

## 4-118 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

- Miniature for space limiting applications
- Self Generated, High Level, Low Impedance Output simplifies your system.
- Weighs on 2.2 ounces
- Operates to 500°F



### Description

CEC's miniature 4-118 Vibration Transducers are especially valuable where space is limited, and where heavier transducers would invalidate your test results. These transducers can be used in high temperatures, they have low sensitivity to transverse accelerations and can be mounted in any plane. The measurement system is simplified because their 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, producing an output proportional to velocity. The gold-on-sapphire bearings provide nearly friction-free movement, extending 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 Specifications

Sensitivity:	105mV $\pm$ 2mV/in/sec at 250Hz, 0.5 RMS in/sec in the vertical position at +77°F (25°C) into a 10,000 Ohm resistive load
Dynamic Range:	
Frequency:	50 to 500Hz
Amplitude:	0.2" peak-to-peak, maximum
Acceleration	1g to 50 g
Frequency Response:	$\pm$ 10% of reference within the dynamic range
Linearity:	$\pm$ 5% of the 10 g's output within the dynamic range
Transverse Response:	2% maximum
Temperature Range:	-65°F to 300°F to 500°F intermittent (100 hours maximum)
Thermal Coefficient of Sensitivity:	+0.1%/°F
Damped Resonant Frequency:	30Hz nominal
Excitation:	Self generating
Coil Resistance:	800 Ohms $\pm$ 15% at 77°F
Insulation Resistance:	100 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

Maximum Static Acceleration: 8 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: -0001 = 2.2 oz maximum  
 -0002 = 1.5 oz maximum

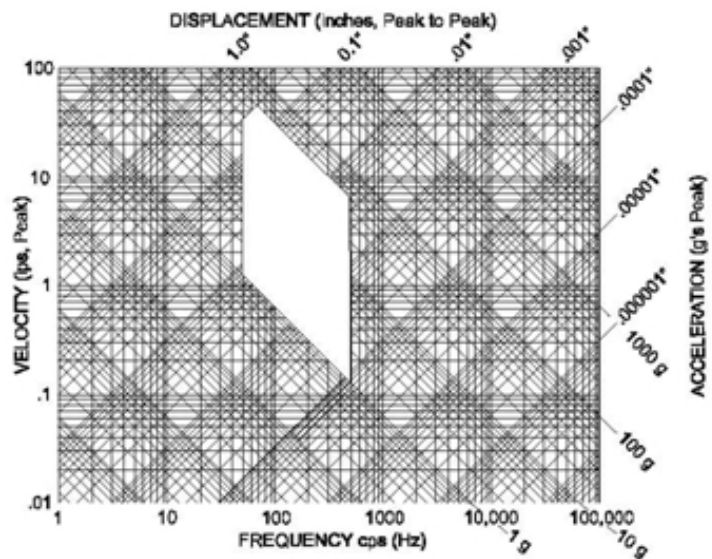
Electrical Connection: -0001 = Integral 3 foot shielded cable with tinned leads  
 -0002 = 2-pin connector on top of case

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

**Optional Accessories:**

-0002: 3 foot cable assembly with mating connector, part number 82406-0036

**VIBRATION NOMOGRAPH  
 Model 4-118 Operating Range**



**Ordering Information**

When ordering, specify Type 4-118-0001 or 4-118-0002. Cable assemblies (4-118-0002) are not furnished and must be ordered separately. In keeping with CEC's policy of continuing product improvement, specifications may be changed without notice.