

SM-4 Geophone Element

Where Quality Data Starts

Features

- Precision machined, rotating coil design
- Precious metal contacts for consistent, reliable & prolonged field performance.
- Choice of three standard natural frequencies (8Hz, 10Hz and 14Hz)
- Vertical and Horizontal elements available for 3-C applications.
- 3-year non-prorated warranty



The SM-4 digital-grade geophone element is designed for low weight, long field-life, and ultra reliable performance. Precision engineered components and computerized test equipment ensure consistency in manufacture and operation throughout and beyond the limited replacement guarantee period of three years.

Applications: 2-D and 3-D seismic exploration with bandwidth from 8 Hz up to 190 Hz.

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



Specifications: SM-4 Geophone Elements

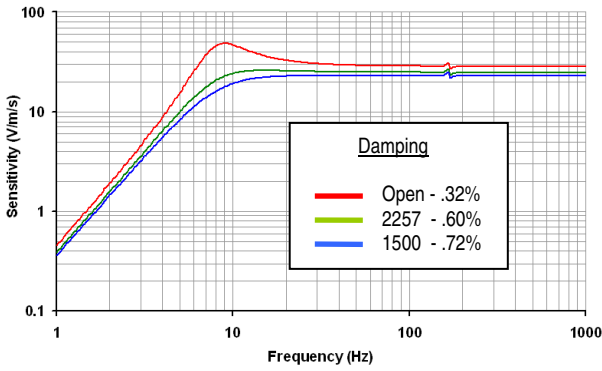
	SM-4/U-B 8 Hz	SM-4/U-B 10 Hz	SM-4/U-B 14 Hz	
Frequency				
Natural frequency	8 Hz	10 Hz	14 Hz	
Tolerance	± 6.3%	± 5%	± 5%	
Maximum tilt angle for specified Fn	20°	25°	25°	
Typical spurious frequency	160 Hz	180 Hz	190 Hz	
Distortion				
Distortion coil to case velocity with 17.78mm/s (0.7 in/s) p.p.	<0.2%	<0.2%	<0.2%	
Distortion measurement frequency	12 Hz	12 Hz	14 Hz	
Max tilt angle for distortion spec	15°	20°	20°	
Damping				
Open circuit damping	0.315	0.25	0.18	
Damping calibration shunt resistance	2,257 Ω	1,339 Ω	645 Ω	
Damping with shunt	0.6	0.6	0.6	
Tolerance with shunt	± 5 %	± 5 %	± 5 %	
Sensitivity				
Sensitivity	28.8 V/m/s	28.8 V/m/s	28.8 V/m/s	(0.73 V/in/s)
Tolerance	± 5 %	± 5 %	± 5 %	
RtBcfn	6,000 Ω Hz	6,000 Ω Hz	6,000 Ω Hz	
Moving mass	11 g	11 g	11 g	(0.38 oz)
Max coil excursion p.p.	2 mm	2 mm	2 mm	(0.08 in)
Coil Resistance				
Standard	375 Ω	375 Ω	375 Ω	
Tolerance	+/- 2.5 %	+/- 2.5 %	+/- 2.5 %	
Physical Characteristics				
Diameter	25.4 mm	25.4 mm	25.4 mm	(1 in)
Height	32 mm	32 mm	32 mm	(1.26 in)
Weight	74 g	74 g	74 g	(2.6 oz)
Operating temperature range	-40°C to +100°C	-40°C to +100°C	-40°C to +100°C	(-40°F to +212°F)
Warranty Period*				
	3 years	3 years	3 years	

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

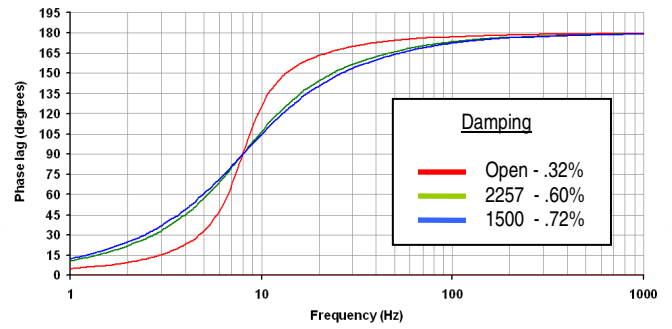
All parameters are specified at +20°C in the vertical position unless otherwise stated.

Geophone Response Curve and Phase Lag

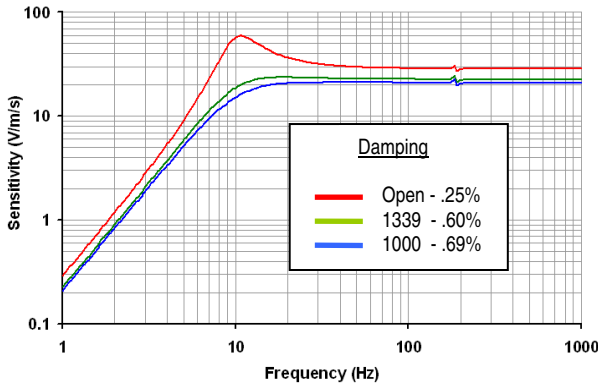
Geophone Response Curve – SM-4 8 Hz



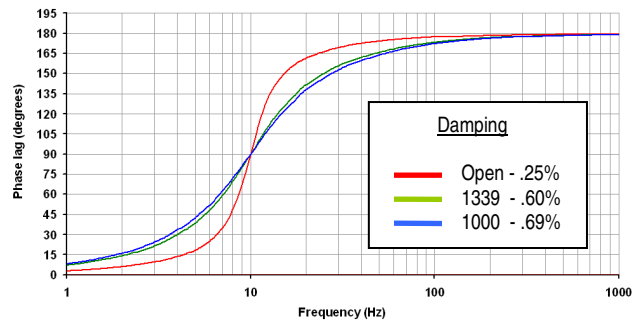
Geophone Phase Lag – SM-4 8 Hz



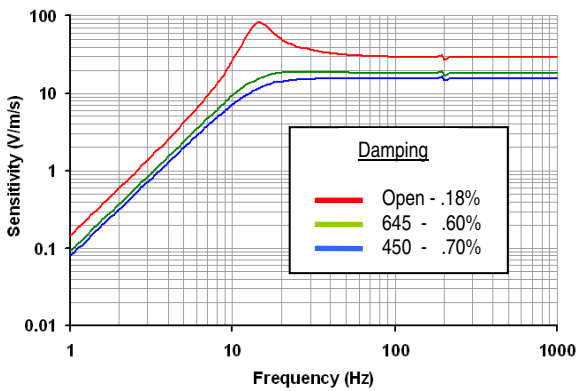
Geophone Response Curve – SM-4 10 Hz



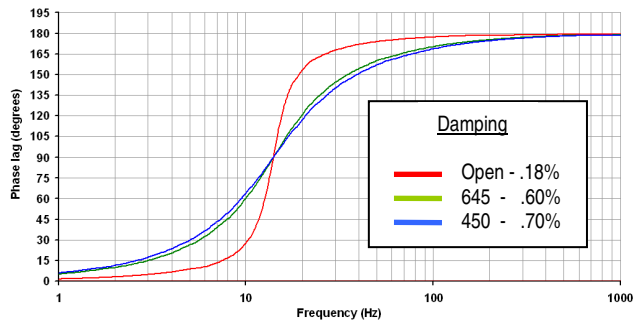
Geophone Phase Lag – SM-4 10 Hz



Geophone Response Curve – SM-4 14 Hz



Geophone Phase Lag – SM-4 14 Hz



Ordering Information

	8 Hz	10 Hz	14 Hz
SM-4			
SM-4/U/B 375 Ω	1004030	1004110	1004190
SM-4/S/B 375 Ω	1004050	1004120	1004200
SM-4/H/B 375 Ω	1004040	1004070	1004210

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