

34201A Accelerometer

Precision Aligned

± 1 g to ± 2 g

Zero g Bias Stability ± 2 mg

Very Low Noise $110 \mu\text{g}/\sqrt{\text{Hz}}$

Triaxial Analog Accelerometers

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. Each axis is precisely aligned within 0.15 degree of the theoretical ideal to minimize errors due to misalignment or transverse sensitivity.

A tough, compact housing holds potted electronics and the small size and built-in power regulation allow the 34201A to fit where other accelerometers can't. Choose from range options of ± 2 , ± 1.5 , or ± 1 g and various bandwidth options to best suit your application.

The voltage output of the 34201A is directly proportional to the acceleration along the axis. Each DC-coupled output is fully scaled, referenced, and temperature compensated. Users are supplied with a calibration certificate listing sensitivity and offset for each sensor.

The accelerometers have a nominal full scale output swing of ± 2 Volts. The zero g output level is nominally $+2.5$ Volts. Custom versions of the 34201A can be provided.

FEATURES

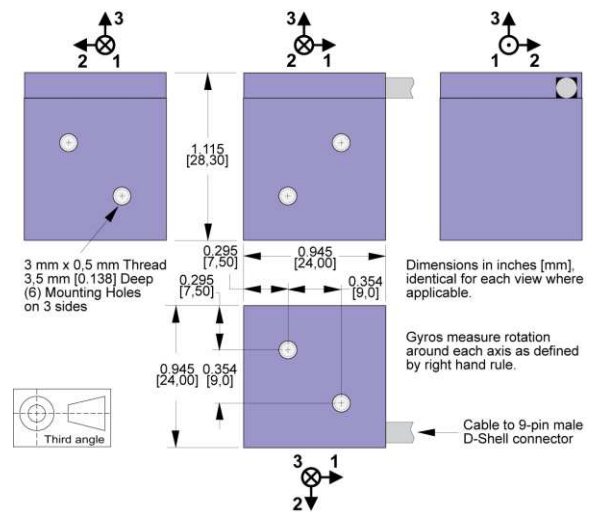
- Low Noise
- Superior Zero g Bias Stability
- Precision Alignment
- High Accuracy and Linearity over Wide Temperature Range
- Rugged for Harsh Environments
- NIST Traceable Calibration
- Small Size

APPLICATIONS

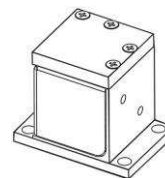
- Vehicle Dynamics
- Construction Equipment
- Research & Development
- Test & Measurement
- Military/Aerospace



dimensions



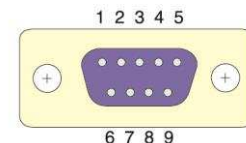
Two 3 mm x 0.5 mm threaded holes are provided on each of three orthogonal faces for mounting



Shown with mounting adapter 34170B (sold separately)

connections

T004
Male D-Shell
Connector



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

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34201A Accelerometer

Performance Specifications

$T_A = T_{min}$ to T_{max} ; $8.5 \leq V_S \leq 36$ V; Acceleration = 0 g unless otherwise noted; within one year of calibration. Improved specifications available upon request.

PARAMETERS	Min	Typical	Max	Units	Conditions/Notes
Range: Measurement Full Scale		±2.0		g	On each axis. Must specify via Option Rnnn
Sensitivity					
At 25°C, Option R002		1000*		mV/g	Precise values on cal certificate
Drift T_{min} to T_{max}		±0.3		%	Percent of sensitivity at 25°C
Zero g Bias Level					
At 25 °C		2.5		V	Precise values on cal certificate
Drift to T_{min} or T_{max}		±2	±6	mg	At 1.25°C/min. temperature rate of change
Alignment					
Deviation from Ideal Axes		±0.15	±0.5	degrees	Precise values on cal certificate Can be compensated if required
Transverse Sensitivity		±0.25		%	Inherent sensor error, excluding misalignment
Nonlinearity		±0.2	±1.25	% FSR	Best fit straight line
Frequency Response	0		2100	Hz	Upper cutoff per option Bnnn, -3 dB pt ±10%
Noise Density		110		µg/√Hz	
Self-Test Input Impedance	5			kΩ	Pullup. Logic "1" ≥ 3.5 V, Logic "0" ≤ 1.5 V
Temperature Sensor					
Sensitivity		6.45		mV/°C	Accuracy ±1 °C
0°C Bias Level		509		mV	
Outputs					
Output Voltage Swing: R001, R1.5	0.05		4.95	V	Series 100Ω 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
Power Supply (V_S)					
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
Temperature Range (T_A)	-40		+85	°C	
Mass		35		grams	Precise values on cal certificate
Shock Survival	-3500		+3500	g	Any axis for 0.5 ms, powered or unpowered

*Scale linearly with range option Rnnn; see Ordering Information

ordering info

34201A - R002 - B094 - T004

Instrument

Range

R002 : ±2 g
R1.5 : ±1.5 g
R001 : ±1 g

Bandwidth

B2k1 : 0 to 2100 Hz
B1k4 : 0 to 1400 Hz
B944 : 0 to 944 Hz
B380 : 0 to 380 Hz
B208 : 0 to 208 Hz
B142 : 0 to 142 Hz
B094 : 0 to 94 Hz
B066 : 0 to 66 Hz
B031 : 0 to 31 Hz
B6.6 : 0 to 6.6 Hz

Termination

T004 : 4 ft. cable with DB9M
T000 : PCB mount (Not shown, call SI)
Tnnn: Custom length, nnn ft. (call SI)