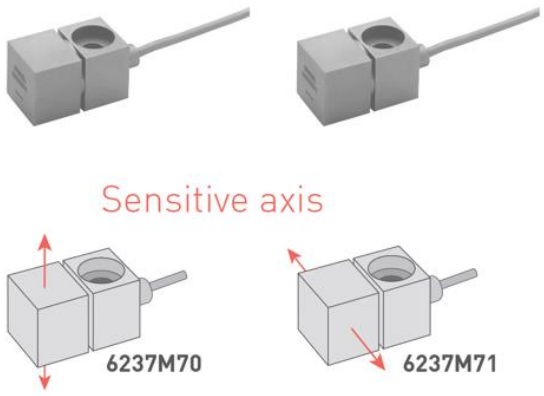
DATA SHEET

Extreme High Temperature Piezoelectric Accelerometer (EHTPE)

Model 6237M70/6237M71



01 Description

The Meggitt 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.

Frequency bandwidth extended from 3 kHz to 6 kHz at level ±5% and from 6 kHz to 10 kHz at level ±3dB when 6237M70/6237M71 are combined with patented remote charge converter (RCC) 1772-2.

Models 6237M70/M71 incorporate Meggitt's 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 sensitiveaxis 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.

Model number definition:
6237MXX-ZZZ
6237MXX= basic model number
ZZZ = cable length in inches
6237MXX-ZZZ-US = Made in the USA

02 Key features and benefits

- +1200°F (+650°C) operation
- Integral hardline cable
- Single bolt mount
- Ground Isolated
- RoHS compliant
- Increased bandwidth with patented remote change convert

03 Applications

- Gas Turbine Testing
- Test cell

04 Contact

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EXTREME HIGH TEMPERATURE PE ACCELEROMETER, Model 6237M70/6237M71

05 Specifications

The following performance specifications are typical values, referenced at +75°F (+24°C) unless otherwise noted.

Dynamic characteristics	**Units**	**6237 M70/M71**	
Charge sensitivity, ±5%	pC/g (pC / m/s²)	10 (1.02)	
Frequency response [1]		See typical amplitude response	
Resonance frequency	kHz	11	
Amplitude response [2]			with 1772-2
±5%	Hz	1 to 3000	13 to 6000
±1 dB	Hz	1 to 5000	8 to 8000
±3 dB	Hz	1 to 6000	3.5 to 10000
Temperature response [3]			
+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	
Resistance at +1200˚F (+650˚C) [4]	kΩ	≥ 10	
Isolation at +1200˚F (+650˚C)	kΩ	≥ 500	
Hardline cable resistivity			
two places at +1200˚F (+650˚C)	kΩ-ft (kΩ-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/s² pk)	500 (4900)	
Shock limit	g pk (m/s² pk)	2000 (19 600)	
Physical characteristics			
Dimensions		See outline detail	
Weight (excluding cable)	oz (gm)	1.1 (30)	
Case material		Inconel	
Hardline cable [6]		Triaxial, 0.095 inch (2.4 mm) diameter	
Connector [7]		Coaxial receptacle	
Mounting torque	lbf-in (Nm)	18 (2)	
Calibrations			
Charge sensitivity	pC/g		
Frequency Response	%	50 Hz to 2000 Hz	
Transverse sensitivity	%		
Capacitance (@1000Hz)	pF		

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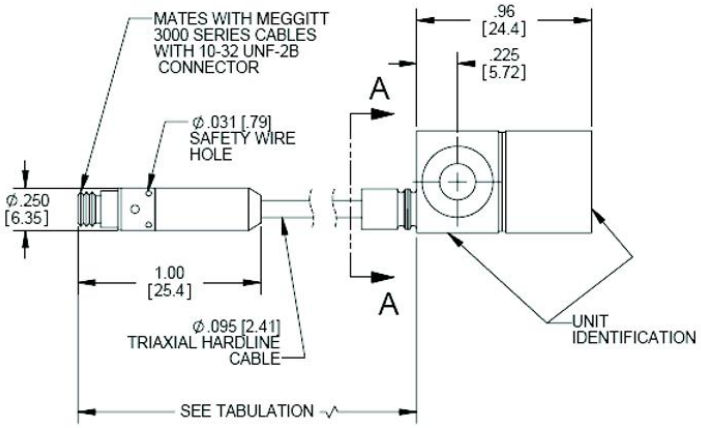
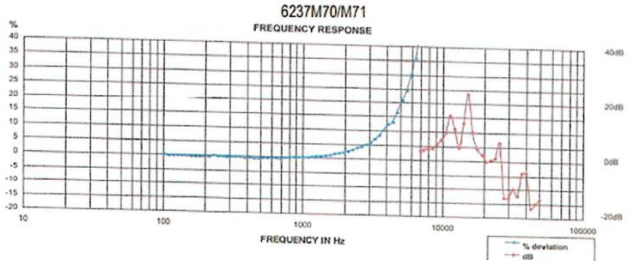
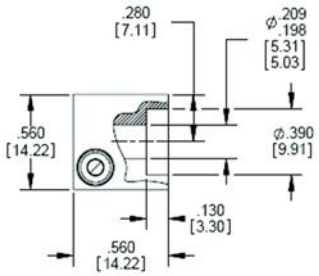
06 Outline details

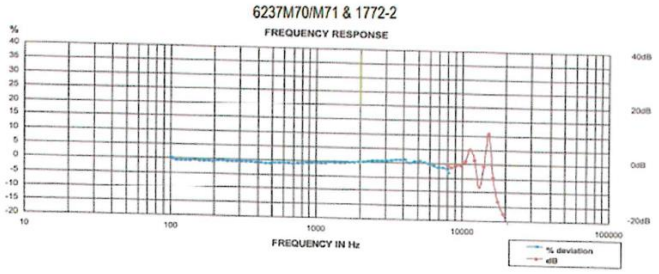






SECTION A-A

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



Accessories

SUPPLIED: EH471 MOUNTING SCREW, 10-32 X .75 in, 12 PT
OPTIONAL: Model 1001-ZZZ cable assembly, for under +550˚F (288°C)
OPTIONAL: Model 1772-2 Remote charge converter
OPTIONAL: Thermal Isolator Pad 47091, EH875 Mounting Screw [reduces temp 200˚F (93°C) for approximately 30 minutes)

Notes:

1. Frequency response is controlled by the resonance characteristics of the transducer. Estimated calibration errors are ±1.5% to 900 Hz and 2.5% from 900 Hz to 5000 Hz.
2. Low-end response of the transducer is a function of its associated electronics.
3. Spurious high frequency discharge may be exhibited by this device for several minutes after exposure to temperature transients of greater than+100°F (+38°C) per minute.
4. The electrical resistance of piezoelectric materials decreases with an increase in temperature and can approach 10 000Ω at +1200°F (+650°C).
5. For cable lengths of less than 12 inches (0.30 m), the maximum operating temperature is +500°F (+260°C). The temperature charge deviation at+500°F (+260°C) is typically +8%.
6. Hardline triaxial cable is Inconel jacketed, mineral oxide insulated.
7. Coaxial connector with 10-32 threads is designed to mate with Meggitt 1001 cable assemblies. Receptacle must be handled with care.
8. Parts made in the USA are marked with -US after the model number

APPLIES TO CALIFORNIA FACILITY

Note: Due to continous process improvement, specifications are subject to change without notice. TCO Review #324