# 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 |

Tel: +44 (0)1732 861200 | E-mail: sales@sontay.com | Web: www.sontay.com

**Sontay Limited. Four Elms Road, Edenbridge, Kent, TN8 6AB UK**

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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** | PM0.1, PM0.3, PM0.5, PM1, PM2.5, PM5 & PM10 Sensing method: Laser-based light scattering particle sensing Concentration range: 0-1000µg/m³ Accuracy: PM1, PM2.5 0µg/m³ to 100µg/m³ ± 5µg/m³ +5% m.v. 100µg/m³ to 1000µg/m³ ± 10% m.v. PM4, PM10 0µg/m³ to 100µg/m³ ± 25µg/m³ 100µg/m³ to 1000µg/m³ ± 25% Response Time: < 6s (t90) Sensor life expectancy: > 3 years Certification to ISO 21501-4 Cleanroom Standard available |
| **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** | Externally powered, 12-24VDC Or via PoE splitter |

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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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