



## SM-45 Miniature High Temperature Geophone

The Miniature High Temperature Geophone is optimized for size and performance where volume and weight are important factors. This product is available as a 15 Hz omni-tilt unit for 3-component devices for special applications such as seismic recording in deviated wells.

Input/Output offers a selection of miniature high temperature geophones capable of working in the most hostile temperature environments. The primary use of the product is for VSP tools, 3C downhole arrays and industrial vibration monitoring where temperatures may exceed the 100°C operational limit of standard geophones.

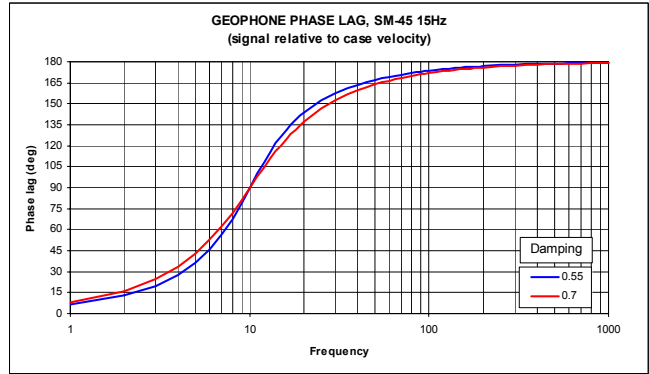
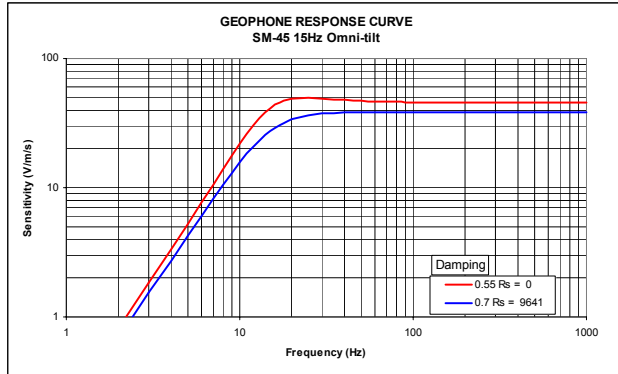


- Small dimension, low weight geophone, retaining the ruggedness and high quality performance of standard elements
- 15 Hz omni-tilt high output, wide bandwidth specification
- External dimensions optimized for use in small diameter down hole tools
- Uses include deviated wells and a variety of miniaturized 3C applications where orientation may vary
- Suitable for use in VSP and downhole array applications, also for industrial vibration monitoring
- Nickel-plated case, special high temperature coils and end-plates for high temperature operating range
- Available as an "Extended" operating temperature range of -40°C to 150°C
- "High Temperature" with an operating range of -40°C to 200°C due for release Q4 - 2002
- "Very High Temperature" 260°C version under development

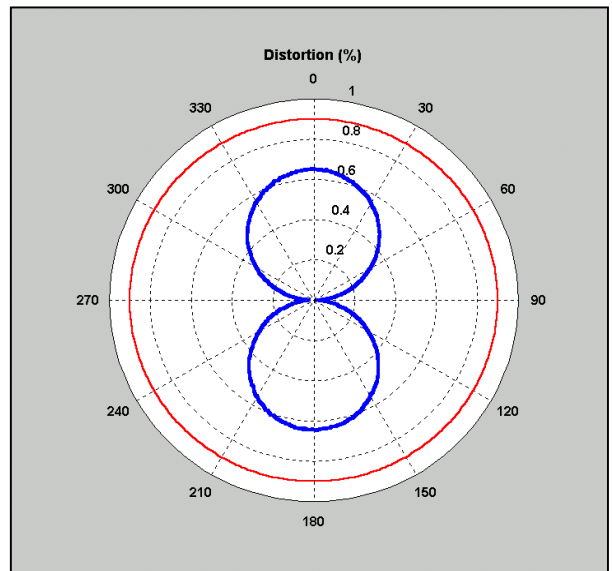
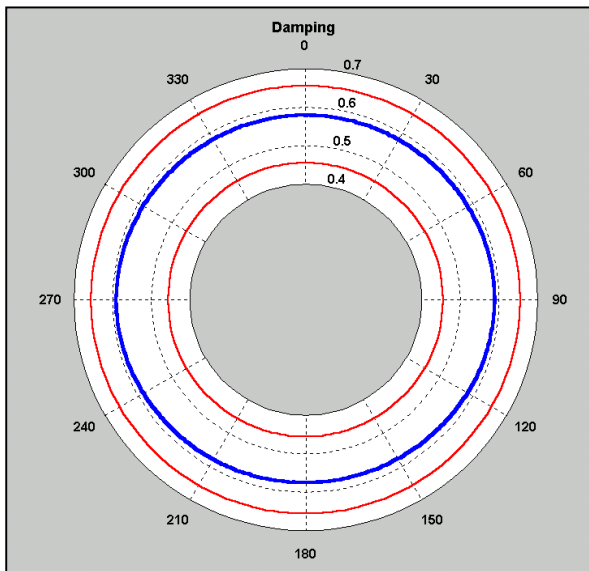
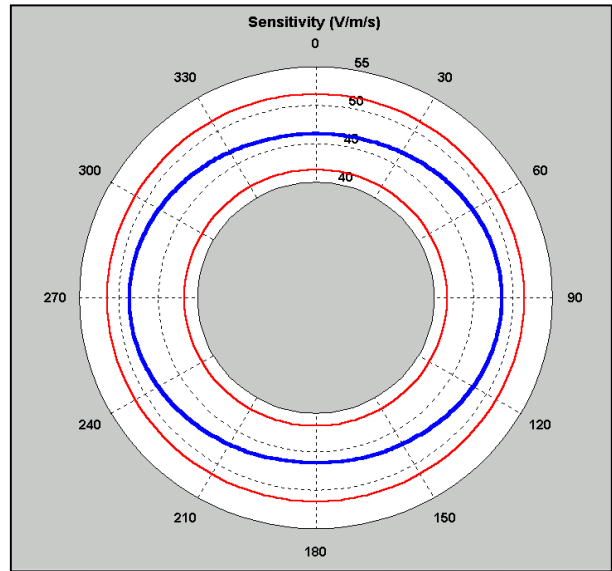
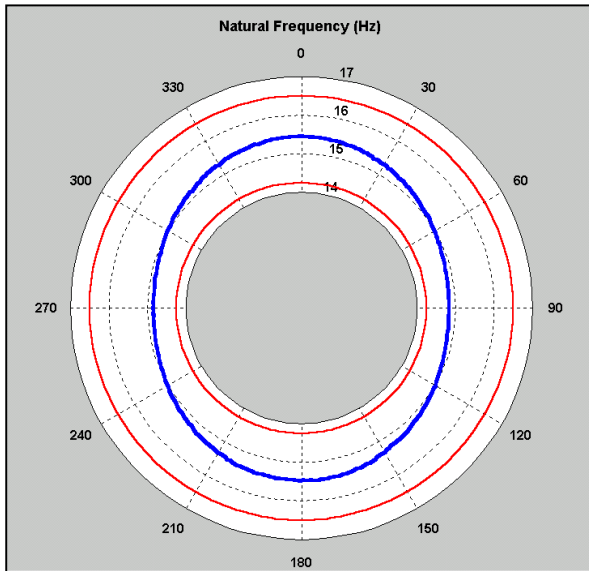
## Specifications: SM-45 High Temperature Geophone

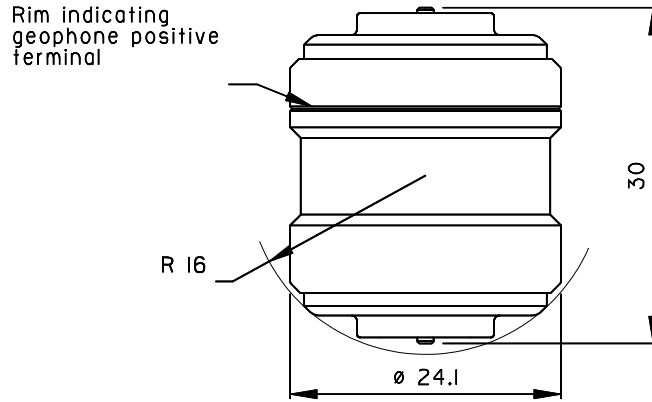
INPUT/OUTPUT, INC.

	<b>Omni-tilt</b>		
	<b>Working position:</b>	Vertical	Horizontal
<b>Frequency</b>			
Natural frequency	15 Hz		
Tolerance		+10 / -5%	± 5%
Maximum tilt angle for specified Fn	360°		
<b>Distortion</b>			
Distortion with 0.7 in/s p.p. coil to case velocity		<0.90%	<0.20%
Distortion measurement frequency	15 Hz		
<b>Damping</b>			
Open circuit	0.55		
Tolerance		+10 / -20%	± 15%
<b>Resistance</b>			
Standard coil	1800 Ω		
Tolerance	± 5%		
<b>Sensitivity</b>			
Open circuit sensitivity	45.5 V/m/s		
Tolerance		+5 / -15%	± 5%
RtBoFn	25,750 Ω Hz		
Typical Spurious frequency	175 Hz		
Moving mass	6.4 g		
Maximum coil excursion p.p.	3.3 mm		
<b>Physical Characteristics</b>			
Diameter	24.1 mm	(0.95 in)	
Height (including terminals)	30.0 mm	(1.18 in)	
Diagonal	32.0 mm	(1.26 in)	
Weight	53.3 g	(1.88 oz)	
Operating temperature range:			
Extended (XT)	-40°C to 150°C	(-40°F to 300°F)	
High Temperature (HT)	-40°C to 200°C	(-40°F to 392°F)	<i>Due Q4 - 2002</i>
Very High Temperature (VHT)	-40°C to 260°C	(-40°F to 500°F)	<i>Under development</i>
Working position	Omni-tilt		
Polarity	Positive terminal indicated by case groove		
Limited warranty period*	30 days		
	(*) 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 otherwise stated		



**Typical Response for tilt position:**





**Ordering information**

**SM-45**

SM-45 / OM 15 Hz 1800 Ω XT (150°C)  
SM-45 / OM 15 Hz 1800 Ω HT (200°C)  
SM-45 / OM 15 Hz 1800 Ω HT (260°C)

P/N 1090510  
P/N 1090514  
P/N 1090518

Due Q4 - 2002  
(under development)

**Patent pending**

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