

U3000: DIGITAL OUTPUT HIGH PRECISION MEMS IMU SENSOR



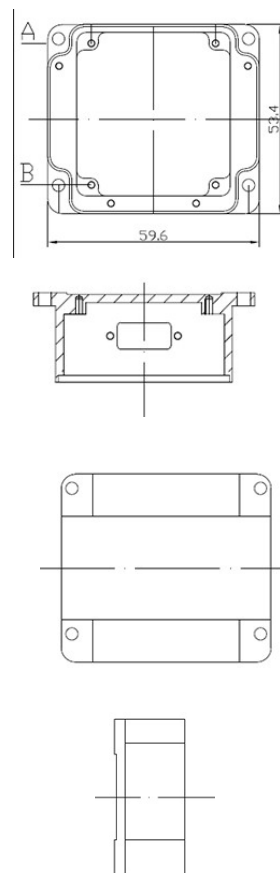
■ PRODUCT DESCRIPTION

The U3000 sensor is a high-precision strapdown Inertial measurement unit that can measure the angular velocity and acceleration parameters of a moving carrier. The original data is estimated by 6-state Kalman filter with appropriate gain, which is suitable for inertial measurement in motion or vibration state. This product adopts highly reliable MEMS accelerometers and gyroscopes, and ensures measurement accuracy through algorithms. At the same time, the sealing design and strict production process ensure that the product can still accurately measure the angular velocity and acceleration of the carrier and other motion parameters in harsh environments. Through nonlinear compensation, orthogonal compensation, temperature compensation, drift compensation and other compensation, the error source of the inertial chip itself can be greatly eliminated, and the product accuracy level can be improved. This product has a digital interface and can be easily integrated into the user's system. This product is all self-developed and has the characteristics of low power consumption, high reliability, high stability, shockproof, waterproof, dustproof, and electromagnetic interference resistance.

■ PRODUCT MAIN SPECIFICATION

Main parameter	Indication	Unit
Gyroscope		
Measurement range (can be customized)	±100	°/s
Angle random walk	0.09	°/√h
Linear scale factor	0.08%	FS
Zero bias stability (In-Run)	3	°/h (Allan)
Zero bias repeatability (In-Run)	3	°/h(Allan)
Accelerometer		
Measurement range (can be customized)	±10/±20/±40	g
Angle random walk	0.03	(m/s)/√h
Linear scale factor	0.1%	FS
Zero bias stability (In-Run)	0.05	mg
Zero bias repeatability (In-Run)	0.12	mg
Electrical indicators		
Data output interface	RS422	
Data update frequency	100	Hz
Voltage	DC 5±0.3	V
Power consumption	<0.6	W
Environment		
Operating temperature	-20~+85	°C
Storage temperature	-40~+85	°C
Anti-vibration	10	g
Impact resistance	150	g@15ms
Mechanical properties		
Waterproof level	IP67	
Dimension	59.6*59*23.5mm	
Weight	120g (excluding packaging box)	

■ PRODUCT DIMENSION



SIZE: L59.6*W59*H23.5MM

■ PRODUCT APPLICATION

- Autonomous mining or coal vehicles or machines
- Industry automation
- Robotics
- Autonomous agriculture vehicle or machines
- Communication in moving system
- Automated guided vehicle (AGV)
- Unmanned aerial vehicles (UAV)
- Unmanned surface vehicle (USV)
- Engineering dump trucks