

4-102/4-103 Vibration Transducer

Applications

- Vibration Analysis and Monitoring
- Dynamic Balancing Equipment
- Engineering Test and Research
- Production and Quality Testing
- Gas Turbine Test Cells
- Power Generation

Features

- Friction Free Design for Large Dynamic Range and Life
- Self Generated, High Level, Low Impedance Output simplifies your system.



Description

The fluid-damped moving elements in CEC's 4-102 and 4-103 Vibration Transducers are free of friction assuring long life and reliability. This frictionless design also features outstanding dynamic range. It can be used to measure displacement to 0.5 inches, with low-levels limited only by system noise.

These transducers are used to measure vibration in many applications, such as fans, high speed motors, rotating machinery, in test cells and on dynamic balancing equipment. The output signal is proportional to velocity, often considered the best measurement for machine health monitoring. The low impedance, high level output can drive AC meters and recorders without using special amplifiers, simplifying your system.

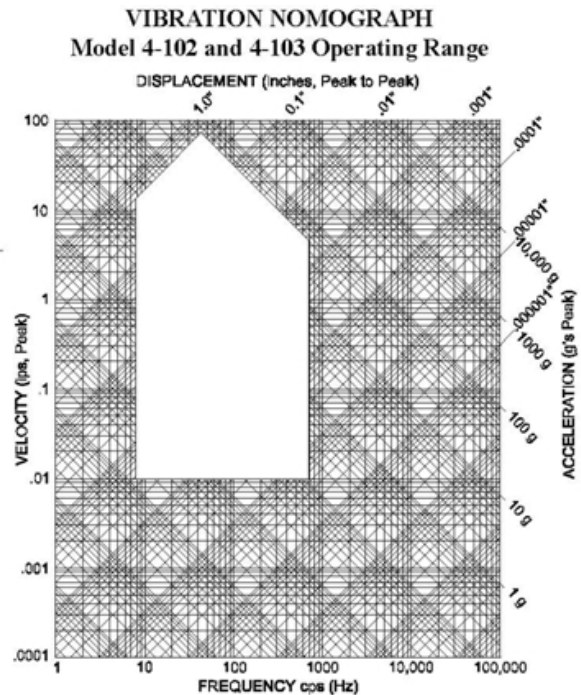
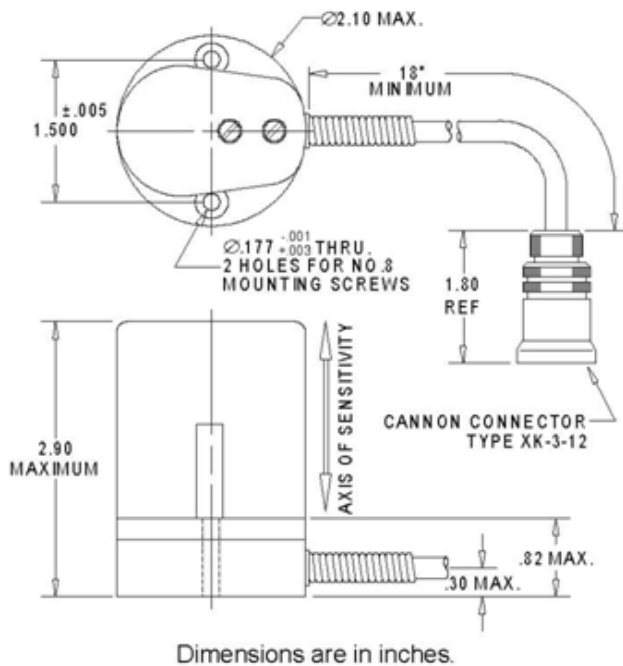
These transducers use a seismic mass magnet suspended by springs, and a coil fixed to the case. The output signal results from relative movement between the magnet and coil when the case vibrates. The system is fluid damped, and operates above its natural frequency. The special "C" springs, which support the mass, withstand high transverse accelerations and rough handling. Positive hermetic sealing prevents damage to the instrument when used in severe environments.

4-102 Specifications

Sensitivity:	110mV \pm 2mV/in/sec at 100Hz, 1 in/sec peak velocity at +77°F (25°C) into a 10,000 Ohm resistive load
Dynamic Range:	8 to 700Hz, 0.5" peak-to-peak, 50 g's peak
Frequency Response:	\pm 5% of mean sensitivity, between 8 and 700Hz at +77°F (25°C)
Linearity:	\pm 5% at 100Hz within the dynamic range
Transverse Response:	2% maximum
Temperature Range:	+32°F to 150°F (0°C to +66°C)
Thermal Coefficient of Sensitivity:	+0.06%/°F
Damped Resonant Frequency:	6Hz nominal
Excitation:	Self generating
Insulation Resistance:	50 mega Ohm minimum over temperature range at 45 vdc
Polarity:	Upward velocity of case causes Pin 2 to be positive
Shock:	100 g's peak maximum in any direction
Static Acceleration:	2.2 g's along sensitive axis produces full travel of moving mass
Electrical Connection:	18" cable with connector type XK-3-12 (CEC P/N 11628)
Transducer Mating Connector:	Type XK-3-11 (CEC P/N 11760, supplied) Pin 1 (-), Pin 2 (+) output; Pin 3 shield/case
Weight:	14 oz maximum, including cable

4-103 Specifications

Sensitivity:	110mV \pm 2mV/in/sec at 100Hz, 1 in/sec peak velocity at +225°F (107°C) into a 10,000 Ohm resistive load
Dynamic Range:	8 to 700Hz, 0.5" peak-to-peak, 50 g's peak
Frequency Response:	\pm 7% of mean sensitivity, between 8 and 700Hz at +225°F (107°C)
Linearity:	\pm 5% at 100Hz within the dynamic range
Transverse Response:	2% maximum
Temperature Range:	+150°F to 250°F (+66°C to +121°C)
Thermal Coefficient of Sensitivity:	+0.05%/°F
Damped Resonant Frequency:	6Hz nominal
Excitation:	Self generating
Insulation Resistance:	50 mega Ohm minimum over temperature range at 45 vdc
Polarity:	Upward velocity of case causes Pin 2 to be positive
Shock:	100 g's peak maximum in any direction
Static Acceleration:	2.2 g's along sensitive axis produces full travel of moving mass
Electrical Connection:	18" cable with connector type XK-3-12 (CEC P/N 11628)
Transducer Mating Connector:	Type XK-3-11 (CEC P/N 11760, supplied) Pin 1 (-), Pin 2 (+) output; Pin 3 shield/case
Weight:	14 oz maximum, including cable



Ordering Information

When ordering, specify Type 4-102-0001 or 4-103-0001. 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.