Mini 3 Axis Fiber Optic

FG-1321-R07

Figure 1. Top View of FG 1321 R07

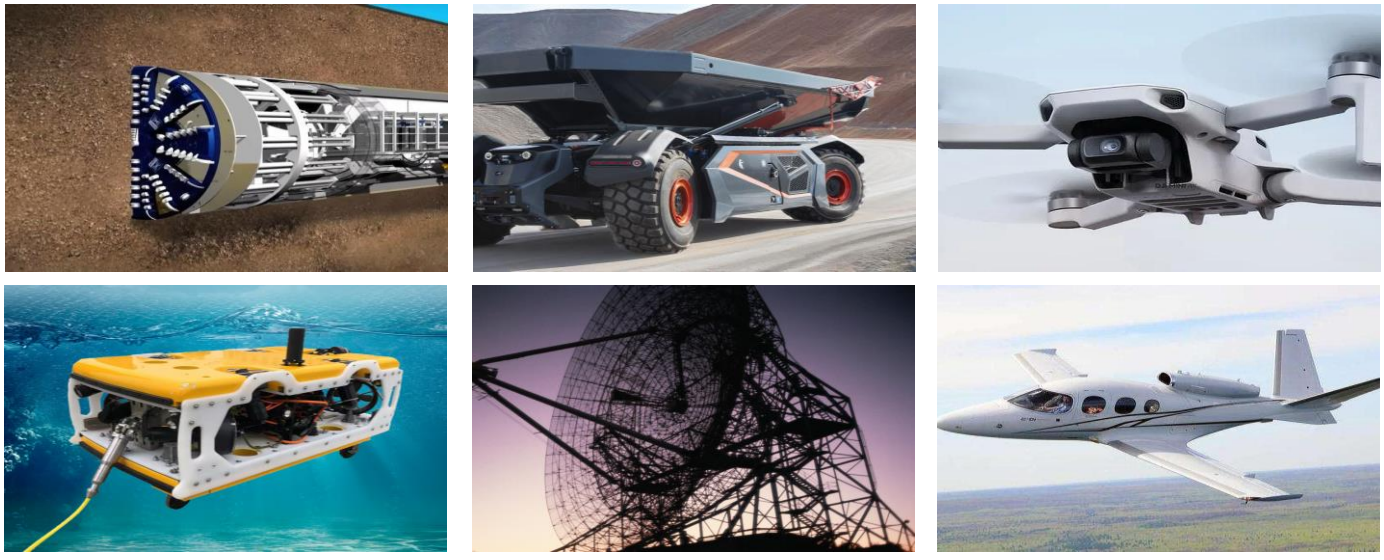


Figure 2. Application scenarios

FEATURES

- All-digital closed-loop control
- Micro-signal correlation detection technology
- ITAR-free design for global accessibility
- Low power consumption and compact size
- RS422 digital output (customizable)
- Wide operating temperature: −45°C to +70°C
- High shock and vibration resistance

APPLICATIONS

- Airborne navigation
- Unmanned aircraft/ship/vehicle
- Positioning and orientation systems
- Ship and aviation systems
- Infrared pod servo guidance
- Orbital detection and attitude control
- Civilian and commercial projects

DESCRIPTION

The FG 1321 R07 is a medium-precision, three-axis fiber-optic gyro (FOG) that combines advanced digital closed-loop control and micro-signal correlation detection technologies. Its miniaturized optical circuit components reduce volume while maintaining the inherent advantages of fiber-optic gyros, such as excellent linearity and high adaptability to temperature and environmental changes.

Designed with a +5VDC power supply and industry-standard RS422 digital output, the FG 1321 R07 simplifies integration into diverse systems. Its ITAR-free status eliminates export/import licensing complexities, making it ideal for global deployment. The gyro's robust construction ensures reliable performance under extreme conditions, including high shock (100g, 6ms) and vibration (18g).

SPECIFICATIONS

Table 1.

Parameter	Min.	Typ.	Max.	Unit/Note
Angular Velocity Range		±890		°/s
Zero-Bias Stability		0.3	0.5	°/h (10s, 1σ, 25°C)
Resolution		≤0.15		°/h
Scale Factor Error		≤200		ppm
Dynamic Bandwidth		≥1		kHz (3dB)
Operating Temperature	−45		+70	°C
Storage Temperature	−55		+85	°C
Power Consumption		≤6		W
Supply Voltage		+5		VDC
Weight		≤350		g
Dimensions		77 ×65×51		mm
Mounting Holes		4-φ4.2		mm
Power Consumption		≤6W		
Supply Voltage		+5VDC		
Electrical Interface	RS 422 Customizable			

Table 2： Electrical Interfaces

Connector point number: The product uses a 15-pin connector for external electrical connection, and the point number is defined as follows:

Serial Number	Connector Point Number	Definition
1	1&2	VCC（power supply+）
2	9&10	VCC_GND（power supply-）
3	7	422_IN+
4	8	422_OUT+
5	14	422_IN-
6	15	422_OUT-

Product power supply: 18V~36V

Communication interface: the interface form is bidirectional 422 interface.

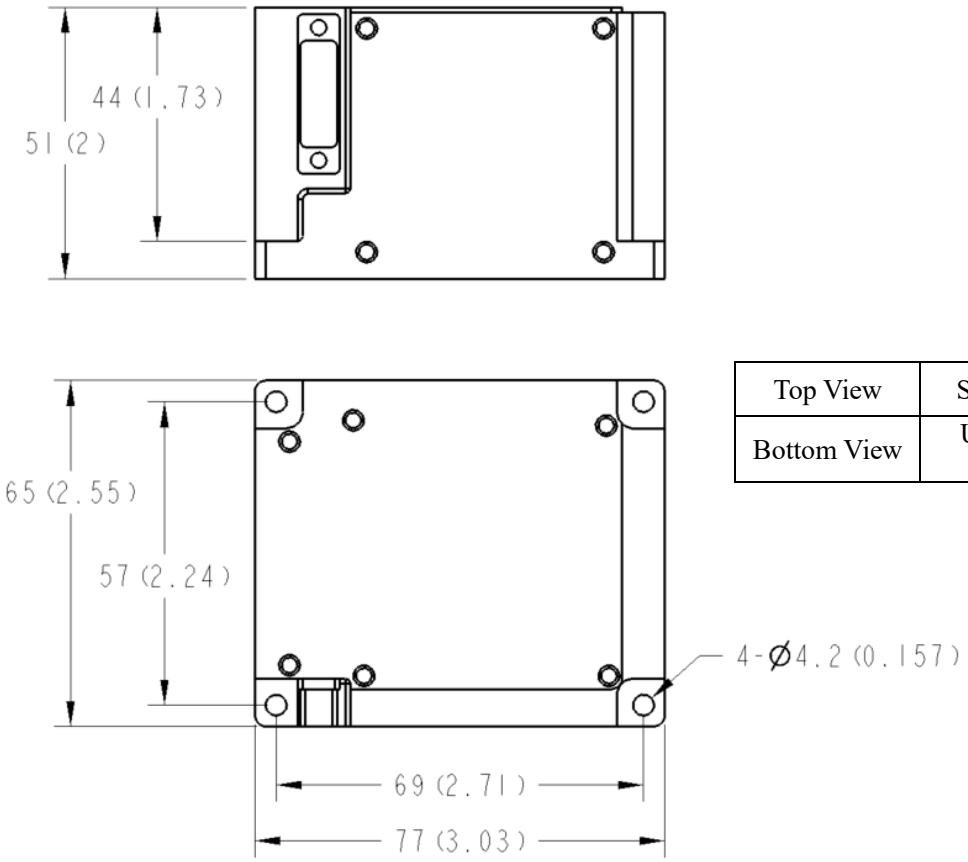
Communication mode: After the gyro combination receives the synchronous pulse (rising edge), it will send the gyro-sensitive angular rate information to the acquisition system. The communication baud rate is 460800, and the communication protocol is shown in the following table:

Table 3 Frame format of output data

Byte	Definition	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
1	Header	1	0	0	0	0	0	0	0
2	X Gyro High 4 bits	0	0	0	0	D31	D30	D29	D28
3	X Gyro Middle 7bits	0	D27	D26	D25	D24	D23	D22	D21
4	X Gyro Low 7 bits	0	D20	D19	D18	D17	D16	D15	D14
5	X Gyro Middle 7bits	0	D13	D12	D11	D10	D9	D8	D7
6	X Gyro Low 7bits	0	D6	D5	D4	D3	D2	D1	D0
7	X Gyro Temperature 7bits	0	T13	T12	T11	T10	T9	T8	T7
8	X Gyro Temperature low 7bits	0	T6	T5	T4	T3	T2	T1	T0
9-15	Y Gyro data	Same format as above							
16-22	Z Gyro data	Same format as above							
23	Cycle code	0-0xFF cycle							
24	End of frame	1	0	1	0	1	0	1	0

DIMENSIONS

Outline Dimensions：L77×W65×H51（mm）



Top View	Side View
Bottom View	Unit: mm (inch)

Figure 3. Outline Dimensions

ORDERING INFORMATION

Part Number	Communication Mode	Package Situation	Buy Now
FG-1321-R07	RS422	Metal package	* *

*: both and are our online store icons. Our products can be ordered from either one of them with the same pricing and delivery time.

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