

# *IMon-Z210*

## Intelligent sensing unit for patrol and inspection instrument

*Datasheet*

*July 02, 2024  
CN Rev.v1.0*

### Product Overview

The IMon-Z210 intelligent sensing unit for patrol and inspection instrument supports wireless data transmission via Bluetooth. Used together with the patrol and inspection instrument and an Android intelligent rugged mobile phone, it enables equipment and personnel management as well as inspection planning through a dedicated APP, realizing convenient, efficient and scientific mobile office. It facilitates early prevention, early detection, early diagnosis and early treatment of mechanical equipment faults, and supports rational management of equipment and inspection personnel with appropriate and detailed management plans. It greatly simplifies equipment inspection and provides a new perspective for the development of equipment condition inspection.

### Main Features

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- Transmission mode: Adopts Bluetooth communication for low-power consumption and high-speed transmission;
- Multi-parameter measurement: Measures vibration acceleration, velocity, displacement, envelope and temperature; collects vibration waveform and spectrum data simultaneously;
- Operation with no buttons and simple design: Supports one-key operation via APP, automatic data acquisition, and single-hand operation;

- Patrol & inspection support: Fixed installation of wireless sensors, data reception by handheld unit, and integrated inspection, meter reading and condition monitoring via APP for simple, efficient and easy patrol and inspection;
- Integrated multi-function data acquisition: Performs vibration and temperature measurement, on-site waveform and spectrum observation via APP. It also supports manual input of process meter readings and visual inspection items (such as running, overflow, dripping, leakage, etc.) for each equipment, enabling full awareness of operating status and making work more convenient, efficient and accurate.

## Technical Parameters

Technical specifications of intelligent sensing unit for patrol and inspection instrument

Parameter	Indicator
<b>Dynamic characteristics</b>	
Sensor	Acceleration sensor, temperature sensor
Measurement	Single-axis, simultaneous measurement of acceleration (A), velocity (V), displacement (D), envelope and temperature
Vibration sensitivity	50mV/g
Vibration range	100 g
Amplitude linearity	≤5%
Transverse sensitivity	<5%
Frequency response	10 ~ 5kHz(±5%); 1 ~ 10Hz(±3dB)
Analysis bandwidth	100 ~ 10K Hz
Spectral lines	6400
Vibration range parameters	Acceleration (peak): 800 m/s <sup>2</sup> max
	Velocity (RMS): 600 mm/s max

	Displacement (peak-to-peak): 1600 $\mu\text{m}$ max
Vibration measurement accuracy	$\pm 5\%$
Resonant frequency	28 kHz (typical); 22 kHz (minimum)
Shock measurement	Supported
Vibration measurement response time	$< 0.4\text{s}$
Temperature measurement response time	$< 0.4\text{s}$
Temperature measurement range	$-50^{\circ}\text{C}\sim 380^{\circ}\text{C}$
Temperature measurement accuracy	$20^{\circ}\text{C}\sim 200^{\circ}\text{C}$ $\pm 1\%$ or $\pm 1^{\circ}\text{C}$ (max)
	$200^{\circ}\text{C}\sim 380^{\circ}\text{C}$ $\pm 2\%$ or $\pm 2^{\circ}\text{C}$ (max)
	$-50^{\circ}\text{C}\sim 20^{\circ}\text{C}$ $\pm 2\%$ or $\pm 2^{\circ}\text{C}$ (max)
Distance coefficient	12:1
Emissivity	0.1 ~ 1.0 (adjustable)
Laser aiming	$< 1\text{mW}$ 650nm, Laser Class II
Data acquisition	Static data (overall values), dynamic data (spectrum)
<b>Electrical characteristics</b>	
Power supply	3.7V rechargeable lithium battery
Continuous working time	30h (non-continuous vibration acquisition); 10h (continuous vibration acquisition)
Indicator	Power indicator, communication indicator
Grounding	Housing insulated from signal, internal shielding

Protection device	Rubber sleeve with insulation, anti-slip and anti-drop properties
<b>Communication characteristics</b>	
Communication method	Bluetooth
Baud rate	1MB/s
Transmission time	< 0.6 s (1024 points)
Communication frequency	2.4GHz
Communication distance	≤20m
<b>Environmental characteristics</b>	
Operating environment	-10°C~50°C
Storage temperature	-20°C~60°C
Vibration limit	400gpk
Shock limit	4000gpk
Encapsulation	Hermetically sealed
<b>Physical characteristics</b>	
Weight	200g
Dimensions	86mm * 54mm * 23mm
Installation method	Strong magnetic adsorption, 1/4-28 UNF thread
Impact resistance	Operates normally without housing damage after 1-meter drop onto concrete floor



### Intelligent sensing unit for patrol and inspection instrument

#### Accessory list

<b>Product name</b>	<b>Product model</b>
Patrol and inspection instrument (explosion-proof)	IMon-Z200
Patrol and inspection instrument (non- explosion-proof)	IMon-Z201
Intelligent sensing unit for patrol and inspection instrument	IMon-Z210
RFID Card (HF 13.56 MHz)	IOpt-Z100
Intelligent equipment management platform	ISys200
Intelligent Equipment Manager APP	ISys200AP