

ISOTRON[®] Accelerometer

**ENDEVCO
MODEL
7255A-01
-1**

Model 7255A-01 and -1 (PYROTRON[™])

- Low Impedance Output
- Built-in Mechanical Filter
- Hermetically Sealed
- Light Weight (5.0 gm)
- High-g/Near-Field Shock Applications



Actual size

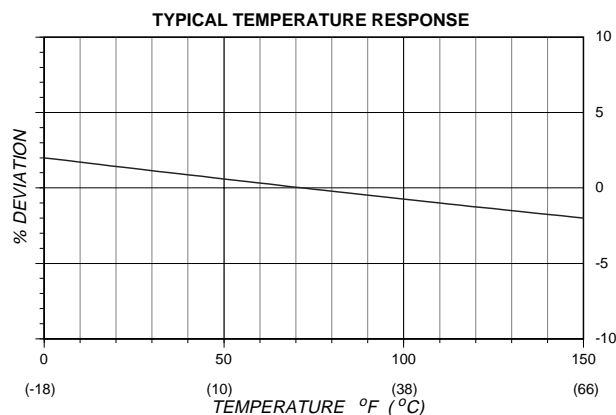
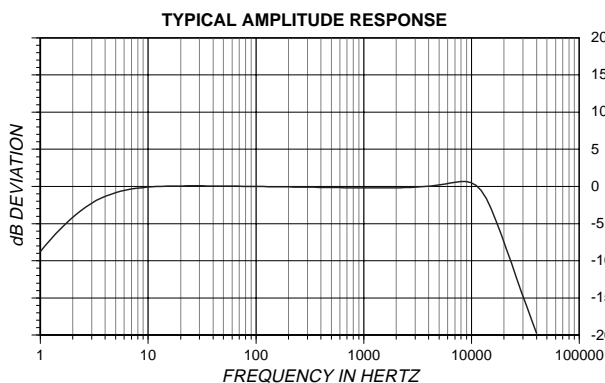
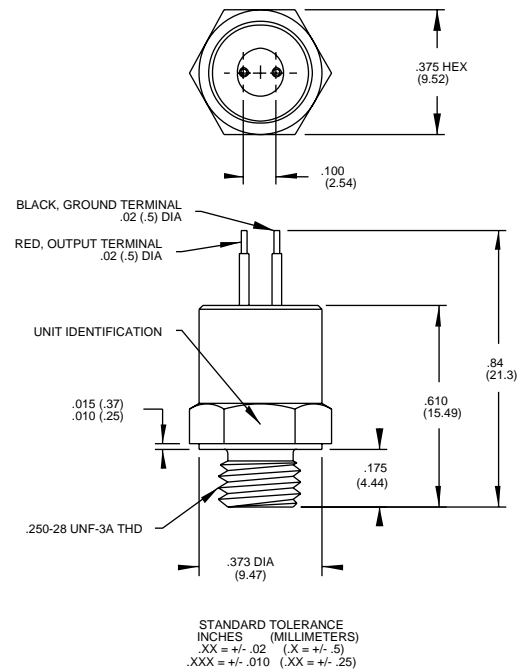


DESCRIPTION

The ENDEVCO[®] Model 7255A PYROTRON is a miniature, lightweight piezoelectric accelerometer with integral electronics, designed specifically for near-field pyroshock and high-level mechanical impact measurements, where unwanted high frequency signals often mask the desired low-level, low frequency information. The unit incorporates a uniquely designed built-in mechanical filter system to effectively block out high frequency input spikes, protecting the sensing element from overstress.

The Model 7255A-01 has a 50 000 g full scale output range and 300 000 g survivability. It is ideal for near-field, high-g measurement. For lower level shocks, a high output "-1" range (5000 g F.S.) is available. The 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. Signal ground is connected to the inner case of the unit which acts as a shield, and 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 gage, lightweight hook-up wires are required for error-free operation. The model number suffix indicates acceleration sensitivity in mV/g; i.e., 7255A-01 features output sensitivity of 0.1 mV/g.

ENDEVCO Signal Conditioner Models 133, 2792B, 2793, 2775A or OASIS 2000 Computer-Controlled System, set to +10 mA, are recommended for use with this accelerometer.



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

DYNAMIC CHARACTERISTICS	Units	-01	-1
RANGE	g	±50 000	±5000
VOLTAGE SENSITIVITY			
Typical	mV/g	0.10	1.0
Minimum	mV/g	0.07	0.75
FREQUENCY RESPONSE			
Resonance Frequency, Mechanical filter	kHz	See Typical Amplitude Response 15	
Amplitude Response			
±1 dB, Typical	Hz	10 to 10 000	
TRANSVERSE SENSITIVITY			
	%	≤ 5	
TEMPERATURE RESPONSE			
		See Typical Curve	
AMPLITUDE NONLINEARITY			
	%	0.4/10 000 g	0.4/1000 g

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	
RESOLUTION	equiv. g rms	0.50	0.05
Broadband, 2 Hz to 10 kHz			
GROUNDING		Case isolated from signal ground by 50 MΩ minimum at 50 Vdc	

POWER REQUIREMENT

SUPPLY VOLTAGE	Vdc	+18 to +24
SUPPLY CURRENT	mA	+2 to +10
+10 mA recommended		
WARM-UP TIME (to within 10% of final bias)	sec	5

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE	0°F to +150°F (-18°C to +66°C)		
HUMIDITY	Hermetically sealed		
SHOCK LIMIT	g pk	300 000 [1]	25 000 [2]
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.004	0.0004
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	2 (3.6)	4 (7)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.05	0.005

PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	5.0 (.17)
CASE MATERIAL		Stainless Steel
CONNECTOR [3] [4]		Solder terminals using ribbon cable, field replaceable
MOUNTING TORQUE	lbf-in (Nm)	30 (3.5)

CALIBRATION

SUPPLIED:		
VOLTAGE SENSITIVITY	mV/g	1000 g half-sine, shock pulse

ACCESSORIES

Model 3024-120 (10 ft) CABLE ASSEMBLY, TWISTED PAIR
P/N EHM 1094 PROTECTIVE VINYL BOOT [5]

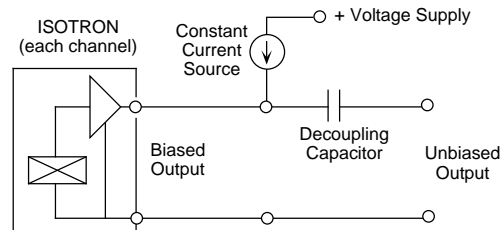
OPTIONAL ACCESSORY

Model 2967A BERYLLIUM TRIAX MOUNTING BLOCK
Model 3024M1-120 (10 ft) CABLE ASSEMBLY, TWISTED PAIR SHIELDED

- 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.

NOTES

- Mechanical filter is effective up to 300 000 g's peak in the sensitive direction, and 100 000 g's peak in the transverse direction.
- The -1 range is limited to 25 000 g's peak.
- Heavy cable (other than the supplied model 3024) may cause frequency response errors during measurement or calibration.
- It is recommended to install small shrink tubing over the solder joints to prevent accidental touching.
- Read the Instruction Manual regarding the use of Protective Vinyl Boot.
- Recommended reading: TP308.



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.