# ISOTRON® Accelerometer

**ENDEVCO MODEL 7250A-2 -10**

## Model 7250A-2 and -10

- **Low Impedance Output**
- **Hermetically Sealed**
- **360° Cable Orientation**
- **Light Weight (1.8 gm)**
- **Flight Test Applications**

Actual size

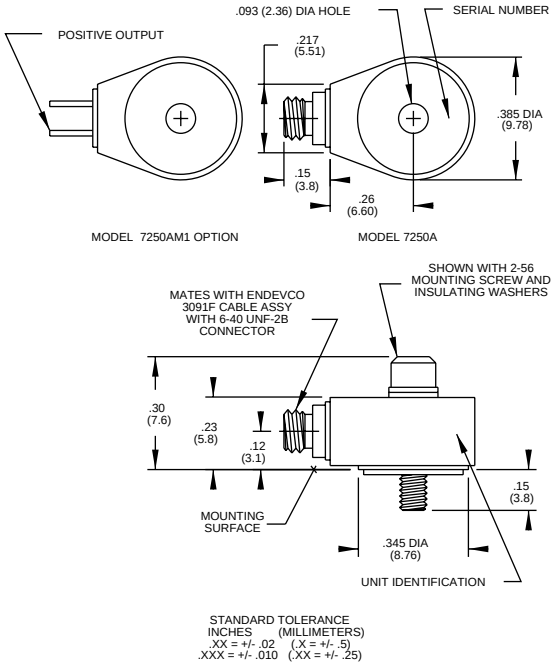
### DESCRIPTION

The ENDEVCO® Model 7250A is a subminiature, piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration on small objects. The unit is hermetically sealed for use in extreme environments and to ensure long term stability. This accelerometer offers high resonance frequency and wide bandwidth, its light weight (1.8 gm) effectively eliminates mass loading effects. The Model 7250A features a standard 6-40 coaxial connector which requires a specially designed coaxial cable for error free operation.

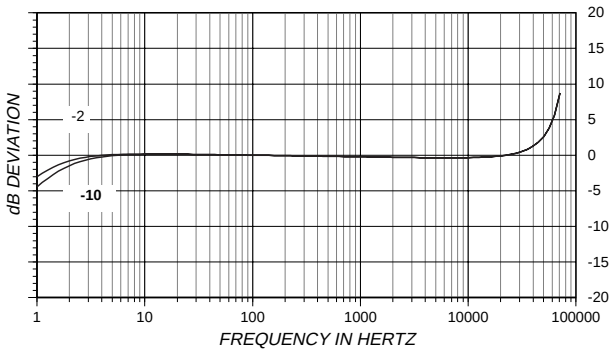
The Model 7250A features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in annular shear mode. This accelerometer incorporates an internal hybrid signal conditioner in a two-wire system, which transmits its low impedance voltage output through the same cable that supplies the constant current power. Signal ground is connected to the outer case of the unit and, when used with the supplied isolated mounting screw/washer, it is electrically isolated from ground. The centrally located mounting bolt permits 360° cable orientation, however, the unit may also be adhesively mounted. A model number suffix indicates acceleration sensitivity in mV/g; i.e., 7250A-10 features output sensitivity of 10 mV/g.

A special version, Model 7250AM1, is available with solder pins as output terminals instead of the 6-40 UNF connector.

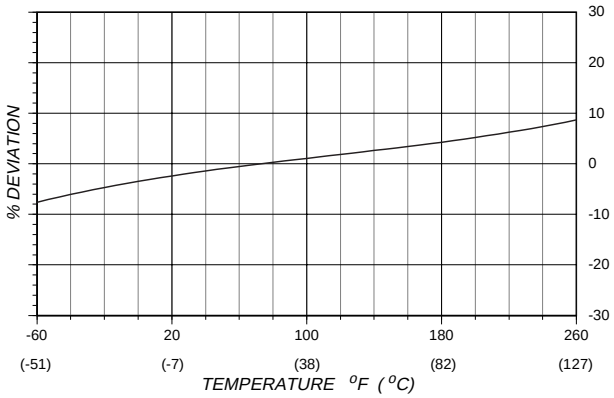
ENDEVCO Signal Conditioner Models 4416B, 133, 2792B, 2793, 2775A or OASIS 2000 Computer-Controlled System are recommended for use with these accelerometers.




**TYPICAL AMPLITUDE RESPONSE**




**TYPICAL TEMPERATURE REPONSE**



**ENDEVCO**
**MODEL**
**7250A-2**
**-10**

# 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 | -2 | -10 |
|---|---|---|---|
| RANGE | g | ±5000 | ±500 |
| VOLTAGE SENSITIVITY [1] ±10% | mV/g | 2 | 10 |
| FREQUENCY RESPONSE | | See Typical Amplitude Response | |
| RESONANCE FREQUENCY | kHz | 85 | |
| AMPLITUDE RESPONSE | | | |
| ±5% | Hz | 3 to 10 000 | 3 to 10 000 |
| ±1 dB | Hz | 2 to 20 000 | 2 to 20 000 |
| TEMPERATURE RESPONSE | | See Typical Curve | |
| TRANSVERSE SENSITIVITY | % | ≤ 5 | |
| AMPLITUDE LINEARITY [2] | % | 1 to full scale | |
| **OUTPUT CHARACTERISTICS** | | | |
| OUTPUT POLARITY | | Acceleration directed into base of unit produces positive output | |
| DC OUTPUT BIAS VOLTAGE | Vdc | +11.0 to +14.0 | +8.5 to +11.5 |
| OUTPUT IMPEDANCE | Ω | ≤ 200 | |
| FULL SCALE OUTPUT VOLTAGE | V | ±10 | ±5 |
| RESOLUTION 2 Hz to 20 kHz | equiv. g rms | 0.01 | 0.02 |
| GROUNDING | | Signal ground connected to case. Isolation achieved via isolated mounting washer and isolated screw | |
| **POWER REQUIREMENT** | | | |
| SUPPLY VOLTAGE | Vdc | +24 to +28 | +18 to +28 |
| SUPPLY CURRENT | mA | +2 to +10 | |
| WARM-UP TIME To 10% of final bias level | sec | < 3 | |
| **ENVIRONMENTAL CHARACTERISTICS** | | | |
| TEMPERATURE RANGE | | -67°F to +257°F (-55°C to +125°C) | |
| HUMIDITY | | Hermetically sealed | |
| SINUSOIDAL VIBRATION LIMIT | g pk | 2000 | |
| SHOCK LIMIT | g pk | 10 000 | |
| BASE STRAIN SENSITIVITY | | | |
| Screw Mounted | equiv. g pk/μ strain | 0.8 | |
| Adhesive Mounted | equiv. g pk/μ strain | 0.0004 | |
| THERMAL TRANSIENT SENSITIVITY | equiv. g pk/°F (/°C) | 0.5 (0.9) | |
| ELECTROMAGNETIC SENSITIVITY | equiv. g rms/gauss | 0.2 | |
| **PHYSICAL CHARACTERISTICS** | | | |
| DIMENSIONS | | See Outline Drawing | |
| WEIGHT | | | |
| Without Mounting Screw | gm (oz) | 1.8 (0.06) | |
| With Mounting Screw | gm (oz) | 2.3 (0.08) | |
| CASE MATERIAL | | Nickel plated aluminum case. Invar 36 support | |
| CONNECTOR | | 6-40, Mates with Endevco 3091F | |
| MOUNTING TORQUE | lbf-in (Nm) | 5 (0.57) | |
| **CALIBRATION** | | | |
| SUPPLIED: | | | |
| SENSITIVITY | mV/g | | |
| MAXIMUM TRANSVERSE SENSITIVITY | % | | |
| FREQUENCY RESPONSE | dB | 20 Hz to 50 kHz | |

**ACCESSORIES**

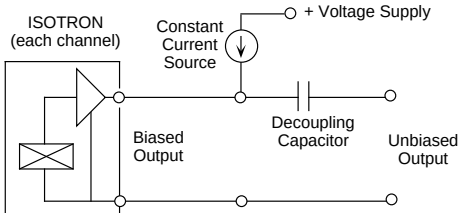
| | |
|---|---|
| Model 3091F-120 (10 ft) | CABLE ASSEMBLY |
| P/N EHM178 | ALLEN WRENCH |
| P/N 12746 | INSULATED MOUNTING SCREW KIT |

**OPTIONAL ACCESSORIES**

| | |
|---|---|
| Model 2950M18 | TRIAXIAL MOUNTING BLOCK |

NOTES

1. Other sensitivity ranges available on special order.
2. 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.
3. 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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