34203B

SPECIFICATIONS

Precision Aligned ±1 g to ±5 g Triaxial Accelerometer with Signal Conditioning and Temperature Sensor

Precisely Measure Real-World Accelerations

The Measurement Specialties 34203B accelerometer has each mutually orthogonal axis precisely aligned, typically within 3/4 degree of the theoretical ideal. This provides the accuracy required by most measurement applications without any compensation.

Choose the bandwidth option best suited for your application to measure up to ±5 g accelerations on each of three axes.

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

Custom versions of the 34203B can be provided for applications with different requirements.

FEATURES AND BENEFITS

Precision Alignment
Each axis of the Measurement Specialties 34203B Triaxial Accelerometer 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 34203B 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°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. For critical applications, the built-in temperature sensor can be used to compensate for residual temperature effects.

Calibration Certificate
Each 34203B 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 34203B 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.

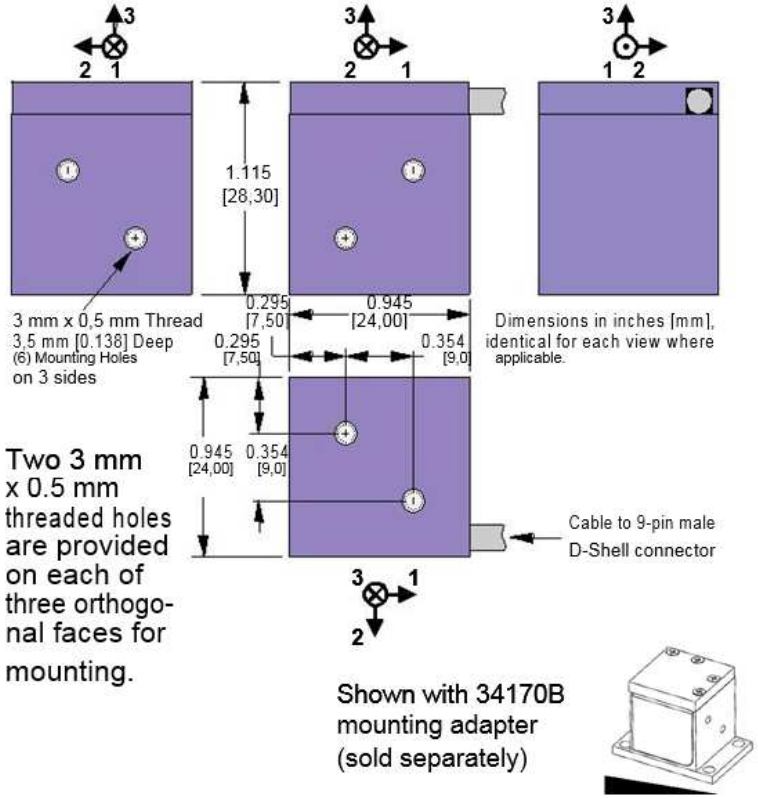
SPECIFICATIONS FOR 34203B - *improved specifications available upon request*

Ta = Tmin to Tmax; 8.5 ≤ Vs ≤ 36 V; Acceleration = 0 g unless otherwise noted; within one year of calibration.

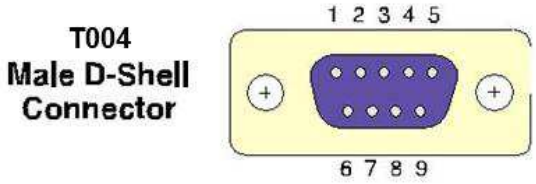
Parameter	Min	Typical	Max	Units	Conditions/Notes
Range					
Measurement Full Scale	±1.0		±5.0	g	Specify via Option Rnnn
Sensitivity					
At 25°C, Option R005		400†		mV/g	Precise values on cal certificate
Drift T_{min} to T_{max}		±0.5		%	% of sensitivity at 25°C
Zero g Bias Level					
At 25°C		2.5 ±0.015		V	Precise values on cal certificate
Drift T_{min} to T_{max}		±0.015		g	
Alignment					Precise values on cal certificate
Deviation from Ideal Axes		±0.15	±0.5	degrees	Can be compensated if required
Transverse Sensitivity		±0.25		%	Inherent sensor error, excluding misalignment
Nonlinearity		±0.2		% FSR	Best fit straight line
Upper Cutoff Frequency			2500	Hz	±10% Must specify per Option Bnnn
Noise Density		200		µg/√Hz	
Self Test Input Impedance	30	50		kΩ	To ground. Logic "1"≥2V, Logic "0"≤0.8V
Temperature Sensor					Precise values on cal certificate
Sensitivity		6.45		mV/°C	Error ±1°C over temperature
+0°C Bias Level		509		mV	
Outputs					
Output Voltage Swing	0.50		4.50	V	I_{OUT} = ±0.5 mA
Capacity Drive Capability	1,000			pF	
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*

MECHANICAL

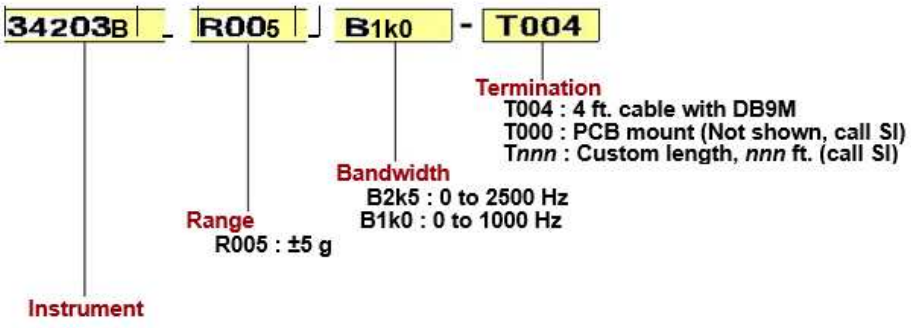


CONNECTIONS



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

ORDERING INFORMATION



NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity Company
2236 N. Cleveland-Massilon Road
Akron, OH 44333
USA
Tel: +1-330-659-3312
Sales: pvg.cs.amer@meas-spec.com

EUROPE

MEAS France SAS
a TE Connectivity Company
26 Rue des Dames
F78340 Les Clayes-sous-Bois
France
Tel: +33 (0) 130 79 33 00
Fax: +33(0) 134 81 03 59
Sales: pfg.cs.emea@meas-spec.com

ASIA

Measurement Specialties (China), Ltd.,
a TE Connectivity Company
No. 26 Langshan Road
Shenzhen High-Tech Park (North)
Nanshan District, Shenzhen 518057
China
Tel: +86 755 3330 5088
Fax: +86 755 3330 5099
Sales: pfg.cs.asia@meas-spec.com

TE.com/sensorsolutions