

High Temperature, Radiation Hardened, Charge Output Accelerometer

- +900 °F (+482 °C) Temperature Range
- 10 pC/g Sensitivity
- 24 kHz Resonant Frequency
- Survives Integrated Gamma Flux to 10^8 Rads
- Survives Integrated Neutron Flux to 10^{10} N/cm²
- Measures Vibration on Turbines, Engines, Exhaust Systems

Operates to +900 °F (+482 °C)

Actual Size



Model 357B61
High Temperature Accelerometer

Model 357B61 high temperature accelerometer offers operation to temperatures that are well beyond the capability of most conventional piezoelectric vibration sensors. The unit is well-suited for vibration studies on turbomachinery, power generation equipment, exhaust systems, and in extreme, high-temperature ambient environments. Additional features include a robust, all-welded, hermetically sealed, Inconel® housing and a supplied 10 ft (3 m) hardline cable.

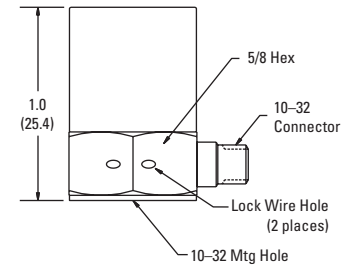
The unit conveniently operates with PCB's specially designed in-line charge converters and ICP® sensor signal conditioners, which serve to condition the output signal for recording or analysis. Alternatively, this accelerometer can be used with laboratory-style charge amplifiers — as long as the input resistance capability of the charge amplifier is known to accommodate the lower resistance values that can occur with accelerometers operating above +500 °F (+260 °C).

As with all PCB® instrumentation, this sensor is complemented with toll-free applications assistance, 24-hour customer service, and is backed by a no-risk policy that guarantees satisfaction or your money refunded.



Specifications

Model		357B61	
Performance		English	SI
Sensitivity	(± 10%)	10 pC/g	1.02 pC/m/s ²
Measurement Range		± 3000 g pk	± 29,430 m/s ² pk
Frequency Range	(± 5%)	5000 Hz	5000 Hz
Resonant Frequency		≥ 24 kHz	≥ 24 kHz
Non-Linearity		≤ 1%	≤ 1%
Transverse Sensitivity		≤ 3%	≤ 3%
Environmental			
Overload Limit	(axial direction)	± 5000 g	± 49,050 m/s ²
Temperature Range		-65 to +900 °F	-54 to +482 °C
Integrated Gamma Flux		≤ 10 ⁸ rad	≤ 10 ⁸ rad
Integrated Neutron Flux		≤ 10 ¹⁰ N/cm ²	≤ 10 ¹⁰ N/cm ²
Electrical			
Polarity	(acceleration directed from mounting surface into base)	Negative	Negative
Capacitance		550 pF	550 pF
Insulation Resistance	(at 70 °F)	≥ 10 ⁸ ohm	≥ 10 ⁸ ohm
	(at 900 °F)	≥ 10 ⁵ ohm	≥ 10 ⁵ ohm
Physical			
Sensing Element		Ceramic	Ceramic
Sensing Geometry		Compression	Compression
Housing Material		Inconel®	Inconel®
Sealing	(welded)	Hermetic	Hermetic
Size	(hex x height)	5/8 x 1.0 in	5/8 in x 25.4 mm
Weight		1.1 oz	30 gm
Electrical Connector	(side)	10-32 coaxial	10-32 coaxial
Mounting Thread		10-32 female	10-32 female
Supplied Accessories			
Model 081B05 Mounting Stud, 10-32 to 10-32 thread			
Model M081B05 mounting stud, 10-32 to M6 x 0.75 thread			
Model 023A10 Hardline Cable, 10 ft (3 m) length, 10-32 plug to 10-32 jack			
NIST Traceable Calibration Certificate			



Model 357B61
High Temperature, Charge Output Accelerometer

Dimensions shown are in inches (millimeters)



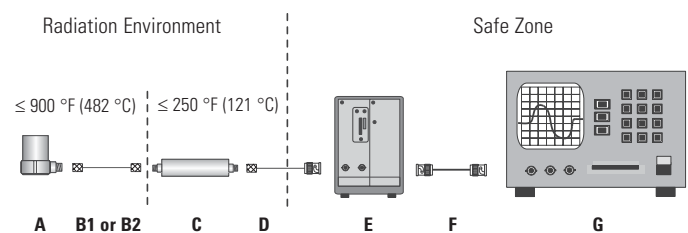
In-line charge converters are powered from conventional ICP® sensor signal conditioners and serve to condition the charge-output accelerometer signal into

a usable voltage signal for readout, recording, or analysis. Models 422E35 and 422E36 charge converters maintain operation at lower source resistances encountered when operating sensors at temperatures >500° F (260° C). Models 422E65/A and 422E66/A are Rad Hard and maintain operation at lower source resistances encountered when operating sensors at temperatures >500° F (260° C). Request data sheet for full specifications.

Model Number	Charge Conversion	Integrated Gamma Flux	Integrated Neutron Flux
422E35	1 mV/pC	N/A	N/A
422E36	10 mV/pC	N/A	N/A
422E65/A	1 mV/pC	≤ 10 ⁸ Rads	≤ 10 ¹⁰ N/cm ²
422E66/A	10 mV/pC	≤ 10 ⁸ Rads	≤ 10 ¹⁰ N/cm ²

Recommended Components for a Typical Installation

- A** High temperature, radiation hardened accelerometer.
- B1** Series 023 hardline cable, (for up to +900 °F (+482 °C)).
- B2** Series 025JGxxxJG cable assembly, 10-32 plug each end (for up to +390 °F (+199 °C)), specify xxx length in feet).
- C** In-line charge converter, Model 422E65/A or 422E66/A.
- D** Series 025JGxxxAC cable assembly, 10-32 plug to BNC plug.
- E** ICP® sensor signal conditioner.
- F** Model 012A03 output cable, BNC plug each end.
- G** Readout, recording, or data acquisition device.



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ISO 9001:2000 CERTIFIED

A2LA ACCREDITED to ISO 17025

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The Vibration Division of PCB® Piezotronics, Inc. specializes in the development, application, and support of shock and vibration sensors, microphones, impact hammers, piezoelectric actuators, and dynamic strain sensors for acceleration measurements, acoustic testing, and structural testing requirements. This product focus, coupled with the strengths and resources of PCB, permits the Vibration Division to offer exceptional customer service, 24-hour technical assistance, and a **Total Customer Satisfaction** guarantee.

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