



MODELS 333D05, 333D06

## 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

### VIBRATION TESTING SIMPLIFIED

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.

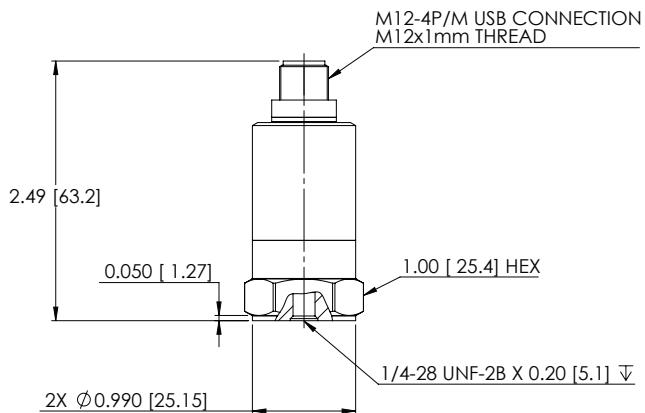
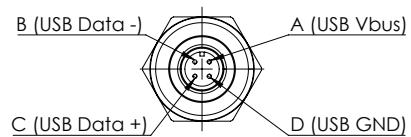
Based on piezoelectric sensing technology, Digiducers have a wide frequency range,  $\pm 5\%$  flat from 2 Hz to 8 000 Hz (120 CPM to 480 000 CPM). The unit comes in a rugged, stainless steel, hermetically sealed package to survive harsh environments. With an optional magnetic mounting base and detachable 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

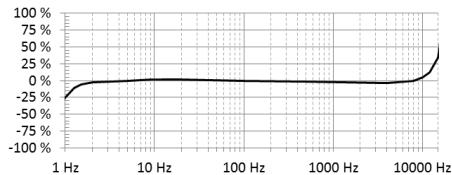
Performance	333D05 333D05-C	333D06 333D06-C
Measurement Range <sup>[5]</sup>		
Channel A	± 20 g pk (± 196 m/s <sup>2</sup> )	± 100 g pk (± 980 m/s <sup>2</sup> )
Channel B	± 10 g pk (± 98 m/s <sup>2</sup> )	± 50 g pk (± 490 m/s <sup>2</sup> )
Sensitivity <sup>[1][2][3]</sup>		
Channel A	4.00 % FSV/g	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 (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 %)	90 CPM to 660 000 CPM (1.5 Hz to 11 000 Hz)	
Frequency Range (±3 dB) <sup>[3]</sup>	54 CPM to 900 000 CPM (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> (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	
Physical		
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	1/4-28 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)	

## TOP VIEW OF CONNECTOR



## 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, 1/4-28 thread
MD821AM/A	Lightning 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 detachable cable

Specifications at room temperature unless otherwise specified.