



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	English	SI
Performance												
Sensitivity ($\pm 10\%$)	10 mV/g	1.02 mV/(m/s ²)	100 mV/g	10.2 mV/(m/s ²)	100 mV/g	10.2 mV/(m/s ²)	500 mV/g	51 mV/(m/s ²)	500 mV/g	51 mV/(m/s ²)	1000 mV/g	102 mV/(m/s ²)
Measurement Range	± 500 g pk	± 4905 m/s ² pk	± 50 g pk	± 490 m/s ² pk	± 50 g pk	± 490 m/s ² pk	± 10 g pk	± 98 m/s ² pk	± 10 g pk	± 98 m/s ² pk	± 5 g pk	± 49 m/s ² pk
Frequency Range ($\pm 5\%$)	1.0 to 10,000 Hz				0.5 to 3000 Hz							
Resonant Frequency	> 50 kHz				≥ 40 kHz				≥ 20 kHz			
Phase Response ($\pm 5^\circ$)	3 to 10,000 Hz				2 to 3000 Hz				2 to 3000 Hz		2.5 to 3000 Hz	
Broadband Resolution	0.0005 g rms	0.005 m/s ² rms	0.00015 g rms (0.0015 m/s ² rms)				0.00005 g rms (0.0005 m/s ² rms)					
Non-Linearity	$\leq 1\%$											
Transverse Sensitivity	$\leq 5\%$											
Environmental												
Overload Limit (Shock)	± 5000 g pk	$\pm 49,000$ m/s ² pk	± 5000 g pk								± 4000 g pk	
Temperature Range (Operating)	-65 to +250 °F (-54 to +121 °C)		0 to +150 °F (-18 to +66 °C)									
Base Strain Sensitivity	0.01 g/ $\mu\epsilon$ (0.1 (m/s ²)/ $\mu\epsilon$)											
Electrical												
Excitation Voltage	20 to 30 VDC				18 to 30 VDC							
Constant Current Excitation	2 to 20 mA											
Output Impedance	≤ 300 Ohm						≤ 200 Ohm			≤ 500 Ohm		
Output Bias Voltage	7 to 16 VDC				7 to 12 VDC							
Discharge Time Constant	1.0 to 4.0 sec		1.0 to 3.0 sec				1.0 to 2.5 sec			0.7 to 2.0 sec		
Spectral Noise (10 Hz)	20 $\mu\text{g}/\sqrt{\text{Hz}}$		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 ($\mu\text{m}/\text{sec}^2$)/ $\sqrt{\text{Hz}}$)					
Physical												
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	0.40 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	0.64 in	16.3 mm	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	0.40 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		Side		Top		Side		Top		Side	
Mounting Thread	Adhesive Mount				5-40 Female							
Mounting Torque	N/A				4 to 5 in-lb							
TEDS MODEL AVAILABLE												
	Included		TLD333B30		TLD333B35		TLD333B40		TLD333B45		TLD333B50	