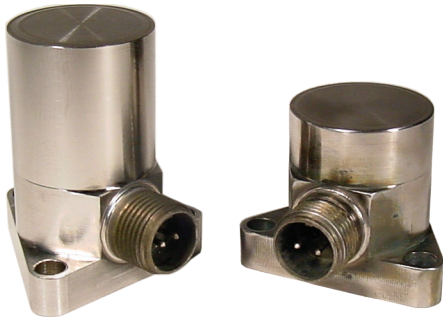




4-171

Accelerometers

High Temperature Piezoelectric Accelerometer



Applications

- Gas Turbine Engine Monitoring
- Ground Test Application
- APU Testing
- Compressor or Gear Box Monitoring

Features

- Self-generated (no external power)
- Balanced Differential Output
- Operates to +900°F
- Available in 10, 20 or 50 pC/g

Description

The CEC Model 4-171 is a self-generating, piezoelectric accelerometer designed for high temperature vibration measurement applications. This instrument provides a high sensitivity and stable output for continuous operation at temperatures as high as +900°F. While the unit does not require power for operation, the accelerometer output must be operated into a charge converter that is designed to accept a 100 kohm source resistance.

The 4-171 piezo ceramic sensing element is housed within a rugged case. The case and connector are both made from Inconel. The mounting base incorporates a standard three-point mounting pattern on a 1.188" diameter B.C., common to many applications. The 4-171 series provides a balanced differential output that is isolated from the case ground. Sensitivities available include 10 pC/g, 20 pC/g and 50 pC/g



4-171 Piezoelectric Accelerometer

Performance Specifications

DYNAMIC

Reference Sensitivity

4-171-0010: 10 pC/g RMS 5% referenced @ 100Hz

4-171-0020: 20 pC/g RMS 5% referenced @ 100Hz

4-171-0050: 50 pC/g RMS 5% referenced @ 100Hz

Frequency: 5 to 2500Hz

Frequency Response: 5 to 10Hz, ±10% of reference

Sensitivity: 10 to 2500Hz, ±5% of reference

Transverse Sensitivity: ≤ 5%

Amplitude Linearity: ≤ 1% up to 100g RMS

ELECTRICAL

Output: Balanced differential (2-pin floating)

Transducer Capacitance: 1.14 nF

Pin to Case Capacitance: 23 pF

Transducer Resistance: 100k Ω minimum at +900°F (+371°C)

Pin to Case Resistance: 25M Ω minimum at +900°F (+371°C)

Grounding: Two pins (differential output) isolated from case ground

PHYSICAL

Sensing Element: Piezo Ceramic in a single-ended compression design

Weight: 4oz (113gm)

Case Material: Inconel

Connector: Two-pin, 7/16-27 threads

Mounting: Three holes .185" Dia. equally spaced on ø1.188" bolt circle

ENVIRONMENTAL

Acceleration Limits (in any direction)

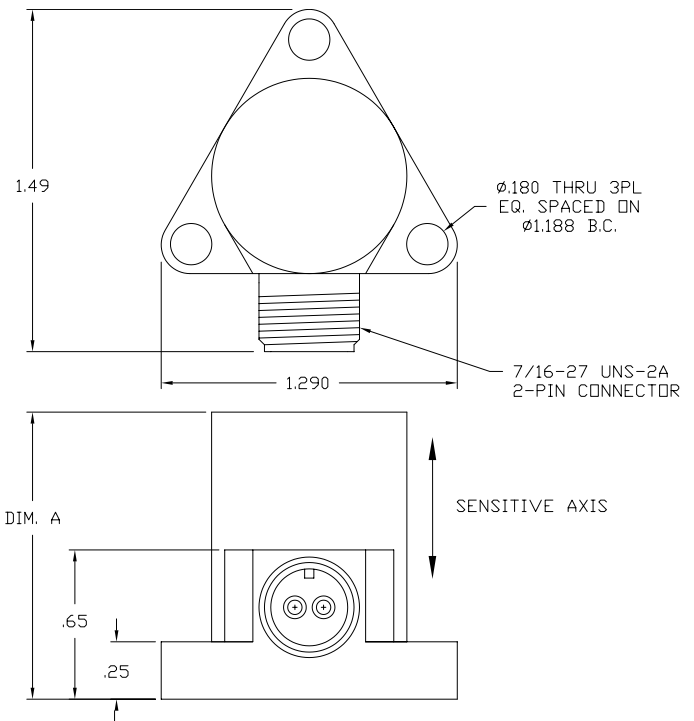
Vibration (sinusoidal): 1000g

Shock: 2000g

Temperature Range: -65 to +900°F

Altitude: Not affected

Construction: Hermetically sealed by welding and ceramic-to-metal fusion



DASH NO.	-0010	-0020	-0050
DIM. A	1.00	1.50	1.50

Ordering Information

In keeping with CEC's policy of continuing product improvement, specifications may be changed without notice.