U300-B: MINIATURE DIGITAL OUTPUT HIGH PERFORMANCE MEMS IMU SENSOR

■ PRODUCT DESCRIPTION

The U300-B sensor, launched by MXMW Hi-Tech Company, is a sturdy and durable industrial-grade small-size inertial measurement unit (IMU) that can measure the acceleration, angular velocity and attitude angle (pitch angle, roll angle) parameters of the moving carrier. The U300-B is great replacement of ADIS16460, which uses high-reliability MEMS accelerometers and gyroscopes, and applies a 6-state extended Kalman filter algorithm with appropriate gain to ensure measurement accuracy, and greatly eliminates the problem through various compensations such as nonlinear compensation, orthogonal compensation, temperature compensation and drift compensation. It eliminates error sources and is especially suitable for inertial measurement under motion or vibration conditions to meet strict environmental requirements.

■ PRODUCT MAIN SPECIFICATION

Main parameter	Indication	Unit
Gyroscope		
Measurement range (can be customized)	±125/±250/±500/±1000	°/s
Angle random walk	0.12	°/√h
Linear scale factor	0.1	%FS
Zero bias stability (In-Run)	7	°/h (Allan)
Zero bias repeatability (In-Run)	7	°/h
Accelerometer		
Measurement range (can be customized)	±3/±6/±12/±24	g
Angle random walk	0.09	(m/s)/√h
Linear scale factor	0.1	%FS
Zero bias stability (In-Run)	0.08	mg
Zero bias repeatability (In-Run)	0.18	mg
Electrical indicators		
Data output interface	SPI/UART	
Data update frequency	200	Hz
Voltage	3.3	V
Power consumption	<0.2	W
Environment		
Operating temperature	-40～+85	℃
Storage temperature	-40～+85	℃
Anti-vibration	10	g
Impact resistance	150	g@15ms
Mechanical properties		
Waterproof level	IP67	
Dimension	22.4*22.4*7.4mm	
Weight	7g (excluding packaging box)	

■ PRODUCT DIMENSION
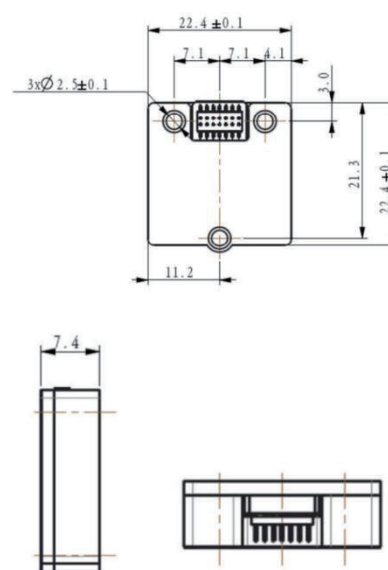
SIZE: L22.4*W22.4*H7.4MM

■ 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