

MassSense® Liquid Density Meter

The MassSense® Liquid Density Meter or LDM revolutionizes the measurement of liquid density with its small integral packaging and sensitive measuring capabilities. The heart of the LDM is a patented* silicon sensing tube that vibrates at a very high frequency, above 20 kHz, which eliminates the impact of environmental vibrations on density measurement. Silicon sensing tube technology is lighter and stronger than traditional metal sensing technology. The result is an instrument that can detect even the slightest changes in density with the industry leading performance specifications. Installation in a process is normally on a controlled flow bypass. An internal orifice in the LDM directs a small portion of the bypass flow through the vibrating detector. Approved for Hazardous Locations & IP67 Sealed. The LDM has ATEX, UL, and CUL approvals for hazardous environments.



Features

■ In-Line, Real Time

The small internal volume of the silicon sensor and high-speed digital processing results in very fast density detection. This is important in those applications where speed is important.

■ Low Power Consumption

The LDM's, 400 mW, power consumption makes the instrument ideal for portable and remote applications. The instrument can be powered using a small solar panel, external battery, for remote or power adapter.

■ Advanced Measurement Capabilities

The LDM can be programmed to calculate specific gravity, brix, plato, concentration, as well as other custom measurements.

■ Unmatched Resolution and Sensitivity

The LDM resolves density to 0.000001 g/cc and has an accuracy of 0.0001 g/cc.

Applications

Concentration Measurement: Chemical Concentration

Density measurement provides the composition and quality of fluids. The density measurement can detect with binary chemical concentration of the materials.

Specific Gravity The liquid density meter can provide specific gravity which is a common measurement in the production of beer, wine, and other beverages. No sample preparation is required for the LDM.

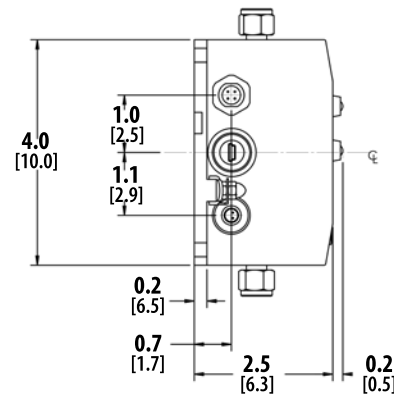
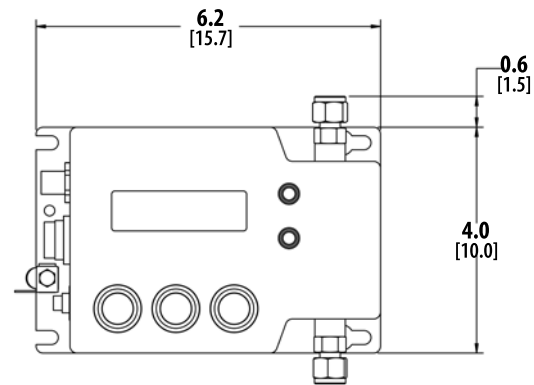
Fuel Quality Monitoring Density can be used to identify and monitor the composition and quality of fuels. Density is also the preferred method to determine the composition of E85 and biofuel. Other uses have been to confirm the correct weight of fuel for airplanes.

Salt Water Solutions The silicon sensor design and construction allows the meter to be used in salt water and other corrosive situations. Self-cleaning systems are available in the case that the process requires a mechanism for cleaning between samples.

Specifications

GENERAL	
Liquid Density Range	0.6 - 1.3 g/cc
Accuracy	Digital Density: 0.0001 g/cc Analog Density: +/- 0.1% of full scale Temperature: 0.6 F (0.3 C)
Repeatability	0.00003 max g/cc
Max Pressure	300 psig (21.7 bar) standard
Operating Temperature	-4 to 140 F (-20 to 60 C)
Sample Rate	100 mS
Fittings	5/16 straight thread, o-ring seal; standard fitting 1/4" Swagelok® compression
Bypass	0.027" (0.07 cm) standard, 0.050" (0.127 cm) optional
Mounting	(4) 1/4" 20 UNC (M6) bolts
Materials	Housing painted aluminum, wetted parts: SS, Silicon, Epoxy, Glass
Dimensions	6.2" x 2.5" x 4" (15.7 cm x 6.3 cm x 10 cm)
Weight	2.5 lb (1135 g)
POWER	
Supply	5 VDC, 500 mW USB or 8 to 30 VDC
Consumption	400 mW
ELECTRICAL	
Outputs	(2) 4-20mA analog, optional
Communication	USB, standard RS-232, optional RS-485, optional
Display	2x16 standard character, adjustable LCD backlit, optional
Memory	2 Gb internal data logger
APPROVAL	
	EX IIC (Zone 0, T4), AEx, CUL, UL (Class 1 Div 1 Group ABCD)
OTHER OPTIONS	
	Display IP67 Sealed Modbus NIST

Dimensions Inches [cm]



* US Patents 6,477,901, 6,499,354, 6,637,257, 6,647,778, 6,923,625, 6,932,114, 6,935,010, 7,059,176, 7,228,735, 7,263,882, 7,351,603, 7,381,628, 7,437,912, 7,568,399, 7,581,429, 7,628,082, 7,789,949, 7,823,445, 7,921,737B2, 8,016,798, 8,021,961, Japanese Patent 4,568,763 and more patents pending

Order Information

The Liquid Density Meter (LDM) includes: ISSYS Software, 5/16 straight thread, o-ring seal, 1/4" Swagelok® compression fittings. See the HOW TO ORDER guide for complete product selections.

Models

LDM Hazardous with or without the display
LDM Non-Hazardous with or without a display

Available Options

Bypass, Output (Digital or Analog), Pressure, NIST, IP67 Sealed, Viscosity, Modbus