

# Geophones Specifications

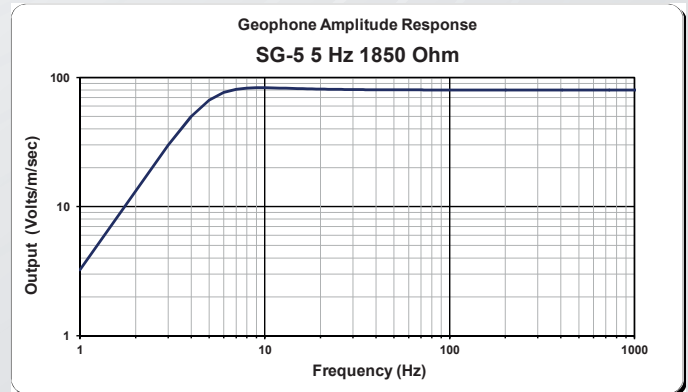
## HIGH-SENSITIVITY GEOPHONES SENSORS

### SG-5

Natural Frequency ( $\pm 7,5 \%$ )	5 Hz
Coil Resistance ( $\pm 5 \%$ )	1850 $\Omega$
Pk-Pk Coil Travel	3 mm
Harmonic Distortion <sup>(1)</sup>	<0,1%
Sensitivity ( $\pm 5 \%$ )	80 V/m/s
Open Circuit Damping ( $\pm 7,5 \%$ )	0,6
Moving Mass	22.7g
Spurious Resonance	> 150 Hz
Diameter	32 mm
Length	43 mm
Weight	170 g
Operating Temperature	-40° to 80°C

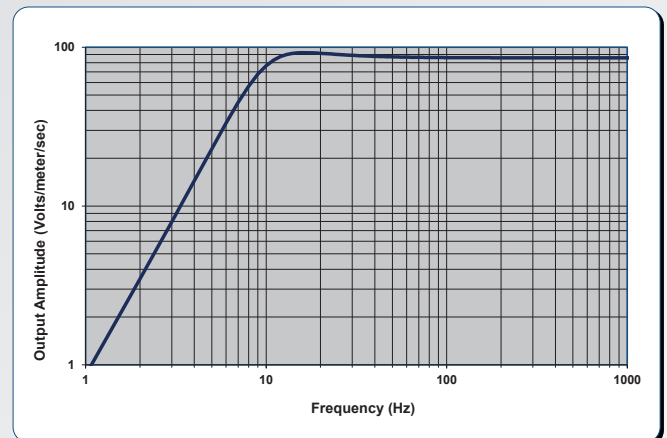
Except where otherwise noted all electromechanical specifications are valid at 22 °C and from 0 to 10 degree tilt.

(1) Measured at 12Hz and 0.7 in/s peak-peak velocity



### SG-10HS

Natural Frequency ( $\pm 3,5 \%$ )	10 Hz
Damping ( $\pm 3,5 \%$ )	0.56
Sensitivity ( $\pm 3,5 \%$ )	85.8 V/m/s
Coil Resistance ( $\pm 3,5 \%$ )	1800 $\Omega$
HAC Impedance	6875 $\Omega$ (12Hz)
Harmonic Distortion <sup>(1)</sup>	$\leq 0.1\%$
Spurious Frequency	>250 Hz
Coil Mass	19.5 g
Pk-Pk Coil Travel	2.6 mm
Max. Tilt	<15°
Diameter	32 mm
Height	43 mm
Weight	170 g
Working Temperature	-40° to 80°C
Storage Temperature	-40° to 80°C



## HIGH-PERFORMANCE GEOPHONES SENSORS

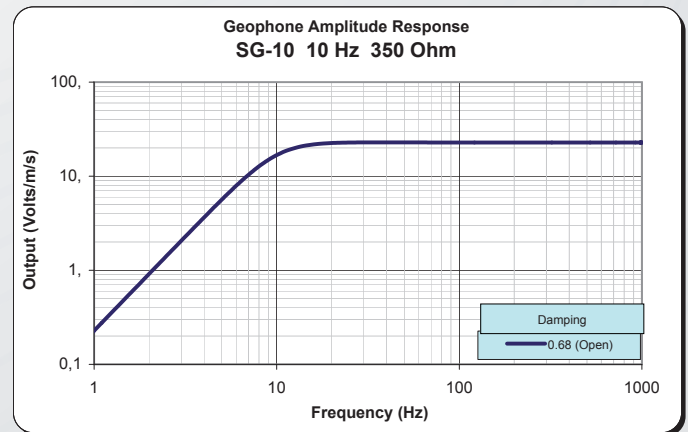
### SG-10

Operating Position	Vertical
Natural Frequency ( $\pm 2,5\%$ )	10 Hz
Coil Resistance ( $\pm 3,5\%$ )	350 $\Omega$
Tilt	0° to 15°
Pk-Pk Coil Travel	1,78 mm
Harmonic Distortion <sup>(1)</sup>	<0,075%
Sensitivity ( $\pm 2,5\%$ )	22,8 V/m/s
Open Circuit Damping ( $\pm 5\%$ )	0,68
Damping Constant ( $R_c B_c f_n$ )	4925 $\Omega \cdot \text{Hz}$
Moving Mass	8,4g
Spurious Resonance	> 240 Hz
Diameter	27,4 mm
Length	30,15 mm
Weight	78 g
Operating Temperature	-40° to 70°C

Parameters are specified at 20°C and no tilt unless otherwise noted.

All dimensions are for basic unit only (no land or marsh case).

(1) measured at 17.8 mm/sec pk-pk velocity and the higher of either 12 Hz or the nominal natural frequency



### SGH-10

Operating Position	Horizontal
Natural Frequency ( $\pm 2,5\%$ )	10 Hz
Damping ( $\pm 5\%$ )	0.68
Sensitivity ( $\pm 2,5\%$ )	22.8 (0.579V/in/s)
Coil Resistance ( $\pm 3,5\%$ )	350 $\Omega$
HAC Impedance	1049 $\Omega$ (12Hz)
Harmonic Distortion <sup>(1)</sup>	<0,075%
Spurious Frequency	>240 Hz
Coil Mass	8.4 g
Pk-Pk Coil Travel	1.78 mm
Max. Tilt	<5°
Diameter	27.4 mm
Height	30.15 mm
Weight	78 g
Operating Temperature	-40° to 70°C

# CONVENTIONAL GEOPHONE SENSORS

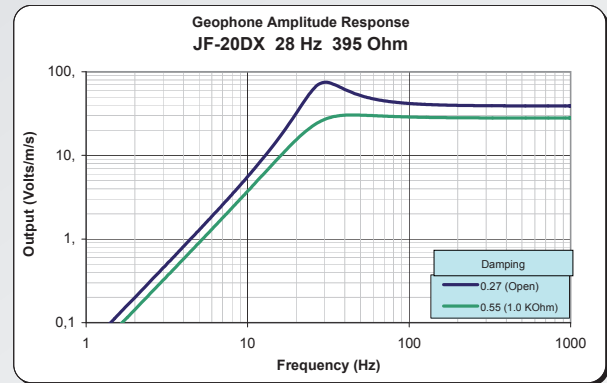
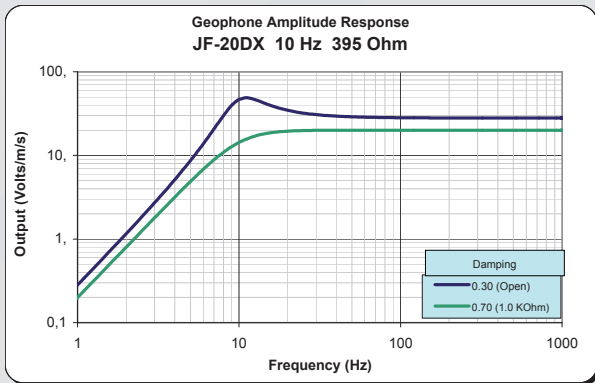
## JF-20DX

Natural Frequency ( $\pm 5\%$ )	10 Hz	14 Hz	28 Hz	40 Hz
Coil Resistance ( $\pm 5\%$ )	395 $\Omega$			575 $\Omega$
Tilt	0° to 20°			
Harmonic Distortion <sup>(1)</sup>	< 0,2%			
Pk-Pk Coil Travel	1,5 mm			
Open Circuit Sensitivity (V/m/s)	28,0		39,0	42,0
Open Circuit Damping	0,30	0,22	0,27	0,37
Damping Constant ( $R_T B_c f_n$ ) ( $\Omega\text{Hz}$ )	5672		11003	17119
Moving Mass	11 g			8,2 g
Spurious Resonance (Hz)	>200	>250	>350	>380
Damping with Resistor ( $\pm 5\%$ )	0,700	0,510	0,552	0,576
Damped Sensitivity ( $\pm 5\%$ )	20 V/m/s	20 V/m/s	28 V/m/s	30,4 V/m/s
Diameter	25,4 mm		27 mm	
Length	33,5 mm			
Weight	87 g		100 g	95 g
Operating Temperature	-40° to 70°C			

Parameters are specified at 22°C and no tilt unless otherwise noted.

All dimensions are for basic unit only (no land or marsh case)

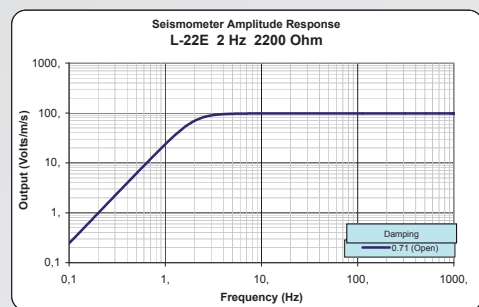
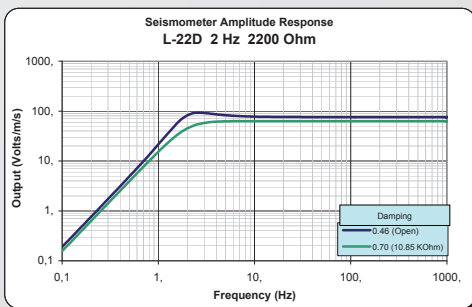
(1) measured at 17.8 mm/sec pk-pk velocity and the higher of either 12 Hz or the nominal natural frequency



## SEISMOMETERS

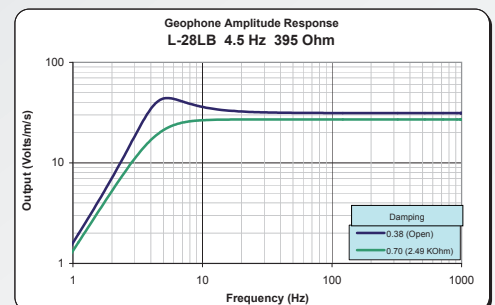
	L-22D			L-22E		
Natural Frequency ( $\pm 0,2\text{Hz}$ )	2 Hz					
Tilt Tolerance	0° to 5°					
Open Circuit Damping	0,46			0,71		
Damping with Resistor	0,70			na		
Moving Mass	72,8 g					
Pk-Pk Coil Travel	3,81 mm					
Diameter	60,3 mm					
Length	50,8 mm					
Weight	425 g					
Coil Resistance	510 $\Omega$	2200 $\Omega$	8540 $\Omega$	510 $\Omega$	2200 $\Omega$	8540 $\Omega$
Sensitivity( V/m/s)	36,5	75,7	149,2	47,1	97,9	192,8
Shunt Resistor Value	2516	10854	42133	na	na	na
Damping Constant ( $R_T B_c f_n$ ) ( $\Omega\text{Hz}$ )	1453	6266	24323	2427	10470	40644

Parameters are specified at 20°C and no tilt unless otherwise noted.  
All dimensions are for basic unit only (no land or marsh case)



## L-28LB

Natural Frequency ( $\pm 0,5\text{ Hz}$ )	4,5 Hz	
Harmonic Distortion <sup>(1)</sup>	0,20 %	
Open Circuit Damping	0,38	
Moving Mass	19 g	
Pk-Pk Coil Travel	4 mm	
Diameter	31,8 mm	
Length	38,1 mm	
Weight	141,75 g	
Coil Resistance	395 $\Omega$ ( $\pm 6,5\%$ )	630 $\Omega$ ( $\pm 7,5\%$ )
Sensitivity	31,3 V/m/s	39,5 V/m/s
Damping Constant ( $R_T B_c f_n$ )	4103 $\Omega \cdot \text{Hz}$	6543,8 $\Omega \cdot \text{Hz}$



Parameters are specified at 20°C and no tilt unless otherwise noted.

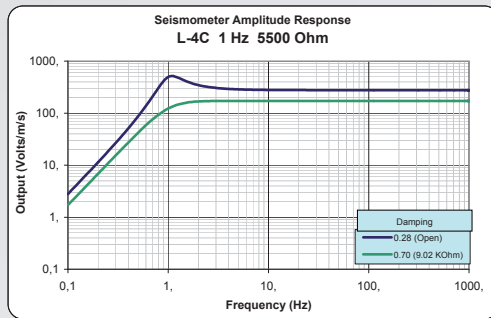
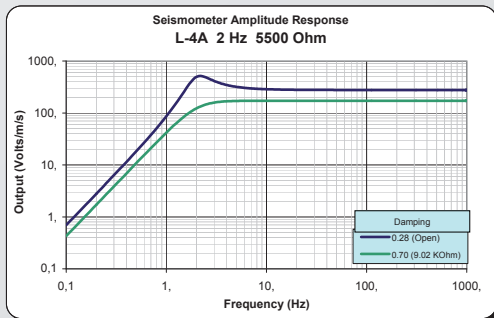
All dimensions are for basic unit only (no land or marsh case)

(1) measured at 17.8 mm/sec pk-pk velocity and the higher of either 12 Hz or the nominal natural frequency

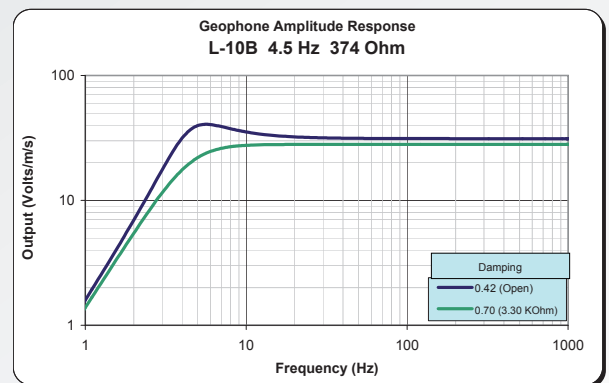
# SEISMOMETERS

	L-4A			L-4C		
Natural Frequency	2 Hz ( $\pm 0.25$ Hz)			1 Hz ( $\pm 0.05$ Hz)		
Tilt Tolerance	< 0.1 Hz Change to 10°			< 0.05 Hz Change to 5°		
Open Circuit Damping (vertical units only)	0,28					
Pk-Pk Coil Travel	6,25 mm					
Moving Mass	500 g			1000 g		
Diameter	76 mm					
Length	130 mm					
Weight	1700 g			2150 g		
Operating Temperature	-30° to 60°C					
Coil Resistance	500 $\Omega$	2000 $\Omega$	5500 $\Omega$	500 $\Omega$	2000 $\Omega$	5500 $\Omega$
Sensitivity (V/m/s)	83,5	166,9	276,8	83,5	166,9	276,8
70% Damping Shunt Resistor	820	3279	9016	820	3279	9016
Damping Constant ( $R_T B_c f_n$ ) ( $\Omega$ Hz)	554	2217	6097	1109	4434	12194

Parameters are specified at 20°C  $\pm$  2°C and no tilt unless otherwise noted.  
 All dimensions are for basic unit only (no land or marsh case)  
 Parameters valid at <(PK-Pk Travel)/16



	L-10B	
Natural Frequency ( $\pm 0,5$ Hz)	4,5 Hz	
Coil Resistance ( $\pm 6,5\%$ )	374 $\Omega$	3600 $\Omega$
Sensitivity ( $\pm 10\%$ )	31,2 V/m/s	96,9 V/m/s
Harmonic Distortion (1)	0,20%	
Open Circuit Damping ( $\pm 10\%$ )	0,42	
Damping Constant (RTBCfn)	4561,5 $\Omega$ Hz	43907,8 $\Omega$ Hz
Moving Mass	17 g	
Pk-Pk Coil Travel	2 mm	
Spurious Resonance	na	
Diameter	31,75 mm	
Length	35,56 mm	
Weight	141,75 g	



Parameters are specified at 20°C and no tilt unless otherwise noted.  
 All dimensions are for basic unit only (no land or marsh case)  
 (1) measured at 17.8 mm/sec pk-pk velocity and the higher of either 12 Hz or the nominal natural frequency

**GEOPHONE TESTER : SGT-II**

PARAMETER	RANGE	ACCURACY OF MEASUREMENT
Natural Frequency	1 to 100 Hz	± 2%
Coil Resistance	20 to 10000 ohms	± 1%
Damping	0.1 to 1.2	± 1%
Sensitivity	0 to 1000 V/m/s	± 2%
Harmonic Distortion	0 to 20%	± 10% of reading
Dynamic Impedance	20 to 24000 ohms	± 1%
Leakage Test	0.1 to 10 Megohms	± 10%(after proper zero)
Operating Temperatures	AIU-II	-20° to 50°C
Storage Capacity	AIU-II	20000 records minimum
	OIU - PC based	limited only by PC disk space approx. 7500 records/Mbyte)
Battery Run Times	AIU-II	14 hours typical @ 25°C on internal batteries
Charger Power Requirements	AIU-II	10.5 - 16 Volts DC @ 1.5 Amps maximum

NOTE: The following specifications assume a properly calibrated AIU.

**HYDROPHONE TESTER : SGT-H**

PARAMETER	RANGE	ACCURACY OF MEASUREMENT
Natural Frequency	1 to 100 Hz	± 3%
Coil Resistance	20 to 10000 ohms	± 1%
Damping	0.1 to 1.2	± 3%
Sensitivity	0 to 100 V/bar	± 4%
Dynamic Impedance	20 to 24000 ohms	± 2%
Leakage Test	0.1 to 10 Megohms	± 10%(after proper zero)
Operating Temperature	+15° to 25°C	-
Humidity	10 to 90%, noncondensing	-
Power	100-240 VAC, 47-63 Hz, 30 W	-
Sealing	Not sealed against moisture or dust	-
Storage Temperature	-20° to 60°C	-
Dimensions, LxWxH (chamber only)	518 mm x 225 mm x 244 mm	-
Weight (chamber only)	7.2 kg (15.8 lbs)	-
Transport Case Dimensions, LxHxH	630 mm x 492 mm x 352 mm	-
Transport Weight	19.4 kg (42.7 lbs)	-

## SGHT-15

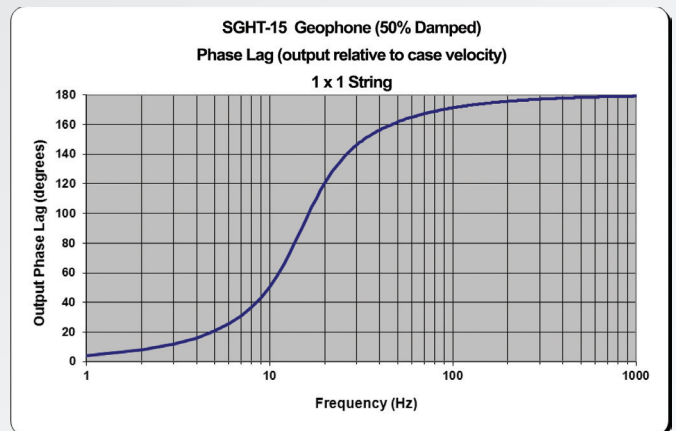
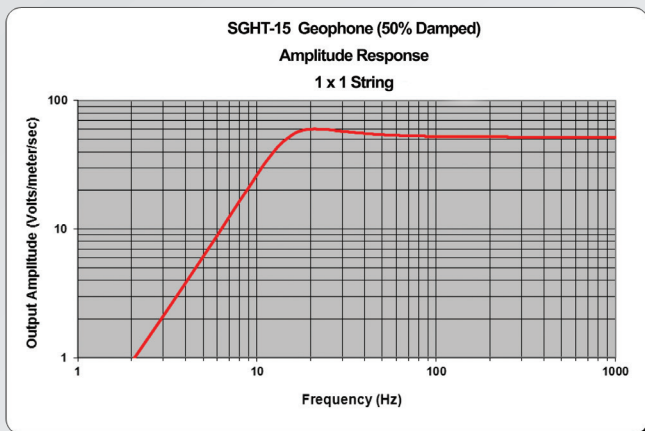
	NOMINAL	HORIZONTAL	0° to 180°
Natural Frequency	15 Hz	± 5%	-5% to +15%
Coil Resistance	2350 Ω	± 5%	± 5%
Sensitivity	52.0 V/m/s (1.32 V/in/s)	-15% to +5%	-15% to +5%
Open Circuit Damping (without damping resistance)	0.50	-15% to +15%	-20% to +15%
Distortion (@ 15 Hz & 1.8 cm/s pk-pk) (@ 15 Hz & 0.7 in/s pk-pk)		≤ 0.2%	≤ 0.9%
Spurious Frequency		≥ 365 Hz	≥ 280 Hz
Coil Excursion Pk-Pk		<3.0 mm (<0.118 in)	<0.6 mm (<0.024 in)
Moving Mass	7.4 g		

## PHYSICAL CHARACTERISTICS

Length	27.5 mm (1.082 in)
Diameter	22.25 mm (0.874 in)
Weight	43 g (1.517 oz)
Storage Temperature	-40°C to 100°C
Operating Temperature	-40°C to 205°C
Polarity	Positive terminal indicated by « + » sign
Working Position	Omni-tilt

All electromechanical specifications are valid @ 20°C

Note: Sercel reserves the right to change its specifications without prior notice.



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