

FOG-Based Inertial Sensor Solutions

FIBERPRO specializes in fiber optic measurement
and sensor devices

Your innovative navigation solution provider



1995

Foundation of FIBERPRO



2022

Year of Public Listing

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Creating New Value with New Technology

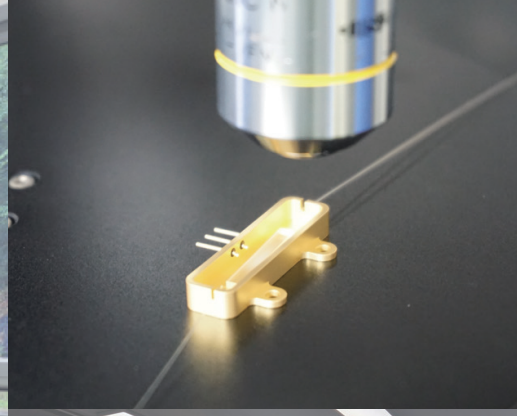
At FIBERPRO, our commitment to innovation is more than a slogan — it is the driving force behind everything we do. Rooted in cutting-edge technology, we go beyond expectations to deliver creativity and innovation to our customers.

As specialists in optical measurement and fiber optic sensors, our focus is clear: to be a trusted industry leader, advancing through continuous innovation and an unwavering commitment to excellence.

Global Network

We provide fiber optic sensor solutions to our customers through a worldwide network





FIBERPRO is a specialized technology company providing integrated navigation solutions based on Fiber Optic Gyroscope technology.

Why Choose FOG?

Fiber optic gyroscopes (FOG) provide unparalleled reliability and performance, overcoming the limitations of traditional gyroscopes. This makes FOG the preferred choice for next-generation navigation systems.

▶ All solid state

No moving parts, making them highly durable and resistant to noise and vibration.

▶ Scalability

Performance can be tailored to meet specific customer requirements.

▶ Low maintenance cost

As a solid-state device, it offers long service life with minimal preventive maintenance.

▶ Reliability

Designed with high-performance components compliant with MIL-STD and Telcordia standards for proven reliability in demanding applications.

▶ Radiation Tolerant

Offers exceptional accuracy and stability, even in harsh terrestrial and space environments, making it ideal for aerospace, defense, and industrial applications.





Fiber Optic Gyroscope (FOG)

A Fiber Optic Gyroscope (FOG) is an advanced inertial sensor that measures angular rate using light interference within optical fibers. Its proven solid-state design ensures high reliability, precision, and durability, making it the core component in modern navigation and stabilization systems.

Single Axis Fiber Optic Gyroscope

FG 150



- Bias Repeatability | 1.0° /hr
- Scale Factor Accuracy | 1000 PPM
- Angle Random Walk | 0.035°/√hr (typ.)
- Dimension | 60 mm x 60 mm x 25 mm
- Weight | 165 g

Single Axis Fiber Optic Gyroscope for space grade

SAG-SS



- Bias Stability | 0.02° /hr (1000 sec)
- Scale Factor Accuracy | 500 PPM
- Angle Random Walk | 0.005°/√hr
- Dimension | 123 mm x 123 mm x 63 mm
- Weight | 1.0 kg

P-FOG



- Bias Stability (3σ) | 0.01° /hr (1 hour)
- Scale Factor Accuracy (3σ) | 200 PPM
- Angle Random Walk | 0.001°/√hr
- Weight | 4.0 kg



Inertial Measurement Unit (IMU)

A FOG-based Inertial Measurement Unit (IMU) is a high-precision navigation device. It combines Fiber Optic Gyroscopes (FOG) and accelerometers to measure angular rate and linear acceleration. This enables accurate position, orientation, and motion tracking in dynamic environments. It is an essential unit for navigation and stabilization systems.

Tactical Grade IMU

FI 180



- Gyro Bias Repeatability | 0.5° /hr
- Gyro Scale Factor Accuracy | 100 PPM
- Accel. Bias residual error | 0.5 mg / 0.7 mg / 1.2 mg
- Accel. Bias Repeatability | 1.0 mg / 1.3 mg / 1.5 mg
- Accel. Operating Range | 8g / 15g / 40g
- Dimension | 88.9 mm Ø x 84.5 mm (H)
- Weight | 810 g

Tactical Grade IMU

FI 200P



- Gyro Bias Repeatability | 0.5° /hr
- Gyro Scale Factor Accuracy | 100 PPM
- Accel. Bias Repeatability | 0.3 mg
- Accel. Operating Range | Up to 50 g
- Dimension | 88.9 mm Ø x 84.5 mm (H)
- Weight | 900 g

Navigation Grade IMU

FI 210



- Gyro Bias Repeatability | 0.025°/hr
- Gyro Scale Factor Accuracy | 200 PPM
- Accel. Bias Repeatability | 0.18 mg
- Accel. Operating Range | 40 g
- Dimension | 225.5 mm x 189 mm x 156 mm
- Weight | 8.0 kg



Inertial Navigation System

A FOG-based Inertial Navigation System (INS) is a high-precision navigation solution. It utilizes a FOG-based Inertial Measurement Unit (IMU). The IMU measures angular rate and linear acceleration. It calculates position, velocity, and orientation without reliance on external signals such as GPS. It uses navigation algorithms to provide accurate and reliable guidance in dynamic, GPS-denied environments. It is essential for navigation systems.

Inertial Navigation System for Gyrocompass

FN 210G



- Heading Accuracy | $0.1^\circ \cdot \text{sec (LAT)}$ (w/o GPS-aided)
- Attitude Accuracy | 0.01°
- Operating Voltage | 9 to 36 VDC
- Dimension | 330 mm x 192 mm x 180 mm
- Weight | < 15 kg

GPS-Aided Inertial Navigation System

FN 180-S



- Heading with Dual Antenna | $0.15^\circ - 0.08^\circ$
- Pitch & Roll Accuracy(with GNSS) | 0.005° RMS
- Heave Resolution | 0.01 m
- Operating Voltage | 9 to 36 VDC
- Dimension | 160 mm x 149 mm x 96 mm
- Weight | < 2.1 kg

FOG-based MRU/AHRS/INS

FN 180-C



- Heading with Dual Antenna | $0.15^\circ - 0.08^\circ$
- Pitch & Roll Accuracy(with GNSS) | 0.005° RMS
- Heave Resolution | 0.01 m
- Operating Voltage | 9 to 36 VDC
- Dimension | 88.9 mm x 129 mm
- Weight | 950 g



MEMS-based Inertial Sensor Solution

Our MEMS-based inertial sensor solution delivers compact, lightweight, and cost-effective performance. It includes gyroscopes for motion sensing, Inertial Measurement Units (IMUs), and Inertial Navigation Systems (INS). These sensors leverage MEMS technology to provide reliable performance across a wide range of applications, including UAVs, robotics, autonomous vehicles, and industrial systems.

Three Axis Gyroscope

TAG-304



• Bias In-run Stability	2.0° /hr
• Scale Factor Accuracy	1000 PPM
• Angle Random Walk	0.2°/√hr
• Dimension	19.5 mm x 15.2 mm x 5.5 mm
• Weight	10 g

Inertial Measurement Unit

Kernel-210



• Gyro Bias In-run Stability	1.0° /hr
• Gyro Angle Random Walk	0.2°/√hr
• Accel. Bias In-run Stability	0.005 mg (RMS,8g)
• Accel. Operating Range	8 g, 15 g, 40 g
• Dimension	28.38 mm x 19.5 mm x 10.5 mm
• Weight	15 g

GPS-aided Inertial Navigation System

INS-U



• Heading Accuracy (GNSS)	0.3° RMS
• Pitch & Roll Accuracy(GNSS)	0.05° RMS
• GNSS	Single GNSS Antenna
• Operating Voltage	5 to 32 VDC
• Dimension	82 mm x 40 mm x 26 mm
• Weight	< 200 g

