WISE-2410

LoRaWAN Wireless Condition Monitoring Sensor



Features

- LoRaWAN wireless connectivity
- Built-in 3-axis accelerometer and temperature sensor
- On-board computing. Directly sends VRMS, ARMS, Peak, Displacement, Kurtosis, Crest factor, Skewness and Standard Deviation values to applications
- Support battery power supply, no wiring installation needed
- Easy settings with user friendly interfaces on WISE Studio utility
- ISO 10816-3 compliant
- Support wide temperature -20 ~ 80 °C (Battery-powered)
- IP66 enclosure design

● ANATEL ▲ I Introduction

WISE-2410 is a LoRaWAN wireless condition monitoring sensor integrated with an ARM Cortex-M4 processor, LoRa transceiver, 3-axis accelerometer and temperature sensor. It balances the wireless bandwidth between WISE-2410 and the gateway, so it also mitigates the data transmission fail rates between edge-devices and gateways.

Star Topology

WISE-2410 is a LoRaWAN uses a star network topology and features a gateway data relay function between sensors and the application server. The communication between the sensors and gateway goes over the wireless channel, utilizing the LoRa physical layer, whilst the connection between the gateways and the central server are handled over a backbone IP-based network or over Modbus protocol to the application server.

Computing on Board

With an ARM Cortex-M4 Processor, WISE-2410 enables users to implement more features inside. WISE-2410 is able to calculate more complex eigenvalues itself, such as VRMS, ARMS, Peak, Displacement, Kurtosis, Crest factor, Skewness and Standard Deviation values. With its edge computing capability, WISE-2410 can balance the loading between WISE-2410, gateway, and cloud service.

Plug & Play with 2-year Battery life cyle

WISE-2410 includes two 3.6V AA battery holders. Along with LPWAN technology verified by Advantech, the battery life on WISE-2410 can be up to 2 years with once per hour data update interval time. With IP66 protection design, WISE-2410 is ideal for Low-Power Wide-Area Network (LPWAN) applications, such as pumps, HAVC system, motors, facility monitoring and more. WISE-2410 connects to Advantech's WISE Studio Utility for more user friendly and efficient installation.

Common Specification

Wireless Communication

Frequency Band

Spreading Factor

Transmit Power

 Topology Sensitivity

Data Rate

EU 863-870 (MHz) / RU 864-870 (MHz) US 902-928 (MHz) / AU 915-928 (MHz) AS 919-924 (MHz) / TH 920-925 (MHz) JP 920-928 (MHz) 7~12 Up to 20dBm Star (LoRa/LoRaWAN) -148dB 50 kbps at FSK mode EU 21.9 kbps at SF7 mode US/TW 5.47 kbps at SF7 mode for JP

3.6V AA Battery *2pcs (Not included)

2 years (once per hour data update interval time)

Stud mount, Mounting pad and Adhesives

-20°C ~ 80°C (Battery powered)

CE (RED), FCC, NCC, TELEC, VCCI, BSMI, RCM,

General

- Power Input
- Battery Life
- LED Indicator
- Configuration Interface
- IP Class
- Mounting
- Dimension (H x D)
- Certification

Environment

- Operating Temperature
- Operating Humidity
- Storage Temperature

Storage Humidity

-25°C ~ 90°C 5% ~ 95% RH

Power, Tx

IP66

ANATEL

Micro-B USB

84.7 x 48.3 mm

10% ~ 95% RH

3-Axis Accelerometer Sensor

Axis

- Frequency Range
- Amplitude Range

Output Data Rate

Resolution

Nonlinearity

- X-Y-Z 10~1000Hz ±2/4/8/16q Statistical Time-Domain Velocity RMS, Acceleration (RMS & peak), Displacement, Kurtosis, Crest factor, Skewness, Standard deviation 3200Hz@WISE-2410-xA 6600Hz@WISE-2410-xB 10 bit (all g range) Sensitivity (TYP.) 31.2mg/LSB Noise (MAX. TA = 25°C. 0g) ±150mg@WISE-2410-xA ±75mg@WISE-2410-xB ± 0.5 %
- Cross-Axis Sensitivity
- Sensitivity Change Due ±0.02 %/°C to Temperature
- **Temperature Sensor**
- Measurement Range
 - -20°C ~ 120°C

±1 %

 Accuracy -2°C with 85°C (TA = 27°C, Directly contact -5°C with 120°C with heat source (Metal Base of WISE-2410)

Ordering Information

Smart Condition Monitoring Sensor

 WISE-2410-NA/ WISE-2410-NB 	Wireless Smart Condition Monitoring Sensor - US 902-928 (MHz)		
Firmware Image (Firmware Image (Optional)		
9662410AJ00	WISE-2410-JA Patch		
9662410AT00	WISE-2410-TA AS923 Patch		
9662410AK00	WISE-2410-KA Patch		
9662410AZ00	WISE-2410-ZA AU915 Patch		
 WISE-2410-EA/ WISE-2410-EB 			
Firmware Image (Optional)			
96632410R00	WISE-2410-RA Patch		

LoRaWAN Gateway

•	WISE-6610-N100-A	LoRaWAN gateway supports up to 100 nodes with 915 MHz
•	WISE-6610-E100-A	LoRaWAN gateway supports up to 100 nodes with 868 MHz
•	WISE-6610-A100-A	LoRaWAN gateway supports up to 100 nodes with 923 MHz

Accessories

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- 1760002647-01
- Bat.Cylindrical 3.6V/2500mAh AA Li/SOCI2
- 25F7000004N000
- Magnet base D30XH9mm for WISE-2410 installation
- WISE-2410-MTB01
 - Metal base for WISE-2410 installation

