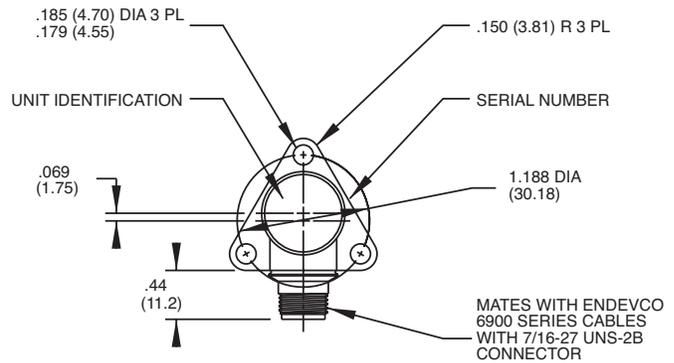
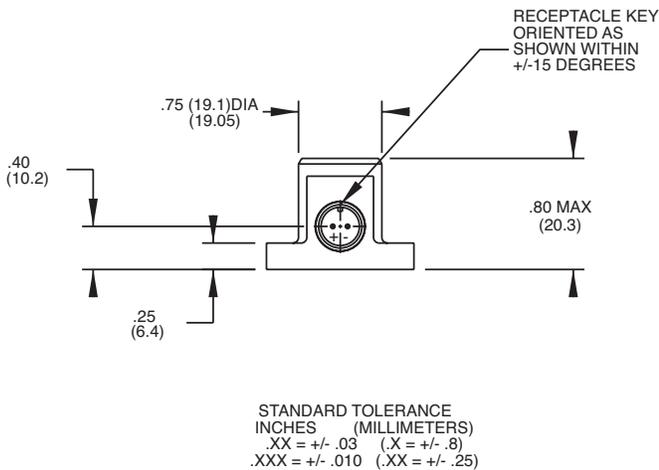


Piezoelectric accelerometer

6222S



Key features

- High-temperature operation (+260°C)
- Balanced differential output
- Ground-isolated
- Requires no external power
- Gas-turbine testing

Description

The Endevco® model 6222S series of piezoelectric accelerometers is designed for vibration measurement of gas-turbine engines used in aircraft and industrial applications. The unit features high sensitivity in a low profile package with a ruggedized connector and standard ARINC 3-point mounting. The 6222S is designed for continuous operation to +500°F (260°C) with long Mean Time Between Failure (MTBF). The accelerometer is a self-generating device that requires no external power for operation.

The 6222S features Endevco's Isoshear® construction, which results in an accelerometer with low transient-temperature and base-strain outputs, high mounted resonance, and high operating temperature. The 6222S provides a balanced differential output which is isolated from case ground. The 6222S is available in standard ranges of 20, 50 and 100 pC/g, and is designed to be used with Endevco's 6917 series of shielded cable assemblies

Endevco signal conditioner models 6634C and 2777A are recommended for use with this differential output, high-impedance accelerometer.

Piezoelectric accelerometer | Model 6222S

The following performance specifications are typical values and taken at +75°F (+24°C), referenced at 100 Hz and conform to ISA-RP-37.2 (1-64) unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

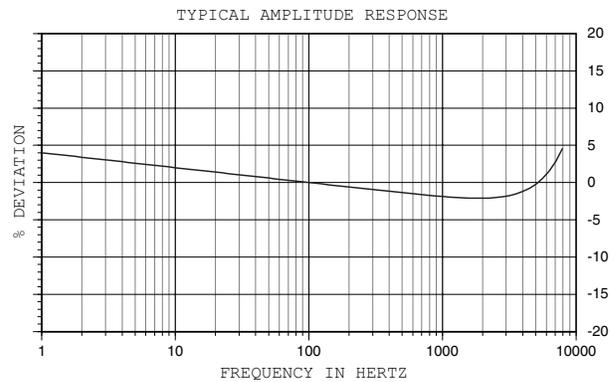
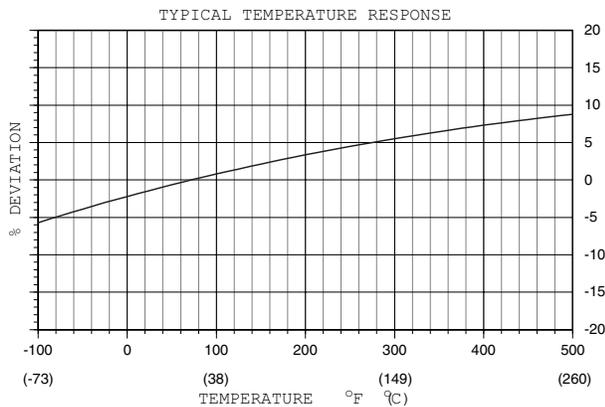
| Specifications | | | | |
|--------------------------------------|-----------------------|---------------------------------------|---------------------------|---------------|
| Dynamic characteristics | | -20A | -50A | -100A |
| Charge sensitivity ±5% | pC/g | 20 | 50 | 100 |
| Frequency response | | See typical amplitude response | | |
| Resonance frequency [1] | kHz | 45 | 28 | 28 |
| Amplitude response [2] | | | | |
| ±5% | Hz | 1 to 9,000 | 1 to 6,000 | 1 to 6,000 |
| ±1dB | Hz | 1 to 12,000 | 1 to 9,000 | 1 to 9,000 |
| Temperature response | | See typical curve | | |
| Transverse sensitivity, max | % | | 3 | |
| Amplitude linearity | % | 1/625 g | 1/250 g | 1/200 g |
| Up to vibration limit | | | | |
| Electrical characteristics | | | | |
| Resistance (Between pins) [4] | GΩ | | ≥10 | |
| At +500°F (+260°C) | MΩ | | ≥50 | |
| Isolation (Pin to case) | GΩ | | ≥10 | |
| At +500°F (+260°C) | MΩ | | ≥50 | |
| Capacitance | pF | 2,800 | 2,800 | 12,200 |
| Either signal pin to case | pF | | ≤30 | |
| Unbalance between pins | pF | | ≤2 | |
| Grounding | | Signal return isolated from case | | |
| Environmental characteristics | | | | |
| Temperature range | | range -65 to +500°F (-54°C to +260°C) | | |
| Humidity | | Hermetically sealed | | |
| Sinusoidal vibration limit | g pk | 2,000 | 1,000 | 500 |
| Shock limit | g pk | 4,000 | 2,000 | 1,000 |
| Base strain sensitivity | equiv g pk / μ strain | 0.1 | 0.4 | 0.2 |
| Thermal transient sensitivity | equiv. g pk /°F (°C) | 0.020 (0.036) | 0.010 (0.018) | 0.005 (0.009) |
| Physical characteristics | | | | |
| Dimensions | | See outline drawing | | |
| Weight | gm (oz) | 60 (2.1) max | | |
| Case material | | Stainless steel | | |
| Connector [3] | | Two pin 7/16-27 UNS receptacle | | |
| Mounting torque | | | | |
| EH621 cap screws | lbf-in (Nm) | | 14 (1.6) | |
| 10-32 stud | lbf-in (Nm) | | 18 (2) | |
| Calibration data | | | | |
| Charge sensitivity | pC/g | | | |
| Charge frequency response | | | | |
| 6222S-20A | % | | 50 to 9000 Hz | |
| 6222S-50A/-100A | dB | | 9000 Hz through resonance | |
| | % | | 50 to 6000 Hz | |
| | dB | | 6000 Hz through resonance | |
| Maximum transverse sensitivity | % | | | |
| Capacitance | pF | | | |

Piezoelectric accelerometer | Model 6222S

| Accessories | | |
|-------------|--|----------|
| Product | Description | 6222S |
| EH621 | 8-32 UNC x 0.5 inch socket head bolt, 3x | Included |
| 6917B-XXX | Low noise, twisted pair cable assembly, ETFE Jacket, 7/16-27 (2 pin socket) to pigtail | Optional |
| 6917D-XXX | Low noise, twisted pair cable assembly, ETFE Jacket, 7/16-27 (2 pin socket) to pigtail, Viton Boot | Optional |
| 6634C-XXX | 1-channel, benchtop, PE/Diff PE/IEPE Vibration Amplifier, | Optional |
| 2777A-XX-YY | Diff. Remote Charge Convertor | Optional |

Notes

1. Cover resonance at approximately 23 kHz, case resonance at approximately 35 kHz.
2. Low-end amplitude response is a function of the associated electronics.
3. Prolonged exposure at maximum temperature may decrease the return to room temperature resistance to as low as 500 M Ω , but will not degrade the overall performance of the unit. All units are processed to initially meet 10 G Ω at room temperature.
4. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.



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