



Di - series

DENSITY AND VISCOSITY PROCESS METERS



For various Tank and Pipe installations

www.lemis-baltic.com

DC - series

Advantages:

- Wide application field;
- High accurate density and viscosity measurements in seconds;
- Viscosity measurements up to 500 cP;
- For various **Tank** and **Pipe** installations;
- Data transfer to PC or controller TDC-5;
- Easily installed and engaged into any production process;
- Liquid-immersed tank installation;
- Rugged design with reliable quality for a pleasant price.

Applications:

- All petroleum products;
- Crude oil;
- Liquefied petroleum gases (LPG);
- Food products & beverages;
- Alcohol drinks;
- Cosmetics and pharmaceuticals;
- Chemicals.

DC-400 Density Meter

DC-400 is designed for density measurements of liquid products **in tanks or pipelines**.

Resonant method provides precise density values in seconds. Built-in temperature sensor allows temperature compensation and accurate temperature measurements.

Various installation types and wide application range makes DC-400 suitable for any industrial system and flexible in operation in the technological process, where density measurements of the liquid products should be made.

DC-400 affords two ways of obtained data processing:

1. **Windows®-based** software allows data transfer to PC and simplifies operation for personnel;
2. Combined with controller TDC-5 it creates a **modern process managing system**, which can operate with different executive mechanisms via three included relay outputs.

DC-410 Density and Viscosity Meter

Upgraded version of DC-400, Density and Viscosity meter DC-410 measures **dynamic** viscosity of different liquids **up to 500 cP** with **accuracy +/-1% cP**.

Due to the accurate density and temperature measurements, DC-410 allows calculating **kinematic** viscosity of the measured liquid as well.

Determining density, viscosity and temperature DC-410 becomes indispensable instrument in petrochemical industry, where all three parameters should be determined.

Installation and signal processing is similar to DC-400.

MODBUS protocol description could be provided for instrument joining to the general monitoring system.

Technical specifications

Performances		Parameters	
		DC-400	DC-410
Measuring range	Density	0.4200 g/cm ³ - 1.6000 g/cm ³	
	Temperature	-40...+85 °C	
	Viscosity	-	up to 500 cP
Accuracy	Density	less than ± 0.05 %	
	Temperature	± 0.1 °C	
	Viscosity	-	± 1 %
Contact surface material		Stainless steel	
Environmental protection		IP68	
Temperature compensation		Automatic	
Power supply		From 6.5 to 15 VDC	
Liquid pressure		up to 363 Psi (25 Bar)	
Data transfer		RS232, RS485, 4-20 mA	
Safety approval		Ex ia IIC T6	
Dimensions	Height	240 mm	
	Diameter	100 mm	
Weight		2.5 kg	

DC-series

TANK INSTALLATIONS



Deep-level firm installation

Easy-demountable low-cost hanging-on-cable installation for easy cleaning

PIPE INSTALLATIONS



Software for the DC-series meters



- Convenient way for process monitoring
- Possibility of connecting up to 254 DC-meters to one software
- Nice user-adjustable design
- Different measuring modes:
 - Continuous,
 - Continuous Average,
 - Start - Stop Manual,
 - Start - Stop Automatic.

- Built-in reference parameters tables for:
 - Petroleum products ASTM D1250 tables ($D_{15\text{ }^{\circ}\text{C}}$, $D_{20\text{ }^{\circ}\text{C}}$, $D_{60\text{ }^{\circ}\text{F}}$, $^{\circ}\text{API}$, SG60/60);
 - Alcohol products (% v/v and % w/w);
 - Sugar-contained liquids ($^{\circ}\text{Brix}$, Heavy $^{\circ}\text{Baume}$, Light $^{\circ}\text{Baume}$, $^{\circ}\text{Plato}$ etc.);
 - Other products ($^{\circ}\text{Jap.Sake}$, $^{\circ}\text{Twadell}$, $^{\circ}\text{Milk}$ and other parameters, which could be derived from density, temperature and viscosity parameters).
- Easy creation of user-defined recalculation formulas for any liquid products (linear and quadratic relations, piecewise-linear interpolation)
- Units options of density and temperature
- Dynamic and kinematic viscosities
- Visual and sound alarm settings
- Unlimited saved results' database (compatible with PARADOX format; convertible to EXCEL files).

Controller for the DC-series meters TDC-5

- A**utomatic temperature compensation
- D**igital/graphic display with backlight
- V**arious readout units
- A**utomatic zero adjustment
- N**o data loss when switched OFF
- T**ied with DC-series several sensors
- A**utomates your technological process
- G**reat manager
- E**asy to operate



The controller is modern, microprocessor based instrument made as a manager for the DC-series density sensors. Equipped with three relay outputs and combined with computer it allows you to automate and control technological process.

Controller Specifications

Performances	Parameters
AC Power supply	120/240 VAC, 50/60 Hz 96 - 256 VAC
Power consumption	10 VA
DC Power supply:	16 - 36 VDC
Display resolution:	Density Temperature
	0.0001 g/cm ³ 0.1 °C, 0.1 °F
Analog output	Isolated 4 - 20 mA, direct or reverse-acting, configurable across full range
ALARM	Indication, relay, the output with programmable value of current in the range 4 - 20 mA. The mode of ALARM may be switched off.
Combined with computer	IRDA, RS485
Relay outputs:	Contact rating (max) AC DC
	100 VA, 240 VAC, 3A 50 W, 24 VDC, 3A
Maximum sensor cable length	Up to 2000 m without preamplifier
Turn on time	2 sec. typical, 4 sec. max.
Housing	IP67 aluminum alloy
Dimensions	185 x 125 x 65 mm
Weight	1.5 kg

LEMIS Baltic

26 Ganību dambis Str., Rīga, LV-1005, LATVIA

Tel: +371 7383223, fax: +371 7383270

E-mail: sales@lemis-baltic.com



www.lemis-baltic.com