

WISE-2410SK

LoRaWAN Wireless Condition Monitoring Starter Kit

NEW



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

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

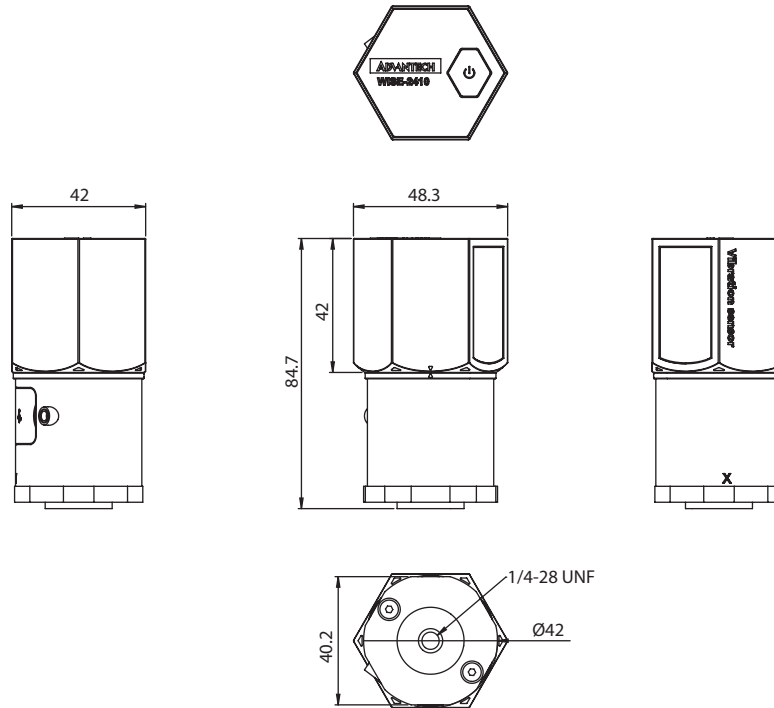
With an ARM Cortex-M4 Processor, WISE-2410 enables users to implement more features inside. WISE-2410 is able to calculate more complex eigenvalues itself, such as VRMS, ARMS, Peak, Displacement, Kurtosis, Crest factor, Skewness and Standard Deviation values. With its edge computing capability, WISE-2410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

Plug & Play with 2-year Battery life cycle

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, HVAC system, motors, facility monitoring and more. WISE-2410 connects to Advantech's WISE Studio Utility for more user friendly and efficient installation.

Dimensions

Unit: mm



Common Specification of WISE-2410

Wireless Communication

Frequency Band	US 902-928 (MHz)
Spreading Factor	7~12
Transmit Power	Up to 20dBm
Topology	Star (LoRa/LoRaWAN)
Sensitivity	-148dB
Data Rate	21.9 kbps at SF7 mode US

General

Power Input	3.6V AA Battery *2pcs (Not included)
Battery Life	2 years (once per hour data update interval time)
LED Indicator	Power, Tx
Configuration Interface	Micro-B USB
IP Class	IP66
Mounting	Stud mount, Mounting pad and Adhesives
Dimension (H x D)	84.7 x 48.3 mm
Certification	CE (RED), FCC

Environment

Operating Temperature	-20°C ~ 80°C (Battery powered)
Operating Humidity	10% ~ 95% RH
Storage Temperature	-25°C ~ 90°C
Storage Humidity	5% ~ 95% RH

3-Axis Accelerometer Sensor

Axis	X-Y-Z
Frequency Range	10~1000Hz
Amplitude Range	±16g
Statistical Time-Domain	Velocity RMS, Acceleration (RMS & peak), Displacement, Kurtosis, Crest factor, Skewness, Standard deviation
Output Data Rate	6600Hz
Resolution	10 bit (all g range)
Accuracy (FC =100Hz)	Under 5%
Noise (MAX. TA = 25°C. 0g)	±40mg
Nonlinearity	±0.5 %
Cross-Axis Sensitivity	±1 %
Sensitivity Change Due to Temperature	±0.02 %/°C

Temperature Sensor

Measurement Range	-20°C ~ 120°C
Accuracy	-2°C with 85°C
(TA = 27°C, Directly contact with heat source (Metal Base of WISE-2410))	-5°C with 120°C

Ordering Information

Smart Condition Monitoring Sensor

WISE-2410SK-NA	Wireless Smart Condition Monitoring Sensor Starter Kit -US 902-928 (MHz)
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Mouser Electronics

Authorized Distributor

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