



HGS (INDIA) LIMITED



HG- 4 Geophone Element



Based on the technology transfer for manufacturing the SM® range of geophones from Sensor® Nederland BV, HGS (India) Limited (erstwhile Geosource India Limited) offers the HG-4 geophone which works effectively while maintaining its original tight specifications even when exposed to the toughest field conditions.

It is designed as a low weight geophone using the best materials to maximise its operating life coupled with repeated high performance.

Applications: 2D and 3D seismic exploration with bandwidth from 10 Hz to 190 Hz. Can be installed in a variety of geophone cases.

Features:

- Choice of three standard natural frequencies (8 Hz, 10 Hz & 14 Hz) and standard coil resistance of 375 Ω
- Vertical and horizontal versions available for 3-C applications
- Made from high precision components for reliable and prolonged field performance
- Rugged design with rotating-coil contacts

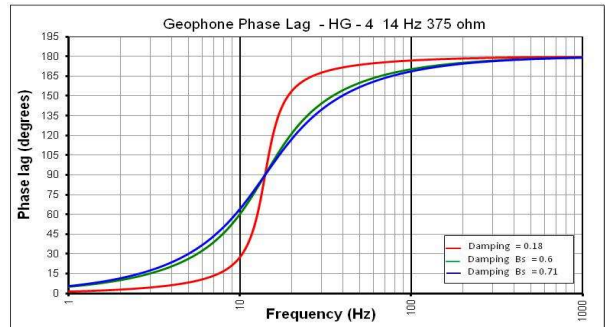
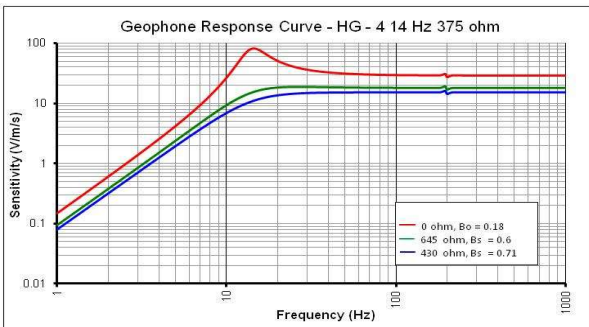
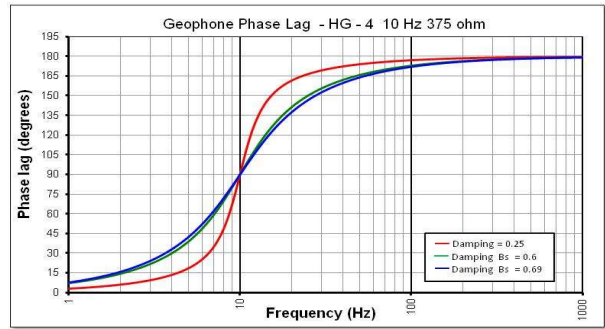
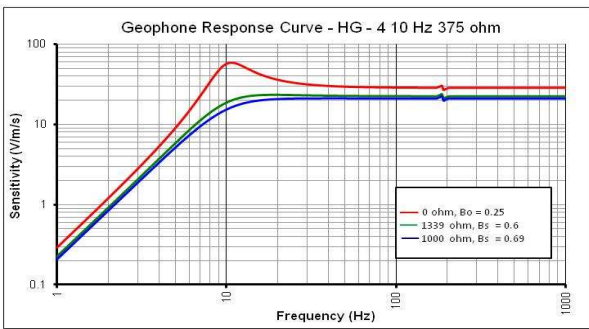
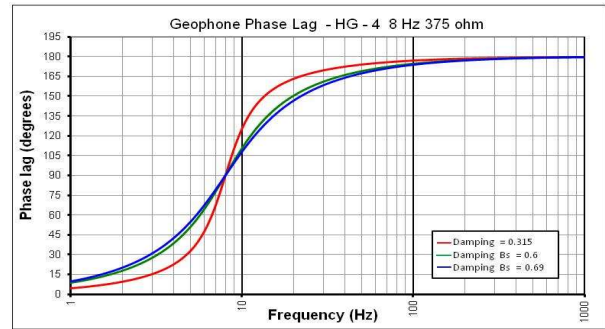
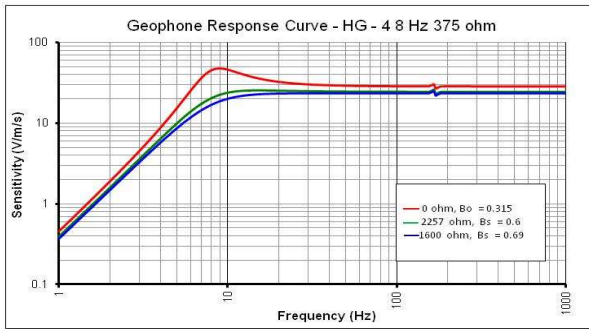
Specifications - HG-4

Frequency	Value	Value	Value
Natural frequency	8 Hz	10 Hz	14 Hz
Tolerance	±6.3%	±5%	±5%
Maximum tilt angle for specified Fn	20°	25°	25°
Typical spurious frequency	160 Hz	180 Hz	190 Hz
Distortion			
Distortion with 17.78 mm/s p.p. coil-to-case velocity	<0.2%	<0.2%	<0.2%
Distortion measurement frequency	12 Hz	12 Hz	14 Hz
Maximum tilt angle for distortion specification	15°	20°	20°
Damping			
Open circuit (typical)	0.315	0.25	0.18
Damping calibration-shunt resistance	2257 Ω	1339 Ω	645 Ω
Damping with calibration shunt	0.6	0.6	0.6
Tolerance with calibration shunt	±5%	±5%	±5%
Shunt for damping	1600 Ω	1000 Ω	430 Ω
Damping for above mentioned shunt	0.69	0.69	0.71
Resistance			
Standard coil resistance	375 Ω	375 Ω	375 Ω
Tolerance	±5%	±5%	±5%
Sensitivity			
Open - circuit Sensitivity	28.8V/m/s	28.8V/m/s	28.8V/m/s
Tolerance	±5%	±5%	±5%
$R_t B_c f_n$	6000 Ω Hz	6000 Ω Hz	6000 Ω Hz
Moving mass	11 g	11 g	11 g
Max coil excursion p.p .	2 mm	2 mm	2 mm
Physical Characteristics			
Diameter	25.4 mm	25.4 mm	25.4 mm
Height	32 mm	32 mm	32 mm
Weight	74 g	74 g	74 g
Operating temperature range	-40°C to 100°C	-40°C to 100°C	-40°C to 100°C
Working angle for S(inverted)	180°	180°	180°
Warranty Period*	3 years	3 years	3 years

*Warranty excludes damage caused by high voltage and physical damage to the element case.

All parameters are specified at +20°C in the working position unless stated otherwise.

Geophone Response Curve and Phase Lag



Ordering information

Description	Part No.	Working position
HG-4 8 Hz		
HG-4 U 8 Hz 375 Ω	SG000098	Upright
HG-4 H 8 Hz 375 Ω	SG000090	Horizontal
HG-4 S 8Hz 375 Ω	SG000117	Inverted
HG-4 10 Hz		
HG-4 U 10 Hz 375 Ω	SG000107	Upright
HG-4 H 10 Hz 375 Ω	SG000095	Horizontal
HG-4 S 10 Hz 375 Ω	SG000122	Inverted
HG-4 14 Hz		
HG-4 U 14 Hz 375 Ω	SG000108	Upright
HG-4 H 14 Hz 375 Ω	SG000128	Horizontal
HG-4 S 14 Hz 375 Ω	SG000127	Inverted

Version 1.1

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