

4-171 Piezoelectric Accelerometer

Applications

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

Features

- Self-generating (no external power)
- Balanced Differential Output
- Operates to +482°C (+900°F)
- Ideal for test cell turbine vibration monitoring
- Available in 10, 20 or 50pC/g sensitivity



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 +482°C (+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 kΩ source resistance.

The 4-171 Piezo ceramic sensing element is housed within a rugged enclosure and connector, both made from 440C S.S. 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.

DYNAMIC

Reference Sensitivity

4-171-0010	10 pC/g referenced @100 Hz
4-171-0020	20 pC/g referenced @100 Hz
4-171-0050	50 pC/g referenced @100 Hz

Frequency:	5 to 2500 Hz
Frequency Response:	5 to 10 Hz, ±10% of reference
Sensitivity:	10 to 2500 Hz, ±5% of reference
Transverse Sensitivity:	≤5%
Amplitude Linearity:	≤1% up to 100g RMS

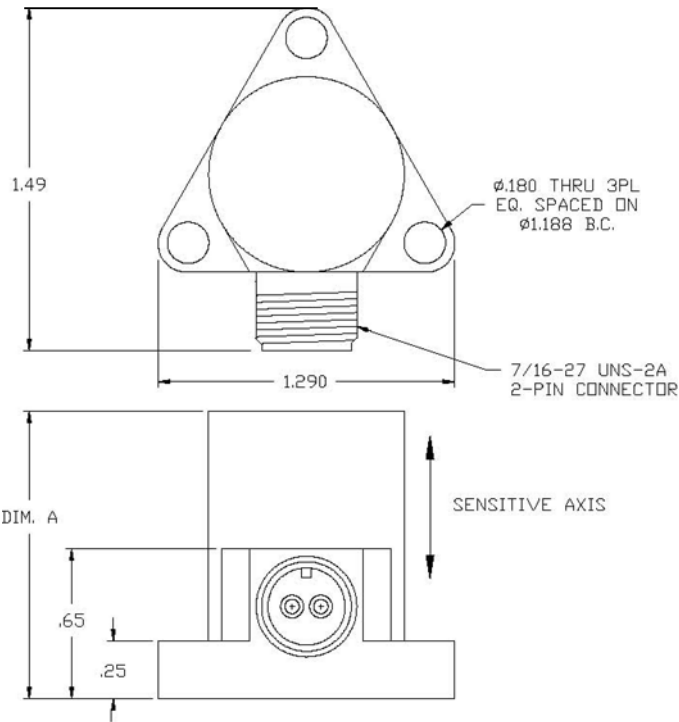
ELECTRICAL Output:

Transducer Capacitance:	Balanced Differential (2-pin floating)
Pin to Case Capacitance:	1.14nF
	23pF
Transducer Resistance:	100kΩ minimum at +482°C (+900°F)
Pin to Case Resistance:	25MΩ minimum at +482°C (+900°F)
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:	Iconel
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: -54 to +582°F (-65 to +900°F)
 Altitude: Not Affected
 Construction: Hermetically sealed by welding and ceramic-to-metal fusion.



DSH 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.