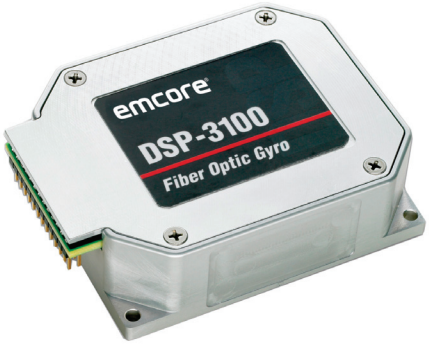
DSP-3100 FOG

High-performance, Single-axis Fiber Optic Gyro

emcore®

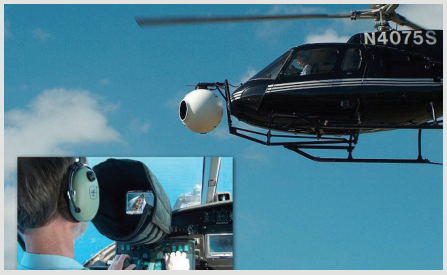


Key Features

- Industry standard 26-pin connector
- Single-axis, modular design for multi-axis configurations
- Patented Digital Signal Processing (DSP)
- Exceptional bias stability and linearity
- Industry standard RS-422 communications
- Commercial off-the-shelf (COTS) product

Applications

- Antenna/radar/optics stabilization
- Gun/turret stabilization
- IMU, GPS/INS integration
- AHRS integration

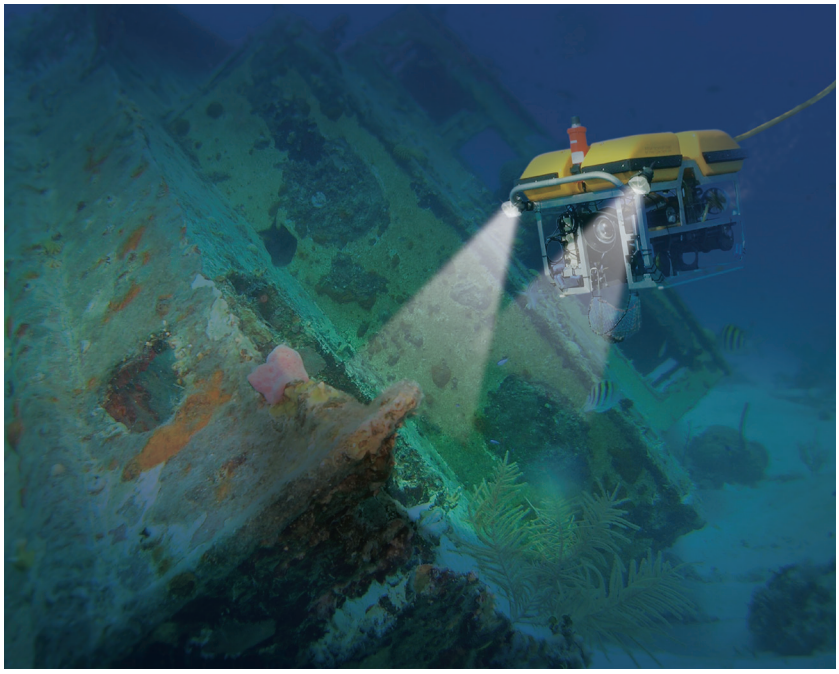


Airborne surveying applications use EMCORE's DSP-3100 to provide the stabilisation necessary to produce clear images.

Increased Accuracy in a Smaller Form Factor

Designed for demanding applications requiring high-speed data output, the EMCORE DSP-3100 offers a powerful high-speed RS-422 interface with 1000 Hz asynchronous in a package more compact than the EMCORE DSP-3400. With its industry-standard Samtec 26-pin connector, it offers a versatile package ideal for installations with tighter installation requirements while not sacrificing performance, reliability, or durability.

The entire DSP-3000 series uses EMCORE's patented Digital Signal Processing (DSP) electronics. EMCORE's breakthrough DSP design overcomes the limitations of analog signal processing, virtually eliminating temperature-sensitive drift and rotation errors. In addition, EMCORE's DSP technology offers significant performance improvements in such critical areas as scale factor and bias stability, scale factor linearity, turn-on to turn-on repeatability, and maximum input rate. Exceptional low noise (ARW), insensitivity to cross-axis error, and shock and vibration robustness make the DSP-3000 series a perfect fit for demanding industrial applications. This performance, combined with the inherent simplicity and reliability of our mature all-fiber optical circuit, establish the DSP-3000 series as an affordable, outstanding solution for motion sensing, stabilization, navigation, and precision pointing applications.



Underwater Remotely Operated Vehicles (ROVs) depend on the EMCORE DSP-3100 for precise navigation information to complete their tasks.

Precision, Performance, and Price

Fabricated from EMCORE's proprietary E•Core® polarization maintaining fiber, the EMCORE DSP-3100 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-3100 is exceptionally flat, lacking the discrete noise components of mechanical gyros. With no moving parts to maintain or replace, the DSP-3100 lasts longer, functions better, and yields significant product life cycle savings.

Specifications	EMCORE DSP-3100 Single-axis Fiber Optic Gyro
	Digital
Input Rate *(max)*	±375°/sec
Bias Instability *(25°C)*	≤1°/hr, 1σ
Bias vs. Temperature *(≤1°C/min)*	≤6°/hr, 1σ
Bias Offset *(25°C)*	±20°/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)
Electrical/Mechanical Interface	**Digital**
Bandwidth *(-3 dB)*	440 Hz
Initialization Time *(valid data)*	≤5 secs
Data Interface	Asynchronous RS-422
Baud Rate	375 Kbps
Data Rate	1000 Hz
Physical Specifications	**Digital**
Dimensions *(max)*	87.9 mm L x 66.0 mm W x 24.9 mm H (3.5" x 2.6" x 1.0")
Weight *(max)*	0.2 kg (0.44 lbs)
Power Consumption	3 W (max), 1.25 W (typical)
Input Voltage	+5, ±10% VDC
Environmental Specifications	**Digital**
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	>20,000 hours

For detailed interface control drawings (ICD) and technical manuals on this product, please visit ***emcore.com/nav/support***

For More Information

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Made in the U.S.A.

ISO9001 CERTIFIED

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