

Model 7255A Isotron[®] accelerometer

Features

- Low impedance output
- Built-in mechanical filter
- Hermetically sealed
- Light weight (5.0 gm)
- High-g/near-field shock applications

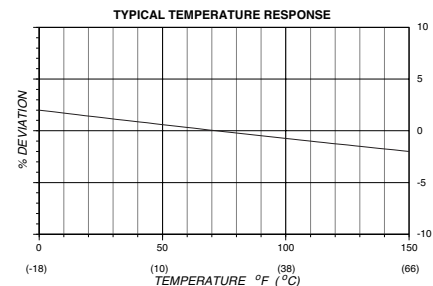
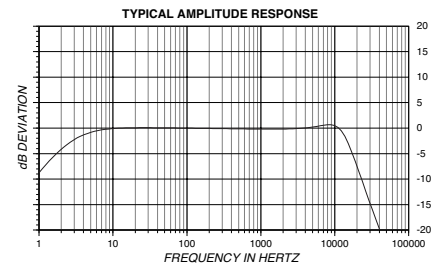
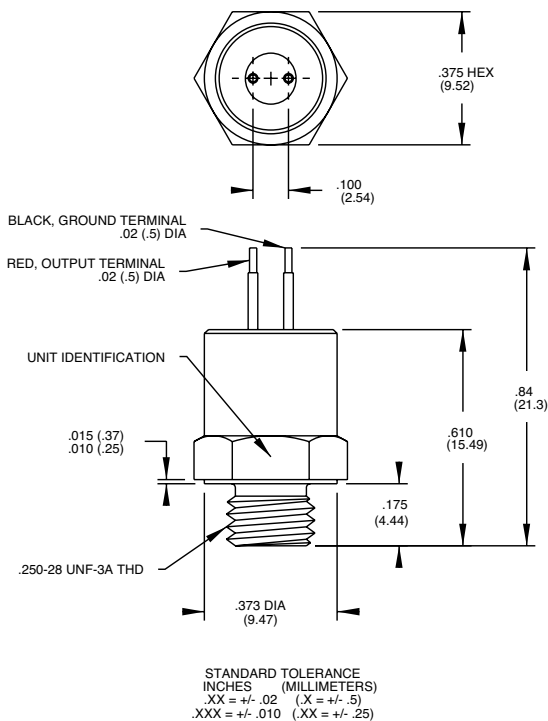


Description

The Endevco[®] model 7255A Pyrotron is a miniature, lightweight piezoelectric accelerometer with integral electronics, designed specifically for near-field pyroshock and high-level mechanical impact measurements, where unwanted high frequency signals often mask the desired low-level, low frequency information. The unit incorporates a uniquely designed built-in mechanical filter system to effectively block out high frequency input spikes, protecting the sensing element from overstress. The model 7255A-01 has a 50 000 g full scale output range and 300 000 g survivability. It is ideal for near-field, high-g measurement. For lower level shocks, a high output “-1” range (5000 g F.S.) is available.

The accelerometer incorporates an internal hybrid signal conditioner in a two-wire system which transmits its low impedance voltage output through the same cable that supplies the required constant current power. Signal ground is connected to the inner case of the unit which acts as a shield, and both the output and signal ground terminals are electrically isolated from the mounting surface. The accelerometer features an integral 1/4-28 mounting stud and two solder-pin terminals for output connection. Small gage, lightweight hook-up wires are required for error-free operation. The model number suffix indicates acceleration sensitivity in mV/g; i.e., 7255A-01 features output sensitivity of 0.1 mV/g.

Endevco signal conditioner Models 133, 2792B, 2793, 2775B or Oasis 2000 computer-controlled system, are recommended for use with this accelerometer.



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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) 4 mA and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics	Units	-01	-1
Range	g	±50 000	±5000
Voltage sensitivity			
Typical	mV/g	0.10	1.0
Minimum	mV/g	0.07	0.75
Frequency response		See typical amplitude response	
Resonance frequency, mechanical filter	kHz	15	
Amplitude response			
±3 db, typical	Hz	3 to 10 000	
Transverse sensitivity	%	≤ 5	
Temperature response		See typical curve	
Amplitude linearity (to full scale)	%	< 3	
Output characteristics			
Output polarity		Acceleration directed into base of unit produces positive output	
DC output bias voltage	Vdc	+8.5 to +11.5	
Output impedance	Ω	≤ 100	
Full scale output voltage	V	±5	
Resolution	equiv. g rms	0.50	0.05
Broadband (2 Hz to 10 kHz)			
Grounding		case isolated from signal ground by 50 MΩ minimum at 50 Vdc	
Power requirement			
Voltage supply	Vdc	+18 to +24	
Current requirement	mA	+2 to +20	
±8 mA recommended	mA	+2 to +20	
Warm-up time (to within 10% of final bias)	sec	≤ 5	
Environmental characteristics			
Temperature range		0°F to +150°F (-18°C to +66°C)	
Humidity		Hermetically sealed	
Shock limit	g pk	300 000 [1]	25 000 [2]
Base strain sensitivity	equiv. g pk/μ strain	0.004	0.004
Thermal transient sensitivity	equiv. g pk/°F	2	4
Electromagnetic sensitivity	equiv. g rms/gauss	0.05	0.05
Physical characteristics			
Dimensions		See outline drawing	
Weight	oz (gram)	0.17 (5.0)	
Case material		Stainless steel	
Connector [3] [4]		Solder terminals using ribbon cable, field replaceable	
Mounting torque	in-lbf (Nm)	30 (3.5)	
Calibration			
Supplied			
Voltage sensitivity	mV/g	1000 g half-sine, shock pulse	

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Accessories:

Product	Description	7255A
3024-12W	Cable assembly, 10ft	Included
EHM1094	Protective vinyl boot	Included

Notes:

1. Mechanical filter is effective up to 300 000 g's peak in the sensitive direction and 100 000 g's peak in the transverse direction.
2. The mechanical filter is effective up to 25 000 g's peak in the sensitive direction and 10 000 g's peak in the transverse direction.
3. Heavy cable (other than the supplied model 3024) may cause frequency response errors during measurement or calibration.
4. It is recommended to install small shrink tubing over the solder joints to prevent accidental touching.
5. Read the instruction manual regarding the use of protective vinyl boot.
6. Recommended reading: TP308.
7. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at +1 (866) 363-3826 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.

