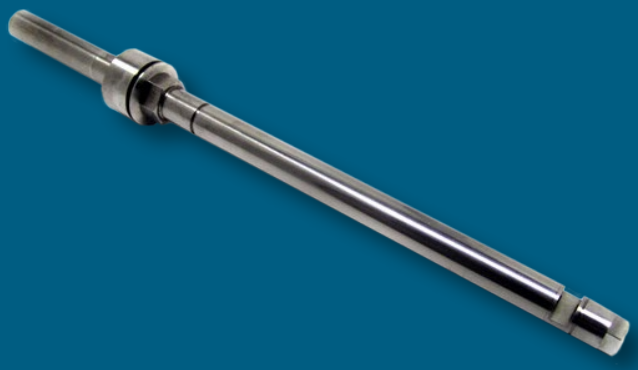
Process Insights™
Premium Insights Into Process

PROCESS INTERFACE

PRODUCT DATASHEET

O-Ring Single-Sided Transmission (O-SST™)Process Probe

Compatible with NIR and UV-VIS Analyzer for Process Sampling



More signal

Less noise

Lower detection limits

- Corrosive process streams containing strong acids, bases, peroxides or halogenated compounds
- Corrosion-resistant construction especially those containing nitric acid or cyanides
- O-ring process seals
- Sealed against ambient moisture infiltration

O-Ring Single-Sided Transmission (O-SST) Process Probe

When an in-process fiber optic probe is needed in a corrosive process stream containing strong acids, bases, or cyanides the GUIDED WAVE O-Ring Single-Sided Transmission Probe or O-SST™ Probe is recommended. The O-SST Probe performs similarly to the industry-standard gold alloy sealed SST Probe but uses polymer o-rings to seal the sapphire windows. Like the SST Probe, the O-SST Probe has high optical throughput for low noise inline spectroscopy of complex solutions. Inline probes eliminate costly and problematic fast loops and sample systems.

A Simple, Serviceable Design

The O-SST 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. The probe can be dismantled for periodic o-ring service, although we recommend that this be done with us to ensure optimum performance. To clean the O-SST Probe simply remove it from the process and wipe the windows with a clean, soft cloth. The O-SST Probe can be mounted to the connection in several ways. A flange can be welded to the O-SST Probe for connection to the process access port. Alternatively the optional Probe Servicing Extractor Mechanism may be used to facilitate installation and removal of the process probe so that it may be cleaned without disrupting the process.

Process-Resistant Construction

The o-ring sealed O-SST Probe is designed as an alternative to the gold alloy sealed SST Probe as it withstands corrosive processes, especially those containing nitric acid or cyanides. 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. Elastomeric seals prevent leakage and protect the O-SST Probe's vital internal optics. The process and processing environment dictate the actual o-ring material that is best suited for the application. Suitable o-ring materials must be specified to meet the process chemistry and safety requirements. Common materials, such as Viton, Kalrez®, EPDM, etc., are readily available. Consult appropriate resources for temperature specifications of various o-ring materials and chemical compatibility with the process. On request, the O-SST Probe can be supplied welded to an ANSI or DIN process flange. All purchases of flanged O-SST Probes require a customer signoff drawing to confirm the location and dimensions of the flange.

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. Our brand utilizes multiple o-ring seals that effectively address both issues. This protects the expensive internal optics.

Exceptional Light Transmission

Like all our sample interfaces, the O-SST 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 O-SST 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.

Optically Matched with All Our Analyzers and Compatible with Most Other Spectrometer Brands

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 our sample interfaces, analyzers, and fiber optic cables are optically matched, so when used in combination they achieve the highest possible consistency and performance. The O-SST Probe is also manufactured to facilitate full integration with any fiber optic system configured with SMA 905 connectors. This includes FT-NIR analyzers. When choosing a sample interface for an FT-NIR analyzer the current fiber core size must be taken into consideration. The O-SST Probe design works best when the size of the internal and external fiber core match.

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 O-SST Probe along with one of our optically matched analyzers and process grade fiber optic cables – *for control you can measure!*

Optional O-SST Probe Accessories

The O-SST 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
- Probe Servicing Extractor 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	1; 2; 5; 10; 15; 20; 30; 40; 50 (mm) other lengths available on request
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	-25 °C to 250 °C (o-ring material dependent)
Pressure Range	0 psi to 1000 psi [0 – 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 option
Probe Diameter	0.750 inch [19 mm]; 1.000 inch [25.4 mm] (larger diameter recommended for probes ≥24 inches long)

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Process Insights manufactures and delivers premium sensors, monitors, detectors, analyzers, instrumentation, and software that are mission-critical to keep your operations, personnel, and the environment safe – every day across the globe.

Get the most reliable, precision analytical technologies available on the market today. We will work to match your needs and budget, and provide the optimal, and most stable process analysis solution for your application.

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