



MODELS 333D05, 333D06

VIBRATION TESTING SIMPLIFIED

DIGIDUCER® USB DIGITAL ACCELEROMETER

- USB Plug-and-Play Capability
- Rugged Piezoelectric Sensing Technology
- Broad Frequency and Dynamic Range
- Phone, Tablet, and PC Ready
- Record and Send Data to Off-Site Specialists
- Embedded Calibration
- Detachable M12 to USB-A (or USB-C) cable

TYPICAL APPLICATIONS

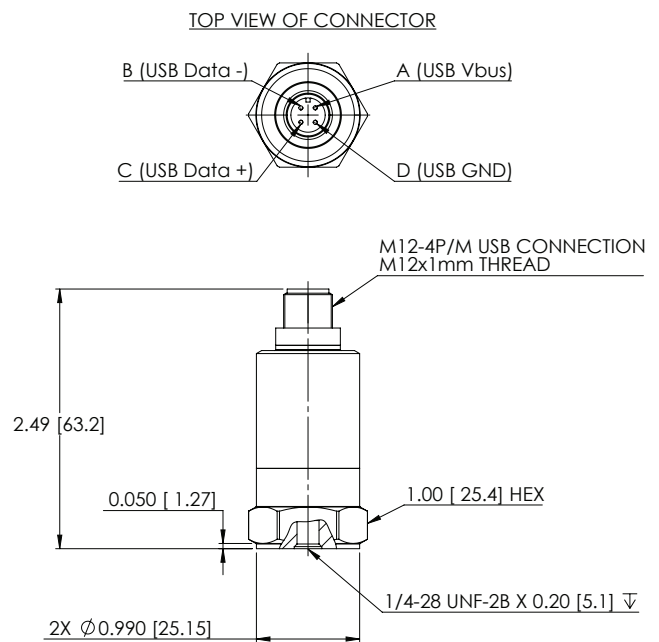
- Vibration Testing & Troubleshooting
- Automotive NVH
- Universities and Educational Research
- Predictive Maintenance and Condition Monitoring
- Production Line Testing

The Modal Shop's 333D Series Digiducers put high-quality, low-hassle vibration measurements in the palm of your hand. These USB Digital Accelerometers allow users to take professional-grade vibration measurements right from a PC, smartphone, or tablet, turning any device into a portable, hand-held vibration meter spectrum analyzer. The simplicity of the Digiducer opens the door to those just starting out in vibration, while still providing the accuracy and range needed by the experts. This unit is compatible with a variety of software applications, allowing users to choose the app that best fits their testing needs. The Digiducer offers standard USB audio digital output, making it easy to write custom software to connect it to IoT systems or use off-the-shelf applications from a variety of vendors.

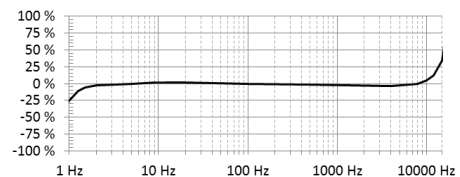
Based on piezoelectric sensing technology, Digiducers have a wide frequency range, $\pm 5\%$ flat from 2 Hz to 8 000 Hz (120 CPM to 480 000 CPM). The unit comes in a rugged, stainless steel, hermetically sealed package to survive harsh environments. With an optional magnetic mounting base and detachable cable (length of 3 meters), taking measurements is quick and easy, even in the most difficult to reach places. Digiducers deliver accurate, useful vibration testing in a package you can trust.

Models 333D05-C and 333D06-C include cable 529D10 for direct connectivity to popular USB-C ready devices, eliminating the need for USB adaptors.

| SPECIFICATIONS | | |
|--|---|--------------------------------------|
| Performance | 333D05 333D05-C | 333D06 333D06-C |
| Measurement Range ^[5] | | |
| Channel A | ± 20 g pk (± 196 m/s ²) | ± 100 g pk (± 980 m/s ²) |
| Channel B | ± 10 g pk (± 98 m/s ²) | ± 50 g pk (± 490 m/s ²) |
| Sensitivity ^[1] ^[2] ^[3] | | |
| Channel A | 4.00 % FSV/g | 0.8647 % FSV/g |
| Channel B | 7.96 % FSV/g | 1.7205 % FSV/g |
| ADC Bandwidth (-3 dB) | 9.3 CPM to 1 374 000 CPM (0.155 Hz to 22 900 Hz) | |
| Frequency Range (±5 %) | 120 CPM to 480 000 CPM (2 Hz to 8 000 Hz) | |
| Frequency Range (±10 %) ^[3] | 90 CPM to 660 000 CPM (1.5 Hz to 11 000 Hz) | |
| Frequency Range (±3 dB) ^[3] | 54 CPM to 900 000 CPM (0.9 Hz to 15 000 Hz) | |
| Resonant Frequency | ≥ 1 500 000 CPM (≥ 25 000 Hz) | |
| Mounted Resonance ^[3] | 1 044 000 CPM (17 400 Hz) | |
| Mounted Resonance Amplification ^[3] | 200 % | |
| Broadband Resolution ^[1] (1 Hz to 10,000 Hz) | 0.002 5 g pk (0.024 5 m/s ² pk) | |
| Non-Linearity ^[4] | ≤ 2 % | |
| Transverse Sensitivity ^[3] | ≤ 5 % | |
| Communication Standard | USB 2.0 Full Speed | |
| Power Consumption ^[3] | ≤ 45 mA | |
| Internal ADC | 24-bit | |
| Supported Sample Rates | | |
| 24-bit | 48, 44.1, 32, 22.05, 16, 11.025, 8.0 kHz | |
| 16-bit | 48, 44.1, 32, 22.05, 16, 11.025, 8.0 kHz | |
| Physical | | |
| Overload Limit (Shock) | 7 000 g pk (68 647 m/s ² pk) | |
| Temperature Range | 14 °F to 158 °F (-10 °C to +70 °C) | |
| Temperature Coefficient | 0.10 % / °F (0.18 % / °C) | |
| Size – Hex | 1.0 in (25.4 mm) | |
| Size – Height | 2.49 in (63.2 mm) | |
| Weight ^[6] | 4.3 oz (122 grams) | |
| Mounting Thread | ¼-28 UNF | |
| Mounting Torque | 2 lbf-ft to 5 lbf-ft (2.7 N-m to 6.8 N-m) | |
| Sensing Element | Piezoelectric Ceramic | |
| Sensing Geometry | Shear | |
| Housing Material | Stainless Steel | |
| Sealing | Welded Hermetic | |
| Electrical Connector | M12, 4-pin | |
| Electrical Connector Position | Top | |
| Ingress Protection Rating | IP67 | |
| Cable Length | 10 ft (3 m) | |
| M12 to USB Cable (Included) | | |
| 333D05/333D06 | 525D10 (USB-A) | |
| 333D05-C/333D06-C | 529D10 (USB-C) | |



Technical Drawing
(cable not shown)



Typical Frequency Response Curve

| Optional Accessories | |
|----------------------|---|
| 525D03 | 3 ft (1 m) cable, 4-socket M12 connector to USB Type-A |
| 526D10 | 10 ft (3 m) coiled cable, 4-socket M12 connector to USB Type-A |
| DigiCase | Protective EVA carrying case 7.2 x 3.9 x 1.9 in (183 x 99 x 48 mm) |
| 080A121 | Flat surface magnet base |
| 080A131 | Curved surface magnet base |
| 080A107 | Stainless steel probe tip, 2 in, ¼-28 thread |
| MD821AM/A | Lightning to USB-A female cable adaptor |

[1] Conversion Factor 1g = 9.80665 m/s²

[2] FSV = Full Scale Value

[3] Typical

[4] Zero-based, least square straight line method.

[5] Minimum range

[6] Including detachable cable

Specifications at room temperature unless otherwise specified.