ENDEVCO
AN AMPHENOL COMPANY

PERFORMANCE SPECIFICATION
INTEGRAL ELECTRONIC ACCELEROMETER
7250B-XX

Document Number	Rev	Date	Entered by	Description of Change	Change Accountable Engineer	ECO
80218	A	4/10/26	NAD	Corrected paragraph 2.3.2 to replace ±5% limit with ±1dB (3Hz to 20000Hz)	DRK	56605

1.0 DESCRIPTION

The MEGGITT Model 7250B-XX is a subminiature, piezoelectric accelerometer designed specifically for vibration measurement in mini-structures and small objects. This unit is hermetically sealed for use in extreme environments and to ensure long term operation with excellent stability. This accelerometer offers high resonance frequency and wide bandwidth, the light weight (1.9 gm) effectively eliminates mass loading effects. The Model 7250B features a standard 10-32 coaxial connector, requiring a specifically designed coaxial cable for error free operation.

The Model 7250B-XX features MEGGITT's PIEZITE® operating in annular shear mode. 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 outer case of the unit and, when used with an isolated mounting screw/washer, it is electrically isolated from ground. The centrally located mounting bolt permits 360° cable orientation, however, the unit may also be adhesively mounted. A model number suffix indicates acceleration sensitivity in mV/g; i.e., 7250B-10 features output sensitivity of 10 mV/g.

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.

		Units	Range Dash Number -2	-10
2.0	DYNAMIC CHARACTERISTICS			
2.1	RANGE	g	± 2500	± 500
2.2	VOLTAGE SENSITIVITY ± 10%	mV/g	2	10
2.3	FREQUENCY RESPONSE		See Typical Curve, Page 6	
2.3.1	RESONANCE FREQUENCY	kHz	85	
2.3.2	AMPLITUDE RESPONSE	Hz		
	± 1 dB		3 Hz to 20000 Hz	
	± 3 dB (typical)		1 Hz to 40000 Hz	

		Units	Range Dash Number -2	-10
2.4	TEMPERATURE RESPONSE		See Typical Curve, Page 6	
2.4.1	At -67°F (-55°C) max/min	%	-12 / 0	
2.4.2	At +257 (+125°C) max/min	%	+12 / 0	
2.5	TRANSVERSE SENSITIVITY	%	≤ 5	
2.6	AMPLITUDE LINEARITY	%	1 to full scale	
3.0	OUTPUT CHARACTERISTICS			
3.1	OUTPUT POLARITY		Acceleration directed into base of unit produces positive output.	
3.2	DC OUTPUT BIAS VOLTAGE	Vdc	+11.0 to +14.0	
3.2.1	-67°F to +257°F (-55°C to +125°C)	Vdc	+8.5 to +16.0	+6.5 to +14.0
3.3	OUTPUT CONNECTION		See Connection Diagram, Page 4	
3.4	OUTPUT IMPEDANCE	Ω	≤ 200	
3.5	FULL SCALE OUTPUT VOLTAGE	V	±5	±5
3.6	RESIDUAL NOISE 1 Hz to 10 kHz	equiv. g rms	0.007	0.002
3.9	GROUNDING		Signal ground connected to case. Isolation achieved via isolated mounting washer or isolated screw.	
4.0	POWER REQUIREMENT			
4.1	SUPPLY VOLTAGE	Vdc	+24 to +28	+18 to +28
4.2	SUPPLY CURRENT	mA	+2 to +20	
4.3	WARM-UP TIME To 10% of final bias level	sec	< 3	

		Units	Range Dash Number -2	-10
5.0	ENVIRONMENTAL CHARACTERISTICS			
5.1	TEMPERATURE RANGE		-67°F to +257°F (-55°C to +125°C)	
5.2	HUMIDITY		Hermetically sealed	
5.3	SINUSOIDAL VIBRATION LIMIT	g pk	2000	
5.4	SHOCK LIMIT [1]	g pk	10000	
5.5	BASE STRAIN SENSITIVITY			
5.5.1	SCREW MOUNTED	equiv. g pk/μ strain	.08	
5.5.2	ADHESIVE MOUNTED	equiv. g pk/μ strain	0.0004	
5.6	THERMAL TRANSIENT SENSITIVITY	equiv. g pk/°F	0.5	
5.7	ELECTROMAGNETIC SENSITIVITY	equiv. g rms/gauss	0.2	
5.8	ACOUSTIC SENSITIVITY At 155 dB SPL	equiv. g	0.1	
6.0	PHYSICAL CHARACTERISTICS			
6.1	DIMENSIONS		See Outline Drawing	
6.2	WEIGHT			
6.2.1	WITHOUT MOUNTING SCREW	gm (oz)	1.9 (0.067)	
6.2.2	WITH MOUNTING SCREW	gm (oz)	2.4 (0.085)	
6.3	CASE MATERIAL		Titanium	
6.4	CONNECTOR		6-40 threaded receptacle	
6.5	MOUNTING TORQUE	lbf-in (Nm)	5 (0.57)	

7.0 ACCESSORIES

7.1 SUPPLIED

CABLE ASSEMB LY	[2]	3091F-120
ALLEN WRENCH	[2]	EHM178
ISOLATED SCREW MOUNTING		12746

7.2 OPTIONAL

MOUNTING SCREW		EH96
WASHER		EHW95
NUT		EHN64
ISOLATED MOUNTING SCREW		42632

8.0 CALIBRATION

8.1 SUPPLIED

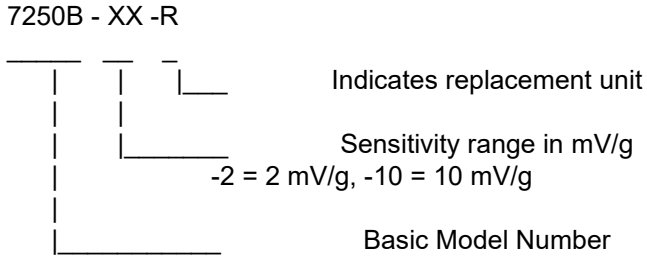
8.1.1	SENSITIVITY	mV/g	
8.1.2	MAXIMUM TRANSVERSE SENSITIVITY	%	
8.1.3	FREQUENCY RESPONSE	dB	20 Hz to 40 kHz

9.0 NOTES

[1] Shock pulses of short duration may excite transducer resonance. Shock level above the sinusoidal vibration limit may produce temporary zero shift which will result in erroneous velocity or displacement data after integration.

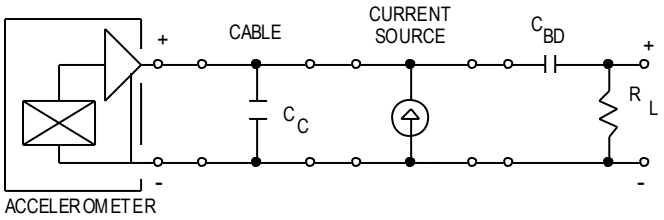
[2] For -R units, the indicated accessories are optional.

[3] Model Number Definition:



[4] CE Certification: This product is fully compliant to European Union's Low Voltage Directive 2006/EC, EMC Directive 2004/108/EC, and compliant RoHS Directive 2002/95/EC and is eligible to bear the CE mark

CONNECTION DIAGRAM, EACH CHANNEL

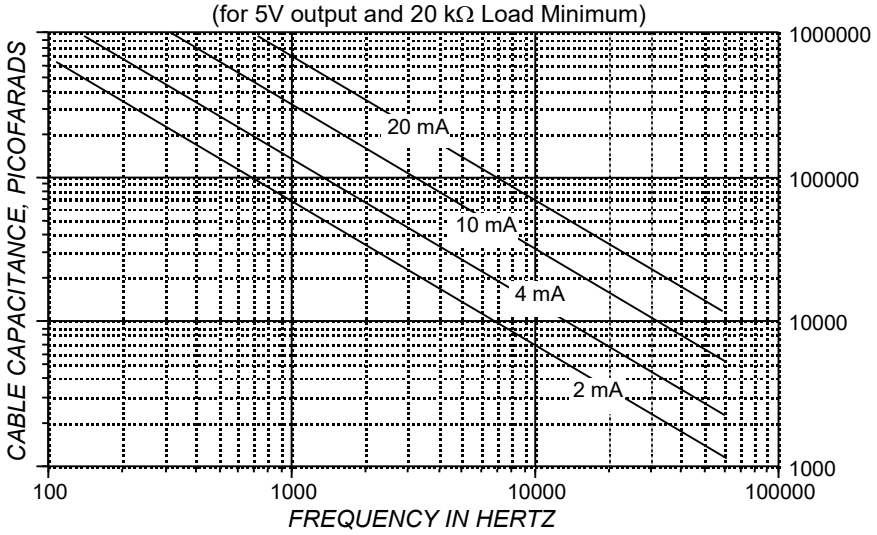


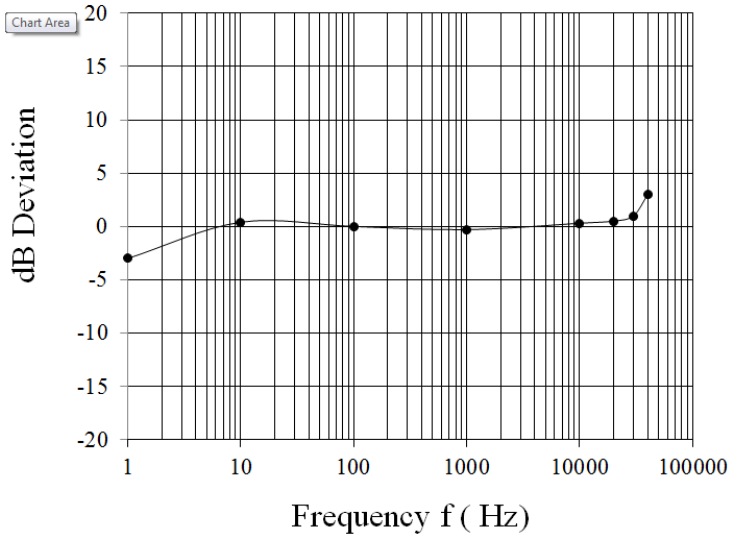
- Range is dependent on the sensitivity of the unit and bias, and the compliance voltage of the constant current power source. The positive range is limited to the difference between the compliance voltage and the unit's bias, divided by the unit's sensitivity. The negative range is limited to approximately 2 volts less than the bias voltage divided by the unit's sensitivity.

- Cable capacitance C_C will load the accelerometer output, affecting frequency response, and is dependent on the magnitude of constant current, as shown in Load Capacitance vs. Frequency Plot.

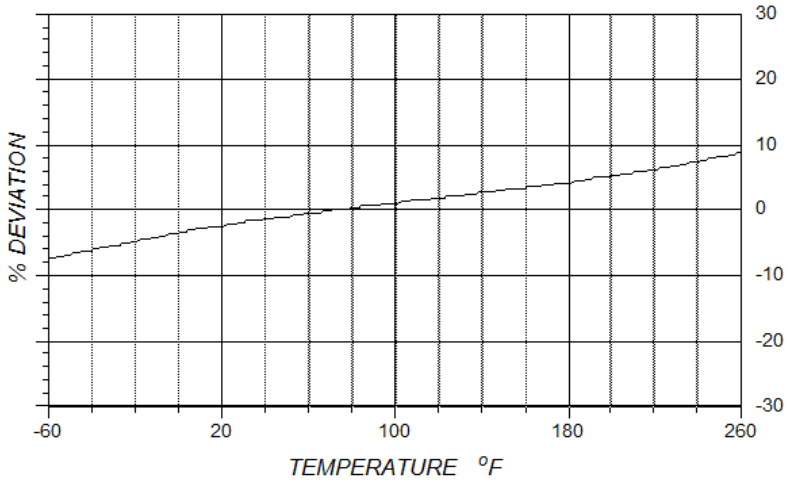
- Bias decoupling capacitor C_{BD} and load resistor R_L can be determined from: $f_{-3\ dB} = \frac{1}{2\pi R_L C_{BD}}$
  where f is the lowest frequency of interest.

THEORETICAL LOAD DIAGRAM
(for 5V output and 20 kΩ Load Minimum)





TYPICAL AMPLITUDE RESPONSE



TYPICAL TEMPERATURE RESPONSE, MODEL 7250B