34200B Accelerometer

Precision Aligned
±10g to ±70g
Superior Zero g Bias Stability

Triaxial Analog Accelerometers

The Measurement Specialties 34200B triaxial analog accelerometers are capable of accurately measuring ±10 g, ±15 g, ±20 g, ±25 g, ±30 g, ±35 g, ±40 g, ±50 g, or ±70 g accelerations on three mutually orthogonal axes. Each axis is precisely aligned within 0.5 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 34200B to fit where other accelerometers can't. Choose the bandwidth and range options best suited for your application.

The voltage output of the 34200B 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.

Tested over the -40ºC to +85ºC temperature range, 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 34200B can be provided.

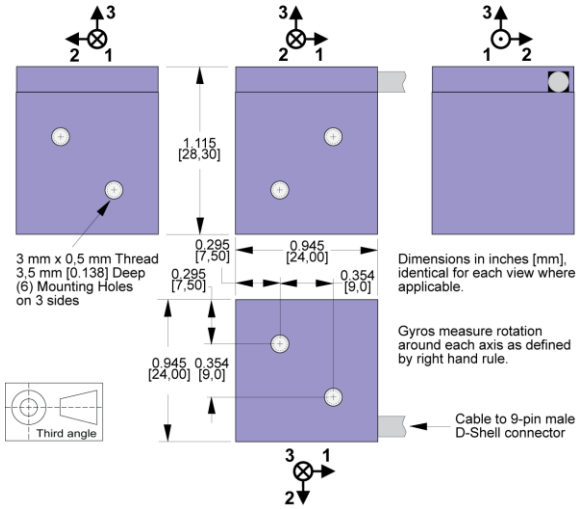
FEATURES

- Precision Alignment
- High Accuracy and Linearity over Wide Temperature Range
- Rugged for Harsh Environments
- NIST Traceable Calibration
- Small Size
- Built-in Power Supply Regulation
- Easy Installation
- Three Year Warranty

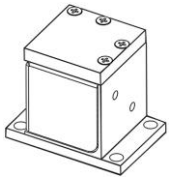
APPLICATIONS

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

dimensions



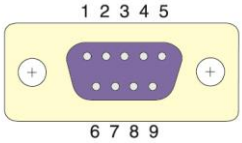
Two 3 mm x 0.5 mm threaded holes are provided on each of three orthogonal faces for mounting



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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Performance Specifications

$T_A = T_{min}$ to T_{max} ; $8.5 \le V_S \le 36$ 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	±10		±70	g	On each axis. Must specify via Option Rnnn
Sensitivity					
At 25ºC, Option R050		38*		mV/g	Precise values on cal certificate
Drift Tmin to Tmax		±0.5		%	Percent of sensitivity at 25ºC
Zero g Bias Level					
At 25 ºC		2.5		V	Precise values on cal certificate
Drift to Tmin or Tmax		±60		mg	At 1.25ºC/min. temperature rate of change
Alignment					
Deviation from Ideal Axes		±0.2	±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	2	% FSR	Best fit straight line
Frequency Response	0		400	Hz	Upper cutoff per option Bnnn, -3 dB pt ±10%
Noise Density					10 Hz to 400 Hz
Option R070		1.8	3.5	mg/√Hz	
Option R050, R040		1.4	3.0	mg/√Hz	
Option R035, R030, R025, R020, R015, R010		1.1	3.0	mg/√Hz	
Self-Test Input Impedance	10			kΩ	Pullup. Logic “1” ≥ 3.5 V, Logic “0” ≤ 1.5 V
Temperature Sensor					Accuracy ±1 ºC
Sensitivity		6.45		mV/ºC	
0ºC Bias Level		509		mV	
Outputs					
Output Voltage Swing	0.25		4.75	V	I_{out} = ±0.5 mA
Capacitive Drive Capability	1000			pF	
Power Supply (V_S)					
Input Voltage Limits	-20		+38	V	-80 V continuous, >38 V if ≤550 ms, duty <1%
Input Voltage Operating	+8.5		+36	V	Continuous
Input Current		15	20	mA	
Rejection Ratio		>120		dB	DC
Temperature Range (T_A)	-40		+85	ºC	
Mass		35		grams	Precise values on cal certificate
Shock Survival	-4000		+4000	grams	Any axis for 0.5 ms, powered or unpowered

*Scale linearly with range option Rnnn; see Ordering Information

ordering info