

Seismic Sensors

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The ISS supports a wide range of commercially available sensors including miniature geophones, short period and broadband seismometers, force balance accelerometers (FBA) and piezoelectric accelerometers.

In addition to this, ISS International manufactures a range of geophones and piezoelectric accelerometers for borehole applications.

Geophones

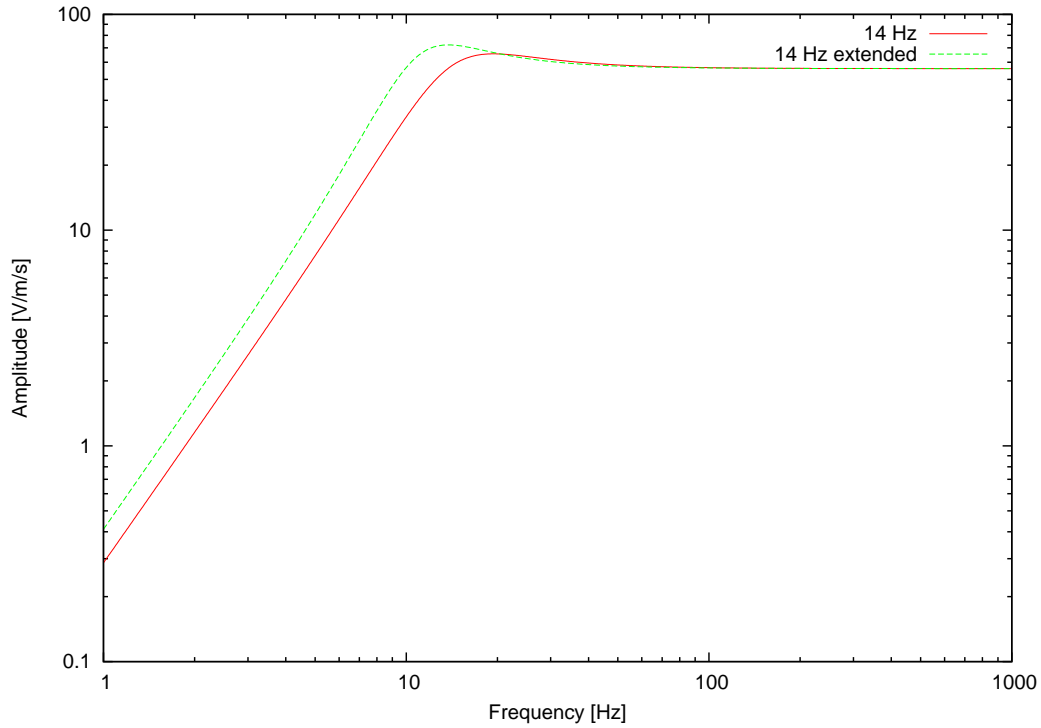
Geophones manufactured by ISS International are designed to be installed in a borehole of diameter 76 mm. The sensors are cast with an integral cable of length 15 m (customised lengths are available on request).

Type Name	Natural Frequency [Hz]	Undamped Sensitivity [V/m/s]	Tilt Angle [°]	Displacement Limit [mm]	Approx Usable Frequency Range [Hz]
G4.5	4.5	28	2	4	3 -2000
G14HS	14	80	180	0.5	7 - 2000

Extended Low Frequency Response

Electronically enhanced sensors make use of electronic compensation to extend the range of sensitivity below the natural frequency of the geophone element used in the sensor. This results in a sensor with an extended range that can be installed in a small borehole, but at a cost much lower than the equivalent natural geophone.

The 14 Hz sensor can be used with an extended low frequency response by using a capacitor in the damping feedback. The result of extending this response is shown in the graph.



Piezoelectric Accelerometers

Accelerometers manufactured by ISS International are designed to be installed in a borehole of diameter 76mm. The sensors are cast with an integral cable of length 15 m (customised lengths are available on request).

Type Name	Lowest Frequency [Hz]	Highest Frequency [Hz]	Mounted Resonance [kHz]	Undamped Sensitivity [mV/g]	Broadband Noise [μ g]	Approx Usable Frequency Range [Hz]
A2.3k	0.2	2300	15	500	8	0.2 - 2300
A25k	2	25000	60	100	150	2 - 25000