



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 Cable

## TYPICAL APPLICATIONS

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

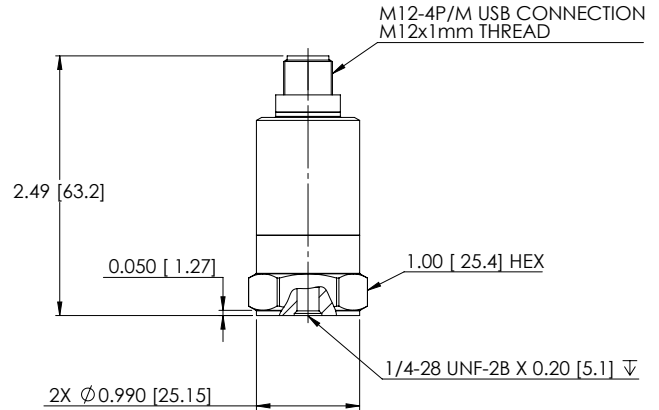
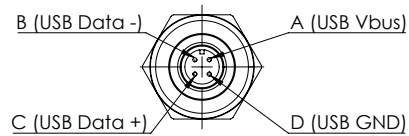
The Modal Shop's 333 Series Digiducers put high-quality, low-hassle vibration measurements in the palm of your hand. These USB Digital Accelerometers allow users to take professional-grade vibration measurements right from a PC, smartphone, or tablet, turning any device into a portable, hand-held vibration 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 also uses standard drivers, making it possible to write custom software if necessary and connect it to IoT systems.

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.

## SPECIFICATIONS

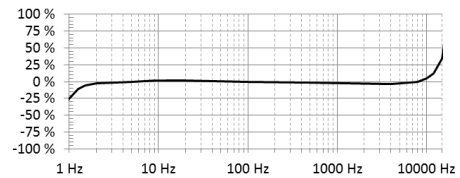
| Performance  | 333D05  | 333D06                                  |
|--|---|---|
| Measurement Range <sup>[5]</sup>                           |   |   |
| Channel A  | ± 20 g pk<br>(± 196 m/s <sup>2</sup> )              | ± 100 g pk<br>(± 980 m/s <sup>2</sup> ) |
| Channel B  | ± 10 g pk<br>(± 98 m/s <sup>2</sup> )               | ± 50 g pk<br>(± 490 m/s <sup>2</sup> )  |
| Sensitivity <sup>[1][2][3]</sup>                           |   |   |
| 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<br>(0.155 Hz to 22 900 Hz) |   |
| Frequency Range (±5 %)                                     | 120 CPM to 480 000 CPM<br>(2 Hz to 8 000 Hz)        |   |
| Frequency Range (±10 %) <sup>[3]</sup>                     | 90 CPM to 660 000 CPM<br>(1.5 Hz to 11 000 Hz)      |   |
| Frequency Range (±3 dB) <sup>[3]</sup>                     | 54 CPM to 900 000 CPM<br>(0.9 Hz to 15 000 Hz)      |   |
| Resonant Frequency   | ≥ 1 500 000 CPM (≥ 25 000 Hz)                       |   |
| Mounted Resonance <sup>[3]</sup>                           | 1 044 000 CPM (17 400 Hz)                           |   |
| Mounted Resonance Amplification <sup>[3]</sup>             | 200 %   |   |
| Broadband Resolution <sup>[1]</sup><br>(1 Hz to 10,000 Hz) | 0.002 5 g pk (0.024 5 m/s <sup>2</sup> pk)          |   |
| Non-Linearity <sup>[4]</sup>                               | ≤ 2 %   |   |
| Transverse Sensitivity <sup>[3]</sup>                      | ≤ 5 %   |   |
| Communication Standard                                     | USB 2.0 Full Speed                                  |   |
| Power Consumption <sup>[3]</sup>                           | ≤ 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            |   |
| <b>Physical</b>  |   |   |
| Overload Limit (Shock)                                     | 7 000 g pk (68 647 m/s <sup>2</sup> 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 <sup>[6]</sup>                                      | 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   |   |
| Electrical Connector Position                              | Top   |   |
| Cable Included   | 525D10  |   |
| Cable Length   | 10 ft (3 m)   |   |
| Cable Connectors   | M12 to USB-A  |   |

### TOP VIEW OF CONNECTOR



### Models 333D05, 333D06

Technical Drawing  
(cable not shown)



### Typical Frequency Response Curve

#### Optional Accessories

|                  |   |
|------------------|---|
| <b>526D10</b>    | 10 ft (3 m) coiled cable, 4-socket M12 connector to USB Type-A        |
| <b>525D03</b>    | 3 ft (1 m) cable, 4-socket M12 connector to USB Type-A                |
| <b>DigiCase</b>  | Protective EVA carrying case<br>7.2 x 3.9 x 1.9 in (183 x 99 x 48 mm) |
| <b>080A121</b>   | Flat surface magnet base  |
| <b>080A131</b>   | Curved surface magnet base  |
| <b>080A107</b>   | Stainless steel probe tip, 2 in, ¼-28 thread                          |
| <b>MD821AM/A</b> | Apple Lightning to USB-A female cable adaptor                         |
| <b>MUF82AM/A</b> | USB-C multiport to USB-A female cable adaptor                         |

[1] Conversion Factor 1g = 9.80665 m/s<sup>2</sup>

[2] FSV = Full Scale Value

[3] Typical

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

[5] Minimum range

[6] Including 525D10 detachable cable

Specifications at room temperature unless otherwise specified.