

## SM-24 Geophone Element

- Tight specification, low-distortion geophone
- Extended spurious over 240 Hz, allowing full bandwidth at 2-ms sampling
- Backwards compatible with SM-4, SM-4 Superphone™ range, and SM-24ST
- 3-year limited warranty



The SM-24 geophone element is designed to offer the highest performance in seismic exploration based upon field-proven I/O Sensor technology. Low distortion, combined with excellent specifications, provide high-fidelity data in 2-D and 3-D surveys. The extended bandwidth allows the full potential of 2-ms/24-bit recording systems to be realized.

Applications: 2-D & 3-D seismic exploration with bandwidth from 10 Hz up to 240 Hz.

Implementation: Can be installed in a variety of I/O Sensor geophone cases.

# Specifications

INPUT/OUTPUT, INC.

## SM-24/U-B 10 Hz 375 W

### Frequency

Natural frequency ( $f_n$ )	10 Hz
Tolerance	+/-2.5%
Max. tilt angle for specified $f_n$	10°
Typical spurious frequency	>240 Hz

### Distortion

Distortion with 0.7 in/s p.p. coil-to-case velocity	≤0.1%
Distortion measurement frequency	12 Hz
Max. tilt angle for distortion specification	10°
Typical distortion (string of 12 geophones in series, measured at 12 Hz)	0.03%

### Damping

Typical open-circuit damping	0.25
Damping calibration-shunt resistance	1,339 Ω
Damping with calibration-shunt	0.6
Tolerance with calibration-shunt	+5%, -0%

### Coil Resistance

Standard	375 Ω
Tolerance	+/-2.5%

### Sensitivity

Sensitivity	28.8 V/m/s (0.73 V/in/s)
Tolerance	+/-2.5%
$R_f B_c f_n$	6,000 ΩHz
Moving mass	11 g (0.38 oz)
Maximum coil excursion p.p.	2 mm (0.08 in)

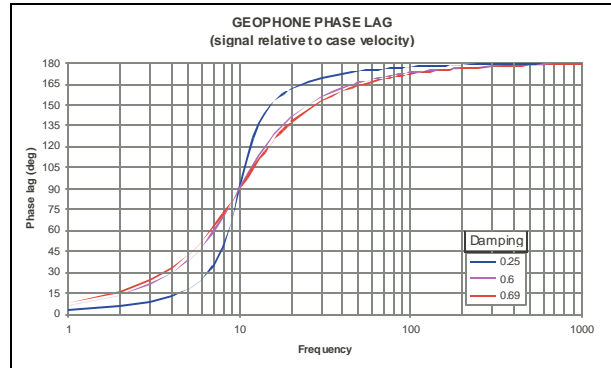
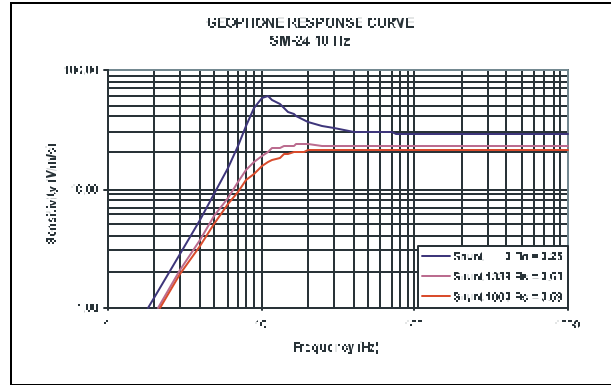
### Physical Characteristics

Diameter	25.4 mm (1 in)
Height	32 mm (1.26 in)
Weight	74 g (2.6 oz)
Operating temperature range	-40°C to +100°C (-40°F to +212°F)

### Limited Warranty Period\*

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 vertical position unless otherwise stated.



## Ordering Information

### SM-24

SM-24/U-B 10 Hz 375 Ω (upright basic unit with insulating disc)	P/N 1004117
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