

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.

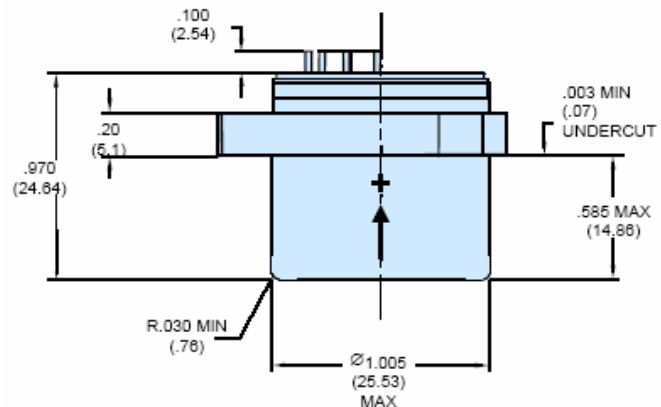
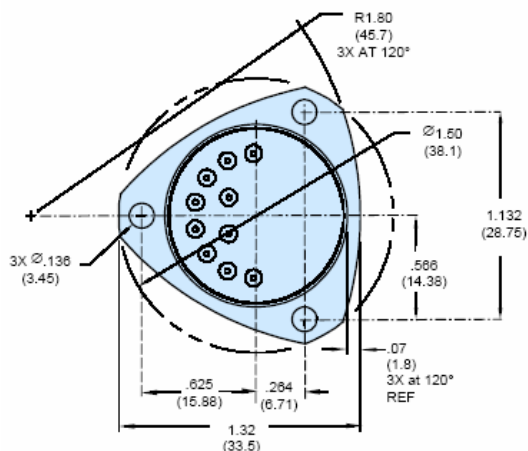


The QA3000 also includes a current-output, internal temperature sensor. By applying temperature-compensating algorithms, bias, scale factor, and axis misalignment performance are dramatically improved.

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 ² rms]	<10 (50-500 Hz)	<15 (50-500 Hz)	<20 (50-500 Hz)
	<35 (500-2000 Hz)	<40 (500-2000 Hz)	<50 (500-2000 Hz)
Intrinsic Noise [μg-rms]	<7 (0-10 Hz)	<7 (0-10 Hz)	<7 (0-10 Hz)
	<70 (10-500 Hz)	<70 (10-500 Hz)	<70 (10-500 Hz)
	<1500 (500-10,000 Hz)	<1500 (500-10,000 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

Defense & Space Redmond

Honeywell International, Inc.
 MAIL ADDRESS: P.O. Box 97001
 15001 N.E. 36th Street
 Redmond, Washington 98073-9701
 PHONE: 888 206 1667
 FAX: 425 883 2104
www.honeywell.com

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