



Piezoelectric Accelerometers

DESCRIPTION

AMETEK's piezoelectric accelerometers are designed to meet the operational and reliability requirements of aerospace applications. With over fifty years of experience, AMETEK offers piezoelectric accelerometers in all three modes of operation: compression, shear, and bender. AMETEK also designs accelerometers for a wide range of temperatures, environments, frequency responses, sensitivities, and configurations.

AMETEK's piezoelectric accelerometers meet the following performance requirements: high accuracy, high sensitivity, wide-band frequency response, ultra-low cross-axis sensitivity, isolation from mounting forces and temperature gradients and fully-welded construction for isolation from extreme pressures and environments. AMETEK has design experience with low noise softline cables, hardline cables for high temperature operations, cable braiding, special connectors, uni-axial, bi-axial, and tri-axial sensors, integral electronics, and special mounting configurations.

Performance, established 'in-field' reliability, and experience makes AMETEK's piezoelectric accelerometers the optimum choice. AMETEK will custom design and manufacture piezoelectric accelerometers to cost-effectively meet customer-specific requirements.

TYPICAL APPLICATIONS

- aircraft engines
- helicopters
- land gas turbines
- centrifugal pumps
- compressors
- gas generators
- launch vehicles
- missiles
- marine vehicles



FEATURES

- ✓ *Ultra-sensitive, high accuracy measurement of vibration and acceleration*
- ✓ *Operating temperature above 1000°F (538°C)*
- ✓ *Wide frequency response*
- ✓ *Low cross-axis sensitivity*
- ✓ *Stable output through environmental extremes*
- ✓ *Custom configurations including integral electronics, cables, connectors, and mounting arrangements*
- ✓ *Hermetically sealed construction for isolation from external environments*

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SPECIFICATIONS

OPERATIONAL

Charge Sensitivity: 1 to 1,050 pC/g

Mounted Resonant Frequency: Dependent on requirements, including sensitivity

Frequency Response: Minimum 2Hz, maximum strongly dependent on design

Transverse Sensitivity: 5% maximum, special models 1% maximum

Temperature Response: $\pm 5\%$ to $\pm 10\%$ of charge sensitivity within operational temperature range

ENVIRONMENTAL

Temperature Range:

Wide Range: -67° to 500°F (-55° to 260°C)

Extreme Range: -452° to 1000°F (-260° to 538°C)

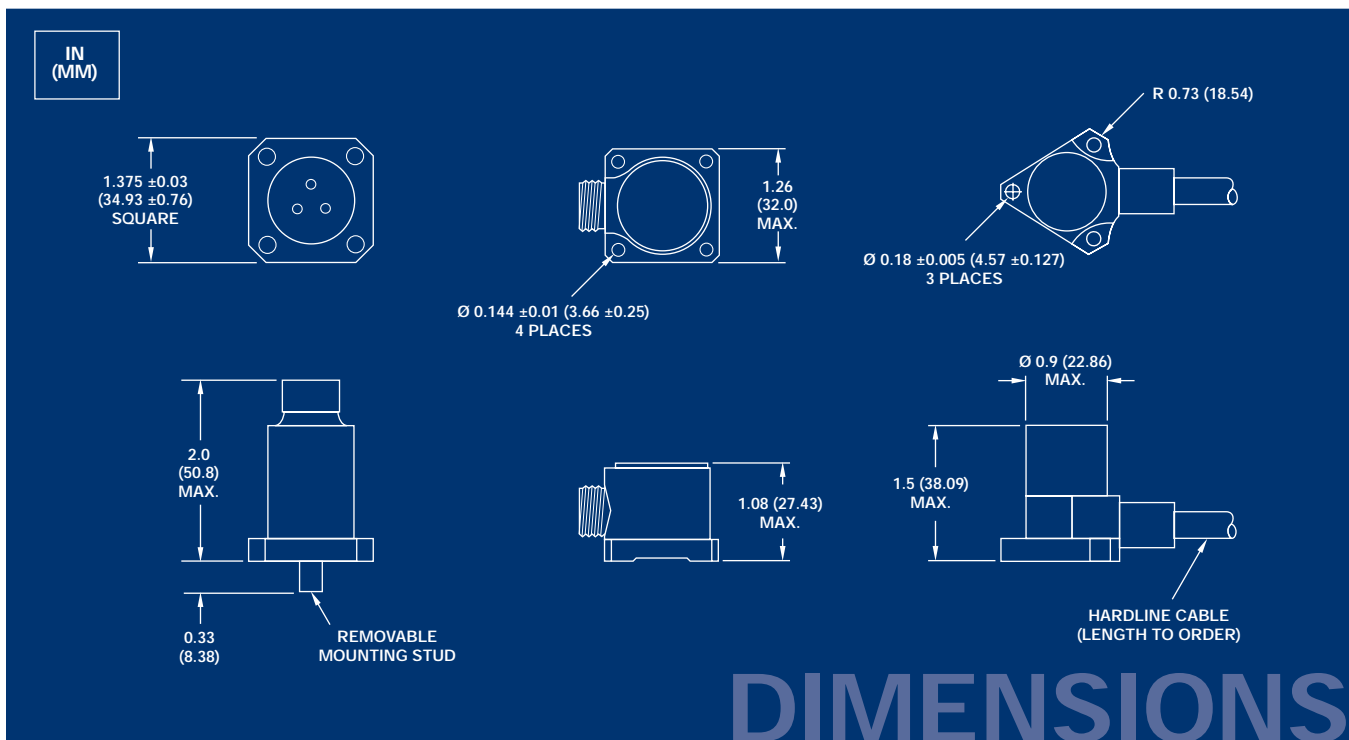
Higher temperatures available

Acceleration Range: Vibration Limit: 200 to 1000 g pk

Shock Limit: 1,000 to 10,000 g pk in any direction

Acoustic Sensitivity: Less than 0.1 equivalent g at 155 db SPL

Individual specification limits have been achieved on various existing designs. Please contact AMETEK regarding your specific requirements.



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