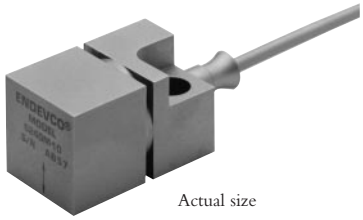
Piezoelectric Accelerometer

ENDEVCO MODEL 6240M10

Model 6240M10

- **High Temperature Operation (+760°C)**
- **Hermetically Sealed**
- **Ground Isolated**
- **Requires No External Power**
- **Aircraft Gas Turbine Testing**



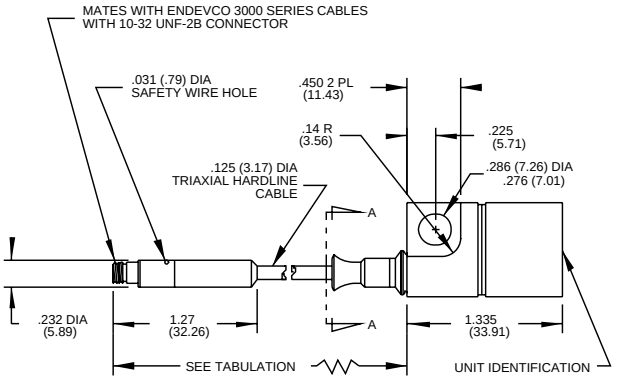
Actual size

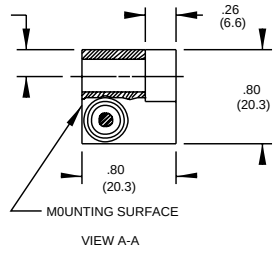
DESCRIPTION

The ENDEVCO® Model 6240M10 piezoelectric accelerometer is uniquely designed for continuous operation at +1200°F (+650°C) and intermittent operation up to +1400°F (+760°C). The 6240M10 is ideally suited for application on aircraft gas turbine engines as part of vibration monitoring systems. The 6240M10 design features small size for installation in space cramped areas, along with high sensitivity for low level vibration analysis. The accelerometer is a self-generating device that requires no external power source for operation.

Electrical connection is made through an integral hardline triaxial cable with a 10-32 receptacle on the end of the cable to mate with ENDEVCO's Model 3090C or 3075M6 coaxial cable assemblies. The sensing elements and integral shield are isolated from the case. Standard cable length is 120 inches, however, other cable lengths are also available on special order.

ENDEVCO Signal Conditioner Model 2721B is recommended for use with this accelerometer. The 2771A Remote Charge Convertor is also compatible for applications using this high impedance accelerometer.

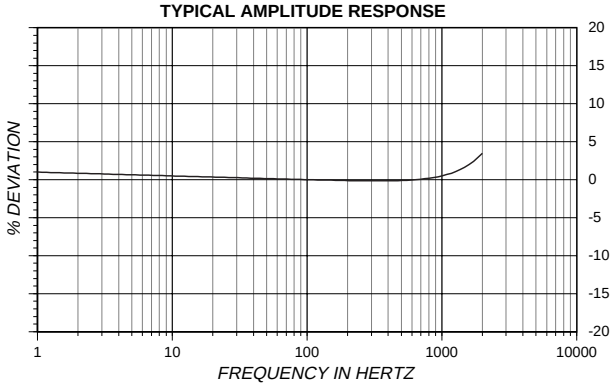




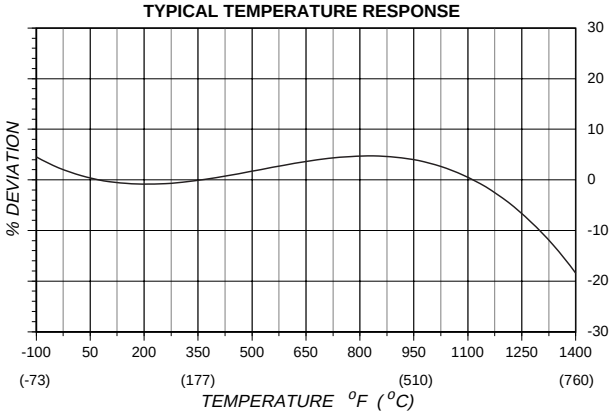
TABULATION	
CABLE LENGTH	TOLERANCE
UP TO 72 (1829)	+/- 2.00 (51)
73 (1854) TO 144 (3658)	+/- 4.00 (102)
OVER 144 (3658)	+/- 4.00 (102) PER 144 (3658) OR PORTION THEREOF

STANDARD TOLERANCE
INCHES (MILLIMETERS)
.XX = +/- .02 (.X = +/- .5)
.XXX = +/- .010 (.XX = +/- .25)

TYPICAL AMPLITUDE RESPONSE



TYPICAL TEMPERATURE RESPONSE



ENDEVCO
MODEL
6240M10

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	
CHARGE SENSITIVITY, ±10%	pC/g	5.0
FREQUENCY RESPONSE [1]		See Typical Amplitude Response
RESONANCE FREQUENCY	kHz	10
AMPLITUDE RESPONSE [2]		
±5%	Hz	30 to 2000
±1dB	Hz	5 to 3000
TEMPERATURE RESPONSE		See Typical Curve
TRANSVERSE SENSITIVITY	%	≤ 5
AMPLITUDE LINEARITY Per 200 g, 0 to 1000 g	%	1

ELECTRICAL CHARACTERISTICS		
OUTPUT POLARITY		Acceleration directed into base of unit produces positive output
RESISTANCE (Between pins)	MΩ	≥ 100
At +1200°F (+650°C)	kΩ	≥ 10
ISOLATION (Between pins)	MΩ	≥ 100
At +1200°F (+650°C)	kΩ	≥ 100
CAPACITANCE Excluding hardline cable	pF	180
HARDLINE CABLE CAPACITANCE Center conductor to inner shield	pF/ft (pF/m)	110 (361)
GROUNDING		Signal return isolated from case

ENVIRONMENTAL CHARACTERISTICS		
TEMPERATURE RANGE		
TRANSDUCER/HARDLINE CABLE [3]		
CONTINUOUS		-65°F to +1200°F (-54°C to +649°C)
INTERMITTENT		-65°F to +1400°F (-54°C to +760°C)
CONNECTOR		-67°F to +500°F (-55°C to +260°C)
HUMIDITY		
TRANSDUCER/CABLE		Hermetically sealed
CONNECTOR		Epoxy sealed, non-hermetic
SINUSOIDAL VIBRATION LIMIT	g	250
SHOCK LIMIT	g	1000

PHYSICAL CHARACTERISTICS		
DIMENSIONS		See Outline Drawing
WEIGHT(excluding cable)	gm (oz)	95 (3.3)
CASE MATERIAL		Inconel
HARDLINE CABLE		Triaxial, 0.125 inch diameter, Inconel jacketed, mineral oxide insulated. The model number suffix "XXX" indicates cable length in inches
CONNECTOR		Coaxial receptacle with 10-32 UNF threads designed to mate with ENDEVCO 3000 Series Cable Assembly or equivalent. Receptacle must be handled with care
MOUNTING		Single recessed hole for 1/4 inch screw.
TORQUE	lbf-in (Nm)	24 (2.7)

CALIBRATION	
SUPPLIED:	
CHARGE SENSITIVITY	pC/g
TRANSVERSE SENSITIVITY	%
CAPACITANCE	pF

ACCESSORIES

P/N EH301 — MOUNTING SCREW
1/4-28 UNF x 0.75 in socket head cap

OPTIONAL

3090C-XXX — CABLE ASSEMBLY

NOTES

1. Frequency response is controlled by the resonance characteristics of the transducer. Estimated calibration errors are ± 1.5% to 900 Hz and 2.5% from 900 Hz to 5000 Hz.
2. Low-end response of the transducer is a function of its associated electronics.
3. For cable lengths of less than 12 inches (0.30 m) , the maximum operating temperature is +500°F (+260°C).
4. 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.

ENDEVCO CORPORATION, 30700 RANCHO VIEJO ROAD, SAN JUAN CAPISTRANO, CA 92675 USA (800) 982-6732 (949) 493-8181 fax (949) 661-7231
www.endevco.com Email:applications@endevco.com