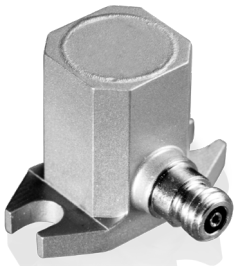
Piezoelectric accelerometer

Model 2248 / 2248M1



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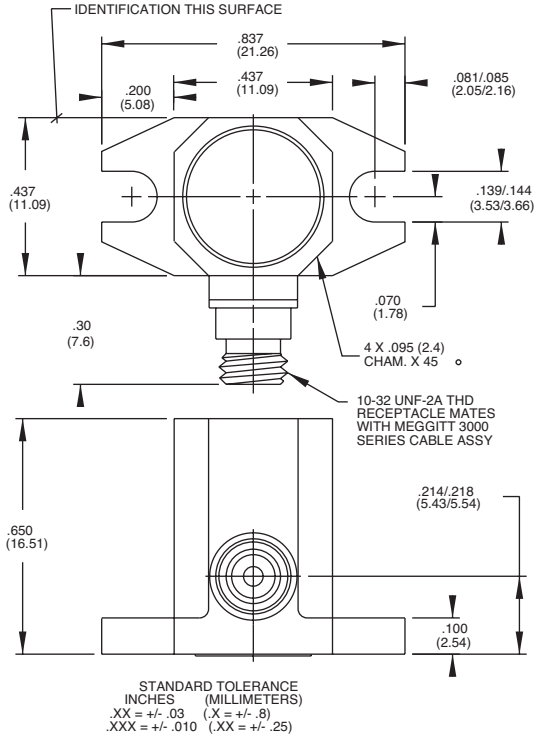
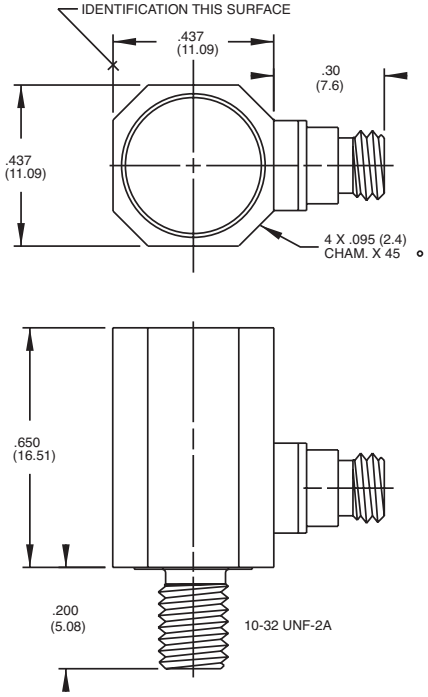
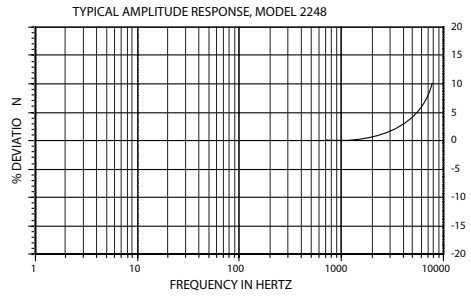
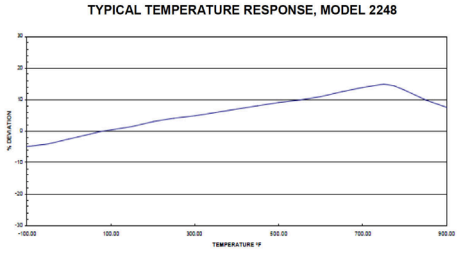
Model 2248M1









Key features

- Small size
- Light weight
- High temperature operation (+482°C)
- Gas turbine, nuclear applications

Description

The Meggitt model 2248 is a small piezoelectric accelerometer for shock and vibration measurement of structures subjected to very high temperatures. It features a side 10-32 receptacle, with either flange (2248) or integral stud-mount (2248M1). The accelerometer is a self-generating device that requires no external power source for operation.

The 2248 features Meggitt's crystal material in compression construction. The design provides mechanical isolation of base strain from the mounting surface. Signal ground is connected to case.

Signal conditioner models 2721B and 2771C, or equivalent are recommended for use with this accelerometer.

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Specifications

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

Dynamic characteristics		**Units**
Charge sensitivity		
Typical values	pC/g	3.0
Minimum	pC/g	2.4
Frequency response		See typical amplitude response
±1 dB	Hz	1 to 8K
±5%	Hz	1 to 5K
Mounted resonance frequency (typical)	kHz	25
Minimum	kHz	22
Temperature response	%	±18 max over temperature range
Transverse sensitivity	%	≤ 5
Amplitude linearity	%	1
Per 1000g, 0 to 3000 g		

Electrical characteristics		
Resistance at room temperature (typical)	GΩ	1
At +900°F (+482°C) [1]	KΩ	≥ 100
Capacitance	pF	250
Grounding		Signal return connected to case

Environmental characteristics		
Temperature range		-65°F to +900°F (-54°C to +482°C)
Humidity		Hermetically sealed
Sinusoidal vibration limit	g pk	500
Shock limit	g pk	3000
Base strain sensitivity	equiv. g pk/µstrain	0.005
Transient temperature [2]	g pk/°F	0.10 equiv

Physical characteristics		
Dimensions		See outline drawing
Weight	oz (gm)	0.46 (13)
Case material		Inconel
Connector		10-32 coaxial connector
Mounting torque	lbf-in (Nm)	18 to 20 (2 to 2.3)
Mounting		
2248		(2) 6-32 bolts
2248M1		10-32 stud

Calibration		
Supplied:		
Frequency response each axis		20 Hz to 8000 Hz 8000 Hz through resonance
Sensitivity	pC/g	
Maximum transverse sensitivity	%	
Mounted resonance frequency	kHz	
Capacitance	pF	

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Accessories

Product	Description	2248	2248M1
Meggitt EH535	Mounting screws, 6-32 (2x)	Included	N/A
Meggitt 3075M6-120	Cable assembly, for > +482°C, 10 ft	Included	Included
3090C-120	Cable assembly, for > +260°C, 10 ft	Optional	Optional
2721B	Signal conditioner	Optional	Optional
2771C	In-line charge convertor	Optional	Optional

Notes

1. Because of low resistance at high temperatures, the signal conditioner must be capable of operating with the specified source resistance. Contact factory if you have any questions.
2. With 1 Hz high pass filter.

APPLIES TO CALIFORNIA FACILITY

Continued product improvement necessitates that Meggitt reserve the right to modify these specifications without notice. Meggitt 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. 111619