

# Accelerometer FAQ



## What type of inertial sensors are manufactured by InnaLabs®?

InnaLabs® is a leading manufacturer of high-performance inertial sensors, including Tactical grade Coriolis Vibratory Gyroscopes and Navigation grade, Quartz Servo Accelerometers. InnaLabs® offers solutions for the Aerospace, Subsea, Marine, Space, Energy, Industrial, Civil Engineering, and Transportation markets.

## My performance requirements are very rigorous, which accelerometers would meet my needs?

Our AI-Q-2010 accelerometer offers navigation grade performance with excellent reliability and fast delivery.

## My performance requirements are below "Navigation standards" & my budget is limited, which accelerometers would match my needs?

The AI-Q-710 accelerometer offers performance between tactical and navigation grade at cost competitive prices.

## Which accelerometer is best for my application?

We can guide you in the choice of the correct accelerometer for your application. You can choose between the AI-Q-710, AI-Q-1410 and AI-Q-2010 depending on the desired measurement range, bias and scale factor composite repeatability and temperature sensitivity requirements. The AI-Q-710 has a smaller casing which is suitable for applications driven by volume constraints.

## What distinguishes your family of products, from your competitors?

Our products have been developed to meet the moderate to high performance requirements of our customers. They have low output errors, low intrinsic noise, and very high bias and scale factor repeatability. They are built in Europe, offer excellent low term stability and are ITAR free. Their performance is supported with exceptional delivery times and very competitive pricing.

## What load resistor should I use?

The external resistor used affects the maximum g-range measurable by the test system, due to voltage drop across both it and the internal coil resistance.

Where:

$$\text{Acceleration Range (@30 °C)} = \frac{1000 \times V_{IN}}{K_1(R_L + R_{MEAS})}$$

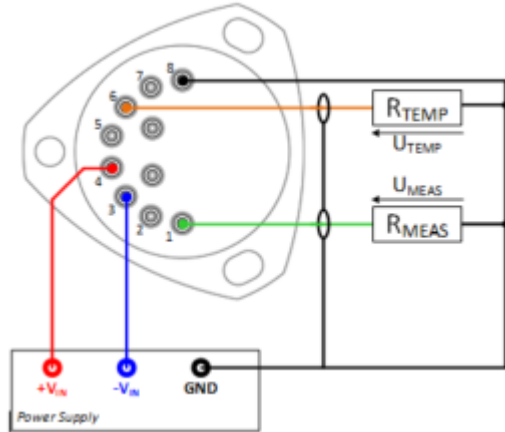
$V_{IN}$ : Absolute Power Supply Voltage

$K_1$ : Scale Factor

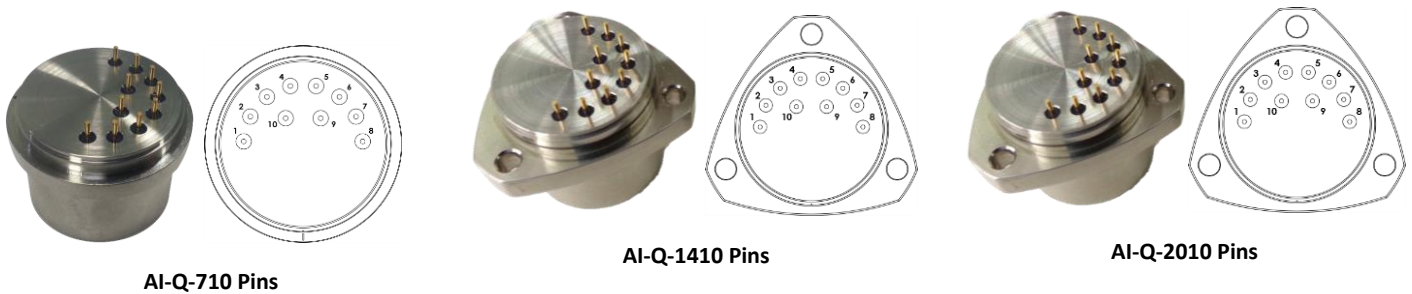
$R_L$ : Coil Resistance

$R_{MEAS}$ : Measurement Resistance

As the input voltage is increased, a larger voltage drop is available, enabling the same acceleration level to be measured with a larger measurement resistor, thus improving the signal-to-noise ratio.



## What is the pin out configuration for the accelerometers?



Pin	Function	Type	Characteristics
1	Signal Out	Analogue	Acceleration output, current signal
2	Current Torque	Analogue	Current input test pin
3	Negative Power Supply	Power	-13 V to -28 V
4	Positive Power Supply	Power	+13 V to +28 V
5	Not Connected	N/A	Do not connect to this pin.
6	Temperature Sensor Output	Analogue	Temperature output, current signal
7	Voltage Self-Test	Analogue	Voltage input test pin
8	Signal & Power Return	Ground	Ground reference for power supplies and signals
9	-10 V DC	Analogue	Voltage output
10	+10 V DC	Analogue	Voltage output

## How can I purchase InnaLabs<sup>®</sup> Accelerometers?

To purchase please contact your local InnaLabs<sup>®</sup> Global [Sales Network](#) or InnaLabs<sup>®</sup> direct at [contact.sales@innalabs.com](mailto:contact.sales@innalabs.com)