

## HypoSensor Borehole

### Force Balance Accelerometer

Model FBA ES-DH is a triaxial downhole package useful for deep borehole installations. The unit consists of three HypoSensor force balance accelerometer modules mounted orthogonally in one small convenient package.

With full-scale recording ranges of  $\pm 0.25$  to  $\pm 4g$ , the HypoSensor provides on-scale recording of earthquake motions even at near-fault locations.

The significant bandwidth of DC to 200 Hz allows engineers and scientists to study motions at higher frequencies while maintaining the very important DC response that allows simple field calibration and reduces post-processing confusion.

Output circuitry is also significantly enhanced. Four types of outputs can be selected by the user:  $\pm 2.5V$  single-ended,  $\pm 10V$  single-ended,  $\pm 5V$  differential or  $\pm 20V$  differential.

The  $\pm 2.5V$  single-ended output is appropriate for use with traditional Kinemetrix earthquake recording instruments. The  $\pm 10V$  single-ended output and  $\pm 20V$  differential output are well suited for use with a wide range of digital recorders currently on the market. HypoSensor force balance accelerometers are also available in the FBA ES-SB shallow borehole package.

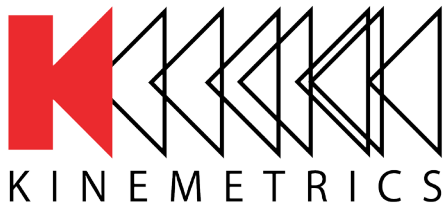


### FEATURES

- Low noise
- Extended bandwidth – DC to 200 Hz
- Factory-selectable full-scale range
- Calibration coil (standard)
- Single-end or differential output (user selectable)
- Double-stage transient protection

#### Options

Single 12Vdc supply	P/N 110501-PL
Internal compass	P/N 108390-04-PL
Wellhead junction box	PN 108365-PL
EPRI-Youd Wedging System	PN 105080-PL
Yoke adapter for loading poles	P/N 105060-PL
Master orientation pole	P/N 105071-PL
Loading pole (10 ft extens. pole)	P/N 105075-PL
Loading pole clamp	P/N 108369-PL
Centering spiders	



KINEMETRICS

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## SPECIFICATIONS

<b>Dynamic range:</b>	155 dB+
<b>Bandwidth:</b>	DC to 200 Hz
<b>Calibration coil:</b>	Standard
<b>Full-scale range:</b>	Factory-selectable at $\pm 0.25g$ , $\pm 0.5g$ , $\pm 1g$ , $\pm 2g$ or $\pm 4g$
<b>Outputs:</b>	User selectable at: $\pm 2.5V$ single-ended $\pm 10V$ single-ended $\pm 5V$ differential $\pm 20V$ differential
<b>Linearity:</b>	$< 1000 \mu g/g^2$
<b>Hysteresis:</b>	$< 0.1\%$ of full scale
<b>Cross-axis sensitivity:</b>	$< 1\%$ (including misalignment)
<b>Zero point thermal drift:</b>	$< 500 \mu g/^\circ C$
<b>Power consumption:</b>	12mA from +/- 12V (Standard Amp) 35mA from +/- 12V (Low Noise Amp) 100mA from Single 12Vdc supply
<b>Operating Temperature:</b>	$-20^\circ$ to $70^\circ C$ ( $0^\circ$ to $160^\circ F$ )
<b>Housing:</b>	75 mm diameter x 470 mm (3" x 18" $3/4$ stainless steel type 316) Watertight to 1000 psi
<b>Weight:</b>	6 kg (13 $1/4$ lbs)
<b>Ordering Information:</b>	Mating connector and cable, P/N 700306-XXX (-XXX: Must specify desired cable length.)