SENOFEE

ITEM NO: FOG170B

Single Axis Gyroscope Fiber

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FOG170B Single Axis Gyroscope Fiber

General Description

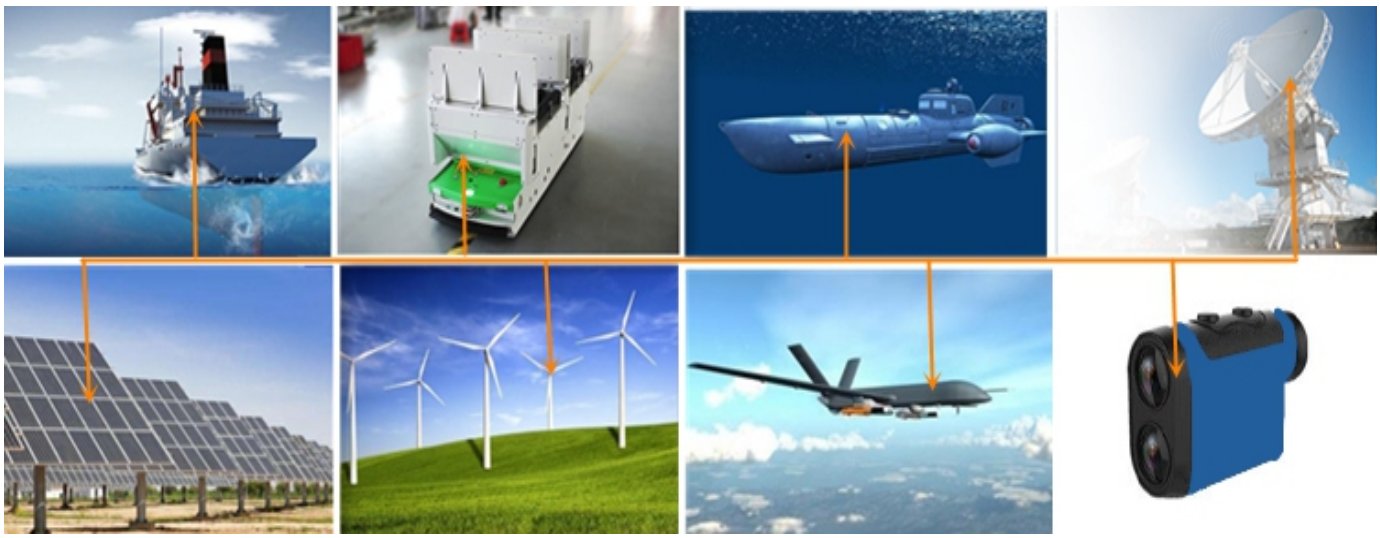
As a new type of all-solid-state optical gyroscope, fiber optic gyroscope adopts the 1310 scheme, which has fast start-up, wide measurement range andThe advantages of high reliability. FOG170B single-axis medium and high-precision fiber optic gyroscope can be applied to land positioning and orientation and vehicle north findingApplication requirements for medium and high-precision inertial navigation systems such as instrument, airborne attitude, marine gyro compass, etc.This manual is only applicable to FOG170B products, including performance indicators, technical conditions, overall dimensions and installation and use.Among them, the technical conditions include the environmental range, electrical performance, and physical characteristics of the product.

Specifications

Zero bias stability:≤0.02°/hr(1σ)
Measuring axis: Single-axis
Output signal:RS422 output
Store temperature : -55°C~+100°C
Measuring range: ±500°/s
Random walk coefficient:≤0.005°/$\sqrt{hr}$

Applications

1:Motionattitude control
2:Damping of high speed train swing
3: Servo tracking
4: Robot balance
5: Automatic cargo truck
6: Locking of the aiming system
7: Oil drilling
8: Monitoring structural deformation
9:Drone
10:Building monitoring
11.Airborne attitude



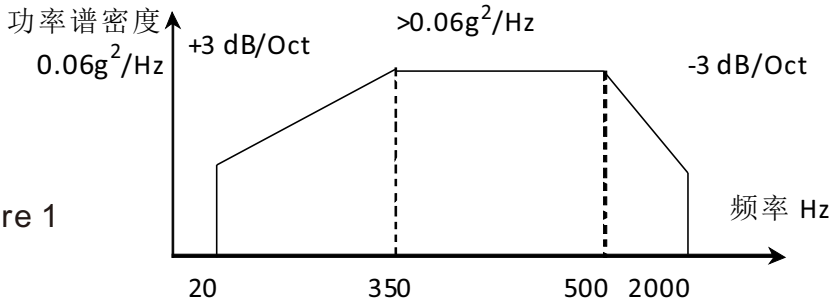
Performance Specification

	1310	1550	
Zero bias stability	≤0.02°/hr(1σ,10s)	≤0.02°/hr(1σ,10s)	2h continuous test, 10s smooth result
Zero Bias repeatability	≤0.01°/hr(1σ,10s)	≤0.01°/hr(1σ,10s)	2h continuous test, 10s smooth result
Random walk coefficient	≤0.005°/ √hr	≤0.005°/ √hr	
Total temperature scale factor repeatability	≤200 ppm(1σ)	≤100ppm(1σ)	-40℃ ~ +60℃
Scale factor nonlinearity	≤10 ppm(1σ)		Room temperature
Scalefactor asymmetry	≤10 ppm(1σ)		Room temperature
Full temperature offset repeatability	≤0.05°/√hr	≤0.05°/√hr	-40℃ ~ +60℃
Magnetic field sensitivity	≤0.02°/hr/Gs		
Vibration conditions	4.2g,20Hz ~ 2000Hz		
Dynamic Range	±500°/s		
Working temperature	-40℃ ℃ ~ ~ +70℃		
Storage temperature	-50℃ ℃ ~ ~ +70℃		
Connector	J30-15ZK		
OutPut mode	RS422		

Sinusoidal sweep vibration

The gyroscope is fixed on the vibrating table through tooling according to the vibration direction, and the gyroscope performs sinusoidal scanning in 3 directions, corresponding to the X-axis, Y-axis, and Z-axis directions. Vibration step: add excitation to the vibrating table, power up the gyroscope, warm up for a certain period of time (gyro-start time), test the gyroscope output value, about 5min; perform sinusoidal vibration. Vibration conditions: 20Hz-2000Hz, scan time 5min, amplitude 4.2g. During the vibration, record the gyroscope output.

Random vibration
Vibration frequency: 20Hz~2000Hz
Vibration time: 5min for each axis
Vibration direction: X, Y, Z axis
Vibration spectrum: see attached picture 1



picture 1

Indicator requirements:
The fiber optic gyroscope has no resonance in the sine frequency sweeping range of 20HZ ~ 2000Hz;
Random vibration: the absolute value of the zero offset value in the vibration and the average value of the front and back zero offsets must be less than 0.5°/h.

Impact test conditions

Peak acceleration (g)	30
Duration (ms)	10
Number of impacts	3 times in each direction
Waveform	Half sine wave
Direction	X、Y、Z
Note: The interval between two impacts is not less than 1.5s	

During the impact, the product is in the energized state, and the product should be able to work normally after completing the mechanical impact. The zero change value before and after the impact is less than 0.3°/h.

Definition of output interfaces

Node number	Definition	Remark	colour
1	T+	X gyroscope output signal+	Yellow
2	T-	X gyroscope output signal-	Orange
3	R+	R gyroscope output signal+	Blue
4	R-	R gyroscope output signal-	Green
5、13	+5V	+5V power input	Red
6、7	±5VGND	GND	Black

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