Quartz Accelerometer AI-Q-2071 Datasheet

InnaLabs®
www.innalabs.com

General Description

The InnaLabs® AI-Q-2071 navigation grade accelerometer is the leading ITAR-Free choice for high-performance, high accuracy inertial navigation systems. The proven quartz flexure technology inside InnaLabs®' accelerometers provides a very high input range and excellent long-term repeatability, which make the AI-Q-2071 an optimal solution for AHRS and strap-down INS in aerospace, marine and land applications.

Principle of Operations

The AI-Q-2071 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-2071 accelerometers at competitive prices.

In addition to navigation applications, the AI-Q-2071 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.
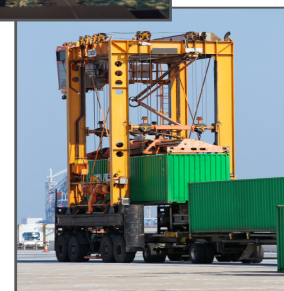
How to Order

AI-Q-2071 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, including the AI-Q-710, AI-Q-1410 and AI-Q-2000 series.

Features

- Navigation grade performance (<500µg, one-year bias compsite repetability)
- ±15g Max Measurement Range
- Environmentally rugged
- Analogue current output
- Compact, rugged design
- High thermal stability
- Internal temperature sensor for thermal compensation
- Dual built-in self test
- ITAR-Free, no export control

Applications

- Inertial Navigation Systems (INS)
- Inertial Measurement Units (IMUs)
- Attitude & Heading Reference Systems (AHRS)
- Commercial aircrafts
- Land & marine vehicles
- Inclinometers for industrial & drilling
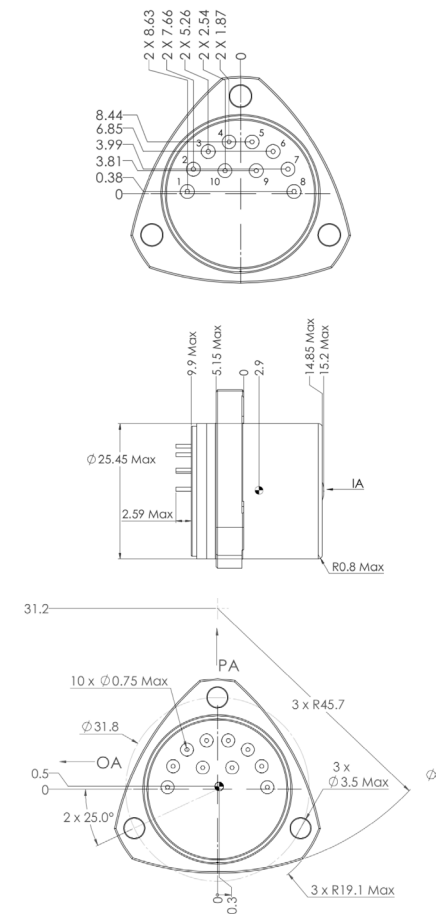- Train & rail measurement systems
- Robotic systems control

Specification

Parameter	Value
Input Range	±15 g
Bias	<4 mg
One-Year Composite Repeatability Temperature Sensitivity	<550 µg <30 µg/°C
Scale Factor	1.2 to 1.46 mA/g
One-year Composite Repeatability Temperature Sensitivity	<600 ppm <180 ppm/ °C
Axis Misalignment	<2,000 µrad
One-year Composite Repeatability	<100 µrad
Vibration Rectification	<40 (50-500 Hz) µg/g^{2}RMS <150 (500-2,000 Hz) µg/g^{2}RMS
Intrinsic Noise	<7 (0-10 Hz) µgRMS <70 (10-500 Hz) µgRMS <1,500 (500-10,000 HZ) µgRMS
Environment	
Operating Temperature	-55°C to +95°C
Shock	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	<16 mA
Quiescent Power @ ±15V DC	<480 mW
Electrical Interface	Temp Sensor Voltage Self Test Current Self Test Power/Signal Ground -10VDC Output +10VDC Output
Input Voltage	±13 to ±28 VDC
Physical	
Weight	71 ±4 g
Diameter below mounting surface	Ø 25.45 Max mm
Height - bottom to mounting surface	14.85 mm
Case Material	300 Series Stainless Steel

Dimensions

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QUALITY
ISO 9001:2015
NSAI Certified