



4-106

Vibration Transducer



Applications

- **For vertical or horizontal vibration measurements at low frequencies**

Features

- **Self-generated velocity transducer**
- **Converts mechanical vibration into AC voltage signals**

Velocity Sensors

Description

Two models of the 4-106 Vibration Transducer have maintained a prominent position in the study of vibration. As a result, much of the early test instrumentation was standardized on their use. Several jet-aircraft engine manufacturers used these early instruments almost exclusively for vibrational analysis in testing.

Externally both models of the 4-106 are similar, but internal construction and damping differ since the 4-106-0001 measures vertical vibration and the 4-106-0002 requires mounting on a horizontal plane.

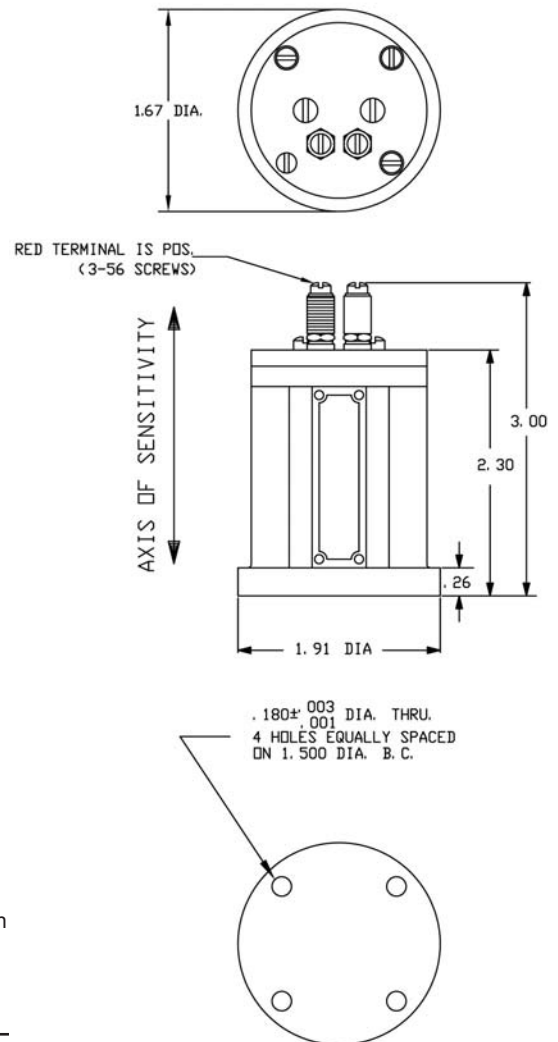
The stabilized permanent-magnet seismic mass is coupled to the case by coil springs, riding on Nitralloy bushings over a highly polished, hard-chromed, stainless steel shaft. This construction affords excellent wear resistance and minimum sliding friction, a combination insuring long life and good sensitivity at low frequencies. The case is made of cast aluminum to combine strength with minimum weight. Four mounting holes accommodate standard No. 8 fillister-head screws for attaching the transducer to vibrating body, and two screw-terminals on the top are provided for cable attachment.



4-106 Vibration Transducer

Performance Specifications

	Type 4-106-0001	Type 4-106-0002
Mounting Orientation:	Sensitive axis in vertical direction base down.	Sensitive axis in horizontal direction.
Sensitivity:	122 ±5 mV/in/sec at 100 Hz, referenced at +77°F (+25°C)	122 ±5 mV/in/sec at 100 Hz, referenced at +77°F (+25°C)
Frequency Range:	20 Hz to 1000 Hz	10 Hz to 1000 Hz
Amplitude Range:	0.2 inch pk-pk max	0.5 inch pk-pk max
Acceleration:	0.1 g to 30 g	0.5 g to 30 g
Transverse Response:	±2% maximum	±2% maximum
Linearity:	±5% at 100 Hz within the dynamic range	±5% at 100 Hz within the dynamic range
Temperature Range:	-22°F to +140°F	-20°F to +212°F
Thermal Coefficient of Sensitivity:	0.03%/°F	0.02%/°F
Static Acceleration:	2 g's in sensitive axis produces full travel of the moving mass	1 g in sensitive axis produces full travel of the moving mass
Damped Resonant Frequency:	5 Hz nominal	5 Hz nominal
Excitation:	Self-generating	Self-generating
Coil Resistance:	600 Ω ±15% at +77°F	600 Ω ±15% at +77°F
Insulation Resistance:	100 megaohm min. over temperature range at 45 VDC	100 megaohm min. over temperature range at 45VDC
Polarity:	Red terminal is positive when velocity of case is moved upward	Red terminal is positive when velocity of case is moved upward
Shock:	100 g's peak without damage	100 g's peak without damage
Weight:	6 oz. maximum	6 oz. maximum
Electrical Connection:	Two no. 3-56 terminal studs on top of case	Two no. 3-56 terminal studs on top of case



Optional Accessories

Cable assembly P/N 49658-XXXX, where -XXXX = length of cable in inches.

Ordering Information

When ordering, specify 4-106-0001 for vertical operation or 4-106-0002 for horizontal operation. In keeping with CEC's policy of continuing product improvement, specifications may be changed without notice.