



## HGS (INDIA) LIMITED



### HG-7 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-7 geophone which is used where broader bandwidth is required in higher resolution applications. It is an advanced high spurious frequency geophone manufactured in 10 to 50 Hz natural frequencies. The unique spring design of the HG-7 geophone provides clean extra bandwidth response combined with excellent distortion characteristics. This geophone is well suited to high sample rate digital recording.

It is available in both vertical and horizontal versions.

#### **Features:**

- Available in 10 Hz, 14 Hz, 20 Hz, 30 Hz & 50 Hz with high spurious frequencies
- Vertical and horizontal versions available
- Suited for faster sample rate systems & high resolution surveys

### Specifications - HG-7

<b>Frequency</b>	<b>Value</b>	<b>Value</b>
Natural frequency	10 Hz	14 Hz
Tolerance	±5%	±5%
Maximum tilt angle for specified Fn	25°	25°
Typical spurious frequency	340 Hz	420 Hz
<b>Distortion</b>		
Distortion with 17.78 mm/s p.p. coil-to-case velocity	<0.2%	<0.2%
Distortion measurement frequency	12 Hz	14 Hz
Maximum tilt angle for distortion specification	20°	20°
<b>Damping</b>		
Open circuit (typical)	0.25	0.18
Damping calibration-shunt resistance	1339 Ω	645 Ω
Damping with calibration shunt	0.60	0.60
Shunt for damping	1000 Ω	430 Ω
Damping for above mentioned shunt	0.69	0.71
Tolerance with shunt	±5%	±5%
<b>Resistance</b>		
Standard coil resistance	375 Ω	375 Ω
Tolerance	±5%	±5%
<b>Sensitivity</b>		
Open - circuit Sensitivity	28.8V/m/s	28.8V/m/s
Tolerance	±5%	±5%
$R_t B_c f_n$	6000 ΩHz	6000 ΩHz
Moving mass	11 g	11 g
Maximum coil excursion p.p.	2 mm	2 mm
<b>Physical Characteristics</b>		
Diameter	25.4 mm	25.4 mm
Height	32 mm	32 mm
Weight	74 g	74 g
Operating temperature range	-40°C to 100°C	-40°C to 100°C
<b>Warranty Period*</b>	2 years	2 years

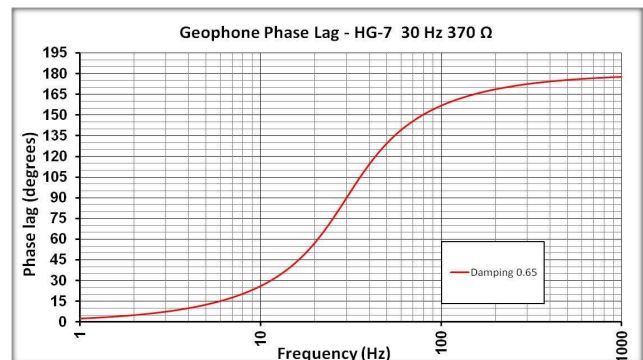
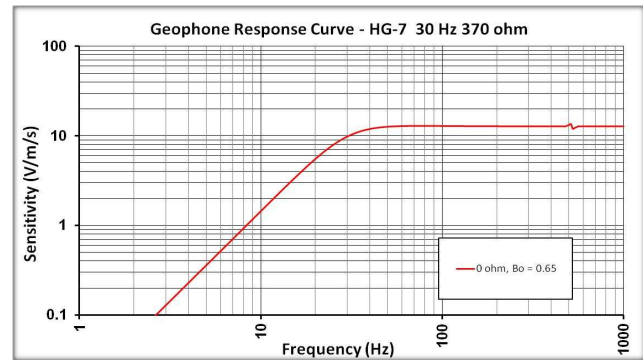
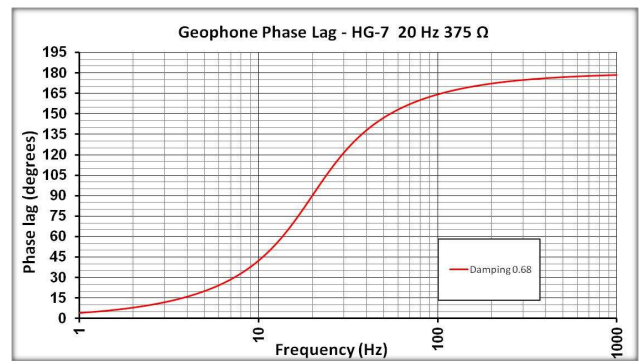
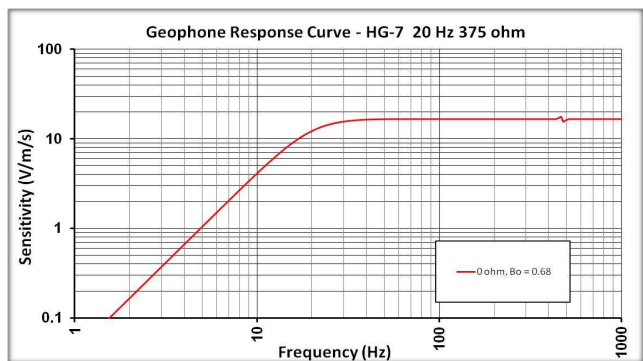
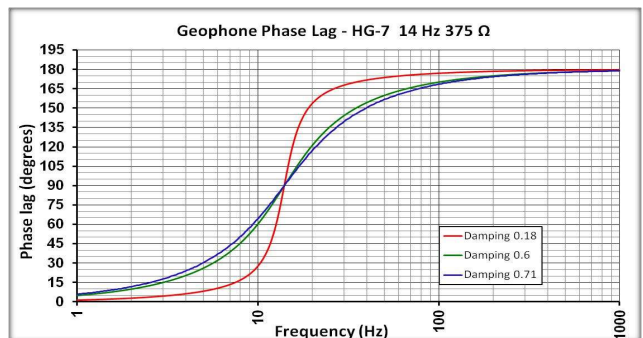
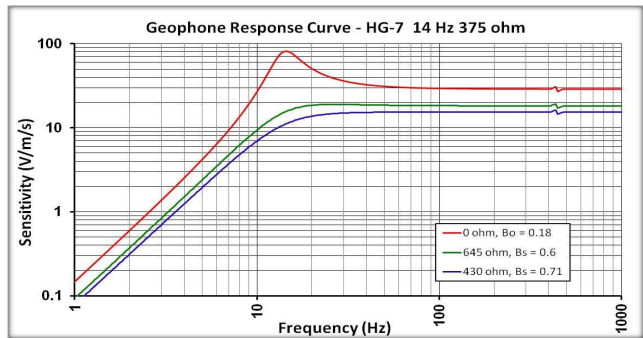
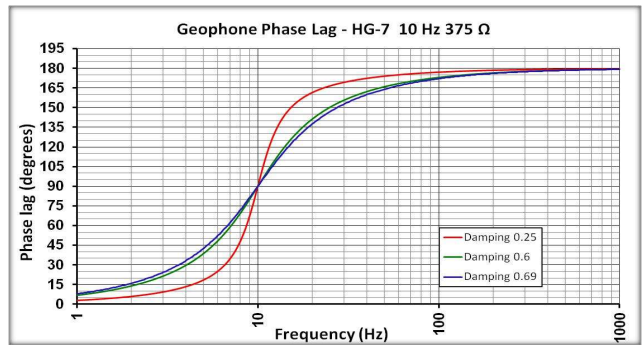
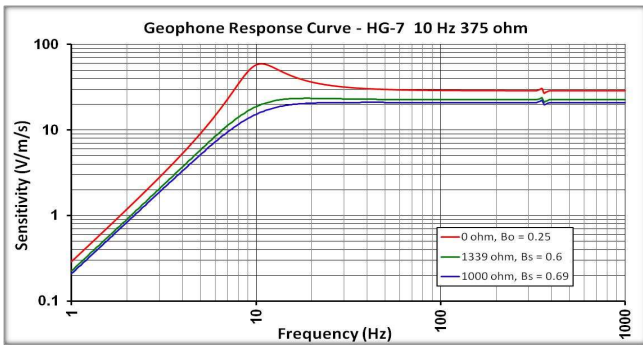
\*Warranty excludes damage caused by high voltage and physical damage to the element case.

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

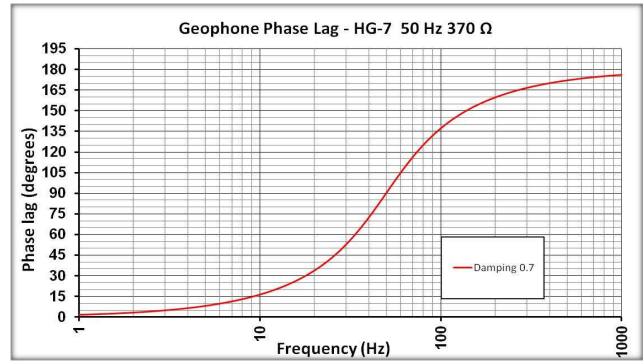
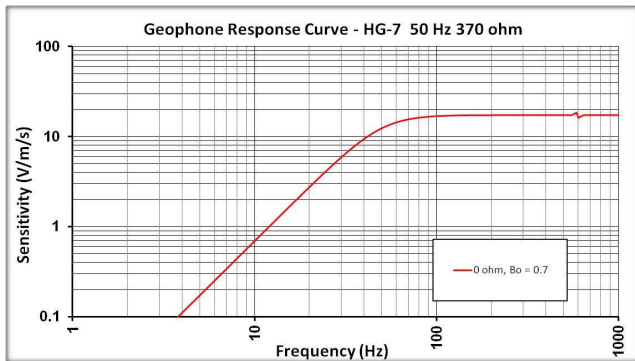
### Specifications - HG-7

<b>Frequency</b>	<b>Value</b>	<b>Value</b>	<b>Value</b>
Natural frequency	20 Hz	30 Hz	50 Hz
Tolerance	±5%	±5%	±5%
Maximum tilt angle for specified Fn	25°	360°	360°
Typical spurious frequency	450 Hz	500 Hz	570 Hz
<b>Distortion</b>			
Distortion with 17.78 mm/s p.p. coil-to-case velocity	<0.2%	<0.2%	<0.2%
Distortion measurement frequency	20 Hz	30 Hz	50 Hz
Maximum tilt angle for distortion specification	20°	360°	360°
<b>Damping</b>			
Open circuit damping	0.68	0.65	0.70
Open circuit damping Tolerance	±5%	±5%	±5%
<b>Resistance</b>			
Standard coil resistance	375 Ω	370 Ω	370 Ω
Tolerance	±5%	±5%	±5%
<b>Sensitivity</b>			
Open - circuit Sensitivity	16.5V/m/s	12.8V/m/s	17.2V/m/s
Tolerance	±5%	±5%	±5%
$R_t B_c f_n$	2777 ΩHz	1740 ΩHz	3060 ΩHz
Moving mass	7.8 g	7.5 g	7.7 g
Maximum coil excursion p.p.	2 mm	2 mm	2 mm
<b>Physical Characteristics</b>			
Diameter	25.4 mm	25.4 mm	26.8 mm
Height	32 mm	32 mm	32 mm
Weight	74 g	74 g	83 g
Operating temperature range	-40°C to 100°C	-40°C to 100°C	-40°C to 100°C
<b>Warranty Period*</b>	2 years	2 years	1 year
*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



## Geophone Response Curve and Phase Lag



### Ordering information

Description	Part No.	Working position
<b>HG-7 10 Hz</b>		
HG-7 U 10 Hz 375 Ω	SG000100	Upright
HG-7 H 10 Hz 375 Ω	SG000105	Horizontal
<b>HG-7 14 Hz</b>		
HG-7 U 14 Hz 375 Ω	SG000153	Upright
HG-7 H 14 Hz 375 Ω	SG000154	Horizontal
<b>HG-7 20 Hz</b>		
HG-7 U 20 Hz 375 Ω	SG000167	Upright
HG-7 H 20 Hz 375 Ω	SG000168	Horizontal
<b>HG-7 30 Hz</b>		
HG-7 U 30 Hz 370 Ω	SG000101	Upright
HG-7 H 30 Hz 370 Ω	SG000099	Horizontal
<b>HG-7 50 Hz</b>		
HG-7 U 50 Hz 370 Ω	SG000143	Upright
HG-7 H 50 Hz 370 Ω	SG000144	Horizontal

Version 1.2

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