Enabling the Extraordinary
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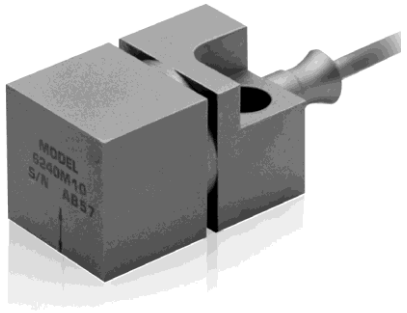
MEGGITT

DATA SHEET

Extreme+ High Temperature Piezoelectric Accelerometer (E+HTPE)



Model 6240M10

01 Description

The Meggitt model 6240M10 piezoelectric accelerometer is uniquely designed for continuous operation at +1200°F (+650°C) and intermittent operation up to +1400°F (+760°C). The 6240M10 is ideally suited for applications on aircraft gas-turbine engines as part of vibration monitoring systems. The 6240M10's small size allows for installation in cramped quarters. It also features a relatively high sensitivity for low-level vibration analysis. The accelerometer is a self-generating device that requires no external power source for operation.

Electrical connection is made through an integral hardline triaxial cable terminated with a 10-32 receptacle. Cable assemblies 3075M6 and 1001-ZZZ or equivalent are designed to mate with this receptacle. The sensing elements and integral shield are isolated fromthe case. The standard cable length is 120 inches, however, other cable lengths are also available on special order.

Model number definition:
6240M10 = basic model number
6240M10 -ZZZ
ZZZ = cable length in inches

02 Key features and benefits

- +1200˚F (+650˚C) operation, +1400˚F (+760˚C) intermittent
- Hermetically sealed
- No pyroelectric or thermal velocity spiking
- Single bolt mount
- Ground isolated

03 Applications

- Aircraft and gas turbine engine monitoring
- Test cell vibration measurements
- Nuclear applications

04 Contact

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EXTREME+HIGH TEMPERATURE PE ACCELEROMETER, Model 6240M10

05 Specifications

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

Dynamic characteristics	Units	6240M10
Charge sensitivity, ±10%	pC/g	5.0
Resonance frequency	kHz	10
Amplitude response [1][2]		
±5%	Hz	30 to 2000
±1 dB	Hz	1 to 3000
Charge temperature response		±10% to 1200°F (+650°C)
Transverse sensitivity	%	≤ 5
Amplitude linearity	%	1
per 200 g, 0 to 1000 g		
Electrical characteristics		
Output polarity		Acceleration directed into base of unit produces positive output
Resistance (between pins)	MΩ	≥ 100
at +1200°F (+650°C) [3]	kΩ	≥ 10
Isolation (between pins)	MΩ	≥ 100
at +1200°F (+650°C)	kΩ	≥ 100
Capacitance	pF	180
accelerometer without hardline cable		
Hardline cable capacitance	pF/ft (pF/m)	110 (361)
(conductor to inner shield)		
Grounding		Signal return isolated from case
Environmental characteristics		
Temperature [4]		
Continuous		-65˚F to +1200˚F (-54˚C to +650˚C)
Intermittent [5]		-65˚F to +1400˚F (-54˚C to +760˚C)
Connector		-65˚F to +500˚F (-54˚C to +260˚C)
Humidity		
Transducer/cable		Hermetically sealed
Sinusoidal vibration limit	g pk	250
Shock limit	g pk	1000
Physical characteristics		
Dimensions		See outline detail
Weight		
Sensor without integral cable	gm (oz)	95 (3.3)
Integral cable	gm/ft (oz/ft)	14 (0.49)
Case material		Inconel
Hardline cable		Triaxial, 0.125 inch-diameter
Connector		Coaxial receptacle with 10-32 UNF threads
Mounting		Single recessed hole for 1/4 inch screw.
Mounting torque	lbf-in (Nm)	24 (2.7)
Calibrations Supplied		
Charge sensitivity (100 Hz)	pC/g	
Transverse sensitivity	%	
Capacitance	pF	

Accessories:
SUPPLIED: EH802 MOUNTING SCREW, ¼-28 UNF X 1 inch hex cap screw
OPTIONAL: Model 1001-ZZZ Cable assembly, +550˚F (288°C)
OPTIONAL: Model 3075M6-ZZZ Cable assembly +900°F (482°C), Hardline/Model 3076-ZZZ Cable Assembly +1000°F (538°C), Flexible

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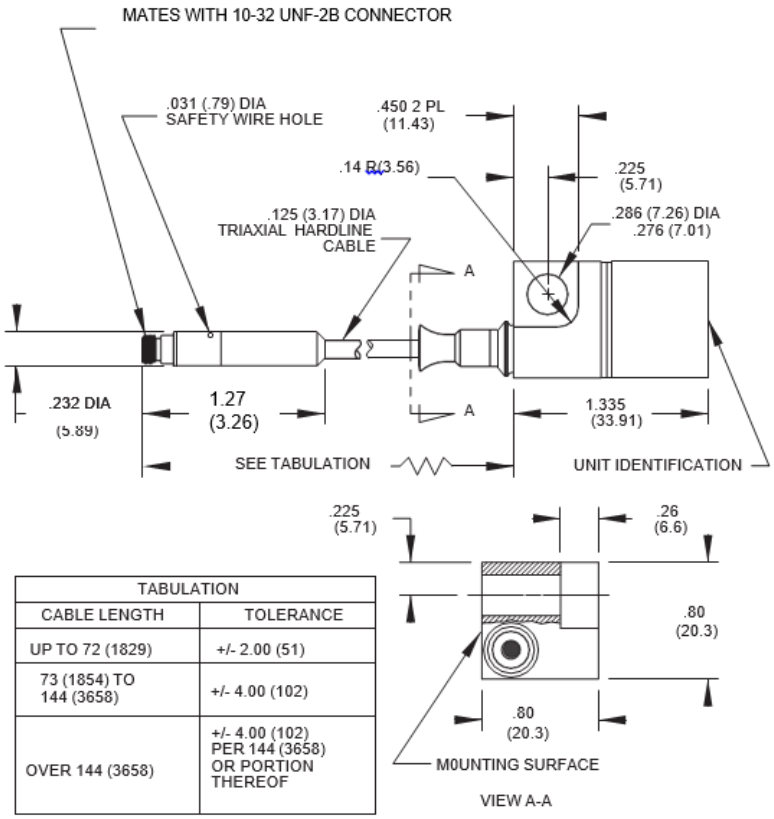
06 Outline details



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

Note:

1. Frequency response is controlled by the resonance characteristics of the transducer. Estimated calibration errors are ±1.5% to 900 Hz & 2.5% from 900 Hz to 5 KHz.
2. Low-end response of the transducer is a function of its associated electronics.
3. The electrical resistance of piezoelectric materials decreases with an increase in temperature but remains above 10 000 Ω at +1200°F (+650°C).
4. For cable lengths of less than 12 inches (0.30 m), the maximum operating temperature is +500°F (+260°C).
5. Intermittent exposure is defined as 5 minutes over a 30 minute period.

APPLIES TO CALIFORNIA FACILITY