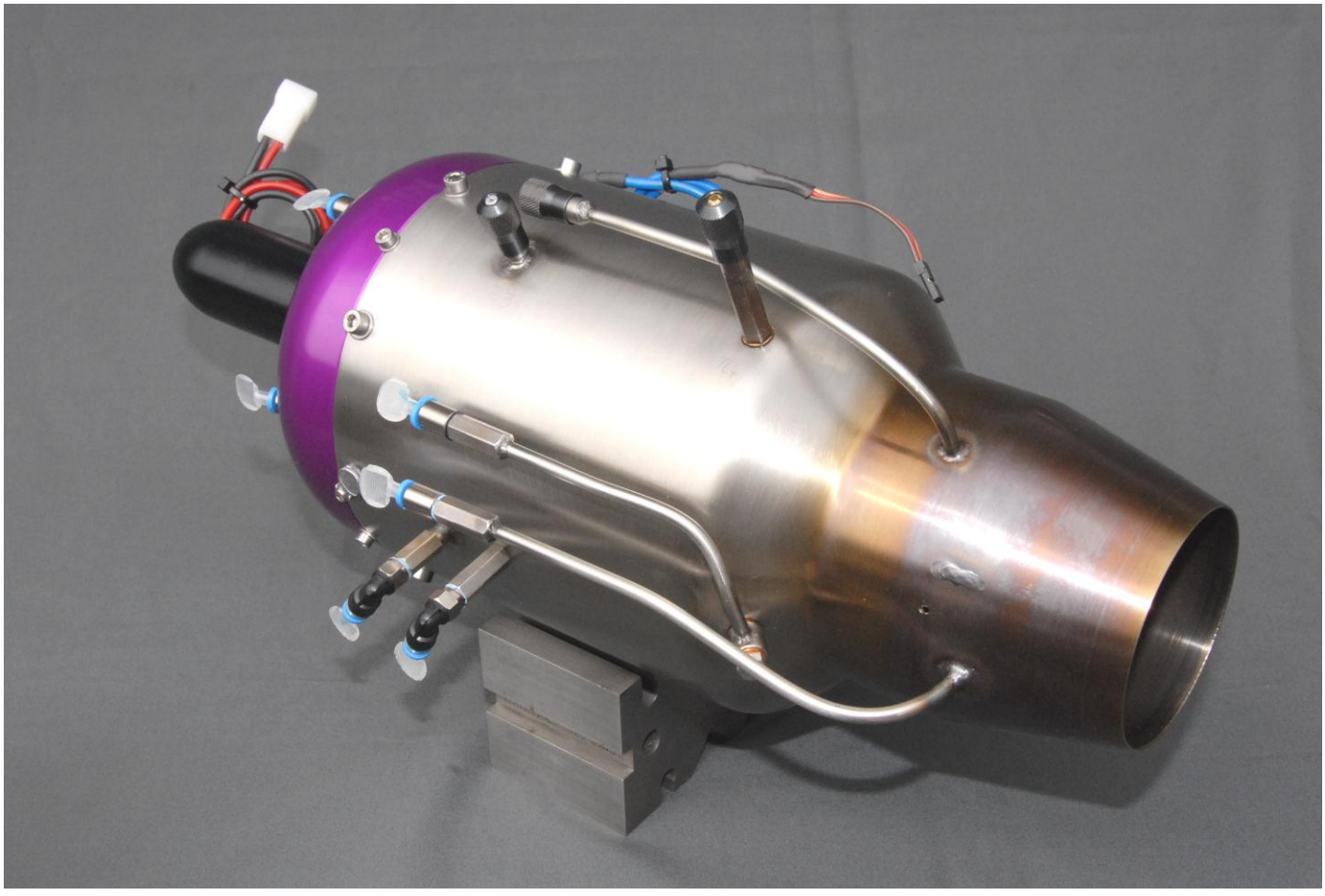
All data at STP **S.T.P**. : Standard Temp. & Pressure
Temperature : 15 Degrees Celsius / 59 Degrees Fahrenheit
Pressure : 1013 Mbar / 29.91 in



Picture of a standard Olympus HP E-start.



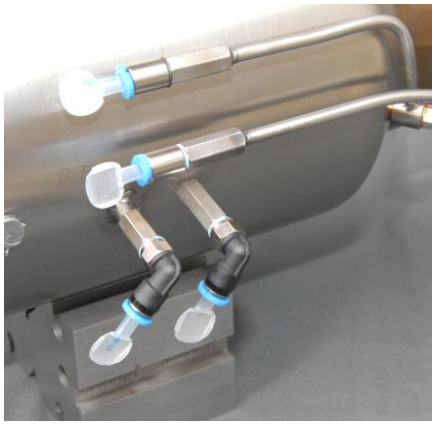
Picture of a Olympus HP E-start with additional measuring points.



Additional measuring points on engines are build on request and are not standard.

Front engine view

Side view

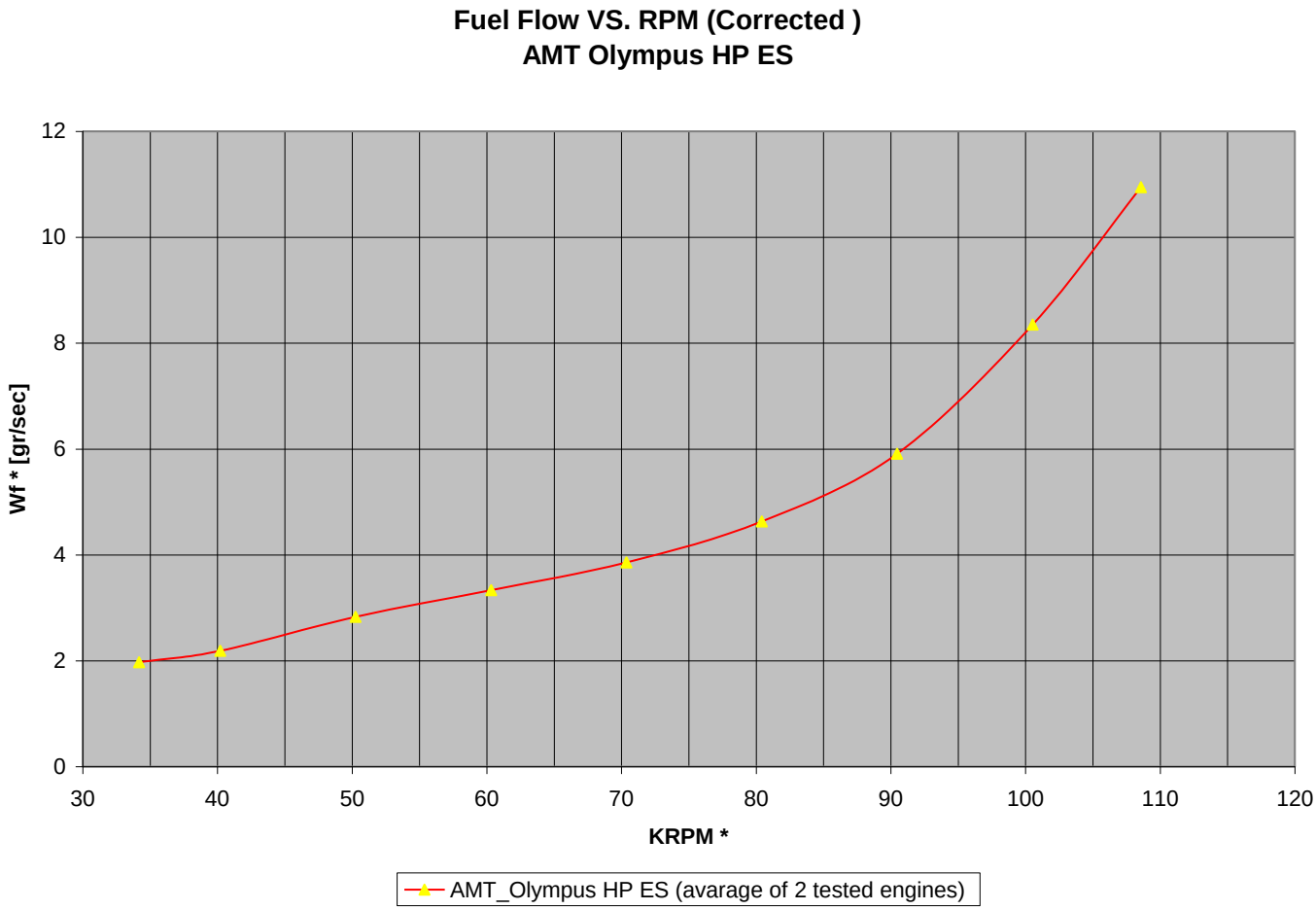


Rear engine view

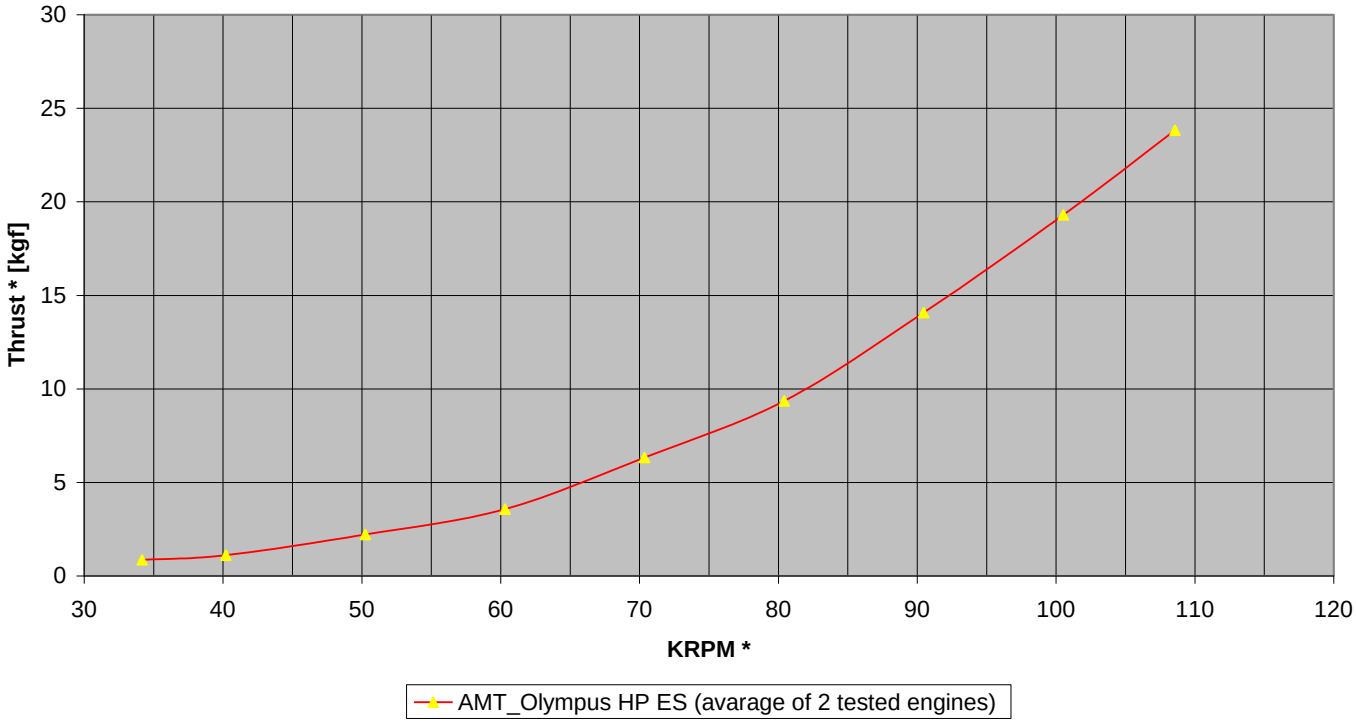
The Olympus HP E-start on a full size glider as a “bringing home” device. (ASW 20)

Picture Klaus Meitzner

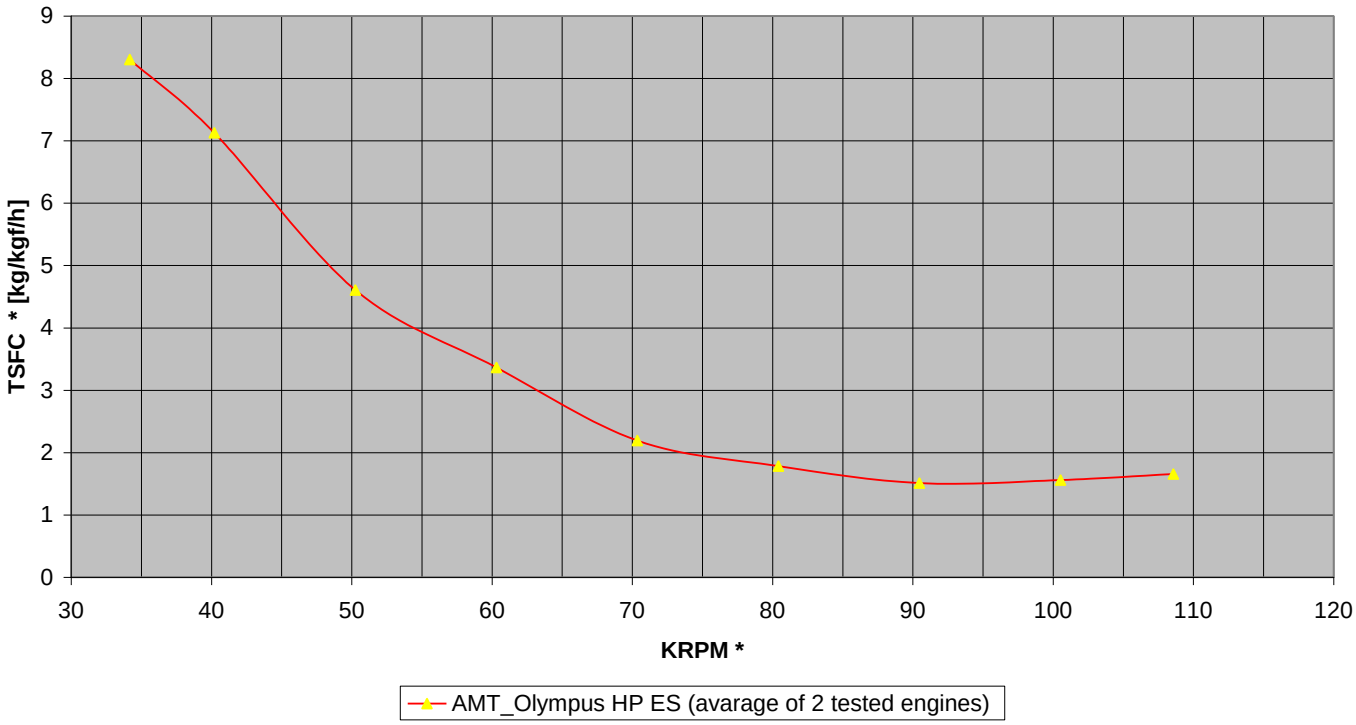
Olympus HP E-start data as graphical information.

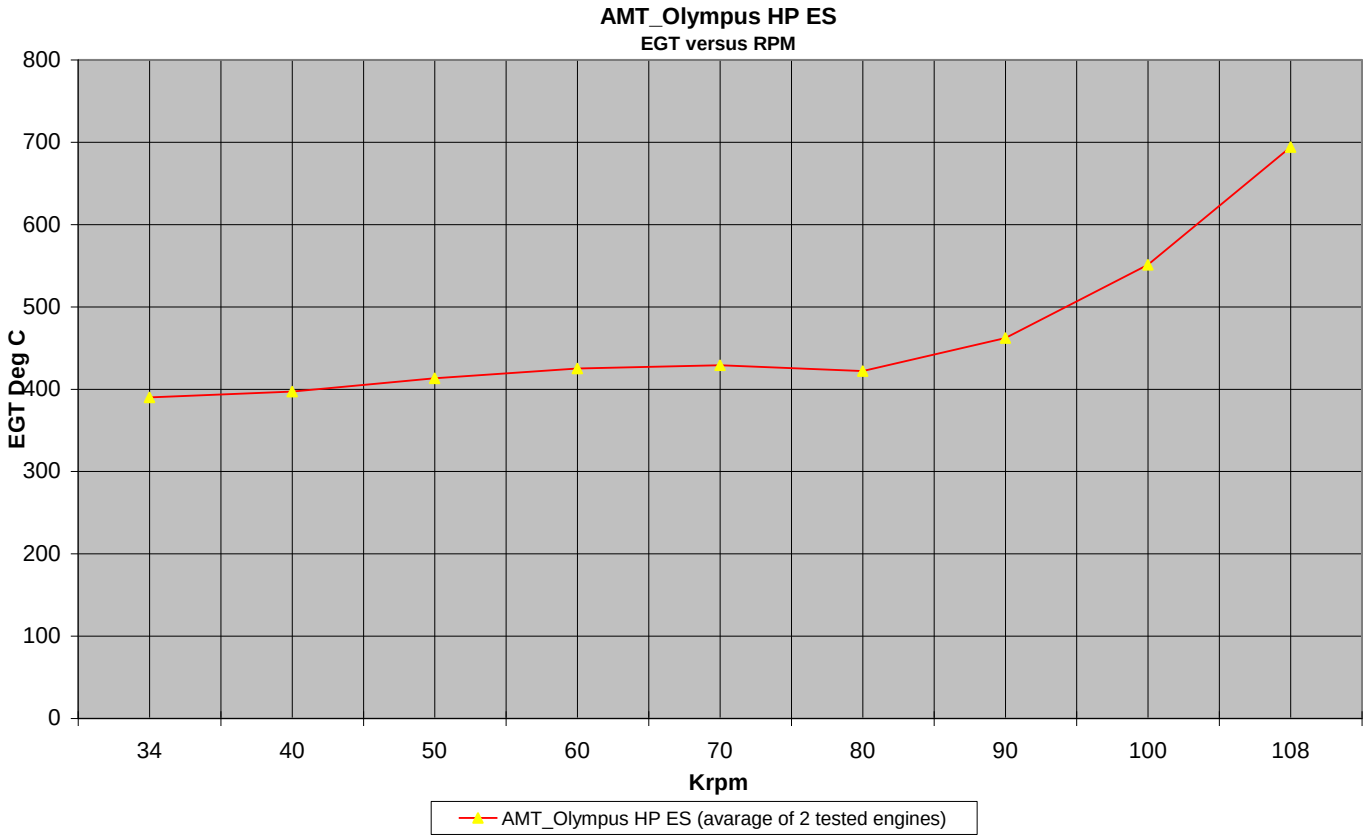


Thrust VS. RPM (Corrected)
AMT Olympus HP ES



SFC VS. RPM (Corrected)
AMT Olympus HP ES





Electronic Control Unit

AMT Netherlands developed in house a fully automatic ECU to control the turbine, main reason for this development was that there was a need for fully automatic starting turbines.

The latest update was to make it possible to start directly on kerosene with the use lithium polymer (LiPo) batteries The lithium polymer batteries are available for all our engine types.

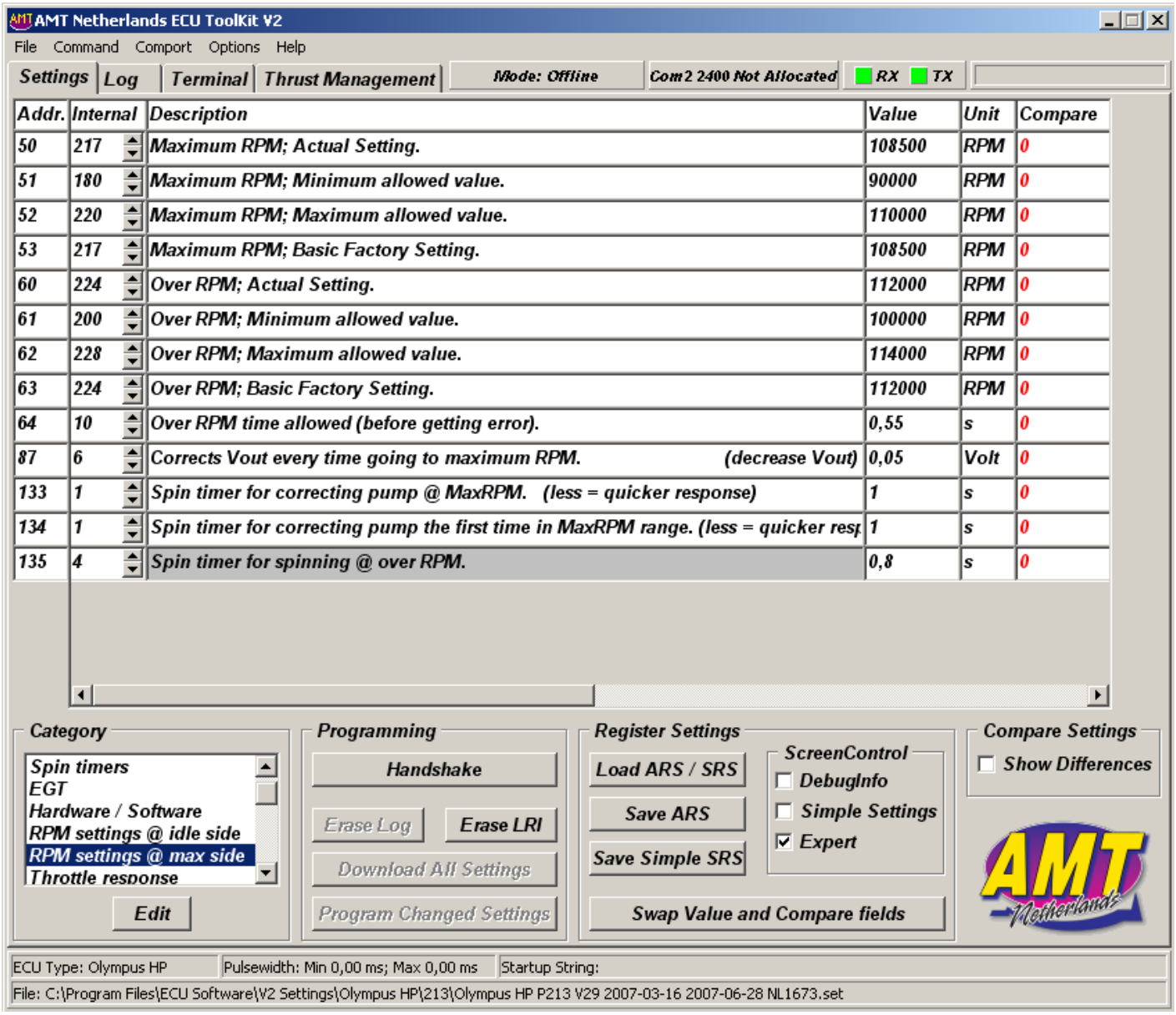
ECU Features.

* One or Two channel operation.
* ECU works on 4 cell LiPo.
* Output for fuel solenoid valve.
* Output for igniter solenoid valve.
* Output for igniter.
* Output for E-starter.
* Programmable failsafe timer, standard set to 1 second delay before full stop.
* Log file of last 22 min, of run @ 1 seconds interval.
* Serial 2400 Baud, rs232 level output.
* Weight 160 gram / 5,4 oz.
* Fuzzy logic software, for fast throttle response.
* No adjustments needed.
* Ridged small ECU housing.
* All high quality cables with gold plated connectors.
* Standard "K type" EGT probe connector.

Note:
Latest software version (V33F and up) can control the ECU with a RS232 protocol. (For data see AMT website)

Telemetry software

Settings Tab

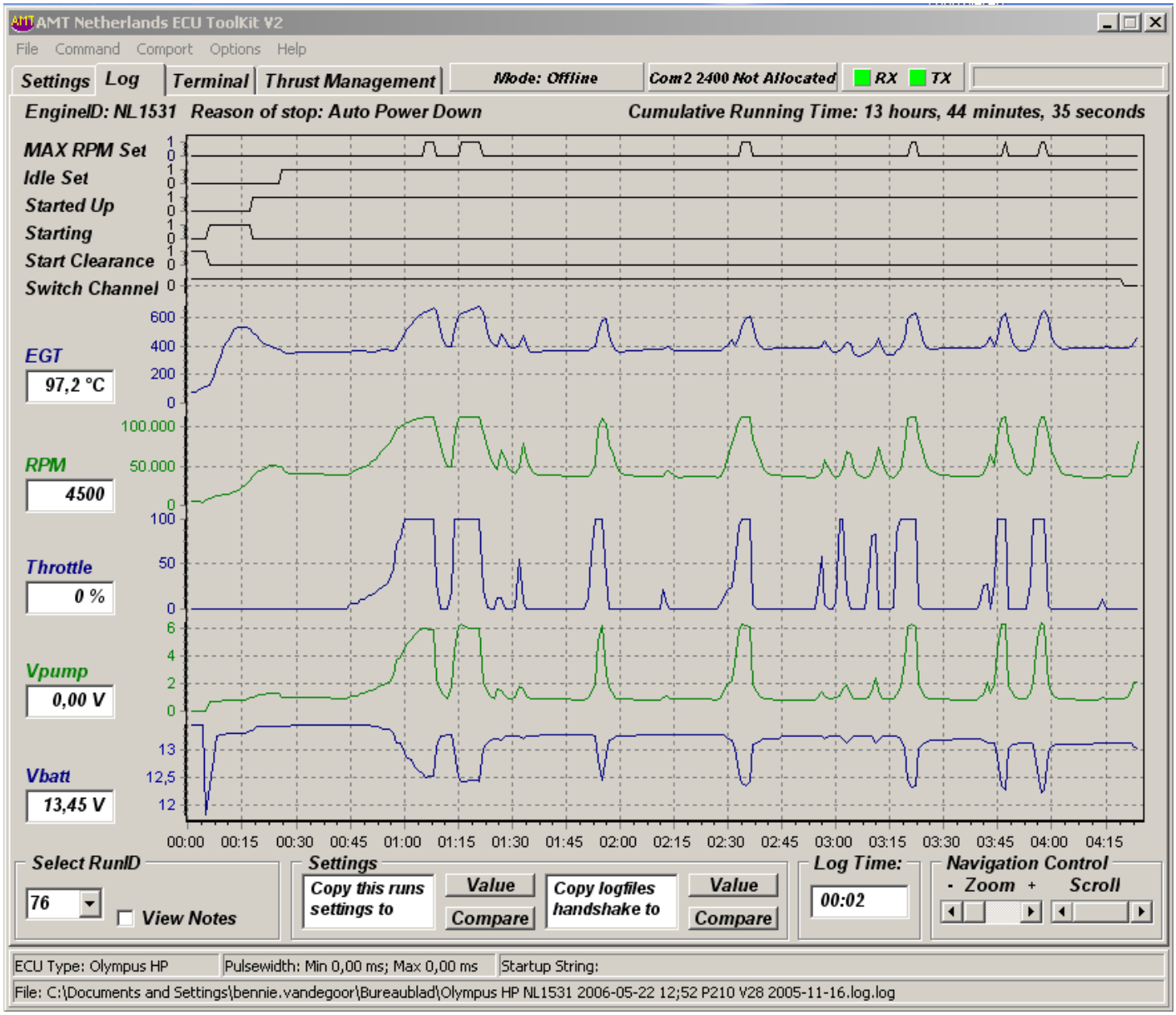


The telemetry PC software is written for use with the Window XP operating system, this software will be shipped with every turbine.

With the “Settings” Tab in the PC program the user can change several parameters in the ECU software. Normally this is not needed, all ECU,s are pre-programmed and tested with the actual engine and fuel pump.

AMT Netherlands keeps record of all information during building of the engine including all data during testing.

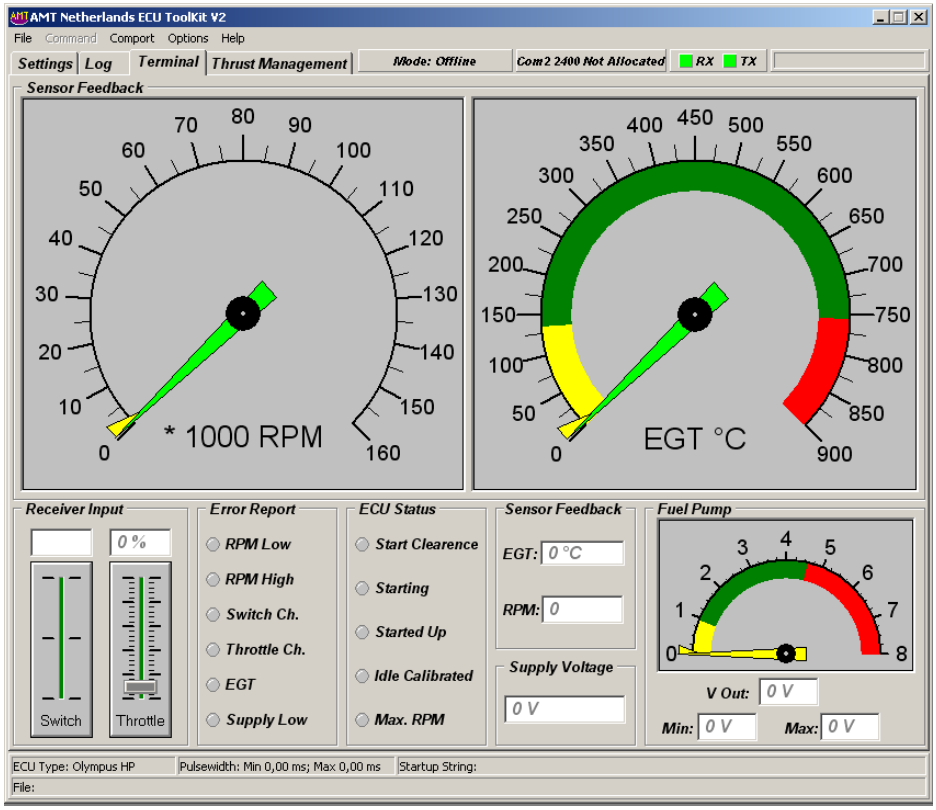
Log Tab



At a running engine the following information is logged.

-> RPM of shaft. (500 RPM resolution)
-> Exhaust Gas Temperature. (4 Degree Celsius resolution)
-> Throttle channel. (1 % resolution)
-> Switch channel, or throttle trim @ single channel operation.
-> Fail save condition if occurred.
-> Number of fail safes during last engine run.
-> Supply voltage of ECU.
-> Pump voltage.
-> Status of ECU (e.g. started up, max RPM set, error messages)
-> Reason of last stop.
-> For each engine run, all engine settings are stored.
-> Each run has its own unique engine number and time.
-> Total running time and run time of last run.

When using the actual program and you move your cursor over the graph, the cursor feedback will give you more detailed information in high resolution. All data from cursor position is displayed on the left of the screen.



Terminal Tab

At the “Terminal” Tab the operator can observe real time data coming from the ECU.

ECU status, control inputs, fuel pump voltage battery voltage and all error messages are visible on the screen.

Since the 2010 this engine is equipped with a direct kerosene start system, each set contains the following parts:

1 x Fully tested Olympus HP E-start gas turbine with kerosene start system.
1 x Version 2.0 b Electronic Control Unit.
1 x High flow main solenoid valve for kerosene.
1 x High flow fuel solenoid valve for igniter.
1 x Olympus HP fuel pump.
1 x Rear engine mount.
1 x Front engine mount + EGT sensor mount.
1 x 4 cell 2500Mah Lithium Polymer battery pack.
1 x Battery pack charge cable.
1 x Safety clip for RPM sensor.
1 x Thermo sensor (K-type).
1 x Manual Olympus HP E-start (kerosene).
1 x 3 meter Festo PP3 tube.
1 x 2 meter Festo PP4 tube.
1 x Fuel filter.
1 x Festo T piece for igniter feed.
1 x Engine Data Terminal.
1 x EDT charge cable.

All specifications are subject to change without notice.

For latest information see **AMT Netherlands** website at Http://www.amtjets.com