Optical Fiber | Pressure Transducer

High range series (PTH)

Optical Fiber Sensor – Product Information Sheet

Fiber optic sensors provide high accuracy and high-resolution measurement of strain and temperature, beneficial for test and measurement applications involving extreme conditions where conventional sensors cannot perform well.

The PTH models are high pressure range (up to 10,000 psi) transducers capable of achieving ±0.25% FSO measurement uncertainty if environmental temperature is static.

This optical pressure sensors meet PiMS™ (Pi-FBG Measurement Standard). To achieve the performance specifications presented, a Q.series X F108 Optical Gage Amplifier is required.

The F108 Optical Gage Amplifier seamlessly integrates with the Q.series X data acquisition platform. The modularity and versatility of the Q.series X product line can address any of your measurement challenges. Utilize GI.bench software for quick and easy setup and combine with GI.cloud for cloud storage and remote monitoring.

Key Features

- **Operating Range: -50 up to 200 °C**
- **±0.25% FSO Uncertainty**
- **10 km transmission**
- **Intrinsically Save**
- **EMI & Radiation Immune**

Typical applications:

Oil & Gas

Measure temperature, vibration and strain in hazardous areas for condition monitoring of critical assets to reduce failure frequency and increase equipment reliability.

Transformers & Generators

Measure vibration and voltage at high electrical potential without electromagnetic interference

Battery testing & monitoring

Non-conductive measurement of temperature, strain, and vibration for testing and monitoring new energy storage technologies while avoiding electrical safety hazards.

Electric powertrain testing

Performance testing and validation of powertrain components in electric vehicles and aircraft with temperature sensors exposed to electromagnetic fields.

Nuclear power, research & fusion reactor monitoring

Ensure low sensor degradation with hermetically sealed sensors to monitor critical reactor components without the impact of high gamma radiation and temperature.

Space simulation testing

Measure strain, pressure, acceleration, and temperature in an environmental test chamber under cryogenic and high vacuum conditions

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Technical Data

Performance

Transducer operating range	-50 up to 150 °C
Gauge pressure range	0 – 1000 psi / 0 – 5000 psi / 0 – 10000 psi
Proof pressure	2000 psi / 10000 psi / 20000 psi
Dynamic response	DC up to 2 kHz
Pressure measurement uncertainty Static temperature	±0.25% Full scale output (FSO)
Pressure measurement uncertainty Dynamic temperature	±1% FSO
Pressure resolution	0.01% FSO
Temperature absolute uncertainty	±0.5 °C
Temperature relative uncertainty	±0.2 °C
Temperature resolution	0.01 °C
Optical sensor specifications	PiMS compliant

Environmental

Pressure medium	Air / Water / Oil
Cable temperature (OFNP cable)	-40 up to 70 °C
Cable temperature (stainless steel cable)	-60 up to 150 °C
Minimum cable bend radius	16 mm
Optical connector	E2000/AFC
Fiber type	SMF28 compatible

Ordering Information

Model part number	PTH-SBFA-SC1E2
Additional information	Pressure, High Range, -50 to 150°C, 1/4" compression fitting, 10,000psi, commercial calibration, 2.3mm stainless steed coil jacket, 2.5m cable length, E2K/APC

For Detailed Information about standard geometries, material substitutions, custom tip dimensions and alternative cable lengths please contact your sales partner.

For further information visit Q.series X F108 landing website or contact your local Gantner Instruments sales representative

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