

# DSP-3000 光纤陀螺仪

高性能单轴光纤陀螺仪



## Key Features

- 获得专利的数字信号处理
- 出色的偏置稳定性和线性度
- 卓越的可靠性
- 选择模拟，数字或RS-232输出
- 单轴模块化设计，适用于多轴配置
- 商业现货（COTS）产品

## Applications

- 天线/雷达/光学稳定
- 炮/炮塔稳定
- IMU，GPS / INS集成
- AHRS集成



Many mobile satellite communications antennas rely on the KVH DSP-3000 for accurate pointing and stabilization.

## 卓越性能

KVH的原始DSP-3000是KVH的单轴光纤陀螺（FOG）系列的主力，可在各种应用中提供可靠的性能。其紧凑而坚固的设计加上模拟，数字和RS-232输出选择，使DSP-3000成为最通用的光纤陀螺仪，并且是制导和稳定，低成本惯性测量单元（IMU）的理想解决方案），集成的GPS / INS和AHRS。

DSP-3000使用KVH的专利数字信号处理（DSP）电子产品。KVH突破性的DSP设计克服了模拟信号处理的局限性，实际上消除了对温度敏感的漂移和旋转

错误。此外，KVH的DSP技术在比例因子和偏置稳定性，比例因子线性度，导通到导通的可重复性以及最大输入速率等关键领域提供了显著的性能改进。出色的低噪声（ARW），对跨轴误差不敏感以及抗震和抗振性能，使DSP-3000成为要求苛刻的工业应用的理想之选。这种性能，加上我们成熟的全光纤光学电路固有的简单性和可靠性，使DSP-3000成为运动传感，稳定，导航和精确指向应用的出色且价格合理的解决方案。



Cameras mounted on aircraft require special stabilization to create clear images or motion pictures, surveillance, and other applications. The KVH DSP-3000 is an essential part of many of these systems.

## Precision, Performance, and Price

Fabricated from KVH's proprietary E•Core® polarization maintaining fiber, the KVH DSP-3000 delivers superior precision and reliable performance at a lower cost than other comparable fiber optic and mechanical gyroscopes. Its temperature stability and repeatability make it particularly well-suited for precision stabilization, GPS integration, and

multi-axis tactical-grade inertial measurement systems. The noise spectrum of the DSP-3000 is exceptionally flat, lacking the discrete noise components of mechanical gyros. With no moving parts to maintain or replace, the DSP-3000 lasts longer, functions better, and yields significant product life cycle savings.

Specifications	KVH DSP-3000 Single-axis Fiber Optic Gyro	
	Digital	Analog
Input Rate (max)	±375°/sec	±100°/sec
Bias Instability (25°C)	≤1°/hr, 1σ	≤3°/hr, 1σ
Bias vs. Temperature (≤1°C/min)	≤6°/hr, 1σ	≤20°/hr, 1σ
Bias Offset (25°C)	±20°/hr	±100°/hr
Scale Factor Non-linearity (max rate, 25°C)	≤500 ppm, 1σ	
Scale Factor vs. Temperature (≤1°C/min)	≤500 ppm, 1σ	
Angle Random Walk (25°C)	≤0.067°/√hr (≤4°/hr/√Hz)	≤0.1°/√hr (≤6°/hr/√Hz)
Electrical/Mechanical Interface	Digital	Analog
Bandwidth (-3 dB)	≥44 or 440 Hz	200 Hz ±10%
Initialization Time (valid data)	≤5 secs	
Data Interface	Asynchronous RS-232 Optional Synchronous	±2 VDC differential; 3 dB BW of 200 Hz; 45° phase shift at 100 Hz
Baud Rate	115.2 Kbps	2 VDC differential; 3 dB BW of 200 Hz; 45° phase shift at 100 Hz
Data Rate	100 Hz (Asynchronous) 1000 Hz (Synchronous)	±2 VDC differential; 3 dB BW of 200 Hz; 45° phase shift at 100 Hz
Physical Specifications	Digital	Analog
Dimensions (max)	88.9 mm L x 58.4 mm W x 33.0 mm H (3.5" x 2.3" x 1.3")	
Weight (max)	0.27 kg (0.6 lbs)	
Power Consumption	3 W (max), 1.25 W (typical)	
Input Voltage	+5, ±10% VDC	
Environmental Specifications	Digital	Analog
Temperature (operating)	-40°C to +75°C (-40°F to +167°F)	
Shock (operating)	40 g, 10 msec, half-sine	
Vibration (operating)	8 g rms, 20-2000 Hz	
MTBF	≥55,000 hours	

For detailed interface control drawings (ICD) and technical manuals on this product, please visit [www.kvh.com/DSP3000docs](http://www.kvh.com/DSP3000docs)

