

Quartz Accelerometer AI-Q-560 Datasheet



General Description

The AI-Q-560 is built with InnaLabs® Quartz Flexure technology to deliver true navigational grade performance. With a low measurement range of $\pm 15g$ and excellent stability and long-term repeatability, the AI-Q-560 is an optimal solution for high-accuracy commercial Inertial Measurement Units and other demanding applications.

Principle of Operations

The AI-Q-560 features an internal temperature sensor that allows the user to carry out temperature calibration and compensation, enhancing the bias, scale factor and axis misalignment performance over temperature. State-of-the-art manufacturing processes enable InnaLabs® to offer AI-Q-560 accelerometers at competitive prices.



In addition to navigation applications, the AI-Q-560 can be used to calculate speed, distance and inclination in a wide range of applications, ranging from industrial control, test and measurement, transport, oil and gas and civil engineering.

How to Order

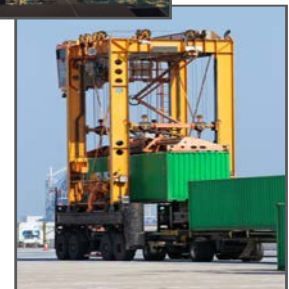
The AI-Q-560 is available to order from InnaLabs® worldwide network of Agents and distributors. InnaLabs® offers a range of accelerometers based on the same design and production processes from the AI-Q-21XX0 product family which includes AI-Q-2110, AI-Q-2120 and AI-Q-2130.

Features

- $<1mg$ and 600ppm (one-year repeatability)
- $\pm 15g$ Max Measurement Range
- Analogue current output
- Compact, rugged design
- High stability under temperature changes
- High reliability
- Internal temperature sensor
- Dual built-in self test
- No Export control required

Applications

- Land, Air and Sea Inertial Navigation Systems (INS)
- Inertial Measurement Units (IMUs)
- Attitude & Heading Reference Systems (AHRS)
- Orientation systems
- Pointing Systems
- Train & rail measurement systems
- Robotic systems control



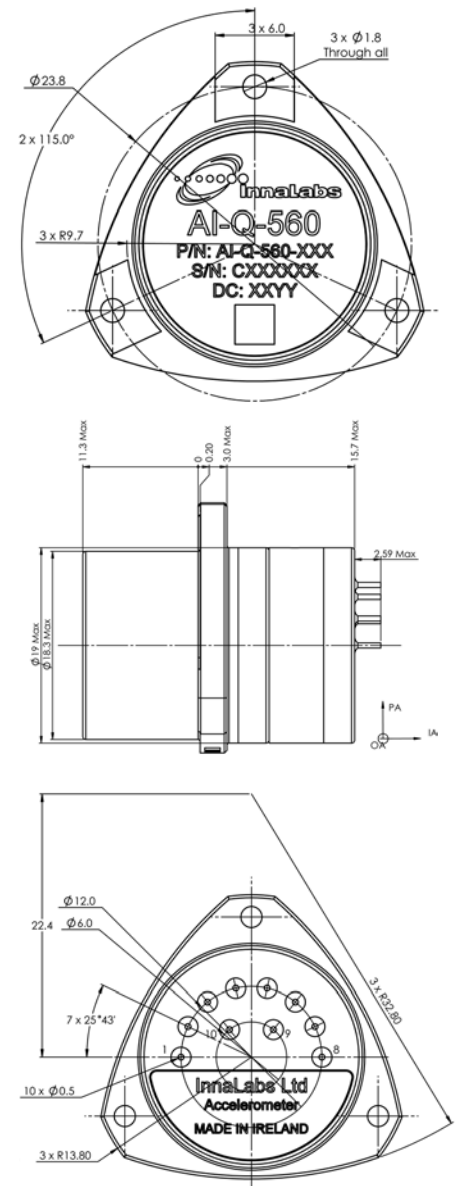
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Performance Parameters

Parameter	Value
Input Range	± 15 g
Bias	≤ 4 mg
One-Year Repeatability	≤ 1 mg
Temperature Sensitivity	≤ 50 $\mu\text{g}/^\circ\text{C}$
Scale Factor	0.65 to 0.85 mA/g
One-year Repeatability	≤ 600 ppm
Temperature Sensitivity	≤ 100 ppm/ $^\circ\text{C}$
Axis Misalignment	≤ 1.5 mrad
One-year Repeatability	≤ 100 μrad
Vibration Rectification	≤ 25 (50-200 Hz) $\mu\text{g}/\text{g}^2\text{RMS}$ ≤ 70 (10-500 Hz) $\mu\text{g}/\text{g}^2\text{RMS}$ $\leq 1,500$ (500-10 kHz) $\mu\text{g}/\text{g}^2\text{RMS}$
Intrinsic Noise	≤ 7 (0-10 Hz) μgRMS ≤ 70 (10-500 Hz) μgRMS $\leq 1,500$ (500-10,000 Hz) μgRMS
Environment	
Operating Temperature	-55°C to $+105^\circ\text{C}$
Shock (survival)	250 g
Vibration Peak Sine	15 g @ 20 to 2,000 Hz
Resolution/Threshold	≤ 1 μg
Bandwidth	> 300 Hz
Temperature	
Temperature Model	Yes
Electrical	
Quiescent Current per Supply	≤ 6 mA
Quiescent Power @ $\pm 15\text{V DC}$	≤ 180 mW
Electrical Interface	Temp Sensor Voltage Self Test Current Self Test Power/Signal Ground -10VDC Output +10VDC Output
Input Voltage	± 13 to ± 18 VDC
Physical	
Weight	31.5 ± 4 g
Diameter	$\varnothing 18.2$ Max mm
Height	11.3 Max mm

Dimensions



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