

Industrial Accelerometer

**ENDEVCO
MODEL
5220-HF**

Model 5220-HF

- High Frequency Vibration Measurement
- API 670 Compatible
- Ground Isolated with Faraday Shielding
- Resonance Suppression Circuitry

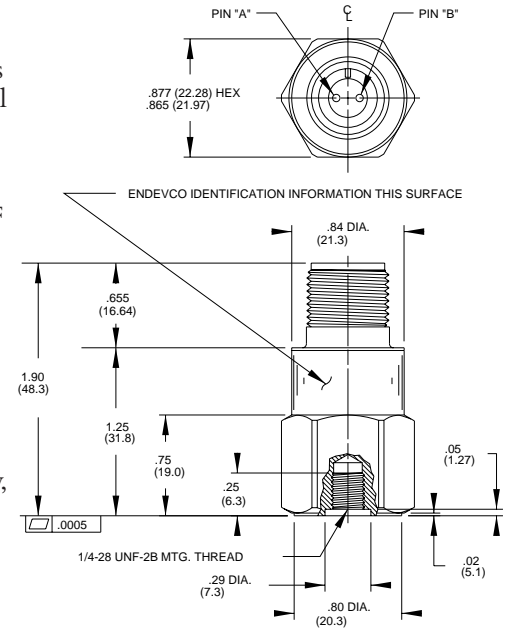


DESCRIPTION

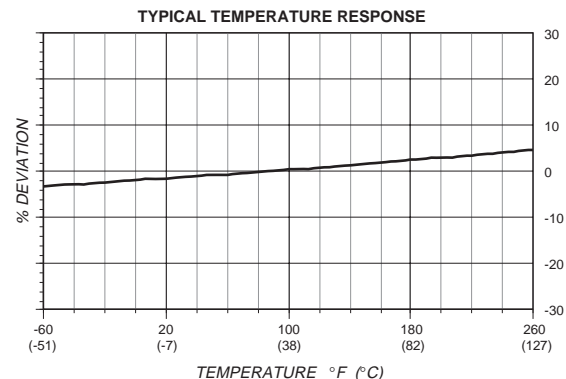
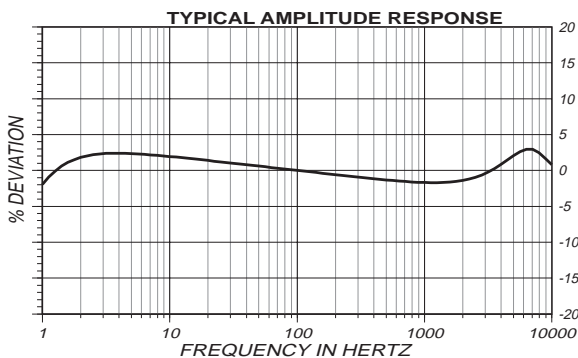
The ENDEVCO® Model 5220-HF series accelerometer complies with the requirements of API 670 and is designed specifically for wide bandwidth vibration measurement in the rugged environments of industrial machinery monitoring. This accelerometer incorporates internal signal conditioning to provide a low impedance output. Model 5220-HF offers a very wide dynamic range and an extremely low noise floor. The Model 5220-HF incorporates an active 2-pole low-pass filter for resonance suppression. Signal ground is isolated from the mounting surface and outer case to prevent ground loops, and the sensor is hermetically sealed to ensure long-term operation with excellent stability. The Model 5220-HF incorporates faraday shielding to limit sensitivity to ESD to a minimum.

The Model 5220-HF features ENDEVCO's PIEZITE® Type P-8 crystal element, operating in shear mode, in an electrically isolated sensor and charge amplifier unit. Model 5220-HF is provided with a 1/4-28 UNF mounting stud and M8 x 1.25-6g metric adaptor mounting stud.

The following performance specifications conform to ISA-RP-37.2 (1-64) and are typical values, referenced at +24°C (+75°F), 24 Vdc supply, 4 mA constant current and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.



DYNAMIC CHARACTERISTICS	Units	
RANGE	g pk	80
VOLTAGE SENSITIVITY ±10%	mV/g	100
FREQUENCY RESPONSE		
RESONANCE FREQUENCY (Typical)	kHz	25
AMPLITUDE RESPONSE [1]	Hz	
± 10%		1 to 10 000
± 3dB		0.5 to 18 000
TEMPERATURE RESPONSE		
at -50°C (-58°F) to +120°C (+248°F)	%	See Typical Curve
TRANSVERSE SENSITIVITY	%	±10
AMPLITUDE LINEARITY		
to 80 g peak	%	≤ 1



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SPECIFICATIONS

The following performance specifications conform to ISA-RP-37.2 (1964) and are typical values, referenced at +75°F (+24°C), 24 Vdc supply, 4 mA, and 100 Hz, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

OUTPUT CHARACTERISTICS	Units	
OUTPUT POLARITY		Acceleration directed into base produces positive output
DC OUTPUT BIAS VOLTAGE	Vdc	
All with 80 g peak vibration input:		
at 24°C (75°F)		11.5 to 12.5
at -50°C to +99°C (-58°F to +211°F)		10.0 to 13.5
at +100°C to +120°C (+212°F to +248°F)		≤ ±100 mV/°C ≤ ±56 mV/°F
OUTPUT IMPEDANCE	Ω	50
FULL SCALE OUTPUT VOLTAGE	V	± 8
RESIDUAL NOISE		
2.5 Hz to 25 kHz at 25° C typical (max)	μg rms	300 (600)
at 120° C typical (max)	μg rms	300 (600)
1.0 Hz at 25° C typical (max)	μg	30 (60)
at 120° C typical (max)	μg	40 (80)
GROUNDING		Signal ground isolated from case and connected to Faraday shield
ISOLATION	MΩ	>10
-58°F to 248°F (-50°C to +120°C)		

POWER REQUIREMENT

SUPPLY VOLTAGE	Vdc	+22 to +30
SUPPLY CURRENT	mA	+2 to +10
OVER VOLTAGE PROTECTION	Vdc	> 40
WARM-UP TIME	sec	< 1
To within 10% of final bias		
REVERSE POLARITY PROTECTION		Provided

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE		-50°F to +120°F (-58°C to +248°C)
HUMIDITY		Hermetic sealed
SINUSOIDAL VIBRATION LIMIT	g pk	500
SHOCK LIMIT	g pk	5000
BASE STRAIN SENSITIVITY	equiv. μg pk/μ strain	.002

PHYSICAL CHARACTERISTICS

DIMENSIONS		See Outline Drawing
WEIGHT	without cable	90 (3.17)
CASE MATERIAL		316L Stainless Steel
MATING PLUG		MS3106 - 10SL - 4S
MOUNTING TOUQUE	in-lbs (N-m)	24 (2.9)

CALIBRATION

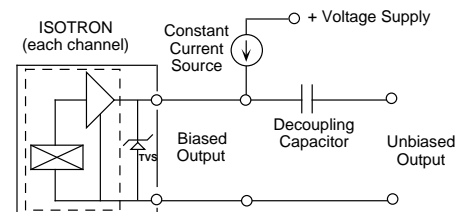
SUPPLIED:		
SENSITIVITY	mV/g	

ACCESSORIES	INCLUDED
MODEL 2984-2	1/4-28 UNF Adaptor Stud
MODEL 2984-8	1/4-28 UNF/M8 x 1.25-6g Adaptor Stud

ACCESSORIES	OPTIONAL
MODEL 6923M9	Cable Assembly (MS3456L-10SL-4S Connector), single shield
MODEL 6923M16	Cable Assembly (MS3456L-10SL-4S Connector), double shield

NOTES

- Also available with low end corner frequency down to 0.08 Hz.
- Optional connector options are also available by specifying the following:
 - 5220M4 Two-pin spring terminals for easy detachment
 - 5220M5 Three-pin quick disconnect for mating with PT06-8-3S connector
 - 5220M6 BNC quick disconnect for mating with coax cable assemblies. The 5220M6 does not allow for signal ground isolation
- 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.



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.