

PERFORMANCE SPECIFICATION
 ACCELEROMETER
 6222S-XXXX

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
77021	NR	11/30/22	DAM	Initial Release of 6222s-XXXX Performance Specification	DAM	53277

 1.0 DESCRIPTION

The ENDEVCO® Model 6222S-XXXX Accelerometer is designed to operate with long mean time between failure in the environments of jet engines. It features a rugged design to withstand normal jet engine maintenance and installation environments.

The transducer utilizes ENDEVCO PIEZITE® P8 crystals and ISOSHEAR® construction to significantly reduce transient temperature and base strain outputs while maintaining a high mounted resonance and a high operating temperature.

Electrically, the transducer is designed for use with differential charge amplifiers.

Model number suffix "-XXXX" is used to specify the charge output. The model number suffix "XXX" designates the charge sensitivity in pC/g. Available are 20, 50 and 100 pC/g versions. The letter "A" refers to a two-pin 7/16-27 UNS-2A threaded receptacle. e.g., the 6222S-50A is a 50 pC/g model with a two-pin 7/16-27 UNS-2A threaded receptacle.

The following performance specifications are taken at +75°F (+24°C), referenced at 100 Hz and conform to ISA-RP-37.2 (1-64) unless otherwise noted.

 2.0 DYNAMIC CHARACTERISTICS

2.1	CHARGE SENSITIVITY	-20	20 pC/g ±5%
		-50	50 pC/g ±5%
		-100	100 pC/g ±5%
2.2	RESONANT FREQUENCY [1]	-20	45 kHz typical, 40 kHz minimum
		-50	28 kHz typical, 25 kHz minimum
		-100	28 kHz typical, 25 kHz minimum
2.3	FREQUENCY RESPONSE [2]	-20	±5% 1 Hz to 9 kHz
			±1 dB (ref.) 1 Hz to 12 kHz
	(See typical curves)	-50	±5% 1 Hz to 6 kHz
			±1 dB (ref.) 1 Hz to 9 kHz
		-100	±5% 1 Hz to 6 kHz
			±1 dB (ref.) 1 Hz to 9 kHz

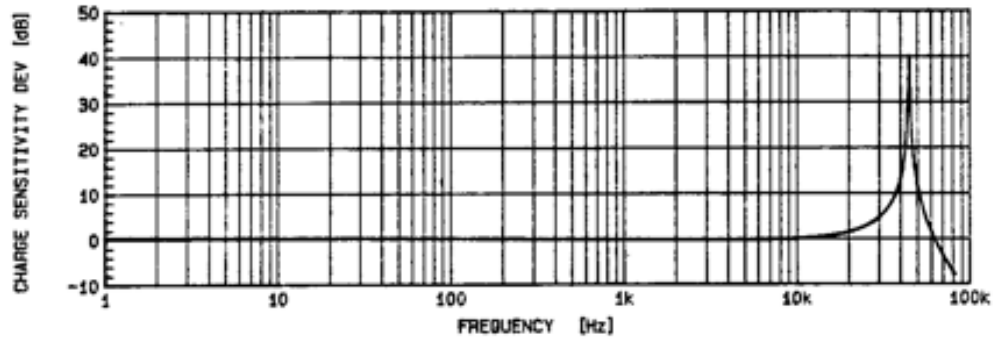
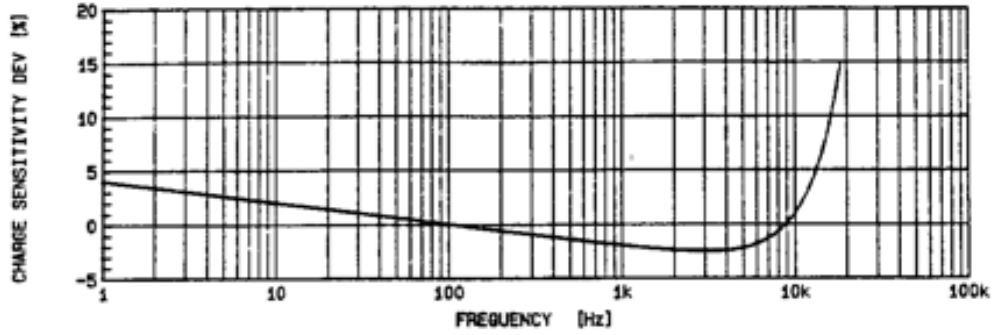
2.4	TEMPERATURE RESPONSE (See typical curves)	-20 -50 -100	±10% typical from -65°F to +500°F (-53°C to +260°C) ±10% typical from -65°F to +500°F (-53°C to +260°C) ±10% typical from -65°F to +500°F (-53°C to +260°C)
2.5	TRANSVERSE SENSITIVITY		3% maximum
2.6	AMPLITUDE LINEARITY		Sensitivity increases approximately: -20 1% per 625 g -50 1% per 250 g -100 1% per 200 g
2.7	RESISTANCE [3]		
2.7.1	Between Signal Pins		10 GΩ minimum at room temperature 50 MΩ minimum at +500°F (+260°C)
2.7.2	Each Signal Pin to Case		10 GΩ minimum at room temperature 50 MΩ minimum at +500°F (+260°C)
2.8	CAPACITANCE		
2.8.1	Between Signal Pins	-20 -50 -100	2800 pF typical 2800 pF typical 12200 pF typical
2.8.2	Either Signal Lead to Case		Less than 30 pF typically, with an unbalance between pins of 2 pF maximum.
2.9	BASE STRAIN	-20 -50 -100	1.0 equivalent g at 250 μstrain, typical. 0.4 equivalent g at 250 μstrain, typical. 0.2 equivalent g at 250 μstrain, typical.
2.10	TRANSIENT TEMPERATURE		With a 1 Hz high pass filter -20 0.020 equivalent g per °F typical -50 0.010 equivalent g per °F typical -100 0.005 equivalent g per °F typical

3.0	<u>ENVIRONMENTAL CHARACTERISTICS</u>	
3.1	TEMPERATURE	-65°F to +500°F (-54°C to +260°C)
3.2	ALTITUDE	Not affected
3.3	VIBRATION	-20 2000 g pk sinusoidal -50 1000 g pk sinusoidal -100 500 g pk sinusoidal
3.4	SHOCK	-20 4000 g pk any direction -50 2000 g pk any direction -100 1000 g pk any direction
3.5	CONTAMINATION	Hermetically sealed
4.0	<u>PHYSICAL CHARACTERISTICS</u>	See Outline Drawing
4.1	WEIGHT	0.13 lbs (60 grams) maximum
4.2	CASE MATERIAL	Stainless steel
4.3	ELECTRICAL CONNECTOR (RECEPTACLE)	7/16-27 UNS-2A threaded receptacle. Mates with ENDEVCO® 6900 series Cable Assemblies or equivalent.
5.0	<u>ACCESSORIES</u>	
5.1	SUPPLIED	
	Bolt, Mach soc hd cap	ENDEVCO® P/N EH621, 8-32 x 1/2" long
6.0	<u>CALIBRATIONS</u>	
6.1	SUPPLIED	
	Sensitivity	pC/g at 100 Hz
	Transverse Sensitivity	% at approximately 12 Hz and 7.5 g
	Output Capacitance	pF
	Frequency Response	-20 % plotted 50 Hz to 9 kHz, dB plotted 9 kHz through resonance. -50, -100 % plotted 50 Hz to 6 kHz, dB plotted 6 kHz through resonance.

- [1] Cover resonance at approximately 23 kHz, case resonance at approximately 35 kHz.
- [2] Frequency response below 1 Hz depends on associated electronics.
- [3] Prolonged exposure at maximum temperature may decrease the return to room temperature resistance to as low as 500 M Ω , but will not degrade the overall performance of the unit. All units are processed to initially meet 10 G Ω at room temperature.

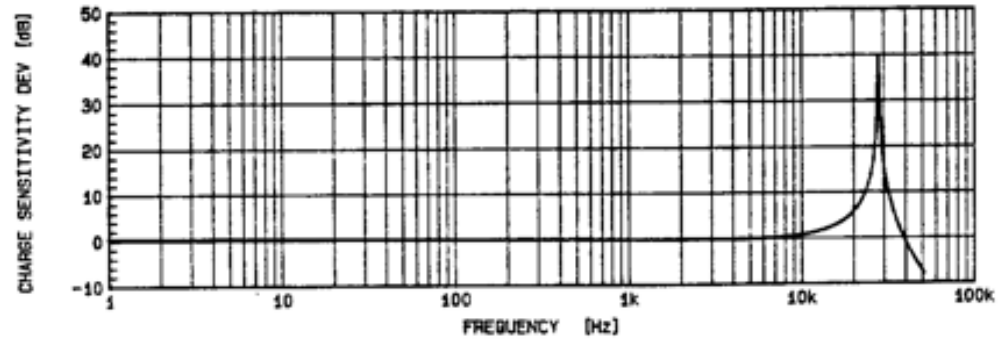
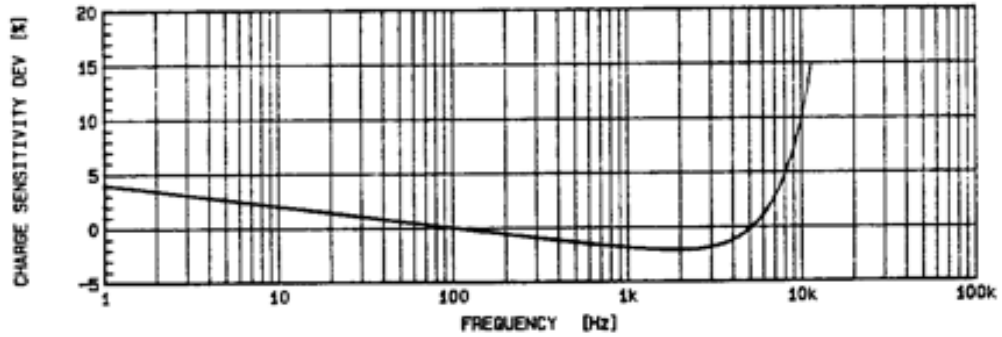
TYPICAL FREQUENCY RESPONSE

ENDEVCO MODEL 62225-20



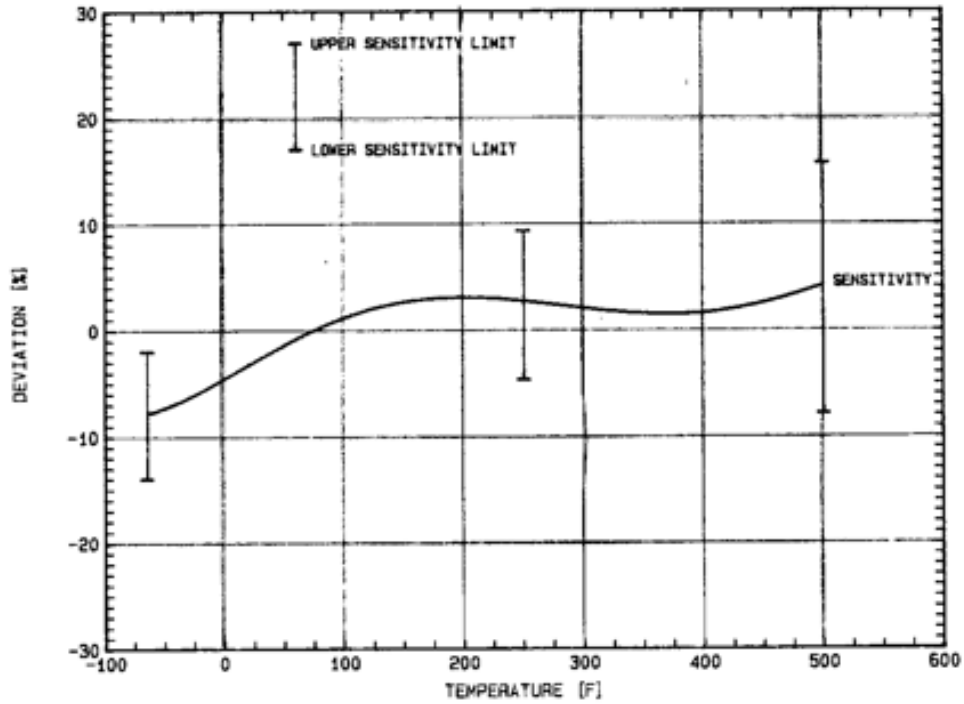
TYPICAL FREQUENCY RESPONSE

ENDEVCO MODEL 62225-50 & 62225-100



TYPICAL TEMPERATURE RESPONSE

ENDEVCO MODELS 6222S-20 & 6222S-50



TYPICAL TEMPERATURE RESPONSE

ENDEVCO MODEL 6222S-100

