AUTOFLUG

Fuel Gauge Transmitter

Multifunctional

The AUTOFLUG flange mounted active capacitance type Multifunctional Fuel Gauge Transmitter (FGT) comprises fuel height measurement, fuel compensation and optical high and low level sensing functionality in one unit. This sensor achieves highest accuracy over the entire temperature range with various fuel types. The optionally mounted optical high and low level sensors provide independent low and high warning signals for cockpit indication. The fuel gauging length can be adapted in accordance with customer requirements.

Fuel Gauge Transmitter and Compensator Functionality

The Fuel Gauge Transmitter and Fuel Compensator are active capacitance type sensors. The capacitor's conductive surfaces are provided by concentric tubes. The measured capacitance of the Fuel Gauge Transmitter is dependent on the fuel height at the sensor. When the Fuel Compensator is totally immersed in fuel, the measured capacitance represents the fuel characteristics, which is mainly dependent on fuel type and temperature.
Within the sensor's electronics the measured capacitances which represent the actual fuel height and the fuel characteristic are transformed into an EMI immune output signals.

Fuel High and Low Level Sensor Functionality

The High or Low Level Sensors are optical point sensors, i. e. they are able to determine the presence or absence of fuel at the location where the sensor is located. The level sensor switching point is mechanically adjustable.
The High and Low Level Sensor electronics are fully independent from the fuel height measurement and fuel compensation.

Customising

AUTOFLUG provides a wide range of Fuel Gauge Transmitters. AUTOFLUG Fuel Gauge Transmitters and Fuel Compensators are based on company standardised components such as tubes, flanges, level sensors, electronics, cables and connectors. In short time AUTOFLUG can configure, build, test and qualify sensor prototypes. Series production can start immediately thereafter.
AUTOFLUG performs fuel tank studies based on customer supplied CAD data in order to define the required quantity and position of the Fuel Gauge Transmitter and the associated height vs. volume tables for fuel volume and fuel mass calculation.

AUTOFLUG

Fuel Gauge Transmitter

Multifunctional

Mechanical Interface

Mounting	flange mounted from bottom
Flange Dimensions	approx. 124 mm by 80 mm
Flange Height	25 mm
Sensing length	250 mm to 1,000 mm

Electrical Interface

Fuel Gauging		
Input Power	15 VDC, max. 25 mA	
Output Signal	Pulse Width Modulated (PWM)	
	amplitude:	0 to 5 VDC
	carrier frequency:	488 Hz
Fuel Compensation		
Input Power	15 VDC, max. 25 mA	
Output Signal	Pulse Width Modulated (PWM)	
	amplitude:	0 to 5 VDC
	carrier frequency:	488 Hz
Fuel Level Sensing (max. 2 Sensors)		
Input Power	15 VDC, max. 11 mA (per Level Sensor)	
Output Signal Low Level Sensor	14 ±1 VDC → Low Level Warning,	≤ 500 mVDC → No Warning
Output Signal High Level Sensor	14 ±1 VDC → High Level Warning,	≤ 500 mVDC → No Warning

Temperature Range

Operational	-40 °C to +71 °C
Storage	-55 °C to +85 °C

Applicable Fluids

NATO Code MIL Type

F-40 MIL-DTL-5624, Grade JP-4
F-34 MIL-DTL-83133E, Grade JP-8
F-44 MIL-DTL-5624, Grade JP-5
F-35 MIL-DTL-83133E
F-37 MIL-DTL-83133E, Grade JP8+100
F-54
F-63
JET-A / JET-A1 ATSM D-1655
Jet B AVTAG DERD 2486

Accuracy

Fuel Gauging	± 0.5 % duty cycle at empty condition (dry), linearly increasing to ±1.6% duty cycle at full condition (fully immersed)
Fuel Level Sensing	± 1 mm repeatability ± 2 mm hysteresis

Weight

590 g + 200 g/m

Environmental Qualification

in accordance with MIL-STD-810

EMC / EMI Qualification

in accordance with MIL-STD-461

www.autoflug.de

9-2015

THINKING SAFETY