

Piezoelectric Microphone

**ENDEVCO
MODEL
2510M4A**

Model 2510M4A

- Requires No External Power
- High Intensity Acoustic Measurement
- High Temperature To +500°F (+260°C)
- Operational Range, 100 To > 180 dB SPL
- Hermetically Sealed
- Vibration Compensated



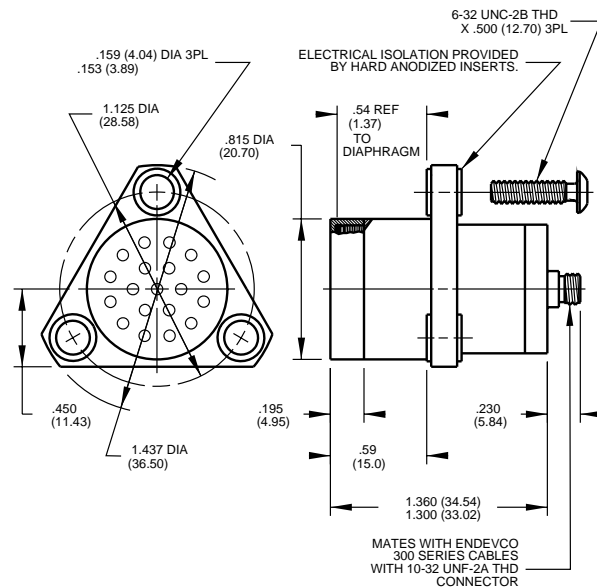
Actual size

DESCRIPTION

The ENDEVCO® Model 2510M4A Microphone measures high intensity acoustic noise and very low pressure fluctuations. The rugged, hermetically sealed construction and extremely wide temperature range -67°F to +500°F (-55°C to +260°C) make this transducer extremely useful over a wide range of environmental conditions, including insensitivity to altitude changes, and the transducer has vibration compensation incorporated into the sensing element. The microphone is a self-generating device that requires no external power source for operation.

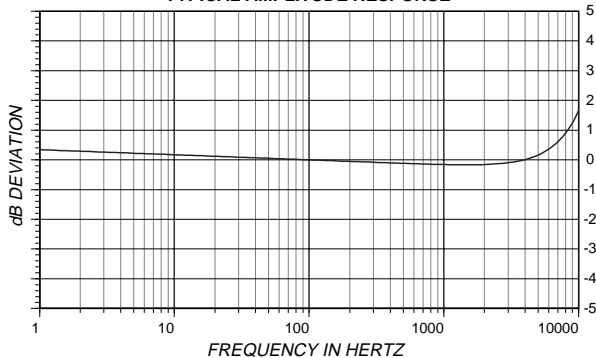
The Model 2510M4A features a very thick diaphragm that prevents puncturing or damage due to particle impact, accidental mishandling, or high pressure pulses. Insulation between the transducer and mounting surface prevents data-degrading ground loops. The Model 2510M4A is intended primarily to operate into charge amplifiers. Long cables may be used between the transducer and charge converter without affecting charge sensitivity. Although the basic design is directed toward maximizing charge characteristics, the Model 2510M4A also gives excellent results when operated into voltage amplifiers. The Model 2510M4A, with electrical specifications identical to the basic Model 2510, provides a special mounting for flush diaphragm or other applications.

ENDEVCO Signal Conditioner Models 133, 2775A, 2721B or 2680 are recommended for use with this high impedance microphone.

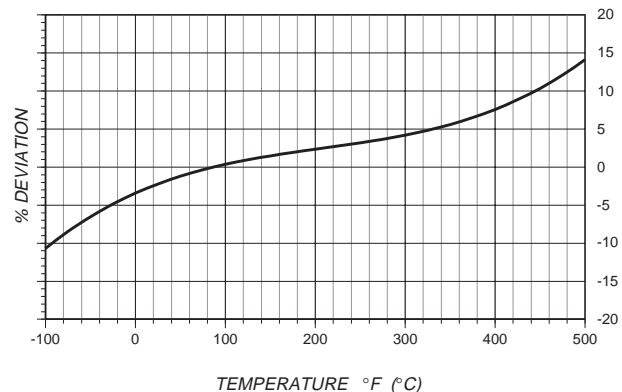


STANDARD TOLERANCE
INCHES (MILLIMETERS)
XX = +/- .02 (X = +/- .5)
XXX = +/- .010 (XX = +/- .25)

TYPICAL AMPLITUDE RESPONSE



TYPICAL TEMPERATURE RESPONSE



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SPECIFICATIONS

The following performance specifications are typical values, referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted.

DYNAMIC CHARACTERISTICS		Units
CHARGE SENSITIVITY, Typical		
	pC rms @ 140 dB SPL [1]	31
	pC rms/psi [2]	1069
	pC rms/N/m ² [3]	0.155
	dB re 1 pC rms @ 1 µbar	-33.1
RANGE	dB SPL	100 to > 180
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	30
AMPLITUDE RESPONSE		
±1 dB	Hz	2 to 4 kHz
±3 dB	Hz	1 to 10 kHz
TEMPERATURE RESPONSE		See Typical Curve
AMPLITUDE LINEARITY	dB	0.5
120 to 164 dB SPL		
ELECTRICAL CHARACTERISTICS		
RESISTANCE	MΩ	≥ 20 000
CAPACITANCE	pF	5200
GROUNDING		Case ground insulated from mounting bracket. Case isolated from mounting bracket by 1 MΩ, minimum
ENVIRONMENTAL CHARACTERISTICS		
TEMPERATURE RANGE		-67°F to +500°F (-55°C to +260°C)
HUMIDITY		Hermetically Sealed
VIBRATION SENSITIVITY		< Output of unit at 105 dB SPL @ 1 g pK
Up to 2 kHz		
SINUSOIDAL VIBRATION LIMIT	g pk	150
SHOCK LIMIT	g pk	1000
PHYSICAL CHARACTERISTICS		
DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	57 (2.0)
CASE MATERIAL		Stainless Steel
CONNECTOR		Coaxial, 10-32 Type, Mates Endevco 3000 Series Cables
MOUNTING TORQUE	lbf-in (Nm)	
CALIBRATION		
SUPPLIED:	pC/pk @ 140 dB SPL	
CHARGE SENSITIVITY	pC/rms @ 140 dB SPL	
CAPACITANCE	pF	

ACCESSORIES

Model 3090C-120 (10ft) CABLE ASSEMBLY
 Model EH426 MOUNTING SCREW, 6-32, Buttonhead,
 Three Each

NOTES

- Reference: 0 dB = 0.0002 µbar rms (dyne/cm² rms) =
 20x10⁻⁶ N/m² rms = 20 µPa rms.
- 140 dB SPL = 2.9x10⁻² psi rms.
- 140 dB SPL = 200 N/m² rms.

Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.