

High Resolution Quartz Flexible Accelerometer



- **Product Description**

Idealphotonics' s accelerometer employs the latest linear rebalanced accelerometer technology. It is a small, lightweight, high performance Accelerometers, suited for navigation, stabilization and flight control.MP-IP-QA-5108 is ideally suited for Inertial navigation systems ;Precision leveling and measuring systems and Gravity meters.



● Product features

Product Features ; Excellent cost to performance ratio ; ITAR free ;
Rebalanced quartz pendulum technology ; Broad dynamic range ; Robust
design and high reliability; Internal temperature sensor; High purity Quartz
Technology; Ultra High resolution

● Part Number

MP-IP-QA-5108

● Application area

Applications | Inertial navigation systems | Precision leveling and measuring
systems | Gravity meters

● Core parameters

Linearity	Natural Frequency
$\leq 15\mu\text{g}/\text{g}^2$	$>800\text{Hz}$



● General Parameters

Technical Specification

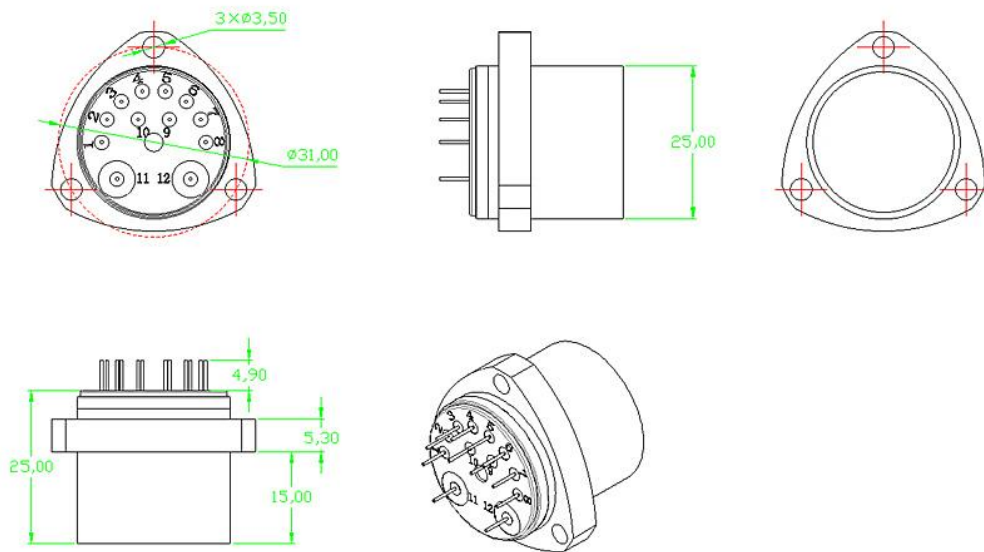
ABSOLUTE MAXIMUM RATINGS (T=25°C)

Parameter	Value
Range	$\pm 5g$
Threshold/Resolution	$\leq 0.05\mu g$
Bias(K_0)	$\pm 5mg$
Bias(k_0)Temperature Sensitivity	$\pm 20\mu g/^\circ C$
- Composite Error	$\leq 250 \mu g$
Bias Long term stability(3Months)	$\leq 5\mu g$
Bias Repeatability (day to day)	$\leq 5\mu g$
Scale Factor ($K1$)	$2 \pm 0.3 \text{ mA/g}$
- $K1$ Temperature Sensitivity	$\pm 20 \text{ ppm}/^\circ C$
$K1$ long term stability	$\leq 5\text{ppm}$
Scale Factor Repeatability (day to day)	$\leq 5\mu g$
- Composite Error	$\leq 400 \text{ ppm}$
Axis Misalignment	$\leq 3 \text{ mrad}$
- Composite Error	$\leq 100 \mu\text{rad}$
Linearity	$\leq 15 \mu g/g^2$
Natural Frequency	$> 800\text{Hz}$
Vibration rectification error	$< 20\mu g/g^2\text{RMS}$

Environmental	Value
Shock	250 g
Vibration Peak Sine 20..2000 Hz	25 g
Operating Temperature	-55°C...+85°C

Electrical	Value	Physical	Value
Power	±15V - 2.5W	Weight	<90 grams

CONNECTOR PIN DEFINITION (Unit: mm)



Built in OMEGA PT1000 Temperature sensor

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	-15 V
4	Positive Power Supply	Power	+15V
5	Signal Power Ground	Ground	Ground reference for power supplies and signals
6	Voltage Self -Test	Analogue	Voltage input test pin
7	Capacitor plate 1	Capacitor	Capacitor
8	Capacitor plate 2	Capacitor	Capacitor
9	-9 V DC	Analogue	Voltage output
10	+9 V DC	Analogue	Voltage output
11	Temperature Sensor Output	Analogue	Temperature output, current signal
12	Temperature Sensor Output	Analogue	Temperature output, current signal



Note:

a. When welding products, an electric iron with reliable grounding is needed.

The welding temperature shouldn't be too high, and the welding time shouldn't be too long, The circuit soldering repetition can't exceed triple times.

b. \pm 15V power supply port can not be reversed, and single electrical connection is not allowed(+15V or -15V).

c. In order to prevent electrostatic damage, please avoid touching the circuit pins directly.

d. Please pick off the protective cap when using this product in the system.

e. An alcohol wipe to clean the products is recommended.