

For more information, please, visit LEMIS process web site!

www.lemis-process.com



LEMIS process use the proven vibrating element technique which is widely accepted as the most accurate method of continuous online viscosity measurement, LEMIS process engineers made new developments by the introducing unique proprietary design of resonant tube sensor allowing accurate measurement of liquid viscosity. An integral high accuracy Pt-1000 probe continuously monitors liquid temperature allowing temperature compensation and future calculation of kinematic viscosity. The technology proves high accuracy of measurement and long term calibration stability even in severe operation conditions. It is insensitive to plant vibration, high variation of temperatures or turbulence. A choice of wetted parts materials: from stainless steel for general industrial use, Ni-Span-C for most demanding applications, and Hastelloy for applications where ultimate corrosion resistance is required.



DC-51 SERIES



PROCESS IN-FLOW

VISCOMETERS



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IN PROCESS TO EXCELLENCE

PROCESS IN-FLOW

VISCOMETERS DC-51*

Resonant tube sensor

In process viscosity measurements directly in the pipelines with accuracy $\pm 1\%$ of span

- Forget Sampling!
- Continuous viscosity measurements in-flow.
- They're economical and easy to operate.
- Select a DC-51 type according to the flow and system parameters you require.
- Measures highly viscous liquids up to 1200 cP.



ADVANTAGES

- Continuous, online kinematic viscosity monitoring at process conditions
- Accurately measures density of liquids with viscosity up to 1200 cSt
- Rigorous factory calibration and testing of the transducer
- Large offer of factory pre-built installation packs
- No moving parts, virtually maintenance-free system
- Hazardous area approvals
- Large offer of standard products configurations available
- We also can tune system specification for your specific requirements

APPLICATIONS

- Blending operations
- Industrial burner' oil viscosity control
- Petroleum products, fuels, lubricants, LPG, LNG
- Food, Dairy & Beverages
- Pulp and paper applications
- Inks, paints & varnishes
- Process monitoring and control
- Product identification and consistency



*DC-52 series measure both density and viscosity

Specifications

Viscosity operating range	0...1200 cSt
Accuracy	$\pm 1\%$ of span
Viscosity Effect	Automatically compensated
Temperature Effect	0.005 kg/m ³ /°C automatically compensated
Pressure Effect	Negligible
Max liquid viscosity, cSt	Up to 1200 cSt
Temperature Measurement	Built-in high accuracy 4-wire PT-1000 DIN 43760 Class A
Process Temperature Range	-200°C to +200°C (-328°F to +392°F)
Installation types	Straight line (S-type), L-flow chamber (G-type), pipeline recess mounting (T-type)
Process Connections	Large selection of flanges available.
Flow Range	5 l/min to 300 l/min according installation type
Maximum Operating Pressure	100 bars max for standard installation or flange rating for another installation
Ambient Temperature Range	-40°C to +85°C (-40°F to +185°F)
Weather Rating	IP68 for sensor and IP55 for Terminal box
Sensor	stainless steel 316L; Ni-Span C; Hastelloy C22
Other Wetted Parts	stainless steel 316L or Hastelloy C22
Case finish	stainless steel 316L
Electronics Housing	aluminum, blue epoxy finish
Electrical Connections	Screw terminals; Cable entry: 2 x 3/4 " NPT
Sensor Power Supply	6 - 12 VDC 30 mA (60 mA pick)
Sensor output	Line density and temperature digital signals
Analog output	Up to 3 x isolated 4 - 20 mA, direct or reverse-acting, configurable, customized
Digital output	User choice of signals and protocols: RS485; RS232; Modbus; etc...
Quality Assurance	ISO 9001:2000
Factory Calibration	Calibration certificates supplied as standard
CE mark	Compliant EN 61326 ; EN5011 ; EN 50082-2
Hazardous area	ATEX II 1/2G Ex ia IIB T4 ; IEC Ex ia IIB T4 Ga /Gb ; CCE certificate
Material Traceability	Optional certification available

G-type



S-type



T-type



Calibration of **LEMIS process** viscometers is performed in-house according ISO 9001:2000 quality assurance program and by using calibration materials that are traceable to national standards. In-house calibration and testing is performed with rigorous quality protocol for every standard model of the sensor. **LEMIS process** installation packs allow simple, switch-and-go field installation with minimal pipeline disturbance or process downtime. When ordered with **LEMIS process** installation pack, the sensor has mounted at factory, tested and calibrated already fitted assuring best performance and eliminating the need for in-situ calibration for most of applications. The sensors has no moving parts and virtually maintenance-free.