MESIT

GROUP OMNIPOL

Fuel Measurement Systems

A sophisticated and proven solution based on the principle of capacitive sensors for measuring the level of fuel in airplane tanks.

- **Complete solution for different types of fuel tanks**
- **High measurement accuracy up to ±2 %**
- **Software meets the RTCA DO-178 and hardware RTCA DO-160**
- **Any number of fuel level transmitters depending on the airplane design**
- **High level of security (redundancy of calculations, independent measurement circuits)**
- **System configurable using a regular PC**
- **Communication line RS 422, RS 485 or ARINC 429 for communication with the parent system**

Assembly

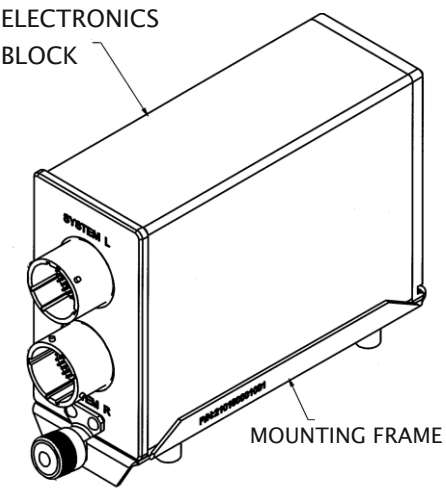
The standard configuration of the fuel measurement system set consists of an electronics control block and capacitive fuel level transmitters.

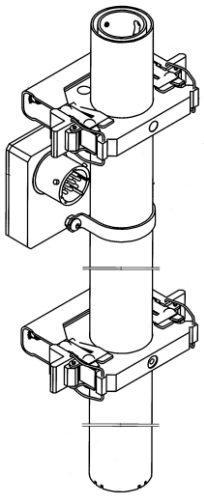
It can be supplemented with a minimum level sensor, a pressure filling control block and a maximum level sensor. The output of the electronics block provides information about the amount of fuel and the system status for a parent computer or digital indicator.

Electronics block

The system control block initiates measurement in capacitive fuel level transmitters.

There can be any number of these transmitters depending on the airplane design. The transmitters are either purely analogue, i.e. information about the amount of fuel is transmitted in analogue form, or fully digital using standardized buses. After receiving information from individual transmitters, the control block calculates the real amount of fuel in the airplane tanks.





Capacitive fuel level transmitters

Measuring of the volume of fuel carried in the airplane tanks is based on measuring the capacity using the interface height of two different dielectrics (fuel and air) in a capacitive transmitter.

A change in fuel volume in the tank is then reflected in a changed flooding height of the transmitter and, also, in a changed capacity of the transmitter. This data is converted to a value suitable for transmission to the electronics block (analogue or digital).

Technical parameters of the electronics block

Supply voltage	22 VDC – 32.2 VDC, emergency 18 VDC
Temperature range	-55 °C to 70 °C
Weight	max. 0.650 kg
Dimensions	60 mm × 109 mm × 158 mm
Certification	RTCA/DO-160G, RTCA/DO-178B

Application

Fuel measurement systems are supplied for airplanes:
L 410UVP-E20, L 410NG, EV 55, L 39, L 59, L 159, L 159T1.

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