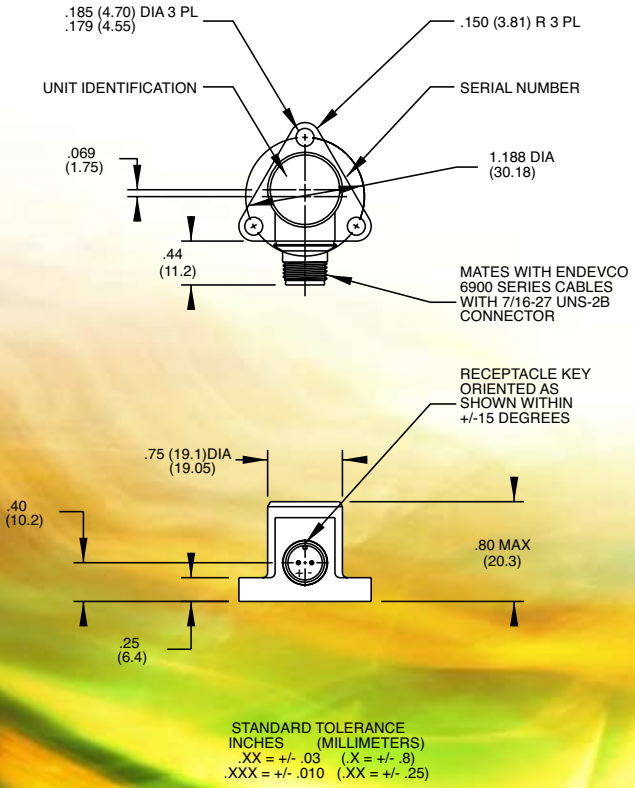
Endevco

Model 6222S
Piezoelectric accelerometer

Features

- High-temperature operation (+260°C)
- Balanced differential output
- Ground-isolated
- Requires no external power
- Gas-turbine testing

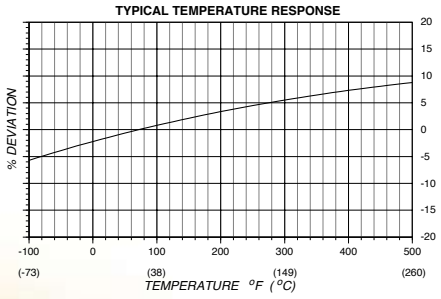


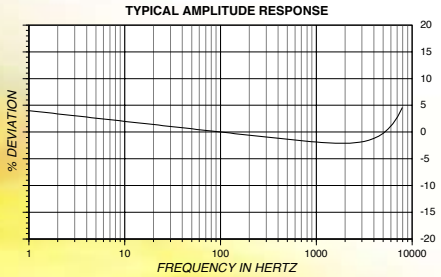
Description

The Endevco® Model 6222S series of piezoelectric accelerometers is designed for vibration measurement of gas-turbine engines used in aircraft and industrial applications. The unit features high sensitivity in a low profile package with a ruggedized connector and standard ARINC 3-point mounting. The 6222S is designed for continuous operation to +500°F (260°C) with long Mean Time Between Failure (MTBF). The accelerometer is a self-generating device that requires no external power for operation.

The 6222S features Endevco's Piezite® Type P-8 crystal element in our Isoshear® construction. The result is an accelerometer with low transient-temperature and base-strain outputs,high mounted resonance, and high operating temperature. The 6222S provides a balanced differential output which is isolated from case ground. The 6222S is available in standard ranges of 20, 50 and 100 pC/g, and offers a selection of three different connector types to maximize versatility of the accelerometer. This unit is designed to utilize Endevco's 6917 series of shielded, softline cable assemblies.

Endevco signal conditioner Models 6634C, 2777A, 68220 (computer-controlled test-cell amplifier system) and 68221 (68220 with tracking filter) are recommended for use with this high-impedance accelerometer.





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smart engineering for
extreme environments

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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), 24 Vdc supply, 4 mA, and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics	Units	-20A	-50A	-100A
Charge sensitivity ±5%	pC/g	20	50	100
Frequency response			See typical amplitude response	
Resonance frequency [1]	kHz	45	28	28
Amplitude response [2]				
±5%	Hz	1 to 9000	1 to 6000	1 to 6000
±1dB	Hz	1 to 12 000	1 to 9000	1 to 9000
Temperature response			See typical curve	
Transverse sensitivity	%		≤ 3	
Amplitude linearity	%	1/625 g	1/250 g	1/200 g
Up to vibration limit				
Electrical characteristics				
Resistance (Between pins) [4]	GΩ		≥ 10	
At +500°F (+260°C)	MΩ		≥ 50	
Isolation (Pin to case)	GΩ		≥ 10	
At +500°F (+260°C)	MΩ		≥ 50	
Capacitance	pF	2800	2800	12 200
Either signal pin to case	pF		≤ 30	
Unbalance between pins	pF		≤ 2	
Grounding			Signal return isolated from case	
Environmental characteristics				
Temperature range			-65 to +500°F (-54°C to +260°C)	
Humidity			Hermetically sealed	
Sinusoidal vibration limit	g pk	2000	1000	500
Shock limit	g pk	4000	2000	1000
Base strain sensitivity	equiv. g pk /µ strain	1.0	0.4	0.2
Thermal transient sensitivity	equiv. g pk /°F (/°C)	0.020 (0.036)	0.010 (0.018)	0.005 (0.009)
Physical characteristics				
Dimensions			See outline drawing	
Weight	gm (oz)		91 (3.2)	
Case material			Stainless steel	
Connector [3]	Two pin 7/16-27 UNS receptacle designed to mate with Endevco 6917B, 6917D or equivalent cable assemblies			
Mounting torque				
EH621 cap screws	lbf-in (Nm)		14 (1.6)	
10-32 stud	lbf-in (Nm)		18 (2)	
Supplied calibration				
Charge sensitivity				
6222S-20A	%		50 to 9000 Hz	
	dB		9000 Hz through resonance	
6222S-50A/-100A	%		50 to 6000 Hz	
	dB		6000 Hz through resonance	
Maximum transverse sensitivity	%			
Capacitance	pF		At approximately 12 Hz + 7.5 g	

Included accessories

P/N EH621 8-32 UNC x 0.5 inch socket head cap, 3x

Optional accessories

6917B-XXX Cable assembly (500°F)
6917D-XXX Cable assembly (550°F)

Model 6634C

Notes:

1. Cover resonance at approximately 23 kHz, case resonance at approxiamtely 35 kHz.
2. Low-end amplitude response is a function of the associated electronics.
3. Hermetic receptacle designed to mate with M83723/95K0803N or D38999/26KA983N connector plug or equivalent is also available as a standard option. Specify at time of order.
4. Prolonged exposure at maximum temperature may decrease the return to room temperature resistance to as low as 500 MΩ , but will not degrade the overall performance of the unit. All units are processed to initially meet 10 GΩ at room temperature.
5. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco'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.

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APPLIES TO CALIFORNIA FACILITY

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

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