TAC-DSP-1750 FOG emcore®

The World's Smallest, High-Performance Single or Dual-Axis FOG

Available in single or dual axes

Key Features

- Superior bias stability of 0.05°/ hr, 1 (typical)
- Single or Dual-Axis high performance FOGs
- 15 pin Molex connector
- Integrated heatsink
- Angle Random Walk (ARW) 0.013°/ hr (0.8°/hr/ Hz)
- Available in two configurations:
  - Unhoused single axis
  - Unhoused dual axis
- Commercial off-the-shelf (COTS) product
- Available with 6", 8", 10" flex circuits, or custom shape.
- Backwards compatible with legacy DSP-1750 hardware

Applications

- Gimbals
- Optical/antenna stabilization
- Long-range optical and sensor systems
- Equipment platform stabilization
- Payloads for UAVs
- Weapons platform stabilization
- GPS/INS, IMU integration

Engineered for the Tightest Spaces

EMCORE takes fiber optic gyro (FOG) technology to a new level of performance with the TAC-450 series based DSP-1750, the world's smallest high-accuracy FOG. Available in both single and dual-axis configurations, the TAC-DSP-1750 is designed for a wide range of precision navigation, stabilization, and pointing applications where low noise and high performance across the entire range of operating temperatures are critical. Ideal applications include long-range optical and sensor systems, gimbals, tactical missiles, autonomous vehicle navigation, and the stabilization of virtually all types of commercial equipment platforms.

Trusted for the Toughest Missions

The TAC-DSP-1750 delivers performance never before achieved in FOGs of similar size. Available in single or dual-axis gyro configurations, the TAC-DSP-1750 is a high bandwidth, extremely low noise sensor. the TAC-DSP-1750 integrates magnetic shielding within the gyro housing, providing improved performance in systems with problematic magnetic environments. It delivers extremely low noise coupled with high bandwidth.

PIC Technology Improves Reliability

PIC INSIDE

A key element of the TAC-DSP-1750 is EMCORE's new, groundbreaking integrated planar optical chip. Replacing individual fiber optic components, the TAC-DSP-1750 with PIC Inside™ offers improved reliability, unit-to-unit repeatability, and easier integration. The result is a precision photonic fiber optic gyro sensor that is more durable, reliable, and for a high level of repeatability.

Precision Gyros Designed for Ultimate Flexibility

The TAC-DSP-1750 provides unmatched versatility to meet the demands of the most challenging design projects. Choose a single or dual-axis configuration, each employing the world's smallest precision FOG. All variants offer ease of use and high adaptability, featuring flexible communication options allowing for user-programmable data output rates up to 1000 Hz. This OEM package enables ease of integration into even the smallest of systems.

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Ideal for the stabilization and orientation of high-speed gimbals.

NON ITAR

Pipelines deliver massive amounts of crude daily and ensuring safe operation is key. The EMCORE TAC-450-DSP1750, coupled to additional sensors, provides these inspection robots with extremely accurate angular data.

EMCORE TAC-DSP-1750 Fiber Optic Gyro

Performance Specifications	
Input Rate *(max)*	±490°/sec
Bias Instability *(25°C)*	0.05°/hr, 1σ (typical)
Bias vs. Temperature *(≤1°C/min)*	3°/hr, 1σ (typical)
Bias Offset *(25°C)*	±2°/hr
Scale Factor Non-linearity *(full rate, 25°C)*	≤200 ppm, 1σ (typical)
Scale Factor vs. Temperature *(≤1°C/min)*	≤300 ppm, 1σ (typical)
Angle Random Walk *(25°C)*	≤0.013°/√hr(≤0.8°/hr/√Hz)
Bandwidth *(-3 dB)*	≥440 Hz Single Axis ≥790 Hz Dual Axis
Electrical/Mechanical Interface	
Initialization Time	≤5 seconds
Data Interface	Asynchronous RS-422
Baud Rate	115.2 Kbps
Data Rate	1000 Hz
Physical Specifications	
Processor Dimensions	58.4 mm Dia x 27.9 mm H (2.3" x 1.1")
Gyro Sensor Dimensions	44.7 mm Dia x 21.8 mm H (1.76" x 0.86")
Weight - Processor	0.10 lbs (.45 kg) NOMINAL
Weight – Gyro Sensor (nominal)	0.16 lbs (.072 kg)
Power Consumption	Single-axis: 4W (max), 3.2w (typical) Dual-axis: 5W (max), 4.1W (typical)
Input Voltage	+9 to +36 VDC
Environmental Specifications	
Temperature *(operating)*	-40°C to +75°C (-40°F to +167°F)
Shock *(operating)*	30 g, 11 msec, sawtooth
Vibration *(operating)*	8 g rms, 20-2000 Hz, random

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

RoHS Compliant

For More Information

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Made in the U.S.A.

ISO9001 CERTIFIED