

# AHRS1000

## High Performance Attitude and Heading Reference System



### Main Features

- 3-axis Attitude Angle Accuracy: 0.5° (static), 2° (dynamic)
- Attitude Angle Range: yaw ±180°, pitch ±90°, roll ±180°
- Range: Acc ±5g, Gyro ±300°/s, Magnetic ±6gauss
- Bandwidth: 200Hz, Sampling Rate: 5000 samples/s
- Data Storage Capacity: 8GB
- Wide Working Temperature: -40°C~+85°C
- High Stability & Reliability, High Survivability

AHRS1000 Attitude and Heading Reference System (AHRS) is a high performance inertial measurement system, it can measure 3-axis attitude angles (yaw, pitch, roll) for the strap-down carrier. No matter the carrier is moving or static, AHRS1000 can work stably and provide highly precise attitude angles. Each X, Y, Z axis of AHRS1000 is composed of one accelerometer, one gyro, one magnetic sensor. the gyro can provide the accurate 3-axis angular rate, the accurate 3-axis attitude angles can be calculated according to strap-down algorithm, the magnetic sensor and accelerometer can amend the attitude angles continuously, it can realize dynamic error compensation through Kalman filter and complementary filter methods.

In full temperature range (-45°C~+85°C), it adopts digital signal processor (DSP) to adjust, compensate (zero position, installation error), layout of strap-down navigation system and attitude angle calculation, etc. The system enjoys small size, light weight, it is widely applied in Unmanned Aircraft, Precision Guided Weapon, ROV Underwater Navigation, Ship Stability & Control, etc.

- ✓ **12-Step Quality Control, Super Reliability, More Functions**
- ✓ **Adopting Original Big Brand Component, High-class Material, Competitive Price**

- ✓ **Real Actual Precise after Calibration, Perfect Performance**
- ✓ **Successful Applications in Tens of Fields, More than 1000 Customers are Using**

### Typical Applications



Unmanned Aircraft



Precision Guided Weapon



ROV Underwater Navigation



Ship Stability & Control

### Super Reliability & Performance

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Focus on MEMS Measurement & Control Technologies, Products include:

MEMS Acc	MEMS Gyro	IMU	Vertical Gyro	AHRS
INS	GNSS/INS	E-compass	Inclinometer	FOG

# AHRS1000

## High Performance Attitude and Heading Reference System

### Technical Specifications

Technical Specs			
Item	Specs	Value	
System General Specs	Startup time	<1s	
	Output mode	speed, position, attitude, angular rate, acceleration	
	Bandwidth	200Hz (settable)	
	Data storage capacity	8GB	
	Sampling rate	5000samples/s	
Heading and Attitude Parameters	Yaw	Range	$\pm 180^\circ$
		Static accuracy	0.5°
		Dynamic accuracy	2° (RMS)
	Pitch	Range	$\pm 90^\circ$
		Static accuracy	0.5°
		Dynamic accuracy	2° (RMS)
	Roll	Range	$\pm 180^\circ$
		Static accuracy	0.5°
		Dynamic accuracy	2° (RMS)
Gyro	Range	$\pm 300^\circ/s$	
	Bias stability	200°/h	
	Resolution	0.05°/s	
	Bandwidth	40Hz	
	Output noise	0.2°/s	
Accelerometer	Range	$\pm 5g$	
	Non-linearity	<5%	
	Resolution	0.001g	
	Bandwidth	40Hz	
	Output noise	0.5mg	
Magnetic Sensor	Range	$\pm 6Gauss$	
	Output noise	0.5mg	
	Bandwidth	40Hz	
	Non-linearity	<1%	
Electrical Characteristics	Power supply	5.7~16VDC	
	Current	300mA	
	Output interface	RS232	
	Connector	9-pin D model connector	
Physical Characteristics	Weight	280g	
	Dimension	60*60*60mm	
Environment Characteristics	Working temperature	-40° C~+85°C	
	Shock	200g, 6ms	

### Super Reliability & Performance