

## 34200B

### SPECIFICATIONS

- Precision Aligned  $\pm 10$  g to  $\pm 70$  g
- Triaxial Accelerometer
- Superior Zero g Bias Stability

### Precisely Measure Real -World Accelerations

Measurement Specialties' 34200B accelerometer has each mutually or-thogonal axis precisely aligned within 0.5 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 calibration certificate to compensate for any small residual error.

Choose the bandwidth and range options best suited for your application to measure  $\pm 10$  g,  $\pm 15$  g,  $\pm 20$  g,  $\pm 25$  g,  $\pm 30$  g,  $\pm 35$  g,  $\pm 40$  g,  $\pm 50$  g, or  $\pm 70$  g accelerations on each of three axes.

Each axial sensor has been tested over the -40 to +85°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. Precise values for each axis are available on the included calibration certificate.

### FEATURES AND BENEFITS

#### Precision Alignment

Each axis of the Measurement Specialties 34200B 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 34200B 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.

#### Calibration Certificate

Each 34200B 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. The alignment data can be used to compensate the measured values to achieve an even higher level of sensor accuracy.



**Self-Test on Digital Command**

A TTL-compatible self-test low 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 a 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 34200B is robust and can be used in harsh environments. The unit will survive 4000 g powered or unpowered.

**Warranty**

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

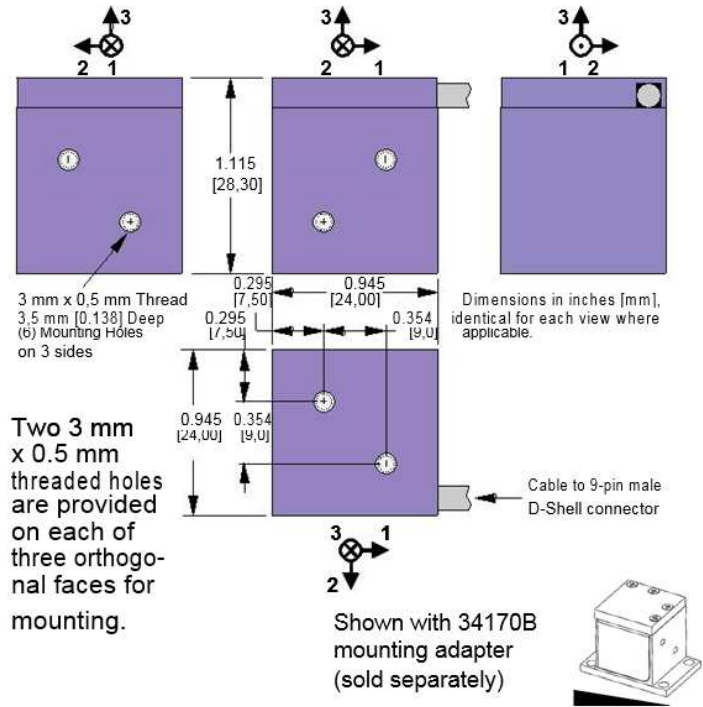
**SPECIFICATIONS FOR 34200B** - *improved specifications available upon request*

Ta = Tmin to Tmax;  $8.5 \leq V_s \leq 36$  V; Acceleration = 0 g unless otherwise noted; within one year of calibration.

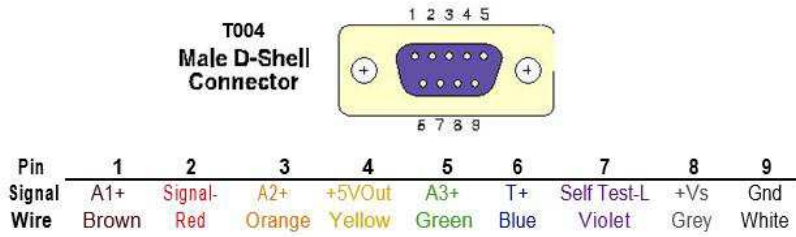
Parameter	Min	Typical	Max	Units	Conditions/Notes
<b>Range</b>					
Measurement Full Scale	±10		±70	g	On each axis. Must specify via Option Rnnn
<b>Sensitivity</b>					
At 25°C, Option R050		40 <sup>†</sup>		mV/g	Precise values on cal certificate
Drift T <sub>min</sub> to T <sub>max</sub>		±0.5		%	Percent of sensitivity at 25°C
<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>		±60		mg	At 1.25°C/min temperature rate of change
<b>Alignment</b>					Precise values on cal certificate
Deviation from Ideal Axes		±0.2	±0.5	degrees	Can be compensated if required
<b>Transverse Sensitivity</b>		±0.25		%	Inherent sensor error, excluding misalignment
<b>Nonlinearity</b>		0.2	2	% FSR	Best fit straight line
<b>Frequency Response</b>	0		400 <sup>††</sup>	Hz	Upper cutoff per Option Bnnn, -3 dB pt ±10%
<b>Noise Density</b>					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	
<b>Self-Test Input Impedance</b>	10			kΩ	Pullup. Logic "1" ≥ 3.5 V, Logic "0" ≤ 1.5 V
<b>Temperature Sensor</b>					Accuracy ±1°C
Sensitivity		6.45		mV/°C	
0°C Bias Level		509		mV	
<b>Outputs</b>					
Output Voltage Swing	0.50		4.50	V	I <sub>out</sub> = ±0.5 mA
Capacitive Drive Capability	1000			pF	
<b>Power Supply (Vs)</b>					
Input Voltage Limits	-20		+38	V	-20 V continuous
Input Voltage - Operating	+8.5		+36	V	
Input Current		15	20	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>	-4000		+4000	g	Any axis for 0.5 ms, powered or unpowered

<sup>†</sup> Scale linearly with range option Rnnn <sup>††</sup> Per Option Bnnn; See Ordering Information

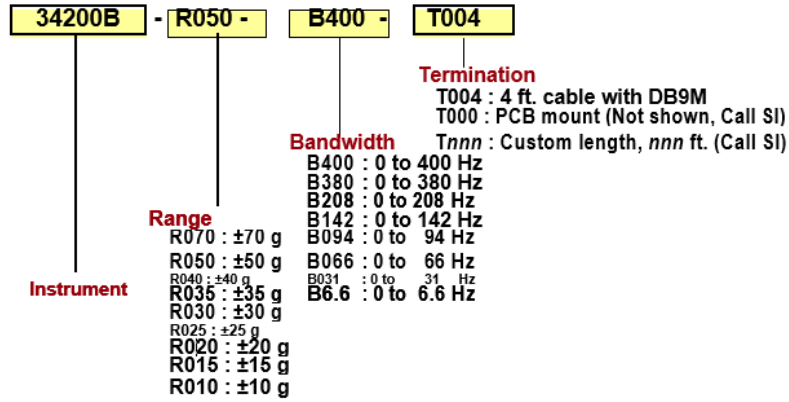
MECHANICAL



CONNECTIONS



ORDERING INFORMATION



**NORTH AMERICA**

Measurement Specialties, Inc.,  
 a TE Connectivity Company  
 2236 N. Cleveland-Massillon 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**

Measurement Specialties, Inc., a TE Connectivity company.

Measurement Specialties, TE Connectivity, TE Connectivity (logo) and EVERY CONNECTION COUNTS are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2015 TE Connectivity Ltd. family of companies All Rights Reserved.