

# SDD3000-A01

## 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><0.5^\circ/\text{hr}</math>**
- **0.01 $^\circ/\sqrt{\text{hr}}$  Exceptionally Low Noise (ARW)**
- **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



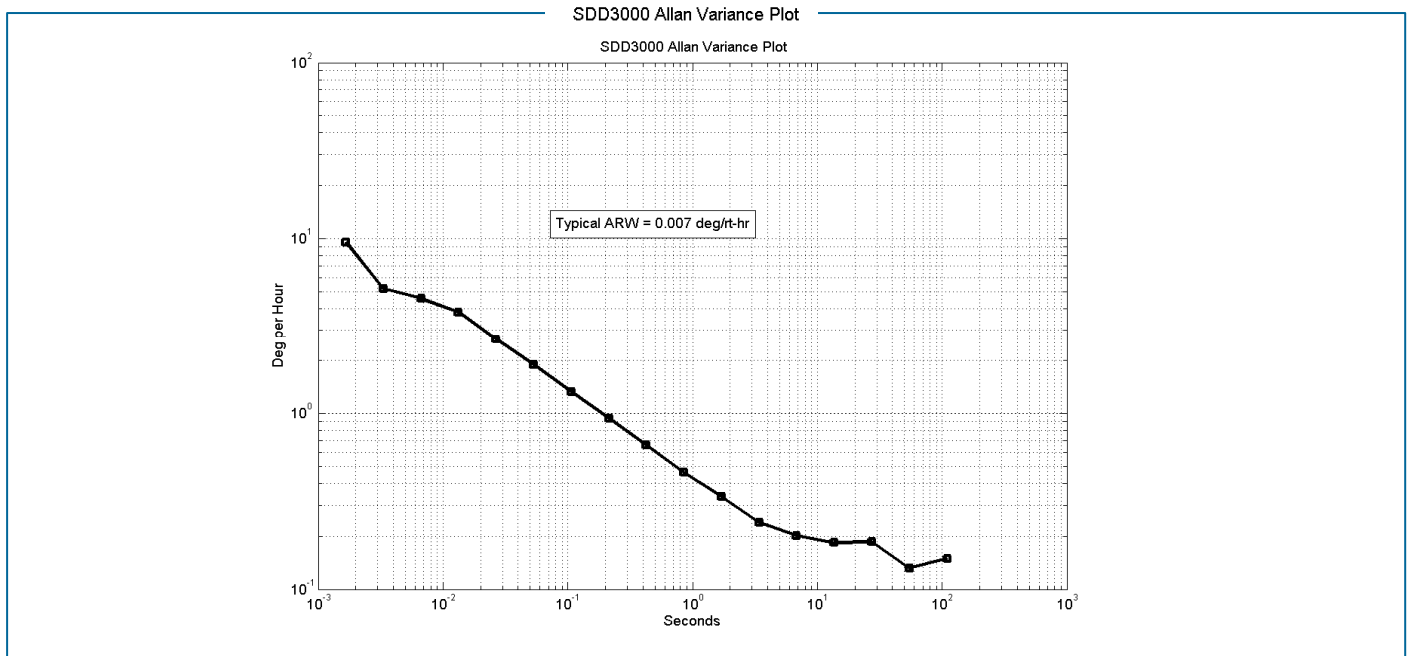
The SDD3000-A01 meets state-of-the-art systems requirements for precision accuracy, low noise angular rate sensing with a digital RS-232 / RS-422 output. The SDD3000-A01 is an enhanced alternative to fiber optic and spinning mass gyro technology or SDI's popular, highly-reliable QRS11 and QRS116 units. The SDD3000-A01 provides a temperature-compensated output with unprecedented bias stability and durability. Ideal for rugged ground vehicle and aerospace applications, the SDD3000-A01 is an extremely versatile quartz gyro that requires very little configuration and integration time into new or retrofit applications. Using the latest-best generation version of EMCORE's unique quartz micro-machined sensing element, the SDD3000-A01 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-A01 provides reliable service and low total cost of ownership.

[www.emcore.com/nav](http://www.emcore.com/nav)

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	Units	Measure	SDD3000-A01
<b>System Performance</b>			
Start-Up Time	sec	max	≤ 1.5
I/O (Dual Protocol, User Selectable)			RS-232 or RS-422, 115.2 KBaud
<b>Gyro Performance</b>			
Standard Range Full Scale	deg/sec	min	±100
Bias Over Temperature	deg/hr	1 $\sigma$	1.0
Bias Over Temperature	deg/hr	max	3.0
Bias In-Run Stability (Constant Temperature)	deg/hr	1 $\sigma$	0.5
Scale Factor Error Over Temperature	ppm	1 $\sigma$	200
Rate Output Noise (ARW)	deg/ $\sqrt{\text{hr}}$	max	0.01
Non-Linearity (% Full Range)	%	max	0.05
<b>System Physical &amp; Environmental</b>			
Input Voltage			+11 to +16 Vdc
Power			<2.25W (230 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*			-2° C to +60° C
Vibration Operating (10 – 1100 Hz, flat profile)			5.2 g rms. performance
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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*Transforming Navigation*

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