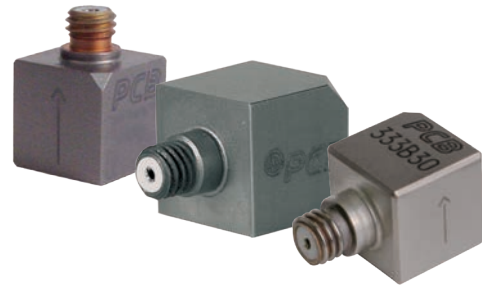




SERIES 333

## ACCELEROMETERS FOR MODAL TESTING



- High-output, piezoceramic sensing elements for strong output signal levels when measuring lower-amplitude input vibrations
- Reduced mass-loading effects by employing ultra-lightweight casing materials
- Minimal phase deviation, an important consideration for mode shape analysis

### TYPICAL APPLICATIONS

- Structural vibration testing
- Multi-channel modal analysis
- Analytical model correlation
- Ground vibration testing (GVT)
- Force response simulation

### STRUCTURAL TEST ICP® ACCELEROMETERS

The Series 333 ICP® accelerometers, and their accessories, are designed to address the needs of multi-point modal and structural test measurement applications. This equipment was developed in conjunction with the world renowned University of Cincinnati Structural Dynamics Research Laboratory and proven in real-world testing situations.

Conventional structural test data systems use a few to several hundred sensors. Cable bundles can be complex and confusing, resulting in setup errors. Sensors with TEDS (Transducer Electronic Data Sheet) allow for an internal sensor digital chip to store sensor information. This information contains descriptive identifiers, that when connected to a TEDS compatible signal conditioner or data system, reads the descriptive information and automatically aligns the data system. Human error is minimized, reducing time consuming data verification or re-test.

## SPECIFICATIONS

Model Number											
	English	SI	English	SI	English	SI	English	SI	English	SI	
<b>Performance</b>											
Sensitivity ( $\pm 10\%$ )	100 mV/g	10.2 mV/(m/s <sup>2</sup> )	100 mV/g	10.2 mV/(m/s <sup>2</sup> )	500 mV/g	51 mV/(m/s <sup>2</sup> )	500 mV/g	51 mV/(m/s <sup>2</sup> )	1000 mV/g	102 mV/(m/s <sup>2</sup> )	
Measurement Range	$\pm 50$ g pk	$\pm 490$ m/s <sup>2</sup> pk	$\pm 50$ g pk	$\pm 490$ m/s <sup>2</sup> pk	$\pm 10$ g pk	$\pm 98$ m/s <sup>2</sup> pk	$\pm 10$ g pk	$\pm 98$ m/s <sup>2</sup> pk	$\pm 5$ g pk	$\pm 49$ m/s <sup>2</sup> pk	
Frequency Range ( $\pm 5\%$ )	0.5 to 3000 Hz										
Resonant Frequency	$\geq 40$ kHz				$\geq 20$ kHz						
Phase Response ( $\pm 5^\circ$ )	2 to 3000 Hz								2.5 to 3000 Hz		
Broadband Resolution	0.00015 g rms (0.0015 m/s <sup>2</sup> rms)					0.00005 g rms (0.0005 m/s <sup>2</sup> rms)					
Non-Linearity	$\leq 1\%$										
Transverse Sensitivity	$\leq 5\%$										
<b>Environmental</b>											
Overload Limit (Shock)	$\pm 5000$ g pk								$\pm 4000$ g pk		
Temperature Range (Operating)	0 to +150 °F (-18 to +66 °C)										
Base Strain Sensitivity	0.01 g/ $\mu\epsilon$ (0.1 (m/s <sup>2</sup> )/ $\mu\epsilon$ )										
<b>Electrical</b>											
Excitation Voltage	18 to 30 VDC										
Constant Current Excitation	2 to 20 mA										
Output Impedance	$\leq 300$ Ohm				$\leq 200$ Ohm				$\leq 500$ Ohm		
Output Bias Voltage	7 to 12 VDC										
Discharge Time Constant	1.0 to 3.0 sec				1.0 to 2.5 sec				0.7 to 2.0 sec		
Spectral Noise (10 Hz)	11 $\mu\text{g}/\sqrt{\text{Hz}}$ (110 ( $\mu\text{m}/\text{sec}^2$ )/ $\sqrt{\text{Hz}}$ )					3.8 $\mu\text{g}/\sqrt{\text{Hz}}$ (37 ( $\mu\text{m}/\text{sec}^2$ )/ $\sqrt{\text{Hz}}$ )					
<b>Physical</b>											
Weight	0.14 oz (4.0 gm)				0.26 oz (7.5 gm)						
Sensing Element	Ceramic Shear										
Housing / Sealing	Titanium / Hermetic										
Size - Height	0.40 in	10.2 mm	0.57 in	14.5 mm	0.45 in	11.4 mm	0.65 in	16.5 mm	0.45 in	11.4 mm	
Size - Length	0.63 in	16.0 mm	0.40 in	10.2 mm	0.68 in	17.3 mm	0.45 in	11.4 mm	0.68 in	17.3 mm	
Size - Width	0.40 in	10.2 mm	0.40 in	10.2 mm	0.45 in	11.4 mm	0.45 in	11.4 mm	0.45 in	11.4 mm	
Electrical Connector	10-32 Coaxial Jack										
Electrical Connection Position	Side		Top		Side		Top		Side		
Mounting Thread	5-40 Female										
Mounting Torque	4 to 5 in-lb										
<b>TEDS MODEL AVAILABLE</b>											
	TLD333B30		TLD333B35		TLD333B40		TLD333B45		TLD333B50		



**3425 Walden Avenue, Depew, NY 14043-2495 USA**  
 Toll-Free in the USA: **800 828 8840**  
 Phone: **1 716 684 0001** | Email: **info@pcb.com**

PCB Piezotronics, Inc. is a designer and manufacturer of microphones, vibration, pressure, force, torque, load, and strain sensors, as well as the pioneer of ICP® technology used by design engineers and predictive maintenance professionals worldwide for test, measurement, monitoring, and control requirements in automotive, aerospace, industrial, R&D, military, educational, commercial, OEM applications, and more. With a worldwide customer support team, 24-hour SensorLine<sup>SM</sup>, and a global distribution network, PCB® is committed to Total Customer Satisfaction. Visit [www.pcb.com](http://www.pcb.com) for more information. PCB Piezotronics, Inc. is a wholly owned subsidiary of MTS Systems Corporation. Additional information on MTS can be found at [www.mts.com](http://www.mts.com).

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