MARIMEX®

Inline Viscometers - Our Passion

ViscoScope® VA - 100

Process Viscometer

The ViscoScope® Sensor VA-100

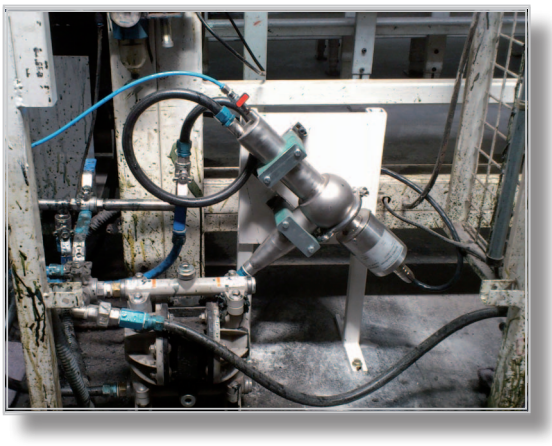
sensor requires no maintenance and is designed for accurate, reproducible and reliable measurement of the dynamic viscosity of liquids in real-time. A Pt100 integrated into the probe simultaneously measures the process temperature.

The sensor is used to monitor viscosity in continuous and batch processes. Possible applications include shortening and optimizing mixing processes (final viscosity and homogenization), the metered addition of solvents in open coating plants or regulation of the medium temperature in order to maintain a constant viscosity (application of adhesives).

Most liquids are non-Newtonian so relative viscosity is the relevant measurement in processes. The ViscoScope® system is factory-calibrated using certified Newtonian calibration oils. This multipoint calibration allows the user to obtain reproducible results, e.g. when several systems are used in the same applications, after repair or relocation to a different plant. In order to compare the process viscosity with a known laboratory viscosity, it is necessary to calculate a correlation empirically.

The cost-effective ViscoScope® VA-100 sensor is series manufactured and available in two models with different probes and either an NPT or metric thread or hygienic fittings. The sensor can even be installed in pipes with small diameter using standardized or custom-made flow chambers.

The ViscoScope® VA-100 sensor is an ideal and versatile process viscometer for less challenging process conditions in the chemicals, food processing or pharmaceuticals industries. It is also CIP / SIP compliant and can be installed with no dead spaces under hygienic conditions and in areas with potentially explosive atmospheres.



Your benefits

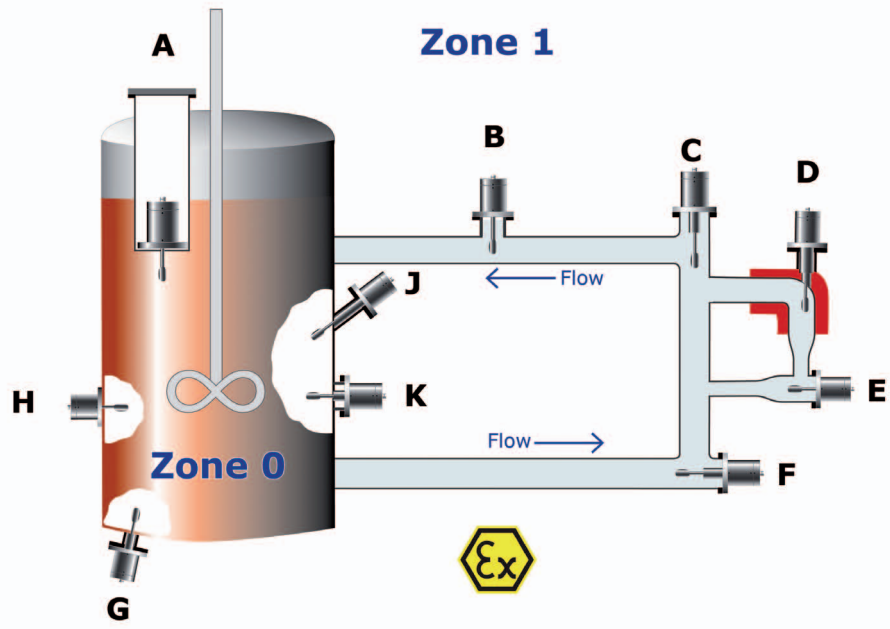
- *easy handling*
- *no maintenance*
- *long-life instrument*
- *process documentation*
- *better quality*
- *optimizing of production*

Mechanism

The probe of the ViscoScope® sensor is fully welded to ensure that no moving parts come into contact with the fluid being measured. Electric coils drive the probe at its resonance frequency and stimulate it to an oscillating torsion at a small amplitude. A fast closed-loop PID controller keeps the amplitude constant. Thus the higher the viscosity, the higher the voltage required. This can be used to measure the dynamic viscosity in mPa·s x g/cm^3 (η x ρ).

The low amplitude at the resonance frequency prevents material fatigue, which could otherwise cause components to move or wear. It also ideal for ensuring that the instrument has a long, reliable and maintenance-free service life.

The sensor can be installed in any position in vessels, tanks, pipes or flow chambers in practically any installation



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Overview of the various sensors

		
Sensor type	**VA-100C** Cylinder	**VA-100B** sphere
Viscosity range in mPa·s x g/cm³	0.1 – 2,500	10 – 25,000
	under process conditions	
Probe size	ø 32 x 145 mm ø 1.25 x 5.7“	ø 32 x 120 mm ø 1.25 x 4.7“
Material	316Ti / 316L (1.4571 / 1.4404)	
Protection	IP65	
Process temperature (integrated RTD in viscosity probe)	from -25°F to 270°F / -10°C to 130°C	
Process connection	1,5“ NPT-thread / M48 / Varivent® 50 / Tri-Clamp 2“	
Pressure	Vacuum up to 64 bar / 950 psi, dependent on fitting	
Installation	Installation in any orientation in vessel, tank, pipe, flow-through cell	
Cable length Sensor - Transmitter	maximum 1,000 meters / 3,330 feet short cable length recommended for very low viscosities	
Flow velocity	up to 5 m / sec. or 16 feet / sec., dependent on installation	
Reproducibility of reading	± 0.3% or ± 1 Digit	± 0.5% ± 1 Digit
Accuracy of reading	± 2% or ± 1 Digit	± 2% or ± 1 Digit
option: hazardous area	II 1/2G Ex ia IIC T6...T3 Ga/Gb	

Subject to change without notice.

Sometimes process technology, applications or local conditions demand the design of a special probe. The VA-100S (special) sensor is designed for these applications.

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