

PERFORMANCE SPECIFICATION  
 TRIAXIAL ACCELEROMETER  
 2230E

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
76305	NR	4/1/22	NAD	Release of 2230E Triaxial Accelerometer Performance Specification	DAM	52599

 1.0 **DESCRIPTION**

The ENDEVCO® Model 2230E is a small triaxial piezoelectric accelerometer designed specifically for vibration measurement in three orthogonal axes on small structures and objects. The transducer features three M3 receptacles for output connection, and is adhesively mounted. Its light weight (17gm) effectively minimizes mass loading effects.

The Model 2230E features ENDEVCO's PIEZITE® Type P-8 crystal elements, operating in annular shear mode, which exhibit excellent output sensitivity stability over time. This piezoelectric accelerometer self-generates its high impedance output and requires no external power for operation. Signal ground is connected to the case and mounting surface of the unit. A low-noise, flexible coaxial cable is required for error-free operation.

The following performance specifications conform to ISA-RP-37.2 (1-64) 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.

		<u>UNITS</u>	
2.0	<b><u>DYNAMIC CHARACTERISTICS</u></b>		
2.1	CHARGE SENSITIVITY		
	Typical	pC/g	3.0
	Minimum	pC/g	2.0
2.2	FREQUENCY RESPONSE		See Typical Curve
2.2.1	Resonance Frequency		
	Typical	kHz	21
	Minimum	kHz	16
2.2.2	Amplitude Response [1]		
	± 5%	Hz	1 to 7,000
	±1 dB (ref.)	Hz	1 to 10,000
2.3	TEMPERATURE RESPONSE		See Typical Curve
	At -67°F (-55°C) max/min	%	-18 / -5
	At +500°F (+260°C) max/min	%	+20 / -5
2.4	TRANSVERSE SENSITIVITY	%	≤ 5
2.5	AMPLITUDE LINEARITY	%	1 per 500 g, 0 to 2000 g

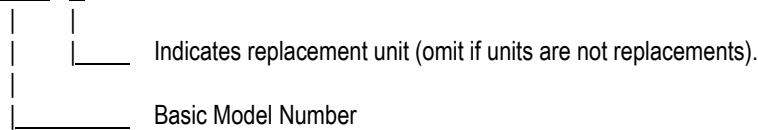
		<u>UNITS</u>	
3.0	<b><u>ELECTRICAL CHARACTERISTICS</u></b>		
3.1	OUTPUT POLARITY		Acceleration in the direction of the axis arrow produces positive output.
3.2	RESISTANCE	GΩ	
	At +500°F (+260°C)	MΩ	≥ 10
3.3	CAPACITANCE	pF	770
3.4	GROUNDING		Signal return connected to case.
4.0	<b><u>ENVIRONMENTAL CHARACTERISTICS</u></b>		
4.1	TEMPERATURE RANGE		-67°F to +500°F (-55°C to +260°C)
4.2	HUMIDITY		Hermetically sealed
4.3	SINUSOIDAL VIBRATION LIMIT	g pk	1000
4.4	SHOCK LIMIT [2]	g pk	2000
4.5	ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.01
5.0	<b><u>PHYSICAL CHARACTERISTICS</u></b>		
5.1	DIMENSIONS		See Outline Drawing
5.2	WEIGHT	gm (oz)	17 (0.6)
5.3	CASE MATERIAL		304L Stainless Steel
5.4	CONNECTOR		M3 X 0.5 6H thread
6.0	<b><u>ACCESSORIES</u></b>		
6.1	SUPPLIED Cable Assembly [3] [4]		Model 3053V-120, 3x
6.2	OPTIONAL Cable Assembly Cable Assembly		Model 3053VM1-120, 3x Model 3901-118, 3x

		<u>UNITS</u>	
7.0	<b><u>CALIBRATION</u></b>		
7.1	SUPPLIED		
	Charge Sensitivity	pC/g	
	Capacitance	pF	
	Maximum Transverse Sensitivity	%	
	Charge Frequency Response	%	20 to 10,000 Hz

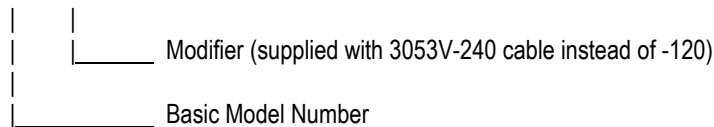
8.0 **NOTES**

- [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 zero shift, which will result in erroneous velocity or displacement data after integration.
  - [3] Flexible cable, such as the supplied 3053V, should be used to minimize cable-strain errors.
  - [4] For the “-R” assemblies the noted accessories are optional.
- 5 Model Number Definition:

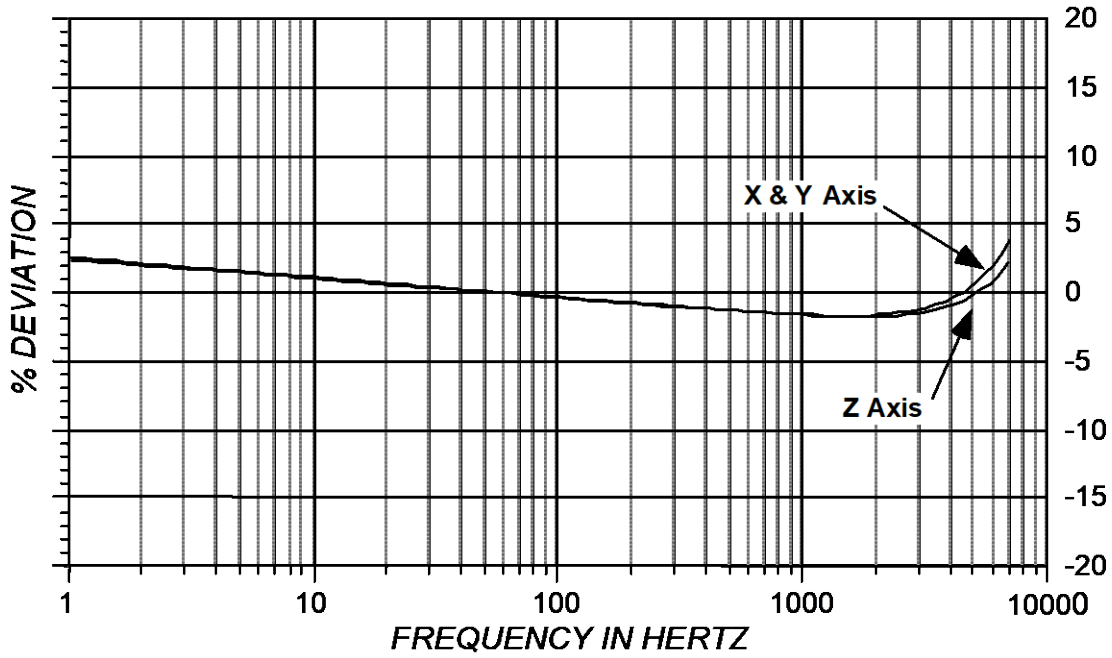
2230E - R



2230E M2



**TYPICAL AMPLITUDE RESPONSE, MODEL 2230E**



**TYPICAL TEMPERATURE RESPONSE, MODEL 2230E**

