

VSH323 Process Viscometer **NEW**

Accurate and Reliable Process Viscosity and Temperature Measurement

- **No-Moving-Parts Reliability**
- **Accurate Ratio-Metric Viscosity**
- **No Permanent Magnet**
- **Easily Cleaned**
- **Patented Cantilever Beam Technique**
- **Fast Response**
- **316 Stainless Steel**
- **Fast & Accurate Temperature Measurement**
 - **Pt RTD in Measurement Cage**



Scale 1:1 [approx.]

The VSH323 sensor inserts into a process tank or line using a simple adaptor [see below]. The sensor is suited for continuous operation at temperatures as high as 190 deg.C. [374F]. The measurement head has a short integral cable which interfaces to an extension cable with built in pre-amp. Cable runs can be up to 330ft [100m]. [The required total cable length should be specified on your order.] The extension cable terminates with a 6-pin locking circular connector that connects directly to the back panel of the C300 end user electronics or to a B3ac or B3dc OEM circuit card.

Operation: Every 200ms a new measurement is made of viscosity and temperature, then the data is analyzed and updated every two seconds. On the face of the device inside a screened cage a vibrating cantilever beam and post are used for viscosity measurement [US patent 6,668,621]. Vibration of the beam is induced with very brief pulses from a coil inside the sensor. A piezoelectric element on the beam senses beam vibrations for viscosity determination. A ratio-metric technique eliminates the effects of sensitivity shifts due to age or temperature. A proprietary beam tip design magnifies the viscous damping effects, increasing sensitivity. Temperature of the fluid is measured using a 1000 ohm precision platinum RTD positioned near the beam tip. There are no moving parts to wear or jam, no motors, no rotating seals, no shuttling bobbins to jam, no capillaries to plug and no measurable self heat to corrupt the viscosity and temperature measurements. The design is simple, rugged and very cost effective. The body is made of 316 stainless steel. It is easily cleaned by immersion into a solvent. Three measurement ranges are available from 5 to 2000 centipoise over the temperature span of 0 to 190 degrees Celsius.

Specifications

Viscosity

Measurement Range	5 – 40 centipoise [VSH323-41] Optimized for HFO 10 to 200 centipoise [VSH323-22] 100 to 2000 centipoise [VSH323-23]
Measurement Accuracy	±1.5% FS Serial Port, ±3%FS Display
Measurement Resolution, Serial Port	0.01 cp 0-99cp, 0.1 cp 100-999cp
Measurement Resolution, Display	0.1 cp 10-400cp, 1 cp 100-2000 cp

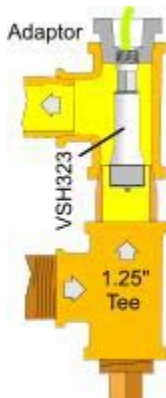
Temperature

Measurement Range	0 to 190 degree Celsius [32 to 374F]
Measurement Accuracy	±0.1 degree Celsius [Serial Port], ±0.2 degC. [Display]
Measurement Resolution	± 0.01 deg. C. [Serial Port], ±0.1 degC. [Display]

Mechanical

Mounting	3” sensor support shaft, ¼” NPT male thread.
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Installation



The VSH323 viscometer can be inserted into a one-inch or greater bypass line [shown left], or a process tank. We offer various adaptors such as the one shown to convert the sensor tip [1/4” NPT] into standard male pipe threads, including 1, 1.25, 1.5, and 2 inch or virtually any other thread size, including metric.

The top of the sensor stem can be extended with a shaft for insertion into a tank, or adapted to virtually any piping system, or the adaptor shown on the left used in a through-wall flange. In each application fluid motion refreshes the sample in the measurement head. If the fluid viscosity exceeds the measurement range, there is no damage to the sensing head. The measurement beam is free, so there are no measurable pressure effects.

The adaptor is also available with a protective cage for direct immersion into a tank. The top of the tank adaptor has a ½” or ¾” female NPT thread to accommodate an extension shaft. Consult factory or your sales rep for additional details.



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We Can Help

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