

Model 7251AHT-500M1 Isotron[®] accelerometer

Features

- Low impedance output
- 302°F (150°C) operation
- 360° cable orientation
- Hermetically sealed
- Wide bandwidth
- New low profile

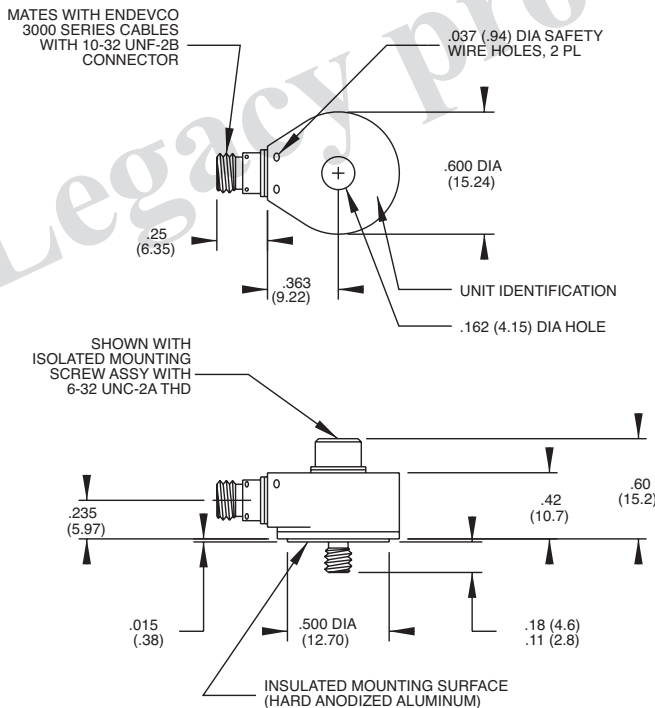


Description

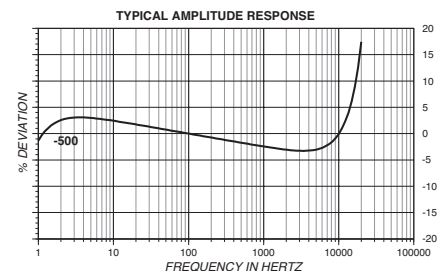
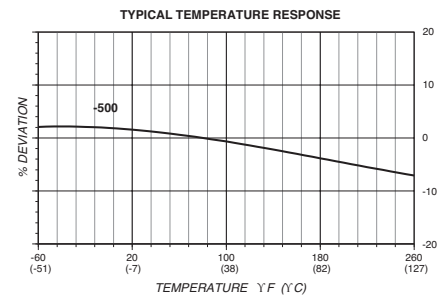
The Endevco[®] model 7251AHT-500M1 is a small piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration on most structures. The unit is hermetically sealed against environmental contamination, offers high output sensitivity, and wide bandwidth. This new lightweight (14 gm) design effectively minimizes mass loading effects.

The model 7251AHT-500M1 features Endevco's Piezite[®] type P-8 crystal element, operating in annular shear mode, which exhibits low base-strain sensitivity and excellent output stability over time. 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 constant-current power. Signal ground is connected to the outer case of the unit and, when the unit is used with the supplied isolated mounting screw, it is electrically isolated from ground. The centrally located mounting bolt permits 360° cable orientation, a very desirable feature in many applications. A model number suffix indicates sensitivity in mV/g; i.e., 7251AHT-500M1 features an output sensitivity of 500 mV/g.

Endevco signal conditioner models 133, 2792B, 4416B, 2793, 2775A or CCASTM computer-controlled system are recommended for use with this accelerometer.



STANDARD TOLERANCE
INCHES (MILLIMETERS)
XX = +/- .02 (X = +/- .5)
.XXX = +/- .010 (.XX = +/- .25)



Model 7251AHT-500M1 Isotron[®] accelerometer

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 the National Institute of Standards and Technology (NIST), is supplied.

DYNAMIC CHARACTERISTICS	Units	-500
RANGE	g	
125°C	+/-10	
135°C	+/- 8	
150°C	+/- 6	
VOLTAGE SENSITIVITY, ±10% [1]	mV/g	500
FREQUENCY RESPONSE		
Resonance Frequency	kHz	45
Amplitude Response		
±5%	Hz	1 to 10 000
±1dB	Hz	.5 to 20 000
TRANSVERSE SENSITIVITY	%	≤ 5
TEMPERATURE RESPONSE		See Typical Curve
AMPLITUDE NONLINEARITY, to F.S.	%	≤1 ≤1

OUTPUT CHARACTERISTICS

OUTPUT POLARITY	Acceleration directed into base 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	0.001	0.0005 0.0002
OVERLOAD RECOVERY	μs	≤ 10	
GROUNDING	Signal ground connected to case and isolated from mounting surface		

POWER REQUIREMENT

COMPLIANCE VOLTAGE	Vdc	+18 to +24
SUPPLY CURRENT	mA	+2 to +10
WARM-UP TIME	sec	< 5

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE	-67°F to +302°F (-55°C to +150°C)		
HUMIDITY	Hermetically sealed		
SINUSOIDAL VIBRATION LIMIT	g pk	500	
SHOCK LIMIT	g pk	5000	
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.04	
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	0.02 (0.036)	
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.00004	

PHYSICAL CHARACTERISTICS

DIMENSIONS	See Outline Drawing		
WEIGHT	gm (oz)	10.5 (0.37)	
CASE MATERIAL	Stainless Steel		
CONNECTOR	10-32 receptacle, side mounted, mates with Endevco 3000 series cable		
MOUNTING TORQUE	lbf-in (Nm)	10 (1.1)	

CALIBRATION

SUPPLIED:		
VOLTAGE SENSITIVITY	mV/g	
MAXIMUM TRANSVERSE SENSITIVITY	%	
FREQUENCY RESPONSE	%	20 Hz to 10 kHz

INCLUDED ACCESSORIES

P/N 10207, 6-32	ISOLATED MOUNTING SCREW ASSY,
P/N EHM49	ALLEN WRENCH, 7/64
Model 3024M6-240	CABLE ASSEMBLY

OPTIONAL ACCESSORIES

Model 2950M3	TRIAXIAL MOUNTING BLOCK
--------------	-------------------------

NOTES

- Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send for TP290 for more details.