

LSM200-38999

Mil-Spec UAV 2-Bolt Fuel & Oil Level Sensor

The LSM200-38999 is a solid-state, mil-spec capacitive liquid level sensor well-suited for UAV fuel and oil level measurement applications utilising the latest advancements in capacitive sensing technology for robust, dependable measurements with advanced accuracies of $\pm 1\%$ of reading ($\pm 0.5\%$ accuracy variants available). Designed for real-time, reliable fuel and oil level measurement, the LSM200-38999 is ideal for defence UAV platforms that require powerful fluid level sensing in extreme environments.

Featuring a MIL-DTL-38999 connector fitted directly to the sensor head, the device is lightweight with an extremely small footprint and offers plug-and-play installation for defence UAV platforms.. All control electronics are integrated within the sensor head allowing for analog 0-5V, CAN or analog and CAN outputs without the need for external CPU processing. The LSM200-38999 is made to order and is custom built up to a length of 450mm. Both the probe and electronics have a high operating temperature of -40°C to $+125^{\circ}\text{C}$, with -55°C to $+150^{\circ}\text{C}$ temperature variants available. Certification to MIL STD 461F and RCTA DO160F available.

As a solid-state IP68 rated device, the LSM200-38999 has no moving parts and is vibration tolerant, shock resistance and operates across a wide temperature range. The sensor can be fixed to a fuel or oil tank at any angle, included inverted, whilst maintaining high accurate measurement.

Key Features

- Continuous, solid-state capacitive sensing technology
- Analog 0-5V and CAN output options
- Advanced accuracies of $\pm 1\%$ of reading ($\pm 0.5\%$ accuracy variants available)
- -40°C to $+125^{\circ}\text{C}$ operating temperature range (-55°C to $+150^{\circ}\text{C}$ option)
- Mil-Std EMC Certified to 461F and RCTA DO160F
- IP68 rated
- 2 bar differential tank pressure ratings (up to 10 bar available)
- MIL-DTL-38999 connector
- Manufactured in the UK

Benefits

- Insensitive to orientation allowing for convenient placement in fluid tanks.
- Solid-state for minimal maintenance.
- Manufactured to length and calibrated in intended liquid for accuracy.
- Capacitive technology delivers accurate level measurement despite sloshing.
- Full customisation available to suit specialist applications.
- Compatible with a wide variety of dielectric fluids, including fuel, oil, water and coolants.

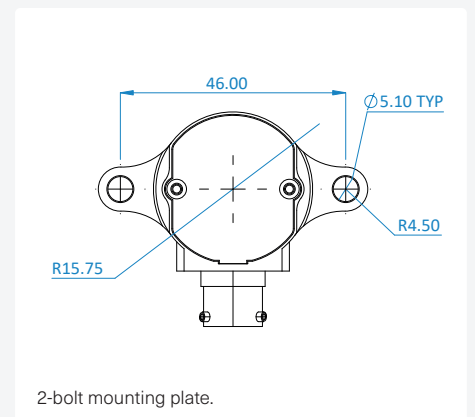


Integrated MIL-DTL-38999 connector.



Sealed integrated electronics.

Example Sensor Dimensions



2-bolt mounting plate.

EMC Approvals

MIL STD 461F Army Ground Limits:
CS114, CS115, CS116, RE102, RS103, RS101, CE102, CS101

RTCA DO160F: Section 25 ESD Cat. A



Mil-Std EMC Certified



Vibration Tolerant



Integrated Electronics



Ingress Protection up to IP68K



Insensitive to Orientation



Lightweight Construction



Solid-State Technology

Output

Analog	0 – 5VDC (Configurable)
CAN	2.0A with 11bit identifier with configurable base ID
Output Resolution	10bit
Sample Rate	100Hz
Accuracy	±1% of full scale @20°C ±0.5% of full scale @20°C (option)

Electrical

Supply Voltage	+6VDC – 30VDC 5VDC +/- 0.1VDC Unregulated
Supply Current	<20mA Nominal @ 12VDC

Calibration

Fluid Compatibility	All common fuels, oils, coolants, water and blends.
Fluid Calibration	Fluid specific, on board storage of multiple fluids available.
Dry Calibration	Up to 10 point calibration across temperature

Mechanical

Probe Length	80 – 700mm
Mounting Options	1 bolt, 2 bolt, 3 bolt, 5 bolt SAE, AN-8 and AN-10 Threaded
Sealing	Radial O-ring / Dowty seal

Environmental

Environmental Protection	IP68
Vibration	Designed to meet: 10Hz to 2000Hz sine sweep @10G (24hrs per each axis)
Shock	Designed to meet: 50G half sine wave for 11ms, 10 times each axis
Pressure Rating	2 bar (10 bar option)
Operating Temperature Range	-40°C to +125°C (-55°C to +150°C variant available)

Wiring Definition

Description	Wire Colour	PIN Out
Supply (+)	● Red	A
Ground (GND)	● Black	B
Signal	● Yellow	C
Tx Comms (Transmit)	○ White	D
Rx Comms (Receive)	● Green	E

Configuration Interface

Type	RS-232 via FTDI USB cable. See Accessories.
GUI	Available on request

Specifications may be subject to change without prior notice.

Custom Sensors

Reventec specialises in unusual sensor requirements and can adapt existing designs to fit your specific application.

- ✓ Remote electronics for high temperature environments
- ✓ Micro sensors
- ✓ Mil-spec certified

