Energy Accelerometers

Honeywell

Precision Accelerometers for Energy Exploration

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High Temperature Accelerometers Based On Q-Flex® Technology

Honeywell produces the QAT (160C and 185C versions) and the MiniQ (150C, 185C and 200C) high temperature accelerometers for down hole measurement-while-drilling and wireline applications. These accelerometers utilize Honeywell's Q-FLEX® design, the industry standard in Aerospace, ruggedized for high temperature use.

As with the entire Q-Flex accelerometer family, the QAT and MiniQ accelerometers feature 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 Q-Flex electronics develop an acceleration-proportional output current providing both static and dynamic acceleration measurements. 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.

Honeywell's energy accelerometers also include a current-output internal temperature sensor. By applying temperature compensating algorithms, bias, scale factor, and axis misalignment performance are dramatically improved.

Robust design and quality assurance provides superior reliability.

Honeywell Accelerometers Provide

- Industry leading accelerometer performance at a competitive price

Honeywell Accelerometer Benefits

- Unparalleled domain knowledge
- Demonstrated reliability and robustness

Find out more

For more information about Honeywell's Inertial Sensors, please visit **aerospace.honeywell.com/accelerometers** or contact us at **InertialSensors@honeywell.com**.

QAT 160

QAT 185

Mini Q

Key Features:

- High temperature capability
- Environmentally rugged
- Analog output
- Square or round mounting flange options (QAT160/185 only)
- Field-adjustable range
- Internal temperature sensor for thermal compensation
- Low power electronics
- Built-in test

Performance Characteristics		
Performance	**QAT**	**Mini Q**
Input Range	±20 g	±20 g
Bias	<20 mg	<15 mg
Residual Modeling Error	<450 µg	<600 µg
Scale Factor	2.75 mA/g ± 1.8%	1.3 mA/g
Residual Modeling Error	<450 ppm	<400 ppm
Axis Misalignment	<3 mrad	<6.5 mrad
One-year Repeatability	<400 µrad	
Vibration Rectification (50-500 Hz)	<±100 µg/g²	
Threshold and Resolution	<5 µg	1 µg
Bandwidth	<200 Hz	
Environmental		
Vibration, Operating & Survival		
Sine Vibration	30g peak,50 to 800Hz	
Random Vibration	20 grms	30 grms
Shock		
Operating	1000 g	1000 g
Survival (-40 to 70°)	2000 g	2000 g
Electrical		
Input Voltage	± 12.5 to ± 15.5 VDC	± 12 to ± 18 VDC
Quiescent Current	6 mA per supply	
Quiescent Power	180m Watts	
Physical		
Weight	55 grams	<25 grams
Size	1.0 in. dia. x 0.73 in. high	0.79 in. dia. x 0.57 in. high

Performance by Model	QAT 160	QAT 185	Mini Q
RSS Bias & Scale Factor – One-year Repeatability	1 mg	1.5 mg	1.8 mg
Operating Temperatures	0 to 160°C	-40 to 185°C	0 to 150°C 0 to 185°C 0 to 200°C
Survival Temperatures	175°C intermittent	200°C intermittent	-40°C to 215°C

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

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

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