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AC-63 / AC-62 / AC-61-DH Downhole Accelerometer

Features

- **Full Scale ± 2 g (± 0.5, ± 1, ± 3 g optional)**
- **Bandwidth DC to 50 or 100 Hz**
- **Dynamic range >120 dB**
- **Digital Sensor Control (DSC)**
- **No field adjustment required**
- **Temperature and drift compensation**
- **Robust suspension system**
- **Fits in 4" (102 mm) borehole**
- **Same basic specifications as AC-63**

Outline

The AC-63-DH accelerometer is based on a force balance servo accelerometer concept having a new innovative and rugged mass suspension system designed for borehole applications regarding Strong Motion earthquake survey and monitoring.

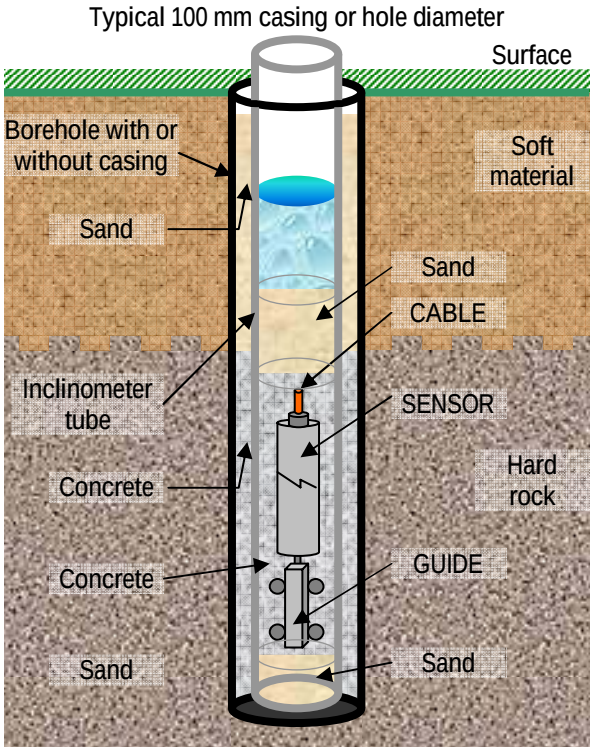
A Digital Sensor Control (DSC) is used to provide the AC-63 with exceptional user-friendly features. At turn on the DSC nulls all outputs including the vertical channel. This powerful feature allows the users to install the AC-63 and turn it on. Time consuming offset adjustment and instrument levelling are not necessary.

The DC response allows the sensor to be easily repaired, tilt tested or recalibrated in the field. With the help of the TEST LINE the AC-63 accelerometer can be completely tested assuring proper operation and accurate acceleration measurement.

The downhole casing contains the entire sensor system. The sensor is connected through Overvoltage Protection stage to the recorder at the surface with a cable.

Using inclinometer tubes and the provided guiding wheels, the sensor can be inserted in the borehole with a defined orientation.

The AC-63-DH accelerometer is directly compatible with the GeoSIG recorders.



Specifications AC-63 / AC-62 / AC-61-DH Downhole Accelerometer

General Characteristics

Application: Strong Motion earthquake survey & industrial applications requiring rugged sensors

Configurations:

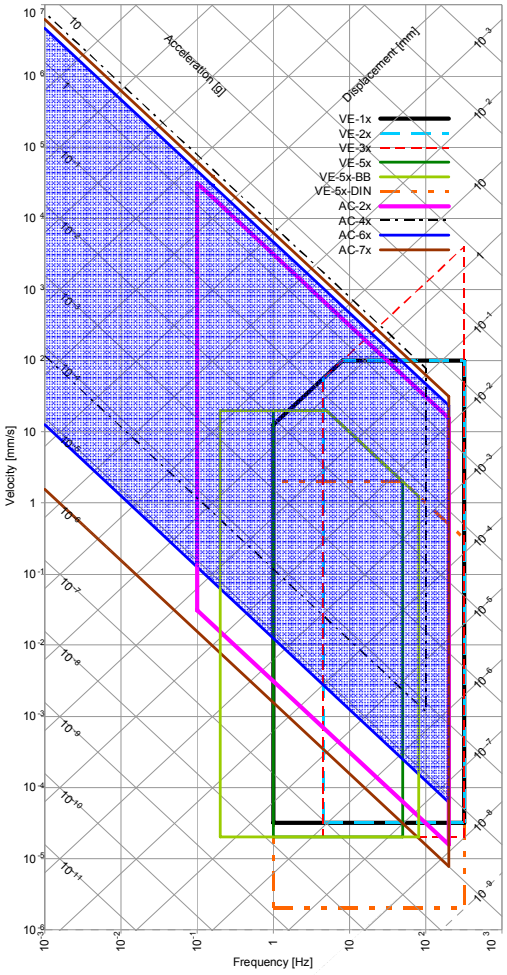
	Triaxial	Biaxial	Uniaxial	Axes	Alignment**
AC-63:	■			X – Y – Z	H – H – V
AC-62-H:		■		X – Y	H – H
AC-62-V:		■		X (or Y) – Z	H – V
AC-61-H:			■	X (or Y)	H
AC-61-V:			■	Z	V

** H: Horizontal, V: Vertical

Full Scale Range: ± 2 g
optional ± 0.5, ± 1, ± 3 g
for ± 10 V diff at output

Sensor Element

Type: Force Balance Accelerometer
Dynamic Range: >120 dB effective at ± 3 g full scale
Nonlinearity: ± 0.2 %
Hysteresis: < 0.01 %
Cross Axis < 0.2 %
Bandwidth: From DC to 100 Hz
optional DC to 50 Hz
Damping: 0.7 critical
Full Scale Output: standard ± 10 V differential
0 ± 5 V single ended
Measurement Range: See Plot



Power

Supply Voltage: 9.5 to 15 VDC, single supply
Consumption: 70 mA @12 VDC (average)

Connector

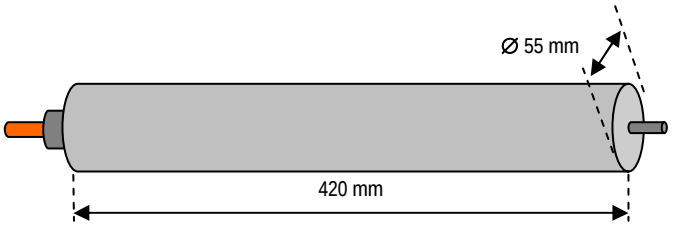
Type 12 poles metallic, shielded, male
Mating: Binder / Coninvers type RC
Surge Protection: All pins are protected by ™Transzorb

Connector Pin Configuration

Pin 1-6 Signal output for axis X, Y, Z
Pin 7,8 Test Input
Pin 9-10 + 12 VDC power supply
Case Shielded Ground

Environment/Housing

Housing Type: Aluminium cylinder, fully sealed
Housing Size: Diameter 55 mm, length 420 mm
Weight: 3.5 kg



Index of Protection: IP 68, up to 10 bars water pressure
Temperature Range: - 40 to 85 °C (operating)
- 40 to 85 °C (non-operating)
Humidity: 0 to 100 %
Orientation: Using 3" inclinometer casing (Figure 1) with included guidewheels (Figure 2).

Standard AC-63-DH Full scale 2 g, sensor mating connector and user manual on CD.
Borehole cable length to be defined.

Accessories

DH-TUBE 3" inclinometer casing as in figure 1 in sections of 3 meters with coupling elements.
Installation kit: All required tools and fixation consumables for up to 100 meters of casing.
DH-BALL Glass Balls for settlement of downhole sensor (25 kg bag)

Ordering Information

Specify: Type of AC-6x-DH, acceleration full scale, depth of borehole and total cable length.

Figure 1

Figure 2