

LSM400-CUSTOM

Mil-Spec Ground Vehicle Transmission Oil Level Sensor

Introducing the LSM400-CUSTOM, a rugged capacitive oil level sensor specifically designed for military ground vehicle transmission oil measurement. Constructed from stainless steel, the IP69K rated robust sensor is highly vibration tolerant and shock resistant and is available in custom sizes up to 700mm long.

Utilising proven capacitive level measurement technology to continuously measure contained fluids, the LSM400-CUSTOM is ideal for measurement onboard ground vehicle platforms and valuable for efficient operations in challenging military environments. The mil-spec oil level sensor is calibrated in the intended fluid to achieve superior accuracies of $\pm 0.5\%$ of reading and features a secure 4-bolt mounting configuration.

The integrated electronics are housed within the sensor head allowing for an extremely small footprint without the need for external CPU processing. 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. Certified to MIL STD 461F and RCTA DO160F.

Reventec capacitive liquid level sensors' measurement accuracy is unaffected by physical orientation allowing for convenient placement within fuel and oil tanks. All capacitive liquid level sensors in our LSM range have 2 bar differential tank pressure ratings.

Key Features

- Continuous, solid-state capacitive sensing technology
- Analog 0-5V and CAN output options
- Extremely accurate; $\pm 0.5\%$ of reading
- Robust stainless steel construction for advanced durability
- 2 bar differential tank pressure ratings (up to 10 bar available)
- Accurate sensing over wide operating temperature range of -55°C to $+150^{\circ}\text{C}$
- Mil-Std EMC Certified to 461F and RCTA DO160F
- IP69K rated
- 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.

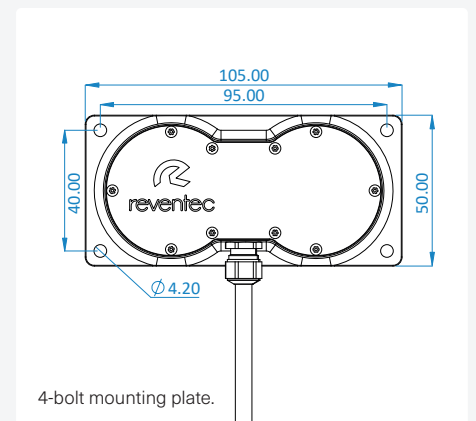


Robust stainless steel construction.



Sealed integrated electronics.

Example Sensor Dimensions



4-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 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	IP69K
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

