



# HGS (INDIA) LIMITED



## HG-11 Geophone Element



Based on the technology transfer for manufacturing the SM<sup>®</sup> range of geophones from Sensor<sup>®</sup> Nederland BV, HGS (India) Limited (erstwhile Geosource India Limited) offers the HG-11 geophone which is a high output geophone. The element provides a clean response over 500 Hz and can be used in any orientation (vertical, horizontal or inverted) providing flexibility in such applications as 3 component borehole tools. Typically, it is used in high resolution seismic reflection studies.

### Features:

- Geophone with high spurious over 500 Hz
- Provides wide bandwidth data suitable for up to 1 ms data sampling
- Can be operated in any orientation
- Provides high output by using special magnet and case
- Rugged design with rotating-coil contacts suitable to withstand shocks

## Specifications - HG-11

<b>Frequency</b>	<b>Value</b>	<b>Value</b>
Natural frequency	30 Hz	40 Hz
Tolerance	±5%	±5%
Maximum tilt angle for specified Fn	360°	360°
Typical spurious frequency	>500 Hz	>500 Hz

### **Distortion**

Distortion with 0.7 in/s p.p. coil-to-case velocity	<0.2%	<0.2%
Distortion measurement frequency	30 Hz	40 Hz
Maximum tilt angle for distortion specification	360°	360°

### **Damping**

Open circuit (typical)	0.55	0.6
Tolerance (open circuit)	±5%	±5%
Shunt for 0.60 damping	4700 Ω	-
Shunt for 0.70 damping	1300 Ω	4640 Ω

### **Resistance**

Standard coil resistance	360 Ω	1500 Ω
Tolerance	±5%	±5%

### **Sensitivity**

Open - circuit Sensitivity	30 V/m/s	50 V/m/s
Tolerance	±5%	±5%
Moving mass	9.2 g	8.1 g
Maximum coil excursion p.p.	2 mm	2 mm

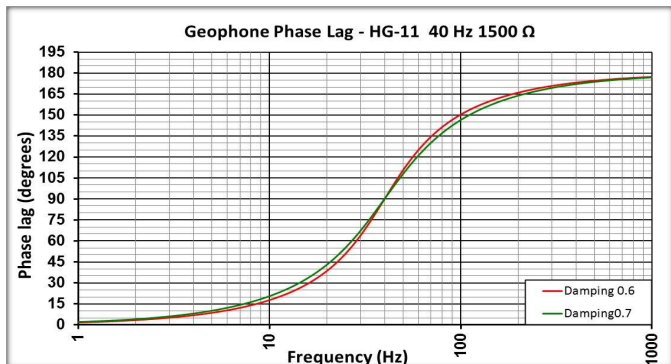
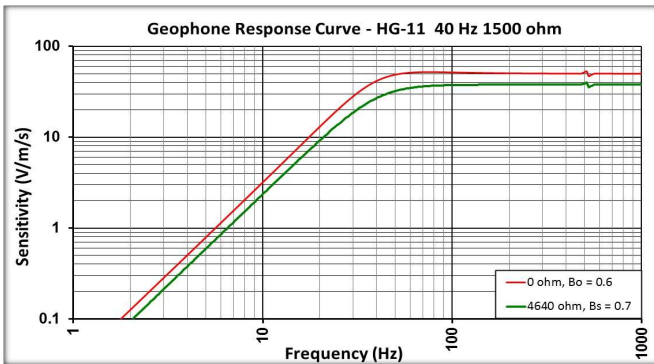
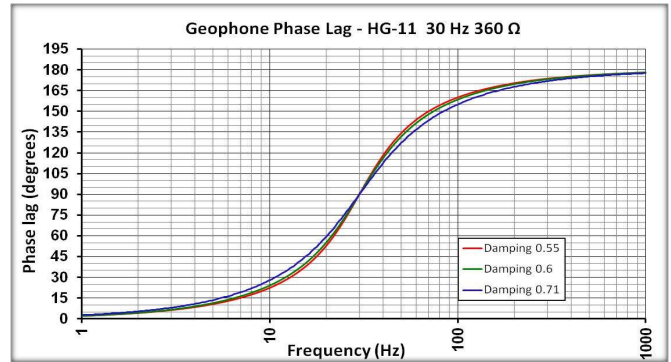
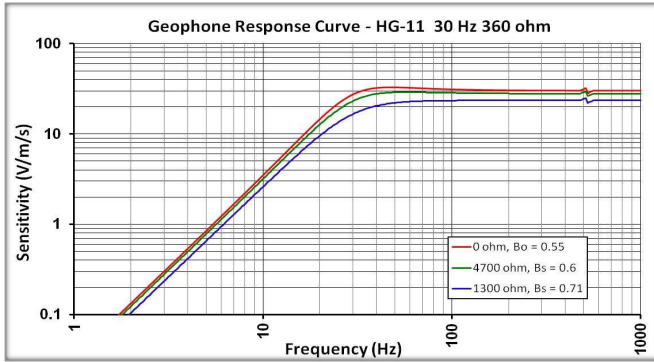
### **Physical Characteristics**

Diameter	26.6 mm	26.6 mm
Height	32 mm	32 mm
Weight	83 g	83 g
Operating temperature range	-40°C to 100°C	-40°C to 100°C

<b>Warranty Period</b>	2 years	2 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.

## Geophone Response Curve and Phase Lag



Version 1.4

### Ordering information

#### Description

HG-11 U 30 Hz 360 Ω  
 HG-11 H 30 Hz 360 Ω  
 HG-11 U 40 Hz 1500 Ω  
 HG-11 H 40 Hz 1500 Ω

#### Part No.

SG000103  
 SG000096  
 SG000574  
 SG000575

#### Work direction

Omni-directional (upright polarity\*)  
 Omni-directional (horizontal polarity\*\*)  
 Omni-directional (upright polarity\*)  
 Omni-directional (horizontal polarity\*\*)

\* A mechanical tap passing through the geophone towards the terminals will give a NEGATIVE going voltage on the positive terminal marked with dot.  
 \*\* A mechanical tap passing through the geophone towards the terminals will give a POSITIVE going voltage on the positive terminal marked with a dot.

#### India

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