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GeoSIG
swiss made to measure

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

Features

- **Full Scale ± 0.1, 0.2, 0.5, 1, 2 and 4g jumper selectable**
- **Bandwidth 0.1 Hz to 100 Hz (optional 200 Hz)**
- **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 ± 10° 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 series are state-of-the-art servo-accelerometers based on standard exploration geophone mass-spring system with electronic feedback. Having remarkable temperature and aging stability because of the very simple principle, the AC-2x rarely requires maintenance.

Triaxial, biaxial and uniaxial configurations are all available in surface and downhole models, complementing the versatile useability of the AC-2x.

The AC-2x is housed in a sealed cast aluminium housing with the dimensions of 195 x 112 x 96 mm. The housing also offers a single bolt mounting system with three levelling screws. Stainless steel housings as well as internal mounting inside GSR-xxAH housing options are available.

With the help of the TEST LINE the sensor can be easily and completely tested. Full scale is user selectable on site by setting the internal 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:

	Triaxial	Biaxial	Uniaxial	Axes	Alignment**
AC-23 or AC-23i*:	■			X – Y – Z	H – H – V
AC-22-H or AC-22i-H*:		■		X – Y	H – H
AC-22-HV or AC-22i-HV*:		■		X (or Y) – Z	H – V
AC-21-H or AC-21i-H*:			■	X (or Y)	H
AC-21-V or AC-21i-V*:			■	Z	V

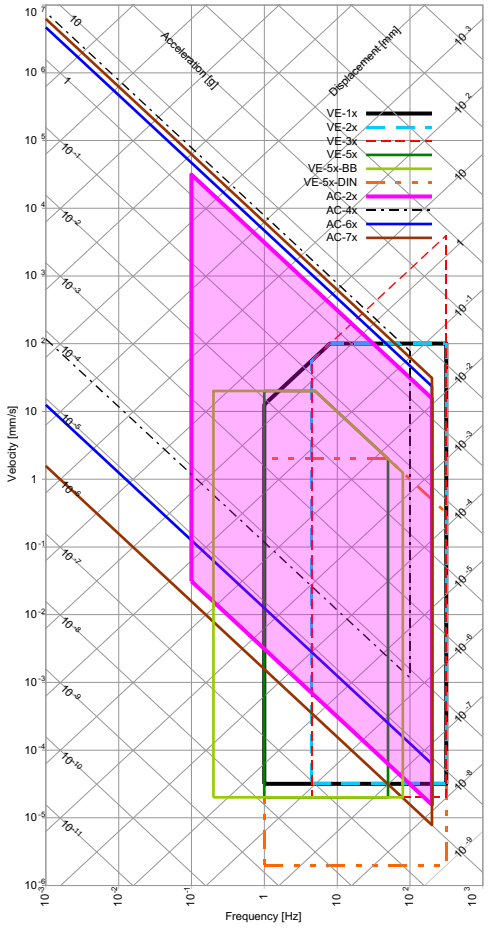
* i : Internal sensor ** H: Horizontal, V: Vertical

Full Scale Range: Jumper selected in range
± 0.1, ± 0.2, ± 0.5, ± 1, ± 2 and 4g
for ± 10 V diff at output
AC-23 NPP: ± 0.5, ± 1 and ± 2g

Sensor Element

Type: Servo-accelerometer based on geophones with feedback
Dynamic Range: > 140 dB correlated mean RMS noise amplitude (per-bin) with respect to 4 g full scale
Linearity: 0.1 %
Accuracy: ± 0.4 dB max over the bandwidth
Cross Axis Sensitivity: 1 %
Bandwidth: 0.1 Hz (1 pole) to 100 Hz (1 pole)
optional 200 Hz
Damping: 0.7 critical
Offset Drift: < 1 mV/^{0}C
Span drift: < 200 ppm/^{0}C
Full Scale output: 0 ± 10 V differential (20 Vpp)
optional 2.5 ± 2.5 V single-ended (5 Vpp)
0 to 20 mA current loop

Measuring Range: See Plot



Power

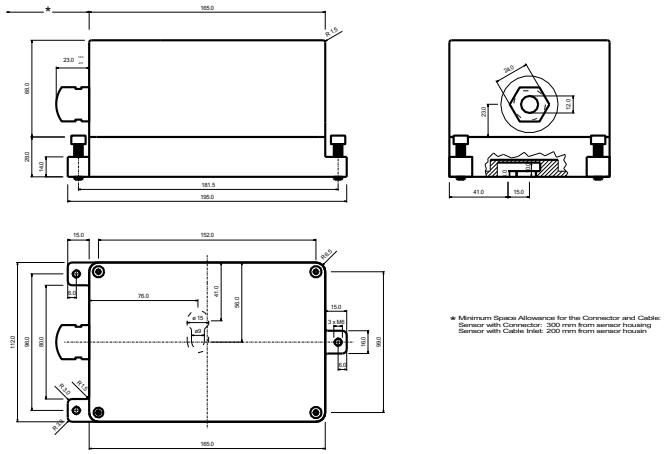
Supply Voltage: 12 VDC regulated (10 to 15 V)
Consumption: 26 mA typical, 140 mA max. @ 15 VDC
Mating: Binder / Coninvers type RC
Overvoltage Protection: All pins are protected

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: 195 x 112 x 96 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 ± 10°



Standard AC-23 Floor mounted, Full scale ± 2 g,
2 m cable with cable inlet and recorder mating connector, concrete anchor bolt and user manual on CD

Options

Cable & connector: Cable connector
Metallic, Shielded, IP67, 12 pins, male
optional MIL, Bendix PT07A 14-19P
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
As internal sensor
Mounting: Wall mounted

Ordering Information

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