

Fuel Gauge Transmitter

Flexible



The AUTOFLUG flexible active capacitance type Fuel Gauge Transmitter is designed to measure fuel in complex, difficult to access and/or large tank geometries. The sensor is mounted by means of a flange. For installation in the fuel tank, a guiding tube for the Fuel Gauge Transmitter will be pre-installed into a complex fuel tank section. The flexible sensor part will later be installed into this guiding tube. The flexible sensitive element follows the shape of the guiding tube. After installation, the sensor flange seals the fuel tank with an O-ring.

Alternative installation procedure

The sensor will be installed into a pre-bended guiding tube. The complete assembly can thereafter be mounted into the fuel tank.

The fuel gauging length can be adapted in accordance with customer requirements.

Functionality

The flexible sensor is an active capacitance type sensor. The capacitor's conductive surfaces are provided by a plastic structure. The measured capacitance is dependent on the fuel height at the sensor.

Within the sensor's electronics the measured capacitance which represents the actual fuel height is transformed into an EMI immune output signal.

A Fuel Compensator can be integrated into the Fuel Quantity Measurement System to improve accuracy by compensation for different fuel types and fuel temperatures.

Customising

AUTOFLUG provides a wide range of Fuel Gauge Transmitters. AUTOFLUG Fuel Gauge Transmitters are based on company standardised components such as flanges, 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 Fuel Gauge Transmitters and the associated height vs. volume tables for fuel volume and fuel mass calculation.



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Mechanical Interface

Mounting	flange mounted in guiding tube
Flange	SAE J1810 compatible
Flange Diameter	65 mm
Flange Height	22 mm
Sensing Length	200 mm to 1,200 mm

Electrical Interface

Input Power	12 ± 3 VDC, max. 20 mA
Output Signal	Pulse Width Modulated (PWM)
	amplitude: 0 to 7 V
	carrier frequency: 488 Hz

Temperature Range

Operational	-55 °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

± 0.5% duty cycle at empty condition (dry), linearly increasing to ± 1.6% duty cycle at full condition (fully immersed)

Bending Property

bending radius: ≥ 250 mm

Weight

500 g at 1,000 mm length

Environmental Qualification

in accordance with MIL-STD-810 and RTCA/DO-160

EMC/EMI Qualification

in accordance with MIL-STD-461 and RTCA/DO-160