

SQ Series Wireless Inclinometers

The SQ series wireless inclinometers are industrial-grade sensors designed for precise inclination monitoring in various structures. They feature high precision, ultra-low power consumption, and robust durability, making them ideal for long-term use in harsh industrial environments.

Utilizing gravity acceleration-based technology, these sensors measure tilt, pitch, and roll angles relative to the initial position. They also provide waggle and temperature data, offering comprehensive inclination status information.

The SQ series can monitor inclination in any direction for both pole-style and planar structures. It supports both relative and absolute inclination monitoring, making it suitable for applications such as monitoring the inclination and foundation settlement of wind power towers, power transmission towers, traffic bridges, buildings, and equipment.

Sensor data is transmitted wirelessly to a remote monitoring system, enabling users to remotely monitor equipment inclination, receive timely alerts, and continuously track changes in attitude. This ensures safe operation, prevents unplanned downtime, and reduces maintenance time and costs.

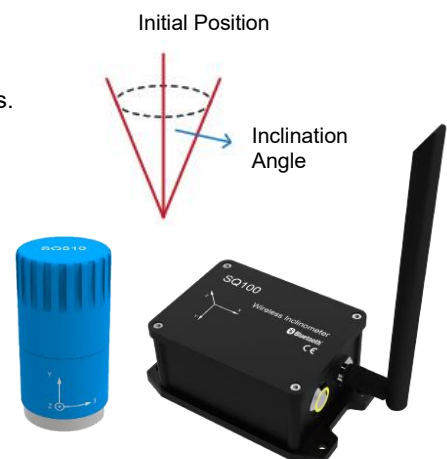
Features and Advantages

- Accurate → Repeatability precision: $\pm 0.001^\circ$, Resolution: 0.001° .
- Easy-to-install → Cable-free; mounted with bracket, adhesive, or magnetic methods.
- Wireless → Reliable data transmission via Bluetooth, LoRa/LoRaWAN, or 4G Cat. 1.
- Low-powered → Built-in battery with 5 years of life for normal usage.
- Ruggedized → Waterproof, dustproof, shockproof, and corrosion-resistant; suitable for harsh industrial environment.
- Flexible → Configurable sampling and communication periods to meet specific requirements.
- Accessible → Remotely accessible anytime, with automatic alerts and maintenance-free operation.
- Convenient → Bluetooth compatible and can be connected via mobile app.



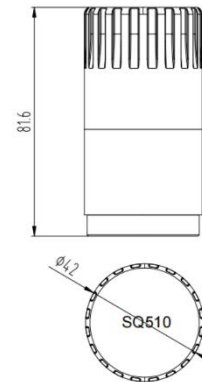
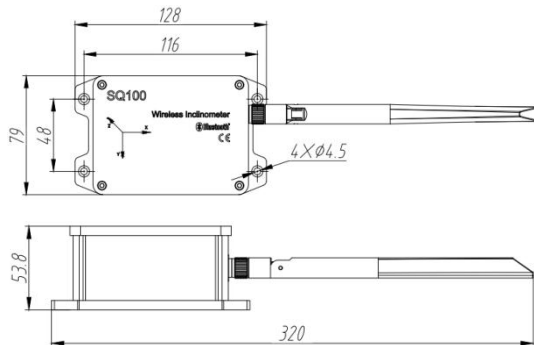
- Inclination: Monitors inclination in any direction for pole-style structures.
- Pitch Angle: inclination in the y-z plane.
- Roll Angle: inclination in the x-y plane.

The SQ series wireless inclinometer sensor measures plane inclination by monitoring pitch and roll angles, enabling determination of the tilting direction of pole-style structures. When calibrated on a horizontal surface, it can also assess absolute inclination.

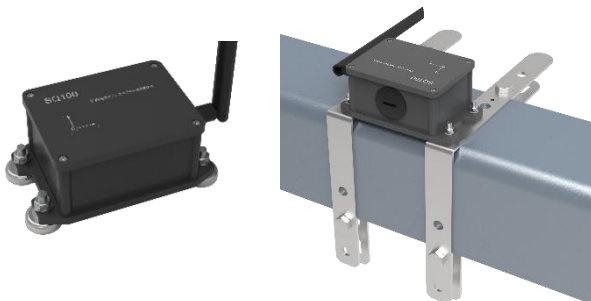


Specifications

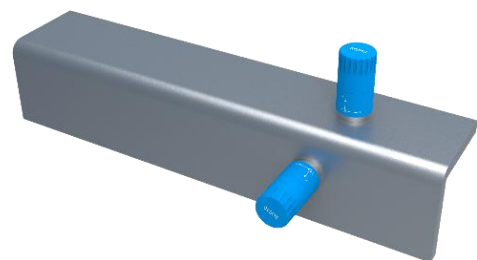
Product Model	SQ100/SQ100-L/ SQ100-C	SQ110/SQ110-L/ SQ110-C	SQ510/SQ510-L/ SQ510-C
Feature Data	Inclination angle, pitch angle, roll angle, waggle, temperature		
Measurement Range	Inclination Angle: 0~30°; Pitch and Roll Angles: ±30°		
Precision	Static: 0.001° (within 1° range) Dynamic (within 5° range): sampling rate 1sps: 0.01° sampling rate 50sps: 0.02° sampling rate 500sps: 0.1°	Static: 0.002° (within 1° range) Dynamic (within 5° range): sampling rate 1sps: 0.02° sampling rate 50sps: 0.05° sampling rate 500sps: 0.1°	Static: 0.004° (within 1° range) Dynamic (within 5° range): sampling rate 1sps: 0.04° sampling rate 50sps: 0.1° sampling rate 500sps: 0.2°
Resolution	0.001°		
Repeatability	0.001°	0.002°	0.004°
Temperature drift	0.001°/°C	0.01°/°C	0.02°/°C
Cross axis error	0.001°	0.001°	0.002°
Bandwidth	10Hz		
Data Acquisition	Low-power tilt-triggered acquisition or periodic acquisition (intervals of 1, 2, 5, 10, 15, 20, 30, 60, 120, 240, 360, 480, 720, 1440 minutes); configurable		
Communication	SQ100/SQ110/SQ510: 2.4GHz Wireless Sensor Network (Bluetooth 5.0), line-of-sight range 300m SQ100-L/SQ110-L/SQ510-L: LoRa/LoRaWAN, line-of-sight range 3000m SQ100-C/SQ110-C/SQ510-C: 4G Cat.1		
Battery	6500mAh Li/SOCL2; replaceable		
Dimensions	128x 79 x 53.8mm (L x W x H)		42x 82mm (D x H)
Weight	520g		180g
Operating Temperature	-40~85°C		
Operating Humidity	10%~90% RH		
Enclosure	Aluminum alloy		Aluminum alloy and polyamide with fiberglass
Ingress Protection	IP67		
Mounting	Horizontal installation with: Adaptor board + expansion screw (on cement wall) L-shaped bracket (on angle steel) Adaptor board + magnet (on steel wall)		Installation in any posture: Industrial-grade epoxy and magnet (inside)



Mounting



SQ100/SQ110 Mounting



SQ510 Mounting