

13207A/23207A Accelerometer

±10 g to ±70 g
Accelerometers with
Wide Bandwidth to 10 kHz

Analog Accelerometer

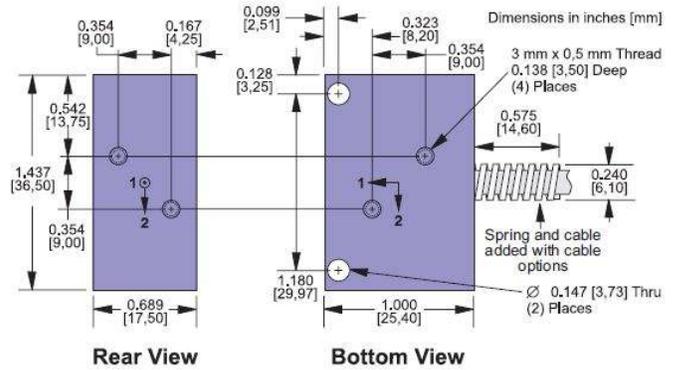
The Measurement Specialties 13207A (uniaxial) and 23207A (biaxial) analog accelerometers offer a frequency response from 0 to 10 kHz while accurately measuring ±10g, ±20g, ±30g, ±40g, ±50g, ±60g or ±70g accelerations on one or two axes. Their tough, compact housing holds potted electronics and their small size and built-in power regulation allow installation where other accelerometers can't. Choose the bandwidth and range options best suited for your application.

The voltage output of the 13207A and 23207A 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, as well as the on-axis and transverse alignment parameters needed to ensure rapid and efficient system implementation. Increased offset compensation can be obtained with Option C002.

The accelerometers have a nominal full scale output swing of ±2 Volts. The zero g output level is nominally +2.5 Volts. Custom versions can be provided.



dimensions



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

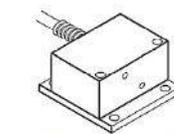
FEATURES

- Wide Bandwidth to 10 kHz
- High Accuracy and Linearity over Wide Temperature Range
- Rugged for Harsh Environments
- Small Size
- Built-in Power Supply Regulation
- Easy Installation
- Three Year Warranty

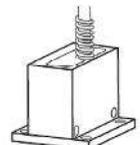
APPLICATIONS

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

Mounting adapters (sold separately)

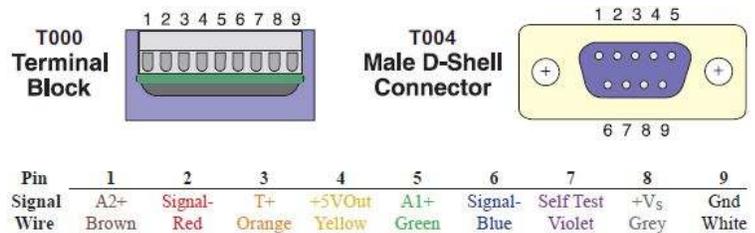


35173A Horizontal



35172A Vertical

connections



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13207A/23207A Accelerometer

performance specifications

$T_A = T_{min}$ to T_{max} ; $8.5 \leq V_S \leq 36$ 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 25°C, Option R070 | | ±29* | | mV/g | Precise values on cal certificate |
| Drift Tmin to Tmax | | ±0.5 | | % | Percent of sensitivity at 25°C |
| Zero g Bias Level | | | | | |
| At 25 °C | | 2.500 | | V | Precise values on cal certificate |
| Drift to Tmin or Tmax, Option C001 | | ±1.5 | | g | At <1.25°C/min. temperature rate of change |
| Drift to Tmin or Tmax, Option C002 | | ±250 | | mg | At <1.25°C/min. temperature rate of change |
| Alignment | | | | | |
| Deviation from Ideal Axes | | ±1.0 | ±3.0 | degrees | Precise values on cal certificate. Can be compensated if required |
| Transverse Sensitivity | | ±0.25 | | % | Inherent sensor error, excluding misalignment |
| Nonlinearity | | ±0.25 | | % FSR | Best fit straight line |
| Frequency Response | 0 | | 10 | kHz | Upper cutoff per option Bnnn, -3 dB pt ±10% |
| Noise Density | | 4 | | mg/√Hz | |
| Self-Test Input Impedance | 10 | | | kΩ | Pullup. Logic "1" ≥3.5 V, Logic "0" ≤1.5 V; "0" causes self-test |
| Temperature Sensor | | | | | |
| Sensitivity | | 6.45 | | mV/°C | Accuracy ±1 °C over temperature |
| 0°C Bias Level | | 509 | | mV | |
| Outputs | | | | | |
| Output Voltage Swing | 0.25 | | 4.75 | V | $I_{out} = \pm 0.5$ mA |
| Capacitive Drive Capability | 1000 | | | pF | |
| Power Supply (Vs) | | | | | |
| Input Voltage Limits | -80 | | +80 | V | -80 V continuous, >38 V if ≤550 ms, duty <1% |
| Input Voltage - Operating | +8.5 | | +36 | V | Continuous |
| Input Current | | 15 | | mA | No load, quiescent |
| Rejection Ratio | | >120 | | dB | DC |
| Temperature Range (TA) | -40 | | +85 | °C | |
| Mass | | 35 | | grams | Excludes cable; T000 values on cal certificate |
| Shock Survival | -4000 | | +4000 | g | Any axis for 0.5 ms, powered or unpowered |

*Scale linearly with range option Rnnn; see Ordering Information

ordering info

23207A - R070 - B1k0 - T004 - C002

Instrument
23207A
13207A

Range
R070 : ±70 g
R060 : ±60 g
R050 : ±50 g
R040 : ±40 g
R030 : ±30 g
R020 : ±20 g
R010 : ±10 g

Bandwidth
B10k : 0 to 10 kHz
B5k0 : 0 to 5 kHz
B1k0 : 0 to 1 kHz

Termination
T004 : 4 ft. cable with DB9M
T000 : Terminal block
Tnnn : Custom length, nnn ft. (call SI)

Calibration
C001 : Std room temp calibration only
C002 : C001 cal plus -40 to +85°C offset compensation

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