

LSM500-38999

Mil-Spec UAV 5-Bolt Fuel Level Sensor

The LSM500-38999 is a mil-spec UAV fuel level sensor harnessing the latest advancements in capacitive sensing technology. Featuring a 5-bolt mounting configuration for a secure fitment, the robust sensor is constructed from anodised aluminium with an integrated MIL-DTL-38999 connector for plug-and-play installation.

Boasting advanced accuracies of $\pm 1\%$ of reading ($\pm 0.5\%$ accuracy variants available), the device houses integrated electronics within the compact sensor head to deliver analog, CAN, or analog and CAN outputs without the need for external CPU processing. The LSM500-38999 is engineered to deliver dependable liquid level readings in extreme environments. With rugged construction, the IP68 rated sensor is highly vibration tolerant and shock resistant with an operating temperature of -40°C to $+125^{\circ}\text{C}$ (-55°C to $+150^{\circ}\text{C}$ option available). The device is custom-built to 1000mm long and designed to easily fit within tank spatial and mounting requirements.

Reventec capacitive liquid level sensors' measurement accuracy is unaffected by physical orientation allowing for convenient placement within fuel, oil and coolant tanks. The LSM500-38999 is well-suited to all common automotive and UAV fuel and oil types including; Gasoline, AVGAS, JET-A, JP-4 and JP-8. Certified to MIL STD 461F and RCTA DO160F, the LSM500-38999 is ideal for a wide variety of defence UAV and ground vehicle platforms.

Key Features

- Continuous, solid-state capacitive sensing technology
- Analog 0-5V and CAN output options
- Measurement accuracy unaffected by physical orientation of the sensor
- Extremely accurate; $\pm 1\%$ of reading ($\pm 0.5\%$ option available)
- 2 bar differential tank pressure ratings (up to 10 bar available)
- -55°C to $+150^{\circ}\text{C}$ operating temperature range
- Mil-Std EMC Certified to 461F and RCTA DO160F
- MIL-DTL-38999 connector for plug and play installation
- Manufactured in the UK

Benefits

- Manufactured to length and calibrated in intended liquid for accuracy.
- Insensitive to orientation allowing for convenient placement in fluid tanks.
- Solid-state for minimal maintenance.
- 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.

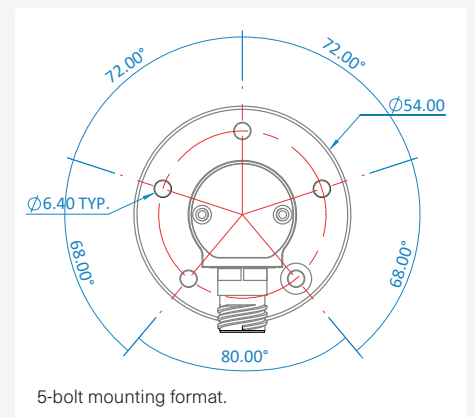


Integrated MIL-DTL-38999 connector.



Secure 5-bolt mounting flange.

Example Sensor Dimensions



5-bolt mounting format.

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 IP69K



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	IP67
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 +150°C

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

