



FOG-3E

FIBER OPTIC GYRO

The 3-Axis Fiber Optic Gyro type FOG-3E is a general-purpose sensing unit, providing digital measurement data of angular rates and angle increments relative to three orthogonal body fixed axes.

The FOG-3E consists of a sensor assembly with the associated sensor electronics mounted on top and is intended for further mechanical and electrical integration into a system.

KEY FEATURES AND BENEFITS

Civilian product export classification/ITAR free

Unlimited bandwidth, white noise = well suited for high speed, high performance stabilization

Adjustable form factor = simple to integrate into customer architecture = ideally suited for stabilization of geo-referenced systems

Multiplexed, closed-loop stable and low-noise FOG gyroscope characteristics

Magnetic shielding, advanced mechanical design for sensor de-coupling

Available in 3 configurations; "open-frame", "light-packaging" and "hermetic packaging"

PERFORMANCE SPECIFICATIONS

Measurement range :	$\geq 480 \text{ }^\circ/\text{s}$
Bias (over the temperature range) :	$0.9 \text{ }^\circ/\text{h}$ (typ.) $\leq 5 \text{ }^\circ/\text{h}$ (max)
In-run stability :	$< 1 \text{ }^\circ/\text{h}$ (typ.)
Scale-factor accuracy (over temp range) :	$< 200 \text{ ppm}$
Scale-factor non linearity :	$< 300 \text{ ppm}$
Angle random walk :	$0.17 \sqrt{\text{hour}}$ (typ.) $\leq 0.3 \sqrt{\text{hour}}$ (max)
Bandwidth :	250 Hz
RS-422 synchronous	
Baud rate :	2 Mbit/s
Data rate :	1000 Hz (nominal), $\geq 2000 \text{ Hz}$ (max)
Power supply:	+/- 15V ; + 5V

Featured Applications

Helicopter Autopilots
Hybrid Navigation & Geo-Localization
High-Performance Stabilization
Attitude & Heading Reference Systems
Automatic Flight Control Systems

Redundant IMU for HRG, RLG, or MEMS Gyro based
Unmanned Navigation Systems
Pipeline, Geodesy & Aerial Surveys
Industrial
Robotics

DATASHEET FOR FOG-3E

ELECTRICAL / MECHANICAL

Initialization Time (valid data)	≤ 100 ms (first transmission of data)
Data Interface Synchronous	TYPE RS-422
Baud Rate	2 Mbit/s
Data Rate	1000 Hz (nominal), ≥ 2000 Hz (max)
Dimensions (max)	84.5 x 66.5 x 50 mm (w/o connector)
Weight (max)	≤ 460 g
Power Consumption	5 W (typical), 13.25 W (max)
Input Voltage	±15 VDC, +5 VDC

ENVIRONMENT

Temperature (operating)	-45°C to +85°C (Ground survival is -55°C to +95°C)
Shock (operating)	RTCA/DO-160E, Sec. 7 Operational: 6 g, 20 ms (Cat. D) Crash Safety: 20 g, 20 ms (Cat. E)
Vibration (operating)	Endurance: 20 ... 2000 Hz, 6.3 grms random Performance: 20... 200 Hz, 5.0 grms random

ALL ERRORS ARE DEFINED AS 1 σ -VALUES IF NOT STATED OTHERWISE

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