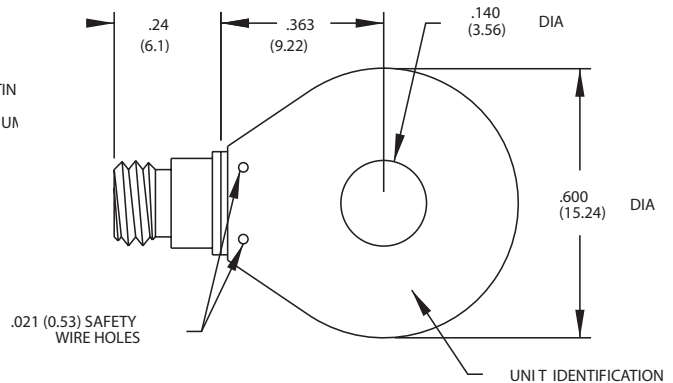
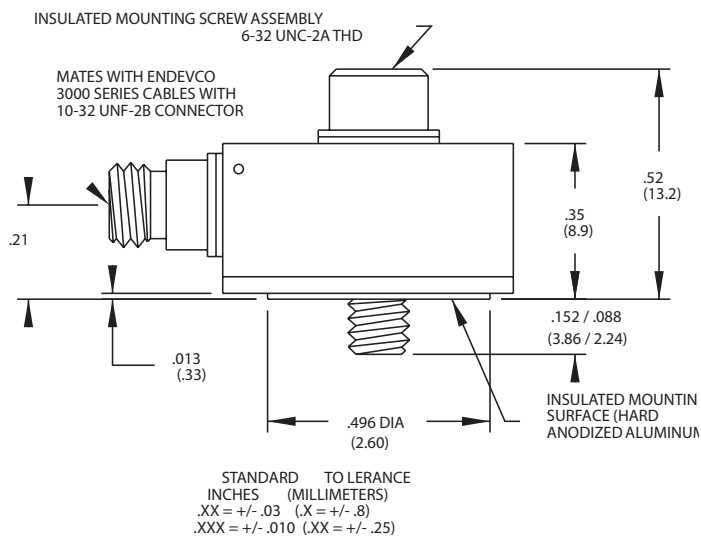


Piezoresistive accelerometer

Model 2221F



Key features

- High temperature operation (+260°C)
- Hermetically sealed
- 360° cable orientation
- Lightweight
- Aerospace and flight testing

Description

The Endevco® model 2221F piezoelectric accelerometer is designed specifically for high temperature vibration measurement on small structures and objects. The unit is hermetically sealed and is ideal for use in extreme environmental conditions. Its light weight (11 gm) effectively minimizes mass loading. The accelerometer is a self-generating device that requires no external power source for operation.

The model 2221F features Endevco's Piezite® type P-8 crystal element operating in annular shear mode. This unit exhibits excellent output sensitivity stability over time. Signal ground is connected to the outer case of the unit and, when used with an isolated mounting screw, the accelerometer is electrically isolated from ground. A low-noise coaxial cable is supplied for error-free operation. The transducer has a centrally located thru bolt, allowing for 360° cable orientation. The unit may also be adhesively mounted if the application permits.

Piezoresistive accelerometer | Model 2221F

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C), 4 mA and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied

Specifications		
Dynamic characteristics	Units	
Charge sensitivity		
Typical	pC/g	10.0
Minimum	pC/g	7.5
Frequency response		See typical amplitude response
Resonance frequency	kHz	45
Amplitude response ⁽¹⁾		
±5%	Hz	1 to 10,000
±1 dB	Hz	0.1 to 12,000
Temperature response		See typical curve
Transverse sensitivity	%	≤ 3
Amplitude linearity		
Per 400g, 0 to 2,000 g	%	1
Electrical characteristics		
Output polarity		Acceleration directed into the base of the unit produces positive output
Resistance	GΩ	≥10
Resistance at +350°F (+177°C)	GΩ	≥1
Isolation	MΩ	10
Capacitance	pF	900
Grounding		Signal return connected to case. Case isolated from mounting surface by insulated screw assembly
Environmental characteristics		
Temperature range		-67°F to +500°F (-55°C to +260°C)
Humidity		Hermetically sealed
Sinusoidal vibration limit	g pk	1000
Shock limit	g pk	3000
Base strain sensitivity	equiv. g/μ strain	0.02
Thermal transient sensitivity	equiv. g pk/°F (°C)	0.004 (0.007)
Physical characteristics		
Dimensions		See outline drawing
Weight	gm (oz)	11 (0.39)
Case material		Stainless steel
Connector		Coaxial, 10-32 male thread
Mounting torque	lbf-in (Nm)	8 (1)
Calibration data		
Supplied:		
Frequency response	%	20 Hz to 10 000 Hz
	dB	10,000 Hz to 50,000 Hz
Charge sensitivity	pC/g	
Maximum transverse sensitivity	%	
Capacitance	pF	

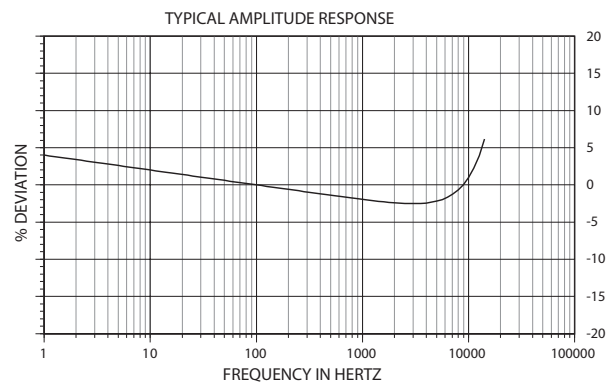
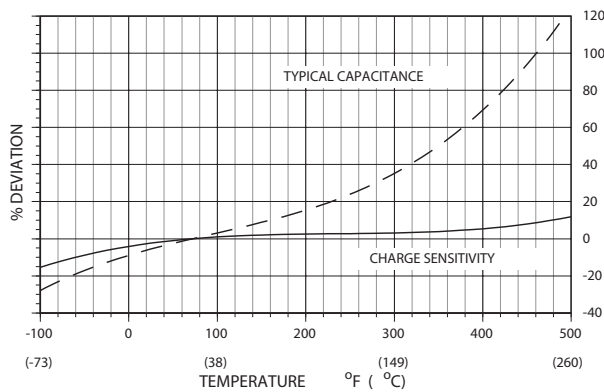
Piezoresistive accelerometer | Model 2221F

Accessories			
Product	Description	2221F	2221F-R
3090C-120	Cable assembly, 10 ft	Included	Optional
10207	Insulated mounting screw	Included	Included
EHM49	Allen wrench, 7/64 inch	Included	Optional
2987	Adhesive mounting adapter	Included	Optional
2771C	In-line charge converter	Optional	Optional
133	Signal conditioner	Optional	Optional

Options	
Options	Description
M19	Ships with the following accessories: QTY 1 3090C-8, QTY 2 10207, QTY 1 EHM49, QTY 1 2987

Notes

1. Low-end response of the transducer is a function of its associated electronics.
2. 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.
3. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



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