

250 SERIES

DM-250.2N - Density Meter

DM-250.2L - Density & Level

VM-250.2N - Viscosity Meter

VDM-250.2N - Density & Viscosity



Portable Submersible Density Meter

DM-250.2N & DM-250.2L



DM-250.2N OVERVIEW

Principle of Determination

Density and Viscosity

Density and viscosity measurements employ the vibrating element sensor. This consists of a compact cylindrical sensor which is vibrated in the hoop mode which delivers balanced drive. This means that the sensor is virtually unique in being capable of being installed not just with a rigid mounting but also suspended on cables or using tape measures.

Density is determined using the well established resonant frequency principle. By alternately driving the sensor into vibration at the upper and lower half power (3dB) frequencies the bandwidth can be determined, which is also a function of the dynamic viscosity of the fluid.

Thus a single sensor will report the density, dynamic viscosity and temperature (from an integral RTD sensor) and thus kinematic viscosity can also be determined.

By using calculations based on the ASTM D341 equations, the kinematic viscosity can be calculated at a reference temperature. Base density can be calculated based on the methods defined in the Manual of Petroleum Measurement Standards.

Easy Measurement Visualization



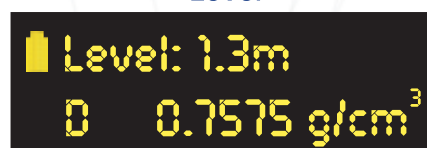
Density and Temperature



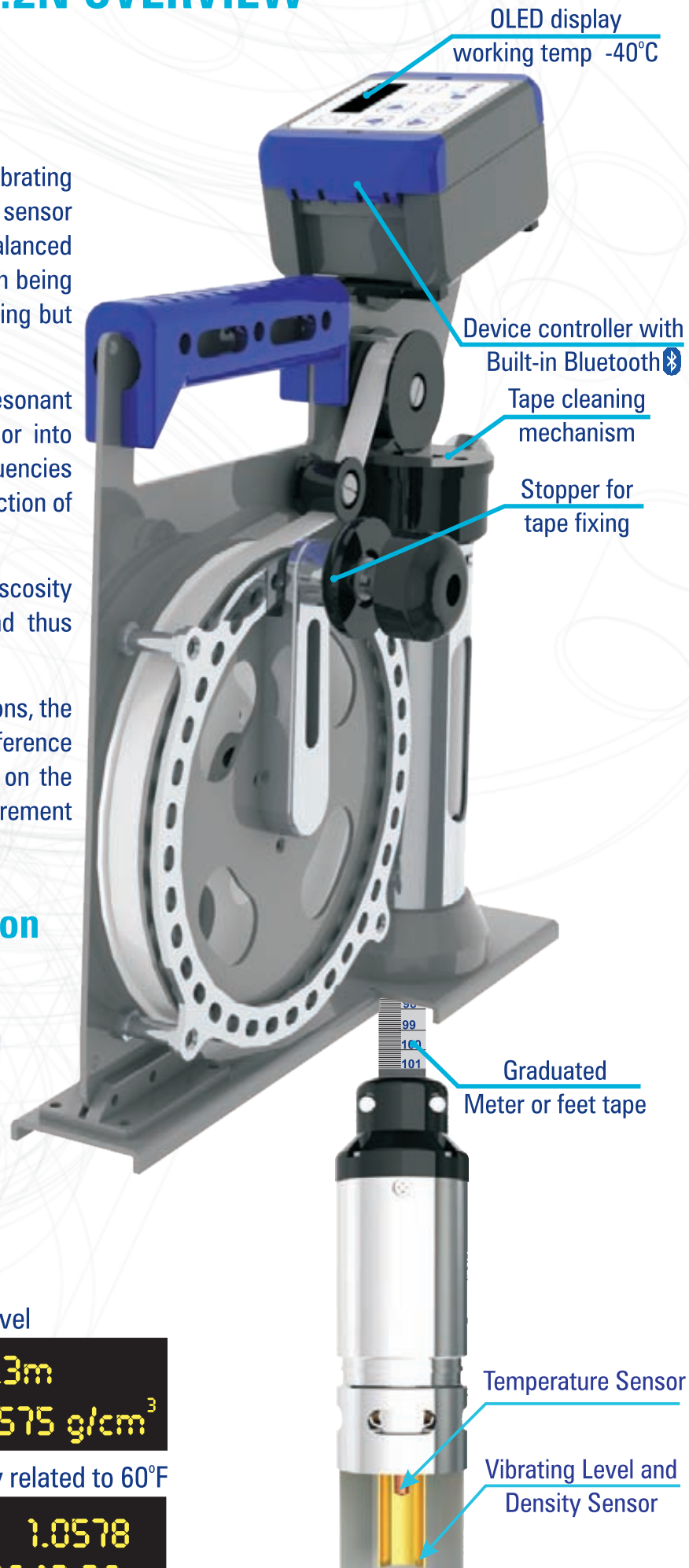
Referred Density to 20°C



Level

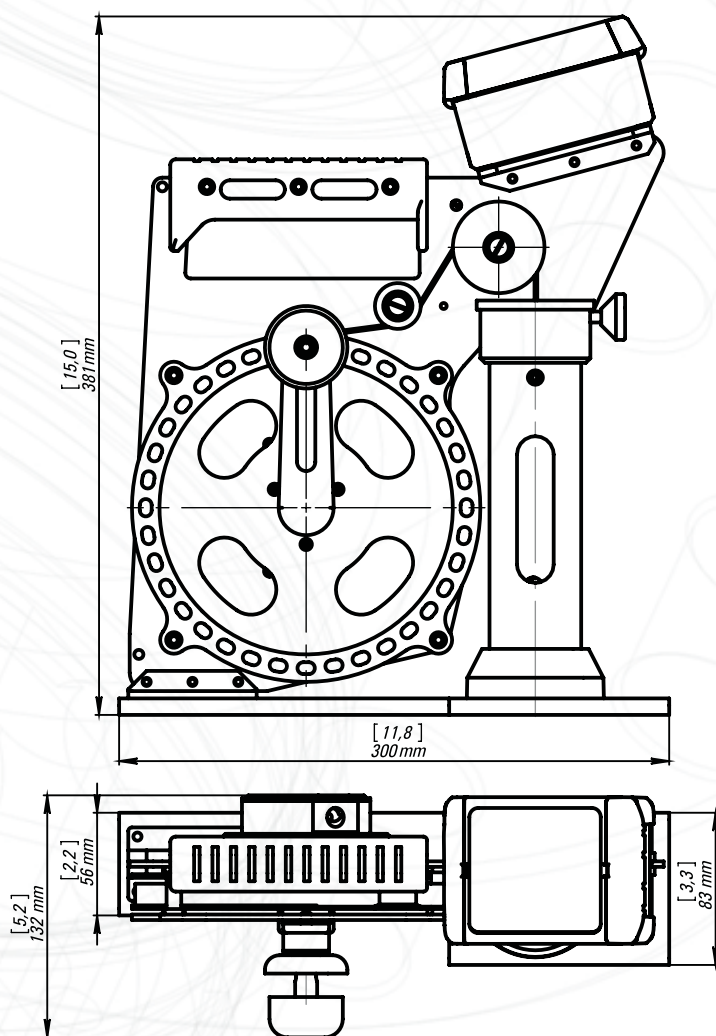
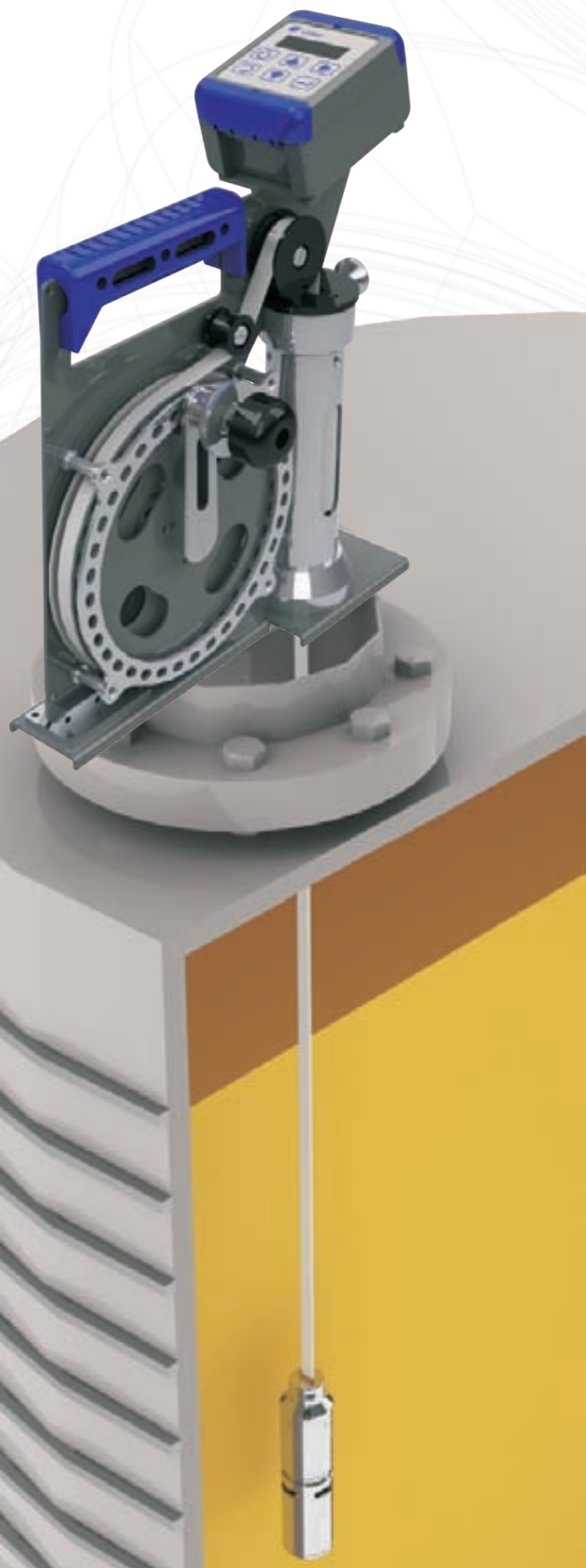


Specific Gravity related to 60°F



The portable density meter DM-250.2N is designed for density and level measurements of any pure liquids directly in tanks, without sampling, at the depth up to **30 meters**.

Dimensions

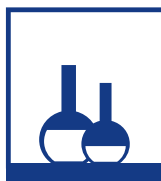


Advantages

- Direct density measurement
- Record spot density and average per tank
- Automatic temperature compensation
- No sampling required
- ATEX, IEC Hazloc certification
- Safe operation, low maintenance
- At any depths up to 30 meters
- Economical and easy to operate
- Measures highly viscous liquids up to 2000 cP
- Rigid construction for heavy duty outdoor operation
- Local results storage and Bluetooth and USB data transfer

Applications

- Petroleum industry
- Ethanol production
- Food & Beverages
- Chemical industry



Specifications

Measuring range:

Density	0... 3 g/cm ³ (0... 3000 kg/m ³)
Density Standard calibration	0.6... 1.2 g/cm ³ (600... 1200 kg/m ³)
Temperature	-40... +85°C (-40... +185°F)
Level	up to 30 m (100ft.)

Accuracy:

Density	±0.0003 or ±0.0005 g/cm ³ (±0.3 or ±0.5 kg/m ³)
Temperature	±0.1°C (±0.2°F) or ±0.2°C (±0.4°F)
Level*	±2mm (±0.008")

Repeatability:

Density	±0.00015 or ±0.00025 g/cm ³ (±0.15 or ±0.25 kg/m ³)
Temperature	±0.1°C (±0.2°F)
Level*	±1mm (1/16")

Resolution:

Density	0.0001 g/cm ³ (0.1 kg/m ³)
Temperature	0.01°C (0.02°F)
Level*	±1mm (1/16")

Supported measuring units

Real Density: g/cm³, kg/m³, lb/gal, lb/ft³; API; SG
 Referred Density: at 15°C, 20°C, 60°F; API60; SG60
 Tables ASTM D 1250
 Alcohol Tables
 Temperature in °C or °F

Ambient temperature

-40... +50°C (-40... +122°F)

Depth of submersion

Up to 30 meters (100 ft.)

Sensor:

Type	Vibrating element (Resonance principle)
Material	Stainless steel SS 316 L; NiSpan C; Hastelloy C22
Weather rating	IP68

Hazardous environment Approvals

Controller	II 2G (1G) Ex ib [ia Ga] IIB T4 Gb
Sensor	II 1G Ex ia IIB T4 Ga

Charging device

USB with IP68 protected connector

Power supply

NiMH 3.6V-2500mAh

Operating time without charging

up to 24 hours

Dimensions, weight:

Level block with sensor 376 x 300 x 104 mm (14.8 x 11.8 x 4.1 in), 3 kg (6.6 lb)

Temperature compensation

Automatic

Viscosity compensation

Automatic

Data handling

OLED Display (2x12) with backlight
 Local memory up to 2000 results with date/time stamped
 Build in Bluetooth and USB for data transfer to printer or PC
 Optional Windows - based software

Delivery

Delivered in compact carrying case

Options:* Available only in DM-250.2L version

** Ordered separately



Multifunctional software allows to view results in a convenient user-friendly form;
 Compatible for a Windows 7/8/10*



Immediate printout of the measurements by Bluetooth
 No need for PC**



Delivered in compact carrying case



For more information please visit www.lemis-process.com



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