

IF3500: HIGH PERFORMANCE FOG INS+GNSS SENSOR

■ PRODUCT DESCRIPTION



IF3500 is a self-developed fiber optic inertial navigation system with small size and high accuracy, which can achieve self north finding at 0.1° . The system consists of a fiber optic gyroscope with zero bias stability of $0.015^\circ/h$, a high-precision quartz accelerometer, and a full system multi frequency satellite module supporting Beidou function. This product can independently search for north navigation and also supports single and dual antenna combinations. Equipped with excellent navigation fusion algorithms, optimized for satellite occlusion, multipath interference, and other situations.

■ PRODUCT MAIN SPECIFICATION

System accuracy	Pure inertia seeking north	$\leq 0.1^\circ \times \text{sec}\phi$	(RMS)
	Satellite integrated navigation	$\leq 0.05^\circ$	(RMS, Single antenna dynamic alignment)
	Pure inertial attitude	$\leq 0.02^\circ \times \text{sec}\phi$	(RMS)
	Combined attitude	$\leq 0.01^\circ$	(RMS)
Position accuracy	Single point positioning	$\leq 1.2\text{m}$	(INS+GNSS, RMS)
	Odometer/DVL combination	$1\% \times D$ (D is the mileage, depending on the odometer accuracy)	
	Pure INS	$\leq 1.2\text{nm/h}$ (CEP)	
Velocity accuracy	0.02m/s (INS+GNSS, RMS)		
Heave accuracy	$5\text{cm} \& 1\%$		
Starting time	$\leq 5\text{s}$		
Time alignment	≤ 1 minute (satellite assisted); ≤ 5 -minute (pure INS)		
Data update rate	200Hz (configurable)		
Main device indicators			
Gyroscope	Range	± 500	$^\circ/\text{s}$
	Bias stability	≤ 0.01	$^\circ/\text{h}$ (GJB, 1σ)
Accelerometer	Range	± 30	g
	Bias stability	≤ 20	μg (GJB, 1σ)
Physical property			
Voltage	12~36V	Power consumption	$\leq 20\text{W}$
Working temperature	$-40^\circ\text{C} \sim +60^\circ\text{C}$	IP grade	IP65
Dimension	$150 \times 130 \times 135\text{mm}$	Net weight	$\leq 3\text{kg}$
Vibration	Meet the vibration requirements of GJB150.16A-2009 and propeller aircraft equipment		
Shock	$30\text{g}, 11\text{ms}$, half sine		
Interface Characteristics			
Interface type	Channel 1: RS232; Channel 2: RS422; Channel 2: CAN; Channel 1: Ethernet; Channel 1: PPS		
Transmission speed	$9600 \sim 921600\text{bps}$ (configurable)		

■ PRODUCT APPLICATION

- Drone
- ROV and unmanned ship
- ROV/ AUV navigation
- Aerospace utilization