



ORIGINATED	DM	04-23-03	<b>PERFORMANCE SPECIFICATION ACCELEROMETER</b>	<b>PS84M108</b>
CHECKED	JRL	04-08-03		PAGE 1 OF 4
APPROVED	MM			REVISION B
	JGM	04-22-03		EO NUMBER 25993
				DATE 06-24-03

1.0 **DESCRIPTION**

The ENDEVCO<sup>®</sup> Model 84M108 Accelerometer is a biaxial transducer designed to operate at temperatures up to 400°F. The accelerometer is hermetically sealed and has two integral hardline cables brazed to the accelerometer using ASTM-AWS BAu4 classification brazing alloy. Special features are designed into the accelerometer in order to reduce the strain effects from the hardline cable. The sensor is insulated from the case and outer cable sheath.

The use of ENDEVCO PIEZITE<sup>®</sup> Type P-8 yields a high charge sensitivity.

2.0 **PERFORMANCE CHARACTERISTICS AND SPECIFICATION**

All specifications are taken at 72°F referenced at 100 Hz and conform to ISA-RP 37.2 (1-64) unless otherwise specified.

- 2.1 CHARGE SENSITIVITY 10 pC/g, typical
- 2.2 CHARGE SENSITIVITY DEVIATION VS FREQUENCY
  - 2.2.1 Typical Response +1/+1/0+3 at 2/10/100 Hz
  - 2.2.2 Tested Response (including calibration uncertainties) ±5% maximum from 2 Hz to 100 Hz
- 2.3 RESONANT FREQUENCY 4.0 kHz, typical
- 2.4 TRANSVERSE SENSITIVITY 10% of reference sensitivity, maximum
- 2.5 AMPLITUDE LINEARITY AND ACCELERATION RANGE Sensitivity increases approximately 1% per 100 g, 0 to 250 g @ 100 Hz, maximum
- 2.6 CHARGE SENSITIVITY (TYPICAL) DEVIATION VS TEMPERATURE Ref/+28% at +75/400°F (+24/149°C)

3.0 **ELECTRICAL CHARACTERISTIC**

(Each Axis)

- 3.1 INSULATION, RESISTANCE Isolated. Greater than 1 MΩ over the temperature range.
- 3.2 OUTPUT RESISTANCE Greater than 10 MΩ over the temperature range.
- 3.3 TRANSDUCER CAPACITANCE EXCLUDING INTEGRAL CABLE 2000 pF, nominal at 75°F (+24°C)

4.0 **ENVIRONMENTAL CHARACTERISTICS**

4.1	OPERATING PRESSURE RANGE AND MEDIA	Up to +200 psi in water environment
4.2	OPERATING TEMPERATURE RANGE (TRANSDUCER)	-65°F to +400°F (-54°C to +204°C)
4.3	MAXIMUM STORAGE TEMPERATURE (EXCLUDING CONNECTOR)	+400°F (+204°C)
4.4	CONNECTOR TEMPERATURE RANGE	-65°F to +300°F (-54°C to +149°C)

5.0 **PHYSICAL CHARACTERISTICS**

5.1	DIMENSIONS, CONFIGURATION AND MARKINGS	See attached drawing
5.2	CASE MATERIAL	Inconel 600
5.3	CABLE	
5.3.1	Type	Triaxial, 0.070" O.D., Inconel 600 jacketed, mineral oxide insulated
5.3.2	Connector	5-44 to mate with Endevco Model 3007 Series Cable Connector
5.3.3	Cable Capacitance	120 pF/ft, center conductor to shield 150 pF/ft, between shields
5.3.4	Minimum Bend Radius	0.7"
5.4	WEIGHT	Approximately 22 grams (excluding cable)

6.0 **ACCESSORIES [1]**

6.1	SUPPLIED	3007-120, Cable Assy, qty 2
6.2	OPTIONAL	EHM1804, Contact Ring, qty 2 EHM1805, Canted Coil Spring, qty 2

7.0 **TEST DATA AND CALIBRATIONS SUPPLIED**

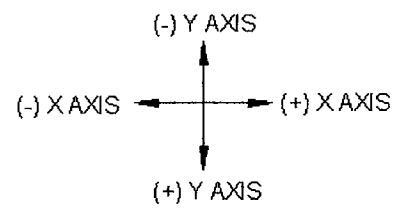
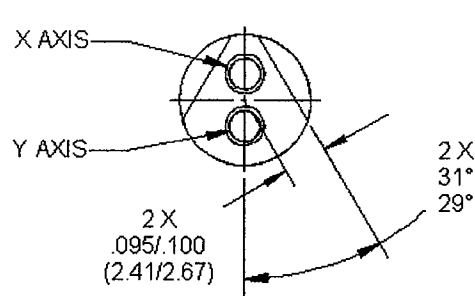
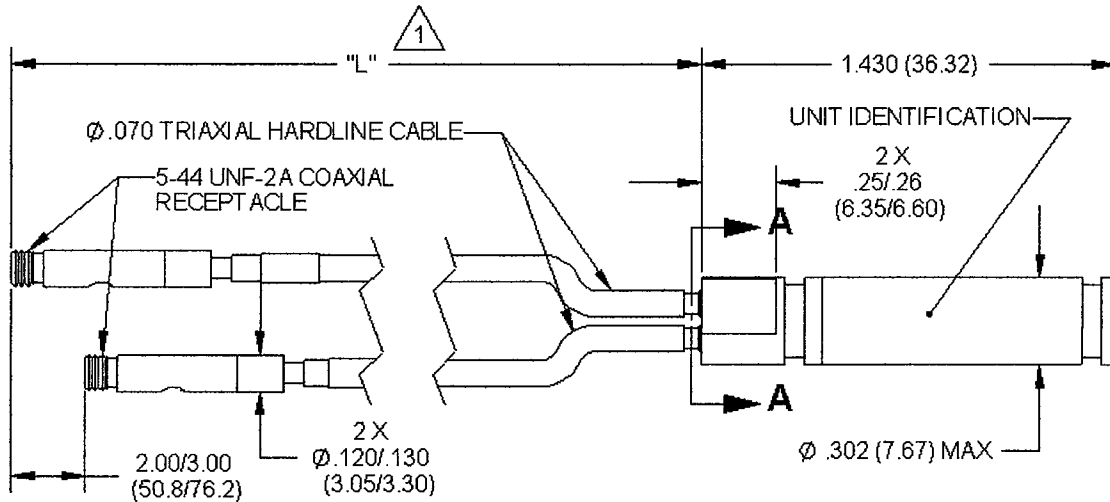
7.1	CHARGE SENSITIVITY	pC/g at 100 Hz, R.T.
7.2	FREQUENCY RESPONSE	2 Hz to 100 Hz at R.T.
7.3	CHARGE SENSITIVITY DEVIATION VS TEMPERATURE @100 AND 300 HZ	R.T, +250°F, +400°F (+121°C, +204°C)



7.4	MAXIMUM TRANSVERSE SENSITIVITY	100 Hz, R.T.
7.5	TOTAL CAPACITANCE ACCELEROMETER AND CABLE	pF at 1000 Hz, R.T.
7.6	INTERNAL RESISTANCE	10 Vdc, R.T. & 400°F (+204°C)
7.7	ISOLATION RESISTANCE	10 Vdc, R.T. & 400°F (+204°C)
7.8	RESONANT FREQUENCY	100 Hz to major mounted fn plotted at 10 dB/inch, R.T.

8.0 **NOTES**

[1] Cable length tolerances; plus 6 inches, minus zero inches.



**AXIS SENSITIVITY**  
(BASED ON SECTION A-A)

**SECTION A-A**  
SCALE: NONE

**1** CABLE LENGTH "L" IS DETERMINED BY DASH NUMBER, I.E. 84M108-120 WILL HAVE A CABLE LENGTH OF 120 INCHES. SEE TABULATION FOR LENGTH TOLERANCE.

TABULATION	
LENGTH INCHES (MILLIMETERS)	TOLERANCE INCHES (MILLIMETERS)
UP TO 12 (304.8)	+1.0 (25.4)
OVER 12 TO 36 (304.8 TO 914.4)	+2.0 (50.8)
OVER 36 TO 120 (914.4 TO 3.05m)	+4.0 (101.6)
OVER 120 (3.05m)	+4.00 (101.6) PER 120 (3.05m) OR PART THERE OF +12.00 (304.8) MAX TOLERANCE

STANDARD TOLERANCE  
INCHES (MILLIMETERS)  
.XX = +/- .03 (.X = +/- .8) SOL  
.XXX = +/- .010 (.XX = +/- .25)