In-Line Explosion Proof Sensors

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Viscosity Sensors

Cambridge Viscosity®
by PAC

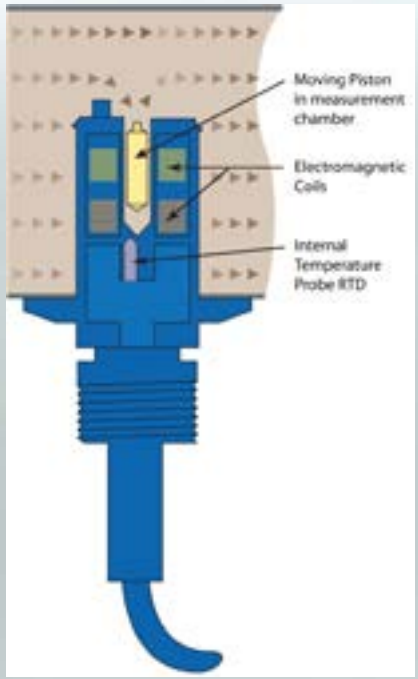
The Global Standard for Small Sample Viscosity Measurement

- Accurate and Reliable Viscosity Measurement for the Process
- Rugged and Durable Due to Unique Design
- Simple to Install Requiring Little Maintenance

Viscosity Sensors

FAST AND RELIABLE PROCESS VISCOSITY MEASUREMENT

Cambridge Viscosity's (CVI's) patented sensor technology is the preferred choice for small sample viscosity measurement. It uses only one moving part, a piston, driven electromagnetically through fluid in a small measurement chamber. A deflector, positioned over the piston, moves fluid into the measurement chamber, while two coils move the piston back and forth at a constant force. Proprietary circuitry analyzes its two-way travel time to measure absolute viscosity.



Every CVI viscometer uses one of these sensors – ensuring that every viscometer is the most accurate and reliable it can be. Furthermore, since all wetted parts are stainless steel and the piston is in constant motion, the sampling area is continually scrubbed clean. There is no need for frequent calibration and very little maintenance is required.

CVI offers several in-line explosion proof sensors, which are installed in process fluids to provide continuous temperature and viscosity tracking. These sensors can be paired with either the VISCOpro 1600 or VISCOpro 2000 instrument.

APPLICATION RANGE

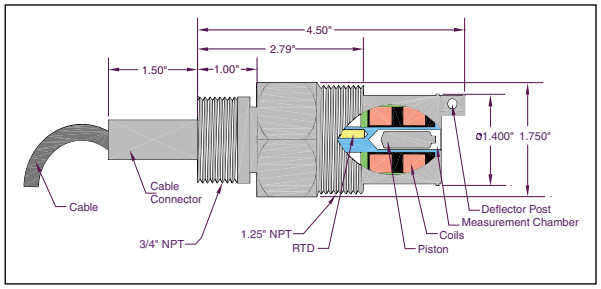
- Viscosity Measurement from 0.2 To 20,000 centipoise
- Available in 13 different 20:1 ranges.

STANDARD METHODS

Correlation to:
- ASTM D7483
- ASTM D445

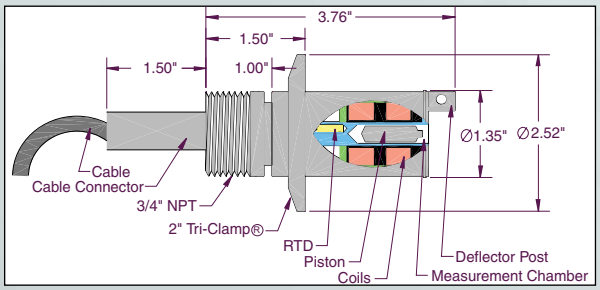
SENSOR 301 - IN-LINE VISCOMETER

Ideal where threaded connections are desired, the In-line Viscometer Sensor 301 has a 1.25 inch (31.75 mm) NPT thread to easily install into a process line using a "Tee", or into a large tank or pipe using a weld ferrule. Maximum flow rate over the sensor head is 10ft/sec (3 m/sec). Common applications for the 301 sensor include coatings, fuels, petrochemical, refineries, oil analysis, and lubricants.



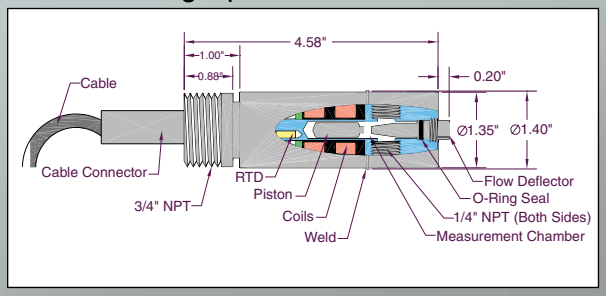
SENSOR 311 - IN-LINE VISCOMETER

Appropriate for most applications, the 311 sensor has a quick-disconnect flange for fast, tool-less installation. Recommended for line sizes less than 2 inches (50.8 mm). Typical systems include a tee, Tri-Clamp and an application specific gasket.Maximum flow rate over the sensor head is 10ft/sec (3 m/sec). Common applications include biofuels, lubricants, and coatings.



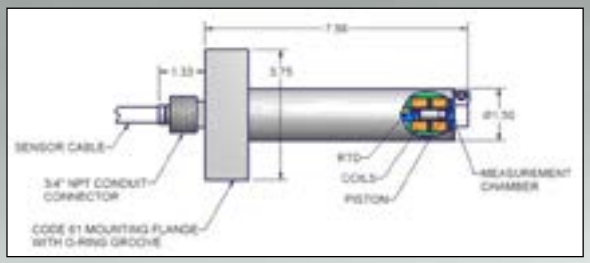
SENSOR 372 - FLOW THROUGH VISCOMETER

The 372 sensor installs directly into small-diameter process lines using 1/4 inch (6.35 mm) NPT fittings. The sensor comes with a removable jacket which can be plumbed with process material for excellent temperature tracking or a separate flow line for temperature control of sample material. Recommended flow rate over the sensor head is 0.5 to 1.0ft/sec. Common applications include biofuels, lubricants, coatings, petrochemical, and refineries.



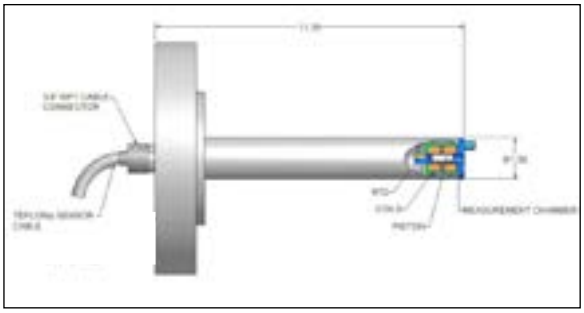
SENSOR 392 - VISCOMETER

Designed with a rugged, four bolt stainless steel SAE Code 61 flange, the 392 sensor fits easily to any pipe line size over 2 inches (38.1 mm). Custom tees are available. Common applications include biofuels, lubricants, coatings, petrochemical, and refineries.



SENSOR 393 - ROUND FLANGED VISCOMETER

The round flanged viscometer sensor is designed in multiple configurations and is easily installed in pipelines 2 inches and larger in size. Custom tees are available. Common applications include enhanced oil recovery, biofuels, petrochemical, and refineries. See the CVI 393 Flanged Sensor datasheet for configurations.



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SPECIFICATIONS

Sensor Range	0.2-20,000cP (0.2-2cP, 0.25-5cP, 0.5-10cP, 1-20cP, 2.5-50cP, 5-100cP, 10-200cP, 25-500cP, 50-1,000cP, 100-2,000cP, 250-5,000cP, 500-10,000cP, 1,000-20,000cP)
Sensor Type	Electromagnetic-U.S. and Worldwide patents granted and applied
Wetted Components	316L / 430 STAINLESS STEEL
Maximum Temperature	375°F (190°C) High temperature option* for up to 375°C (707°F)
Maximum Operating Pressure	301, 311, 372, and 392 sensor: 1000 psi (70.3 bar) 393 sensor: Up to 1000 psi (70 bar), configuration dependent
Temperature Sensor Type	PT 100
Compatible Electronics	VISCOpro 2000 & VISCOpro 1600
Certifications	**For all sensors:** Approved for Class 1, Div. 1, Group B, C, & D Approved for Ex d IIC T6 Gb, -20°C<Tamb<40°C Approved for Ex d IIC T5 Gb, -20°C <Tamb<60°C Approved for Ex d IIC T4 Gb, -20°C <Tamb<95°C Approved for Ex d IIC T3 Gb, -20°C <Tamb<160°C Approved for Ex d IIC T2 Gb, -20°C <Tamb<190°C Approved for Ex d IIC T1 Gb, -20°C <Tamb<375°C (high temperature only) **Sensor 372 only:** Alberta Boilers Safety Association (ABSA) CRN# 0F07232.2 **Sensor 392 only:** Alberta Boilers Safety Association (ABSA) CRN# 0F11510.2

* only available for the 301, 372, and 392 sensors

Cambridge Viscosity® by PAC

Cambridge Viscosity

With more than 10,000 installations worldwide, Cambridge Viscosity is the proven leader in viscosity management technology. With over 25 years of experience, Cambridge Viscosity understands and meets the needs of laboratory researchers and process engineers in a wide range of industries whose jobs depend on the quality, accuracy, and reliability of viscosity measurement equipment. With their patented sensor technology, Cambridge Viscosity has become the gold standard in small sample viscosity measurement.