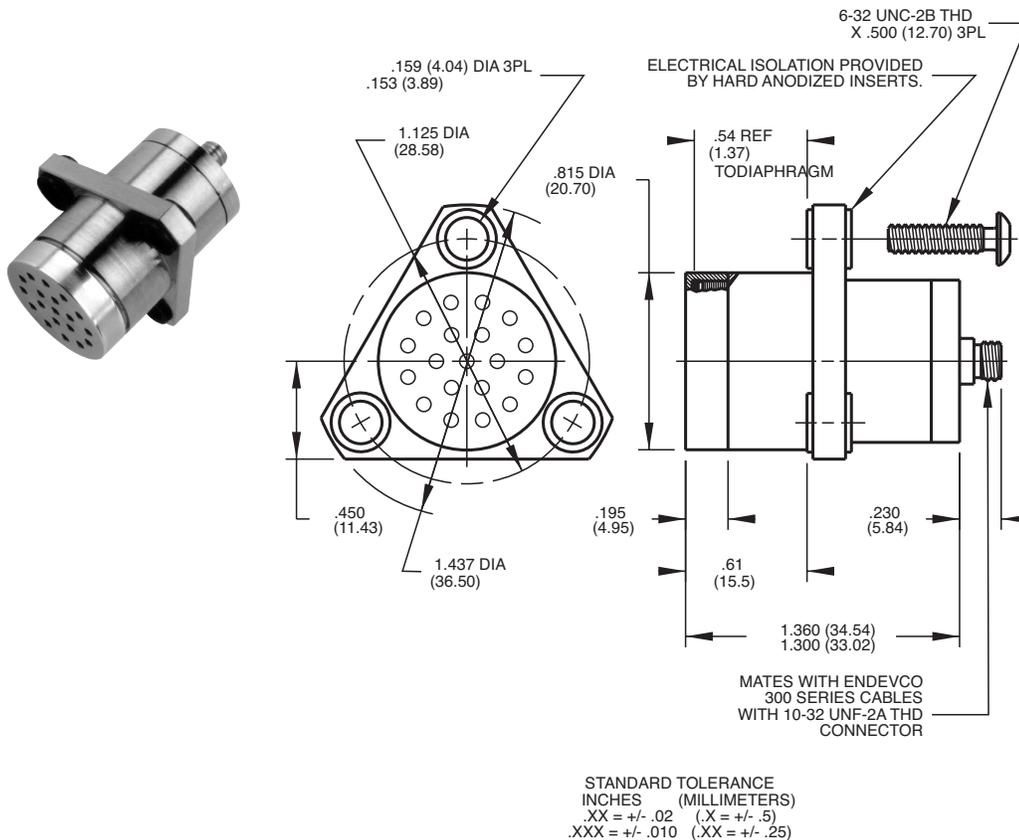


# Piezoelectric microphone

## Model 2510M4A



### Key features

- Designed for high intensity acoustic measurements
- Hermetically sealed
- Vibration compensated
- High temperature to +500°F (+260°C)
- Operational range, 100 to > 180 dB SPL

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, 2721B or 2680 are recommended for use with this high impedance microphone.

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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 <sup>2</sup> [3]	0.155
Range	dB re 1pC rms @ 1 μbar	-33.1
Resonance frequency	dB SPL	100 to > 180
Amplitude response	kHz	30
±1 dB	Hz	2 to 4 kHz
±3 dB	Hz	1 to 10 kHz
Amplitude linearity		
120 to 164 dB SPL	dB	0.5
120 to 180 dB SPL	dB	1.0

#### 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 3kHz
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

#### Calibration

Supplied:		
Charge sensitivity	pC rms @ 140 dB SPL	
	pC pk @ 140 dB SPL	
Capacitance	pF	

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### Accessories

Product	Description	2510M4A
3090C-120	10 ft cable assembly	Included
EH426	Mounting screw, 6-32, buttonhead (x 3)	Included

### Notes

1. Reference: 0 dB = 0.0002  $\mu$ bar rms (dyne/cm<sup>2</sup>rms) =  $20 \times 10^{-6}$  N/m<sup>2</sup>rms = 20  $\mu$ Pa rms
2. 140 dB SPL =  $2.9 \times 10^{-2}$  psi rms
3. 140 dB SPL = 200 N/m<sup>2</sup> rms
4. Maintain high levels of precision and accuracy using Endeveco's factory calibration services. Call Endeveco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

### Contact

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