SS-BH-5C borehole geophone

SSBH sensor is a geophysical device designed to measure vibrations in boreholes for DownHole, UpHole and CrossHole surveys.

Made from stainless steel, it is robust and rugged, and can be equipped with 4.5, 8 or 10Hz geophone sensors.

It can be used with any exploration seismograph and, naturally, with all our seismographs, especially the DoReMi[tm] system.

Simplicity

The SSBH sensors is extremely practical with its electric simple action switch for locking and unlocking the sensor to the borehole wall. Two LED indicators on the control panel show if the sensor is locked or free to be moved. Use of four horizontal sensors guarantees the readability of the first breaks of the SH waves in any sensor orientation inside hole. Geophone outputs can be read from any brand of digitizer. The lead-acid gel battery (commercial off-the-shelf type) integrated in the cable wheeler, makes the system more practical and with less cables around. The unit comes with the battery charger, additional power supply cable with alligator clips to use an external battery, an horizontal starter for SH shots and a pulling rope.

Precision

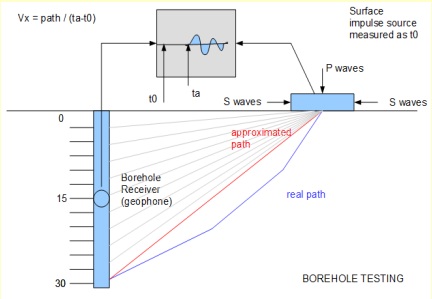
Although it is not critical in this field of application, SSBH uses the best geophone digital grade available on the market. A machined internal geophone holder guarantees precise angular orientation of the sensor and absolute orthogonality of the Z sensor.

Safety

The locking system guarantees trouble-free operation even in harsh environments such as flooded wells and boreholes with mud or dirty water. A safety cord can be applied to extract the sensor in case of malfunction or if for any other reason the sensor becomes jammed in the borehole. The locking piston is also equipped with a specific breaking point that helps to unjam the unit as soon it is forced.
Operator safety is also guaranteed, since the movement is limited in force with an electronic torque control and the shape of the locking system is IP5-.

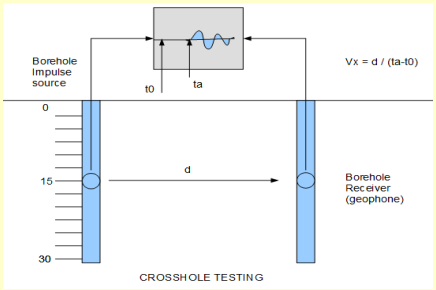
Application

The SSBH sensors is designed mainly to measure soil properties as per Vs30 calculation.



Downhole
Injecting energy from the surface you can measure the travel time of P waves and SH waves and then calculate the elasto-mechanic properties of soil.

Crosshole
Using a proper borehole source of mechanical pulses to be put at the same depth of receiver and/or measuring wit a variatey of depths for both direct measuremen of P wave speed and S wave speed can be accurately accomplished.



Some customization can be applied to the sensor for example connecting rods to use 2 sensors as a double body sensors to measure the differential time arrivals.

Technical Features

Number of channels:	5 standard (optional 3 or customized)
Configuration:	Z vertical, horizontal at 0°, 45°, 90°, 135°
Non-orthogonality:	< 0.01%
Leveling:	not available
Eigen frequency:	recommended 10Hz (+/-5%) (other upon request)
Damping:	0.707
Inertial mass:	24 g
Sensitivity:	27V/m/s (high gain: 78V/m/s option available)
Maximum allowed tilt:	Vertical: 10° Horizontal (for 8Hz sensors): 5°
Sensor mass movement:	0.2mm
Dimensions:	1080x55mm (sensor body)
Min – Max diameter:	65mm - 80mm
Sensor weight:	4500g
Total weight:	8000g
Cable length:	standard 50 meters
Connector:	MIL-C-56842 Amphenol PT series 10-pole
Locking system:	electric motor
Power supply:	12V lead-acid battery
Conformity declaration:	CE

SARA Electronic Instruments s.r.l. reserves the right to make changes in price, content, description, terms, etc. at any time without notice

SARA electronic instruments s.r.l.
06129 – Perugia – Via Armando Mercuri, 4 – ITALY
Phone: +39 075 5051014 – Fax: +39 075 5006315 - www.sara.pg.it - info@sara.pg.it
Reg. Trib. Perugia N-5718 – C.C.I.A.A. 109864 - C.F. e P.iva 00380320549 - N.Reg.RAEE: IT08020000001128