



QL-MINI

Digital Accelerometer + Inclinometer

For multi-sense measurements

The 10-Axis QL-MINI multi-sense sensor, designed for precision-critical environments, accurately measures 3-axis angle, angular velocity, acceleration, and magnetic field. Its advanced features include patented algorithms for enhanced accuracy and stability. Built tough with a MEMS design, it operates well in harsh conditions, featuring low noise, high bias stability, and vibration robustness. The sensor includes a military-grade RM3100 magnetic chip and a 32-bit processor, encased in an anti-vibration aluminum shell for durability. It comes with QL-VISIO software for easy dashboard management and supports various output data formats like ASCII, CSV, and MAT. The QL-MINI is ideal for those needing accurate, reliable, and long-lasting measurement solutions.

The QL-MINI has a USB connection and comes with free software

KEY FEATURES

High Performance

Features a 10-Axis Military-grade Tri-axial Accelerometer, Tri-axial Inclinometer (Pitch, Roll, Yaw), Angular Velocity, Angle, Temperature, Magnetic Field, Air Pressure, and Height measurements. Customizable ranges and output rates from 0.2 to 200Hz.

Robust Design

Equipped with a 32-bit processor and a highly-integrated MEMS module for exceptional performance in harsh environments and significant signal noise immunity.

Industrial-Grade Inclinometer

Incorporates an RM3100 magnetometer-compensation chip, automatic data correction, and Kalman Algorithm for 0.05 degrees accuracy on the X and Y axes and minimal Z-axis drift.

QUAKELOGIC Advantage

Utilizes an integrated R&D dynamic fusion algorithm and Kalman Filtering for stable data output, excellent bias stability, and low noise, enhancing measurement accuracy.

Worry-free Support

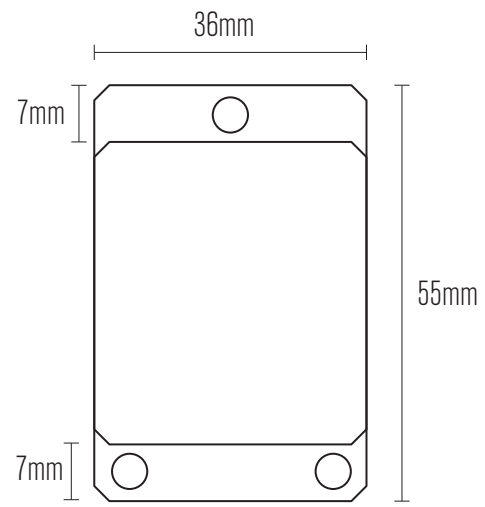
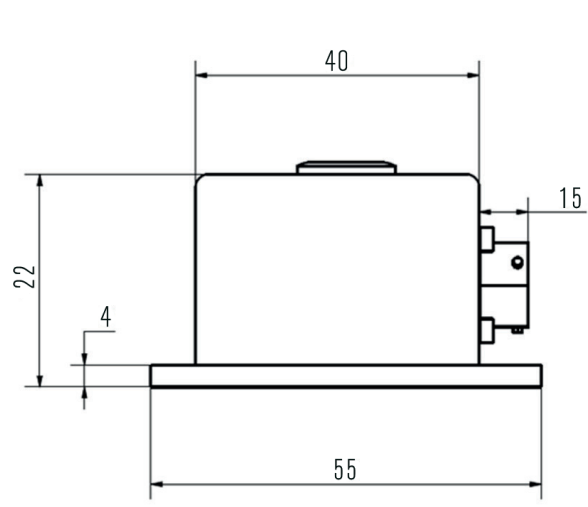
Includes a 12-month warranty and lifetime customer service from the QUAKELOGIC team.



TECHNICAL SPECIFICATIONS

- Current:** <40mA
- Voltage:** 3.3-5V (requiring a power source of 3.3-5V)
- Data output frequency:** 0.2-200Hz
- Baud Rate:** 4800-961200 (adjustable)
- Working Temperature:** -40 °C~ +85°C
- Output Content:**
3-axis Acceleration+Angle+Angular Velocity+Magnetic Field+Quaternion+Air Pressure+Height
- Range:** Acceleration ($\pm 16g$), Gyroscope ($\pm 2000^\circ/s$), Magnet Field ($\pm 4900\mu T$), Angle (X, Z-axis: $\pm 180^\circ$, Y $\pm 90^\circ$), Barometer (1 axis)
- Resolution:** Acceleration (0.005g), Gyroscope (0.61°/s), Magnet Field (16 bits)
- Angle Accuracy(after calibrated):**
X, Y-axis: 0.05° (Static), X, Y-axis: 0.1° (Dynamic)

The QL-MINI is developed using an advanced algorithm originally designed for aerospace Satellite Attitude Determination. At the core of these products are several key algorithms, including the R&D Dynamic Fusion Algorithm, Kalman filtering (a type of program filter), digital filtering, and a state estimation algorithm. This design approach eliminates the need to delve into complex protocols like those of MPU6050/9250 for attitude angle analysis, thus saving both time and energy.



This datasheet can be reviewed or updated without notice