LEMIS®
USA

450 Series

7 in 1 measurements

- Density Profile
- Ullage Level
- Temperature Profile
- Interface Level
- Viscosity Profile
- Emulsion Profile
- Bottom Sensor

Inventory Control with Servo Gauging

DUTI-454

OVERVIEW

Density meter DUTI-454 is designed for continuous process measurement of density, level detection, temperature measurement, average value of density measurement, average temperature measurement and corrected density measurement of liquid with maximal dynamic viscosity up to 1200 cP and process temperature range of -40...+85°C (-40... +185°F)

DUTI-454 can provide measurements in automatic mode using preset schedule in device memory.

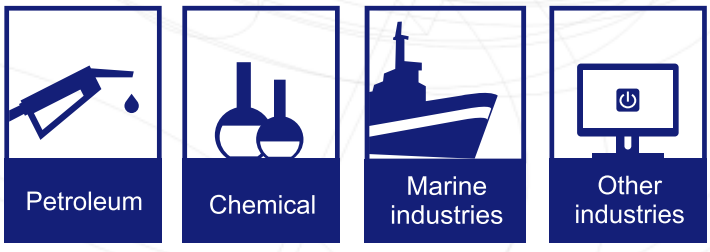
DUTI-454 is used for measurement of pure homogenous petroleum. DUTI-454 can be used for cleaned oil and it's recycling product measuring.

Advantages

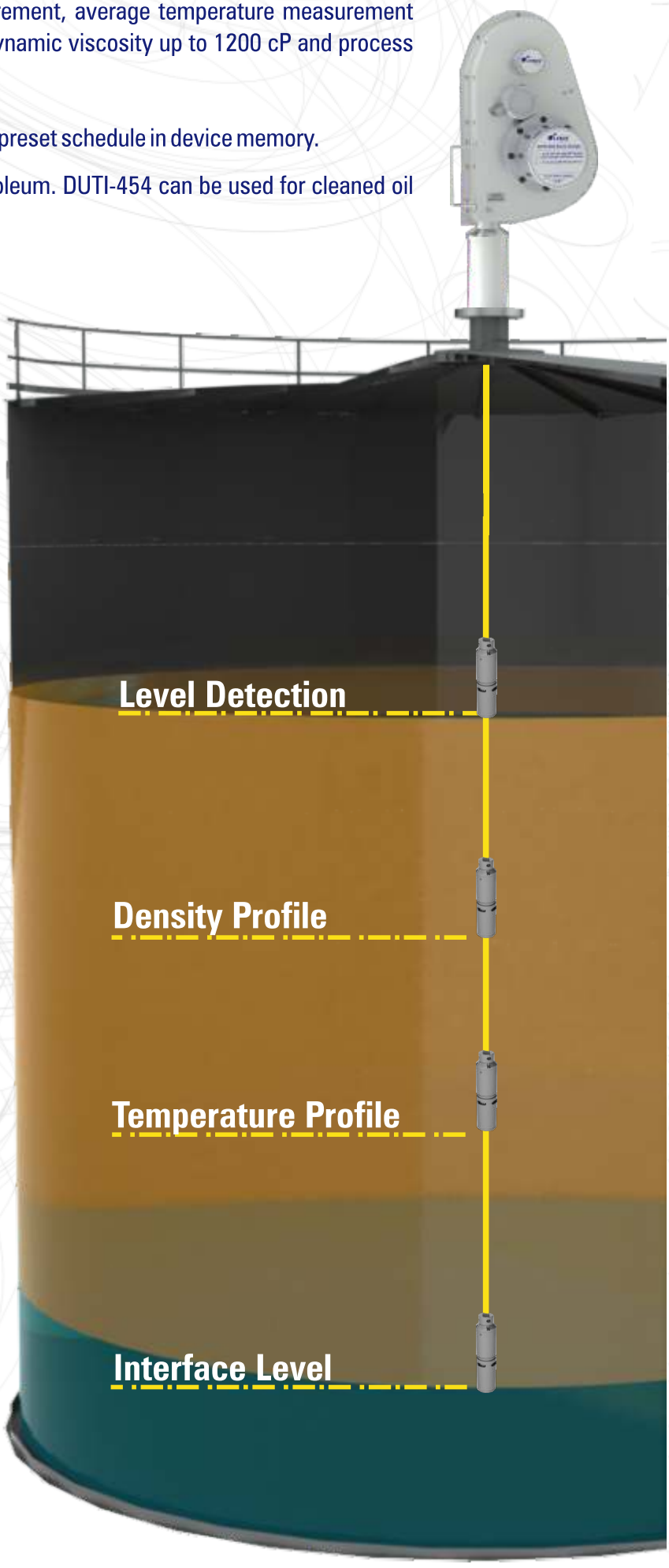
- Direct density measurement
- Automatic temperature compensation
- No sampling required
- Safe operation, low maintenance
- At any depths up to 30 meters
- Economical and easy to operate
- Measures highly viscous liquids up to 1200 cP
- Rigid construction for heavy duty outdoor operation
- Local result storage and RS-485 data transfer

Applications

- Petroleum industry
- Ethanol production
- Food & Beverages
- Chemical industry
- Cosmetic industries
- Pharmaceutical industry



DUTI-454.2



Specifications of DUTI-454.1

DUTI-454.1
Level ±10mm

Software

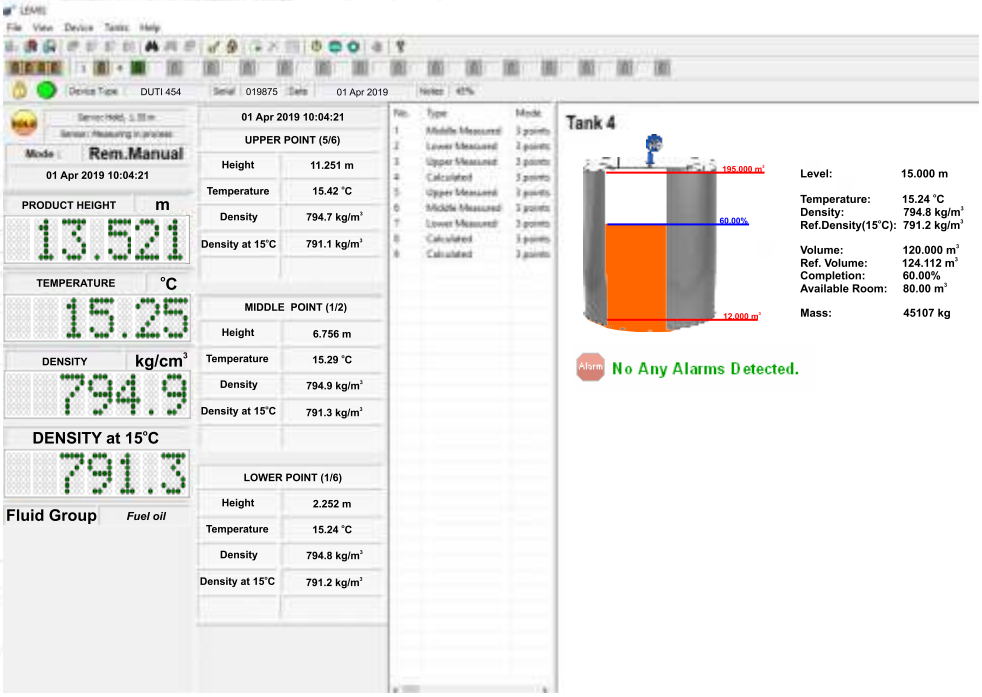
DUTI-454 work happens in automatic mode, without the operator, in accordance with the measurement schedule that is installed in the software. Measurement results of a product in tank are saved in the internal memory of the device.

Measurement results are transfered from internal device memory to PC or tank farm management controller in accordance with “Data exchange protocol Modbus RTU”

The software allows:

- Receiving of observed/relative densities, temperature values and height;
- Various formats for data reading;
- Choice of type of the measuring product;
- Tank filling graphical visualization;
- Storage of the measured and calculated values in the database tables;
- Conversion of the database tables to EXCEL format and printing of the results;

Measuring range:	
Density	0… 3 g/cm³ (0… 3000 kg/m³)
Temperature	-40… +85°C (-40... +185°F)
Level	Up to 30 m (up to 100 ft)
Accuracy:	
Density	±0.0003 or ±0.0005 g/cm³ (±0.3 or ±0.5 kg/m³)
Temperature	±0.1°C (±0.2°F)
Level	±10 mm (±0.4”)
Repeatability:	
Density	±0.00015 or ±0.00025 g/cm³ (±0.15 or ±0.25 kg/m³)
Temperature	±0.01°C (±0.02°F) or ±0.1°C (±0.2°F)
Level	±10 mm (±0.4”)
Resolution:	
Density	0.0001 g/cm³ (0.1 kg/m³)
Temperature	0.1°C (0.2°F)
Level	10 mm (±0.4”)
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 D1250 Tape graduation - Metric / Imperial Temperature in °C or °F
Ambient temperature	-40… +60°C (-40... +140°F)
Depth of submersion	Up to 30 meters (up to 100 ft)
Intrinsically safe:	
Controller	ATEX II (2G) Ex dia IIB T4
Level block with sensor	ATEX II 1G Ex ia IIB T4
Power supply	12V AC 6W
Output:	
Digital	Standard: RS485, Modbus; user choice of signals and protocols
Dimensions, weight:	
Level block with sensor	570 x 350 x 290 mm (22.4 x 13.7 x 11.4") up to 18 kg (39 lb)
Temperature compensation	Automatic
Viscosity compensation	Automatic
Data handling	Local memory up to 2000 results Optional Windows - based software



Specifications of DUTI-454.2

Measuring range:	
Density	0… 3 g/cm³ (0… 3000 kg/m³)
Temperature	-40… +85°C (-40... +185°F)
Level	Up to 30 m (up to 100 ft)
Accuracy:	
Density	±0.0003 or ±0.0005 g/cm³ (±0.3 or ±0.5 kg/m³)
Temperature	±0.1°C (±0.2°F)
Level	±1 mm (±0.004")
Repeatability:	
Density	±0.00015 or ±0.00025 g/cm³ (±0.15 or ±0.25 kg/m³)
Temperature	±0.01°C (±0.02°F) or ±0.1°C (±0.2°F)
Level	±1 mm (±1/16")
Resolution:	
Density	0.0001 g/cm³ (0.1 kg/m³)
Temperature	0.1°C (0.2°F)
Level	1 mm (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 D1250 Tape graduation - Metric / Imperial Temperature in °C or °F
Ambient temperature	-40… +60°C (-40... +140°F)
Depth of submersion	Up to 30 meters (up to 100 ft)
Intrinsically safe:	
Controller	ATEX II (2G) Ex dia IIB T4
Level block with sensor	ATEX II 1G Ex ia IIB T4
Power supply	12V AC 6W
Output:	
Digital	Standard: RS485, Modbus; user choice of signals and protocols
Dimensions, weight:	
Level block with sensor	690 x 360 x 290 mm (27.1 x 14.1 x 11.4") up to 20 kg (44 lb)
Temperature compensation	Automatic
Viscosity compensation	Automatic
Data handling	Local memory up to 2000 results Optional Windows - based software

DUTI-454.2
Level ±1mm

Sensor principle of operation:

Detection of Density and Ullage

The detection method is based upon the principle of detecting a change in resonance frequency.

Temperature Measurement

Temperature measurement is obtained by changes in electrical resistance of a platinum element.

Sensing probe DUTI includes:

- Vibrating Level sensor
- Vibrating Density sensor
- Platinum Temperature sensor
- Conductivity Interface sensor

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

LEMIS USA,Inc
15556 Summit Park Dr., Suite 601
Montgomery
TX 77356, USA
Ph.: +1 281 465 8441
E-mail: info@lemis-usa.com