

SmartProbe FBG Sensor

Key Features

- Single Interface Process Pressure, Temperature, and Acoustic Optical Sensor Assembly
- Working Pressure Ranges available from 350 to 1,400 barg
- FBG Pressure, Temperature and Acoustic Sensor
- Zero Power, Electrically Immune
- Intrinsically Safe
- Multiple km Signal Integrity
- Small Intrusion Design
- HP Metal Seal Mounting Fixture
- NACE Compliant

About SmartProbe

SmartProbe is an all optical measurement probe which combines highly sensitive point acoustic pickup with process fluid pressure and temperature sensing. Numerous SmartProbe sensors can remotely interrogator with a [SmartSonic](#) quasi-distributed acoustic sensing (QDAS) instrument.

SmartProbe applications include:

Process flow status monitoring:

- Gauge pressure and temperature at same location on the flow OD
- Leak detection
- Tamper detection at valves

Process flow condition monitoring:

- Upper and lower pipe measurement locations allow for free surface detection
- Acoustic and pressure measurements support pig detection and slug detection
- Acoustic, pressure, and temperature measurements support flow blockage
- Acoustic measurements support solids (e.g. sand) detection and characterization

SmartProbe installation methods:

- Smart Fibres licensed interface for OEM SmartProbe sensor
- ANSI, API ring flanges incorporating dual SmartProbe sensor ports

SmartProbe Connection methods:

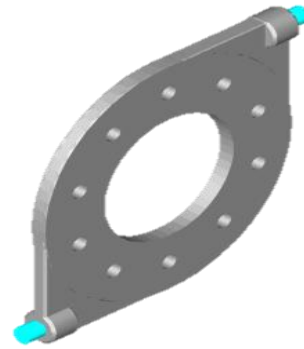
- Armoured pigtail with optical connectors for field connections / terminations

Specifications (preliminary)

Model	SmartProbe LP	SmartProbe MP	SmartProbe HP
Pressure Measurement Range	10,000 psi	15,000 psi	20,000 psi
Pressure Measurement Uncertainty (1σ)	30 psi	30 psi	30 psi
	0.30 % Full Scale	0.20 % Full Scale	0.15 % Full Scale
Temperature Measurement Range	-50 to +200 °C / -60 to +400 °F		
Temperature Measurement Uncertainty (1σ)	0.2 °C / 0.4 °F		
Acoustic Measurement Bandwidth	DC to 100 kHz		
Acoustic Measurement Dynamic Range	160 dB		



SmartProbe Pipe Connector



SmartProbe Ring Flange Adaptor