



Applications

- Platform Stabilization Applications
- Camera Systems in Aircraft
- Unmanned Aerial Vehicles (UAV)
- Gun Stabilization Systems
- Aeronautics and Aviation

Features

- Industry's Best CSWaP with 1/2 the Weight and 1/3 the Power Requirements of Current Generation FOGs
- Most Affordable Closed-Loop FOG Available
- Fully-Integrated Optics and Electronics
- Next-Generation Field Programmable Gate Array (FPGA) Electronics
- Closed-Loop Design for Improved Drift Stability, Higher Linearity, and Greater Flexibility

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

Suitable for Demanding Applications

The EMCORE-Hawkeye™ Series EG-120 FOG module is an ultra-compact, state-of-the-art design that is the smallest, most affordable closed-loop FOG available on the market today. At approximately 1/2 the weight with 1/3 the power requirements of current generation FOGs, the EG-120 delivers the industry's best Size, Weight and Power (SWaP) compared to competing products and is 35% smaller than EMCORE's previous generation FOGs. The EMCORE-Hawkeye™ EG-120 incorporates advanced, next-generation Field Programmable Gate Array (FPGA) electronics that deliver increased performance and reliability combined with low cost.

The EMCORE-Hawkeye™ series features performance specifications that are ideal for medium accuracy platform stabilization applications such as camera systems used in aircraft, Unmanned Aerial Vehicles (UAVs) and gun stabilization systems. A wide variety of other guidance, navigation and aeronautics applications are supported. The EMCORE-Hawkeye™ FOG platform allows greater selection of performance capabilities to meet a broad range of customer requirements including a low-power (LP) version.

Performance Specifications

| Parameter | EG-120 | EG-120LP (Low-Power) |
|--|---|---|
| Gyro Performance | | |
| Fiber Optic Gyro Type | Closed-Loop | Closed-Loop |
| Input Rate (maximum) | ±250°/sec | ±250°/sec; |
| Bias In-Run Stability (25 °C) | Digital: ≤1.0 deg/hr, 1σ (max) | Analog: ≤10.0 deg/hr, 1σ |
| Bias vs. Temp (≤ 1 °C/min); no compensation | Digital: ≤20°/hr, 1σ | Analog: ≤50°/hr, 1σ |
| Scale Factor Non-Linearity (max rate, 25 °C) | ≤250 ppm, 1σ | ≤500 ppm, 1σ |
| Scale Factor Change Over Temperature | <100 ppm, 1σ | <10,000 ppm, 1σ |
| ARW (Angle Random Walk) (25 °C) | Digital: ≤0.04°/√hr | Analog: ≤0.1°/√hr |
| Bandwidth (45 Degrees, Minimum) | Digital: 300 Hz | Analog: 300 Hz |
| Electrical/Mechanical | | |
| Initialization Time (valid data) | ≤0.3 secs | ≤0.3 secs |
| Data Interface | Asynchronous Digital Output | N/A |
| Baud Rate | Up to 1 Mbps | N/A |
| Data Rate | 30K samples/sec data rate (16 bit data) | N/A |
| Dimensions | 2.36" Diameter x 0.83" High (60 mm Diameter x 21 mm High) | 2.36" Diameter x 0.83" High (60 mm Diameter x 21 mm High) |
| Weight, Max | 1 Axis: Non-Mag. shielded: 0.09 kg (0.13 lbs) | 1 Axis: Non-Mag. shielded: 0.09 kg (0.13 lbs) |
| Power Consumption, Max (typical) | 1 Axis: 4.5W | 1 Axis: 1.3W (max w/o TEC) < 1.1W (typical) |
| Input Voltage | +5 VDC | +5, +15, -15 VDC |

EMCORE-Hawkeye™ Series EG-120 Fiber Optic Gyroscopes (FOG)



Performance Specifications (continued)

| Parameter | EG-120 | EG-120LP (Low-Power) |
|-----------------------------|---|---|
| Environmental | | |
| Temperature: Operating | -40 °C to +75 °C (-40 °F to +167 °F) | -40 °C to +85 °C (-40 °F to +185 °F) |
| Shock: Operating | 800 g, 1 msec | 800 g, 1 msec |
| Vibration: Operating | 25 g rms, 20-2000 Hz | 25 g rms, 20-2000 Hz |
| Performance Physical | | |
| Number of Axes | 1 Axis | 1 Axis |
| Housing | Anodized Aluminum | Anodized Aluminum |
| MTBF | 100,000 hr | 100,000 hr |

Scale Compared to U.S. Quarter



**MADE IN
USA**

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