



SERIES 350B4X

HIGH SHOCK ICP® TRIAXIAL ACCELEROMETER



- Mechanically isolated and electrically filtered
- Hermetically sealed sensing element for harsh environments
- Case isolated to avoid electrical noise and ground loops
- Eliminates the need for mounting three single axis sensors on a cube and uses a single shielded cable to simplify routing

TYPICAL APPLICATIONS

- Far-field and Mid-field Pyroshock
- Resonant Beam Excitation Monitoring
- High Shock Metal-to-Metal Impact

SERIES 350B4X IS MECHANICALLY ISOLATED AND ELECTRICALLY FILTERED

Series 350B4X is a ceramic, case isolated ICP® triaxial shock accelerometer that is mechanically isolated, electrically filtered and hermetically sealed for harsh environments such as pyroshock. Mechanical isolation limits the passage of high frequency signals into the sensing element. This ICP® shock accelerometer has an electrical second order LP filter between the sensing crystal and the ICP® amplifier, avoiding amplifier saturation and extending useful frequency response.

SPECIFICATIONS

Model	350B41	350B42	350B43	350B44
Performance				
Sensitivity ($\pm 30\%$)	0.05 mV/g 0.005 mV/(m/s ²)	.1 mV/g .01 mV/(m/s ²)	0.5 mV/g 0.05 mV/(m/s ²)	1.0 mV/g 0.1 mV/(m/s ²)
Measurement Range	$\pm 100,000$ g pk $\pm 981,000$ m/s ² pk	$\pm 50,000$ g pk $\pm 440,000$ m/s ² pk	± 10000 g pk ± 98000 m/s ² pk	± 5000 g pk ± 49000 m/s ² pk
Frequency Range (± 1 dB)	4 to 10000 Hz	4 to 10000 Hz	0.4 to 10000 Hz	0.4 to 10000 Hz
Frequency Range(+ 3 dB)	15000 Hz	15000 Hz	25000 Hz	25000 Hz
Resonant Frequency	>50 kHz	>50 kHz	>50 kHz	>50 kHz
Electrical Filter Corner Frequency (3 dB)	17 kHz	17 kHz	21 kHz	21 kHz
Mechanical Filter Resonant Frequency	35 kHz	35 kHz	35 kHz	35 kHz
Broadband Resolution (1 to 10000 Hz)	0.5 g rms 4.9 m/s ² rms	0.5 g rms 4.9 m/s ² rms	0.04 g rms 0.39 m/s ² rms	0.04 g rms 0.39 m/s ² rms
Non-Linearity	$\leq 2.5\%$	$\leq 2.5\%$	$\leq 2.0\%$	$\leq 2.0\%$
Transverse Sensitivity	$\leq 7\%$	$\leq 7\%$	$\leq 7\%$	$\leq 7\%$
Environmental				
Overload Limit (Shock)	$\pm 150,000$ g pk $\pm 1,471,500$ m/s ² pk	$\pm 150,000$ g pk $\pm 1,471,500$ m/s ² pk	± 50000 g pk ± 490000 m/s ² pk	± 50000 g pk ± 490000 m/s ² pk
Temperature Range (Operating)	-10 to +150 °F -23 to +66 °C	-10 to +150 °F -23 to +66 °C	-10 to +150 °F -23 to +66 °C	-10 to +150 °F -23 to +66 °C
Temperature Range (Storage)	-40 to +200 °F -40 to +93 °C	-40 to +200 °F -40 to +93 °C	-40 to +200 °F -40 to +93 °C	-40 to +200 °F -40 to +93 °C
Base Strain Sensitivity	0.002 g/ $\mu\epsilon$ 0.02 (m/s ²)/ $\mu\epsilon$	0.002 g/ $\mu\epsilon$ 0.02 (m/s ²)/ $\mu\epsilon$	0.002 g/ $\mu\epsilon$ 0.02 (m/s ²)/ $\mu\epsilon$	0.002 g/ $\mu\epsilon$ 0.02 (m/s ²)/ $\mu\epsilon$
Electrical				
Excitation Voltage	20 to 30 VDC	20 to 30 VDC	20 to 30 VDC	20 to 30 VDC
Constant Current Excitation	2 to 20 mA	2 to 20 mA	2 to 20 mA	2 to 20 mA
Output Impedance	≤ 200 Ohm	≤ 200 Ohm	≤ 200 Ohm	≤ 200 Ohm
Output Bias Voltage	8 to 14 VDC	8 to 14 VDC	8 to 14 VDC	8 to 14 VDC
Discharge Time Constant	0.1 sec	0.1 sec	1.0 to 2.0 sec	1.0 to 2.0 sec
Settling Time (within 10% of bias)	< 1 sec	< 1 sec	<10 sec	<10 sec
Electrical Isolation (Base)	> 10 ⁸ Ohm	> 10 ⁸ Ohm	10 ⁸ Ohm	10 ⁸ Ohm
Physical				
Sensing Element	Ceramic	Ceramic	Ceramic	Ceramic
Sensing Geometry	Shear	Shear	Shear	Shear
Housing Material	Titanium	Titanium	Titanium	Titanium
Sealing	Hermetic	Hermetic	Hermetic	Hermetic
Size (Height x Length x Width)	1.02 in x 1.02 in x 1.02 in 26.0 mm x 26.0 mm x 26.0 mm	1.02 in x 1.02 in x 1.02 in 26.0 mm x 26.0 mm x 26.0 mm	1.02 in x 1.02 in x 1.02 in 26.0 mm x 26.0 mm x 26.0 mm	1.02 in x 1.02 in x 1.02 in 26.0 mm x 26.0 mm x 26.0 mm
Weight (without cable)	0.95 oz 27 g	0.95 oz 27 g	0.95 oz 27 g	0.95 oz 27 g
Electrical Connector	Integral Cable*	Integral Cable*	Integral Cable*	Integral Cable*
Electrical Connection Position	Side	Side	Side	Side
Cable Termination	1/4-28 4-Pin Jack	1/4-28 4-Pin Jack	1/4-28 4-Pin Jack	1/4-28 4-Pin Jack
Cable Length	5.0 ft 1.52 m	5.0 ft 1.52 m	5.0 ft 1.52 m	5.0 ft 1.52 m
Cable Type	034 4-cond Shielded	034 4-cond Shielded	034 4-cond Shielded	034 4-cond Shielded
Mounting	Through Hole	Through Hole	Through Hole	Through Hole
Calibration Certificate	ACS-22T/ACS-14T	ACS-22T/ACS-14T	ACS-22T/ACS-14T	ACS-22T/ACS-14T

*/NC base models are available with no cable included

Series 350B4X is provided with two calibrations in accordance with MIL-STD-810H

- Amplitude response calibration for shock accelerometer, 100 Hz to upper 1 dB frequency, max 15 kHz (ISO 17025)
- High-G verification using Hopkinson bar to max g range, NIST traceable