

MODEL 333D01

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

TYPICAL APPLICATIONS

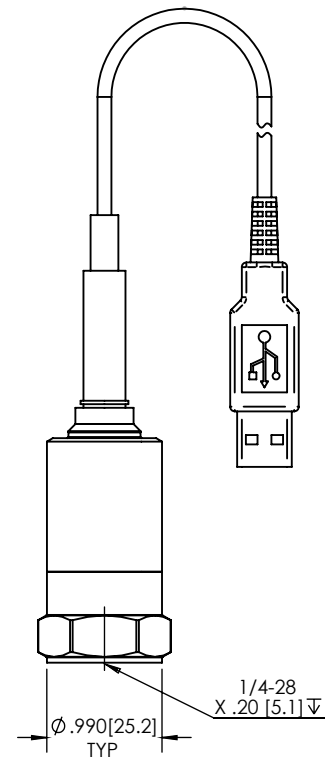
- Vibration Testing & Troubleshooting
- Machinery Health Monitoring
- Route Based Measurements
- Predictive Maintenance & Condition Monitoring
- Production Line Testing

VIBRATION TESTING SIMPLIFIED

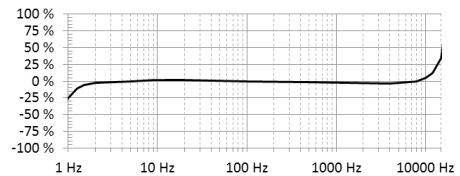
Model 333D01 Digiducer puts high-quality, low-hassle vibration measurements in the palm of your hand. This USB Digital Accelerometer allows users to take professional-grade vibration measurements right from a PC, smartphone, or tablet, turning any device into a portable, hand-held vibration meter spectrum analyzer. The simplicity of Model 333D01 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. Model 333D01 also uses standard drivers, making it possible to write custom software if necessary and connect it to IoT systems.

Based on piezoelectric sensing technology, Model 333D01 has a wide frequency range. The $\pm 5\%$ range is 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 a cable length of almost 3m, taking measurements is quick and easy, even in the most difficult to reach places. Model 333D01 USB Digital Accelerometer delivers accurate, useful vibration testing in a package you can trust.

SPECIFICATIONS		
Performance		
Sensitivity ^{[1][2]}		
Channel A	4.3 % FSV/g	
Channel B	8.4 % FSV/g	
Measurement Range		
Channel A	± 20 g pk	± 196 m/s ²
Channel B	± 10 g pk	± 98 m/s ²
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	2.6 in	66.0 mm
Weight	4.62 oz	131 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	USB Type A Male	
Electrical Connection Position	Top	
Cable (Integral) Length	9.6 ft	2.9 m



Model 333D01
Technical Drawing



Typical Frequency Response Curve

Optional Accessories	
080A121	Flat surface magnet base
080A131	Curved surface magnet base

- [1] Conversion Factor 1g = 9.80665 m/s²
- [2] FSV = Full Scale Value
- [3] Typical
- [4] Zero-based, least square straight line method

Specifications at room temperature unless otherwise specified



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The Modal Shop, Inc. offers structural vibration and acoustic sensing systems and services for various applications in design and test laboratories as well as manufacturing plants. An extensive sound and vibration rental program, precision calibration systems, and both modal and vibration shakers are designed to simplify test phases. Non Destructive Testing Systems help manufacturers provide 100% quality inspection of metal components. The Modal Shop, Inc. is a subsidiary of PCB Piezotronics, Inc., and PCB® is a wholly owned subsidiary of MTS Systems Corporation.

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