



## Fuel Gauge Transmitter

with Fuel Level Sensor

The AUTOFLUG flange mounted active capacitance type Fuel Gauge Transmitter (FGT) with integrated Fuel Level Sensor (FLS) comprises fuel height measurement and optical high or low level sensing functionality in one unit. The optionally mounted optical high or low level sensor provides an independent low or high warning signal for cockpit indication.

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

### Fuel Gauge Transmitter Functionality

The Fuel Gauge Transmitter is an active capacitance type sensor. 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.

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.

### Fuel High or Low Level Sensor Functionality

The High or Low Level Sensor is an optical point sensor, i.e. it is able to determine the presence or absence of fuel at the location where the sensor is located.

The High or Low Level Sensor electronics are fully independent from the fuel height measurement.

### Customising

AUTOFLUG provides a wide range of Fuel Gauge Transmitters. AUTOFLUG Fuel Gauge Transmitters 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.



## Fuel Gauge Transmitter

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### Mechanical Interface

Mounting	flange mounted from top or bottom (no directional limitations)
Flange Diameter	88 mm
Flange Height	36 mm
Sensing length	100 mm to 1,000 mm

### Electrical Interface

Fuel Gauging	
Input Power	15 VDC, max. 25mA
Output Signal	Pulse Width Modulated (PWM) amplitude: 0 to 5 VDC carrier frequency: 488Hz
Fuel Level Sensing	
Input Power	15 VDC, max. 11mA
Output Signal Level Sensor	14 ± 1VDC → 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
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### 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

410 g + 200 g/m

### Environmental Qualification

in accordance with MIL-STD-810

### EMC / EMI Qualification

in accordance with MIL-STD-461

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