

Piezoelectric Accelerometer

**ENDEVCO
MODEL
7722
7724**

Models 7722 & 7724

- **The Ultimate Accelerometer For Cryogenic Temperature Measurement**
- **Withstand Repeated Thermal Shock Down to -452°F (-269°C)**
- **Wide Bandwidth, ISOSHEAR®**
- **Hermetically Sealed, Top Connector**



Actual size

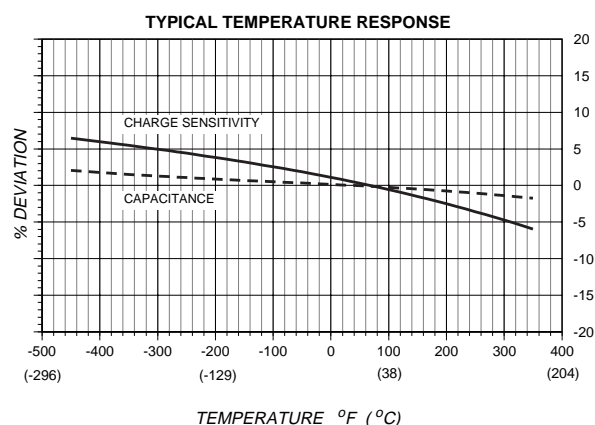
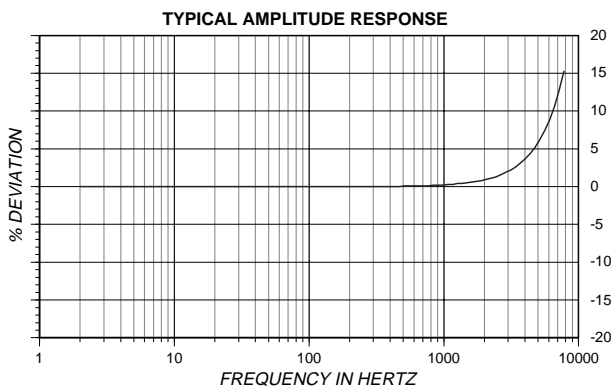
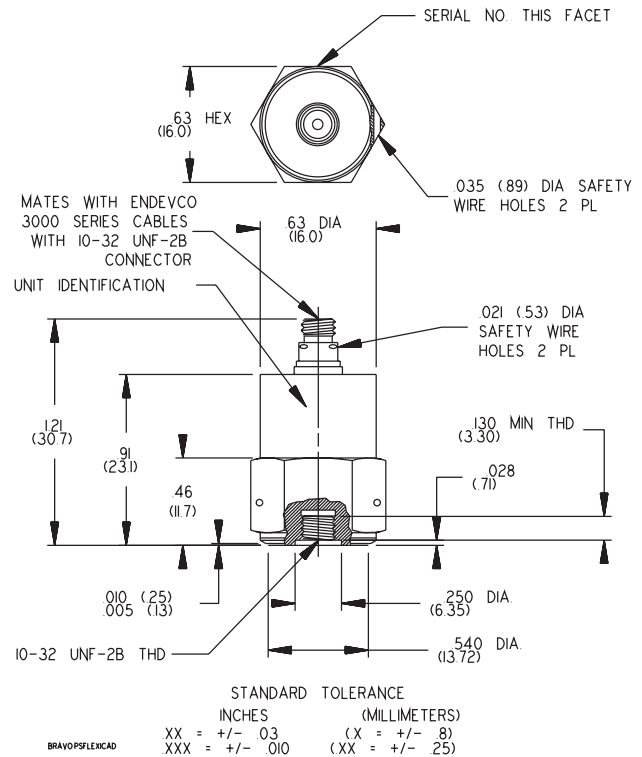


DESCRIPTION

The ENDEVCO® Models 7722/7724 are rugged piezoelectric accelerometers built specifically for measuring vibration under cryogenic conditions. Signal outputs of these units are very stable even at extremely low temperatures. Their internal construction is designed to withstand multiple cycles of thermal shock with steep temperature gradient. The accelerometers are self-generating devices that require no external power source for operation.

The Models 7722/7724 feature ENDEVCO's PIEZITE® Type P-23 crystal elements arranged in ISOSHEAR® configuration. These units exhibit low base strain sensitivity and excellent output stability over time. To achieve high reliability under the most extreme temperature conditions, no thermal expansion-critical connection, (such as wirebond, epoxy or solder,) is used inside the accelerometer. The Model 7722 is a grounded design (ground connects to the outer case), and the Model 7724 is an isolated design (both signal and ground are isolated from the outer case).

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



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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	3.7
FREQUENCY RESPONSE		See Typical Amplitude Response
Resonance Frequency	kHz	20
Amplitude Response, [1]		
±5%	Hz	2 to 4000
±1dB	Hz	.5 to 5000
TRANSVERSE SENSITIVITY	%	≤ 3 (≤ 1 on special order)
TEMPERATURE RESPONSE		See Typical Curve
AMPLITUDE NONLINEARITY [2]	%	1
Up to vibration limit		

ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY		Acceleration directed into base of unit produces positive output
RESISTANCE	GΩ	≥ 10
ISOLATION	MΩ	≥ 100
CAPACITANCE	pF	120
GROUNDING		
Model 7722		Signal return connected to case
Model 7724		Signal return isolated from case

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE		-452°F to +350°F (-269°C to +177°C)
HUMIDITY		Hermetically Sealed
SINUSOIDAL VIBRATION LIMIT	g pk	500
SHOCK LIMIT	g pk	2500
BASE STRAIN SENSITIVITY	equiv. g pk/μ strain	0.0008
THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F (°C)	0.001 (0.002)
ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.0003

PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	gm (oz)	29 (1.0)
CASE MATERIAL		Stainless Steel
CONNECTOR		10-32 UNF-2A Thread mates with Endevco Model 3090C Cable or equivalent
MOUNTING TORQUE	lbf-in (Nm)	18 (2)

CALIBRATION

SUPPLIED:		
CHARGE SENSITIVITY	pC/g	
MAXIMUM TRANSVERSE SENSITIVITY	%	
CAPACITANCE	pF	
FREQUENCY RESPONSE	%	20 to 4000 Hz
	dB	4 kHz thru resonance

ACCESSORIES

Model 3090C-120 (10 ft)	CABLE ASSEMBLY
Model 2981-12	MOUNTING STUD, 10-32 to 10-32
EHM464	HEX KEY WRENCH

OPTIONAL ACCESSORIES

Model 2981-4	MOUNTING STUD, 10-32 to M5
Model 2771AM3	IN-LINE CHARGE CONVERTOR FOR USE WITH CONSTANT CURRENT SOURCE
Model 2950	TRIAXIAL MOUNTING BLOCK

NOTES

- Low-end response of the transducer is a function of its associated electronics.
- 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.
- 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.



Optional In-Line Charge Converter, Model 2771AM3

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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