

## F-107型光纤陀螺仪

F-107 fiber optic gyroscope



### 产品概述

F-107型光纤陀螺仪是一款经典的中精度数字闭环惯性角速度传感器，基于萨格纳克原理，由SLD光源、光纤分束器、光电探测器、集成光学相位调制器、保偏光纤环、控制电路组成。

### 产品特点

工程化程度高、性价比高  
纯固态设计、环境适应性强  
超长寿命，MTBF超过20000h  
单 (+5V)供电、简化系统设计  
全数字RS-422电气接口

### 产品应用

光电吊舱、飞控平台、测绘、轨道惯导铁路检测、平台稳定装置、动中通、导引头、惯性测量单元

### Product overview

F-107 fiber optic gyroscope is a classic medium-precision digital closed-loop inertial angular velocity sensor based on the Sagnac principle, which is consisted of SLD light source, fiber splitter, photodetector, integrated optical phase modulator, polarization maintaining fiber loop, and control circuit.

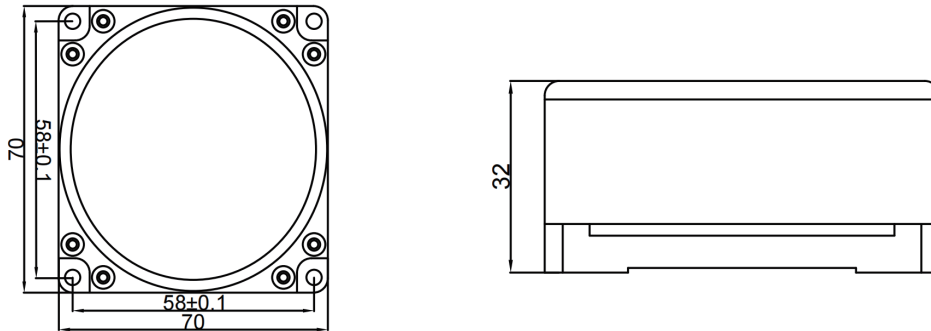
### Product features

High degree of engineering and high cost performance  
Pure solid-state design with strong environmental adaptability  
Ultra-long life, more than 20000h of MTBF  
Single (+5V) power supply of a simplified system design  
All-digital RS-422 electrical interface

### Product application

Photoelectric pod, flight control platform, surveying and mapping, orbital inertial railway detection Platform stabilizing device, moving communication, seeker, inertial measurement unit

## 结构尺寸 Structural dimensions



## 技术指标 Technical indicators

### 规格 Specifications

|   |                          |
|---|--------------------------|
| 型号 Type   | F-107                    |
| 启动时间 Start-up time                                    | ≤3s                      |
| 测量范围 Measuring range                                  | ±500°/s                  |
| 零偏稳定性 Bias stability                                  | ≤0.05°/h, 10s            |
| 零偏稳定性(全温) Bias stability (full temperature)           | ≤0.08°/h, 10s            |
| 零偏重复性 Bias repeatability                              | ≤0.02°/h                 |
| 角度随机游走系数 Angle random walk coefficient                | ≤0.005°/h <sup>1/2</sup> |
| 标度因数稳定性 Scale factor stability                        | ≤30ppm                   |
| 标度因数重复性 Scale factor repeatability                    | ≤10ppm                   |
| 标度因数不对称性 Scale factor asymmetry                       | ≤5ppm                    |
| 标度因数非线性度 Scale factor nonlinearity                    | ≤10ppm                   |
| 标度因数稳定性(全温) Scale factor stability (full temperature) | ≤1500ppm                 |
| 磁场敏感性 Magnetic field sensitivity                      | ≤0.1°/h/Gs               |
| 带宽 Bandwidth  | ≥200Hz                   |
| MTBF  | ≥20000h                  |

### 电气/机械 Electrical/Mechanical

|                                      |                   |
|--------------------------------------|-------------------|
| 外形尺寸 Size                            | Φ70*32mm          |
| 重量 Weight                            | < 230g            |
| 输入电压 Input voltage                   | +4.75~+5.25V      |
| 功耗 Power waste                       | 2.5W (典型) 5W (最大) |
| 工作温度 Working temperature             | -40~+60°C         |
| 存储温度 Storage temperature             | -45~+85°C         |
| 随机振动 Random vibration                | 6.06g, 20~2000Hz  |
| 对外连接器 External connector             | J30V2-9TJW-P2     |
| 对外电气接口 External electrical interface | RS-422            |