



ENERGY **ACCELEROMETERS**

Precision Accelerometers for Energy Exploration

Honeywell

PRECISION ACCELEROMETERS FOR ENERGY EXPLORATION

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 measurement-while-drilling and wireline applications. These accelerometers utilize Honeywell's Q-Flex design, the industry standard in Aerospace, ruggedized for high temperature and specifically customized for the demands of oil and gas applications.

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 provide superior reliability. Often imitated, never duplicated, the QAT and MiniQ are time and time again the accelerometers of choice for the demanding oil and gas applications.

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

HONEYWELL ACCELEROMETERS PROVIDE:

- Industry-leading accelerometer performance at a competitive price.

HONEYWELL ACCELEROMETERS BENEFITS:

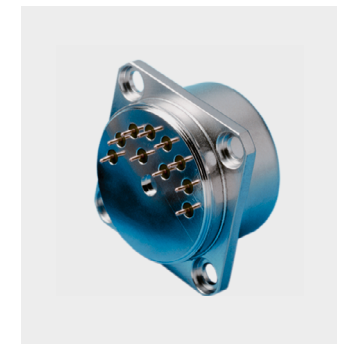
- Unparalleled domain knowledge
- Demonstrated reliability and robustness.

PERFORMANCE CHARACTERISTICS

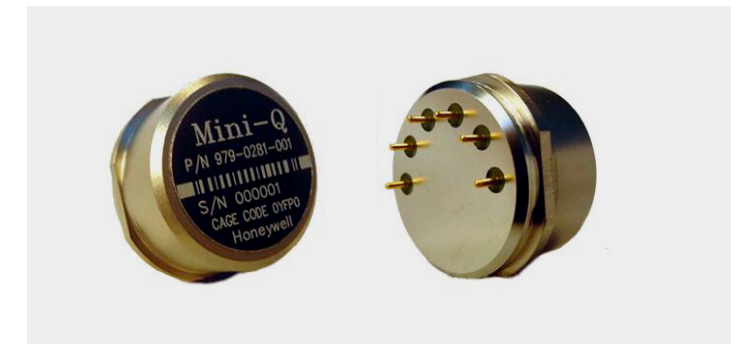
Performance	QAT	Mini Q
Input Range	±20 g	±20 g
Bias	<20 mg	<15 mg
Residual Modeling Error	<450 µg	<600 µg
Scale Factor	2.75 mA/g ± 1.8%	1.3 mA/g
Residual Modeling Error	<450 ppm	<400 ppm
Axis Misalignment	<3 mrad	<6.5 mrad
One-year Repeatability	<400 µrad	
Vibration Rectification	< ± 100 µg/ g ²	
Threshold and Resolution	<5 µg	<1 µg
Bandwidth	<200 Hz	
Environment	QAT	Mini Q
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	QAT	Mini Q
Input Voltage	± 12.5 to ± 15.5 VDC	± 12 to ± 18 VDC
Quiescent Current	6 mA per supply	
Quiescent Power	180m Watts	
Physical	QAT	Mini Q
Weight	55 grams	25 grams
Size	1.0 in. dia. x 0.73 in. high	0.79 in. dia. x 0.57 in. high



QAT 160



QAT 185



Mini Q

PERFORMANCE BY MODEL

RSS Bias and Scale Factor	QAT 160	QAT 185	MiniQ 150	MiniQ 185	MiniQ 200
One Year Repeatability	1mg	1.5 mg	1.8mg	1.8mg	1.8mg
Performance Temperature Ranges*	0 to 160C	-40 to 185 C	0 to 150C	0 to 185C	0 to 200 C
Survival Temperatures	-40 to 175 C	-40 to 200 C	-40 to 215 C	-40 to 215C	-40 to 215C

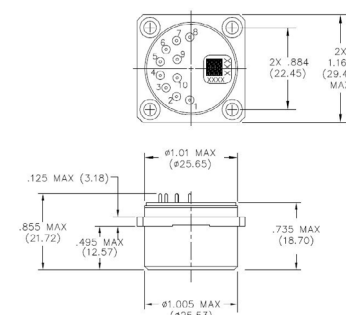
* Temperature range over which performance meets specification. Accelerometers can be operated over larger range (survival temperatures) but could have increased errors.

ACTIVE PART NUMBERS

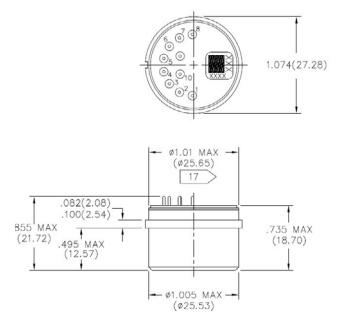
QAT 160	QAT 185	MiniQ 150	MiniQ 185	MiniQ 200
979-0273-OXY or 979-0275-OXY	979-0273-OXY or 979-0275-OXY			979-0281-150 standard g-range 979-0281-151 g-limited to +/-15g
X X = 0 - is standard g-range X = 2 - is g-range is < +/- 15g	X X = 0 - is standard g-range X = 2 - is g-range is < +/- 15g			979-0281-001 standard g-range 979-0281-021 g-limited to +/-15g
Y Y = 1 - Square Flange Y = 2 - Small Round Flange Y = 3 - Large Round Flange	Y Y = 1 - Square Flange Y = 2 - Small Round Flange Y = 3 - Large Round Flange			979-0286-001 standard g-range

Mini Q is only available in round flange package. Inquire about other part numbers or variants.

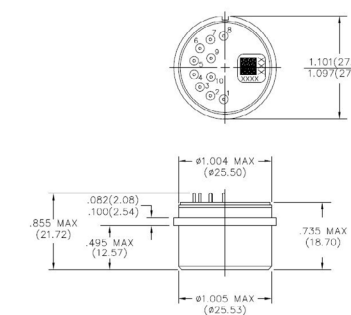
PRODUCT OUTLINES



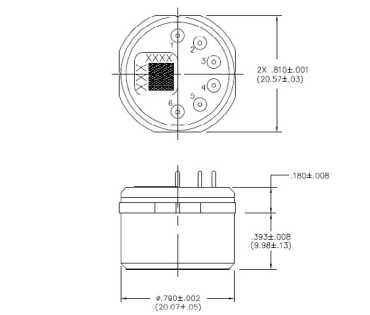
QAT Square Flange



QAT Small Round Flange



QAT Larger Round Flange



Mini Q

For more information

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

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**THE
FUTURE
IS
WHAT
WE
MAKE IT**

Honeywell