



13208A 23208A

Uniaxial Biaxial

SPECIFICATIONS

- ◆ ± 250 g, ± 500 g
Accelerometers With Wide Bandwidth to 10 kHz

This Measurement Specialties product is subject to U.S. Export Law.

Simplify Acceleration and Temperature Measurements

The Measurement Specialties 13208A and 23208A accelerometers include a temperature sensor in their small, rugged package. The small size and built-in power regulation allow the 13208A and 23208A to fit where other accelerometers can't. Choose the bandwidth and range options best suited for your application to measure ± 250 g or ± 500 g accelerations on one or two axes.

The high repeatability of the built-in temperature sensor allows precise compensation of temperature effects. Alignment data provided on the included calibration certificate can be used to manually correct transverse sensitivity and alignment errors, or when extra precision is required, Option C002, offset compensation is available

Tested over the -40 to $+85^{\circ}\text{C}$ temperature range, the accelerometers have a nominal full scale output swing of ± 2 volts. The zero g output level is nominally +2.5 volts. Precise values are available on the included calibration certificate. Custom versions of the 13208A and 23208A can be provided for applications which require different range and/or bandwidth.

FEATURES AND BENEFITS

High Accuracy and Linearity over Wide Temperature Range

The voltage output for each axis of the 13208A and 23208A is directly proportional to the acceleration along that axis. Each DC-coupled output is fully scaled, referenced, and temperature compensated. 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 13208A and 23208A 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 the sensor(s) to verify channel integrity.

Small Size

Complete conditioned uniaxial or biaxial 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 acceleration and temperature. Reverse power voltages of up to -80 V can be withstood indefinitely. Transients of +80 V for 550 ms compatible with MIL-STD-704A can be withstood with full operation.

Easy Installation

Built-in terminal block or cable with 9-pin connector makes it easy to wire. Two through-holes and four tapped holes simplify mounting.

Suitable for Harsh Environments

The 13208A and 23208A are robust and can be used in harsh environments. The units will survive 4000 g powered or unpowered.

Warranty

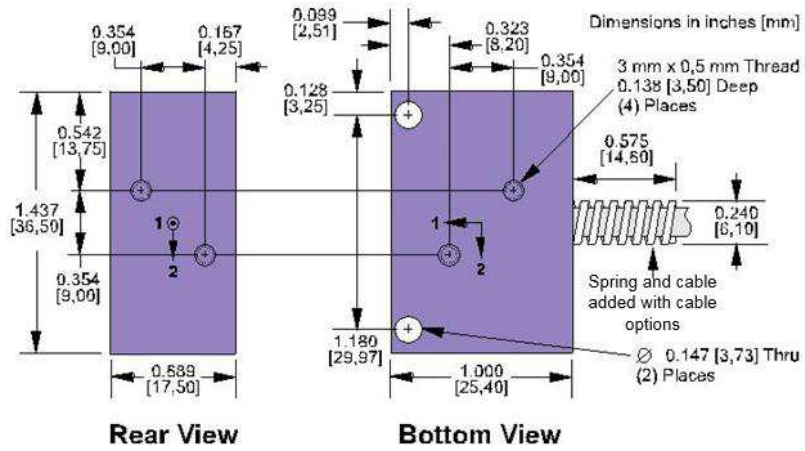
These Measurement Specialties accelerometers come with a three-year factory warranty

SPECIFICATIONS FOR 13208A AND 23208A *-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.

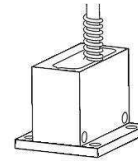
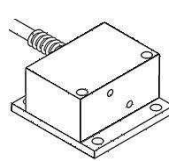
| Parameter | Min | Typical | Max | Units | Conditions/Notes |
|--|-------|-------------|-------|--------|---|
| Accelerometers Full Scale Range | | | | | On each axis, specify with Option Rnnn |
| Option R250 | | ±250 | | g | |
| Option R500 | | ±500 | | g | |
| Sensitivity At 25°C | | | | | |
| Option R250 | | 8.0 | | mV/g | Nominal |
| Option R500 | | 4.0 | | mV/g | Nominal |
| Drift Tmin to Tmax | | ±1 (TBD) | | % | Percent of sensitivity at 25°C |
| Zero g Bias Level | | | | | |
| At 25°C | | 2.50 ±0.010 | | V | Precise values on cal certificate |
| Drift Tmin to Tmax, Option C001 | | ±2.5 | | g | At 1.25°C/min temperature rate of change |
| Drift Tmin to Tmax, Option C002 | | ±500 | | mg | At 1.25°C/min temperature rate of change |
| Alignment | | | | | Precise values on cal certificate |
| Deviation from Ideal Axes | | ±1.0 | ±3.0 | degree | 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 | | 10 | kHz | Upper cutoff per Option Bnnn, -3 dB pt ±10% |
| Noise Density | | 2.8 | | mg/√Hz | 10 Hz to 400 Hz |
| Self-Test Input Impedance | 10 | | | kΩ | Pullup. Logic "1"≥3.5V, Logic "0"≤1.5V |
| Temperature Sensor | | | | | Accuracy ±1°C |
| Sensitivity | | 6.45 | | mV/°C | |
| 0°C Bias Level | | 509 | | mV | |
| Outputs | | | | | |
| Output Voltage Swing | 0.50 | | 4.50 | V | I _{out} = ±0.5 mA |
| Capacitive Drive Capability | 1000 | | | pF | |
| Power Supply (Vs) | | | | | |
| Input Voltage Limits | -80 | | +80 | V | -80V continuous, >38 V if ≤550 ms, duty <1% |
| Input Voltage - Operating | +8.5 | | +36 | V | Continuous |
| Input Current | | 15 | 20 | mA | No load, quiescent |
| Rejection Ratio | | >120 | | dB | DC |
| Temperature Range (Ta) | -40 | | +85 | °C | |
| Mass | | 35 | | grams | Precise values on cal certificate |
| Shock Survival | -4000 | | +4000 | g | Any axis for 0.5ms, powered or unpowered |

MECHANICAL



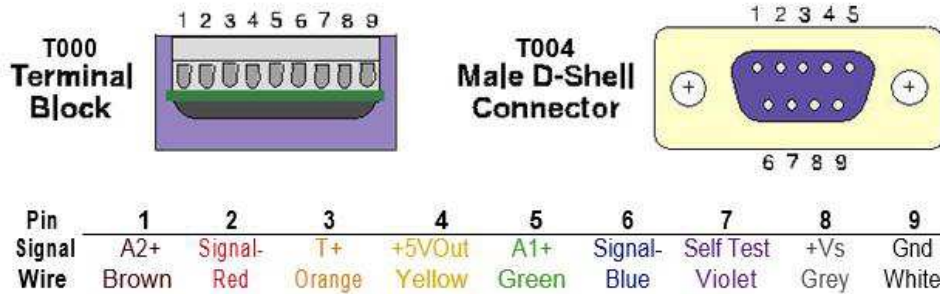
Two through holes and four 3 mm x 0.5 mm threaded holes are provided for mounting

Mounting adapters
 (sold separately)

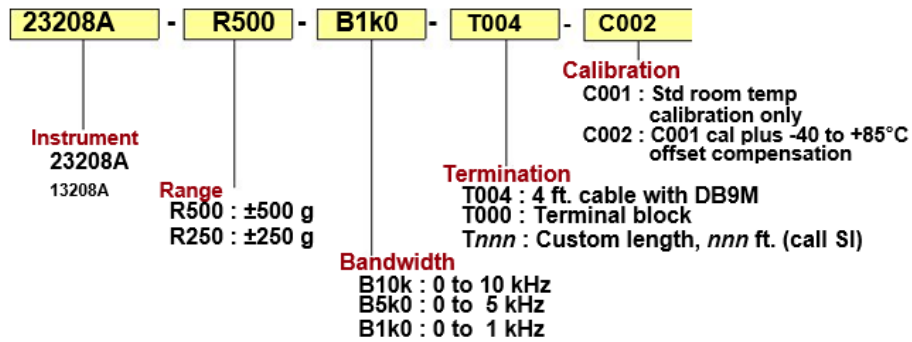


35173A Horizontal 35172A Vertical

CONNECTIONS



ORDERING INFORMATION



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