UmiX 40-5DU

Fiber-Optic Gyroscope Inertial Measurement Unit

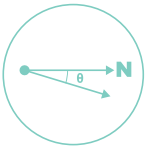
UmiX 40-5DU is a solid-state 6-axis high performance IMU designed for a range of demanding applications. The sensor core provides north-seeking grade Fiber-Optic Gyroscopes (FOG) with long term stability suitable for GNSS-denied navigation, as well as short term performance required for high-end stabilization systems.

KEY PERFORMANCE IN NAVIGATION

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

KEY PERFORMANCE IN STABILIZATION

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



FEATURES

- Free of ITAR components
- North-seeking grade FOG
- Navigation grade accelerometers
- High MTBF (80 000 hours)
- High performance vs. size ratio
- Rugged design for harsh environments
- Low power consumption

MASTERING IN-HOUSE TECHNOLOGY

UmiX 40 integrates in-house technology for both FOG and vibrating quartz accelerometers, benefiting from the 30 years track record of Exail in FOG design and manufacture. Exail develops and manufactures all key components of the sensors, enabling miniaturization whilst assuring continuous performance improvements.

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

2024-08 | V002

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TECHNICAL SPECIFICATIONS

Fiber-Optic Gyroscopes

Dynamic	±490 °/s	
Angular random walk	8 m°/√h	
Bandwidth	5 kHz	
Bias instability	10 m°/h	1σ
Bias thermal residual	50 m°/h	1σ
Scale factor thermal residual	40 ppm	1σ

Vibrating quartz accelerometers

Dynamic	±30 g	
Bias instability	10 µg	1σ
Bias thermal residual	250 µg	1σ
Scale factor thermal residual	40 ppm	1σ
Rectification	50 µg / g^2	1σ

Interfaces

Misalignment	100 µrad
Volume	Ø88.9 × H75 mm
Weight	< 770 g
Mounting	3 top screws 6 bottom screws M4 screws
Alignment Pins	2 x Ø5 mm EF6 holes
Supply voltage	+ 5 V DC
Consumption	< 4,5 W @ ambiant T° < 8 W over full T° range
Connector	21 pin micro D - socket
Communication	RS422
Data rate	100 to 10,000 kHz
Cooling	Conduction through baseplate

Environmental characteristics

Full performance temperature range	-32 to +71 °C
Full performance vibration range	2 grms [0 – 500 Hz]
Operating shocks	40 g - 11 ms

PLATFORM INTEGRATION

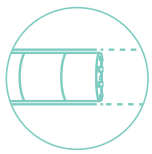

Gimbal


UAV


Autonomous vehicle

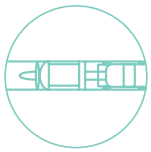

Train


UGV


Tunnelling and mining


Industrial vehicle


Helicopter


Pipe inspection


ROV AUV


Your system

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