Piezoelectric Accelerometer

Model 2222C

- **Industry Standard**
- **Light Weight (0.5 gm)**
- **Adhesive Mounting**
- **Ground Isolated**
- **Small Structure Vibration Measurement**

ENDEVCO MODEL 2222C

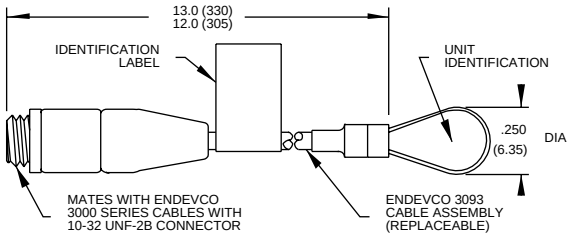
Actual size

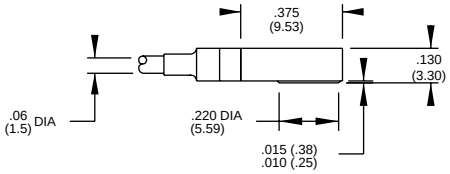
DESCRIPTION

The ENDEVCO® Model 2222C is the world's most popular minature piezoelectric accelerometer for vibration measurement on mini-structures and small objects. Its light weight (0.5 gm without the low-noise replaceable cable) effectively minimizes mass loading. The accelerometer is a self-generating device that requires no external power source for operation.

The Model 2222C features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in the radial shear mode. This sensor exhibits excellent output sensitivity stability over time. Signal ground is isolated from the mounting surface of the unit by a hard anodized surface. A specially designed low-noise coaxial cable is supplied for error-free operation. Unit and cable removal tools are included in the package to ensure proper removal in the field.

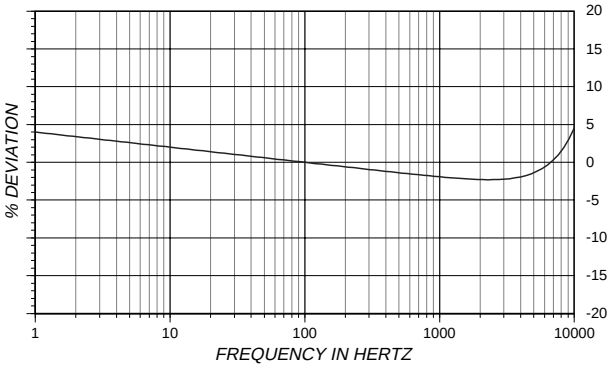
ENDEVCO Signal Conditioner Models 133, 2775A or OASIS 2000 Computer-Controlled System are recommended for use with this high impedance accelerometer.



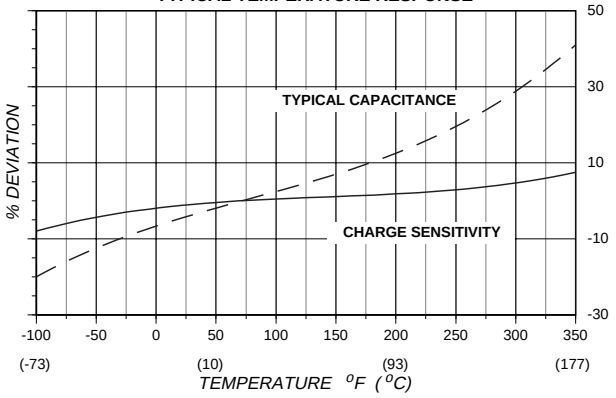


STANDARD TOLERANCE
INCHES (MILLIMETERS)
.XX = +/- .02 (.X = +/- .5)
.XXX = +/- .010 (.XX = +/- .25)

TYPICAL AMPLITUDE RESPONSE



TYPICAL TEMPERATURE RESPONSE



ENDEVCO
MODEL
2222C

Piezoelectric Accelerometer

SPECIFICATIONS

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.

DYNAMIC CHARACTERISTICS	Units	
CHARGE SENSITIVITY		
TYPICAL	pC/g	1.4
MINIMUM	pC/g	1.0
FREQUENCY RESPONSE		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	32
AMPLITUDE RESPONSE [1]		
±1dB	Hz	.5 to 10 000
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤5
AMPLITUDE LINEARITY [4]	%	1
Per 200 g, 0 to 2000 g		

ELECTRICAL CHARACTERISTICS		
OUTPUT POLARITY		Acceleration directed into the base of the unit produces positive output
RESISTANCE	GΩ	≥ 10
ISOLATION	MΩ	≥ 1 at 100 Vdc
CAPACITANCE	pF	470
GROUNDING		Signal return isolated from mounting surface

ENVIRONMENTAL CHARACTERISTICS		
TEMPERATURE RANGE		-100°F to +350°F (-73°C to +177°C)
HUMIDITY [2]		Sealed by silicone compound
SINUSOIDAL VIBRATION LIMIT	g pk	1000
SHOCK LIMIT [3]	g pk	10 000
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.04

PHYSICAL CHARACTERISTICS		
DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	0.5 (0.018)
CASE MATERIAL		Aluminum, hard anodized
CONNECTOR		3093-12 Cable Assembly
MOUNTING [5]		Adhesive

CALIBRATION		
SUPPLIED:		
CHARGE FREQUENCY RESPONSE	%	20 to 10 000 Hz
CHARGE SENSITIVITY	pC/g	
MAXIMUM TRANSVERSE SENSITIVITY	%	
MOUNTED RESONANCE FREQUENCY	kHz	
CAPACITANCE	pF	

ACCESSORIES

Model 2943B	REMOVAL TOOL
Model 3093-12 (1 ft)	CABLE ASSEMBLY, Attached
Model 3090C-120 (10 ft)	CABLE ASSEMBLY
P/N 16205	CABLE WRENCH

OPTIONAL ACCESSORIES

Model 2771AM3	IN-LINE CHARGE CONVERTOR FOR USE WITH CONSTANT CURRENT SOURCE
Model 2961	TRIAXIAL MOUNTING BLOCK
P/N 31849	ADHESIVE MOUNTING KIT

NOTES

1. Low-end response of the transducer is a function of its associated electronics.
2. Removing cable exposes accelerometer interior to environment. See Piezoelectric Instruction Manual No.101 before replacing cable assembly.
3. When exposed to high g and large displacement, the cable must be tied down as close to the accelerometer as possible to prevent cable whip and subsequent cable failure.
4. Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send for TP290 for more details.
5. Adhesives such as petro-wax, hot-melt glue, and cyanoacrylate epoxy (super glue) may be used to mount the accelerometer temporarily to the test structure. An adhesive mounting kit (P/N 31849) is available as an option from Endevco. To remove an epoxy-mounted accelerometer, first soften the epoxy with an appropriate solvent and then twist the unit off with the supplied removal wrench. Damage to sensors caused by inappropriate removal procedures are not covered by Endevco's warranty.
6. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

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