



Fiber Optic Integrated Navigation System

Model:S300D



Product Features

The fiber optic integrated navigation system S300D is based on cost-effective closed-loop fiber optic gyroscope, accelerometer and high-end GNSS receiving board, through multi-sensor fusion and navigation solution algorithm implementation to meet the needs of medium and high-precision mobile measurement systems, large UAVs, etc.

The application field requires accurate measurement of attitude, heading and position information.

Application scenarios

The system has a combined inertial/satellite navigation mode and a pure inertial mode.

The satellites that can be received by the GNSS receiver in the inertial/satellite integrated navigation mode satellite positioning information for combined navigation; output inertial solution position after losing signal speed attitude, with meter-level positioning accuracy in a short time.

After the pure inertia mode is started, it has the function of accurate attitude measurement and can output pitch rolling and heading, pure inertia can statically seek north.

Product Features

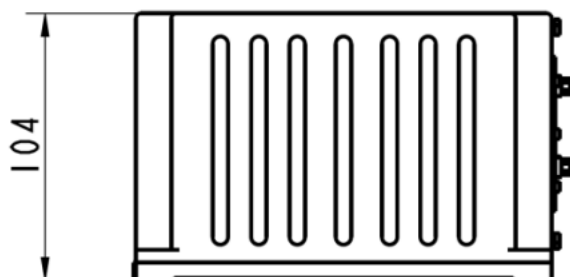
- Position accuracy up to centimeter level
- Attitude measurement error better than 0.01°
- Operating temperature range: -40~60℃
- Vibration environment: 20~2000Hz, 3.03g
- Rich interface types, support RS232, RS422, CAN and other standard interfaces



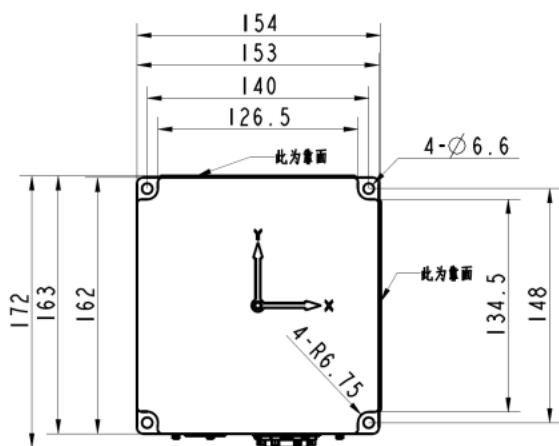
- Mean time between failures up to 30000h

Electrical Characteristics

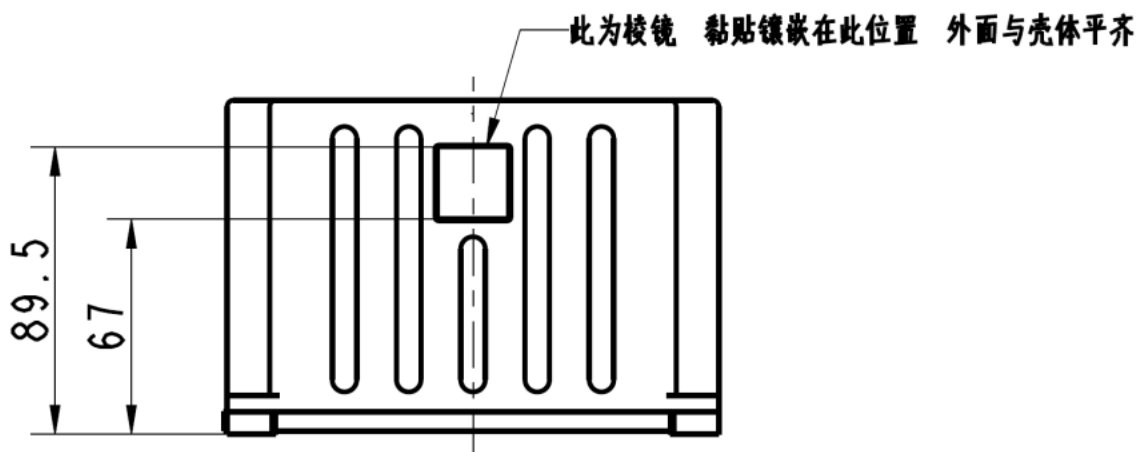
- Power supply: wide voltage input 12~36V
- Rated power: 24W (max)



Mechanical Dimensions



技术指标 Technical indicators



Technical indicators

Parameter	Attributes	Typical value	Unit
Position accuracy	Single point (RMS)	1.2	m
	RTK (RMS)	2cm+1ppm	
	Post-processing (RMS)	1cm+1ppm	
	Loss of Lock Accuracy (CEP)	2nm①	
Heading (RMS)	Combined accuracy	0.1②	°
	Post-processing	0.01	°



	Loss of lock retention accuracy	0.02①	°
	North-seeking accuracy	0.2③	°SecL
Attitude (RMS)	Combined accuracy	0.01	°
	Post-processing	0.006	°
	Loss of lock retention accuracy	0.02①	°
Horizontal Velocity Accuracy (RMS)		0.05	m/s
Timing accuracy		20	ns
Data output frequency		200④	Hz
Gyro	Range	300	°/s
	Zero bias stability	0.02⑤	°/h
	Scale factor	50	ppm
	Corner random walk	0.005	°/√hr
Accelerometer	Range	16	g
	Zero bias stability	50⑤	μg
	Scale factor	50	ppm
	Speed random walk	0.01	m/s/√hr

Speed random walk

Parameter	Attributes	Reference	Unit
Physical size	Size	176.8×188.8×117	mm3
	Weight	< 5	kg
Electrical Characteristics	Rated voltage	12~36	V
	Rated power	24 (steady state)	W
	Memory	Reserved	
Environmental indicators	Operating temperature	-40~+60	°C
	Storage temperature	-45~+70	°C
	Random vibration	3.03 (20~2000Hz)	g
	MTBF	30000	h
Interface features		PPS, EVENT, RS232, RS422, CAN (optional)	
		Network port (reserved), antenna port, wheel speed sensor port	

Note:

- ① The alignment is valid, and the lock is lost for 60 minutes;
 ② Vehicle conditions, need to be maneuvered;
 ③ Two-position alignment, 15min alignment, the difference between the two positions is greater than 90 degrees;
 ④ Single output 200Hz;
 ⑤ 10s average.