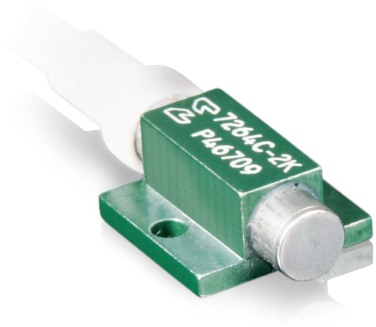
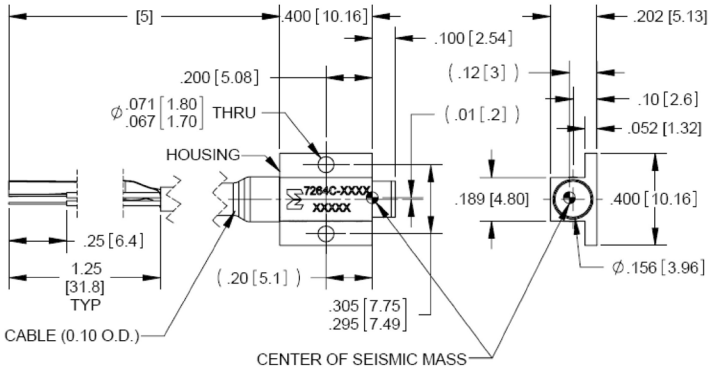
Endevco®

# Piezoresistive accelerometer

## Model 7264C




## Key features

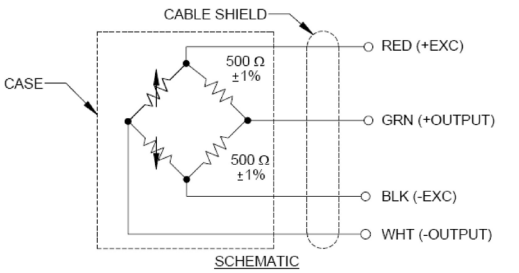
- 500 g and 2000 g full scale ranges
- DC response - long duration transients
- Mechanical overtravel stops
- Small size, rugged
- Crash and shock testing

Model 7264C is a very low mass piezoresistive accelerometer weighing only 1 gram. This accelerometer is designed for crash testing, rough road testing and similar applications that require minimal mass loading and a broad frequency response. This accelerometer meets SAEJ211 specifications for instrumentation for impact testing and SAEJ2570 specification for anthromorphic testing.

7264C utilizes an advanced micromachined sensor, which includes integral mechanical stops. This monolithic sensor offers improved ruggedness, stability and reliability over previous designs. 7264C has minimum damping, thereby producing no phase shift over the useful frequency range. With a frequency response extending down to dc (steady state acceleration), this accelerometer is ideal for measuring long duration transient shocks.

This accelerometer has a full bridge circuit with fixed resistors for shunt calibration. Full scale output is 400 mV with 10Vdc excitation. It is also available with less than 1% transverse sensitivity ("T" option) and less than ±25 mV zero measurand output ("Z" option).

**Recommended electronics for signal conditioning and power supply are the Endevco brand model 126 and 136 and model 436, a general purpose three channel DC conditioner and power supply. U.S. Patents 4,498,229 and 4,605,919 apply.**




## Meggitt Sensing Systems

**Our measurement product competencies:**
Piezoelectric accelerometers | Piezoresistive accelerometers | Isotron accelerometers | Variable capacitance accelerometers | Pressure transducers | Acoustic sensors | Electronic instruments | Calibration systems | Shakers | Modal hammers | Cable assemblies

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## 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 | 7264C-500 | 7264C-2000 |
|---|---|---|---|
| Range | g | ± 500 | ± 2000 |
| Sensitivity (at 100 Hz & 10 g) | mV/g typ (min) | 0.80 (0.40) | 0.20 (0.15) |
| Frequency response [1] | Hz | | |
| (± 2% max, ref. 100 Hz) | | | 0 to 2000 |
| (± 5% max, ref. 100 Hz) | | 0 to 3000 | 0 to 5000 |
| Mounted resonance frequency | Hz | 17 000 | 26 000 |
| Damping ratio | Max | 0.05 | 0.05 |
| Non-linearity | | | |
| (% of reading, to full range) | % max | ±1 | ±1 |
| Repeatability | | | |
| (after full scale shock) | Equiv. g | 0.2 | 0.2 |
| Transverse sensitivity [2] | % max | 3 (1 optional) | 3 (1 optional) |
| Zero measurand output [3] | mV max | ± 50 (± 25 optional) | ± 50 (± 25 optional) |
| Thermal zero shift | mV typ | ± 10 | ± 10 |
| From 0°F to +150°F (-18°C to +66°C), ref 75°F (24°C) | mV max | ± 25 | ± 25 |
| Thermal sensitivity shift | %/°F typ | -0.06 | -0.06 |
| From 0°F to +150°F (-18°C to +66°C) | %/°C typ | -0.10 | -0.10 |
| From 65°F to +85°F (+18°C to +29°C), ref 75°F (24°C) | ± % typ | ± 1.0 | ± 1.0 |
| Warm-up time | ms typ | 1 | 1 |
| Base strain sensitivity (per ISA 37.2 @ 250 µ strain) | Equiv. g's | ‹ 0.1 | ‹ 0.1 |
| Mechanical overtravel stops | g's | 1500 g typical,<br>750 g minimum | 5000 g typical,<br>2500 g minimum |

| Electrical characteristics | |
|---|---|
| Excitation [4] | 5 Vdc and 10 Vdc |
| Input resistance [5] | 300 to 900 ohms |
| Output resistance [5] | 400 to 1600 ohms |
| Fixed resistors | 500 ohms ± 1% |
| Insulation resistance | 100 megohms minimum at 50 Vdc; leads to case and to shield |

| Physical characteristics | |
|---|---|
| Case material | Green anodized aluminum alloy |
| Electrical connections | Integral cable, four conductor No. 32 AWG Teflon® insulated leads, braided shield,<br>White silicone jacket |
| Mounting torque | Holes for two 0-80 mounting screws/3 lbf-in (0.3 Nm)) |
| Weight | 1.4 gram (cable weighs 9 grams/meter) |

| Environmental characteristics | | | |
|---|---|---|---|
| Acceleration limits (in any direction) | | | |
| Static | | 5000 g | 10 000 g |
| Sinusoidal vibration | | 1000 g pk below 3 kHz | 1000 g pk below 5 kHz |
| Shock (half-sine pulse duration) | | 5000 g, 300 µsec or longer | 10 000 g, 200 µsec or longer |
| Temperature | | | |
| Operating | 0°F to +150°F (-18°C to +66°C) | | |
| Storage | -65°F to +250°F (-54°C to +121°C) | | |

| Calibration data supplied | |
|---|---|
| Sensitivity (at 100 Hz and 10 g pk) | mV/g at 5.0 Vdc and 10.0 Vdc |
| Frequency response | 20 Hz to 3000 Hz, % deviation reference 100 Hz; dB plot continued from 3000 to 30 000 Hz<br>for 7264C-500: 20 Hz to 5000 Hz, % deviation reference 100 Hz; dB plot continued from<br>5000 to 30 000 Hz for 7264C-2000 |
| Zero measurand output | mV at 5.0 Vdc and 10.0 Vdc |
| Maximum transverse sensitivity | % of sensitivity |
| Input and output resistance | Ohms |

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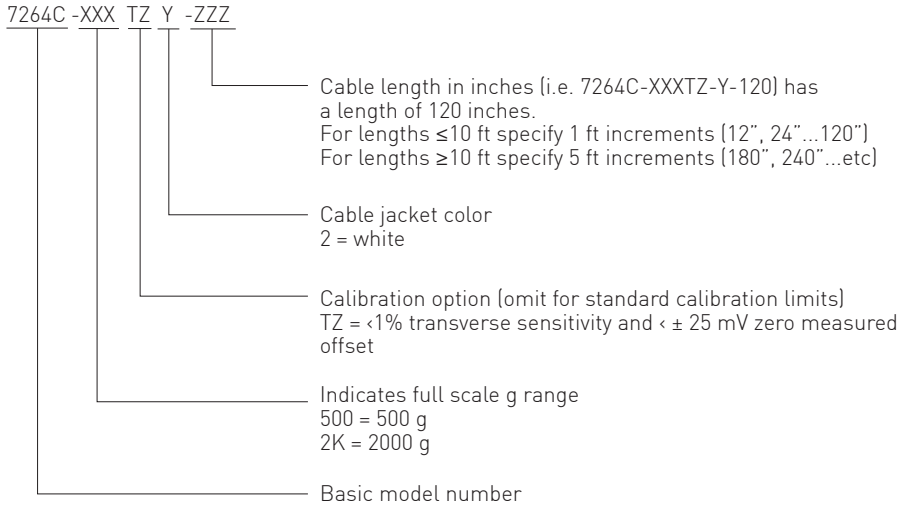
### Accessories

| Product | Description | 7264C |
|---|---|---|
| EHM35 | Allen wrench | Included |
| EHW196 | Size-0 flat washers (x2) | Included |
| EH828 | 0-80 x 3/16 inch socket head cap screw (x2) | Included |
| 24328-3 | Conductor shielded cable | Optional |
| 7953A | Triaxial mounting block | Optional |

### Notes

1. 1% transverse sensitivity available as "T" option.
2. 25 mV zero measurand output available as "Z" option.
3. Alternate excitation voltages up to 12.0 Vdc may be used, but should be specified at time of order to obtain best calibration.
4. Measurand at approximately 1 Vdc. Bridge resistance increases with applied voltage due to heat dissipation in the strain gage elements.
5. Maintain high levels of precision and accuracy using Meggitt's factory calibration services. Call Meggitt'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.
6. Model number definition:




## Contact

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