Process Insights
Premium Insights Into Process

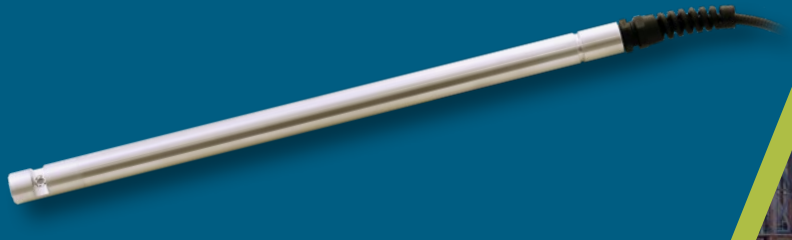
GuidedWave

PROCESS INTERFACE

PRODUCT DATASHEET

Turbidity Process Probe

Compatible with ClearView db Analyzers Configured for Haze or Turbidity



More signal

Less noise

Lower detection limits

- Suitable for Saybolt color, Haze, or Turbidity, and select transmission measurements
- Suitable for liquids and vapors
- Virtual view into the process
- Reproducible pathlength permits servicing in the field

Turbidity Process Probe

Inline probes eliminate costly and problematic fast loops and sample systems. The Guided Wave Turbidity Probe (with additional third port) can be used with the ClearView db process analyzer (photometer) to measure Haze or Turbidity (NTU) directly in the process stream. The turbidity measurement detects solids breakthrough in the process while simultaneously measuring the transmission. The 20mm pathlength is appropriate, for example, when monitoring the Saybolt color.

A Simple, Serviceable Design

The Turbidity Probe is a convenient, compact, rugged sample interface that is easy to install and even easier to service. Key elements of the design include simple, serviceable o-ring seals, sapphire windows, and o-ring sealed optics to prevent ambient moisture infiltration.

Process-Resistant Construction

The Turbidity Probe is designed to withstand harsh process conditions. It is constructed from 316L stainless steel. It can also be made from other materials depending upon specific application requirements, such as Hastelloy C-276. The Turbidity Probe's sapphire optical windows are sealed to the probe body with o-rings. These materials are unaffected by most hydrocarbons and polymers. Additionally, Guided Wave's special construction techniques also make the probe insensitive to most process pipe vibrations. On request, the Turbidity Probe can be supplied welded to an ANSI or DIN process flange. Like other Guided Wave process probes, 24 inches or longer, it is also compatible with the Guided Wave Probe Extractor.

Dual Seal for Added Safety

Perhaps the most crucial aspect of any online sample interface design is the sealing approach. Since process fluid streams will be under pressure and the composition is often hazardous, leaks are unacceptable. Additionally, moisture infiltration from the external environment adversely affects performance too. The Guided Wave brand utilizes multiple o-ring seals that effectively address both issues. This protects the expensive internal optics.

Exceptional Light Transmission

Like all Guided Wave sample interfaces, the Turbidity Probe provides exceptional optical performance. Internal optics result in a collimated light beam for consistently accurate measurements. Typically, peak transmission exceeds 30%. That means more signal, less noise, and lower detection limits for the measurement. The optics on the Turbidity Probe are permanently aligned at the factory. As a result, there is no need for any optical adjustments in the field. Additionally, there is no chance for optical misalignment to occur under normal processing conditions or during servicing.

Pathlengths and Operating Range

This Turbidity probe is available in 20 mm pathlength and in UV-VIS and NIR versions. It operates over the following temperature and pressure ranges:

- Temperature: -20 °C to 250 °C (o-ring material dependent)
- Pressure: 0 to 1000 psi [69 bar]

Compatible with the ClearView db Analyzer Configured for Haze or Turbidity

The sample interface is a crucial component of a complete fiber optic-based analyzer system. For maximum performance, the probe or flow cell must be optically matched with both the analyzer (spectrometer) and the fiber that transmits the spectral signal. All Guided Wave sample interfaces, analyzers, and fiber optic cables are optically matched, so when used in combination they achieve the highest possible consistency and performance.

One of the primary advantages of UV-VIS and NIR process spectroscopy is the utilization of intrinsically safe fiber optic cables to remotely locate the analyzer relative to the sample interface (probe or flow cell) installed in the process. Get the full power of this technology and choose the Turbidity Probe along with an optically matched Guided Wave ClearView db analyzer and process grade fiber optic cables – *for control you can measure!*

Optional Turbidity Probe Accessories

The Turbidity Probe is available with optional accessories for easy adaptation to different process installation configurations.

- Custom flanged probes: Facilitates direct installation of the process probe onto a T junction
- Extractor Assembly Mechanism: Facilitates installation of the process probe so that it may be cleaned without disrupting the process:
  - Rapid safe extraction of the in-line probe from pressurized process streams
  - Mounts to a gate valve via 2-inch Class 300 raised face flange
  - Teflon "V" ring packing glands standard

Specifications:	
Probe Length	12; 18; 24; 30; 36 (inches) other lengths available on request
Optical Pathlength	20 mm
Spectral Range	UV-VIS (230 – 800 nm); NIR (800- 2100 nm)
Fiber Connector	400; 500; 600 µm / SMA 905; FC
Optical Efficiency	>30% for pathlengths < 20 mm
Temperature Range	-20 to 250 °C (o-ring material dependent)
Pressure Range	0 to 1000 psi [69 bar]
Body Material	SS316L standard (SS304, SS316, Hastelloy, Monel, Titanium, and Nickel available on request)
O-Ring Material	Viton, EPDM, Kalrez, Silicon, other materials available upon request
Window Seal	Polymer o-ring materials: Viton, Kal-Rez® 6375, others on request
Mounting	Swaged fittings; custom flanges; extractor assembly mechanism
Probe Diameter	1.0 inch [25.4 mm]

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PREMIUM INSIGHTS – GAIN REAL-TIME INSIGHT INTO YOUR PROCESS

Process Insights' products and solutions deliver innovative and differentiated analysis and measurement solutions and technologies that add high value to our customers and protect the environment.

Our commitment is to deliver smart and affordable innovation that optimizes process, improves safety, and transforms our world.

CENTERS OF EXCELLENCE

PROVIDING PROVEN SOLUTIONS FROM A GLOBAL TECHNOLOGY LEADER

Guided Wave

3033 Gold Canal Drive
Rancho Cordova, CA 95670
USA
+1 916 638 4944
www.guided-wave.com
gwsales@guided-wave.com
gwsupport@guided-wave.com

Process Insights – The Americas

4140 World Houston Parkway
Suite 180
Houston, TX 77032
USA
+1 713 947 9591
info@process-insights.com

Process Insights – EMEA

ATRICOM
Lyoner Strasse 15
60528 Frankfurt
Germany
+49 69 20436910
info@process-insights.com

Process Insights – APAC

Wujiang Economic and Technology
Development Zone
No. 258 Yi He Road, 215200 Suzhou
Jiangsu Province China
+86 400 086 0106
info@process-insights.com

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