U5000: HIGH PRECISION MEMS IMU SENSOR

PRODUCT DESCRIPTION

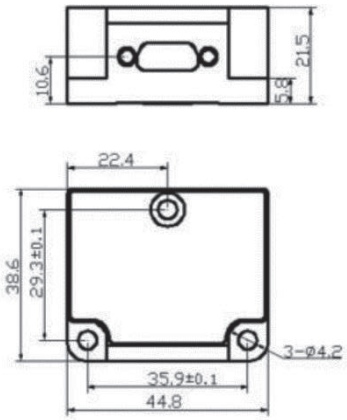
U5000-IMU sensor is a highly reliable and cost-effective six axis MEMS inertial heading and attitude system, which can be widely used in navigation, control, and measurement fields represented by vehicles, ships, and drones. High performance MEMS gyroscopes and MEMS accelerometers are integrated into the independent structure, and the gyroscopes and accelerometers selected in the system represent the leading level of MEMS process inertial devices.

The product can replace STIM-300 IMU, and its core indicators such as full temperature drift, scale factor error, and vibration performance are 3-5 times higher than STIM-300 sensor.

PRODUCT MAIN SPECIFICATION

Parameters		Unit	U5000
Gyroscope	Range	°/s	±400
	Zero bias stability (Allan Curve, 1σ)	°/h	≤0.5
	Zero bias stability (10s smoothing)	°/h	≤3
	Zero bias stability (full temperature)	°/h	≤15
	Zero bias repeatability	°/h	≤3
	Scale factor nonlinearity	ppm	≤100
	Bandwidth	Hz	100
Accelerometer	Range	g	±30
	Zero bias stability (10s smoothing)	μg	≤100
	Zero bias stability (full temperature)	mg	≤2
	Zero bias repeatability	μg	≤100
	Scale factor nonlinearity	ppm	≤1000
	Bandwidth	Hz	100
Interface	Starting time	s	2
	Output frequency	Hz	200 (Customizable, up to 1000)
	Communication interface	—	RS232 / RS422
Mechanical properties	Size	mm	44.8 × 38.6 × 21.5
	Weight	g	≤60
Electrical environment	Working temperature	℃	-40 ~ +80
	Storage temperature	℃	-55 ~ +85
	Working voltage	V	5 ±0.2
	Power consumption	W	2
	Vibration	grms	7.72
	Shock	g	1000, 1ms (on power)
	MTBF	h	200,000 hrs

PRODUCT DIMENSION



PRODUCT FEATURES

- Resistance to harsh mechanical environments
- High performance replacement with STIM300
- Equipped with software online upgrade function
- Full temperature calibration compensation from 40℃-80℃
- 1KHz high-speed sampling

PRODUCT APPLICATION

- UAV/Drone attitude reference/trajectory control
- Drilling and extraction system
- Radar/infrared antenna stabilization platform
- Missile Flight Control
- Vehicle and ship attitude measurement
- Vehicle positioning and orientation