

Optical Fiber | Accelerometer

Accelerometer industrial series (ACI)

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.

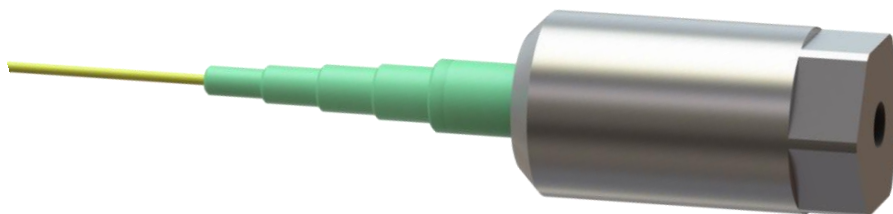
The ACI models are high frequency accelerometers that can capture vibration data from DC to 1500 Hz. Temperature compensation by means of an additional optical sensor is optional.

This optical acceleration 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 150 °C**
- **10 km transmission**
- **Electrical Isolation**
- **Intrinsically Safe**
- **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.

Battery testing & monitoring

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

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.

Transformers & Generators

Measure vibration and voltage at high electrical potential without electromagnetic interference

Electric powertrain testing

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

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
Sensitivity	0.5 pm/G
Acceleration range	± 100 g
Frequency range	DC up to 1500 Hz
Acceleration Measurement Uncertainty	±5.0% Full scale output (FSO)
Resonant frequency	4500 Hz
Acceleration Resolution	15 mg
Maximum shock	1000 g (peak)

Temperature compensation gauge specifications

Temperature absolute uncertainty	±0.5 °C
Temperature relative uncertainty	±0.2 °C
Temperature resolution	0.01 °C
Optical sensor specifications	PiMS compliant

Environmental

Cable temperature (OFNP cable)	-40 up to 70 °C
Minimum cable bend radius	16 mm
Optical connector	E2000/AFC
Fiber type	SMF28 compatible

Ordering Information

Model part number	ACI-SABA-NA1E2
Additional information	Accelerometer, Industrial, -50 to 150°C, 10-32 female thread, no temperature compensation, 316 SS body, OFNP 0.9mm 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](#).