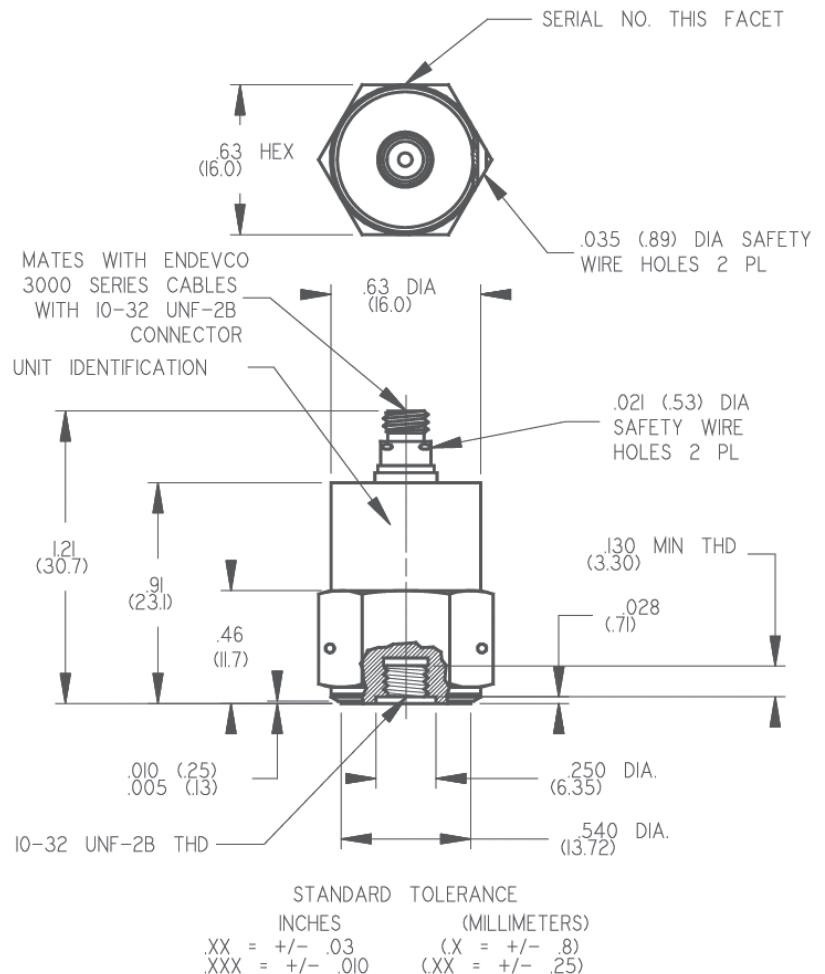
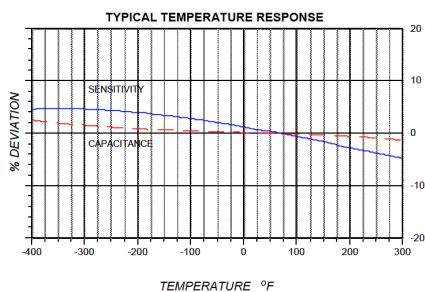
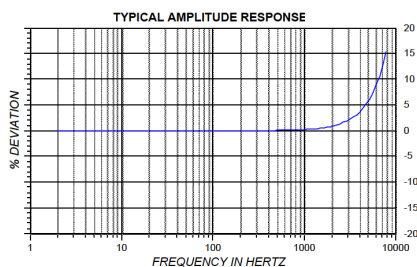


Piezoelectric accelerometer

Model 7722 / 7724



Key features

- Requires no external power
- The ultimate accelerometer for cryogenic temperature measurement
- Withstand repeated thermal shock down to -452°F (-269°C)
- Wide bandwidth, Isoshear®
- Hermetically sealed, top connector

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, which exhibits 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 or 2771C are recommended for use with these high impedance accelerometers.

Piezoelectric accelerometer

Model 7722 / 7724

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
Minimum	pc/g	3.0
Frequency response		see typical amplitude response
Resonance frequency, typical	khz	20
Amplitude response [1]		
±5%	Hz	1 to 4000
±1dB	Hz	1 to 6000
Transverse sensitivity	%	≤3
Temperature response		See typical curve
Amplitude nonlinearity	%	1/500 g
Up to vibration limit		
Electrical characteristics		
Output polarity	Acceleration directed into base of unit produces positive output	
Resistance (2)	gΩ	≥ 10
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 (3)	g pk	2500
Base strain sensitivity	equiv. G pk/μ strain	0.0008
Transient temperature error (4)	equiv. g pk/°F	0.001
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

Piezoelectric accelerometer

Model 7722 / 7724

Accessories

Product	Description	7722	7724	7722-R	7724-R
3090C-120	Cable assembly, 10 ft	Included	Included	Optional	Optional
2981-12	Mounting stud, 10-32 to 10-32, Hex ID	Included	Included	Included	Included
EHM464	Wrench, Hex key	Included	Included	Included	Included
133	3 Channel Signal PE/IEPE signal conditioner	Optional	Optional	Optional	Optional
2771C	Remote charge convertor	Optional	Optional	Optional	Optional

Notes

1. Low-end response of the transducer is a function of its associated electronics.
2. Prolonged exposure at maximum temperature may decrease the return to room temperature resistance to as low as 100 MΩ but will not degrade the overall performance of unit. All units are processed to initially meet 10 GΩ at room temperature.
3. Shock pulses of short duration may excite transducer resonance. Shock level above the sinusoidal vibration limit may produce temporary zeroshift which will result in erroneous velocity or displacement data after integration.
4. With 1 Hz high pass filter.

Ordering information

1. Maintain high levels of precision and accuracy using Endevco's factory 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.