



## 34201A

### SPECIFICATIONS

- $\pm 1$  g to  $\pm 2$  g Triaxial Accelerometer
- Zero g Bias Stability  $\pm 2$  mg
- Very Low Noise  $110 \mu\text{g}/\sqrt{\text{Hz}}$

### Precisely Measure Real -World Accelerations

The Measurement Specialties 34201A accelerometer has each mutually orthogonal axis precisely aligned, typically within  $\pm 0.15$  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 optional calibration certificate to compensate for any small residual error.

Choose the bandwidth and range options best suited for your application to measure  $\pm 1$  g,  $\pm 1.5$  g, or  $\pm 2$  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  $\pm 2$  volts. The zero g output level is nominally  $+2.5$  volts and temperature compensated over the range of  $-40$  to  $+85^\circ\text{C}$ . Precise values for each axis are available on the included calibration certificate.

### FEATURES AND BENEFITS

#### Precision

The Measurement Specialties 34201A Triaxial Accelerometer offers precision measurements over the entire  $-40$  to  $+85^\circ\text{C}$  temperature range with superior bias stability and approximately  $100 \mu\text{g}$  measurement resolution.

#### High Accuracy and Linearity over Wide Temperature Range

The voltage output for each axis of the 34201A 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. Our internal temperature compensation routine provides for unrivaled measurement accuracy over varying temperatures.

#### Calibration Certificate

Each 34201A is supplied with a calibration certificate listing sensitivity and offset, as well as the on-axis and transverse alignment parameters needed to ensure rapid and efficient system implementation.

**Self-Test on Digital Command**

A TTL-compatible self-test 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 one cubic inch.

**Built-in Power Supply Regulation**

Unregulated DC power from +8.5 to +36 volts is all that is required to measure accelerations on all axes.

**Suitable for Harsh Environments**

The 34201A is robust and can be used in harsh environments. The unit will survive 3500 g powered and unpowered.

**Warranty**

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

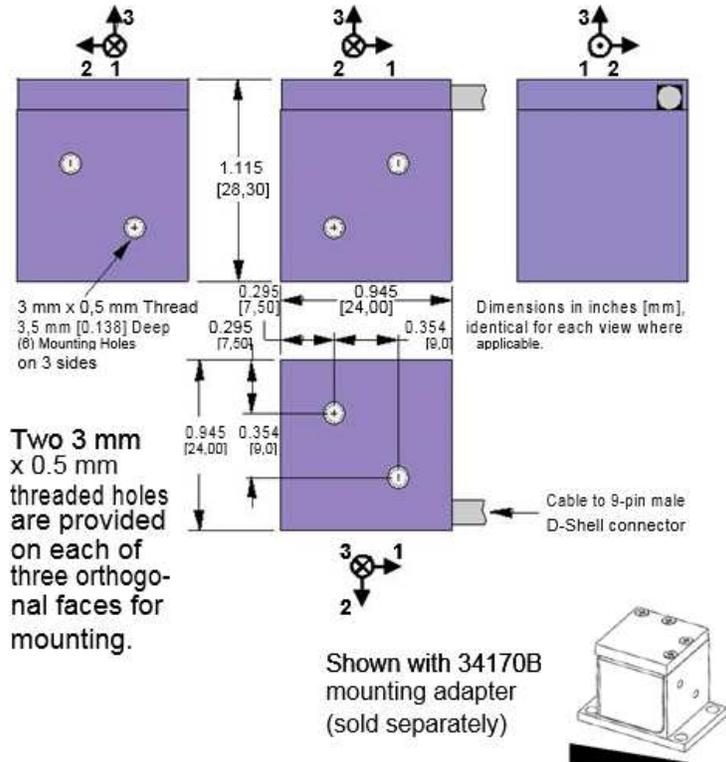
**SPECIFICATIONS FOR 34201A - improved specifications available upon request**

T<sub>a</sub> = T<sub>min</sub> to T<sub>max</sub>; 8.5 ≤ V<sub>s</sub> ≤ 36 V; Acceleration = 0 g unless otherwise noted; within one year of calibration.

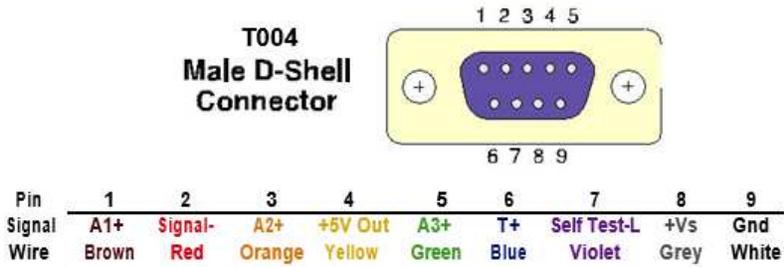
Parameter	Min	Typical	Max	Units	Conditions/Notes
<b>Range</b>					
Measurement Full Scale		±2.0		g	On each axis. Must specify via Option Rnnn
<b>Sensitivity</b>					
At 25°C, Option R002		1000 <sup>†</sup>		mV/g	Precise values on cal certificate
Drift T <sub>min</sub> to T <sub>max</sub>		±0.3		%	
<b>Zero g Bias Level</b>					
At 25°C		2.5 ±0.010		V	Precise values on cal certificate
Drift T <sub>min</sub> to T <sub>max</sub>		±2	±6	mg	At <1.25°C/min temperature rate of change
<b>Alignment</b>					
Deviation from Ideal Axes		±0.15	±0.5	degrees	Precise values on cal certificate Can be compensated if required
<b>Transverse Sensitivity</b>					
		0.25		%	Inherent sensor error, excluding misalignment
<b>Nonlinearity</b>					
		±0.2	±1.25	% FSR	
<b>Frequency Response</b>					
	0		2100	Hz	Upper cutoff per Option Bnnn, -3 dB pt ±10%
<b>Noise Density</b>					
		110		µg/√Hz	
<b>Self Test Pull-up Resistor</b>					
	5			kΩ	Logic "1" ≥ 3.5V, "0" ≤ 1.5V; "0" causes self-test
<b>Temperature Sensor</b>					
Sensitivity		6.45		mV/°C	Error ±1°C over temperature
+0°C Bias Level		509		mV	
<b>Outputs</b>					
Output Voltage Swing, R001, R1.5	0.50		4.50	V	Series 100 Ω for capacitance tolerance >1 MΩ load
Output Voltage Swing, R002	0.55		4.8	V	>1 MΩ load; limits typically reach 0.2 V to 4.95 V
<b>Power Supply (V<sub>s</sub>)</b>					
Input Voltage Limits	-20		+36	V	-20 V continuous, >30 V if <100 ms, duty <1%
Input Voltage - Operating	+8.5		+36	V	
Input Current		13		mA	No load, quiescent
Rejection Ratio		>120		dB	DC
<b>Temperature Range (T<sub>a</sub>)</b>					
	-40		+85	°C	
<b>Mass</b>					
		35		grams	Precise values on cal certificate
<b>Shock Survival</b>					
	-3500		+3500	g	Any axis for 0.5 ms, powered or unpowered

<sup>†</sup>Scale linearly with range option Rnnn; see Ordering Information

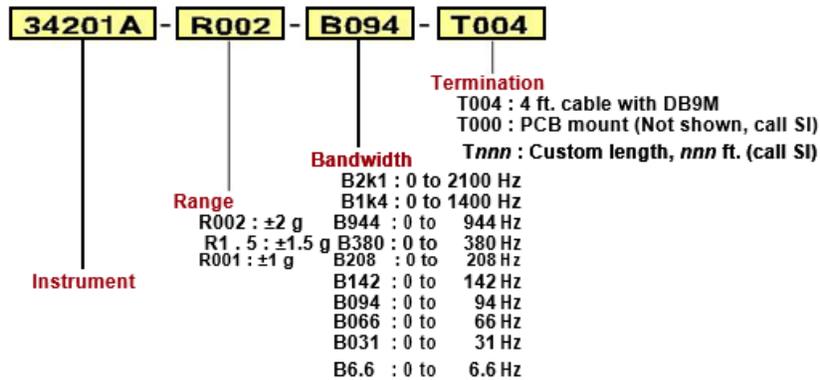
MECHANICAL



CONNECTIONS



## ORDERING INFORMATION

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