



AEROSPACE

Q-Flex® QA1400 Accelerometer

Cost-effective
inertial-grade
sensor



QA1400 Accelerometer

For the most cost-effective inertial-navigation grade solution, Honeywell produces the QA1400 for a variety of industrial and laboratory applications.

As with the entire Q-Flex family of accelerometers, the QA1400 features a patented Q-Flex® etched-quartz-flexure seismic system. An amorphous quartz proof-mass structure provides excellent bias, scale factor, and axis alignment stability.

The integral electronics develops an acceleration-proportional output current providing both static and dynamic acceleration measurement. By use of a customer supplied output load resistor, appropriately scaled for the acceleration range of the application, the output current can be converted into a voltage.

The QA1400 also includes a current-output, internal temperature sensor. By applying temperature-compensating algorithms, bias, scale factor, and axis misalignment performance are dramatically improved. Implementation of the thermal modeling results in bias residual errors as low as $\pm 200 \mu\text{g}$ and scale factor errors as low as $\pm 400 \text{ ppm}$.

For additional details, please contact Honeywell, Inertial Sensor Products Redmond.

Features

- Excellent turn-on repeatability and stability performance
- Environmentally rugged
- Analog output
- Field-adjustable range
- Three fastener precision mounting flange
- Internal temperature sensor for thermal compensation
- Dual built-in test

Specifications

Performance

- Input range $\pm 60 \text{ g}$
- Bias $< 10 \text{ mg}$
 - One-year repeatability $< 1000 \mu\text{g}$
- Scale factor $1.33 \text{ mA/g} \pm 10\%$
 - One-year repeatability $< 1000 \text{ ppm}$
- Axis misalignment $< 2.8 \text{ mrad}$
 - One-year repeatability $< 200 \mu\text{rad}$
- Vibration Rectification $50 - 500 \text{ Hz}$ $< 60 \mu\text{g}/(\text{grms})^2$
- Resolution / Threshold $< 1 \mu\text{g}$
- Bandwidth $> 300 \text{ Hz}$

Environmental

- Operating temperature range $-55 \text{ to } +95^\circ\text{C}$
- Shock 250 g
- Vibration $20 \text{ g peak sine, } 20\text{-}2000 \text{ Hz}$

Electrical

- Input voltage $\pm 13 \text{ to } \pm 18 \text{ VDC}$
- Quiescent current $< 16 \text{ mA per supply}$
- Quiescent power $< 480 \text{ mW @ } \pm 15 \text{ VDC}$

Physical

- Weight 71 grams
- Size $1.0 \text{ in. dia. X } 0.96 \text{ in. high}$
- Case material Stainless steel

Additional product specifications, outline drawings and block diagrams, and test data are available on request.

ISO-9001 Certification Since 1995

For more information, please call **888-206-1667** or FAX **425-883-2104**. Visit our website at www.inertialsensor.com
Specifications are subject to change without notice.

Honeywell