

Piezoelectric Accelerometer

Model 6233C-10,-50 and -100

- High-Temperature Operation (+482°C)
- Balanced Differential Output
- Ground-Isolated
- Requires No External Power
- Gas-Turbine Testing

ENDEVCO
MODEL
6233C-10
-50
-100

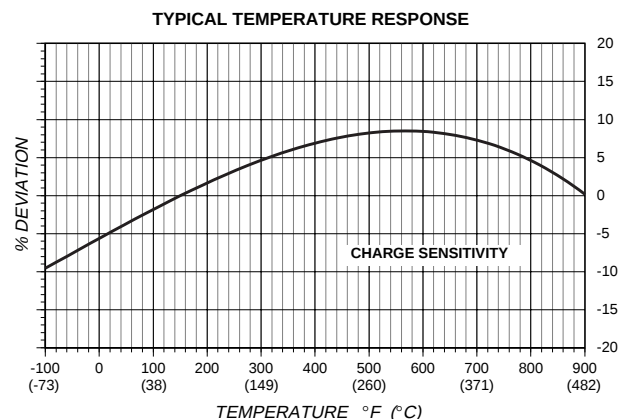
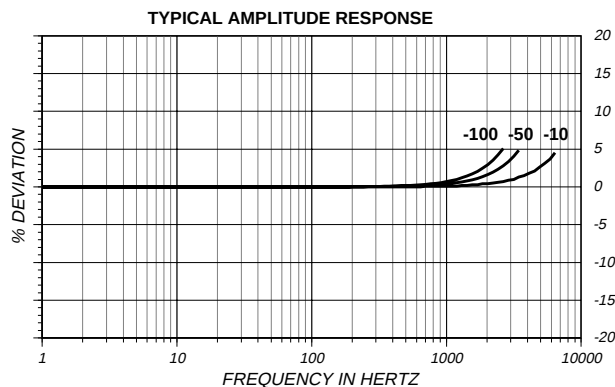
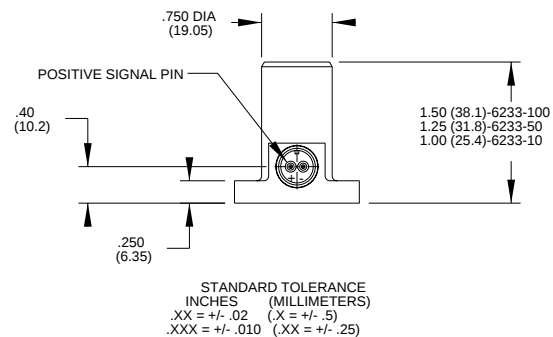
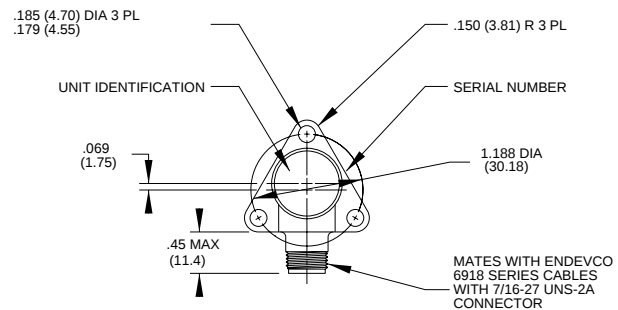


Actual size

DESCRIPTION

The ENDEVCO® Model 6233C series of piezoelectric accelerometers is designed for high-temperature vibration measurement on gas-turbine engines. The unit features high sensitivity, a ruggedized connector, and 3-point mounting. The 6233C is designed for continuous operation to +900°F with a long Mean Time Between Failure (MTBF). The accelerometer is a self-generating device that requires no external power for operation.

The 6233C utilizes ENDEVCO's PIEZITE® Type P-14 sensing element to provide high output, excellent temperature stability, and wide operational bandwidth. With such high temperatures involved, this accelerometer requires the use of a charge amplifier or remote charge converter that is designed to accept a 100-kΩ source resistance. The 6233C provides a balanced differential output that is isolated from case ground. The 6233C is available in standard ranges of 10, 50 and 100 pC/g. It is designed to be used with ENDEVCO's Model 6918M30 shielded, hard-line cable or, temperature permitting, with the 6917D soft-line cable assembly. ENDEVCO Signal Conditioner Models 2787, 2777A, 68221, or 68222 are recommended for use with this high-impedance accelerometer.



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Piezoelectric Accelerometer

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	-10	-50	-100
CHARGE SENSITIVITY, ± 5%	pC/g	10	50	100
FREQUENCY RESPONSE		See Typical Amplitude Response		
RESONANCE FREQUENCY	kHz	31	16	12
AMPLITUDE RESPONSE [1]				
± 5%	Hz	10 to 5000	10 to 2500	10 to 2000
± 1dB	Hz	1 to 8000	.1 to 5000	.1 to 3000
TEMPERATURE RESPONSE		See Typical Curve		
TRANSVERSE SENSITIVITY	%		≤ 5	
AMPLITUDE LINEARITY	%	1/500 g	1/500 g	1/250 g
Up to vibration limit				

ELECTRICAL CHARACTERISTICS

OUTPUT POLARITY	Acceleration directed into base of unit produces positive output at left receptacle pin (looking into receptacle)			
RESISTANCE (Between pins)	GΩ		≥ 1	
At +900°F (+482°C)	KΩ		≥ 100	
ISOLATION (Pin to case)	MΩ		≥ 100	
At +900°F (+482°C)	MΩ		≥ 10	
CAPACITANCE	pF	725	1350	2300
GROUNDING	Signal return isolated from case			

ENVIRONMENTAL CHARACTERISTICS

TEMPERATURE RANGE	-67°F to +900°F (-55°C to +482°C)			
HUMIDITY	Hermetically sealed			
SINUSOIDAL VIBRATION LIMIT	g	1000	1000	500
SHOCK LIMIT	g	2000	2000	1000
BASE STRAIN SENSITIVITY	equiv. g pk/μstrain	0.002	0.0024	0.002
THERMAL TRANSIENT SENSITIVITY [2]	equiv. g pk/°F (°C)	0.10 (0.18)	0.05 (0.09)	0.03 (0.054)

PHYSICAL CHARACTERISTICS

DIMENSIONS	See Outline Drawing			
WEIGHT	gm (oz)	≤ 75 (2.6)	≤ 110 (3.8)	≤ 110 (3.8)
CASE MATERIAL	Inconel			
CONNECTOR	Two-pin receptacle designed to mate with Endevco 6918M30 and/or 6917D cable assemblies			
MOUNTING TORQUE	lbf-in (Nm)	14 (1.6)		

CALIBRATION

SUPPLIED:				
CHARGE FREQUENCY RESPONSE				
6233C-10	%		50 to 4000 Hz	
	dB		4000 Hz through resonance	
6233C-50	%		50 to 2500 Hz	
	dB		2500 Hz through resonance	
6233C-100	%		50 to 2000 Hz	
	dB		2000 Hz through resonance	
CHARGE SENSITIVITY	pC/g			
MAXIMUM TRANSVERSE SENSITIVITY	%			
CAPACITANCE	pF			

ACCESSORY

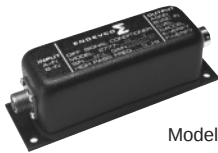
EH534 MOUNTING SCREW
8-32 UNC x 0.5 inch socket head cap, 3x

OPTIONAL ACCESSORIES

6918M30-XXX CABLE ASSEMBLY (900°F)
6917D-XXX CABLE ASSEMBLY (550°F)

NOTES

1. Low-end response of the transducer is a function of its associated electronics.
2. With 1-Hz High-Pass Filter.
3. 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.



Model 2777A Signal Conditioner

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.