PCB PIEZOTRONICS
AN AMPHENOL COMPANY



MODELS **HV356A03, HV356A44, HV356A45**

HIGH-VOLTAGE TRIAXIAL ICP® ACCELEROMETER



- Electrically insulated for use up to 2,000 VDC
- Sensitivity options of 10 mV/g, 50 mV/g, or 100 mV/g are available
- Measurement ranges of 500 g, 100 g, or 50 g are available
- TEDS compliant (HV356A44 & HV356A45 only)
- Custom cable lengths and connector configurations

TYPICAL APPLICATIONS

- Internal EV battery system vibration measurement
- Inverter and drive-control component vibration testing
- Electrified powertrain, motor, and gearbox monitoring
- Energized high-voltage component vibration evaluation
- Vibration studies during EV development and validation

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FOR HIGH-VOLTAGE EV BATTERY AND DRIVE SYSTEMS

The HV356A Series is a family of triaxial ICP® accelerometers built for the unique demands of measuring energized high-voltage electric vehicle systems. The non-conductive housing enables direct contact measurements on components energized up to 2,000 VDC, providing inherent protection for both data acquisition and technicians.

These models maintain the proven performance of their 356 Series counterparts utilizing shear-mode ceramic sensing elements that provide stable frequency response, low noise, and high shock limits — while allowing for direct measurement of high voltage energized EV systems. Building on these strengths, the HV Series adds features such as a rugged polymer housing for high voltage isolation and double jacketed integral cable for increased abrasion resistance. TEDS compliant options - HV356A44 and HV356A45 - simplify channel identification and optional cable lengths support the variety of layouts found in EV battery modules and drive system assemblies. The HV356A Series provides compact, reliable, and electrically insulated vibration data for development, power electronics testing, and durability validation.

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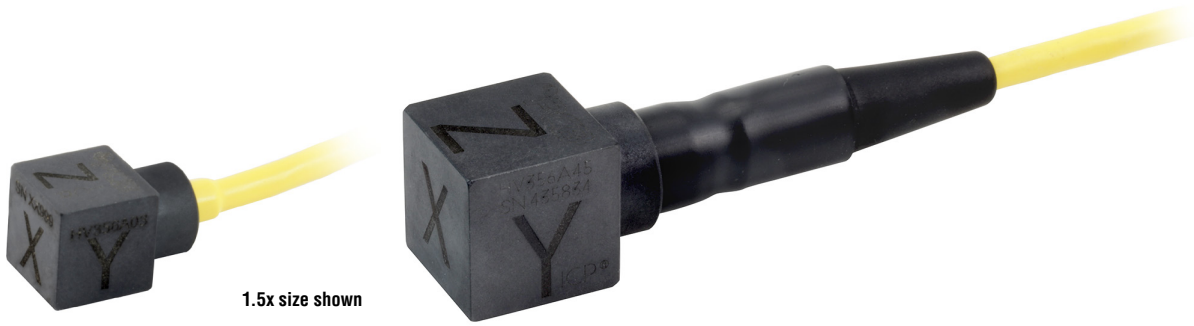

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SPECIFICATIONS

Model Number	HV356A03		HV356A44		HV356A45	
	English	SI	English	SI	English	SI
Performance						
Sensitivity (±10%)	10 mV/g (±20%)	1.02 mV/(m/s²) (±20%)	50 mV/g (±10%)	5.1 mV/(m/s²) (±10%)	100 mV/g (±10%)	10.2 mV/(m/s²) (±10%)
Measurement Range	±500 g pk	±4905 m/s² pk	±100 g pk	±981 m/s² pk	±50 g pk	±490 m/s² pk
Frequency Range (±5 %)	2 to 6800 Hz (y or z axis) 2 to 4200 Hz (x axis)		0.7 to 5000 Hz			
Resonant Frequency	≥ 45 kHz		≥ 30 kHz			
Broadband Resolution (1–10,000 Hz)	0.003 g rms	0.03 m/s² rms	0.0006 g rms	0.006 m/s² rms	0.0005 g rms	0.005 m/s² rms
Non-Linearity	≤ 1%					
Transverse Sensitivity	≤ 6%		≤ 7%			
TEDS	---		Included			
Environmental						
Overload Limit (Shock)	±5000 g pk	±49,050 m/s² pk	±5000 g pk	±49,050 m/s² pk	±5000 g pk	±49,050 m/s² pk
Temperature Range (Operating)	-65 to +250 °F	-54 to +121 °C	-65 to +200 °F	-54 to +93 °C	-65 to +185 °F	-54 to +85 °C
Electrical						
Excitation Voltage	22 to 30 VDC		20 to 30 VDC			
Constant Current Excitation	2 to 20 mA					
Output Impedance	≤ 200 Ohm					
Output Bias Voltage	9 to 16 VDC		8 to 12 VDC			
Discharge Time Constant	0.24 to 1.0 sec		0.8 to 2.4 sec			
Settling Time (within 10% bias)	≤ 3 sec		≤ 5 sec			
Spectral Noise (1 Hz)	1200 µg/√Hz	11,772 (µm/s²)/√Hz	200 µg/√Hz	1962 (µm/s²)/√Hz	125 µg/√Hz	1226 (µm/s²)/√Hz
Spectral Noise (10 Hz)	300 µg/√Hz	2,943 (µm/s²)/√Hz	45 µg/√Hz	441 (µm/s²)/√Hz	40 µg/√Hz	392 (µm/s²)/√Hz
Spectral Noise (100 Hz)	100 µg/√Hz	981 (µm/s²)/√Hz	20 µg/√Hz	196 (µm/s²)/√Hz	15 µg/√Hz	147 (µm/s²)/√Hz
Spectral Noise (1 kHz)	30 µg/√Hz	294 (µm/s²)/√Hz	6 µg/√Hz	58.9 (µm/s²)/√Hz	4 µg/√Hz	39.2 (µm/s²)/√Hz
Electrical Isolation	≥ 2,000 VDC					
Physical						
Sensing Element	Ceramic					
Sensing Geometry	Shear					
Housing Material	Polymer					
Sealing	Hermetic					
Size (H × L × W)	0.34 × 0.34 × 0.34 in	8.64 × 8.64 × 8.64 mm	0.50 × 0.80 × 0.50 in	12.7 × 20.3 × 12.7 mm	0.50 × 0.80 × 0.50 in	12.7 × 20.3 × 12.7 mm
Weight	0.06 oz	1.7 gm	0.20 oz	5.7 gm	0.20 oz	5.7 gm
Connector	¼-28 4-pin					
Connection Position	Side					
Cable Termination	¼-28 4-Pin Jack					
Cable Length	10.00 ft	3.0 m	10.00 ft	3.0 m	10.00 ft	3.0 m
Cable Type	034 Based, Yellow Polyolefin Jacket					
Mounting	Adhesive					
Supplied Accessories						
Model 080A109 Petro Wax Model 080A90 Quick Bonding Gel						

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AN AMPHENOL COMPANY

3425 Walden Avenue, Depew, NY 14043 USA

pcb.com | info@pcb.com | 800 828 8840 | +1 716 684 0001

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