

SDD3000

MEMS Quartz Digital Single Axis Rate Sensor

Ideal for High-Precision Applications:

- Targeting & Pointing Systems
- Gimbal & Platform Stabilization
- Tactical Land Navigation
- Gun & Turret Stabilization
- Marine Stabilization
- Unmanned Aerial Vehicles (UAVs)
- Industrial Robotics



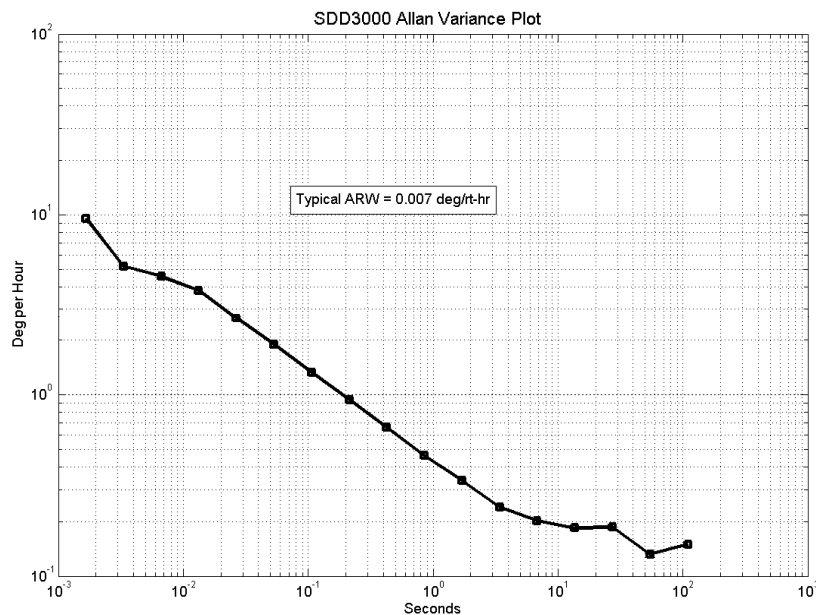
Key Performance Features:

- **Bias in-run Stability <math><1.0\%/hr</math>**
- **Compact <math><8.0\text{ in.}^3</math> Size**
- **Robust Shock & Vibration Tolerance**
 - **40g Shock Operating / 150g Shock Survival**
- **RS-232 or RS-422 Digital Output**
- **Superior Quality & Reliability**
 - **20 Year Lifetime without Calibration**
- **3 Gyro Bias Performance Grades**
- **0.027 $\sqrt{\text{hr}}$ Exceptionally Low Noise (ARW)**



The SDD3000 meets state-of-the-art systems requirements for precision accuracy, low noise angular rate sensing with a digital RS-232 / RS-422 output. The SDD3000 is an enhanced alternative to spinning mass gyro technology or SDI's popular, highly-reliable QRS11 and QRS116 units. The SDD3000 provides a temperature-compensated output with unprecedented bias stability and durability. Ideal for rugged ground vehicle and aerospace applications, the SDD3000 is an extremely versatile rate gyro that requires very little configuration and integration time into new or retrofit applications. Using a next generation version of Systron Donner's unique quartz micro-machined sensing element, the SDD3000 delivers excellent signal to noise ratio and vibration performance characteristics in a small, lightweight package. With no moving parts and no scheduled maintenance, the SDD3000 provides reliable service and low total cost of ownership.

	Units	Measure	SDD3000-A00*	SDD3000-B00	SDD3000-C00
System Performance					
Start-Up Time	sec	max	≤ 1.5	≤ 1.5	≤ 1.5
I/O (Dual Protocol, User Selectable)			RS-232 / 115.2 kbd data rate, or RS-422 / 115.2 kdb data rate		
Gyro Performance					
Standard Range Full Scale	deg/sec	min	±500	±500	±500
Bias Over Temperature	deg/hr	max	1.0	3.0	10.0
Bias In-Run Stability (Constant Temperature)	deg/hr	max	< 0.5	< 1.0	< 1.0
Scale Factor Temperature Stability	ppm	1σ	< 200	< 300	< 400
Rate Output Noise (ARW)	deg/√hr	nom	0.01	0.02	0.02
Non-Linearity (% Full Range)	%	max	≤ 0.05	≤ 0.05	≤ 0.05
G Sensitivity	deg/hr/g	min	< 1.0	< 1.0	< 1.0
System Physical & Environmental					
Input Voltage			+11 to +16 Vdc		
Power			<2.25W (180 mA @ 12V continuous) 1.5A (0.5msec) inrush/start-up surge		
Size Dimensions			3.1" x 3.25" x 0.96" (78 x83 x 25 mm)		
Weight			<0.5 lbs. (<227 grams)		
Operating Temperature Range*			-55° C to + 85° C		
Vibration Operating (20 – 2000 Hz, flat profile)			12 g rms. performance 19 g rms. endurance (5 min/axis)		
Shock Operating			40 g, 30 milliseconds, ½ sine pulse		
Shock Survival (20g 11ms)			150 g, 11 milliseconds, ½ sine pulse		
MTBF			>25,000 hrs		



* Limited temperature range.

For more information, contact:

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