



VMU931

Description

Variense VMU931 is a unique small, and low cost inertial measurement unit. IMUs are electronic devices that record and communicate a body's angular velocity, linear acceleration, and sometimes the magnetic field surrounding the sensor. This sensory information can then be fused using Kalman filter algorithm for excellent orientation and motion detection in industrial, sports and medical applications, such as UAVs navigation and clinical research.

The new rugged VMU931 is a round IMU with a diameter of 31 mm, that can fit up to 3-axis accelerometers, 3-axis gyros, 3-axis magnetic, temperature sensors in a robust aluminium housing as shield against extreme environmental conditions. It is based on the latest MEMS technology, which is highly adaptive to various applications. Real-time data logging, maximum sensitivity and automatic factory calibration ensure that the sensor will fit your system properly.

Potential Applications

Industrial

- Antenna Stabilization & Pointing
- Detect vibration and impact forces
- Measure forces during crash testing
- Measure acceleration and tilt

Medical

- Human movement science
- Activity recognition and Motion Capture
- Surgeons hand movements tracking

Sports and Multimedia

- Measure athletic performance
- Biomechanics research
- Video Games & virtual reality devices

Robotics

- Drone Navigation and flight testing
- Measurement and testing
- Unmanned control

Features and Benefits

- Ultra compact $\varnothing \sim 31$ mm
- 9 Degrees of Freedom MEMS IMU
- Low cost, shock resistant, splashproof and dustproof
- $<5^\circ/\text{hr}$ in-run bias stability
- Compensated gyro bias over temperature & self-test
- Low power & low voltage
- Wide operating range
- USB connectivity
- Adjustable output data: quaternion, rotation matrix, euler Angles, linear Acceleration
- Intuitive and flexible user interface provides easy-to-use display and data logging tools.

Technical Specifications

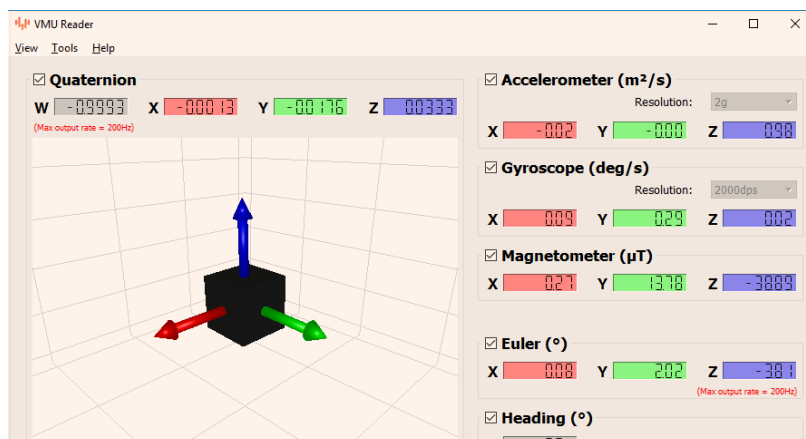
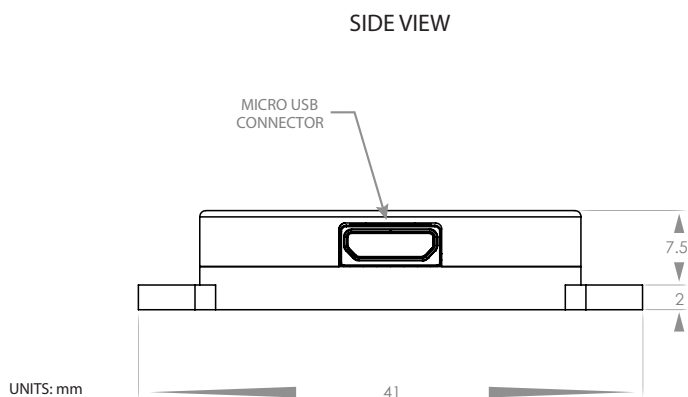
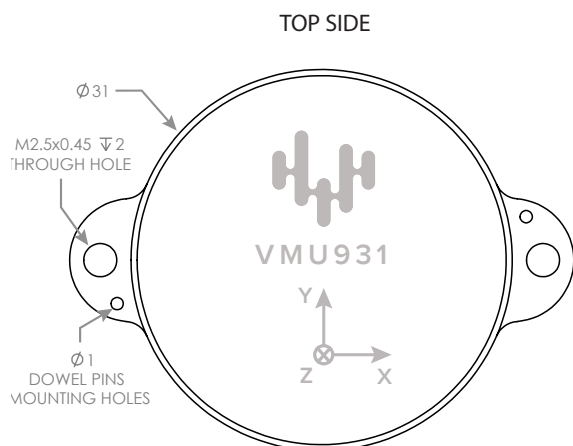
VMU931

Feature	Gyros	Accels	Mags
Operating sensors			
Axes	3	3	3
Range	±2000 °/s	16g	±4800µT
Resolution	0.03 °/s	NA	15µT
Nonlinearity	±0.1 %	±0.5 %	
Analogue specifications			
Resolution	16bit	16bit	16bit
Absolute Maximum Ratings			
Shock tolerance	10,000 g		

Orders	
Feature	Reference
With casing	VMU931-c
Without casing	VMU931-nc
VMUReader Pro	VMU931-ui

Feature	Condition	Value	Unit	Note
Mechanical specifications				
Diameter	Outer	31	mm	
Thickness		9.5	mm	
Weight		15	g	
Environmental protection	IP64			aluminum case
Performance				
Static Accuracy	Pitch/Roll	<0.2	°	
Static Accuracy	Heading	<0.5	°	
In-Run Bias stability		<5	%/hr	
Operating temperature		-40°C to 85°C		
Electrical specifications				
Supply volatge	DC	2.8-5.3	V	
Communication interface				USB
Acquisition Rate	Selectable	up to 1000	Hz	low noise

Sensor Mounting Dimensions



CONTACT

Variense, Inc.
1144 Villeray street #304
H2R 1J6, Montreal, Quebec
Phone: 1 844 827 4367
E-mail: info@variense.com

www.variense.com