

Piezoelectric Accelerometer

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ENDEVCO
MODEL
2248
2248M1

Model 2248, 2248M1

- Small Size
- Light Weight
- High Temperature Operation (+482°C)
- Radiation Hardened for Nuclear Environments
- Gas Turbine, Nuclear Applications

DESCRIPTION

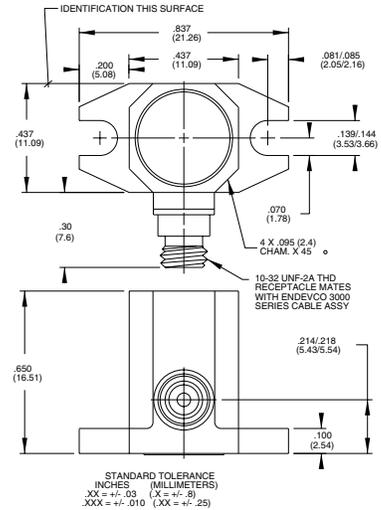
The ENDEVCO® Model 2248 is a small piezoelectric accelerometer for shock and vibration measurement of structures subjected to very high temperatures. This device is capable of operation in nuclear environments during the presence of gamma and neutron radiation. It features a side 10-32 receptacle, with 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 ENDEVCO's PIEZITE® Type P-14 sensing element in our patented ISOBASE® construction, to provide for flat charge temperature response over the range of -67°F to +900°F (-55°C to +482°C). ISOBASE construction provides mechanical isolation of base strain from the mounting surface. The unit is constructed using Inconel, and provides for hermeticity through welding and glass-to-metal fusion at the connector. Signal ground is connected to case.

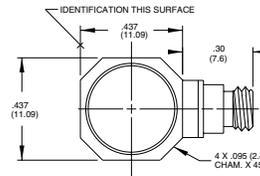
ENDEVCO Signal Conditioner Model 2721B is recommended for use with this accelerometer. The 2771A Remote Charge Converter is also compatible for applications using this high impedance accelerometer.



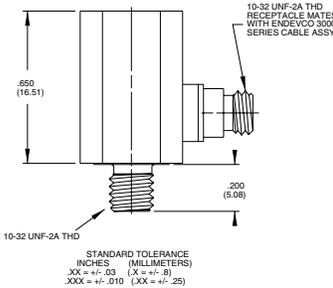
Actual size
MODEL 2248



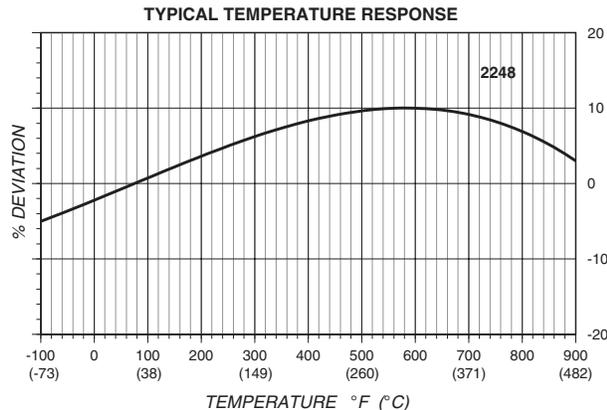
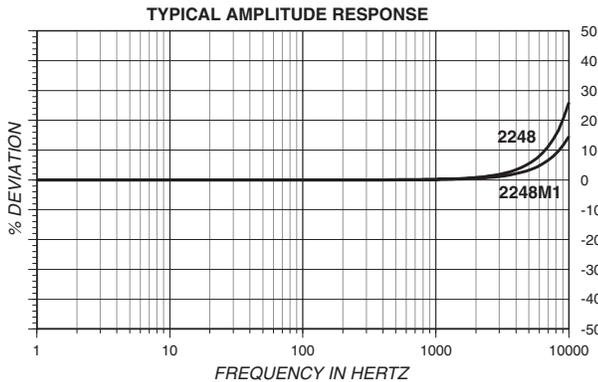
STANDARD TOLERANCE INCHES (MILLIMETERS)
 XX = ±.03 (X = ±.8)
 XXX = ±.010 (XX = ±.25)



Actual size
MODEL 2248M1



STANDARD TOLERANCE INCHES (MILLIMETERS)
 XX = ±.03 (X = ±.8)
 XXX = ±.010 (XX = ±.25)



**ENDEVCO
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2248
2248M1**

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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) 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		
RESONANCE FREQUENCY	kHz	25
AMPLITUDE RESPONSE [2]		
±5%	Hz	1 to 6000
±1dB, typical	Hz	.5 to 8000
TEMPERATURE RESPONSE		
See Typical Curve		
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY [3]	%	1
Per 1000 g, 0 to 3000 g		

ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY		Acceleration directed into base of unit produces positive output
RESISTANCE	GΩ	≥ 1
At +900°F (+482°C) [2]	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	500
SHOCK LIMIT	g	3000
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.0005
RADIATION		
INTEGRATED GAMMA FLUX	rad	Up to 6.2 x 10 ¹⁰
INTEGRATED NEUTRON FLUX	N/cm ²	Up to 3.7 x 10 ¹⁸

PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	13 (0.46)
CASE MATERIAL		Inconel
CONNECTOR		10-32 coaxial connector
MOUNTING TORQUE	lbf-in (Nm)	18 (2)

CALIBRATION

SUPPLIED:		
FREQUENCY RESPONSE	% dB	20 Hz to 8 000 kHz 8 0000 kHz through resonance
SENSITIVITY		
MAXIMUM TRANSVERSE SENSITIVITY	pC/g	
MOUNTED RESONANCE FREQUENCY	%	
CAPACITANCE	kHz	
	pF	

ACCESSORIES

Model EH 535 (2248) MOUNTING SCREWS, 6-32 X 2
Model 3075M6-120 (10 ft) CABLE ASSEMBLY, FOR > +260°C

OPTIONAL ACCESSORIES

Model 3090C-120 (10 ft) CABLE ASSEMBLY, FOR < +260°C
Model 3375M6-36 CABLE ASSEMBLY
P/N 33268 IN-LINE ADAPTER, HIGH TEMP

- Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send for TP290 for more details.
- Maintain high levels of precision and accuracy using Endeveco's factory calibration services. Call Endeveco'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.

NOTES

- Low-end response of the transducer is a function of its associated electronics.
- 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.

Continued product improvement necessitates that Endeveco reserve the right to modify these specifications without notice. Endeveco 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 Endeveco synonymous with reliability.

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