



# 4-125

## Vibration Transducer



### Applications

- Aircraft Engines
- Industrial Turbines
- Test Cells

### Features

- Self-generated, high level, low impedance output
- Operates to +700°F (+371°C)
- Field Repairable

Velocity Sensors

### Description

CEC designed the 4-125 Vibration Transducer for turbine applications. You can use them in turbine hot sections, such as the turbine case, where high temperatures can cause problems with other transducers. The low impedance, high level output requires no special amplifiers, simplifying your measurement system. They have low sensitivity to transverse accelerations, and you can mount them in any plane.

CEC's 4-125 Vibration Transducers use a seismic magnet that moves on gold bearings. A coil is attached to the case, and movement

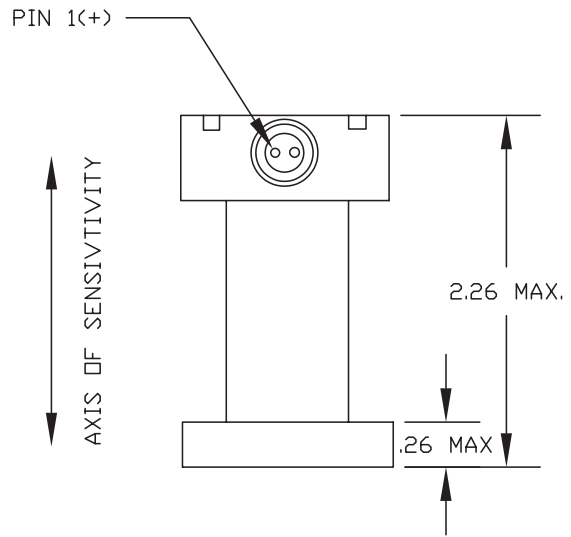
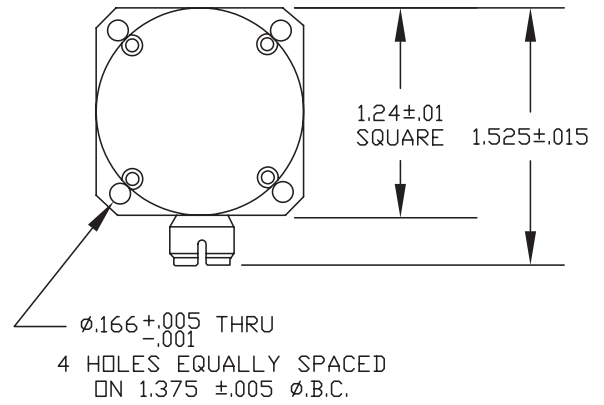
between the magnet and coil produces the output signal when the case vibrates. This air-damped system operates above its natural frequency so the output is proportional to velocity. Rugged construction and design simplicity insure high reliability and long service life.



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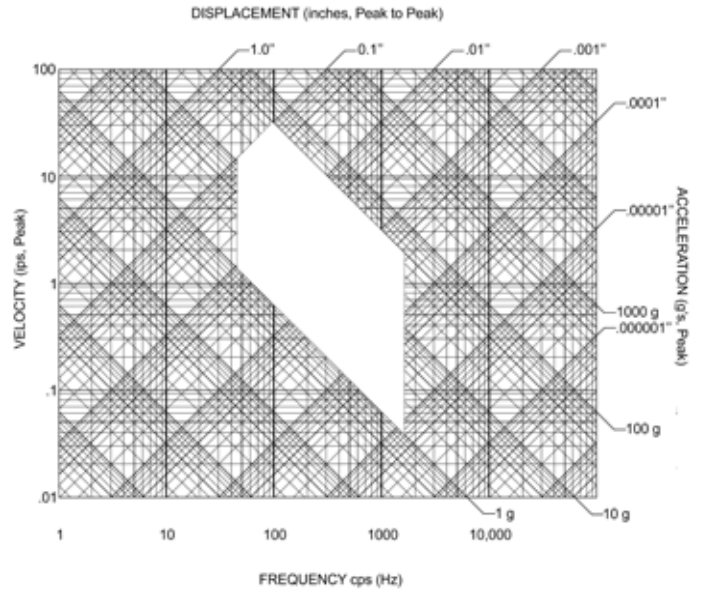
## Performance Specifications

|  |   |
|--|---|
| <b>Sensitivity:</b>                        | 105 ±3 mV/in/sec at 100Hz, 75°F (+24°C) into a 10,000Ω resistive load impedance |
| <b>Dynamic Range</b>                       |   |
| <b>Frequency:</b>                          | 45 Hz to 1500 Hz  |
| <b>Amplitude:</b>                          | 0.1 inch peak-to-peak, maximum  |
| <b>Acceleration:</b>                       | 1 g to 50 g   |
| <b>Frequency Response:</b>                 | ±6% of the mean sensitivity   |
| <b>Linearity:</b>                          | ±1% of output at 20 g's within dynamic range (vertical at 100 Hz)               |
| <b>Transverse Response:</b>                | 2% of maximum   |
| <b>Temperature Range:</b>                  | -65°F to +700°F (-54°C to +371°C)   |
| <b>Sensitivity Shift with Position:</b>    | ±10% maximum  |
| <b>Thermal Coefficient of Sensitivity:</b> | -0.02%/°F   |
| <b>Damped Resonant Frequency:</b>          | 15 Hz nominal   |
| <b>Excitation:</b>                         | Self-generating   |
| <b>Coil Resistance:</b>                    | 465Ω ±24% max. at 75°F  |
| <b>Insulation Resistance:</b>              | 0.1 megaohm, minimum  |
| <b>Polarity:</b>                           | Pin 1 is positive when the case is moved upward                                 |
| <b>Shock:</b>                              | 50 g's maximum in any direction   |
| <b>Maximum Static Acceleration:</b>        | 2.2 g's in the sensitive axis produces full travel of moving mass               |
| <b>Weight:</b>                             | 8 oz. nominal   |



## Ordering Information

When ordering, specify type 4-125-0001. 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.



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