ISOTRON® Accelerometer

ENDEVCO MODEL 7751-500

Model 7751-500

- **Low Impedance Output**
- **Low Frequency Measurement**
- **High Output (0.5 V/g)**
- **Low Noise Floor, Flat To 0.1 Hz**
- **Overrange Protection**
- **Hermetically Sealed**



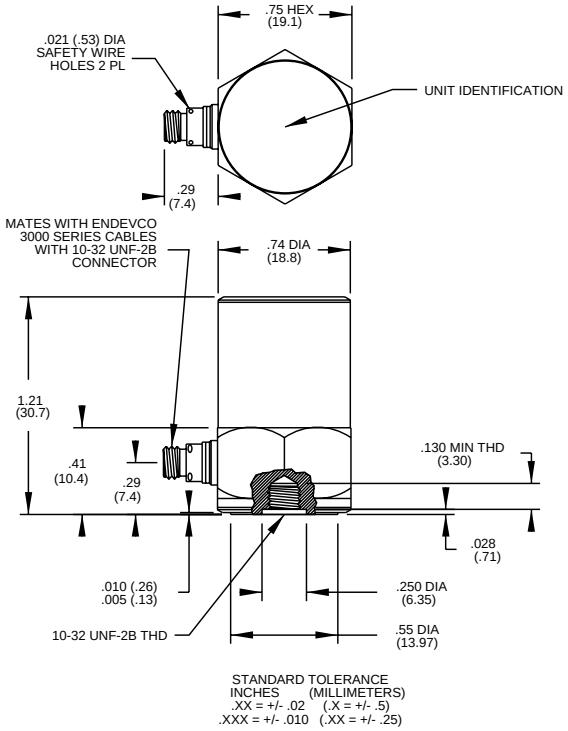
Actual size

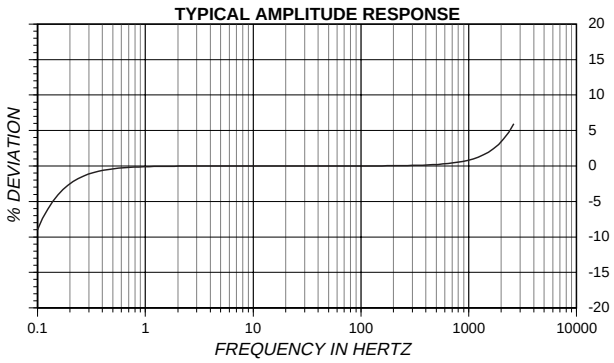
DESCRIPTION

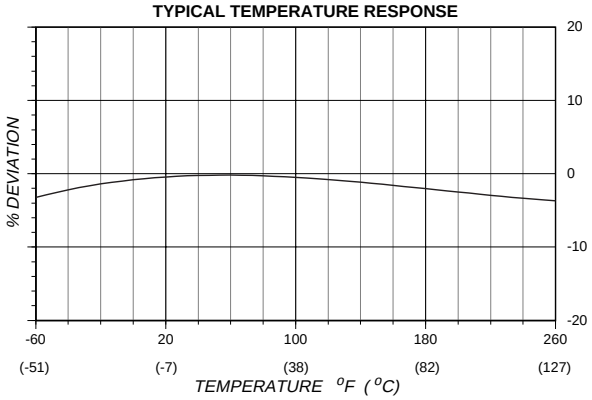
The ENDEVCO® Model 7751-500 is a high output, ISOSHEAR® piezoelectric accelerometer with integral electronics, designed for low-g, low frequency vibration measurement on structures and objects. The ISOSHEAR design is extremely stable and virtually insensitive to environmental inputs such as base bending and thermal transients. This accelerometer is hermetically sealed against external contamination, as required in most aerospace applications.

The Model 7751-500 features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in shear mode, which exhibits low base strain sensitivity, high resonance frequency, and excellent output stability over time. This accelerometer incorporates a low-noise internal hybrid signal conditioner in a two-wire system, which transmits its low impedance voltage output through the same cable that supplies the constant current power. An over-voltage limiting circuit protects the hybrid from accidental shock inputs, and signal ground is connected to the outer case of the unit. The accelerometer features a 10-32 side-connector.

ENDEVCO Signal Conditioner Models 4416BM1, 133, 2792B, 2793, 2775A or CCAS™ are recommended for use with this accelerometer.







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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	
RANGE	g	±10
VOLTAGE SENSITIVITY ±5%	mV/g	500
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	11
AMPLITUDE RESPONSE ±5%	Hz	0.4 to 1500
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY, to F.S.	%	
OUTPUT CHARACTERISTICS		
OUTPUT POLARITY		Acceleration into base of unit produces positive output.
DC OUTPUT BIAS VOLTAGE	Vdc	+8.5 to +11.5
OUTPUT IMPEDANCE	Ω	≤ 150
FULL SCALE OUTPUT VOLTAGE	V	±5
RESIDUAL NOISE 0.5 Hz to 3 kHz Broadband	equiv. g rms	0.00001
OVERLOAD RECOVERY After two times full scale input	µ sec	≤ 10
GROUNDING		Signal return is connected to case
POWER REQUIREMENT		
SUPPLY VOLTAGE	Vdc	+18 to +24
SUPPLY CURRENT	mA	+2 to +10
WARM-UP TIME	sec	< 10
OVERLOAD PROTECTION [1]		2000 g input will not damage internal electronics
ENVIRONMENTAL CHARACTERISTICS		
TEMPERATURE RANGE		-67°F to +257°F (-55°C to +125°C)
HUMIDITY		Hermetically sealed
SINUSOIDAL VIBRATION LIMIT	g pk	200
SHOCK LIMIT	g pk	2000
BASE STRAIN SENSITIVITY	equiv. g pk/µ strain	0.0001
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (/°C)	0.06 (0.108)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.00003
PHYSICAL CHARACTERISTICS		
DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	64 (2.2)
CASE MATERIAL		Stainless Steel
CONNECTOR		10-32 case grounded side connector mates with Model 3000 Series Cable
MOUNTING TORQUE	lbf-in (Nm)	18 (2)
CALIBRATION		
SUPPLIED:		
VOLTAGE SENSITIVITY	mV/g	
MAXIMUM TRANSVERSE SENSITIVITY	%	
FREQUENCY RESPONSE	%	20 Hz to 4 kHz
	dB	4 kHz thru resonance

ACCESSORIES

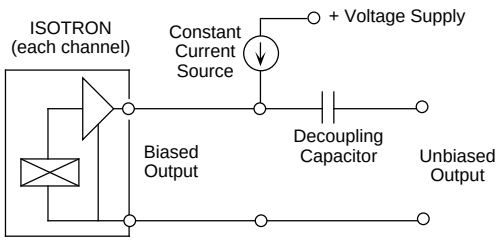
Model 2981-3	MOUNTING STUD, 10-32 to 10-32
Model 3061-120 (10 ft)	CABLE ASSEMBLY

OPTIONAL ACCESSORIES

Model 2980B	INSULATED MOUNTING STUD, 10-32 to 10-32
Model 2988M7	MAGNETIC MOUNTING ADAPTOR
Model 2950	TRIAXIAL MOUNTING BLOCK

NOTES

1. Built-in overrange protection circuit to prevent damage due to accidental shock inputs.



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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