

μ IMU-IC

Micro Inertial Measurement Unit



- Airborne proof
- Superior bias linearity
- Insensitive to rapid temperature changes
- Exceptional vibration robustness
- Hermetically sealed
- Free of EU export restrictions (status quo)

PRODUCT DESCRIPTION

Attached to a freely movable object, the MEMS-based μ IMU-IC measures orientation, direction and velocity in real time. This allows a close monitoring of the object for accurate movement control.

The μ IMU-IC is particularly suitable for demanding applications with rapid changing environmental conditions.

TYPICAL APPLICATIONS

- Navigation and Positioning
- Mobile Mapping
- Photogrammetry
- Pipeline Inspection
- Platform Stabilization

TECHNICAL DATA μ IMU-IC

Micro Inertial Measurement Unit

		μIMU-IC-SP	μIMU-IC-HP
RATE SENSOR PARAMETERS	Typ. ¹⁾	max.	max.
Measurement Range		± 499 °/s	
Bias Instability ²⁾	0.1 °/h		
Bias Stability over temperature range (1 σ)	1.5 °/h	6 °/h	3 °/h
Bias Repeatability turn-on-turn-on (RMS) const. Temp.	1 °/h	10 °/h	4 °/h
Angular Random Walk	0.12 °/√h	0.3 °/√h	0.15 °/√h
Scale Factor Error	200 ppm	1400 ppm	1000 ppm
Axis Misalignment (RMS)		0.5 mrad	
ACCELEROMETER SENSOR PARAMETERS			
Measurement Range		± 15 g	
Bias Instability ²⁾	15 μg		
Bias Stability over temperature range (1 σ)	0.2 mg	3 mg	1.5 mg
Velocity Random Walk	40 μg /√Hz	250 μg /√Hz	70 μg /√Hz
Scale Factor Error (RMS)	150 ppm	1500 ppm	1000 ppm
Axis Misalignment (RMS)		0.5 mrad	
SYSTEM PARAMETERS			
Mass	0.68 kg; 1.5 lb		
Dimensions	ø 85 mm x H 60 mm ø 3.35 inch x H 2.36 inch		
Volume	340 cm³, 20.7 inch³		
Supply Voltage	+ 5 VDC		
Power Consumption	< 8 W		
Interface	RS 422, HDLC or UART		
Data Rate	50 to 1024 Hz (configurable)		
Built in Test (BIT)	Power up BIT, Continuous BIT		
Acoustic noise level	140 dB		
Random vibration level [10 ... 2000 Hz] operational / survival	4.1 g _{RMS} / 11.7 g _{RMS}		
Shock, operational	20 g / 11 ms / 3 axes		
Temperature operating / storage	- 45 °C to + 70 °C / - 55 °C to + 71 °C		

1) Typical Mean Values are subject to statistical fluctuations.

2) Implying Allan Variance under constant room temperature conditions and cluster time 24 h.

FOR MORE INFORMATION,
PLEASE CONTACT:

