

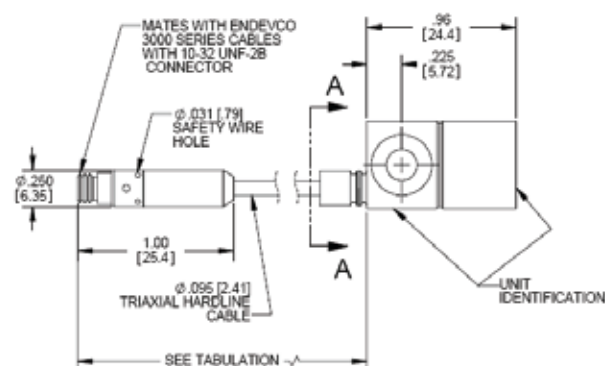
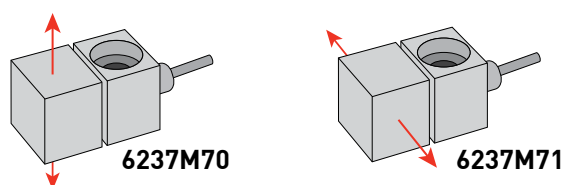
Model 6237 M70/M71 Piezoelectric accelerometer

Features

- +1200°F (+650°C) operation
- Integral hardline cable
- Single bolt mount
- Ground isolated
- Gas turbine testing



Sensitive axis



TABULATION	
CABLE LENGTH	TOLERANCE
UP TO 72 [1829]	±2.00 [51]
73 [1854] TO 144 [3658]	±4.00 [102]
OVER 144 [3658]	±4.00 [102] PER 144 [3658] OR PORTION THEREOF

STANDARD TOLERANCE
INCHES [MILLIMETERS]
XX = ±.02 [X = ±.5]
XXX = ±.010 [XX = ±.25]

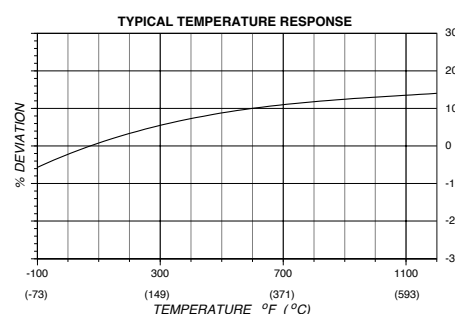
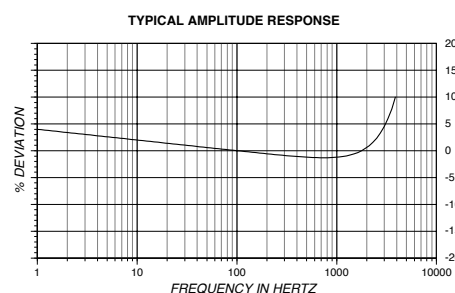
90%

Description

The Endevco® model 6237M70 and 6237M71 piezoelectric accelerometers are designed specifically for use in extremely high temperature environments such as aircraft and ground-based gas turbines. These accelerometers are designed for continuous operation at +1200°F (+650°C) with long Mean Time Between Failure (MTBF). The small size and light weight of these accelerometers permit installation in cramped locations with minimal structural support. The accelerometer is a self-generating device that requires no external power source for operation.

Models 6237M70/M71 incorporate Endevco's Piezite® type P-15 crystal in a shear design. The 6237M70 and 6237M71 differ in their internal design and in the direction of the sensitive axis. The 6237M70 has its sensitive axis located in line with the mounting screw, while the 6237M71 is oriented perpendicular, or transverse, to the mounting screw. The sensing elements and integral shield are isolated from the case. These accelerometers feature an integral hardline cable with a standard length of 120 inches (3.05 meters). Other cable lengths are also available on special order.

Endevco signal conditioner model 2721B is recommended for use with this high impedance accelerometer.



Model 6237 M70/M71 Piezoelectric accelerometer

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Specifications

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C), 100 Hz and 10 Vdc unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics

	Units	
Charge sensitivity, $\pm 5\%$	pC/g (pC / m/s ²)	10 [1.02]
Frequency response [1]		See typical amplitude response
Resonance frequency	kHz	11
Amplitude response [2]		
$\pm 5\%$	Hz	1 to 3000
± 1 dB	Hz	1 to 5000
Temperature response [3]		See typical curve
+600°F (+315°C) max/min	%	+15 / +2
+1000°F (+537°C) max/min	%	+22 / +5
+1200°F (+650°C) max/min	%	+22 / +5
Transverse sensitivity	%	≤ 5
Amplitude linearity		
per 500 g, 0 to 2000 g	%	1

Electrical characteristics

Output polarity		Acceleration directed into base of unit produces positive output at center socket of receptacle
Resistance [4]		
at +1200°F (+650°C)	k Ω	≥ 10
Isolation		
at +1200°F (+650°C)	k Ω	≥ 500
Hardline cable resistivity		
two places at +1200°F (+650°C)	k Ω -ft (k Ω -m)	100 [30.5]
Capacitance		
transducer (excluding cable)	pF	60
hardline cable capacitance	pF/ft (pF/m)	100 [328]
(center conductor to inner shield)		
Grounding		Signal return isolated from case

Environmental characteristics

Temperature range		
transducer/hardline cable [5]		-67°F to +1200°F (-55°C to +650°C)
Connector		-67°F to +500°F (-55°C to +260°C)
Humidity		
transducer/cable		Open to environment via vent hole in splash protected area
connector		Epoxy sealed, non-hermetic
Sinusoidal vibration limit	g pk (m/s ² pk)	500 [4900]
Shock limit	g pk (m/s ² pk)	2000 [19 600]

Physical characteristics

Dimensions		See outline drawing
Weight (excluding cable)	oz (gm)	1.1 [30]
Case material		Inconel
Hardline cable [6]		Triaxial, 0.095 inch [2.4 min] diameter, Inconel jacketed, mineral oxide insulated. The model number suffix "-XXX" indicates cable length in inches.
Connector		Coaxial receptacle with 10-32 UNF threads designed to mate with Endevco 3000 series cable assembly or equivalent. Receptacle must be handled with care
Mounting torque	lbf-in (Nm)	18 [2]

Calibration data supplied

Charge sensitivity	pC/g
Transverse sensitivity	%
Capacitance	pF

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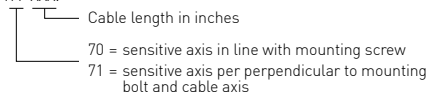
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Accessories

Product	Description	6237M70/M71
EH471	Mounting screw, 10-32 x 0.75 in, 12 pt	Included
3090C-XXX	Cable assembly, "-XXX" indicates cable length in inches	Optional
2721B	Charge amplifier	Optional

Notes:

- Frequency response is controlled by the resonance characteristics of the transducer. Estimated calibration errors are $\pm 1.5\%$ to 900 Hz and 2.5% from 900 Hz to 5000 Hz.
- Low-end response of the transducer is a function of its associated electronics.
- Spurious high frequency discharge may be exhibited by this device for several minutes after exposure to temperature transients of greater than $+100^{\circ}\text{F}$ ($+38^{\circ}\text{C}$) per minute.
- The electrical resistance of piezoelectric materials decreases with an increase in temperature and can approach 10 000 Ω at $+1200^{\circ}\text{F}$ ($+650^{\circ}\text{C}$).
- For cable lengths of less than 12 inches (0.30 m), the maximum operating temperature is $+500^{\circ}\text{F}$ ($+260^{\circ}\text{C}$). The temperature charge deviation at $+500^{\circ}\text{F}$ ($+260^{\circ}\text{C}$) is typically $+8\%$.
- Specify the model number as 6237MY-XXX.



6237M70-120 and 6237M71-120 are the standard cable length products.

- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turnaround time for these services as well as for quotations on our standard products calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn around time for these services as well as for quotations on our standard products.

Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.

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