

EMP-1.2K Lithium-Niobate Fiber Optic Gyroscope (FOG)



DATASHEET | JANUARY 2016

ADVANCED SYSTEMS



Applications

- Navigational Grade Applications
- Unmanned Aerial Vehicle (UAV) Guidance
- Missile Guidance
- Aeronautics and Aviation
- Robotics

Features

- Fully-Integrated Optics and Electronics
- Advanced Optics and DSP Electronics for Higher Accuracy, Lower Noise and Greater Efficiency
- DSP-Based Closed Loop Design for Improved Drift Stability, Higher Linearity, and Greater Flexibility
- Precise Navigation (1 mile/hour without GPS)
- Fast, Precise Gyrocompassing to 1 Milliradian
- Bandwidth to 343 Hz
- Separate Electronics and Sensor Modules
- More Economical than Competing Systems

US Patent No. 7,746,476; 8,773,665; 8,798,405;
8,823,946

Suitable for Demanding Applications

EMCORE's Fiber Optic Gyroscope (FOG) technology is designed for fast, accurate navigation and gyrocompassing, and low noise line-of-sight stabilization. Our long-standing leadership in the development of highly-accurate defense and military grade fiber optic components and systems has paved the way for the development of more accurate and economical fiber optic gyro components. EMCORE's FOGs are setting the new benchmark for tactical and navigational grade gyros for a wide variety of guidance, navigation and aeronautics applications.

EMCORE's EMP-1.2K Fiber Optic Gyro features fully-integrated optics and electronics, and is a superior device in regards to weight and form-factor for navigational applications. Its advanced integrated optics and closed-loop Digital Signal Processing (DSP) delivers much higher accuracy, lower noise, and greater efficiency than competing technologies. The integrated DSP also improves optical drift stability, environmental flexibility and increases linearity. In addition, the EMP-1.2K can be calibrated internally for better thermal effect and has both digital and analog outputs, along with separation of the electronics from the FOG's sensing coil assembly to accommodate the widest variety of installation parameters.

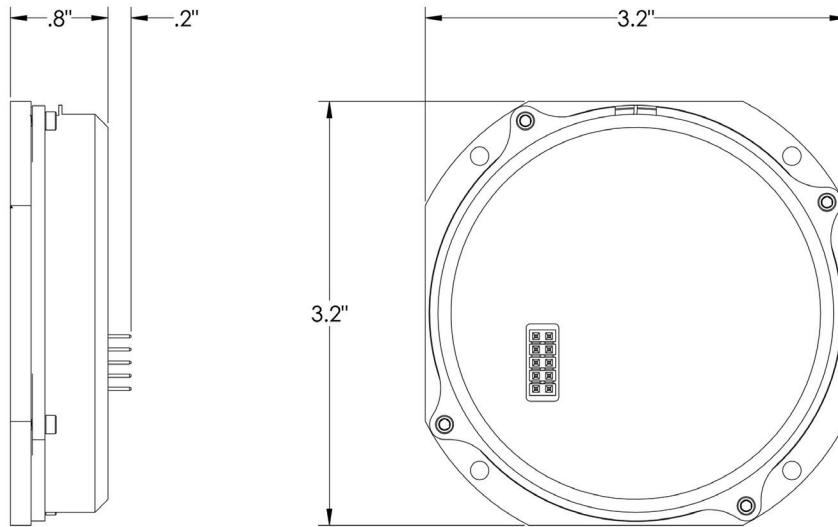
EMCORE's EMP-1.2K is the clear choice when selecting a precision solid-state gyroscope component for navigational grade applications.

General Specifications

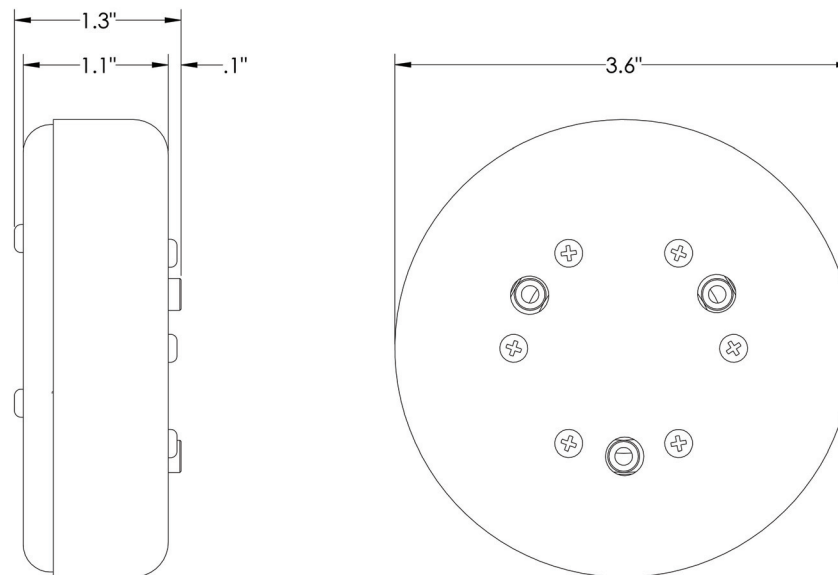
| Specifications | Values |
|------------------------|---|
| Sensor Dimensions | 3.6" D x 1.3" 91.44 mm x 33.02 mm |
| Electronics Dimensions | 3.2" x 3.2" x 0.8" 81.2 mm x 81.2 mm x 20.3 mm |
| Bias (Typical) | 0.01°/hr |
| Noise | 0.002°/√hr |
| Scale Factor | 0.027 Arc Sec/1sb |
| Scale Factor Linearity | 25 ppm |
| Maximum Rate | 343°/sec |
| Digital | I/O |
| Power | +5 V |

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Mechanical Diagram



Electronics Module**



Sensor Module

**The electronics module form factor may be customized for particular applications.