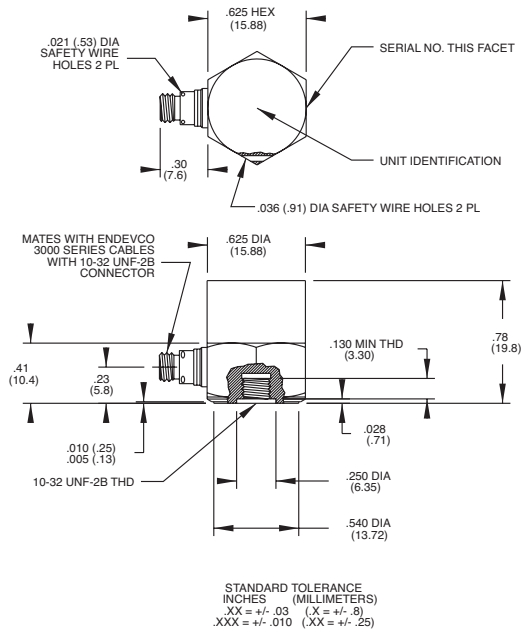


Piezoelectric accelerometer

Model 7201 -10, -50, -100



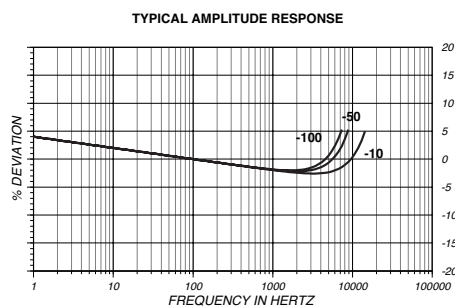
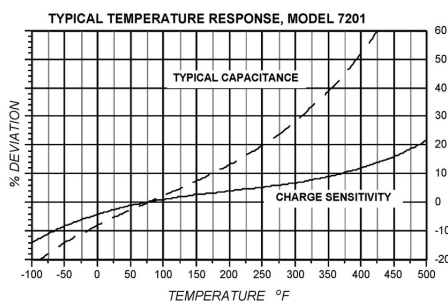
Key features

- Hermetically sealed
- Stable output
- Insensitive to base bending
- Requires no external power
- Excellent general purpose accelerometer
- 7201-10-R, 7201-50-R, 7201-100-R available as replacement sensors

Model 7201 is a stud mounted, Isoshear piezoelectric accelerometer designed for general vibration measurement on structures and objects. The Isoshear design is extremely stable and insensitive to such environmental inputs as base bending and thermal transients. The unit is hermetically sealed against external contamination. The accelerometer is a self-generating device that requires no external power source for operation.

7201 features Endevco's Piezite® Type P-8 crystal element, operating in shear mode. This device exhibits low base strain sensitivity, high resonance frequency, and excellent output stability over time. Signal ground is connected to outer case of the unit. When used with an isolated mounting stud, the accelerometer is electrically isolated from ground. The accelerometer features a 10-32 side-connector. A low-noise coaxial cable is supplied for error-free operation. A model number suffix indicates acceleration sensitivity in pC/g; i.e., 7201-50 features output sensitivity of 50 pC/g.

Signal conditioner models 133, 2771C, or Oasis 2000 computer-controlled system are recommended for use with this high impedance accelerometer.



Piezoelectric accelerometer

Model 7201 -10, -50, -100

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	-10	-50	-100
Charge sensitivity				
Typical	pC/g	10	50	100
Minimum	pC/g	9	45	90
Frequency response [4]			See typical amplitude response	
Resonance frequency	kHz	48	30	25
Amplitude response				
±5%	Hz	1 to 11 000	1 to 6000	1 to 5000
±1 dB (ref.)	Hz	1 to 15 000	1 to 10 000	1 to 8000
Temperature response			See typical curve	
Transverse sensitivity	%		< 5%	
Amplitude linearity [2]	%		1	
Per 250 g 0 to 2000 g				
Output characteristics				
Output polarity		Acceleration directed into base of unit generates positive output at the center socket of receptacle		
Resistance [3]	GΩ		< 10	
Capacitance	pF	1300	3600	3600
Grounding			Signal ground connected to case	
Environmental characteristics				
Temperature range		-100°F to +500°F [-73°C to +260°C]		
Humidity		Hermetically sealed		
Sinusoidal vibration limit	g pk	2000	2000	2000
Shock limit [2]	g pk	20 000	10 000	5000
Base strain sensitivity	eq. g pk/μstrain		0.002	
Thermal transient sensitivity	eq. g/°F (/°C)		0.004 (0.007)	
Electromagnetic sensitivity	eq. g rms/gauss		0.0002	
Physical characteristics				
Dimensions			See outline drawing	
Weight	gm (oz)	18 (0.63)	20 (0.70)	25 (0.88)
Case material, inner			Stainless steel	
Connector		10-32 UNF thread, mates with Endevco 3000 series cable		
Mounting	lbf-in (Nm)		18 (2)	
Calibration				
Supplied				
Charge sensitivity	pC/g			
Capacitance	pF			
Maximum transverse sensitivity	%			
Charge frequency response	%	20 Hz to 10kHz	20 Hz to 6kHz	20 Hz to 5 kHz
	dB	10 kHz thru resonance	6 kHz thru resonance	5 kHz thru resonance

Piezoelectric accelerometer

Model 7201 -10, -50, -100

Accessories

Product	Description	7201-XXX	7201-XXX-R
3090C-120	Cable assembly 10 ft	Included	Optional
2981-12	Mounting stud, 10-32 to 10-32	Included	Included
EHM464	Hex key wrench	Included	Optional
2981-4	Mounting stud 10-32 to M5	Optional	Optional
2981-3	Mounting stud 10-32 to 10-32	Optional	Optional
2771C	In-line charge converter	Optional	Optional
2950	Triaxial mounting block	Optional	Optional
133	Signal conditioner	Optional	Optional
2775B	Signal conditioner	Optional	Optional
4990A-X	OASIS 2000 computer-controlled system	Optional	Optional

Notes

1. Low-end response of the transducer is a function of its associated electronics.
2. Short duration shock pulses, such as those generated by metal-to-metal impacts, may excite transducer resonance and cause linearity errors. Send to TP290 for more details.
3. Prolonged exposure at maximum temperature may decrease the return to room temperature resistance to as low as 50 MΩ but will not degrade the overall performance of the unit. All units are processed to initially meet 10 GΩ at room temperature.
4. Cover resonance at approximately 23 kHz.
5. 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.

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