RF-LW-TIAQ-x

LoRaWAN Indoor Air Quality Monitoring

Features & Benefits

- Leading edge optical and digital sensors provide high accuracy and long life
- Drift free readings without further calibration
- Helping companies achieve WELL® and RESET® compliance
- Built in USB port for easy configuration
- Ultimate wireless connectivity through LoRaWAN
- Simple integration with BACnet and Modbus through gateway

Technical Overview

Our Indoor Air Quality Monitor is a precision instrument which accurately measures up to 9 key environmental parameters including Temperature, Relative humidity, Particle Matter (PM1, PM 2.5, PM4 & PM10), Sound Level, Volatile organic compounds, Carbon Dioxide, Barometric Pressure. Up to two additional gas sensors may be fitted; one of which must be ozone if two sensors are required. Ammonia, Ozone, Formaldehyde, Carbon Monoxide, Nitrogen Dioxide, Hydrogen Sulphide, Sulphur Dioxide and Oxygen.

Technical Specification

Radio output type	LoRaWAN
VOC's	IAQ Index 0 to 500 (see below) TVOC level (ppm) Variability ±15% (typical) - Response time (33-63%) 1 s
Output range temperature	Accuracy: ±0.2°C (typical) Repeatability: ±0.1°C Conversion time: 6.35ms
Output range humidity	Accuracy: ±2% (typical) Repeatability: ±0.1% Response time: 15s
Barometric Pressure	0.12hPa (equivalent to ±1m in altitude) Range (with full accuracy): 300 ⍰ 1100hPa Resolution: 0.18Pa
CO2	Sensing method: Optical. Non-dispersive infrared (NDIR) Accuracy: ±(30, +3%) ppm. (typ.) Range: 0-5000ppm. Extended range 1-10,000ppm. Response time: 3min Sensor life expectancy <15years

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Note: for all gas sensors, None of our devices are approved for use in life safety applications. This document is uncontrolled if printed. Generated on 04/03/25

Particulate matter	PM0.5, PM1, PM2.5, PM4 & PM10 Sensing method: Laser-based light scattering particle sensing Concentration range: 0-1000µg/m^3 Accuracy: PM1, PM2.5 0µg/m^3 to 100µg/m^3 ± 5µg/m^3 +5% m.v. 100µg/m^3 to 1000µg/m^3 ± 10% m.v. PM4, PM10 0µg/m^3 to 100µg/m^3 ± 25µg/m^3 100µg/m^3 to 1000µg/m^3 ± 25% Response Time: < 6s (t90) Sensor life expectancy: > 3 years
Area Coverage	352m2 or one per floor, whichever is more stringent
Security	AES 128 encryption
Sound	Sensitivity: -26dB FS ±1dB SNR: 65dBA Dynamic Range: 91dBA Acoustic Overload Point: 120dB SPL Total Harmonic Distortion: 0.2% (Typ.) @ 105dB SPL
Dimensions	168mm Diameter x 47mm
Housing Material	ABS
Operating Humidity	0 – 95%RH, Non-Condensing
Operating Temperature	0 – 40°C
Compliance	Pre-certified radio regulatory approvals: 868 & 915 MHz spectrum. CE, FCC, RoHS. Particle matter MCERTS Certified. CO2IWBI WELL v2 Compliant
Country of origin	UK
Power Supply	4 x AA sized 3.6V Lithium Thionyl Chloride. LS14500 Or Externally powered, 12-24VDC Or via PoE splitter depending on sensor options

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Related Product Codes

RF-LW-TIAQ	Indoor Air Quality Monitor.Temperature, Relative Humidity, VOC's, Barometric Pressure. Particulate Matter - PM 1, 2.5, 4, 10. Carbon Dioxide
RF-LW-TIAQ-CO2	Indoor Air Quality Monitor with ultrafine particle sensor. Temperature, Relative Humidity, VOC's, Barometric Pressure. Particulate Matter - PM 0.1, 0.3, 0.5, 1, 2.5, 5, 10. Carbon Dioxide
RF-LW-TIAQ-CO2-SND	Indoor Air Quality Monitor with ultrafine particle sensor. Temperature, Relative Humidity, VOC's, Barometric Pressure. Particulate Matter - PM 0.1, 0.3, 0.5, 1, 2.5, 5, 10. Carbon Dioxide. Sound
RF-LW-TIAQ-SND	Indoor Air Quality Monitor.Temperature, Relative Humidity, VOC's, Barometric Pressure. Particulate Matter - PM 1, 2.5, 4, 10. Carbon Dioxide. Sound
RF-LW-TIAQ-VAPE	Indoor Air Quality Monitor with vape/cigarette smoke detection function and ultrafine particles. Temperature, Relative Humidity, VOC's, Barometric Pressure. Particulate Matter - PM 0.1, 0.3, 0.5, 1, 2.5, 5, 10. Carbon Dioxide.
RF-LW-TIAQ-VAPE-SND	Indoor Air Quality Monitor with vape/cigarette smoke detection function and ultrafine particles. Temperature, Relative Humidity, VOC's, Barometric Pressure. Particulate Matter - PM 0.1, 0.3, 0.5, 1, 2.5, 5, 10. Carbon Dioxide. Sound

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