

## Q-Flex® QA-3000 Accelerometer

*Highest inertial navigation-grade performance*

For the highest inertial navigation-grade performance available in today's market, Honeywell produces the Q-Flex® QA3000. Built on the same production line as the industry-standard QA2000 Accelerometer, the QA3000 Accelerometer has the same inherent quality, reliability, and long-term performance characteristics of the QA2000 Accelerometer. Primary applications include spacecraft navigation and control systems.

As with the entire Q-Flex family of accelerometers, the QA3000 features a patented Q-Flex etched-quartz-flexure seismic system. An amorphous quartz proofmass 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.

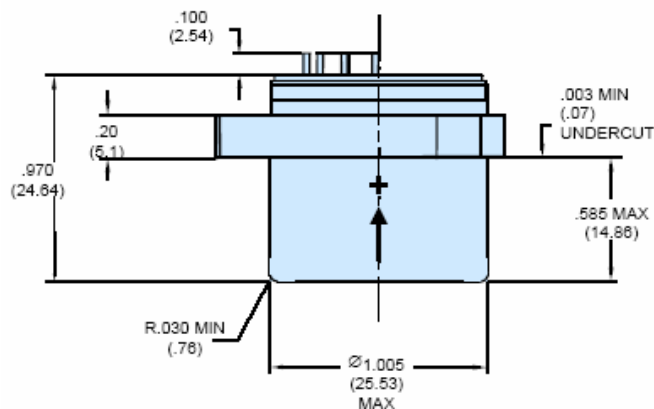
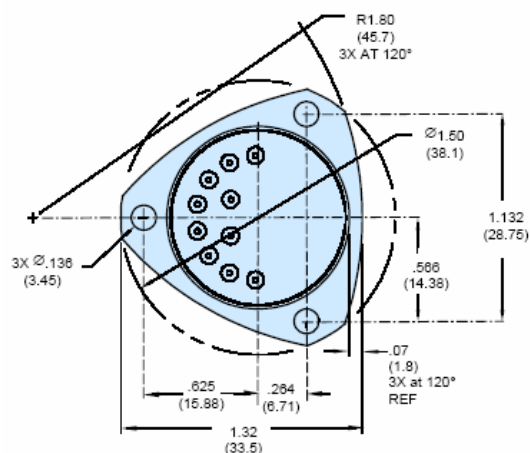


The QA3000 also includes a current-output, internal temperature sensor. By applying temperature-compensating algorithms, bias, scale factor, and axis misalignment performance are dramatically improved.

### Features

- Highest performance accelerometer available
- 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

### Configuration Drawings



## Performance Characteristics

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

Performance	QA3000-030	QA3000-020	QA3000-010
Input Range [g]	±60	±60	±60
Bias [mg]	<4	<4	<4
One-year Composite repeatability [µg]	<40	<80	<125
Temperature Sensitivity [µg/°C]	<15	<15	<25
Scale Factor [mA/g]	1.20 to 1.46	1.20 to 1.46	1.20 to 1.46
One-year Composite Repeatability [ppm]	<80	<160	<250
Temperature Sensitivity [ppm/°C]	<120	<120	<120
Axis Misalignment [µrad]	<1000	<1000	<1500
One-year Composite Repeatability [µrad]	<70	<80	<100
Vibration Rectification [µg/g <sup>2</sup> rms]	<10 (50-500 Hz) <35 (500-2000 Hz)	<15 (50-500 Hz) <40 (500-2000 Hz)	<20 (50-500 Hz) <50 (500-2000 Hz)
Intrinsic Noise [µg-rms]	<7 (0-10 Hz) <70 (10-500 Hz) <1500 (500-10,000 Hz)	<7 (0-10 Hz) <70 (10-500 Hz) <1500 (500-10,000 Hz)	<7 (0-10 Hz) <70 (10-500 Hz) <1500 (500-10,000 Hz)
Environment	QA3000-030	QA3000-020	QA3000-010
Operating Temperature Range [°C]	-28 to +78	-55 to +95	-55 to +95
Shock [g]	100	150	150
Vibration Peak Sine [g]	15 @ 20-2000 Hz	15 @ 20-2000 Hz	15 @ 20-2000 Hz
Resolution/Threshold [µg]	<1	<1	<1
Bandwidth [Hz]	>300	>300	>300
Thermal Modeling	QA3000-030	QA3000-020	QA3000-010
	YES	YES	YES
Electrical	QA3000-030	QA3000-020	QA3000-010
Quiescent Current per Supply [mA]	<16	<16	<16
Quiescent Power [mW] @ ±15 VDC	<480	<480	<480
Electrical Interface	Temp Sensor	Temp Sensor	Temp Sensor
	Voltage Self Test	Voltage Self Test	Voltage Self Test
	Current Self Test	Current Self Test	Current Self Test
	Power / Signal Ground	Power / Signal Ground	Power / Signal Ground
	-10 VDC Output +10 VDC Output	-10 VDC Output +10 VDC Output	-10 VDC Output +10 VDC Output
Input Voltage [VDC]	±13 to ±28	±13 to ±28	±13 to ±28
Physical	QA3000-030	QA3000-020	QA3000-010
Weight [grams]	71± 4	71± 4	71± 4
Diameter below mounting surface [inches]	Ø1.005 Max	Ø1.005 Max	Ø1.005 Max
Height - bottom to mounting surface [inches]	.585 Max	.585 Max	.585 Max
Case Material	300 Series Stainless Steel	300 Series Stainless Steel	300 Series Stainless Steel

### Find out more:

[www.inertialsensor.com](http://www.inertialsensor.com)

### Defense & Space Redmond

Honeywell International, Inc.  
MAIL ADDRESS: P.O. Box 97001  
15001 N.E. 36<sup>th</sup> Street  
Redmond, Washington 98073-9701  
PHONE: 888 206 1667  
FAX: 425 883 2104  
[www.honeywell.com](http://www.honeywell.com)

EXP029, May 2006  
Copyright © 2004, Honeywell  
International Inc. All Rights  
Reserved. Printed in USA

## ISO-9001 Certification Since 1995

DISCLAIMER: Specifications are subject to change without notice. Honeywell reserves the right to make changes to any product or technology herein to improve reliability, function, or design. Honeywell does not assume any liability arising out of the application or use of the product.

Accelerometers exported from the United States must be done in accordance with the Export Administration Regulations (EAR) and/or the International Traffic in Arms Regulations (ITAR) as applicable.

