# 34201A Accelerometer

深圳市亿为测控电子有限公司
Shenzhen Bill-Well Measurement & Control Electronics Co., Ltd.

## Precision Aligned
## ±1 g to ±2 g
## Zero g Bias Stability ±2 mg
## Very Low Noise 110 µg/√Hz


### Triaxial Analog Accelerometers

The Measurement Specialties 34201A triaxial accelerometer offers precision measurements over the entire -40 to +85°C temperature range with superior bias stability and approximately 100 µg measurement resolution. Each axis is precisely aligned within 0.15 degree of the theoretical ideal to minimize errors due to misalignment or transverse sensitivity.

A tough, compact housing holds potted electronics and the small size and built-in power regulation allow the 34201A to fit where other accelerometers can't. Choose from range options of ±2, ±1.5, or ±1 g and various bandwidth options to best suit your application.

The voltage output of the 34201A 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 Volts. The zero g output level is nominally +2.5 Volts. Custom versions of the 34201A can be provided.

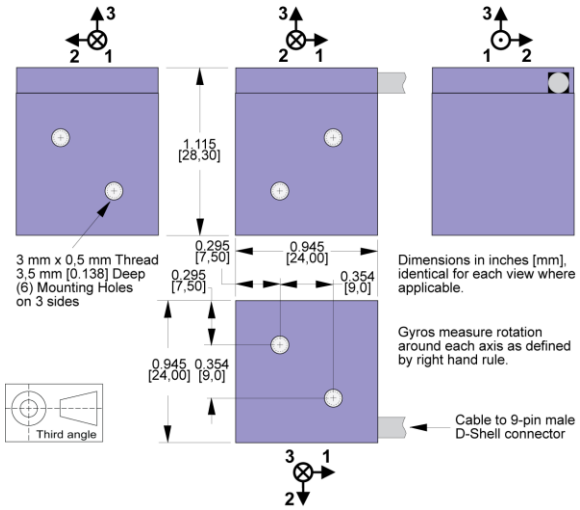
## FEATURES

- Low Noise
- Superior Zero g Bias Stability
- Precision Alignment
- High Accuracy and Linearity over Wide Temperature Range
- Rugged for Harsh Environments
- NIST Traceable Calibration
- Small Size

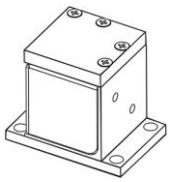
## APPLICATIONS

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

## dimensions

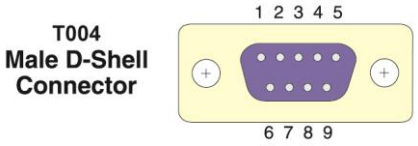



Two 3 mm x 0.5 mm threaded holes are provided on each of three orthogonal faces for mounting



Shown with mounting adapter 34170B (sold separately)

## connections




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

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## Performance Specifications

$T_A = T_{min}$ to $T_{max}$ ; $8.5 \le V_S \le 36$ 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 | | ±2.0 | | g | On each axis. Must specify via Option Rnnn |
| **Sensitivity** | | | | | |
| At 25ºC, Option R002 | | 1000* | | mV/g | Precise values on cal certificate |
| Drift Tmin to Tmax | | ±0.3 | | % | Percent of sensitivity at 25ºC |
| **Zero g Bias Level** | | | | | |
| At 25 ºC | | 2.5 | | V | Precise values on cal certificate |
| Drift to Tmin or Tmax | | ±2 | ±6 | mg | At 1.25ºC/min. temperature rate of change |
| **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 | ±1.25 | % FSR | Best fit straight line |
| **Frequency Response** | 0 | | 2100 | Hz | Upper cutoff per option Bnnn, -3 dB pt ±10% |
| **Noise Density** | | 110 | | µg/√Hz | |
| **Self-Test Input Impedance** | 5 | | | kΩ | Pullup. Logic “1” ≥ 3.5 V, Logic “0” ≤ 1.5 V |
| **Temperature Sensor** | | | | | Accuracy ±1 ºC |
| Sensitivity | | 6.45 | | mV/ºC | |
| 0ºC Bias Level | | 509 | | mV | |
| **Outputs** | | | | | Series 100Ω for capacitance tolerance |
| Output Voltage Swing: R001, R1.5 | 0.05 | | 4.95 | V | >1 MΩ load |
| Output Voltage Swing: R002 | 0.55 | | 4.8 | V | >1 MΩ load; limits typically reach 0.2 V to 4.95 V |
| **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 | ºC | |
| **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

## ordering info