

AC-23 / AC-22 / AC-21 Accelerometer

Features

- Full Scale ± 2 g (options down to ± 0.1 g)
- Bandwidth 0.1/0.2 Hz to 100/200 Hz
- Dynamic range > 125 dB
- Excellent temperature stability
- Strong-Motion, Free field and Industrial applications
- Downhole version (AC-23-DH) is also available
- Different housing and mounting options are available
- Single Bolt Mounted Enclosure provides up to $\pm 10^\circ$ of Levelling Adjustment



Outline

The AC-23 package is a triaxial accelerometer sensor designed for Strong Motion and industrial applications where a high sensitivity is required.

The AC-2x sensors are servo-accelerometers based on a standard exploration geophone mass-spring system with electronic feedback. This type of sensor gives very good stability versus temperature or aging because of the very simple principle.

This type of sensor rarely requires maintenance and has very low aging drift.

The AC-2x is housed in a sealed cast aluminium housing 193 x 112 x 94 mm. The housing also incorporates a single bolt mount with three levelling screws. Stainless steel packaging options are available.

With the help of the TEST LINE the sensor can be easily completely tested. Full scale can be field selected by user with jumpers.

The AC-2x accelerometer is directly compatible with the GeoSIG recorders.

Specifications AC-23 / AC-22 / AC-21 Accelerometer

General Characteristics

Application: Strong Motion earthquake survey Industrial applications requiring high sensitivity

Configurations:

AC-23 or AC-23i*:

AC-22-H or AC-22-Hi*:

AC-22-V or AC-22-Vi*:

AC-21-H or AC-21-Hi*:

AC-21-V or AC-21-Vi*:

	Triaxial	Biaxial	Uniaxial	Axes	Alignment**
■	■	■	■	X - Y - Z	H - H - V
■	■	■	■	X - Y	H - H
■	■	■	■	X (or Y) - Z	H - V
■	■	■	■	X (or Y)	H
■	■	■	■	Z	V

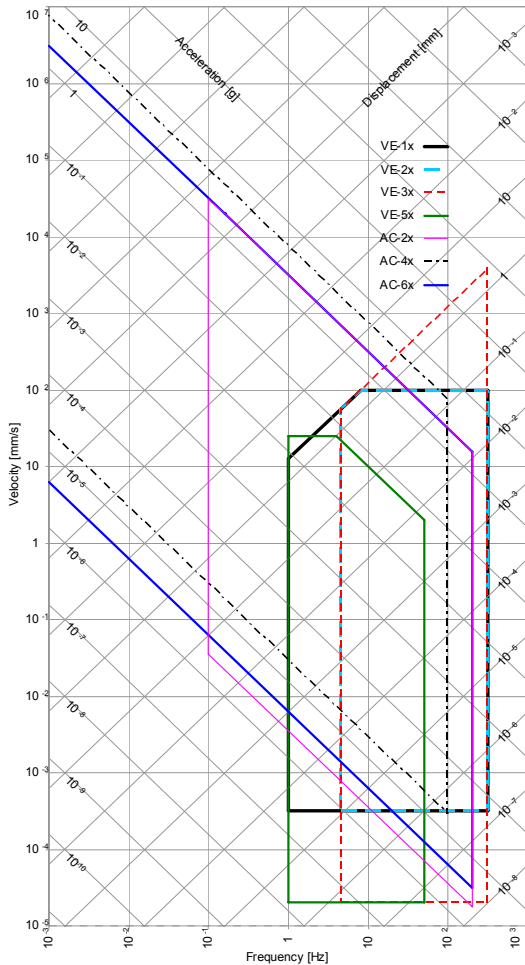
* i : Internal sensor ** H: Horizontal, V: Vertical

Full Scale Range:

Jumper selected in range
 $\pm 0.2, \pm 0.5, \pm 1, \text{ or } \pm 2 \text{ g}$
 for $\pm 10 \text{ V}$ diff at output
 optional $\pm 0.1, \pm 0.25, \pm 0.5 \text{ or } \pm 1 \text{ g}$
 for $\pm 10 \text{ V}$ diff at output

Sensor Element

Type: Geophones with feedback
Dynamic Range: $>125 \text{ dB}$ effective at 2 g full scale
Linearity: $\pm 0.25 \%$ of full scale maximum
Accuracy: $\pm 0.4 \text{ dB}$ max over the bandwidth
Cross Axis Sensitivity: $\pm 1 \%$ typical
 $\pm 3 \%$ maximum
Bandwidth: 0.1 Hz (1 pole) to 100 Hz (1 pole)
 optional 0.2 and/or 200 Hz
Damping: 0.7 critical
Offset Drift: $< 1 \text{ mV}/^\circ\text{C}$
Span drift: $< 200 \text{ ppm}/^\circ\text{C}$
Full Scale output: $0 \pm 10 \text{ V}$ differential (20 Vpp)
 optional $2.5 \pm 2.5 \text{ V}$ single-ended (5 Vpp)
 $0 \pm 5 \text{ V}$ differential (5 Vpp)
 0 to 20 mA current loop
Measuring Range: See Plot



Power

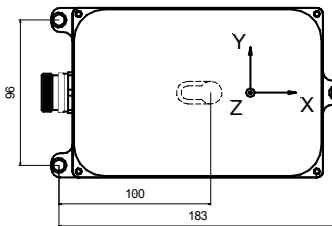
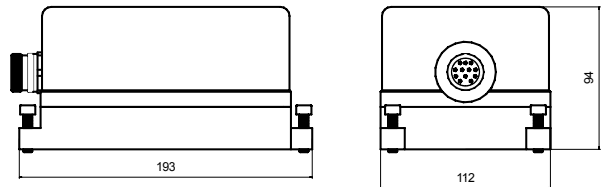
Supply Voltage: 12 VDC regulated (10 to 15 V)
Consumption: 40 mA @ 12 V
Connector: Metallic, Shielded, IP67, 12 pins, male optional MIL, Bendix PT07A 14-19P Binder / Coninvers type RC
Mating:
Overvoltage Protection: All pins are protected

Connector Pin Configuration

Pin 1-2, 3-4, 5-6: Signal output for axis X, Y, Z
 Pin 7-8: Test input, Digital test-pulse (0 – 12 V)
 Pin 9-10: +12 VDC Power Supply
 Pin 11-12: Auxiliary input
Case: Shielded Ground

Environment/Housing

Housing Type: Cast aluminium
 Sealed access cover
Housing Size: 193 x 112 x 94 mm
Weight: 2.5 kg
Index of Protection: IP 65
 optional IP 68
Temperature Range: - 20 to 70 °C (operating)
 - 40 to 90 °C (non-operating)
Humidity: 0 to 100 % (non-condensing)
Orientation: Floor or wall mounting (to be specified in order)
Mounting: Single bolt, surface mount, adjustable within $\pm 10^\circ$



Standard AC-23

Floor mounted, Full scale $\pm 2 \text{ g}$,
 2 m cable with sensor mating connector,
 concrete anchor and user manual on CD

Options

Cable & connector: Sealed cable inlet, replaces connector
 Cable with shielded twisted pairs for any length (including mating sensor connector) with open end
 Cables for connection to GeoSIG recorder
 Connector on user specification mounted at cable end
Housing: Watertight IP 68 housing
 Downhole housing (AC-2x-DH)
 Stainless steel protective housing
Mounting: Wall mounted

Ordering Information

Specify: Type of AC-2x, full scale range, and other applicable options