ENDEVCO
AN AMPHENOL COMPANY

PERFORMANCE SPECIFICATION
ACCELEROMETER
2224C

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
77065	NR	12/22/22	NAD	Initial Release of Performance Specification of 2224C Accelerometer	DAM	53387

1.0 DESCRIPTION

The ENDEVCO® Model 2224C is a general-purpose piezoelectric accelerometer designed for vibration measurement in small structures. The unit features a top connector for mounting convenience in limited space.

The Model 2224C features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in annular shear mode, which exhibits low base strain sensitivity, high resonance frequency, and excellent output stability over time. This piezoelectric accelerometer self-generates it high impedance output and requires no external power for operation. Signal ground is connected to the outer case of the unit and, when used with an isolated mounting stud, the accelerometer case is electrically isolated from ground. The accelerometer features a 10-32 top-connector. A low-noise coaxial cable is required for error-free operation.

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.

		Units	
2.0	**DYNAMIC CHARACTERISTICS**		
2.1	CHARGE SENSITIVITY		
	Typical	pC/g	12
	Minimum	pC/g	8.5
2.2	FREQUENCY RESPONSE		See Typical Curve
2.2.1	Resonant Frequency		
	Typical	kHz	32
	Minimum	kHz	26
2.2.2	Amplitude Response [1]		
	± 5%	Hz	1 to 6000
	± 1dB (ref.)	Hz	.1 to 10000
2.3	TEMPERATURE RESPONSE		See Typical Curve
2.3.1	At -67°F (-55°C) max/min	%	-15 / 0
2.3.2	At +350°F (+177°C) max/min	%	+25 / 0

2.4	TRANSVERSE SENSITIVITY	% Units	≤ 3 (≤ 1 on special order)
2.5	AMPLITUDE LINEARITY Per 250 g, 0 to 1000 g	%	1
3.0	**ELECTRICAL CHARACTERISTICS**		
3.1	OUTPUT POLARITY		Acceleration into the base produces positive output.
3.2	RESISTANCE	GΩ	≥ 10
3.2.1	At +350°F (177°C)	GΩ	≥ 5
3.3	CAPACITANCE	pF	800
3.4	GROUNDING		Signal ground common to transducer case.
4.0	**ENVIRONMENTAL CHARACTERISTICS**		
4.1	TEMPERATURE RANGE		-67°F to +350°F (-55°C to +177°C)
4.2	HUMIDITY		Epoxy sealed, non-hermetic
4.3	SINUSOIDAL VIBRATION LIMIT	g pk	1000
4.4	SHOCK LIMIT [2]	g pk	2000
4.5	BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.002
4.6	THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F	0.001
4.7	ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.0001
4.8	ACOUSTIC SENSITIVITY Low Frequency Up to 1000 Hz At 140 dB SPL At 170 dB SPL	 g/psi equiv. g equiv. g	 0.05 0.007 0.2
4.9	SALT SPRAY		Will meet MIL-E-5272, Para. 4.6.1 when used with sealed connector
5.0	**PHYSICAL CHARACTERISTICS**		
5.1	DIMENSIONS		See Outline Drawing
5.2	WEIGHT	gm (oz)	16 (0.56)
5.3	CASE MATERIAL		303 stainless steel

		Units	
5.4	CONNECTOR		Coaxial, 10-32 thread, mates with Endevco 3000 series cable.
5.5	MOUNTING TORQUE	lbf-in (Nm)	18 (2)

6.0 ACCESSORIES

6.1	SUPPLIED	
	CABLE ASSEMBLY	3090C-120, 1X [3]
	MOUNTING STUD	92981-12, 10-32, Hex ID, 1X
	HEX KEY WRENCH	EHM464, 1X [3]
6.2	OPTIONAL	
	ADAPTOR STUD	2981-3, 10-32

7.0 CALIBRATION

7.1	SUPPLIED		
	Charge Sensitivity	pC/g	
	Capacitance	pF	
	Maximum Transverse Sensitivity	%	
	Charge Frequency Response	%	20 to 6 kHz
		dB	6 kHz to 40 kHz

8.0 NOTES

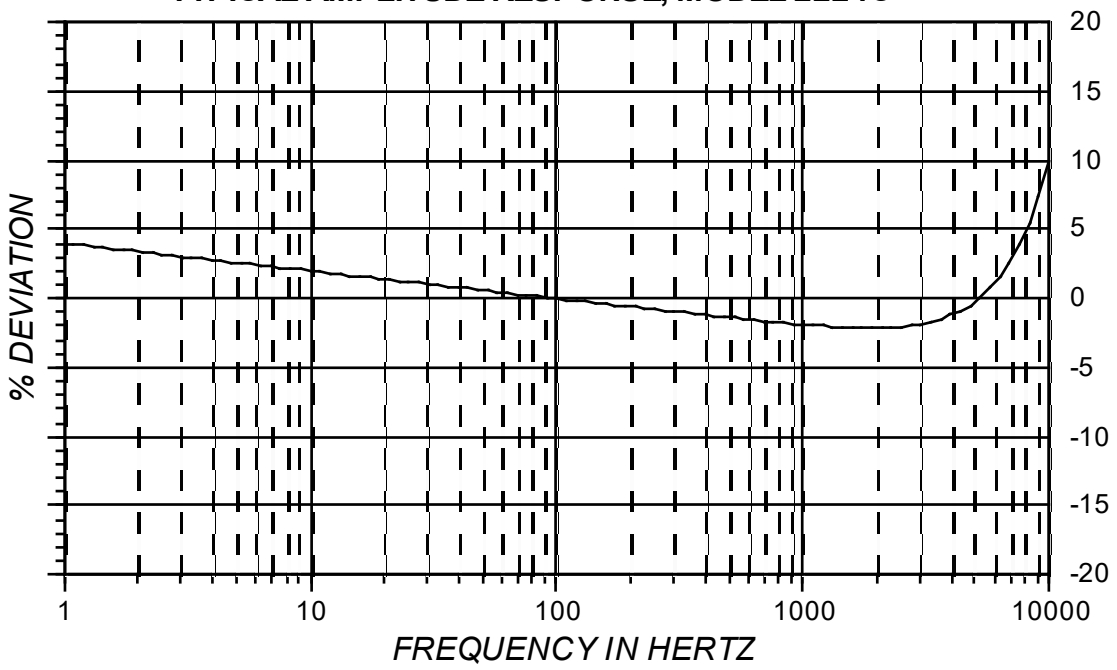
[1] Low-end response of the transducer is a function of its associated electronics.
[2] Shock pulses of short duration may excite transducer resonance. Shock level above the sinusoidal vibration limit may produce temporary zeroshift which will result in erroneous velocity or displacement data after integration.
[3] For -R units, the indicated accessories are optional.
[4] Model Number Definition:

2224C - R

Indicates replacement unit

Basic Model Number

TYPICAL AMPLITUDE RESPONSE, MODEL 2224C



TYPICAL TEMPERATURE RESPONSE, MODEL 2224C