

# ISOTRON® Accelerometer

**ENDEVCO  
MODEL  
2255B-1  
-01**

## Model 2255B-1 and -01

- Low Impedance Output
- Far-Field, High-g Shock
- Built-in Electronic LP Filter
- Strain Isolated
- Solder Terminals



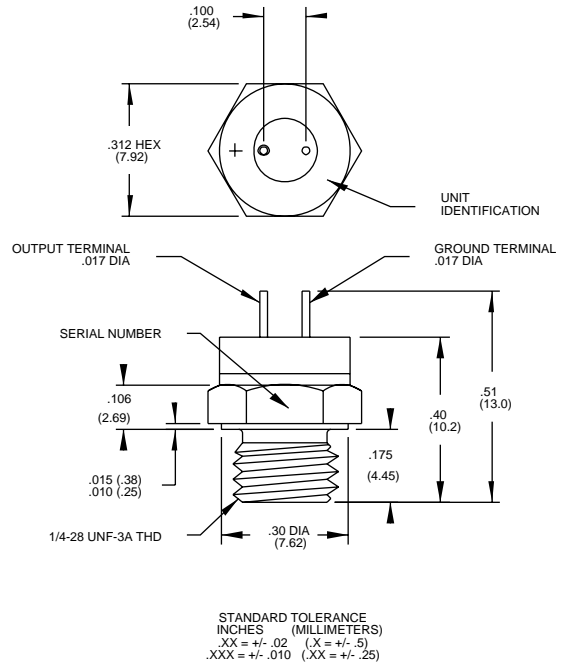
Actual size



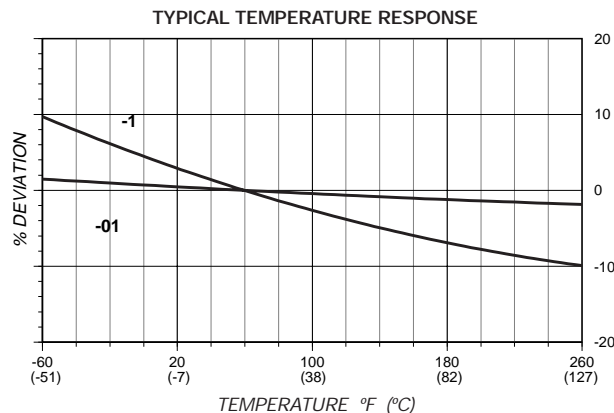
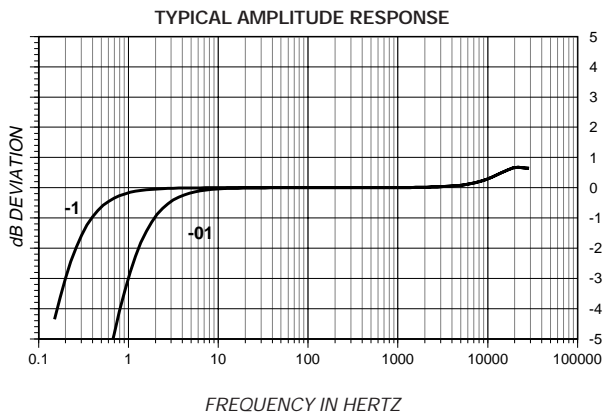
### DESCRIPTION

The ENDEVCO® Model 2255B is a miniature, lightweight piezoelectric accelerometer with integral electronics, designed specifically for far-field high-g shock measurement on structures and test articles. The unit features an electronic second order low-pass filter between the sensor and the amplifier input stage to prevent saturation due to accelerometer resonance.

The Model 2255B features ENDEVCO's PIEZITE® crystal element, operating in annular shear mode, which exhibits excellent output stability over time. A unique strain isolation design internal to the sensor assembly reduces any strain input due to bending motion in the mounting surface. This accelerometer incorporates an internal hybrid signal conditioner in a two-wire system, which transmits its low impedance voltage output through the same cable that supplies the required constant current power. Both the output and signal ground terminals are electrically isolated from the mounting surface. The accelerometer features an integral 1/4-28 mounting stud and two solder-pin terminals for output connection. Small gauge, light weight hook-up wires are provided for error-free operation. The Model number suffix indicates acceleration sensitivity in mV/g; i.e., 2255B-01 features output sensitivity of 0.1 mV/g.



ENDEVCO Signal Conditioner Models 4416B, 133, 2792B, 2793, or 2775A, set to +10 mA, are recommended for use with this accelerometer.



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-01**

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

DYNAMIC CHARACTERISTICS	Units	-1	-01
RANGE	g	±5000	±50 000
VOLTAGE SENSITIVITY	mV/g	1.0	0.1
MINIMUM	mV/g	0.75	0.075
MAXIMUM	mV/g	1.25	0.15
FREQUENCY RESPONSE		See Typical Amplitude Response	
RESONANCE FREQUENCY [1]	kHz	270	300
AMPLITUDE RESPONSE			
±1dB	Hz	1 to 20 000	2 to 20 000
TEMPERATURE RESPONSE		See Typical Curve	
TRANSVERSE SENSITIVITY	%	≤ 5	
AMPLITUDE LINEARITY	%	≤ 2.5	

## OUTPUT CHARACTERISTICS

OUTPUT POLARITY	Acceleration directed into base of unit produces positive output		
DC OUTPUT BIAS VOLTAGE	Vdc	+8.5 to +11.5	
OUTPUT IMPEDANCE	Ω	100	
FULL SCALE OUTPUT VOLTAGE	V	±5	
RESIDUAL NOISE	equiv. g rms	0.05	0.5
2 Hz to 100 kHz, Broadband			
OVERLOAD RECOVERY	μs	10	
GROUNDING	Signal ground connected to inner case but isolated from outer housing		

## POWER REQUIREMENT

SUPPLY VOLTAGE	Vdc	+18 to +24	
SUPPLY CURRENT	mA	+2 to +10	
WARM-UP TIME	sec	< 5	< 3
To ± 10 of final bias level			

## ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE	-67°F to +257°F (-55°C to +125°C)		
HUMIDITY	Epoxy sealed, non-hermetic		
ACCELERATION LIMIT	kg pk	100	200
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.2	1.0
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	1 (1.8)	10 (18.0)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms	5	12

## PHYSICAL CHARACTERISTICS

DIMENSIONS	See Outline Drawing		
WEIGHT	gm (oz)	2.0 (0.07)	
CASE MATERIAL	17-4 PH stainless steel		
CONNECTOR [2]	Gold plated solder terminal		
MOUNTING TORQUE	lbf-in (Nm)	30 (3.5)	

## CALIBRATION

SUPPLIED:			
MODELS 2255B-1 [3]			
VOLTAGE SENSITIVITY	mV/g		
FREQUENCY RESPONSE	dB	20 Hz to 20 kHz	
MODELS 2255B-01 [3]			
VOLTAGE SENSITIVITY [4]	mV/g	1000 g half-sine shock pulse	

## ACCESSORY

Model 3024-120 (10 ft) CABLE ASSEMBLY, TWISTED PAIR

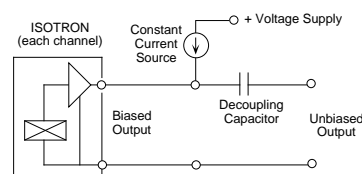
## OPTIONAL ACCESSORY

Model 2967A BERYLLIUM TRIAXIAL MOUNTING BLOCK

## NOTES

- Resonances due to different modes of vibration occur between 120 kHz and 310 kHz. They are completely suppressed by the built-in low pass filter and will not affect linear response of the accelerometer.
- Putting small shrink tubing over the solder joints is recommended.
- All models subjected to full scale proof shock prior to calibration.
- Unit is calibrated by the comparison shock method described in Section 5 of S2.2-1959, American Standards Institute, on

- ENDEVCO Model 2925 Comparison Shock Calibrator. 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.



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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