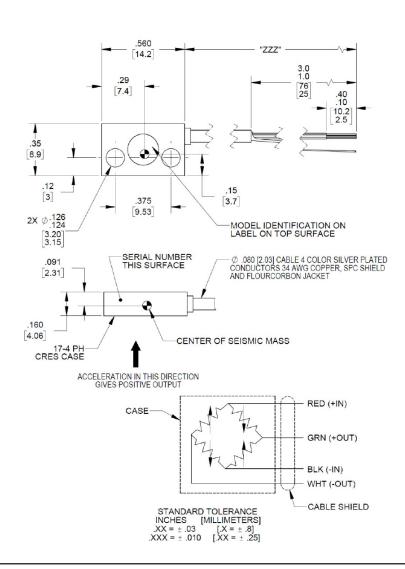
Piezoresistive accelerometer

Model 7280AM7





Key features

- 2k, 20k and 60k g ranges
- Damped for exceptional survivability
- DC response
- Low power consumption
- -55°C to +121°C operating temperature
- Minimal zero shift after shock

Description

Model 7280AM7 is a family of rugged damped piezoresistive accelerometers designed for high amplitude acceleration, vibration and shock applications. The model 7280AM7 features minimal mass loading, broad frequency response, and minimum zero shift during a shock event.

The model 7280AM7 uses a unique micro-machined, piezoresistive sensor with gas damping to attenuate resonant amplitudes, and mechanical stops to reduce breakage under overload conditions. The monolithic sensor incorporates the latest MEMS technology for ruggedness, stability and reliability. The accelerometer features a four-active arm bridge circuit. The M7 modification features a slightly larger package and low-noise cable with protective shrink tubing for superior performance in high-shock environments.

US patent 6,988,412 applies to this unit

60,000 range is subject to International Traffic in Arms Regulations (ITAR), and as such a license is required for shipments outside the U.S. and other restrictions may apply.

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Piezoresistive accelerometer

Model 7280AM7

Specifications

All specifications are referenced at +75°F (+24°C) and 10 Vdc, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Sensitivity (at 5000g)	c characteristics	Units	-2K	-20K	-60K	
Minimum/Typ/Max at 10Vdc μV/g 150/300/600 8.0/16.0/24.0 2.5		g	± 2000	± 20,000	± 60,000	
Minimum/Typical/Maximum						
Frequency response ± 1 dB					2.5/5.0/7.5	
# 1 d β	n/Typical/Maximum	μV/V/g	15/30/60	0.8/1.6/2.4	0.25/0.50/0.75	
Natural frequency	icy response					
Zero measurand output mVV ± 20 ± 20 ± 20 ± 2 Transverse sensitivity % 3 3 3 3 Thermal zero shift (typ) %FSO/°C 0.06 0.06 0.03 Thermal sensitivity shift (typ) %FSO/°F 0.033 0.033 0.033 0.0 Thermal sensitivity shift (typ) %/°C - 0.2 - 0.2 - 0.2 - 0. %/°F - 0.11 - 0.11 - 0.11 - 0. Electrical characteristics Excitation Vdc 2 to 12 (10 standard) Resistance input, minimum Ω 4000 (4,500 for 2k) output, maximum Ω 9000 (8,500 for 2k) lsolation resistance 100 MΩ min at 50 VDC between leads (shorted together) and centre of the standard output, and the standard ou	dB	kHz	DC to 10 kHz	DC to 10 kHz	DC to 13 kHz	
Transverse sensitivity	frequency	kHz	25	100	130	
Thermal zero shift (typ) %FSO/°C 0.06 0.06 0.0 %FSO/°F 0.033 0.033 0.0 Thermal sensitivity shift (typ) %/°C -0.2 -0.2 -0.2 -0. %/°F -0.11 -0.11 -0. Electrical characteristics Excitation Vdc 2 to 12 (10 standard) Resistance input, minimum Ω 4000 (4,500 for 2k) output, maximum Ω 9000 (8,500 for 2k) solation resistance 100 MΩ min at 50 VDC between leads (shorted together) and companies to the companies of the c	asurand output	mV/V	± 20	± 20	± 20	
%FSO/°C 0.06 0.06 0.00 0.0	se sensitivity	%	3	3	3	
%FSO/°C 0.06 0.06 0.00 0.0	zero shift (typ)					
Thermal sensitivity shift (typ) %/°C		%FSO/°C	0.06	0.06	0.06	
$\%^{\circ}\text{C} - 0.2 - 0.2 - 0.2 - 0.11 - 0.11 - 0.11 - 0.11 - 0.11$ Electrical characteristics Excitation Vdc 2 to 12 (10 standard) Resistance input, minimum Ω 4000 (4,500 for 2k) output, maximum Ω 9000 (8,500 for 2k) Isolation resistance $\Omega = \frac{17-4 \text{ CRES}}{100 \text{ M}\Omega min at 50 VDC between leads (shorted together) and compared to the com$		%FSO/°F	0.033	0.033	0.033	
$\%^{\circ}\text{C} - 0.2 - 0.2 - 0.2 - 0.11 - 0.11 - 0.11 - 0.11 - 0.11$ Electrical characteristics Excitation Vdc 2 to 12 (10 standard) Resistance input, minimum Ω 4000 (4,500 for 2k) output, maximum Ω 9000 (8,500 for 2k) Isolation resistance $\Omega = \frac{17-4 \text{ CRES}}{100 \text{ M}\Omega min at 50 VDC between leads (shorted together) and compared to the com$	sensitivity shift (typ)					
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output, maximum		\circ	1000 (1 500 for 2k)			
solation resistance Physical characteristics Case material Weight (excluding cable) Cable Mounting Mounting Environmental Acceleration limits (any direction) Shock Temperature Operating Operating Storage 100 MΩ min at 50 VDC between leads (shorted together) and companies are set of the storage and companies and companies and companies and companies and companies and companies are set of the storage and companies and companies and companies are set of the storage and companies and companies are set of the storage and companies and companies are set of the storage are set of the storage and companies are set of the storage and companies are set of the storage and companies are set of th			, ,			
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Cable (4) 34 AWG SPC, shield, FEP jacket cable weight 0.10 oz/ft (2.83 4-40 high strength screws (x2) Recommended mounting torque, 8 ± 2 lbf-in (0.9 N-m) Environmental Acceleration limits (any direction) Shock 4x the rated range (5x for 2k) Temperature Operating Operating OC (F°) Storage (4) 34 AWG SPC, shield, FEP jacket cable weight 0.10 oz/ft (2.83 4-40 high strength screws (x2) Recommended mounting torque, 8 ± 2 lbf-in (0.9 N-m) 4x the rated range (5x for 2k) 55 to + 121 (- 67 to + 250)						
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Operating °C (F°) - 55 to + 121 (- 67 to + 250) Storage °C (F°) - 55 to + 121 (- 67 to + 250)				-		
Storage °C (F°) - 55 to + 121 (- 67 to + 250)		°C (F°)	- 55 to + 121 (- 67 to -	+ 250)		
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Calibration data						

Data for sensitivity, ZMO, input and output resistance are supplied on the calibration certificate. For the -2k only, a frequency sweep from 20 Hz to 10 kHz is provided. Unless specified by the customer at time of order, the default calibration will be performed at 10.0 Vdc excitation.



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Accessories

Product	Description	7280A
EH853	[2] 4-40 high high strength screws	Included
EHW265	[2] No. 4 washers	Included
7980	Triaxial mounting block	Optional
136	DC amplifier, 3-channel benchtop	Optional
31167	Mounting plate (10-32 stud adaptor)	Optional

Notes

1. Model number definition:

Ordering information

 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.

