

UmiX U5

Fiber-Optic Gyroscope inertial measurement unit

UmiX U5 is a solid-state 6-axis high performance IMU designed for a range of demanding applications. The sensor core provides north-seeking grade Fiber-Optic Gyroscopes (FOG) with long term stability suitable for GNSS-denied navigation, as well as short term performance required for high-end stabilization systems.



KEY PERFORMANCE IN NAVIGATION

- Autonomous and static alignment
- Capable of high heading precision
- Long term performance stability
- Resilient to long GNSS dropout



FEATURES

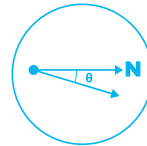
- Free of ITAR components
- North-seeking grade FOG
- Navigation grade accelerometers
- High MTBF (120,000 hours)
- High performance vs. size ratio
- Rugged design for harsh environments
- Low power consumption

MASTERING IN-HOUSE TECHNOLOGY

UmiX integrates in-house technology for both FOG and vibrating quartz accelerometers, benefiting from the 30 years track record of iXblue in FOG design and manufacture. iXblue develops and manufactures all key components of the sensors, enabling miniaturization whilst assuring continuous performance improvements.

KEY PERFORMANCE IN STABILIZATION

- Low noise
- Low latency
- High bandwidth
- 3D rotation measurement



EASE OF INTEGRATION

- Plug and play
- True IMU
- Provides fully compensated sensor data in an orthogonal reference frame
- Lever arm, Coning & Sculling application
- Digital serial output with adjustable baud and data rates
- Synchronization signal available
- Transmission clock available
- Single supply voltage
- Two mounting options
- Hermetically sealed to maximize reliability and long-term performance

TECHNICAL SPECIFICATIONS

Fiber-Optic Gyroscopes

Dynamic	± 490 °/s	max
Angular random walk	0.01 °/ \sqrt{h}	
Bandwidth	>5 kHz	
Latency	200 μ s	
In run bias	0.02 °/h	1σ
Residual bias	0.05 °/h	1σ
Scale factor error	40 ppm	1σ

Interfaces

Sensor misalignment	100 μ rad
Volume	$\varnothing 88.9 \times H75$ mm
Weight	< 770 g
Mounting	3 top screws or 6 bottom screws
Alignment Pins	2
Supply voltage	+ 5 V DC
Consumption	4 W nominal (7 W peak)
Connector	21 pin micro D
Communication	3 \times RS422
Data rate	1 to 10 kHz
Cooling	Conduction through baseplate

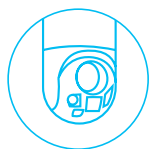
Vibrating quartz accelerometers

Dynamic	± 30 g	max
Bandwidth	>1 kHz	
In run bias	<5 μ g	1σ
Residual bias	150 μ g	1σ
Scale factor error	40 ppm	1σ

Environmental characteristics

Full performance temperature range	-32 to $+71$ °C
Full performance vibration range	5 grms [20 - 1000 Hz]
Operating shocks	40 g - 11 ms

PLATFORM INTEGRATION



Gimbal



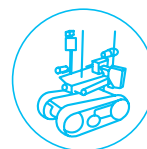
UAV



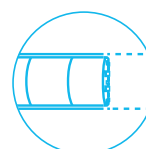
Autonomous
vehicle



Train



AGV



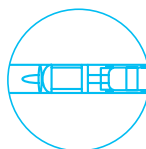
Tunnelling
and mining



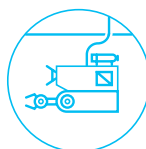
Industrial
vehicle



Helicopter



Pipe
inspection



ROV



Your system