

Preliminary

34207A

SPECIFICATIONS

- Triaxial Accelerometer ± 10 g to ± 70 g
- Wide Bandwidth to 10 kHz Precision Aligned

Precisely Measure Real -World Accelerations

The Measurement Specialties 34207A accelerometer has each mutually orthogonal axis precisely aligned within 0.75 degree of the theoretical ideal. This provides the accuracy required by most measurement applications without any compensation. Critical applications requiring higher accuracy can use the alignment data provided on the calibration certificate to compensate for any small residual error.

Choose the bandwidth and range options best suited for your application to measure up to ± 70 g accelerations on each of three axes.

Each axial sensor has been tested over the -40 to $+85^{\circ}\text{C}$ temperature range and has a nominal full scale output swing of ± 2 volts. The zero g output level is nominally $+2.5$ volts. Precise values for each axis are available on the included calibration certificate.

FEATURES AND BENEFITS

Precision Alignment

Each axis of the Measurement Specialties 34207A is precision aligned to minimize errors due to axis misalignment or transverse sensitivity.

High Accuracy and Linearity over Wide Temperature Range

The voltage output for each axis of the 34207A is directly proportional to the acceleration along that axis. Each DC-coupled output is fully scaled, referenced, and temperature compensated over the entire -40 to $+85^{\circ}\text{C}$ temperature range. Accuracy is improved by minimizing variations due to temperature and aging effects, resulting in a sensor that is more stable over temperature than piezoelectric or piezoresistive devices.

Calibration Certificate

Each 34207A is supplied with a calibration certificate listing sensitivity and offset, as well as on-axis and transverse alignment parameters needed to ensure rapid and efficient system implementation. The alignment data can be used to compensate the measured values to achieve an even higher level of sensor accuracy.



Self-Test on Digital Command

A TTL-compatible self-test low input causes a simulated acceleration to be injected into all three sensors to verify channel integrity.

Small Size

Complete conditioned triaxial accelerometer in less than a cubic inch.

-Built-In Power Supply Regulation

Unregulated DC power from +8.5 to +36 volts is all that is required to measure acceleration and temperature.

Suitable for Harsh Environments

The 34207A is robust and can be used in harsh environments. The unit will survive 4000 g powered or unpowered.

Warranty

These Measurement Specialties accelerometers come with a three-year factory warranty.

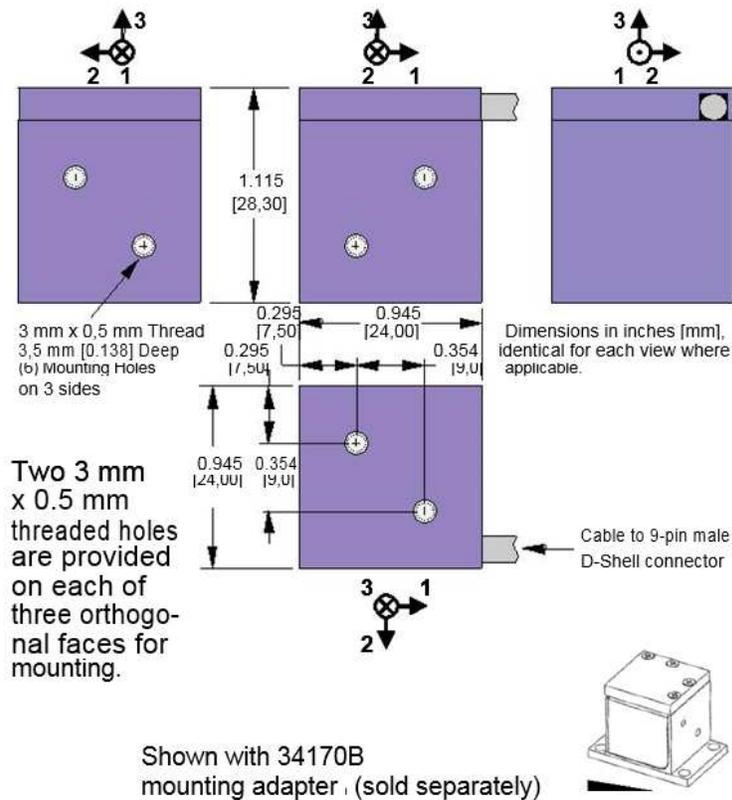
SPECIFICATIONS FOR 34207A - *improved specifications available upon request*

T_a = T_{min} to T_{max}; 8.5 ≤ V_s ≤ 36 V; Acceleration = 0 g unless otherwise noted; within one year of calibration.

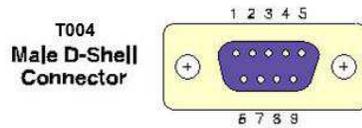
Parameter	Min	Typical	Max	Units	Conditions/Notes
Accelerometers Full Scale Range	±10		±70	g	On each axis, specify with Option Rnnn
Sensitivity					
At 25°C, Option R070		±28 [†]		mV/g	
Drift T _{min} to T _{max}		1% (TBD)		%	Percent of sensitivity at 25°C
Zero g Bias Level					
At 25°C		2.5 ±0.010		V	Precise values on cal certificate
Drift T _{min} to T _{max} At 1.25°C/min rate of change		±500		mg	Some units to >750 mg
Alignment					Precise values on cal certificate
Deviation from Ideal Axes			±0.75	degree	Can be compensated if required
Transverse Sensitivity		±0.25		%	Inherent sensor error, excluding misalignment
Nonlinearity		0.2	2	% FSR	Best fit straight line
Frequency Response	0		10	kHz	Upper cutoff per Option Bnnn, -3 dB pt ±10%
Noise Density		2.2		mg/√Hz	10 Hz to 400 Hz
Self-Test Input Impedance	10			kΩ	Pullup. Logic "1" ≥3.5V, Logic "0" ≤1.5V
Temperature Sensor					Accuracy ±1°C
Sensitivity		6.45		mV/°C	
0°C Bias Level		509		mV	
Outputs					
Output Voltage Swing	0.50		4.50	V	I _{out} = ±0.5 mA
Capacitive Drive Capability	1000			pF	
Power Supply (V_s)					
Input Voltage Limits	-20		+38	V	-20V continuous
Input Voltage - Operating	+8.5		+36	V	
Input Current		15	20	mA	No load, quiescent
Rejection Ratio		>120		dB	DC
Temperature Range (T_a)	-40		+85	°C	
Mass		35		grams	Precise values on cal certificate
Shock Survival	-4000		+4000	g	Any axis for 0.5ms, powered or unpowered

[†]Scale linearly with range option Rnnn.

MECHANICAL

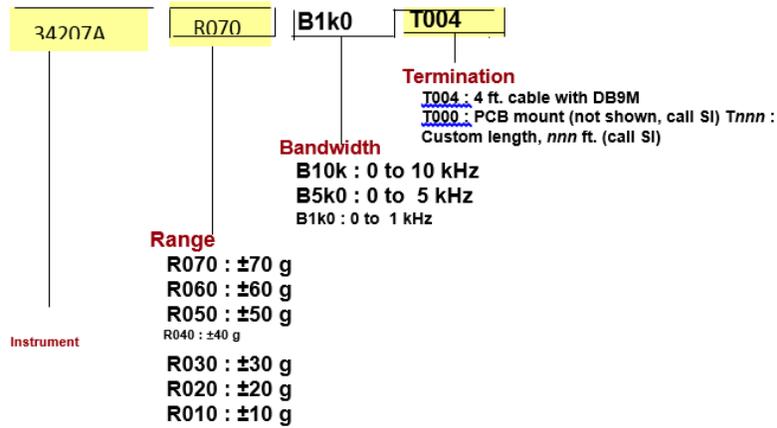


CONNECTIONS



Pin	1	2	3	4	5	6	7	8	9
Signal	A1+	Signal-	A2+	+5VOut	A3+	T+	Self Test-L	+Vs	Gnd
Wire	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

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