

7.5 Liter Fuel Tank with Fuel Level Sensor V1.0

1. Description

The fuel level sensor was specifically designed for the Penguin B 7.5 liter fuel tank. The fuel level sensor allows estimating remaining fuel amount in flight. Installed fuel level sensor is shown in Figure 1.

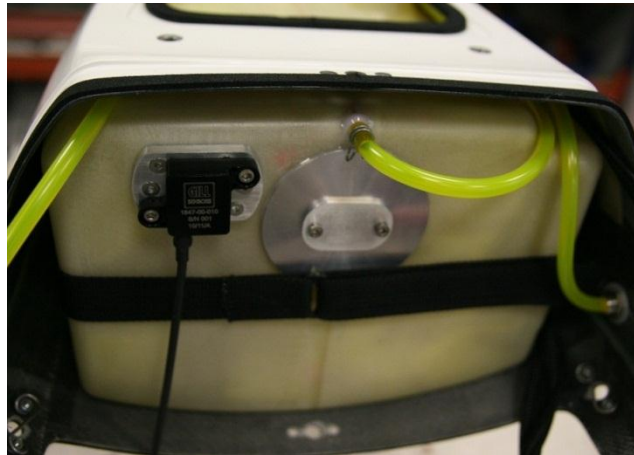


Figure 1 Fuel level sensor installed in Penguin B UAV

2. Sensor Installation and Configuration

For fuel level sensor specifications please refer to separate document '1847-001 Issue B Specification'.

For guidance on calibration procedures please refer to separate document 'Liquid Level Sensor Calibration and Set-Up Using ProbeView Software' as well as provided software application 'ProbeView 104-00'.

For wiring information please refer to separate document 'M-Series Wiring Diagram'

The fuel level sensor comes preinstalled in the Penguin B 7.5 liter fuel tank. The installation configuration is shown in Figure 2. It is important to note that the sensor has the measurement range, which is between 2% and 77% of the fuel tank volume. During the integration of the fuel level sensor into avionics it is important to take into account the actual measurement range in order to produce realistic fuel estimates.



Figure 2 Fuel tank with fuel level sensor

From Figure 2 it can be seen that the fuel tank has irregular shape which means that the value obtained from the fuel sensor is not directly proportional to the fuel tank volume. In order to calculate precise volume estimate it is necessary to implement the lookup table. The lookup table can be based on the information presented in Figure 3. An alternative method to the lookup table is to use the polynomial equation given in the bottom right corner of Figure 3.

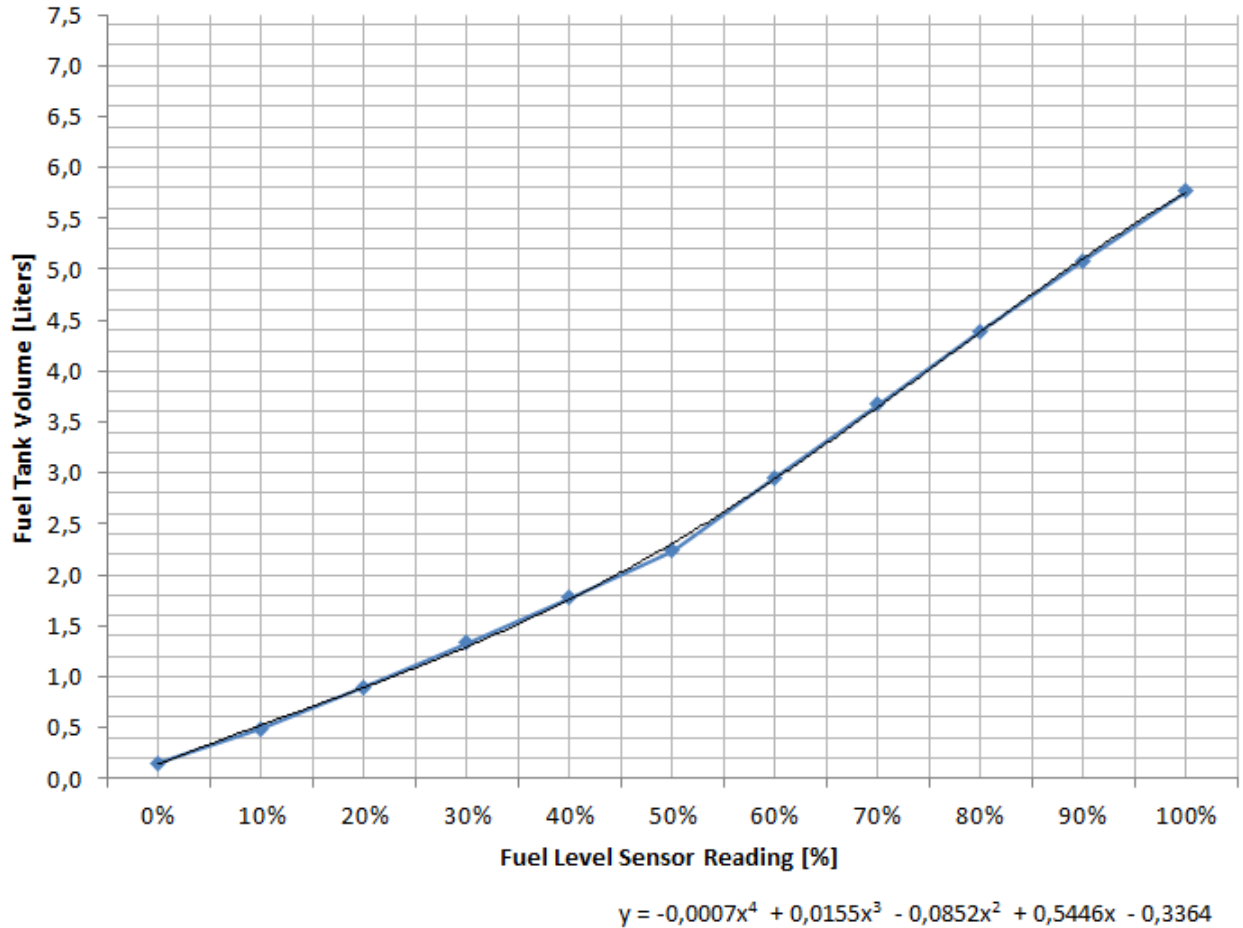


Figure 3 Correlation between the fuel sensor reading and the actual fuel tank volume.

3. Revision History

Revision	Date	Description	Edited by
1.0	08/11/2011	Initial document created	K.Popiks

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