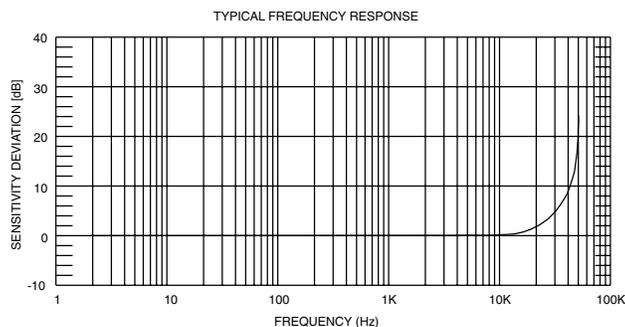
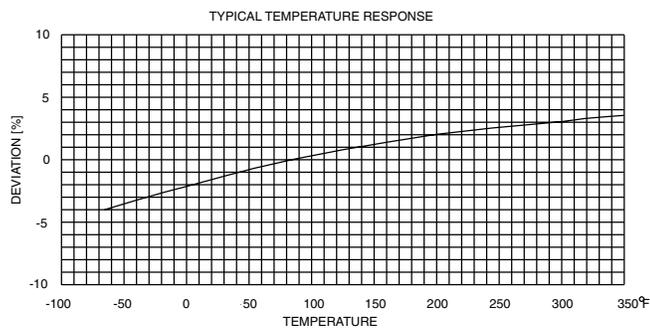
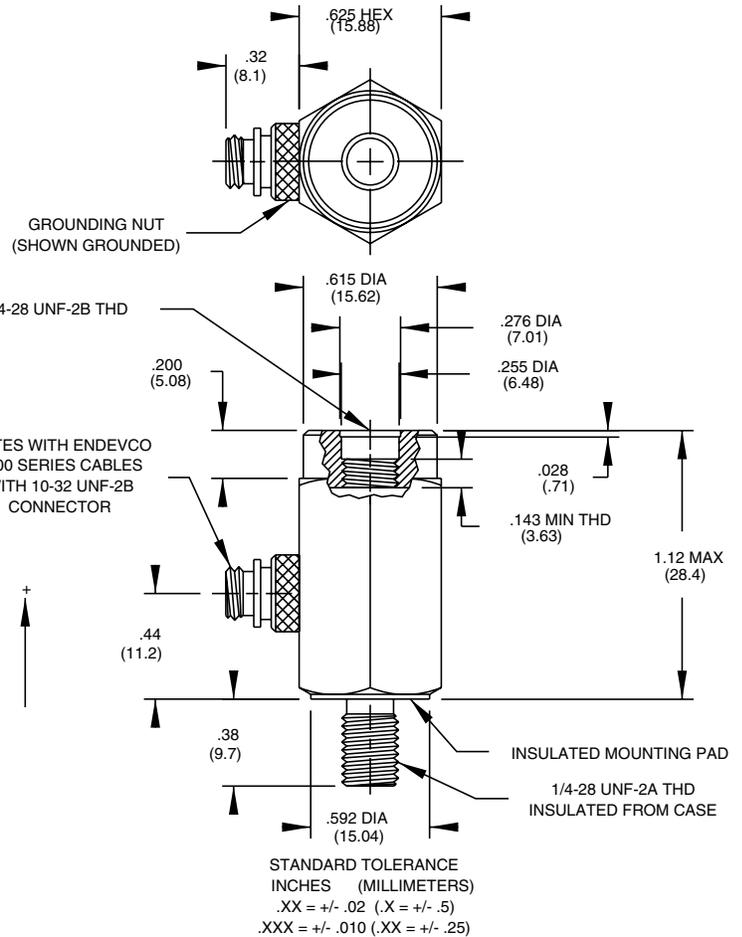


Comparison standard accelerometer Model 2270



Key features

- Laboratory grade primary standard accelerometer for back-to-back comparison calibration
- Stable crystal material
- Supplied with absolute calibration at 100 Hz traceable to NIST
- Selectable connection/ isolation of signal ground and case

Description

The Endeveco® model 2270 primary comparison calibration standard accelerometer is a combination standard accelerometer and calibration fixture used for performing comparison calibrations of other accelerometers. It is extremely stable and has very flat frequency response. The model 2270 has a 1/4-28 tapped hole 0.5 inches deep for attaching units under test. Accessory bushings are provided to mount accelerometers that use 2-56, 6-32, or 10-32 sizes. Additional adapters with 4-40, 4-48, 8-32, and metric M3x0.5 threads are available.

Signal ground can be switched from grounded to isolated at the user's option by means of a knurled nut on the output signal receptacle.

Comparison standard accelerometer

Model 2270

Specifications

All specifications are typical at 75°F (24°C), referenced at 100 Hz and conform to ISA-RP 37.2 (1-64) unless otherwise indicated.

Dynamic characteristics

Charge sensitivity	Units 2.2 pC/g ±20% (0.22 pC/ms ²)	
Frequency range [1]	accelerometers up to 35 grams	2 Hz to 20 000 Hz
	accelerometers between 35 grams and 100 grams	2 Hz to 5000 Hz
Mass loading effect [2]	Sensitivity change due to relative motion resulting from the mass of the test accelerometer plus adapters or fixtures ±0.2% maximum for up to 100 gm at 100 Hz -2% for 50 gm at 10 kHz or 100 gm at 5 kHz	
Shock motion pulse duration [3]	100 µs to 25 ms half sine for accelerometers up to 35gm 200 µs to 25 ms half sine for accelerometers between 35gm and 100gm 3% maximum in any direction	
Transverse sensitivity	Sensitivity increases approximately 0.1% per 1000 g, 0 to 15 000 g	
Amplitude linearity	±3% typical -65°F to 350°F (-54°C to 177°C) referenced to room temperature	
Temperature response	±0.2% maximum per year	
Charge sensitivity time stability		

Electrical characteristics

Capacitance	1700 pF ±20%
Resistance	20 GΩ minimum; 5000 M Ω minimum at 350°F (177°C)
Isolation	10 MΩ minimum case to mounting stud and signal ground
Polarity	Positive output for acceleration into the base

Environmental characteristics

Temperature range	-65°F to 350°F (-54°C to 177°C)
Humidity	Epoxy sealed
Acceleration limit	15 000 g peak shock, 1000 g peak sinusoidal
Base strain sensitivity	0.25 equivalent g peak per 250µ strain peak
Electromagnetic sensitivity	0.03 equivalent g rms at 100 gauss rms, 60 Hz
Stray voltage sensitivity	0.003 equivalent g per Volt at the mounting stud

Physical characteristics

Weight	1.4 oz. (40 gm)
Case material	17-4 PH Stainless steel
Output receptacle [4]	10-32 UNF threaded coax socket type side connector with grounding nut. Mates with Endevco Model 3090C Cable assembly
Mounting [5]	Integral mounting stud 1/4-28 UNF thd x 3/8" long 1/4-28 UNF thd x 1/2" deep for mounting test transducers

Calibration data

Standard CS120	Reciprocity Calibration includes an absolute reciprocity sensitivity at 100 Hz and 2 g peak, and a comparison frequency response from 20 to 10 000 Hz. Test results are furnished in a formal report that includes transverse sensitivity, resistance, capacitance, and frequency response plots.
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Optional

CS120L	Extends the frequency response calibration down to 2 Hz.
CS120H	Extends the frequency response calibration up to 20 000 kHz
CS310	Temperature Response Calibration, -65°F to 350°F (-54°C to 177°C).

Comparison standard accelerometer

Model 2270

Accessories

Product	Description	2270
15071	Adapter stud, 1/4-28 UNF to 10-32 UNF	Included
14159-1	Adapter bushing, 10-32 UNF	Included
14159-2	Adapter bushing, 6-32 UNC	Included
14159-4	Adapter bushing, 2-56 UNC	Included
14159-3	Adapter bushing, 4-40 UNC	Optional
14159-5	Adapter bushing, 4-48 UNF	Optional
14159-6	Adapter bushing, 8-32 UNC	Optional
14159-7	Adapter bushing, M3x0.5	Optional

Notes

1. Low frequency response will be determined by the characteristics of the charge amplifier used with the 2270 standard accelerometer.
2. Sensitivity is the standard output divided by the acceleration motion at the surface provided for attaching test accelerometers.
3. For calibrations with 100 μ s duration pulses, the resonance frequency of the test accelerometer should be above 50 kHz.
4. Tighten the grounding nut to the case finger tight - approximately 4 lbf - in (0.7 Nm). Excessive torque could damage the isolated receptacle assembly. The grounding nut should be in contact with the accelerometer housing when case isolated test transducers are being calibrated, and should be disengaged from the accelerometer housing when case grounded test transducers are being calibrated.
5. Recommended torque for attachment is 18 lbf - in (2Nm).
6. Torque values above 24 lbf - in could cause permanent damage to the isolated bushing assembly.

Ordering information

1. Maintain high levels of precision and accuracy using Meggitt's factory calibration services. Call Meggitt'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.