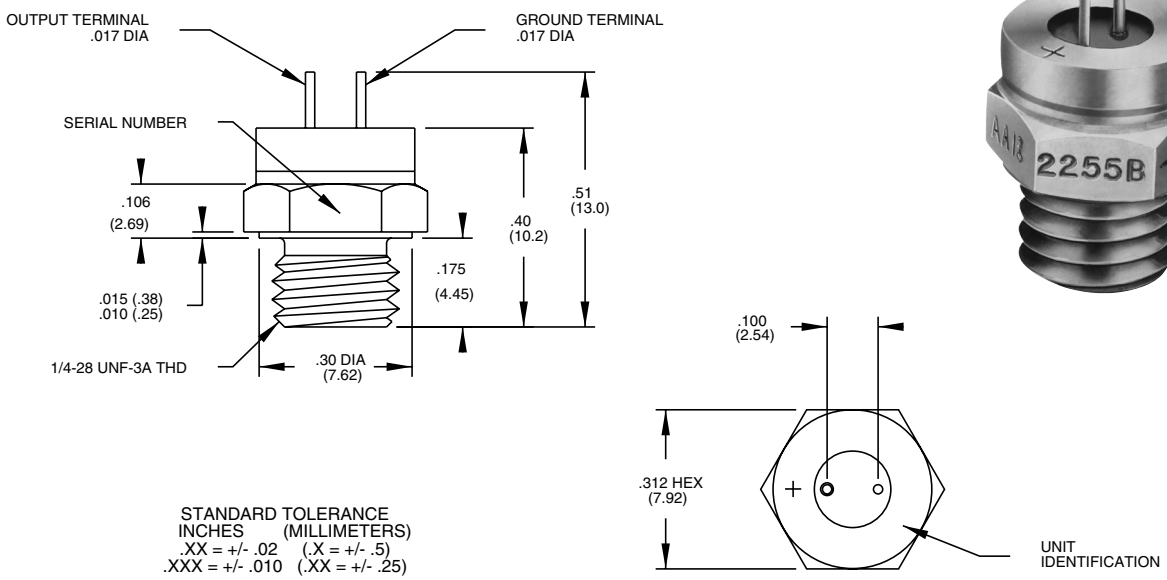
ENDEVCO
AN AMPHENOL COMPANY

High g Shock Isotron® Accelerometer

Model 2255B



Key features

- Low impedance output
- Far-field, high-g shock
- Built-in electronic LP filter
- Strain isolated
- Solder terminals

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 4416C, 133, 2792B, or 2793, set to +10 mA, are recommended for use with this accelerometer.

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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.

Specifications

Dynamic characteristics	Units	-1	-01
Range	g	±5000	±50,000
Voltage sensitivity			
Typical	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	.5 to 20,000	2 to 20,000
Temperature response		See typical curve	
Transverse sensitivity	%	≤5	
Amplitude linearity	%	<2	<0.5
Output characteristics			
Output polarity		Acceleration direction 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
2Hz 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 +20	
Warm-up time	sec	<2	<0.5
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	
Shock limit	kg pk	50	50
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 data			
Supplied:			
Models 2255B-1 (3)			
Voltage sensitivity	mV/g		
Frequency response	dB	20 Hz to 20 kHz max	
Models 2255B-01 (3)			
Voltage sensitivity	mV/g	1000 g half-sine shock pulse	

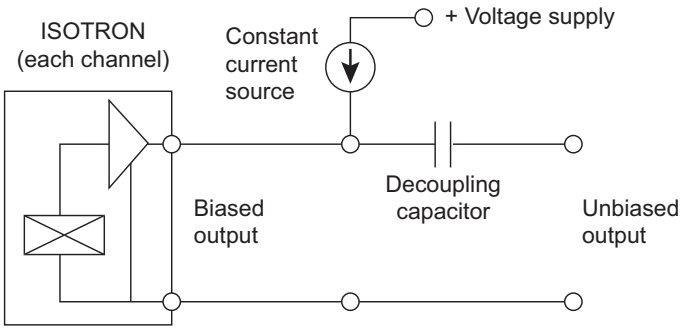
Accessories		
Options	**Description**	**2255B-1, -01**
3024-120	10ft cable assembly, twisted pair	Included
2967C	Titianium triaxial mounting block	Optional

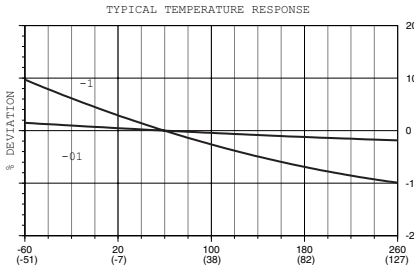
Notes

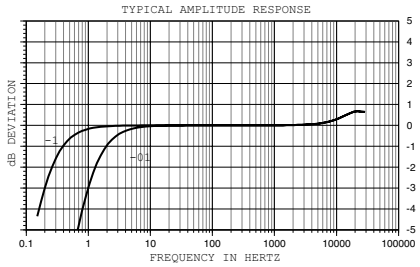
1. Resonances due to different modes of vibration occur between 120kHz and 310 kHz. They are completely suppressed by the built-in low pass filter and will not affect linear response of the accelerometer.Operating temperatures above 93C (200F) result in unpredictable thermal zero shift. TZS should be monitored and/or managed by auto-zeroing to insure no loss in data due to signal saturation.
2. Putting small shrink tubing over the solder joints is recommended.
3. All models subjected to 50,000 g proof shock prior to calibration.
4. 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.

Ordering information

1. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.







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