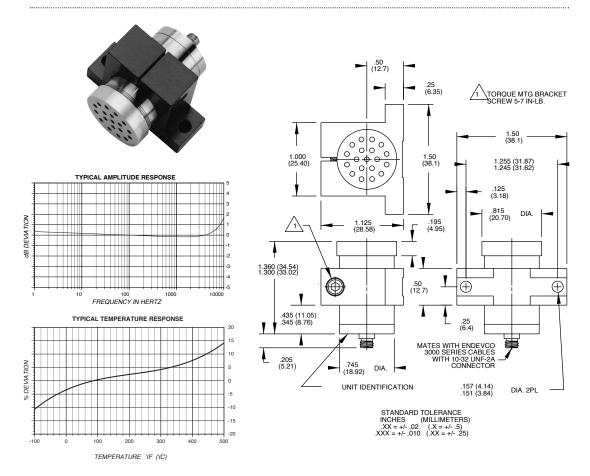


### **Piezoelectric microphone** Model 2510



Key features

- Requires no external power
- Hermetically sealed
- Vibration compensated
- Operational range, 100 to >180 dB SPL
- High intensity acoustic measurement
- High temperature to +500°F (+260°C)

The Endevco® model 2510 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 2510 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 2510 is intended primarily to operate into charge amplifiers. Long cables may be used between the transducer and charge convertor without affecting charge sensitivity. Although the basic design is directed toward maximizing charge characteristics, the model 2510 also gives excellent results when operated into voltage amplifiers.

Endevco signal conditioner models 2775A, 2721B or 2680 are recommended for use with this high impedance microphone.

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Piezoelectric accelerometers | Piezoresistive accelerometers | IEPE accelerometers | Variable capacitance accelerometers | Piezoresistive pressure sensors | Piezoelectric pressure sensors | High intensity microphones | Inertial sensors | Signal conditioners and supportive instrumentation | Cable assemblies



# Piezoelectric microphone

### Model 2510

#### **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
	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 M $\Omega$ ,
		minimum
ENVIRONMENTAL CHARACTERISTICS		
TEMPERATURE BANGE		-67°F to +500°F (-55°C to +260°C)
ILIVII LIATURE RANGE		
HUMIDITY		Hermetically Sealed
HUMIDITY		Hermetically Sealed
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT	g pk	Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz	g pk g pk	Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT		Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT		Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT		Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS		Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150 1000
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT CASE MATERIAL	g pk	Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150 1000 See Outline Drawing 57 (2.0) Stainless Steel
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT	g pk	Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150 1000 See Outline Drawing 57 (2.0)
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT CASE MATERIAL	g pk	Hermetically Sealed < Output of unit at 105 dB SPL @ 1 g pk 150 1000 See Outline Drawing 57 (2.0) Stainless Steel
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT CASE MATERIAL	g pk	Hermetically Sealed   < Output of unit at 105 dB SPL @ 1 g pk
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT CASE MATERIAL CONNECTOR MOUNTING TORQUE	g pk gm (oz)	Hermetically Sealed   < Output of unit at 105 dB SPL @ 1 g pk
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT CASE MATERIAL CONNECTOR MOUNTING TORQUE CALIBRATION	g pk gm (oz) Ibf-in (Nm)	Hermetically Sealed   < Output of unit at 105 dB SPL @ 1 g pk
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT CASE MATERIAL CONNECTOR MOUNTING TORQUE CALIBRATION SUPPLIED:	g pk gm (oz) lbf-in (Nm) pC pk @ 140 dB SPL	Hermetically Sealed   < Output of unit at 105 dB SPL @ 1 g pk
HUMIDITY VIBRATION SENSITIVITY Up to 2 kHz SINUSOIDAL VIBRATION LIMIT SHOCK LIMIT PHYSICAL CHARACTERISTICS DIMENSIONS WEIGHT CASE MATERIAL CONNECTOR MOUNTING TORQUE CALIBRATION	g pk gm (oz) Ibf-in (Nm)	Hermetically Sealed   < Output of unit at 105 dB SPL @ 1 g pk

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## **Piezoelectric microphone** Model 2510

#### ACCESSORIES

Model 3090C-120 (10ft) CABLE ASSEMBLY Model EH303 MOUNTING SCREW, 6-32, Two each

#### NOTES

- Reference:  $0 dB = 0.0002 \mu bar rms (dyne/cm<sup>2</sup> rms) =$ 1.
- $20x10^{-6}$  N/m<sup>2</sup> rms = 20 µPa rms. 140 dB SPL = 2.9x10<sup>-2</sup> psi rms. 140 dB SPL = 200 N/m<sup>2</sup> rms.
- 2.
- 3.
- Maintain high levels of precision and accuracy using Endevco's factory 4. calibration services. Call Endevco'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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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. 090719