CALTROP INSTRUMENTS
A BRIDGE TO PERCEIVE THE WORLD

Product Description:

This product is built-in high-precision three-axis integrated fiber-optic gyro, high-precision quartz flexure accelerometer and mobile mapping-grade multi-mode and multi-frequency GNSS receiver supporting autonomous BeiDou function. Through advanced intelligent combination navigation algorithm and Kalman filtering, optimized design for GNSS occlusion and multi-path interference situation, it can realize high-precision heading, attitude, speed and position measurement of moving carriers.

The inertial guidance system also has a variety of sensor interfaces such as GNSS/odometer/DVL/barometric altimeter, which can well meet the demand for long-time, high-precision and high-reliability navigation applications in complex environments such as urban canyons, and can be used for the navigation and control of various unmanned systems.

Features:

- Fast and accurate determination of initial heading and attitude
- Support real-time heading and attitude output
- Built-in GPS, BeiDou dual-mode receiver
- Dynamic fast alignment
- INS/GNSS combination design
- Support IE post-processing
- Anti-electromagnetic interference and vibration
- Enhanced Kalman filtering algorithm

Applications:

- Car Navigation
- Airborne Navigation
- Shipboard Navigation
- Stabilization Control

Specification:

Combined inertial/satellite navigation accuracy	
Attitude Accuracy	0.01°（1σ）；
	Roll、Pitch：≤0.04°
Position Accuracy	Point position：≤3m（1σ）；
	RTK：≤2cm+1ppm（1σ）
Velocity Accuracy	0.02m/s（Carrier speed less than 500m/s）
Registration Time	1～2min（Depends on the form of dynamic mobility）≤1min(Dual antenna assisted directional)
Heave	<5cm(heave<1m) or 5%(heave>1m)
Inertia/ODO/DVL Accuracy	0.5%×Miles traveled（depending on the accuracy of the external odometer）

Specification：

Pure inertial navigation accuracy			
Attitude Accuracy	Heading Alignment Accuracy：0.3°secφ （RMS, φ = local latitude） （Static self-navigating, single antenna static/manual binding of initial coordinates）		
	Horizontal Attitude Alignment Accuracy：0.01°（1σ）；		
	Horizontal Attitude Holding Accuracy：≤0.05°（1σ）。		
Position Accuracy	Position Accuracy：≤1nmile（10min） （50%CEP）		
Velocity Accuracy	Horizontal velocity accuracy：≤2.6m/s（10min） （1σ）。		
Main Device Characteristic			
Gyroscopes	Range ±500°/s	Zero bias stability	≤0.07°/h（1σ）
Accelerometers	Range ±10g	Zero bias stability	≤20μg（1σ）

Physical Characteristic		Interface Characteristic	
Supply voltage	24V DC rate（12～32V DC）	Interface method	4 serial ports (RS232 or RS422)
Electric consumption	＜25W		Support PPS, EVENTMARK input/output
Operating temperature	-40℃~+55℃	Transmission speed	9600～961200bps（configure）
Protection level	IP65	**User mode**	
Physical dimension	≤140mm×125mm×126mm		
Impact	15g，11ms Half-sine shock		
Shock	6.06g，20～2000Hz		
Weight	≤2.75Kg	Vehicle-mounted (default), aircraft-mounted, ship-mounted	

The data contained in this document is intended for the use of technical trainers only.
The customer's technical department is responsible for assessing the suitability of the product for the intended application and the completeness of the product information given in this document in relation to such application.
For further information on products, technology, terms and conditions of delivery and prices, please contact our nearest office (www.senstechxyz.com).

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