
Instructions of FOG-60 Fiber-Optic Gyroscope

1. Specifications

Testing of specifications of FOG-60 single-axis fiber-optic gyroscope follows GJB 2426A-2004, specifications are shown as below:

Power consumption: $\leq 5W$ (+5V current $\leq 0.6A$, -5V current $\leq 0.3A$);

Bias stability in all temperature: $\leq 0.5^\circ /h$;

Bias repeatability in all temperature: $\leq 0.5^\circ /h$;

Scale factor nonlinearity: $\leq 100ppm$;

Measurement range: $\geq \pm 350^\circ /s$;

Operating temperature: $-40^\circ C \sim +60^\circ C$

2. Electric Interface

1 Power supply voltage: $\pm 5V$ (Ripple $\leq 30mV$);

2 Electric connector: J30J-21ZKP, refer to Table 1 for definition of each node;

3 Cable length : 200mm~250mm;

Table1 Node Definition

No	Signal	Description	Line color	Line diameter
1	+5V	+5V	red	0.15mm
2	-5V	-5V	green	
3	GND	GND	blue	
4	TX+	Positive RS-422 line output (T+)	black	
5	TX-	Negative RS-422 line output (T-)	white	

3 Communication Protocol

Communication parameters of the fiber-optic gyroscope follow the standard of RS-422, communication parameters are shown as below :

①Bound rate: 230400bps;

②Data bits: 8bits (LSB first, MSB last);

③Parity: none;

④Stop bits: 1bit

FOG-60 transmits data through RS-422at the speed of per 0.5ms .Data format is shown in Table 2.

Table 2 Data Format

Data Domain 1	Byte1	Frame head (Beginning of a frame)	0x80
Data Domain 2	Byte2	The most significant byte of angular velocity	Each byte in this data domain has only 7bits of data , the most significant bit of each byte is 0; angular velocity-data with no dimension is expressed by a 4-byte signed-integrity, the most significant byte comes first,and the least significant byte comes last.
	Byte3	The second most significant byte of angular velocity	
	Byte4	The second least significant byte of angular velocity	
	Byte5	The least significant byte of angular velocity	
Data Domain 3	Byte6	Temperature data	Temperature data is expressed by one byte of signed integrity with the unit of °C.
Data Domain 4	Byte7	Checksum	The lowest Byte of the sum of Byte2~6.

4 Mechanical Characters

Mass: $\leq 200\text{g}$;

Outline dimension and mounting dimension: Refer to Fig. 1;

Mounting Holes: $4 \times \Phi 3.2$ via holes;

Mounting surface flatness: $0.015\text{mm}/100\text{mm}$;

Surface preparation: Anodic oxidation.

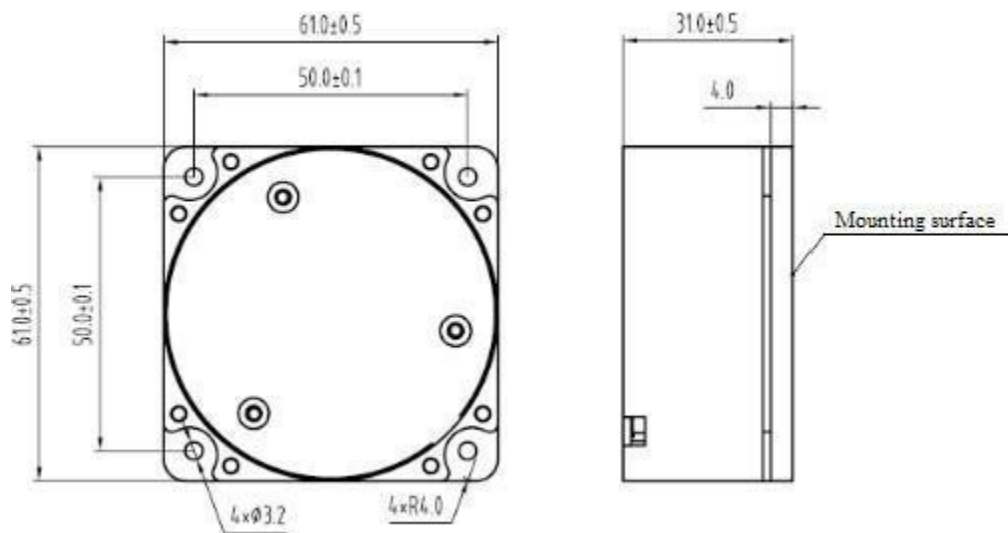


Fig 1. FOG-60 Outline Dimension and Mounting Dimension