Inline Viscometers - Our Passion

The low-cost sensor: VA-100



VA-100C-LT with 1.5“ NPT-thread

VA-100B-LT with Varivent®-Fitting 50/40

The **VA-100** ViscoScope sensor has been developed for applications in the low to medium viscosity range, e.g. for mixing processes, paints and varnishes as well as food products. The sensor measures the dynamic viscosity precisely, reliably and in real-time. Reproducible measurements are essential both for quality control assurance and for process optimisation with the corresponding documentation.

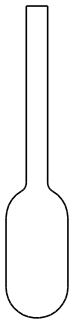
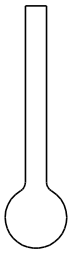
The completely welded design of the sensor probe ensures no moving parts are in contact with the liquid being measured. The low amplitude of the resonance frequency oscillation used by the sensor prevents material fatigue. As a result, the instrument requires virtually no maintenance.

Series production with NPT-thread and antiseptic fittings make it suitable for installations in all kinds of applications.

The two different sensor probe types cover a viscosity range up to 25,000 mPa·s.

You can find technical information regarding the sensors on the reverse side of this leaflet. We will be happy to advise you in selecting the correct instrument.

Overview of the various sensors

		
Sensor type	**VA-100C** Cylinder	**VA-100B** sphere
Viscosity range in mPa·s x gr/cm^3	0.1 – 2,500	10 – 25,000
Probe size	ø 32 x 145 mm ø 1.25 x 5.7“	ø 32 x 117 mm ø 1.25 x 4.6“
Material	1.4571 and 316L (option: Hastelloy C22, Duplex 2205, teflon coating)	
Protection	IP65	
Process temperature (optional Pt100 is integrated into viscosity probe)	LT from -10°C to 130°C / -25°F to 270°F HT from -10°C to 250°C / -25°F to 480°F HT with air cooling	
Process connection	1,5“ NPT-thread or Varivent® 50/40 or Tri-Clover® 2“	
Pressure	Vacuum up to 64 bar / 950 psi, dependend on fitting	
Installation	Installation in any orientation in reactor, vessel, pipe, flow-through cell	
Resonance frequency Shear rate	~ 520 Hz ~ 3250 sec^{-1}	~ 550 Hz ~ 3450 sec^{-1}
Cable length Sensor - Transmitter	maximum 1,000 meters / 3,330 feet short cable length recommended for very low viscosities	
Speed of flow	up to 5 m / sec. or 16 feet / sec., dependend on installation	
Reproducibility of reading	± 0.3% or ± 1 Digit	± 0.3%
Accuracy of reading	± 1% or ± 1 Digit	± 1%
option: hazardous area	in planning	

Subject to change without notice.

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

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ViscoScope VA-100C sensor



ViscoScope-sensor model **VA-100C-LT** with 1.5“ NPT thread

Covering a viscosity range from 0.1 to 2,500 mPa·s, the **VA-100C** (cylinder) sensor is ideal for applications in oils, paints, varnishes, suspensions or emulsions. Reproducibility in Newtonian and non-Newtonian fluids is ± 0.3% or ± 1 digit of the reading taken.

The sensor probe can also be fitted with an optional Pt100 temperature sensor, which makes it possible to calculate a temperature-compensated viscosity using the measured process temperature.

The sensor can be mounted in any position in vessels, pipes or flow-through cells and be supplied with NPT-thread or antiseptic fittings. This provides seamless monitoring of batch and continuous processes.

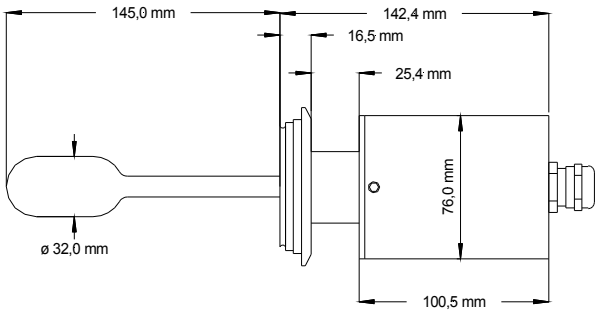
We are specialists in viscosity measurement in industrial processes and will be happy to advise you on selecting the correct system for your application.

Typical Applications

- **Emulsions**
- **Suspensions**
- **Dispersions**
- **Varnishes**
- **Paints**
- **Oils**
- **Mayonnaise**
- **Sauces**
- **Chocolates**

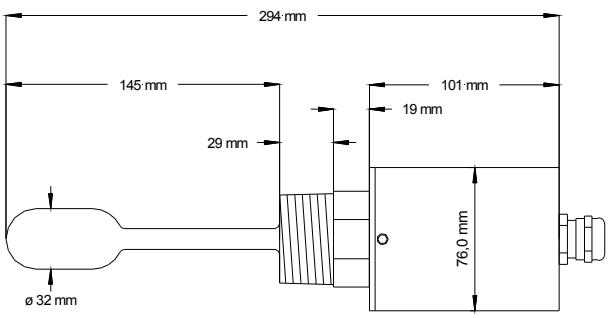
Sensor – Specification

Sensor type	**VA-100C - cylinder**
Viscosity range	0.1 – 2,500 mPa·s x gr/cm^3
Calibration	in 3 dekades
Probe size	ø 32 x 145 mm / ø 1.25 x 5.7“
Material	1.4571 and 316L option: Hastelloy C22, Duplex 2205, teflon coating
Protection	IP65
Process temperature (optional Pt100 is integrated into viscosity probe)	LT from -10°C to 130°C / -25°F to 270°F HT from -10°C to 250°C / -25°F to 480°F HT with air cooling
Process connection	1,5“ NPT thread or Varivent® 50/40 or Tri-Clover® 2“
Pressure	Vacuum up to 64 bar / 950 psi, dependend on fitting
Installation	Installation in any orientation in reactor, vessel, pipe, flow-through cell
Resonance frequency Shear rate	~ 520 Hz ~ 3250 sec^{-1}
Cable length Sensor - Transmitter	maximum 1,000 meters / 3,330 feet short cable length recommended for very low viscosities
Speed of flow	up to 5 m / sec. or 16 feet / sec., dependend on installation
Reproducibility of reading	± 0.3% or ± 1 Digit
Accuracy of reading	± 1% or ± 1 Digit
option: hazardous area	in planning



VA-100C with Varivent® fitting 50 / 40

VA-100C with 1.5“ NPT thread



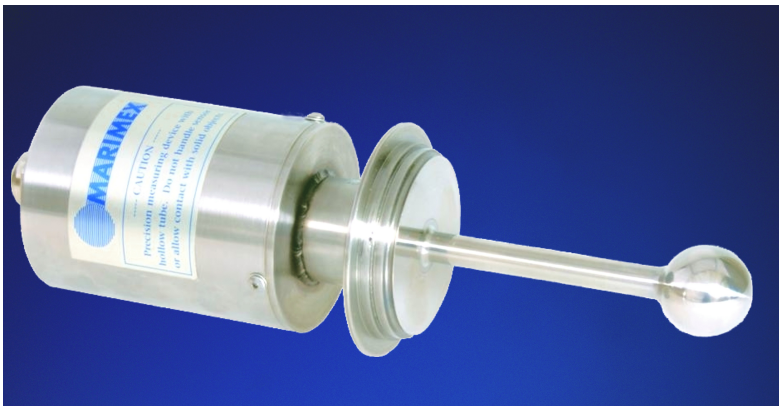
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ViscoScope VA-100B sensor



ViscoScope-Sensor Model **VA-100B-LT** with Varivent®-Fitting 50/40

Viscosities of up to 25,000 mPa·s are common - especially in the food processing sector. The **VA-100B** (ball) sensor is suitable for measurements in this range. With its advantageous geometry, antiseptic fittings and smooth surface, the sensor meets almost every requirement in the area of hygiene. When used in non-Newtonian and Newtonian fluids, reproducibility is ± 0.3% of the reading taken.

If a temperature measurement is also required, the sensor probe can be fitted with an optional integrated Pt100 temperature sensor to provide a further measurement parameter during continuous or batch production.

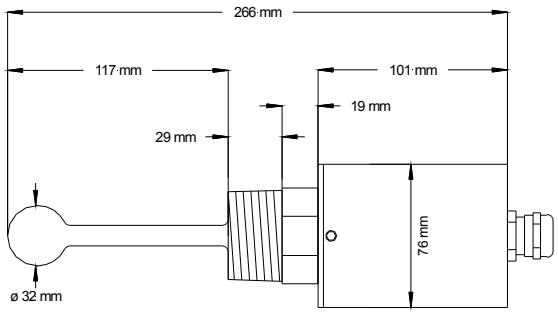
The sensor can be mounted in any position allowing it to be installed in vessels, pipes or flow-through cells. We will be happy to advise you on selecting the correct sensor for your system.

Typical Applications

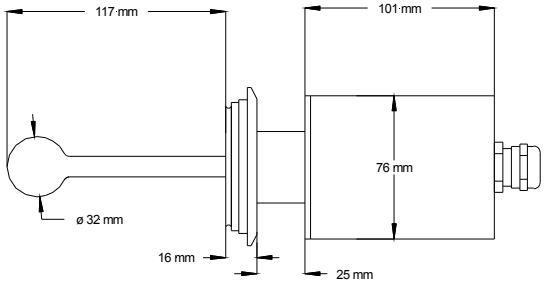
- **Emulsions**
- **Dispersions**
- **Polymers**
- **Cheese**
- **Pectine**
- **Mustard**
- **Joghurt**
- **Sauces**
- **Starch**

Sensor – Specification

Sensor type	**VA-100B - sphere**
Viscosity range	10 – 25,000 mPa·s x gr/cm^3
Calibration	in 3 dekades
Probe size	ø 32 x 117 mm / ø 1.25 x 4.6“
Material	1.4571 and 316L option: Hastelloy C22, Duplex 2205, teflon coating
Protection	IP65
Process temperature (optional Pt100 is integrated into viscosity probe)	LT from -10°C to 130°C / -25°F to 270°F HT from -10°C to 250°C / -25°F to 480°F HT with air cooling
Process connection	1,5“ NPT thread or Varivent® 50/40 or Tri-Clover® 2“
Pressure	Vacuum up to 64 bar / 950 psi, dependend on fitting
Installation	Installation in any orientation in reactor, vessel, pipe, flow-through cell
Resonance frequency Shear rate	~ 550 Hz ~ 3450 sec^{-1}
Cable length Sensor - Transmitter	maximum 1,000 meters / 3,330 feet
Speed of flow	up to 5 m / sec. or 16 feet / sc., dependend on installation
Reproducibility of reading	± 0.3%
Accuracy of reading	± 1%
option: hazardous area	in planning



VA-100B with 1.5“ NPT thread



VA-100B with Varivent® fitting 50 / 40

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