

BS-IU23-M-D6EW

6-Axis High Precision Inertial Measurement Unit



3-axis gyro synchronization	3-axis acceleration	Time
Self-test function	Calibration compensation	RS422

Product Description

The **BS-IU23-M-D6EW** is a compact, high-performance 6-axis inertial measurement unit with real-time output of angular velocity and acceleration measurements in three directions of motion. The product is calibrated in the full temperature range to meet the performance requirements of users under different conditions. Its stainless steel housing provides reliable inertial measurement performance for demanding application scenarios. It has the characteristics of ultra-small size, strong environmental adaptability, low power consumption and precise time synchronization, and is suitable for small UAV navigation control, stable platform, satellite integrated navigation and other scenarios.

Product advantages

- ◆ Temperature compensation for angular rate and acceleration, mounting misalignment angle compensation, nonlinearity compensation, null compensation,
- ◆ 500Hz data update frequency, output 2ms time synchronization pulse function
- ◆ Firmware can be downloaded, upgraded, tested and calibrated through RS422 serial port.
- ◆ With self-check function

Basic characteristics

Operating voltage	4.0V ~ 6.0V
Operating current	<0.2A
Operating temperature	-40°C ~ +85°C
Storage temperature	-45°C ~ +85°C
Size	22mm*20mm*10mm
Measuring range	±500°/s
Zero bias (after calibration and compensation)	≤ 1.9 °/H (ALLAN)
Zero bias stability	≤8°/h (1σ)
Zero-bias repeatability	≤60°/h (1σ)
Scale factor nonlinearity	≤ 400ppm (1σ)
repeatability of scale factor	≤ 400
ppm (1σ) bandwidth	150Hz

Accelerometer characteristics

Measuring range	± 16 G/± 200 G (Auto Switch)
Zero offset (after calibration and compensation)	≤ 0.5 mg (1σ, ALLAN) bias
stability	≤0.1mg (1σ)
Zero-bias repeatability	≤ 0.8 mg (1σ)
scale factor nonlinearity	≤ 400ppm (1σ)
repeatability of scale factor	≤
400ppm (1σ) bandwidth	100Hz

Note: For ± 200 G range, the X/Y axis resolution is 0.5 G and the nonlinearity is ± 2%.

Interface type

RS422 × 1 baud rate: 921600 bps
synchronous clock signal

Interface definition

Serial number	Name
1 (red)	5V
2 (black)	GND
3 (white)	R+ (RS422)
4 (brown)	R- (RS422)
5 (green)	T- (RS422)
6 (yellow)	T+ (RS422)
7 (Orange)	Synchronization clock
8 (blue)	Reserved