

# Q-FLEX QA-650 ACCELEROMETER

## I Economical sensor package

For Q-Flex technology in an economical package, Honeywell produces the QA-650 for industrial grade applications, including: automotive test instrumentation, braking system deceleration, bridge and building sway and tilt monitoring, industrial and robotic control, land vehicle navigation, subway and high-speed train ride comfort control and offshore drilling platform motion monitoring.

As with the entire Q-Flex family of accelerometers, the QA-650 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 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.



Q-Flex QA-650



**MORE THAN  
3M QUARTZ  
ACCELEROMETERS  
SHIPPED OVER THE  
PAST TWO DECADES**

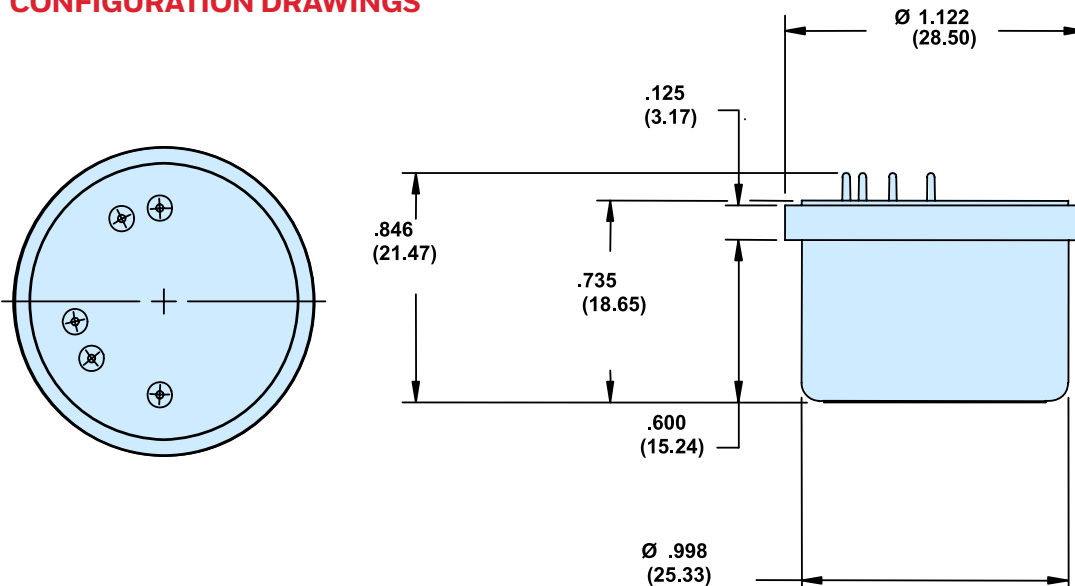
### FEATURES

- Tactical navigation grade performance
- High value
- Environmentally rugged
- Analog output
- Compact design
- Built-in test
- Field-adjustable range

### APPLICATIONS

- Automotive test instrumentation
- Autonomous vehicle testing
- Braking system deceleration
- Bridge and building sway and tilt monitoring
- Industrial and robotic control
- Land vehicle navigation
- Subway and train ride comfort control
- Offshore drilling platform motion monitoring

### CONFIGURATION DRAWINGS



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## PERFORMANCE CHARACTERISTICS

Performance	
Input Range	±30 g
Bias	<15 mg
One-year Composite Repeatability	<2500 µg
Temperature Sensitivity	<100 µg/°C
Scale Factor	1.20 to 1.40 mA/g
One-year Composite Repeatability	<2500 ppm
Temperature Sensitivity	<200 ppm/°C
Axis Misalignment	<15000 µrad
Vibration Rectification	<100 (50-500 Hz) µg/g <sup>2</sup> rms
Intrinsic Noise [°g-rms]	<3000 (0-10,000 Hz)
Environmental	
Operating Temperature Range	-55 to +96°C
Shock	100 g
Vibration Peak Sine	25 g @ 30-500 Hz
Resolution/Threshold	<10 µg
Bandwidth	>300 Hz
Thermal Modeling	Yes
Electrical	
Quiescent Current per Supply	<16 mA
Quiescent Power	<480 mW @ ±15 VDC
Input Voltage	±13 to ±18 VDC
Physical	
Weight	51 Nominal, 65 Max. grams
Diameter below mounting surface	Ø1.045 ±0.005 in.
Height - bottom to mounting surface	0.617 in. Max.
Case Material	300 Series Stainless Steel

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

### ISO-9001 CERTIFICATION SINCE 1995

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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.

### For More Information

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N61-2511-000-000 | 07/2020  
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THE  
FUTURE  
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WHAT  
WE  
MAKE IT

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