SDG500

MEMS Quartz Angular Rate Sensor

Ideal for High Performance Commercial Applications:

- Attitude Control for Small Business & Regional Aircraft
- Antenna, Optical Platform Stabilization & Pointing
- Instrumentation
- Motion Control
- Robotics & Robotic Vehicles

Key Performance Features:

- **Outstanding Vibration & Noise Performance**
- **Exceptional Bias Stability**
- **Compact Size, No Wear-Out Mechanisms**
- **High Reliability & Long Life**
- **DC Voltage Input/High-Level Analog DC Voltage Output**
- **Adaptable – No Software Required**

The SDG500 single-axis angular rate sensor provides exceptional performance versus similar sensors in its class, with a lower noise capability superior to silicon-based gyros. The SDG500 utilizes our proven Quartz MEMS sensing technology and fully-contained electronics in a durable, compact size.

By applying design techniques found only in more expensive rate sensors, excellent bias stability, temperature performance, noise, and vibration performance levels have been achieved.

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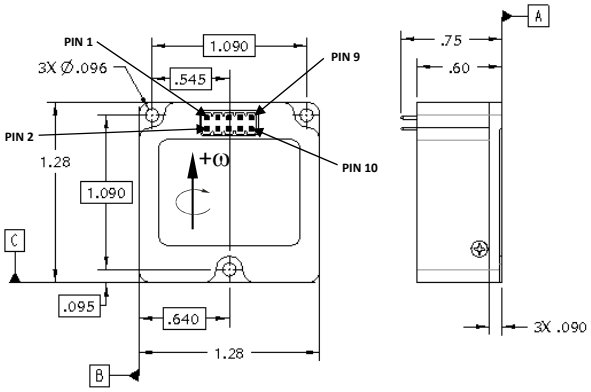
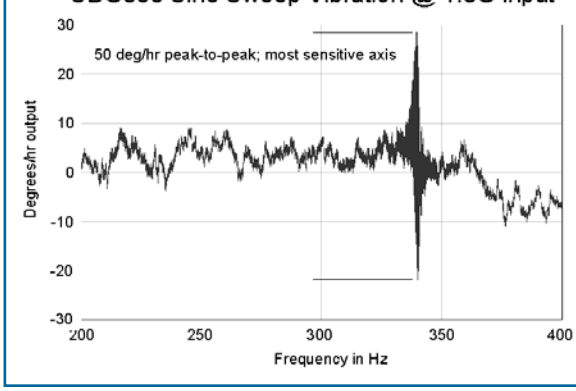
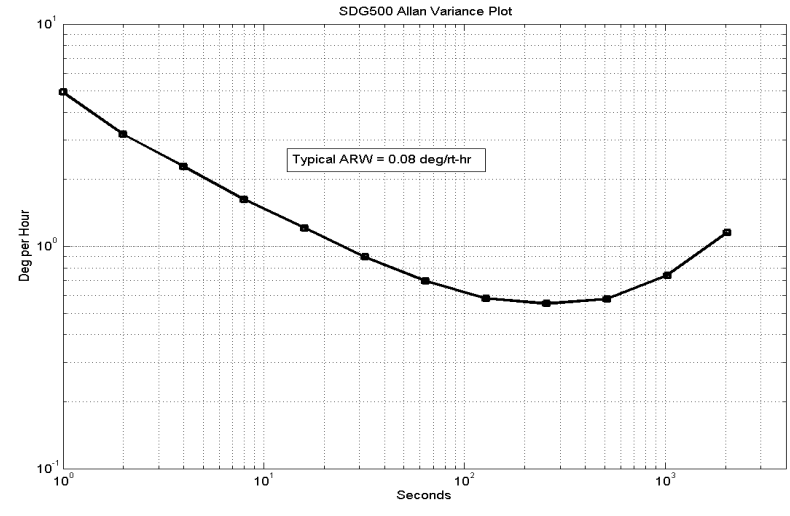


	SDG500-00100-100
Power Requirements	
Input Voltage	+ and – 10 to 15 Vdc
Input Current	< 20 mA (each supply, typical)
Performance	
Standard Range Full Scale	± 100°/sec
Full Scale Output (Nominal)	± 5.0 Vdc
Scale Factor (at 25°C, Typical)	0.050 ± 0.001 Vdc/°/sec
Scale Factor Over Temperature	≤ 0.1%/°C
Bias Calibration (at 25°C)	≤ 1.5°/sec
Bias Variation over Temperature (Dev. from 25°C)	≤ 5°/sec
Bias Stability (In-Run at Constant Temp., Std. Dev.)	< 20°/hr. typical
G Sensitivity	< 0.06°/sec/g
Start-Up Time	< 1.0 sec
Bandwidth (-90°, incl. temp. effect)	60 ± 15 Hz
Damping Ratio	0.7 ± 0.3
Non-Linearity, (% Full Range)	≤ 0.05%
Resolution/Threshold	< 0.004°/sec
Output Noise	≤ 0.005°/sec/√Hz (DC to 100 Hz)
Environments	
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +95°C
Vibration Operating* (20 – 2000 Hz, Flat Profile)	5 g_{rms} , 36°/hr/g_{rms}
Vibration Survival* (5.83 g_{rms})	D0160E, Curve C1
Shock Survival (20g 11ms)	D0160E, Category B
Weight	≤ 25 grams

SDG500 PIN ASSIGNMENT

PIN #		Function
1	–	+Vdc input
2	–	Power Ground
3	–	-Vdc Input
4	–	Temp Output
5	–	Signal Return
6	–	Rate Output
7	–	No Connection
8	–	Self Test Input
9	–	Case Ground
10	–	Built-In Test





* Please see user's guide for more information regarding vibration tolerance and sensitivity.

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A BRAND OF INNOVISTA SENSORS