

ES-U2

Uniaxial Force Balance Accelerometer

For use in a variety of applications

The EpiSensor ES-U2 force balance accelerometer is a uniaxial surface package designed primarily for structural engineering applications. However, it can be used in a variety of applications for measuring accelerations up to $\pm 4g$ and down to the ambient noise level. With full-scale recording ranges of ± 0.25 to $\pm 4g$ (user selectable) the ES-U2 provides on-scale recording of earthquake motions even at near-fault locations and in a wide variety of structure types.

Because the ES-U2 is extremely low-noise, it can detect motions of the ambient vibration field at most urban sites and civil structures from 1 Hz to 200A Hz. This makes the ES-U2 a unique sensor at a great price. The output of the ES-U2 is an amplified, conditioned signal—it requires no external electronics other than a data acquisition system.

The significantly improved 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 processing confusion.

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

The sensor has a number of full scale outputs to match the traditional Kinemetrix earthquake recording instruments, as well as the most modern Kinemetrix' Rock+ series and Quanterra's Q330 series of dataloggers.

EpiSensor force balance accelerometers are also available in triaxial surface and borehole (the FBA ES-SB shallow and FBA ES-DH deep) packages.



FEATURES

- Low noise
- Extended bandwidth - DC to 200Hz
- User-selectable full-scale range
- Calibration coil (standard)
- Single-end or differential output (user selectable)



SPECIFICATIONS

Dynamic range:	155 dB+
Bandwidth:	DC to 200Hz
Calibration coil:	Standard
Full-scale range:	User selectable at $\pm 0.25g$, $\pm 0.5g$, $\pm 1g$, $\pm 2g$ or $\pm 4g$
Outputs:	User selectable at: $\pm 2.5V$ single-ended $\pm 10V$ single-ended $\pm 5V$ differential $\pm 20V$ differential
Zero adjust:	User-friendly access holes for simple, safe, efficient adjustment
Linearity:	$< 1000 \mu g/g^2$
Hysteresis:	$< 0.1\%$ of full scale
Cross-axis sensitivity:	$< 1\%$ (including misalignment)
Zero point thermal drift:	$< 500 \mu g/^{\circ}C$ (1g sensor)
Power consumption:	Quiescent current $< 9 mA$ from $\pm 12V$
Mounting:	Dual bolt for horizontal or vertical mounting
Operating Temperature:	-20° to $70^{\circ}C$ (0° to $160^{\circ}F$)
Housing:	EMI/RFI Watertight enclosure 55x65x97mm (2.2"x2.6"x3.8")
Weight:	0.35kg (0.77 pounds)