PRECISION SENSING DEVICES

Where Innovation, Application & Technology Come Together

SERIES 300 Transmission Probes

PSD's Series 300 Transmission Probes are precision optical instruments that allow remote fiber optic near-IR, UV or visible transmission measurement of heated and pressurized clear to slightly scattering liquid process streams. Applications include permanent in-line and side-stream installations.

A major advantage and unique design feature of this probe is our proprietary sapphire-to-metal seal capability. This technique eliminates the use of O-rings seals or brazed joints that can be chemically attacked and limit the long-term operational reliability of the sapphire seal and lead to potentially dangerous failures. The only sample contact materials are the 316/316L Stainless Steel, or the metal specifically requested, and the sapphire. This capability enables this probe to operate at temperatures up to 300˚C and 5,000 PSI. The sapphire windows are chemically inert and have a very hard surface that resists etching from caustic solutions and scratching from hard or rough surfaces.

The probes come with an internal single strand fiber that is terminated at the back of the probe in an SMA connector. The standard probe contains an internal 600 micron ultra low OH silica fiber, other optional sizes are available based on customer requirements. This probe can be easily connected to single fiber spectroscopy-grade fiber assemblies via its SMA connectors. PSD will manufacture the fiber optic assemblies to satisfy specific type and length requirements.

An option is to have a flexible bundled fiber optic assembly as an integral part of the probe. This optional assembly consists of 200 micron low OH silica fiber, other sizes are available based on customer requirements. The end of the fiber assembly is terminated with a SMA connector. However, the fiber termination can be changed to satisfy the specific connection requirements of any spectrometer. The length of the micro-bundle fiber optic assembly can be made to satisfy specific customer requirements.

The optical arrangement to perform a transmission measurement requires two of these probes. One for transmitting the radiant energy from the spectrometer and the other for collecting. Each probe provides very efficient transmission that provides superior quantitative performance. The probe contains an optically efficient collimating sapphire window. The result is a high transmission capability, excellent optical stability and photometric accuracy. In addition, it provides the flexibility for this probe to be made with diameters of 0.25" to 1" with lengths to satisfy specific customer requirements. This probe can be provided with a wide assortment of attachment capabilities such as welded-on flanges, pipe fittings, or port connectors to accommodate specific installation requirements.

PRODUCT HIGHLIGHTS & SPECIFICATIONS

- No O-rings or brazed joints to fail
- Optional UV and visible light sampling
- Robust and inert construction for industrial process applications
- Optional spacers to accurately pre-set desired pathlengths
- Customer specified probe diameters and lengths
- Alternate material per customer request to construct probe
- Internal purge capability available
- Optional micro-bundle fiber optic assembly
- Proprietary sapphire-to-metal seal providing robust and inert design
- Capable of operating up to 300˚C and 5,000 PSI

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