



4-128-0006

Vibration Transducer



Applications

- **Aircraft Engines**
- **Industrial Turbines**
- **Test Cells**

Features

- **Self-generated, high level, low impedance output**
- **Operates to +700°F**
- **Weighs only 2 ounces**

Velocity Sensors

Description

CEC designed the 4-128-0006 Vibration Transducer for turbine applications. You can use them in turbine hot sections where high temperatures can cause problems with other transducers. The system is simplified due to the low impedance, high level output that can drive AC meters, recorders, and control electronics without using special amplifiers. They have low sensitivity to transverse accelerations, and you can mount them in any plane.

These instruments are especially valuable where space is limited, and where heavier transducers would invalidate test results. The 4-128 is factory repairable.

CEC's 4-128 Vibration Transducers employ a seismic mass (magnet) that moves on precision bearings. A coil is attached to the case, and movement between the magnet and coil produces the output signal when the case vibrates. This air-damped system operates above its natural frequency and provides output proportional to velocity.



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Performance Specifications

Sensitivity:	105 mV/ips $\pm 5\%$ at 100 Hz at 1 in/sec, pk, into a 10,000 Ω load (+75°F $\pm 3^\circ$ F)
Dynamic Characteristics	
Frequency:	70 Hz to 1500 Hz
Amplitude:	0.10 inch peak-to-peak, maximum
Acceleration	0.5g to 50g
Frequency Response: ²	
1.0g to 50g ^B	$\pm 6\%$
0.5g to 1.0g ^A	$\pm 3\text{dB}$
Amplitude Linearity:	$\pm 5\%$
Transverse Response:	$\leq 2\%$
Temperature Range:	-65°F to +700°F (-53°C to +371°C)
Thermal Coefficient of Sensitivity:	-0.02%/°F
Damped Resonant Frequency:	15 Hz nominal ³
Excitation:	Self-generating
Insulation Resistance:	0.1 megaohm, minimum
Polarity:	Pin 2 is positive when the case is moved upward
Shock:	50 g's maximum in any direction
Maximum Static Acceleration:	3 g's in the sensitive axis produces full travel of moving mass
Weight:	2.0 oz nominal

Ordering Information

Mating connectors and cable assemblies are not furnished and must be ordered separately. In keeping with CEC's policy of continuing product improvement, specifications may be changed without notice.

Optional Information

- High temp cable and connector assembly P/N 169500-XXXX ⁴
- Standard cable with sensor mate to BNC P/N 780317-00-XXXX ⁴
- Mating Connector Kit P/N 173960

Note:

1. Top four cap screws must be safety wired together to prevent inadvertent disassembly. Safety wires are not provided.
2. This specification applies to testing performed with unidirectional sinusoidal measurands and is referenced to the measured sensitivity. Dither, which improves the acceleration threshold, is present in most applications.
3. An undamped natural spring resonance is present between 400 and 500 Hz.
4. -XXXX defines the cable length in inches; e.g.: 60-inch cable is P/N 169500-0060

Approvals



North America

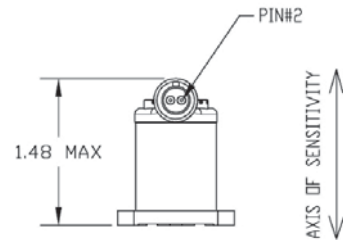
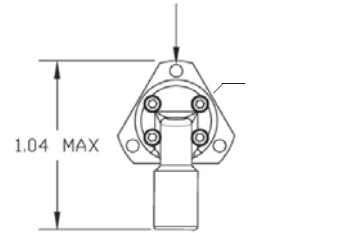
CSA C/US Class I, Division I, Groups A, B, C and D
Class I, Division 2, Groups A, B, C and D



European

ATEX EEx ia IIB or IIC T6 - T1
EEx nA II T6 - T1 X

Ø.125 THRU. 3 HOLES
EQUALLY SPACED ON 1.000 B.C.



SIDE MOUNTED
CONNECTOR

