



HGS (INDIA) LIMITED



HG-24HS 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-24HS (High Sensitivity) geophone which is designed for single point recording. It weighs 86 grams and its diameter is only 1.3 mm larger than the standard HG-24 geophone. The HG-24HS geophone provides sensitivity near to four standard damped HG-24 geophones when connected to a recording system using its system impedance of 20K Ω to arrive at true 0.7 damping.

Features:

- Sensitivity is equivalent to approximately four regular geophones in series
- Available in both land and marsh enclosures
- Tight damping tolerance
- Low maintenance and transportation costs
- Less deployment time and costs

Specifications - HG-24HS

Frequency	Value
Natural frequency	10 Hz
Tolerance	±3.5%
Maximum tilt angle for specified Fn	Vertical 10° Horizontal 0°
Typical spurious frequency	>240 Hz

Distortion	
Distortion with 17.78mm/s p.p. coil-to-case velocity	<0.1%
Distortion measurement frequency	12 Hz
Maximum tilt angle for distortion specification	Vertical 10° Horizontal 0°
Typical distortion	<0.1%

Damping	
Open circuit (Typical)	0.475
Damping with 20KΩ system input impedance	0.7
Tolerance with 20KΩ system input impedance	±3.5%

Resistance	
Standard coil resistance	1800 Ω
Tolerance	±3.5%

Sensitivity	
Sensitivity	85.8 V/m/s
Tolerance	±3.5%
Moving mass	11.8 g
Maximum coil excursion p.p .	2 mm

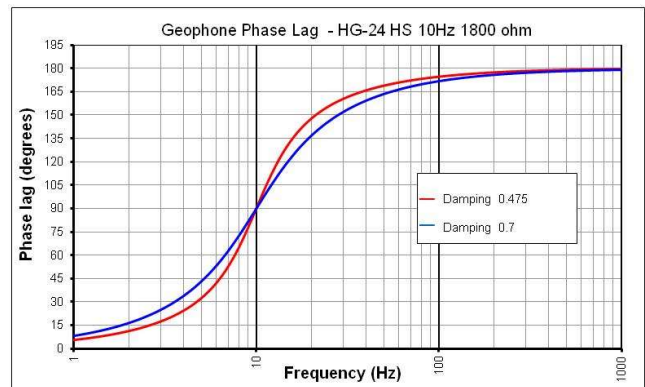
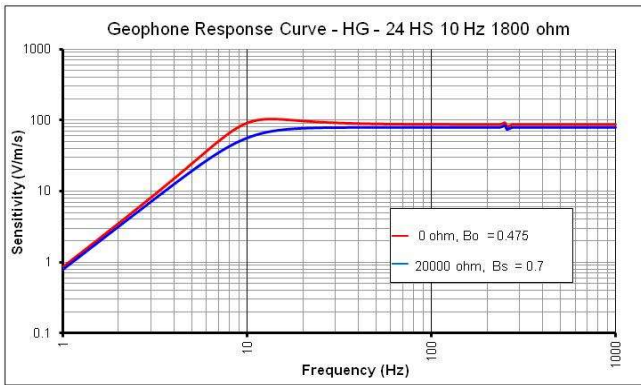
Physical Characteristics	
Diameter	26.7 mm
Height	32.0 mm
Weight	85.6 g
Operating temperature range	-40°C to 100°C

Warranty Period*	3 years
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*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



Comparison of strings with single high sensitivity geophones

	Damping (Open circuit)	Sensitivity (Open circuit)	Damping (1 k Ω resistor)	Sensitivity (1 k Ω resistor)	Damping (System)	Sensitivity V/m/s (V/in/s)
1x1 (regular)	25%	28.8 (0.73)	69%	20.9 (0.53)	70%	20.7 (0.53)
3x2 (regular)	25%	86.4 (2.19)	69%	62.7 (1.59)	71%	61.6 (1.56)
6x1 (regular)	25%	172.8 (4.39)	69%	125.4 (3.19)	77%	116.2 (2.95)
1x1 HG-24HS	48%	85.8 (2.18)	NA	NA	70%	78.7 (2.00)
2x2 HG-24HS	48%	171.6 (4.36)	NA	NA	70%	157.4 (4.00)
3x3 HG-24HS	48%	257.4 (6.55)	NA	NA	70%	236.1 (6.00)
1x1 other	51%	85.8 (2.18)	NA	NA	70%	78.7 (2.00)

Note: Sensitivity in V/m/s (V/in/s), recording system input impedance 20 K Ω

Ordering information

Description	Part No.	Working position
HG-24HS U 10 Hz 1800 Ω	SG000147	Upright
HG-24HS H 10 Hz 1800 Ω	SG000089	Horizontal

Version 1.3

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