



Very High Performance, Low Distortion, Extremely Rugged Geophone

FEATURES

- Very low distortion: better than -90 dB
- Wide frequency response: 10 Hz to 1500 Hz
- No spurious frequencies
- Low resonance: 10 Hz typ
- Very high survival shock: > 5000 g
- One piece molded coil assembly
- Consists of only three, interchangeable, components
- Very long excursion: $\pm 0.20"$
- Low total mass: 108 grams assembled with spike
- Center tapped coil permits fully differential use
- 13 Volt / Meter / Second sensitivity (No load)

DESCRIPTION

The TX53G1 geophone is an extremely rugged seismic transducer, which may be hammered into the ground without degrading performance.

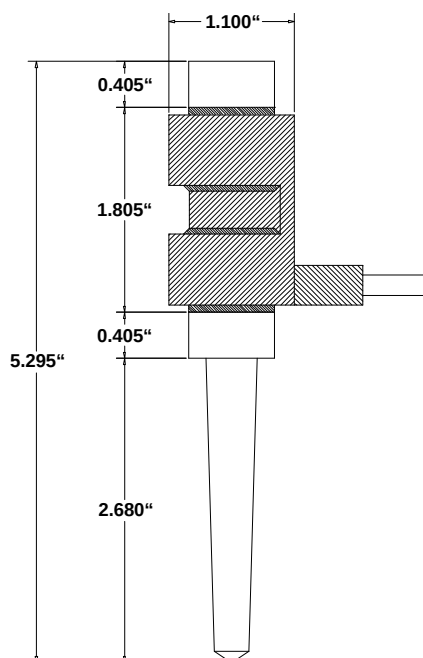
The coil assembly is molded of high impact ABS and is vacuum impregnated to resist moisture absorption. The coil is center tapped to permit fully differential connection to the acquisition system in order to reduce common mode noise.

The transducer core and spike are fabricated of high strength, hard anodized aluminum.

All elements of the TX53G1, from one TX53G1 to another, are interchangeable, allowing easy repair in the field or shop.

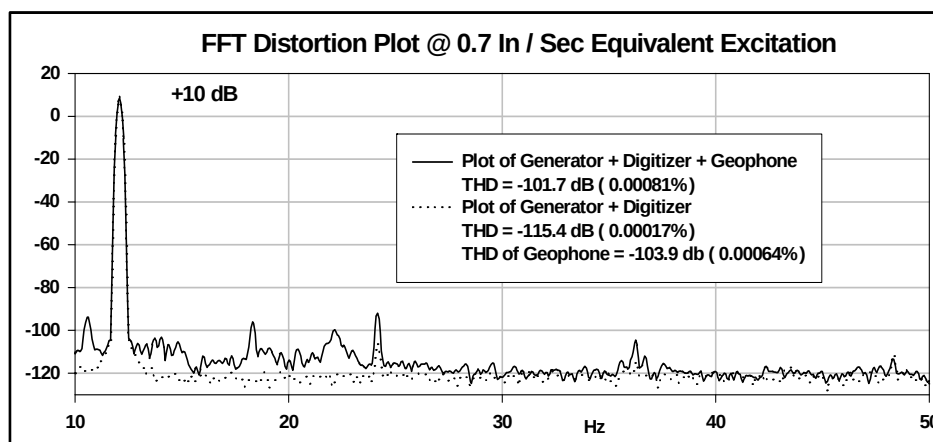
APPLICATIONS

- High performance Seismic Exploration systems
- Earth Science systems
- Nuclear Treaty monitoring systems
- Underwater Seismic systems
- Down-hole seismic applications
- High performance industrial applications



TX53G1 Geophone Assembly

(See application note AN004 for more details)



TX53G1 Geophone -- Specifications

Frequency

Natural frequency (f_n)	10 Hz
Tolerance	$\pm 10\%$
Spurious frequencies	None

Distortion

Distortion with 0.7 in/s p-p	0.0033% max
Distortion measurement frequency	12 Hz
Maximum tilt angle for specification	15°

Pickup Coil

Type	Dual center tapped
Resistance	2.4K Ω / 2.4K Ω (nominal)

Damping	0.7 (typ)
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Sensitivity

Open circuit sensitivity	13 V/M/S
Tolerance	$\pm 10\%$
Moving mass	2.9 Grams
Maximum proof mass excursion	± 0.20 Inches

Physical Characteristics

Diameter	1.1 Inches (excluding cable exit)
Height (assembled)	5.295 Inches
Weight (total)	108 Grams
Operating temperature range	-40C° to +70C°
Survival shock	>5000 G x 2 ms (any direction)

All parameters are specified at 25C° in the vertical position unless otherwise stated.