

Stress Wave Transducer



Description

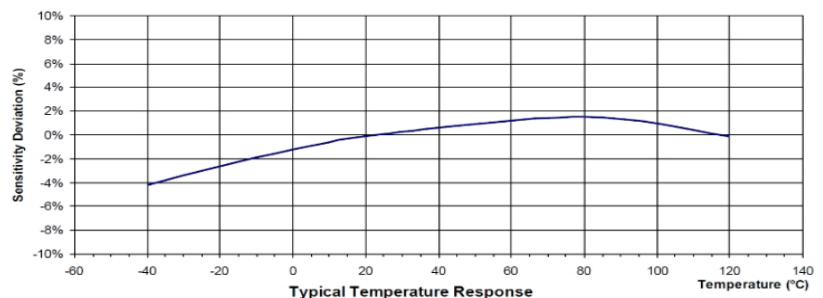
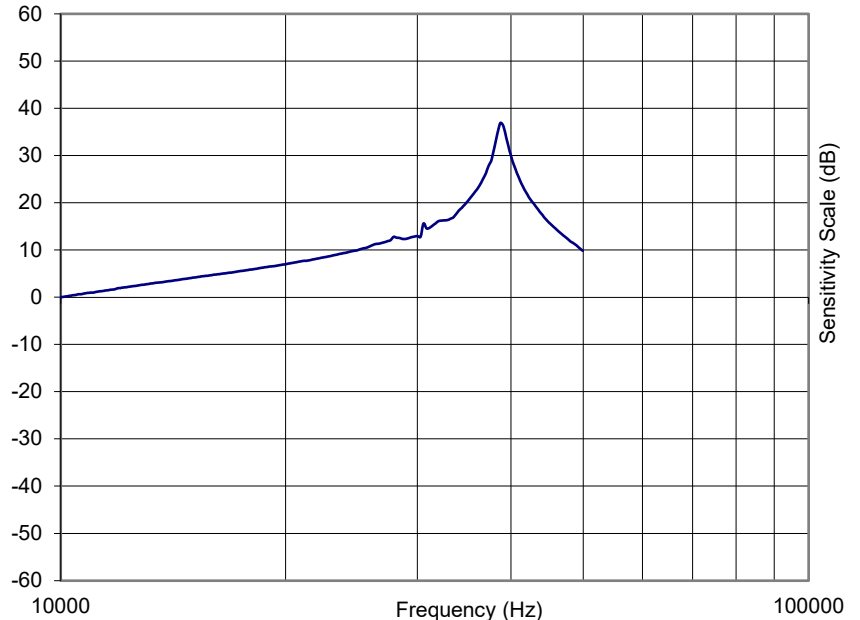
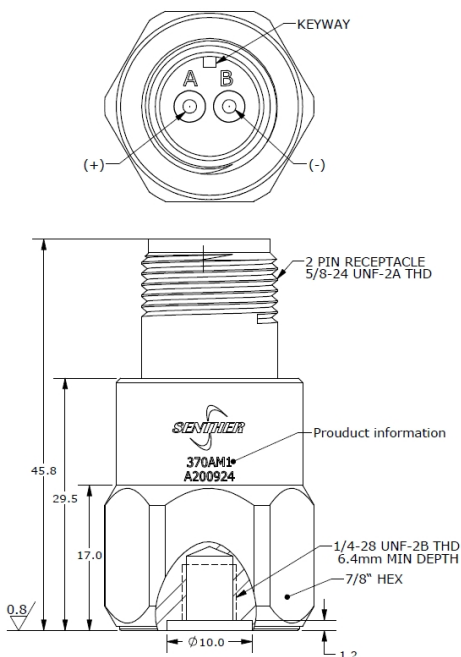
Model 370AM1 is an industrial IEPE accelerometer for measuring general vibration and high frequency stress wave. 370AM1 features an annular shear ceramic crystal which exhibits excellent output stability over time. The accelerometer incorporates an internal circuit with in a two-wire IEPE system which transmits its low impedance voltage output through the same cable that supplies the constant current power. Signal ground is internal shielded and isolated from the outer case of the unit. Polarity inversion protection for the amplify circuit is inherent in the circuit design. The welded stainless-steel construction provides a hermetic housing. The standard MIL-C-5015 glass insulated connector provides long-term stability over the operating temperature range. 370AM1 has 1/4-28 threaded holes for stud mounting on the test object. 370AM1 support general vibration monitoring, while maintain the high frequency resonance(~38KHz): picks up the machine stress wave signal generated by premature wear and scale it by sensor resonance, which is ideal for gearbox and bearing detection. Senter's model 16-L is a mating cable for the sensor.

Features

- General frequency response
- Rugged design
- High sensitivity
- Hermetic seal
- Case isolated
- ESD protection
- Reverse wiring protection
- EMI / RFI shielded
- High Q diagnostic

Application

- Machine monitoring
- System acoustics
- Defect analysis
- Rotating machine
- Abrasion testing



Specification

Typical at +24°C (+75°F), 24Vdc, 4 mA and 38kHz, unless otherwise stated.

PARAMETERS	VALUE	UNITS
SENSITIVITY $\pm 10\%$	10 (@ 100 Hz)	mV/g
FREQUENCY RESPONSE $\pm 3\text{dB}$	0.3-13000	Hz
RESONANT FREQUENCY $\triangle 2$	38 (± 2.5)	kHz
Q $\triangle 1$	>20	dB
SHOCK LIMIT	5000	g

PARAMETERS	VALUE	UNITS
BIAS VOLTAGE	11 to 13	Vdc
OUTPUT IMPEDANCE	50	Ω
RESIDUAL NOISE (BROADBAND 2.5 Hz to 50 kHz)	80	$\mu\text{V RMS}$
INSULATION RESISTANCE (@100Vdc)	>100	M Ω
SUPPLY VOLTAGE	22 to 30	Vdc
SUPPLY CURRENT	2 to 10	mA
WARM-UP TIME	1	sec
OPERATING TEMPERATURE	-50 to +120	$^{\circ}\text{C}$
HUMIDITY	Hermetically sealed	
WEIGHT	76.3	Grams
MATERIAL	Stainless steel	
MOUNTING TORQUE $\triangle 3$	18(2)	lb-in (N-m)

$\triangle Q$ is defined as the resonance decay ± 5 kHz of the resonant frequency;

\triangle Damping is defined, in the time domain, as the number of cycles required to decay from peak value to $\frac{1}{2}$ amplitude of the peak value.

\triangle Apply grease prior to mounting sensor.

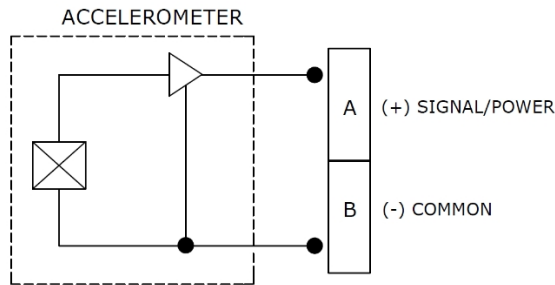
Frequency response limits spectral and noise values are typical

Accessories

Calibration certificate included.

Part Number	Description	Availability
PM0011	Mounting stud $\frac{1}{4}$ -28 to $\frac{1}{4}$ -28 thread	One stud Included
PM0008	Mounting stud $\frac{1}{4}$ -28 to M6 thread	
PM0007	Mounting stud $\frac{1}{4}$ -28 to M10 thread	Optional
16A-10	10 meter mating cable with MIL-C-5015 connector	Optional
16A-10-B	10 meter mating cable with MIL-C-5015 to BNC connector	Optional
IN-03	3 channels IEPE signal conditioner	Optional
IN-91	Portable vibration analyzer	Optional
IN-3062	8 channels data acquisition system	Optional

Measurement configuration



Ordering information

370	AM1	-	A
Model	Output signal	-	Mounting stud
370	A=IEPE output M1=Special FR	-	A= 1/4-28 to 1/4-28 B= 1/4-28 to M6 C*=Special



Senter reserves the right to make changes to any products or technology herein to improve reliability, function or design. Senter does not assume any liability arising out of the application or use of any product or circuit described herein; neither does it convey any license under its patent rights nor the rights of others.