BLITZSensor BS-FU50A-300-D1EW Single Axis Fiber Optic Gyroscope Instructions

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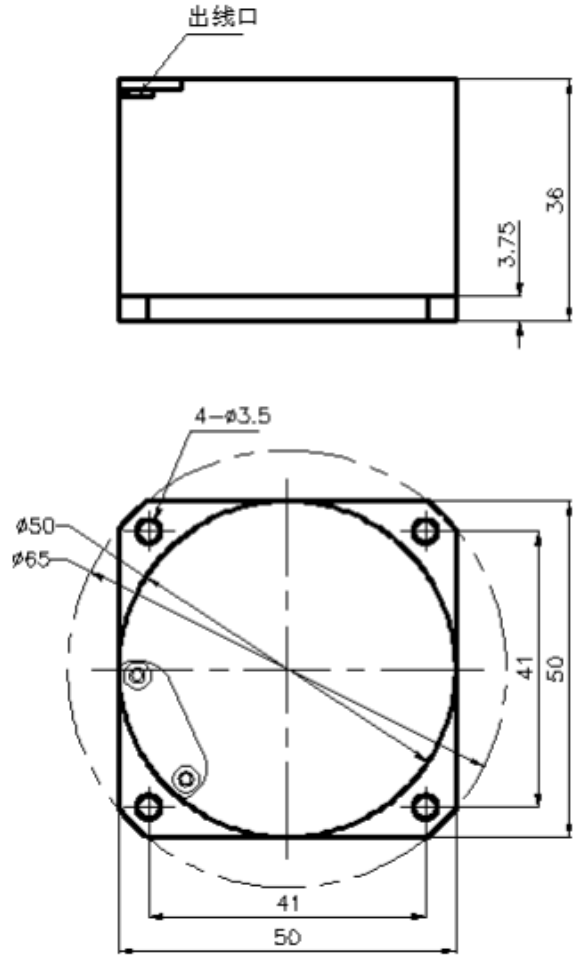
Contents

Overall dimension



- **Overall dimension:** (unit: mm) Φ50 X 36 (OD X H) Mounting face 50 X 50mm
- **Installation dimensions :** 41 X 41, 4 M3 screws
- **Weight** 220±30g

ORDER CODE

BS-FU50A-300-D1EW
BS-FU5

0B-300-D1EW

A and B series differ according to Performance index below

Performance index

Scale factor
Non-linearity of scale factor at room temperature: < 100 ppm Normal temperature scale factor repeatability: < 100 ppm (1σ)

Zero-bias stability
Zero-bias stability at room temperature:
BS-FU50A: < 0.1 °/H (1σ) 10s smooth 1H test result
BS-FU50B: < 0.2 °/H (1σ) 10s smooth 1H test result

Zero-bias repeatability

Normal-temperature zero-bias repeatability:
BS-FU50A: < 0.2 °/H (1σ) 6 test data calculation
BS-FU50B: < 0.3 °/H (1σ) 6 test data calculation

Full temperature operating range:
BS-FU50A: < 0.5 °/H (full temperature extreme difference)
BS-FU50B: < 0.6 °/H (full temperature limit difference)

Random walk
Less than 0.02 °/ hr

Bandwidth
Greater than 200Hz

Initialization time
Less than 5S

Dynamic Range
±300°/s

Environmental adaptability

Operating temperature
-45℃ +60℃
Storage temperature
-55℃ +75℃

Impact
100g (11 ms), 3 times in a row, in three directions. Mean change of zero deviation before and after impact ≤ 0.5 °/H.

Vibration
(A) Randomly swept spectral lines:
20~80Hz 3dB/oct
80~350 Hz 0.04
2 g /Hz 350~2000Hz -3dB/oct

(B) 3 minutes for each of the three directions, the gyroscope is in the working state during the vibration test, and the mean change of zero deviation before, during and after the vibration is ≤ 0.5 °/H.

Electrical interface

Gyro socket model
Model of external interface socket of gyroscope: J30-15ZK, connecting line: 0.12 mm AFR line, line length: 250 mm.

Wiring definition table

Pin number	Definition	Explain	Remark
1, 9	T+	Serial port output RS422 +	
2, 10	T-	Serial port output RS422-	
4, 5	+5VA	Analog supply + 5V	
6, 7	AGND	Analog power ground	
8, 15	—5VA	Analog power supply -5V	
12, 13	VCC	Digital supply + 5/+ 3.3V	
11, 14	GND	Digital power ground	

Power requirements:
+ 5V A: + 5V ± 5%, 0.4A (transient peak about 1.5A), ripple less than 50mV
-5V A: -5V ± 5%, 100mA, ripple less than 50mV
VCC: + 5V ± 10% or + 3.3 V ± 10%,

Note: GND and AGND shall not be connected to the gyro housing.

Communication

When the standard RS-422 serial communication interface is used, the protocol can be adjusted as required.

Hardware interface: the baud rate is 614.4kbps. The communication format is 11 bits of data per frame, including 1start bit, 8 data bits, 1 even parity bit and 1stop bit.The data update period is 0.5ms. Software communication protocol:

Gyro valid data is 32 bits (32-bit signed integer). The data packet transmits 7 bytes of data in total: the first byte is the frame header 80H; Bytes 2 to 6 are gyro data; The 7th byte is a check bit (the check bit is an exclusive or value of the data of the 2nd to 6th bytes).

Data format:
The first byte (frame header) is 80H:

1	0	0	0	0	0	0	0

The second byte is gyro data D6 ~ D0:

0	D6	D5	D4	D3	D2	D1	D0

The fourth byte is gyro data D20 ~ D14:

0	D20	D19	D18	D17	D16	D15	D14

The 5th byte is gyro data D27 ~ D21:

0	D27	D26	D25	D24	D23	D22	D21

The 6th byte is gyro data D31 ~ D28:

0	0	0	0	D31	D30	D29	D28

The 7th byte (check bit) is the exclusive or (XOR) of the 2nd to 6th bytes of data.

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Documents / Resources

	BLITZSensor BS-FU50A-300-D1EW Single Axis Fiber Optic Gyroscope [pdf] Instructions BS-FU50A-300-D1EW, BS-FU50B-300-D1EW, BS-FU50A-300-D1EW Single Axis Fiber Optic Gyroscope, Single Axis Fiber Optic Gyroscope, Axis Fiber Optic Gyroscope, Fiber Optic Gyroscope, Optic Gyroscope, Gyroscope