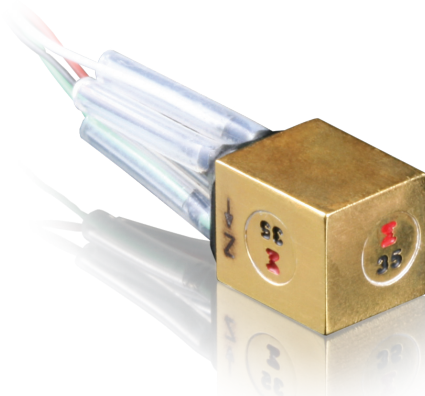


Model 35A Isotron[®] accelerometer

Features

- Low-impedance output
- World's smallest triaxial Isotron[®]
- Lightweight (1.1 gm)
- Flexible, replaceable cable

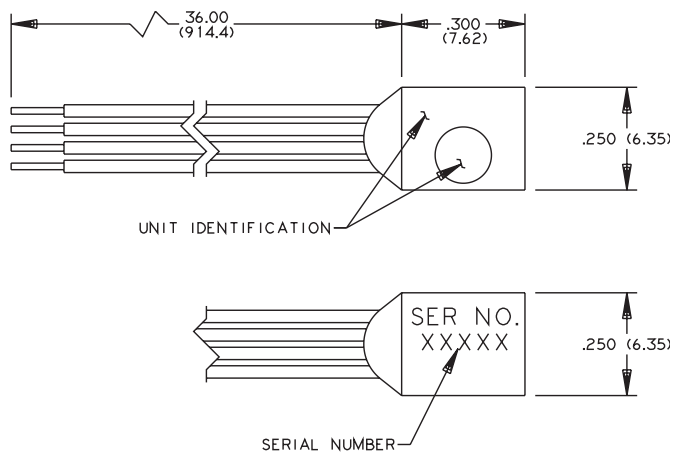


Description

The Endevco[®] model 35A is an extremely small, adhesive-mounted piezoelectric accelerometer with integral electronics, designed specifically for measuring vibration in three orthogonal axes on very small objects. The unit weighs only 1.1 gm, reducing unwanted mass-loading effects. The unit comes with pre-installed fine-gage (34 AWG) wires as output leads. These leads can be easily repaired in the field, or a new lead assembly may be reinstalled at the factory. A 4-conductor cable is attached to the ends of these leadwires, which is terminated with three BNC connectors. The model 35A is ideal for measuring vibration in scaled models, small electronic components, and biomedical research.

The model 35A features Endevco's Piezite[®] Type P-8 sensing element operating in shear mode. The internal amplifiers inside the accelerometer convert high-impedance charge input into low-impedance voltage output. The low-impedance output is transmitted through the same wires that supply the required 4-mA constant-current power. Signal ground is connected to the outer case. A removal tool is included for proper removal in the field.

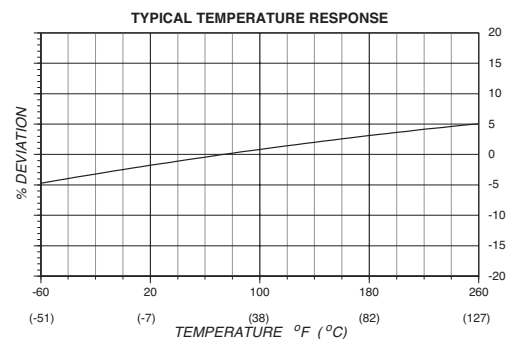
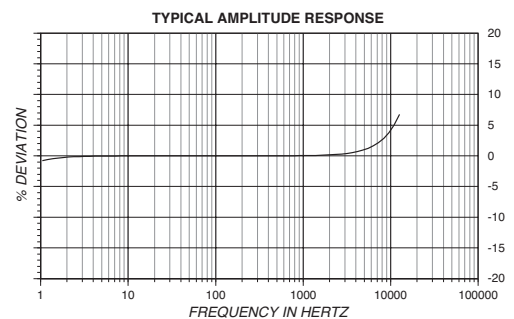
Endevco signal conditioner models 4416B, 133, 2793, 2775B, 4999, 6634C or Oasis 2000 (4990A-X with cards 428 and/or 433) computer-controlled system are recommended for use with these accelerometers.



BLK = G=GROUND
RED = Z=AXIS
GRN = Y=AXIS
WHT = X=AXIS

STANDARD TOLERANCE
INCHES (MILLIMETERS)
.XX = ± .02 (.X = ± .5)
.XXX = ± .010 (.XX = ± .25)

BRAVO- 35A



Model 35A Isotron[®] accelerometer



Specifications

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics

| | Units | |
|-----------------------------|-------|--------------------------------|
| Range | g | ±1000 |
| Voltage sensitivity | | |
| Typical | mV/g | 5 |
| Minimum | mV/g | 4 |
| Frequency response | | See typical amplitude response |
| Resonance frequency typical | kHz | 45 |
| Resonance frequency minimum | kHz | 40 |
| Amplitude response | | |
| ±5% (on Z axis) | Hz | 2 to 8000 |
| ±10% on X-Y axis | Hz | 2 to 8000 |
| ±1 dB | Hz | 1 to 12 000 |
| Temperature response | | See typical curve |
| Transverse sensitivity | % | ≤ 5 |
| Amplitude linearity | % | < 2 to full scale |

Output characteristics

| | | |
|-----------------------------------|--------------|--|
| Output polarity | | Acceleration directed into base of unit produces positive output |
| DC output bias voltage | Vdc | +8.5 to +11.5 |
| -67°F to +257°F (-55°C to +125°C) | % | ±5 typical |
| Output impedance | Ω | ≤ 100 |
| Full scale output voltage | V | ±5.0 |
| Residual noise | equiv. g rms | ≤ 0.007 |
| Grounding | | Signal ground connected to case. |

Power requirement

| | | |
|--------------------|-----|--------------|
| Supply current [1] | mA | +3.5 to +4.5 |
| Voltage | Vdc | +18 to +24 |
| Warm-up time | sec | < 3 |

Environmental characteristics

| | | |
|------------------------------------|---------------------|-----------------------------------|
| Temperature range | | -67°F to +257°F (-55°C to +125°C) |
| Humidity | | Epoxy sealed, non-hermetic |
| Sinusoidal vibration limit | g pk | 500 |
| Shock limit [2] | g pk | 2000 |
| Base strain sensitivity | eq. g pk / μ strain | 0.002 |
| Electromagnetic sensitivity | eq. g rms / gauss | 0.03 |
| Acoustic sensitivity at 140 dB SPL | eq. g | 0.008 |

Physical characteristics

| | | |
|------------------------|---------|-----------------------------|
| Dimensions | | See outline drawing |
| Weight (without cable) | oz (gm) | 0.04 (1.1) |
| Case material | | Aluminum alloy, gold plated |
| Mounting [3] | | Adhesive |

Calibration

| | | |
|------------------------|------|-----------------|
| Supplied: | | |
| Sensitivity | mV/g | |
| Transverse sensitivity | % | |
| Frequency response | % | 20 Hz to 12 kHz |

Notes:

- Excessive current supply may cause permanent damage to accelerometer.
- Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Request TP290 for more details.
- Depending on the dynamic and environmental requirements, adhesives such as petrowax, hot-melt glue, and cyanoacrylate epoxy (super glue) may be used to mount the accelerometer temporarily to the test structure. When removing a cyanoacrylate-mounted accelerometer, first soften the glue with an appropriate solvent, then twist the unit off with the supplied removal tool. Failure to heed this caution may cause permanent damage to the transducer, which is not covered under warranty.
- Small gage wires are soldered to the terminals on the accelerometer, and they are spliced together with the supplied cable assembly at the factory.
- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at +1 (866) 363-3826 for recommended intervals, pricing and turnaround time for these services as well as for quotations on our standard products.

Accessories

| Product | Description | 35A |
|-------------|---|----------|
| 3027AM5-120 | Cable assembly [4] | Included |
| 31662 | Wrench, hex | Included |
| EW1073 | Insulated mounting screw assembly | Included |
| 32227 | Screw, cap, Hex socket, 2-56 x 3/8 | Optional |
| 133 | Signal conditioner | Optional |
| 2775B | Signal conditioner | Optional |
| 2793 | Isotron [®] signal conditioner | Optional |
| 4416B | Signal conditioner | Optional |
| 4999 | Signal conditioner | Optional |
| 6634C | Signal conditioner | Optional |
| 4990A-X | Oasis 2000 computer-controlled system with cards 428 and/or 433 | Optional |



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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