## 34205A Accelerometer



±5 g to ±50 g Superior Zero g Bias Stability Low Noise - Wide Bandwidth



#### **Triaxial Analog Accelerometers**

The Measurement Specialties 34205A triaxial accelerometer offers precision measurements over the entire -40 to +85°C temperature range with superior bias stability and measurement resolution.

A tough, compact housing holds potted electronics and the small size and built-in power regulation allow the 34205A to fit where other accelerometers can't. Choose from range options of ±50, ±40, ±30, ±25, ±20, ±10, or ±5, and various bandwidth options to best suit your application.

The voltage output of the 34205A 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 ±2.25 volts. The zero g output level is nominally +2.5 volts. Custom versions of the 34205A can be provided.

## **FEATURES**

- Superior Zero g Bias Stability
- Low Noise
- Bandwidth to 2 kHz
- High Accuracy and Linearity over Wide Temperature Range
- Rugged for Harsh Environments
- **NIST Traceable Calibration**
- **Built-in Power Supply Regulation**
- Easy Installation
- Three Vear Warranty

dimensions **≜**<sup>3</sup>  $3 \stackrel{3}{\underset{2}{\otimes}} \stackrel{1}{\xrightarrow{}} 1$ 3▲ \_O→2  $( \cdot )$ (Ŧ 1.115 **(+)** 0.945 [24,00] 0.295 3 mm x 0,5 mm Thread 3,5 mm [0.138] Deep (6) Mounting Holes Dimensions in inches [mm], identical for each view when 0.295 0.354
[9,0] applicable Gyros measure rotation around each axis as defined by right hand rule. ۲. 0.945 0.354 Cable to 9-pin male D-Shell connector <sup>3</sup>⊗+

> 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

A	APPLICATIONS Vehicle Dynamics			T004 Male D-Shell Connector							
	Venicie Dynamics										
•	Construction Equipment						67	89			
•	Research & Development										
	Test 9 Macouroment	Pin	1	2	3	4	5	6	7	8	9
	Test & Measurement	Signal	A1+	Signal-	A2+	+5 V Out	A3+	T+	N.C.	+Vs	Gnd
•	Military/Aerospace	Wire	Brown	Red	Orange	Yellow	Green	Blue	Violet	Grey	White

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#### **Performance Specifications**

T<sub>A</sub> = T<sub>min</sub> to T<sub>max</sub>; 8 ≤ V<sub>S</sub> ≤ 18 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	±5		±50	g	On each axis. Must specify via Option Rnnn
Sensitivity					
At 25°C, Option R050		40*		mV/g	Nom ±50 g; Precise values on cal certificate
Drift Tmin to Tmax			±2.0	%	Percent of sensitivity at 25°C
Zero g Bias Level					
At 25 °C		2.5		V	Precise values on cal certificate
Drift to Tmin or Tmax					
Option R050, R040, R030, R025, R020		±80	±200	mg	At 1.25°C/min. temperature rate of change
Option R010, R005		±16	±40	mg	At 1.25°C/min. temperature rate of change
Alignment					Precise values on cal certificate
Deviation from Ideal Axes		±0.35	±3.0	degrees	Can be compensated if required
Nonlinearity		±0.15	±0.5	% FSR	Best fit straight line
Frequency Response	0		2000	Hz	Upper cutoff per Option Bnnn, -3 dB pt ±10%
Noise Density					T <sub>A</sub> = 25°C
Option R050, R040, R030, R025, R020		50		µg/√Hz	
Option R010, R005		10		µg/√Hz	
Temperature Sensor					Accuracy ±1 °C
Sensitivity		6.45		mV/⁰C	
0°C Bias Level		509		mV	
Outputs					
Output Voltage Swing	0.25		4.75	V	$I_{OUT} = \pm 0.5 \text{ mA}$
Capacitive Drive Capability	500			pF	
Power Supply (V <sub>s</sub> )					
Input Voltage Operating	+8		+18	V	Will withstand -20 V continuous or 36 V for <1 sec.
Input Current		33	50	mA	No load; quiescent
Rejection Ratio		>120		dB	DC
Temperature Range (T <sub>A</sub> )	-40		+85	°C	
Mass		35		grams	Precise values on cal certificate
Shock Survival	-5000		+5000	g	Any axis for 0.1 ms, powered or unpowered

\*Scale linearly with range option Rnnn; see Ordering Information

### ordering info

