ENDEVCO
AN AMPHENOL COMPANY

PERFORMANCE SPECIFICATION
MICROPHONE
2510M4A

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
78971	NR	2/29/24	DAM	Initial Release of Performance Specification Microphone 2510M4A	DAM	54638

1.0 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.

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C) and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

2.0 DYNAMIC CHARACTERISTICS

		UNITS	
2.1	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 rms	-33.1
		pC pk @ 140 db SPL	44
		Limit	30 pC pk to 50 pC pk
2.2	RANGE	dB SPL	100 to >180
2.3	FREQUENCY RESPONSE		See Typical Curves, Page 4
2.3.1	RESONANCE FREQUENCY	kHz	30

2.3.2	AMPLITUDE RESPONSE		
2.3.2.1	± 1 dB	Hz	2 to 4000
2.3.2.2	± 3 dB	Hz	1 to 10000
2.4	TEMPERATURE RESPONSE		
2.4.1	Temperature Range	° F	-65 to 500
		UNITS	
2.4.2	Temperature Response, typical		Less than 1.5 db change in charge sensitivity over rated range, relative to room temperature sensitivity.
2.5	AMPLITUDE LINEARITY		
2.5.1	120 to 164 dB SPL	dB	0.5
2.5.2	120 to 180 dB SPL	dB	1.0
3.0	ELECTRICAL CHARACTERISTICS		
3.1	RESISTANCE	MΩ	≥ 20 000
3.2	CAPACITANCE	pF	5200
3.3	GROUNDING		Case ground insulated from mounting bushings by 1 MΩ, minimum.
4.0	ENVIRONMENTAL CHARACTERISTICS		
4.1	TEMPERATURE RANGE		-67°F to +500°F (-55°C to +260°C)
4.2	HUMIDITY		Hermetically Sealed
4.3	VIBRATION SENSITIVITY @ 1 g pk, Up to 2 kHz	-	< Output of unit at 105 dB SPL
4.4	SINUSOIDAL VIBRATION LIMIT	g pk	150
4.5	SHOCK LIMIT	g pk	1000

5.0	PHYSICAL CHARACTERISTICS		
5.1	DIMENSIONS		See Outline Drawing
5.2	WEIGHT	gm (oz)	57 (2.0)
5.3	CASE MATERIAL		Stainless Steel
5.4	BRACKET		Anodized Aluminum
5.5	CONNECTOR		Coaxial, 10-32 Type, Mates Endevco 3000 series cables.
5.6	MOUNTING TORQUE	lbf-in (Nm)	10 (1.1)

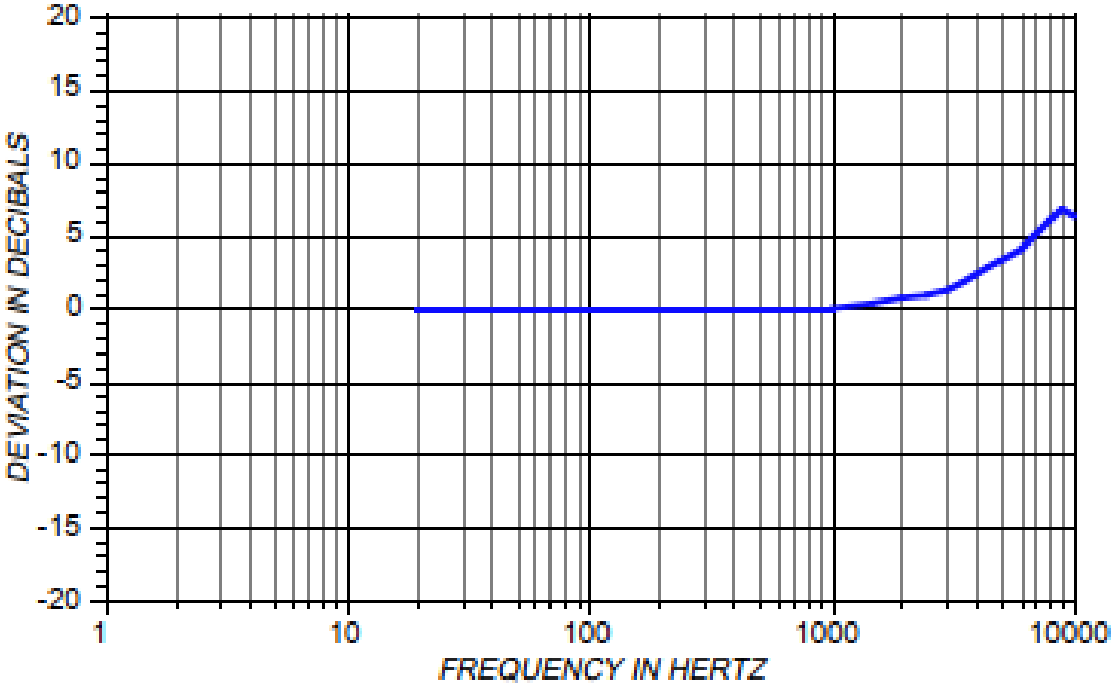
		UNITS	
6.0	ACCESSORIES		
6.1	SUPPLIED		
6.1.1	CABLE ASSEMBLY	1 x	Model 3090C-120 (10 ft)
6.1.2	MOUNTING SCREW, 6-32	2 x	Model EH303

7.0	CALIBRATION	
7.1	SUPPLIED	
7.1.1	CHARGE SENSITIVITY	pC rms @ 140 dB SPL
7.1.2	CAPACITANCE	pF

8.0 NOTES

[1] Reference: 0 dB = 0.0002 µbar rms (dyne/cm^2 rms) =20x10^{-6} N/m^2 rms = 20 µPa rms.
[2] 140 dB SPL = 2.9x10^{-2} psi.
[3] 140 dB SPL = 200 N/m^2.

ENDEVCO MICROPHONE WITH PROTECTIVE GRILL PERFORMED USING CHARGE AMPLIFIER



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