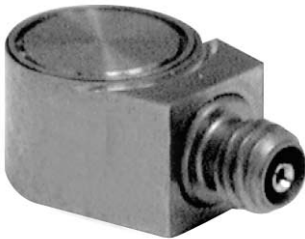


Model 27A11, A12 i-TEDS accelerometer

Features

- Low impedance output
- Built in IEEE 1451.4 TEDS
- Adhesive mounting
- Light weight (1 gm)
- Wide bandwidth (0.2 Hz to 12 kHz)
- Detachable cable

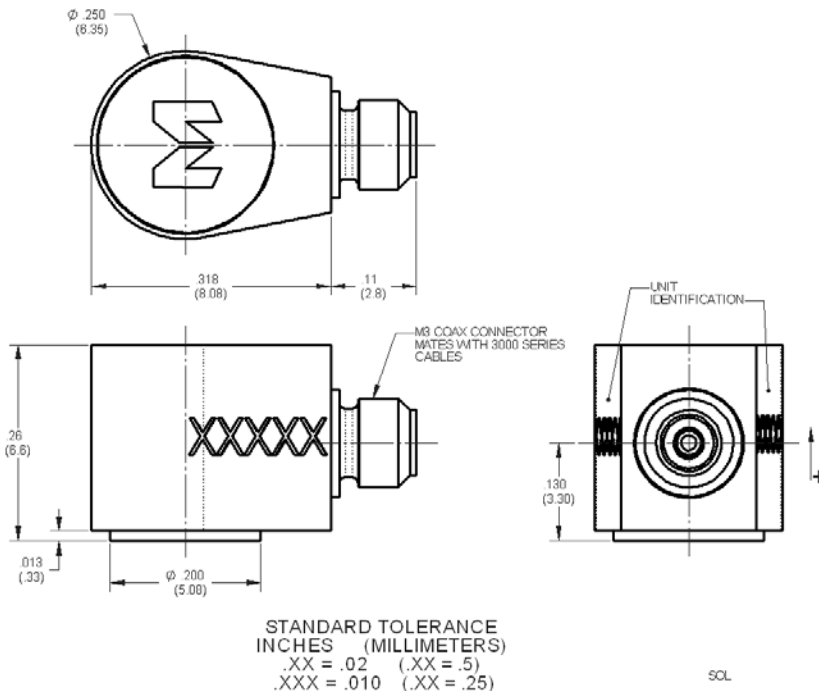


Description

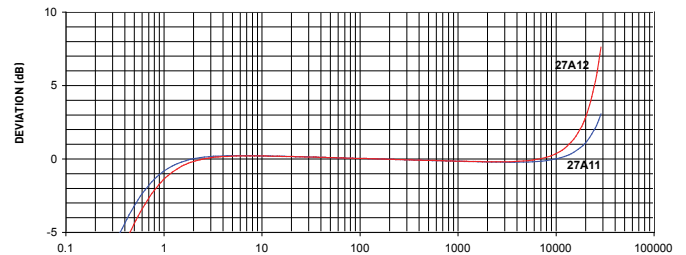
The Endevco® model's 27A11, A12 are the smallest accelerometers with an IEEE 1451.4 Transducer Electronic Data Sheet (TEDS), designed specifically for measuring vibration on mini-structures and small objects. These accelerometers offer high resonance frequency and wide bandwidth, their light weight (1 gm) effectively eliminates mass loading. A field-replaceable miniature cable is supplied with each unit.

Models 27A11, A12 feature Endevco's Piezite® type P-8 crystal element, operating in annular shear mode, which exhibits excellent output sensitivity stability over time. These accelerometers incorporate an internal hybrid signal conditioner in a two-wire system, which transmits its low impedance voltage output through the same cable that supplies the constant current power. A tool is included in the package to ensure proper removal of the accelerometer from its mounting surface.

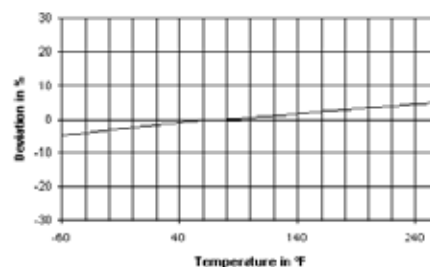
Endevco signal conditioner models 4416B, 133, 2792B, 2793, 2775B or Oasis 2000 computer-controlled system are recommended for use with these accelerometers.



TYPICAL FREQUENCY RESPONSE MODEL 27A11 AND 27A12



TYPICAL TEMPERATURE RESPONSE



Model 27A11, A12 i-TEDS accelerometer

Endevco

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.

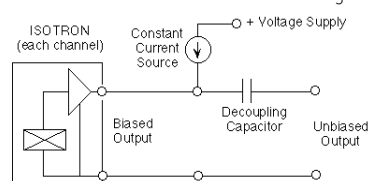
Dynamic characteristics	Units	27A11	27A12
Range	g	±500	±50
Voltage sensitivity ±10%	mV/g	10	100
Frequency response		See typical amplitude response	
Resonance frequency	kHz	50	
Amplitude response ±5% (typical)	%	< 2 to full scale	
	Hz	2 to 10 000	
	Hz	.2 to 12 000	
Temperature response		See typical curve	
Transverse sensitivity	%	5 max	
Amplitude non-linearity	%	< 2 to full scale	
Output characteristics			
Output polarity		Acceleration directed into base of unit produces	
DC output bias voltage	Vdc	+11.5 to +13.0	
Output impedance	Ω	≤ 200	
Full scale output voltage	V	±5	
Resolution (1 Hz to 10 kHz, broadband)	equiv. g rms	0.002	0.0004
Overload recovery	μs	< 10	
Grounding		Signal ground connects to case	
Power requirement			
Supply voltage	Vdc	+18 to +28	
Supply current	mA	+2 to +10	
Warm-up time (to within 10% of final bias)	sec	2	
Environmental characteristics			
Temperature range			
Operating (accelerometer)		-67°F to +257°F (-55°C to +125°C)	
Operating (TEDS communication)		-40°F to +185°F (-40°C to +85°C)	
Humidity		Hermetically sealed	
Sinusoidal vibration limit	g pk	1000	
Shock limit [1]	g pk	5000	
Base strain sensitivity	eq. g pk/μstrain	0.13	0.05
Thermal transient sensitivity	eq. g pk/°F (l/°C)	0.16 (0.29)	0.07 (0.12)
Electromagnetic sensitivity	eq. g rms/gauss	0.0001	0.00006
Physical characteristics			
Dimensions		See outline drawing	
Weight	oz (gm)	0.028 (0.8)	0.035 (1.0)
Case material		Titanium alloy	
Connector		Coaxial, M3 thread	
Calibration			
Supplied			
Sensitivity	mV/g		
Maximum transverse sensitivity	%	5 max	
Frequency response	%	20 Hz to 12 kHz	

Included accessories

3053HM1-120	Cable assembly, (10 ft) hyperFLEX
	Mounting wax
2943M1	Removal tool
2987M9	Isolation mount

Optional accessories

32227	Mounting wax
3053VM1-120	Cable assembly, (10 ft), versaFLEX
Model 2961	Triaxial mounting block
31849	Adhesive mounting kit



Notes

- Depending on the dynamic and environmental requirements, adhesives such as petro-wax, hot-melt glue, and cyanoacrylate epoxy (super glue) may be used to mount the accelerometer temporarily to the test structure. An adhesive mounting kit (P/N 31849) is available as an option from Endevco.
- Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 800-982-6732 for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.
- To remove an epoxy mounted accelerometer, first soften the epoxy with an appropriate solvent and then twist the unit off with the supplied removal wrench. Damage to sensors caused by inappropriate removal procedures are not covered by Endevco's warranty.

Continued product improvement necessitates that Endevco reserve the right to modify these specifications without notice. Endevco maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability.