

## **SDG1000**

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### **Applications**

The SDG1000 establishes a new price-to-performance standard for a wide variety of commercial applications including:

- **Primary AHRS**
- **Secondary Standby Attitude Indicator Systems**
- **Short-Term Navigation**
- **Aircraft Flight Control**
- **Platform Stabilization & Pointing**
- **Instrumentation**
- **Robotics**



### **Description**

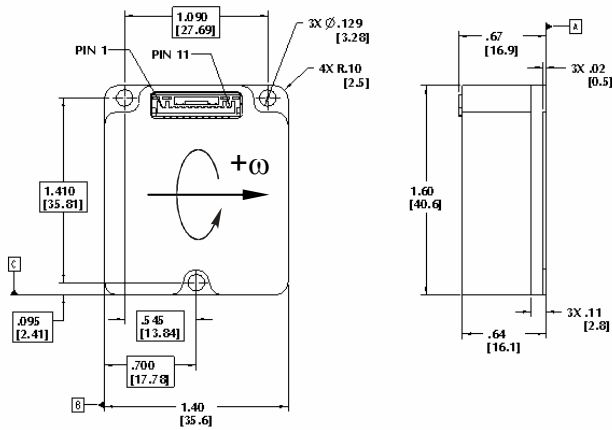
The SDG1000 is a single-axis angular rate sensor that provides exceptional performance with Systron Donner Inertial's proven Quartz MEMS sensing element and fully self-contained electronics.

By applying design techniques found only in more expensive rate sensors, excellent Bias Stability, Temperature Performance, Noise, and Vibration performance levels have been achieved. The availability of the internal temperature sensors enable bias modeling.



### **Key Performance Features**

- **Exceptional Bias Stability**
- **DC Voltage Input/High-Level Analog DC Voltage Output**
- **Rugged Small Size**
- **High Reliability and Long Life**
- **Internal Temperature Sensors**



Connector Pin	Assignment
1	Power Ground
2	+Vdc Input
3	-Vdc Input
4	Temp 1 Output
5	Signal Return
6	Rate Output
7	Built In Test
8	Temp 2 Output
9	No Connection
10	Factory Test, Leave Open
11	Case Ground

PARAMETER	SUMMARY SPECIFICATIONS
<b>Part Number</b>	SDG1000-200-100
<b>Input Voltage</b>	+ and - 10 to 16 Vdc
<b>Input Current</b>	< 15mA (each supply, typical)
<b>Performance</b>	
Standard Range Full Scale	±200°/sec
Full-Scale Output (Nominal)	±5.0 Vdc
Scale Factor (at 25°C)	0.025 ±0.004 Vdc/°/sec.
Scale Factor Over Temperature (Dev. from 25°C)	≤ 0.03%/°C
Bias Calibration (at 25°C)	≤ 1°/sec.
Bias Variation over Temperature (Dev. from 25°C)	≤ 1°/sec.
Bias Stability (In-run at const. temp, Std. Dev.)	< 6°/hr.
G Sensitivity	< 36°/hr/g
Start-Up Time	≤ 1.0 sec.
Bandwidth (-90°)	> 100Hz
Damping Ratio	0.7 ±0.2
Non-Linearity (% of Full Range)	≤ 0.03%
Output Noise	< 0.1°/√ hour (< 0.0017°/sec./√ Hz) (DC to 100 Hz)
<b>Environments</b>	
Operating Temperature	-55°C to +85°C
Storage Temperature	-55°C to +95°C
Vibration, Operating (20 – 2000 Hz, flat profile)	5 g rms
Vibration Rectification	<3.6°/hr/g rms.
Vibration Survival	20 g rms.
Shock (Survival)	200 g, 2 milliseconds, ½ sine pulse
Weight	< 60 grams

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