

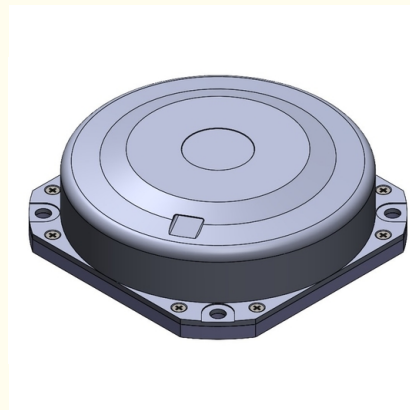
## S-F120H high-precision single-axis closed-loop fiber optic gyroscope, Constant Temperature -50 C -75 C Single-Axis Fiber Optic Gyroscope with Bias stability $\leq 0.001$

Our Product Introduction

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### Basic Information

- Place of Origin: SHENZHEN
- Brand Name: FOVA
- Certification: CE/FCC
- Model Number: S-F120H
- Minimum Order Quantity: 2
- Delivery Time: 20
- Payment Terms: T/T
- Supply Ability: 300PCS/MONTH



### Product Specification

- Measuring Range: 400~+400
- Bias Stability (1 , 100s):  $\leq 0.001$
- Zero Bias Repeatability  $\leq 0.001$  (1 ):
- Scale Factor  $\leq 10$   
Asymmetry:
- Scale Factor  $\leq 10$   
Repeatability:
- Scale Factor  $\leq 10$   
Nonlinearity:
- Full Temperature Scale  $\leq 30$   
Factor Change:
- Random Walk  $\leq 0.0002$   
Coefficient:

## Product Description

### S-F 120 Fiber Optic Gyroscope

S-F120H fiber optic gyro is a high-precision single-axis closed-loop fiber optic gyro, as shown in Figure 1, the structure of the optical system and the circuit system in one package, stable and reliable performance, easy and convenient to install, the user only needs to provide power supply through a plug to receive the output data of the gyro can be used. This product can be used in aviation, aerospace, marine, automotive electronics and other fields.

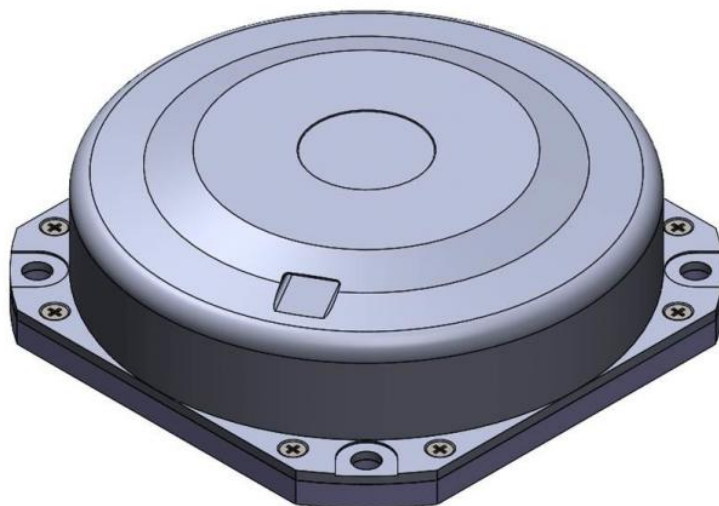


Figure 1 S-F120H fiber optic gyroscope model

#### 1 Performance indicators

The performance indicators of the Table .

Table 1 Performance index of S-F120H fiber optic gyroscope

NO	parameter	unit	1 20 HA	1 20 HB	1 20 HC
	Measuring range	°/s	-400~+400	-400~+400	-400~+400
	Bias stability (1 s, 100s)	°/h	≤0.001	≤0.002	≤0.003
	Zero bias repeatability (1 s)	°/h	≤0.001	≤0.002	≤0.003
	Scale factor asymmetry	ppm	≤10	≤20	≤20
	Scale factor repeatability	ppm	≤10	≤20	≤20
	Scale factor nonlinearity	ppm	≤10	≤20	≤20
	Full temperature scale factor change	ppm	≤30	≤50	≤50
	Random walk coefficient	°/h <sup>1/2</sup>	≤0.0002	≤0.0003	≤0.0004
	Steady-state power consumption	W	≤4.0	≤4.0	≤4.0
	bandwidth	Hz	≥200	≥200	≥200
	weight	g	≤900	≤900	≤900
	Operating temperature	°C	-45~+70	-45~+70	-45~+70
	Storage temperature	°C	-50~+75	-50~+75	-50~+75

#### 2 Product size

The appearance and installation dimensions of Figure the S-F120H fiber optic gyroscope are shown in Figure 2.

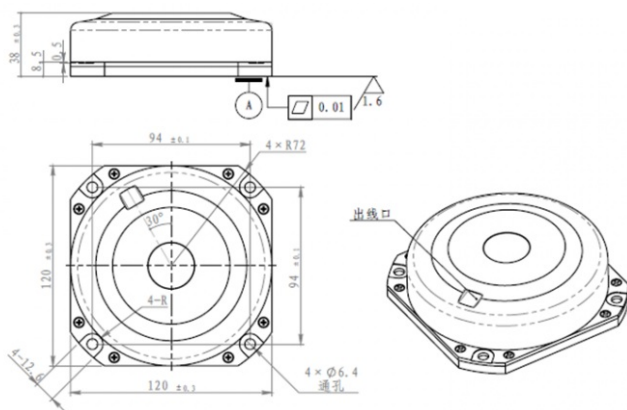


Figure 2 Appearance and installation dimensions of S -F120H fiber optic gyroscope

### 3 Electrical interface

#### 3.1 Power Requirements

the S -F120H fiber optic gyroscope power supply are shown in Table Table 1.

Table 1Power supply requirements for fiber optic gyroscope

parameter	Technical requirements	Remark
Supply current(A)	+5V: Current $\geq 0.5A$	Inrush current $\geq 1A$
	-5V: Current $\geq 0.2A$	
Supply voltage (V)	$\pm 5(\pm 5\%)$	
Power ripple (mv)	$\leq 20$	Vpp

#### 3.2 Interface Definition

The gyro is connected to the external electrical system using a J30-21ZK connector. The wiring definition is shown in Table 2:

Table 2Gyroscope external electrical connection table (J30-21ZK)

Gyro output mode	Model 422	
Power supply socket ( J30-21ZK)	Connection table between mainboard and acquisition line	
	8, 10 (required)	+5V
	6, 7 (required)	DGND(AGND)
	13, 14 (required)	-5V
	16 (422 interface is valid)	422 communication signal T+
	19 (422 interface is valid)	422 Communication signal T-
	15 (422 interface is valid)	422 communication signal R+
	18 (422 interface is valid)	422 Communication signal R-

#### 3.3 Communication protocol

RS-422 method

Serial communication, in line with RS-422 interface standard;

Data update interval: 2.5ms, data transmission baud rate: 115.2kbps;

Data Format:

Data transmission format: Each frame of data is 11 bits, the first bit is the start bit (0), the 2nd to 9th bits are data bits, the 10th bit is the even parity bit, and the 11th bit is the stop bit;

Check mode: even check;

The gyroscope valid data is 32 bits (the highest bit is the sign bit, 0 is "+", 1 is "-"), and the temperature valid data is 21 bits (the highest bit is the sign bit, 0 is "+", 1 is "-");

Data packet format: Each transmission includes 10 bytes in total. The first byte is the frame header (80H); the second byte is the first byte data of the gyroscope (low byte), the third byte is the second byte data of the gyroscope, the fourth byte is the third byte data of the gyroscope, the fifth byte is the fourth byte data of the gyroscope, and the sixth byte is the fifth byte data of the gyroscope (high byte); the

seventh byte is the check bit, which is the XOR value of the first five bytes (gyroscope data) in the data packet; the eighth byte is the low byte of the temperature data, the ninth byte is the middle byte of the temperature data, and the tenth byte is the high byte of the temperature data;Data storage method:

	High							Low
1	1	0	0	0	0	0	0	0
2	0	D6	D5	D4	D3	D2	D1	D0
3	0	D13	D12	D11	D10	D9	D8	D7
4	0	D20	D19	D18	D17	D16	D15	D14
5	0	D27	D26	D25	D24	D23	D22	D21
6	0	0	0	0	D31	D30	D29	D28
7	0	X	X	X	X	X	X	X
8	0	T6	T5	T4	T3	T2	T1	T0
9	0	T13	T12	T11	T10	T9	T8	T7
10	0	T20	T19	T18	T17	T16	T15	T14



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