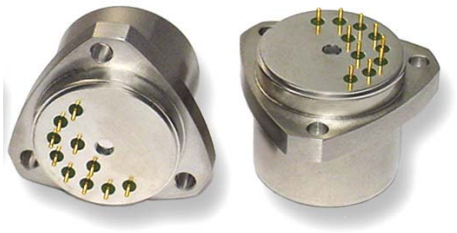
Accelerometer KA-2000

The inertial navigation standard



As the inertial navigation standard by which others are measured, Joint Sensor produces the KA2000. It is the predominant sensor used in today's commercial and military aircraft strap-down inertial navigation systems. The long-term Repeatability and superior reliability characteristics of the KA2000 make it the best value inertial-grade accelerometer available on the market today.

As with the entire family of accelerometers, the KA2000 has an amorphous quartz proof-mass structure which provides excellent bias, scale factor, and axis alignment Repeatability.

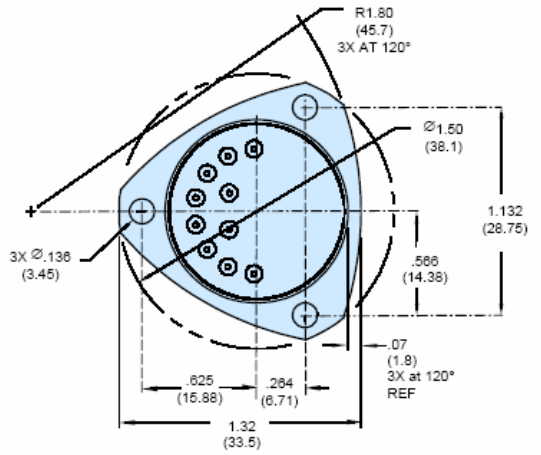
The integral electronics develops an acceleration-proportional output current providing both static and dynamic acceleration measurement. By use of customer supplied output load resistor, appropriately scaled for the acceleration range of the application, the output current can be converted into a voltage.

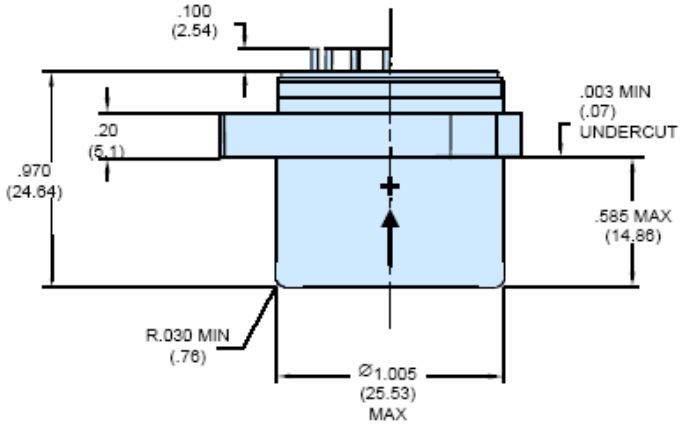
The KA2000 also includes a current-output, internal temperature sensor. By applying temperature-compensating algorithms, bias, scale factor, and axis misalignment performance are dramatically improved.

Features

- Excellent turn-on repeatability performance
- Environmentally rugged
- Analog output
- Field-adjustable range
- Three fastener precision mounting flange
- Internal temperature sensor for thermal compensation
- Dual built-in self-test

Configuration Drawings





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Performance Characteristics

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

Performance	KA2000-030	KA2000-020	KA2000-010
Input Range [g]	±60	±60	±60
Bias [mg]	<4	<4	<4
One-year Composite Repeatability [µg]	<160	<220	<550
Temperature Sensitivity [µg/ºC]	<30	<30	<30
Scale Factor [mA/g]	1.20 to 1.46	1.20 to 1.46	1.20 to 1.46
One-year Composite Repeatability [ppm]	<310	<500	<600
Temperature Sensitivity [ppm/ºC]	<180	<180	<180
Axis Misalignment [µrad]	<2000	<2000	<2000
One-year Composite Repeatability [µrad]	<100	<100	<100
Vibration Rectification [µg/g^2rms]	<20 (50-500 Hz)	<40 (50-500 Hz)	<40 (50-500 Hz)
	<60 (500-2000 Hz)	<60 (500-2000 Hz)	<150 (500-2000 Hz)
Intrinsic Noise [µg-rms]	<7 (0-10 Hz) <70 (10-500 Hz) <1500 (500-10,000 Hz)	<7 (0-10 Hz) <70 (10-500 Hz) <1500 (500-10,000 Hz)	<7 (0-10 Hz) <70 (10-500 Hz) <1500 (500-10,000 Hz)
Environment	**KA2000-030**	**KA2000-020**	**KA2000-010**
Operating Temperature Range [ºC]	-55 to +95	-55 to +95	-55 to +95
Shock [g]	250	250	250
Vibration Peak Sine [g]	15 @ 20-2000 Hz	15 @ 20-2000 Hz	15 @ 20-2000 Hz
Resolution/Threshold [µg]	<1	<1	<1
Bandwidth [Hz]	>300	>300	>300
Thermal Modeling	**KA2000-030**	**KA2000-020**	**KA2000-010**
	YES	YES	YES
Electrical	**KA2000-030**	**KA2000-020**	**KA2000-010**
Quiescent Current per Supply [mA]	<16	<16	<16
Quiescent Power [mW] @ ±15 VDC	<480	<480	<480
Electrical Interface	Temp Sensor	Temp Sensor	Temp Sensor
	Voltage Self Test	Voltage Self Test	Voltage Self Test
	Current Self Test	Current Self Test	Current Self Test
	Power / Signal Ground	Power / Signal Ground	Power / Signal Ground
	-10 VDC Output +10 VDC Output	-10 VDC Output +10 VDC Output	-10 VDC Output +10 VDC Output
Input Voltage [VDC]	±13 to ±28	±13 to ±28	±13 to ±28
Physical	**KA2000-030**	**KA2000-020**	**KA2000-010**
Weight [grams]	71± 4	71± 4	71± 4
Diameter below mounting surface [inches]	Ø1.005 Max	Ø1.005 Max	Ø1.005 Max
Height - bottom to mounting surface [inches]	.585 Max	.585 Max	.585 Max
Case Material	300 Series Stainless Steel	300 Series Stainless Steel	300 Series Stainless Steel

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