

Model 2222C Piezoelectric accelerometer

Features

- **NEW!** 2222C-R available as replacement sensor
- Industry standard
- Light weight (0.5 gm)
- Adhesive mounting
- Ground isolated
- Small structure vibration measurement

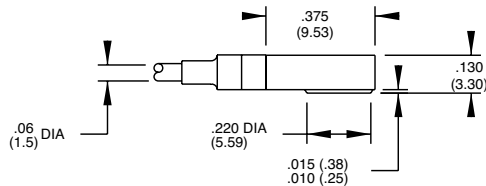
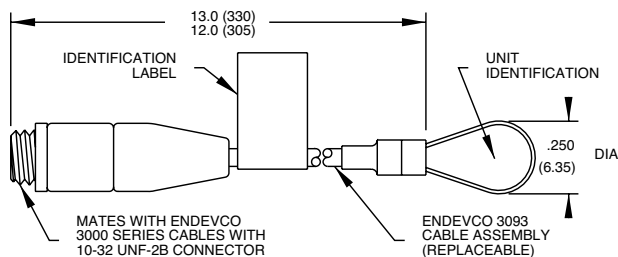


Description

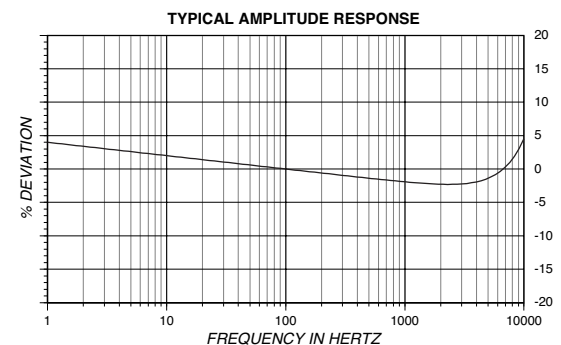
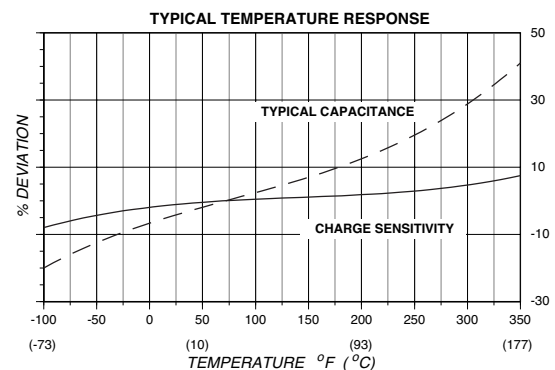
The Endevco® model 2222C is the world's most popular miniature piezoelectric accelerometer for vibration measurement on mini-structures and small objects. Its light weight (0.5 gm without the low-noise replaceable cable) effectively minimizes mass loading. The accelerometer is a self-generating device 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, 2775B, 2771, 6634C or Oasis 2000 (4990A-X with cards 428 and/or 433) computer-controlled system are recommended for use with this high impedance accelerometer.



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



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Endevco®

Specifications

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C), 4 mA 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 (typical)	kHz	32
Minimum	kHz	25
Amplitude response [1]		
±10%	Hz	1 to 8000
±1 dB (ref)	Hz	1 to 10 000
Temperature response		See typical curve
-67°F (-55°C) max/min	%	-15 / 0
+350°F (+177°C) max/min	%	+15 / 0
Transverse sensitivity	%	≤5
Amplitude linearity	%	1
Per 200g, 0 to 2000 g		

Electrical characteristics

Output polarity		Acceleration applied in the direction of the arrow on the unit produces positive output
Resistance (with 3093M10-12 cable)	GΩ	≥10
at +350°F (+177°C) (with 3093M10-12 cable)	GΩ	≥0.5
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 [3]	g pk	1000
Shock limit [4]	g pk	10 000
Base strain sensitivity	equiv. g pk/μ strain	0.04
Thermal transient sensitivity	equiv. g pk/°F (/°C)	0.05 (0.09)

Physical characteristics

Dimensions		See outline drawing
Weight (sensor)	gm (oz)	0.5 (0.018)
Weight (cable-12" long)	gm (oz)	3.7 (0.13)
Case material		Aluminum, hard anodized
Connector		3093-12 cable assembly
Mounting [5]		Adhesive

Calibration

Supplied:		
Charge frequency response	%	20 Hz to 10 000 Hz
Charge sensitivity	pC/g	
Maximum transverse sensitivity	%	
Capacitance	pF	

Notes:

- Low-end response of the transducer is a function of its associated electronics.
- Removing cable exposes accelerometer interior to environment. See Piezoelectric Instruction Manual before replacing cable assembly.
- 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.
- Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. See TP290 for more details.
- 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. 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.
- 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.

Accessories

Product	Description	2222C	2222C-R
2943B	Removal tool	Included	Optional
3093M10-12	Cable assembly, attached, 1 ft	Included	Included
3090C-120	Cable assembly, 10 ft	Included	Optional
16205	Cable wrench	Included	Optional
32279	Mounting wax	Included	Optional
2771C	In-line charge convertor for use with constant current source	Optional	Optional
2961	Triaxial mounting block	Optional	Optional
133	Signal conditioner	Optional	Optional
2775B	Signal conditioner	Optional	Optional
4990A-1	OASIS 2000 computer controlled system with cards 428 and/or 433	Optional	Optional
3090C-XXX	Cable assembly	Optional	Optional
3095A-XXX	Cable assembly	Optional	Optional



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.

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