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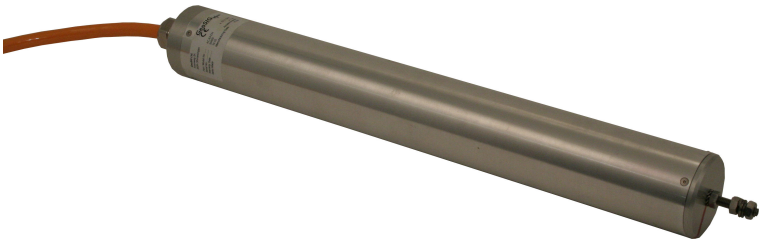
GeoSIG
swiss made to measure

VE-53 / VE-52 / VE-51-DH Downhole Velocity Sensor

Features

- **Sensitivity 1000 V/m/s differential**
- **Bandwidth 1 to 80 Hz**
- **Dynamic range > 120 dB (1 to 30 Hz)**
- **20 Vpp full differential signal output**
- **Excellent temperature stability**
- **High shock survivability**
- **High lifetime stability**
- **Cost effective sensor**
- **Low power consumption**
- **Simple test and calibration**
- **Strong mechanical design**
- **Fits in 3 inch casing**



Outline

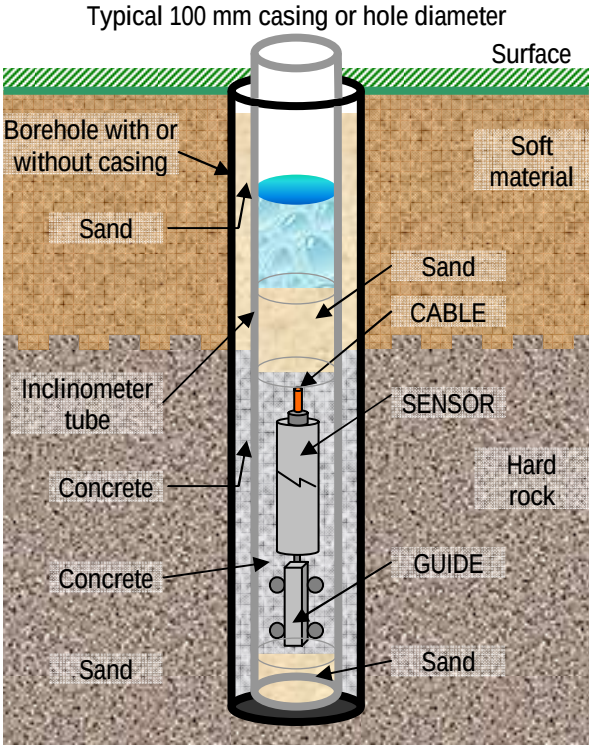
The VE-53-DH sensor package is a triaxial velocity sensor designed for field or industrial survey and monitoring applications concerning vibration or explosion, such as civil engineering.

The VE-5x-DH sensor is based on a standard exploration geophone mass-spring system with electronic feedback. This type of sensor yields a very good stability under temperature changes or aging effects because of the very unsophisticated principle.

With the help of the TEST LINE the VE-53-DH velocity sensor can be completely tested assuring proper operation.

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.

By using inclinometer tubes and the provided guiding wheels, the sensor can be oriented before insertion in the tube.



ISO 9001 REGISTERED FIRM

Specifications VE-53 / VE-52 / VE-51-DH Downhole Velocity Sensor

General Characteristics

Configurations:

	Triaxial	Biaxial	Uniaxial	Axes	Alignment**
VE-53-DH:	■			X – Y – Z	H – H – V
VE-52-DH-H:		■		X – Y	H – H
VE-52-DH-V:		■		X (or Y) – Z	H – V
VE-51-DH-H:			■	X (or Y)	H
VE-51-DH-V:			■	Z	V

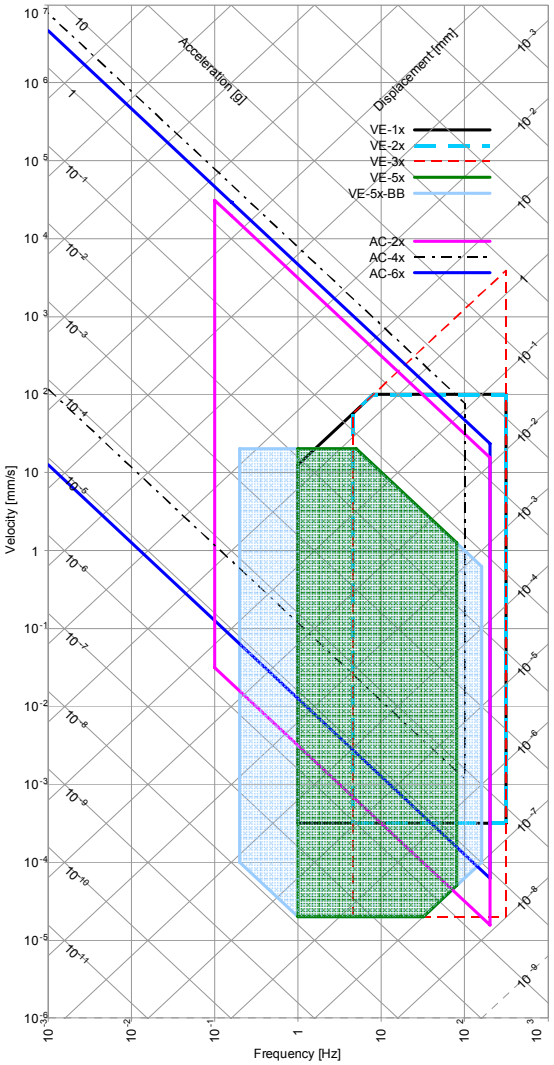
** H: Horizontal, V: Vertical

Sensitivity: 1000 V/m/s differential

Full Scale Range: 10 mm/s nominal output

Sensor Element

Type: Over damped geophones
Dynamic Range: > 120 dB (1 to 30 Hz)
Linearity: ± 0.05 % of full scale maximum
Accuracy: ± 0.2 dB max over the bandwidth
Cross Axis Sensitivity: ± 1 % typical
± 3 % maximum
Bandwidth: 1 to 80 Hz (-3 dB)
Damping: 0.7 critical
Full Scale Output: 0 ± 10 V differential
optional 0 ± 5 V pseudo-differential
Measuring Range: See plot

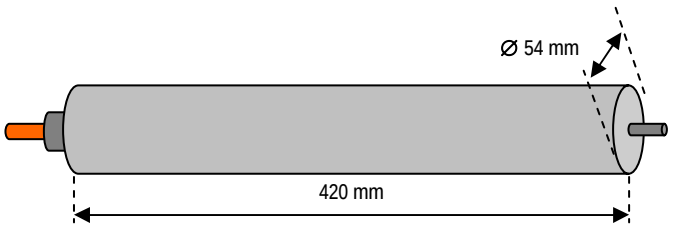


Power

Supply Voltage: 109 to 1518 VDC
Consumption: 70 mA at 12 VDC
Overvoltage Protection: All pins are protected

Environment/Housing

Housing Type: Aluminium cylinder, fully sealed
Housing Size: Diameter 54 mm, length 420 mm
Weight: 3.5 kg
Index of Protection: IP 68, up to 10 bar water pressure
Temperature Range: - 40 to 85 °C (operating)
- 40 to 85 °C (non-operating)
Humidity: 0 to 100 %
Orientation: Using 3” inclinometer casing (Photo 1) with included guidewheels (Photo 2).



Standard VE-53-DH User specified cable already mounted, includes recorder mating connector if delivered with a GeoSIG recorder

Options

Cable & connector: See separate document (GS_Sensor_Connector_Options)

Accessories

DH-TUBE 3” inclinometer casing as in Photo 1 in sections of 3 meters with coupling elements.
Installation kit: All required tools and fixation consumables for up to 100 meters of casing.

Ordering Information

Specify: Depth of borehole and total cable length, required accessories, and other applicable options

Photo 1

Photo 2