



# 4-118

Velocity Sensors

## Vibration Transducer



### Applications

- Vibration Analysis and Monitoring
- Dynamic Balancing Equipment
- Engineering Test and Research
- Production and Quality Testing

### Features

- Miniature, for space limited applications
- Self-generated, high level, low impedance output
- Operates to +500°F (+260°C)
- Weighs only 2.2 ounces

### Description

CEC's miniature 4-118 Vibration Transducers are especially valuable where space is limited, and where heavier transducers would invalidate your results. These transducers can be used in high temperatures, have low sensitivity to transverse accelerations, and can be mounted in any plane. The measurement system is simplified because the low impedance, high level output can drive AC meters and recorders without using special amplifiers. These features make them suitable for many applications on jet engines, turbines, high speed motors, superchargers, internal combustion engines and in test cells.

CEC's 4-118 Vibration Transducers use a seismic mass coil, suspended by springs,

moving on bearings of gold and sapphire. A

high flux magnet is attached to the base. The output signal results from relative movement between the magnet and coil when the case is in motion. This magnetically damped system operates above its natural frequency so the output is proportional to velocity. The gold-on-sapphire bearings provide nearly friction-free movement, extending the instrument life and reliability. These instruments are available in two configurations: the 4-118-0001 with an integral cable, and the 4-118-0002 with a top connector for a detachable cable.



# 4-118 Vibration Transducer

## Performance Specifications

**Sensitivity:** 105 ±5 mV/in/sec referenced at +77°F (+25°C) at 250 Hz, 0.5 in/sec RMS in the vertical position, into a 10,000 Ω resistive load

**Dynamic Range**

**Frequency:** 50 Hz to 500 Hz  
**Amplitude:** 0.2 inch peak-to-peak, maximum  
**Acceleration:** 1 g to 50 g (vertical position)

**Frequency Response:** ±10% of reference within the dynamic range

**Linearity:** ±5% of the 10 g's output within the dynamic range

**Transverse Response:** 2% maximum

**Temperature Range:** -65°F to +300°F continuous, to +500°F intermittent (100 hours max)

**Thermal Coefficient of Sensitivity:** ±0.10%/°F

**Damped Resonant Frequency:** 30 Hz nominal

**Excitation:** Self-generating

**Coil Resistance:** 800 Ω ±15% 77°F

**Insulation Resistance:** 100 megaohm, minimum

**Maximum Static Acceleration:** 8 g's in sensitive axis produces full travel of moving mass

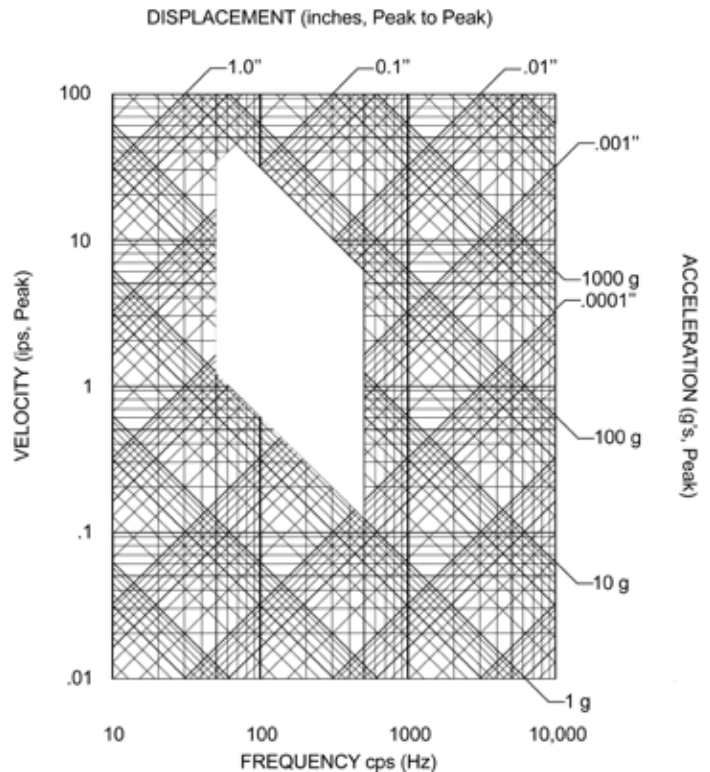
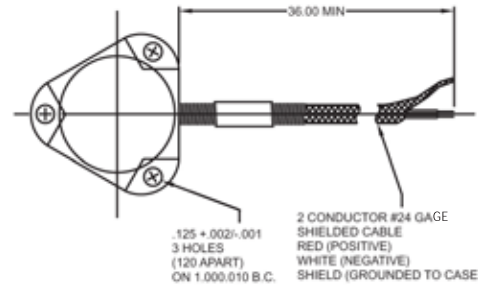
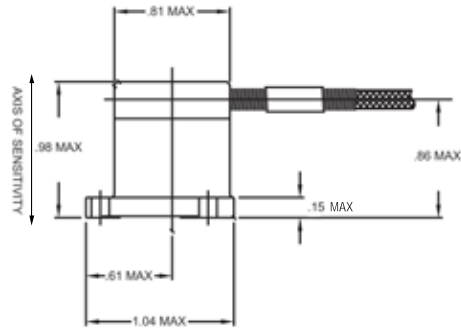
**Polarity:** Output is positive when case moves upward

**Shock:** 100 g's peak without damage

**Electrical Connection:**

	-0001	-0002
+ Output	Red	Pin 2
- Output	White	Pin 1
Case	Shield	

**Weight:** -0001: 2.2 oz. maximum  
 -0002: 1.5 oz. maximum



## Ordering Information

When ordering, specify 4-118-0001 or 4-118-0002. 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 Accessories

4-118-0002: 3-foot cable and mating connector, Part No. 82406-0036