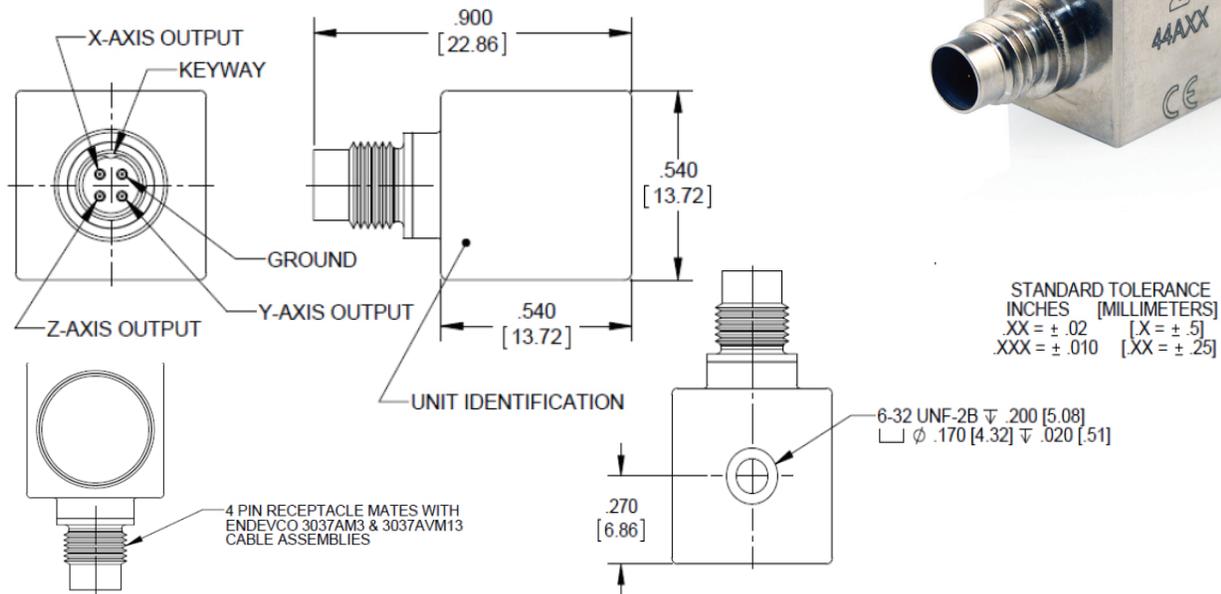


Triaxial IEPE accelerometer

Model 44A



Key features

- General purpose, single axis, 11 mm³ IEPE accelerometer
- Single, threaded 1/4-28 4 pin connector
- Wide frequency bandwidth
- Hermetically sealed
- Lightweight 13 grams
- IEEE P1451.4 TEDS capable

Description

Model 44A is a cost effective general purpose triaxial IEPE accelerometer designed for use in a variety of applications. It features a single threaded 1/4-28 4 pin connector, and is hermetically sealed against environmental contamination.

Model 44A features an annular shear ceramic crystal which exhibits excellent output stability over time. The accelerometer incorporates an internal hybrid circuit with TEDS in a two-wire IEPE system which transmits its low impedance voltage output through the same cable that supplies the constant current power. Signal ground is connected to the outer case of the unit. Isolated mounting studs are available. Polarity inversion protection for the hybrid circuit is inherent in the circuit design.

44A is available in four sensitivities designated by a two digit suffix. The 44A13 has a sensitivity of 10 mV/g, the 44A14, 44A15 and 44A16 have sensitivities of 25 mV/g, 50 mV/g and 100 mV/g respectively. The customer may select the mounting stud size included standard with the unit. The available stud sizes are 10-32, 1/4-28, M5 and M6. The stud size is designated following a dash after the model number.

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The following performance specifications conform to ISA-RP-37.2 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..

Specifications					
Dynamic characteristics	Units	44A13	44A14	44A15	44A16
Range	g	±500	±200	±100	±50
Sensitivity ±10%	mV/g	10	25	50	100
Frequency response					
Resonance frequency					
Typical	kHz		25		
Minimum	kHz		18		
Amplitude response					
±5% y, z-axis	Hz		0.5 to 5000		
±5% x-axis	Hz		0.5 to 3000		
±1dB all axes	Hz		0.3 to 6000		
Phase response					
±5°	Hz		5 to 1500		
Sensitivity deviation vs. temperature					
At -67°F (-55°C)	%		-5		
At +257°F (+125°C)	%		15		
Transverse sensitivity	%		≤5		
Amplitude linearity	%		<1		
Electrical characteristics					
Output polarity		Acceleration directed into base produces positive output			
DC output bias voltage					
Room temperature +75°F (+24°C)	Vdc		+11.4 to +13.0		
-67°F to +257°F (-55°C to +125°C)	Vdc		+8.0 to +15.5		
Output impedance	Ω		≤100		
Noise floor					
Broadband					
1Hz to 10 kHz	µg rms	200	80	80	50
Spectral					
1Hz	µg/√Hz	140	64	60	38
10 Hz	µg/√Hz	17	8	10	6
100 Hz	µg/√Hz	4	2	2	1
1000 Hz	µg/√Hz	2	0.8	0.8	0.5
Grounding method		Signal ground is connected to case			
Power requirements					
Supply voltage [1]	Vdc		+24 to +30		
Supply current	mA		+2 to +20		
Warm-up time [2]	s	2	3	5	10
Digital communication (TEDS) device			DS2431X+U		
Environmental characteristics					
Temperature range, operating [3]		-67°F to +257°F (-55°C to +125°C)			
Humidity		Hermetically sealed			
Vibration limit (sinusoidal motion) [4]	g	1000			
Shock limit [5]	g pk	5000			
Base strain sensitivity at 250 µstrain	g/µstrain	0.001			
Electromagnetic noise	equiv g pk µstrain	0.005			
Physical characteristics					
Dimensions		See outline drawing			
Weight	gram (oz)	13 (0.46)			
Case material		Titanium			
Connector		1/4-28 4 pin			
Mounting method		Threaded stud			
Mounting stud torque, recommended					
10-32 and M6 studs	lbf-in (Nm)	18 (2)			
M5 stud	lbf-in (Nm)	13 (1.5)			
1/4 - 28 stud	lbf-in (Nm)	30 (3.5)			

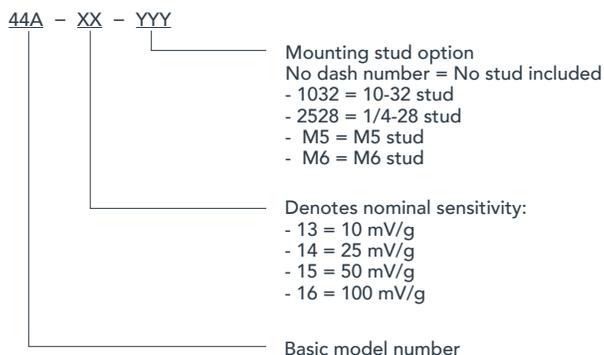
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Calibration data supplied	Units	44A13	44A14	44A15	44A16
Sensitivity	mV/g				
Frequency response					
Amplitude response	%		20 Hz to 5 kHz, y and z axis		20 Hz to 3 kHz, x axis
DC output bias voltage	Vdc				

Accessories						
Options	Description	44AXX	44AXX-1032	44AXX-2528	44AXX-M5	44AXX-M6
3027AM3-ZZZ [6]	Cable assembly 4 pin to 3 BNC	Optional	Optional	Optional	Optional	Optional
3027AVM13-ZZZ	Cable assembly 4 pin to 4 pin	Optional	Optional	Optional	Optional	Optional
42677-1	Mounting stud 6-32 to 10-32	Optional	Included	Optional	Optional	Optional
42677-2	Mounting stud 6-32 to 1/4-28	Optional	Optional	Included	Optional	Optional
42677-4	Mounting stud 6-32 to M5	Optional	Optional	Optional	Included	Optional
42677-3	Mounting stud 6-32 to M6	Optional	Optional	Optional	Optional	Included
42674-1	Isolated mounting stud 6-32 to 10-32	Optional	Optional	Optional	Optional	Optional
42674-2	Isolated mounting stud 6-32 to 1/4-28	Optional	Optional	Optional	Optional	Optional
42674-3	Isolated mounting stud 6-32 to M6	Optional	Optional	Optional	Optional	Optional
42674-4	Isolated mounting stud 6-32 to M5	Optional	Optional	Optional	Optional	Optional
42675-2	Isolated adhesive mounting adapter	Optional	Optional	Optional	Optional	Optional

Notes

- Applications requiring a supply voltage of 20V, the full scale output voltage will be $\pm 5V$ (at room temperature). Applications requiring a supply voltage of 18V, the full scale output voltage will be $\pm 3V$ (at room temperature).
- DC bias within 10% of final value.
- TEDS device operational temperature range is $-40^{\circ}F$ to $+185^{\circ}F$ ($-40^{\circ}C$ to $+85^{\circ}C$). TEDS device will survive full operational range of accelerometer.
- Destructive limit.
- Destructive limit. Shock is a one-time event. Shock pulses of short duration may excite transducer resonance. Shock level above the sinusoidal vibration limit may produce temporary zero shift that will result in erroneous velocity or displacement data after integration.
- ZZZ or ZZZZ designates cable assembly length in inches.
- 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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