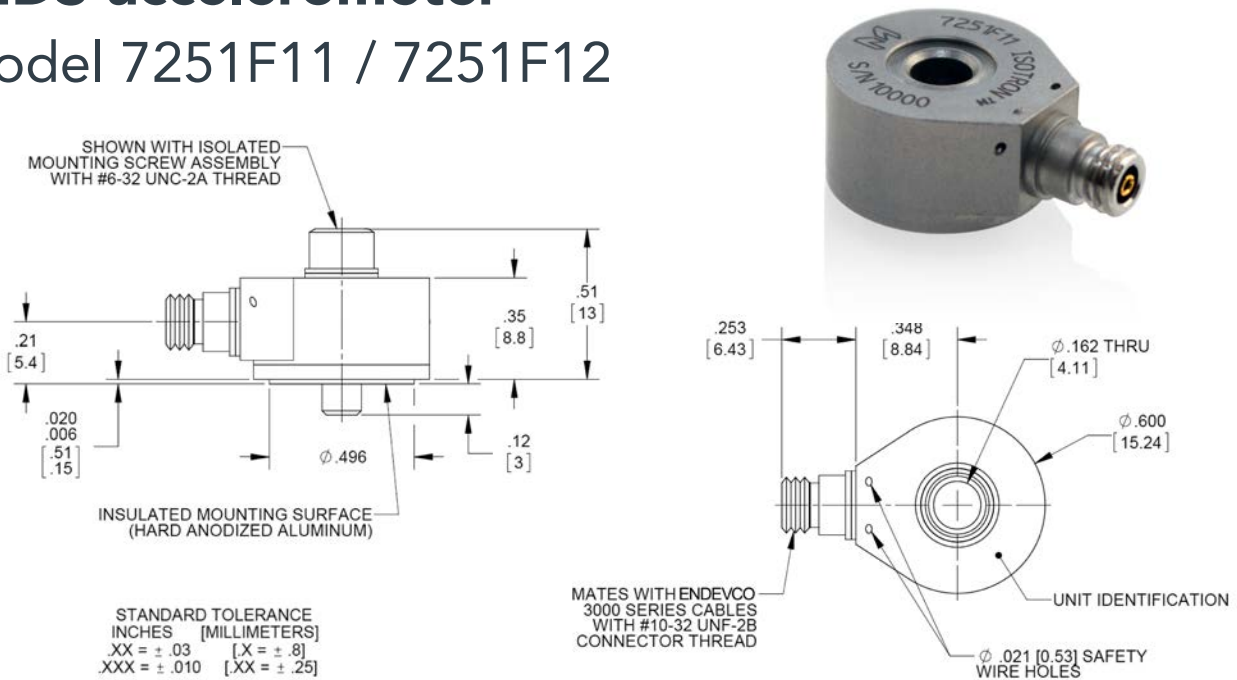


TEDS accelerometer

Model 7251F11 / 7251F12



Key features

- Thru-hole bolt mount IEPE accelerometer
- IEEE P1451.4 TEDS v0.9
- Low profile
- 360° cable orientation
- Hermetically sealed
- Ground isolated when installed with isolated mounting screw

Description

Model 7251FXX is a small piezoelectric accelerometer with integral electronics featuring IEEE P1451.4 Transducer Electronic Data Sheet (TEDS) capability. The unit is hermetically sealed against environmental contamination, offers high output sensitivity, and wide bandwidth. The centrally located mounting bolt permits 360° cable orientation, a very desirable feature in many applications. The lightweight design effectively minimizes mass loading effects on the test structure.

The model 7251FXX features Endevco's Piezite type P-8 crystal element, operating in annular shear mode, which exhibits low base strain sensitivity and excellent output stability over time. This 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 constant current power. Signal ground is connected to the outer case of the unit but the accelerometer is electrically isolated from ground when mounted with the supplied isolated mounting screw.

The model number identifies the range and sensitivity, where 7251F11 indicates a 10 mV/g sensitivity, 500 g range unit, and 7251F12 indicates a 100 mV/g sensitivity, 50 g range unit.

This product is fully compliant to the European Union's Low Voltage Directive, 2014/35/EU and EMC Directive 2014/30/EU and RoHS Directive, 2011/65/EU, and is eligible to bear the CE Mark.

TEDS accelerometer | Model 7251F11 / 7251F12

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.

Specifications			
Dynamic characteristics	Units	7251F11	7251F12
Range	g	±500	±50
Voltage sensitivity			
Nominal (±10%)	mV/g	10	100
Frequency response			
Resonance frequency			
Typical	kHz		45
Minimum	kHz		40
Amplitude response			
±10%	Hz		2 to 10000
Sensitivity deviation over temperature			
±5% deviation	°F (°C)		+32 to +104 (0 to +40)
±10% deviation	°F (°C)		-10 to +185 (-20 to +85)
Transverse sensitivity	%		≤5
Amplitude linearity	%		≤1
Electrical characteristics			
Output polarity		Acceleration directed into the base produces positive output	
DC output bias voltage			
Room temperature, +75°F (+24°C)	Vdc		+11.0 to +14.0
-67°F to +257°F (-55°C to +125°C)	Vdc		+8.0 to +16.0
Output impedance	Ω		≤100
Noise floor			
Broadband			
2 Hz to 10000 Hz	mg rms	2	0.3
Spectral			
1 Hz	mg / √Hz	1500	70
10 Hz	mg / √Hz	150	20
100 Hz	mg / √Hz	100	5
1000 Hz	mg / √Hz	20	3
Grounding		Signal ground is connected to the case and isolated from mounting surface	
Sensitivity deviation versus current, 2 to 20 mA	%		±1
Power requirements			
Supply voltage	Vdc		+23 to +30
Supply current	mA		+2 to +10
Warm-up time	sec		30
Digital communication (TEDS) device			DS2431X+u
Environmental characteristics			
Temperature range			
Operating	°F (°C)		-67 to +257 (-55 to +125)
TEDS communication	°F (°C)		+32 to +185 (0 to +85)
Humidity			Hermetically sealed
Sinusoidal vibration limit [1]	g pk		500
Shock limit [2]	g pk		5000
Base strain sensitivity	eq. g pk/μstrain		0.04
Thermal transient sensitivity	equiv. g pk/°F		0.02
Electromagnetic sensitivity	equiv g rms/Gauss		.00004
Physical characteristics			
Dimensions		See outline drawing	
Weight	oz (gram)		0.37 (10.5)
Case material		Stainless steel	
Connector		10-32 receptacle	
Mounting torque	lbf-in (Nm)		10 (1.1)
Calibration data supplied, each axis			
Sensitivity	mV/g		
Transverse sensitivity, maximum	%		
Frequency response	%		20 Hz to 10000 Hz

Accessories		
Product	Description	7251FXX
3061A-120	Cable assembly, 10 feet	Included
10207	Isolated mounting screw assembly, 6-32	Included
EHM49	Wrench for mounting screw	Included
EH303	Non-isolated 6-32 mounting screw	Optional
31741	Isolated mounting screw assembly, 4mm	Optional
EH700	Non-isolated 4mm mounting screw	Optional
133	Signal conditioner	Optional

Notest

1. Destructive limit.
2. 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.
3. 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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