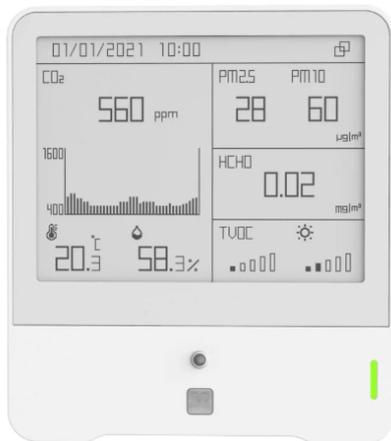


Indoor Ambience Monitoring Sensor

Featuring LoRaWAN®

IOT-S500IAQ11



◆ Introduction

IAQ11 is a compact indoor ambience monitoring sensor for measurement of temperature, humidity, light, CO₂ concentration, HCHO/O₃ level, TVOC, barometric pressure, PM2.5, PM10 and motion. The data will be shown on the E-ink screen in real-time, which helps to measure the indoor environment and comfort.

Sensor data is transmitted using LoRaWAN® technology. Combining Linovision LoRaWAN® gateway and Linovision Development Platform solution, users can manage all sensor data remotely.

IAQ11 can be used in offices, stores, classrooms, hospitals, etc.

◆ Features

- Integrated with multiple sensors like humidity, temperature, CO₂, light, barometric pressure, PM2.5, PM10, etc.
- Multiple display modes and clear emoticon to easily understand the comfort levels via screen
- Support DC power supply
- Equipped with traffic light indicator and buzzer to indicate device status and threshold alarms
- Store locally historical records and support retransmission to prevent data loss
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Linovision IoT Cloud and Linovision Development Platform

◆ Specifications

| Wireless Transmission | |
|------------------------------|---|
| Technology | LoRaWAN® |
| Antenna | Internal Antennas |
| Frequency | CN470/RU864/IN865/EU868/US915/AU915/KR920/AS923-1&2&3&4 |
| Tx Power | 16dBm(868MHz)/22dBm(915MHz)/19dBm(470MHz) |
| Sensitivity | -137dBm @300bps |
| Work Mode | OTAA/ABP Class C |
| Sensors | |
| Temperature | |
| Operating Principle | Digital CMOSens® technology (MEMS) |
| Range | -20°C~60°C |
| Accuracy | ± 0.2°C |
| Resolution | 0.1°C |
| Humidity | |
| Operating Principle | Digital CMOSens® technology (MEMS) |
| Range | 0% ~ 100% RH |
| Accuracy | ± 2% RH |
| Resolution | 0.5% RH |
| Motion | |
| Operating Principle | Passive infrared (PIR) |
| Detection Range | 80 ° Horizontal, 55 ° Vertical, Maximum 5m |
| Status | Vacant/Occupied |
| Light | |
| Operating Principle | Photodiode |
| Range | 0-60000 Lux (Determine as 6 levels, 0-5) |
| TVOC | |
| Operating Principle | MOX (MEMS) |
| Report Mode ¹ | IAQ Rating or Concentration Value |
| IAQ Rating | Range: 1.00 - 5.00 |
| | Accuracy: ±1 |
| | Resolution: 0.01 |
| Concentration | Range: 0 - 2000 µg/m ³ |

| | |
|--|---|
| | Accuracy: 20 µg/m ³ ±15% of readings (1 - 500 µg/m ³) Resolution: 1 µg/m ³ |
| Barometric Pressure | |
| Operating Principle | Piezoresistive absolute pressure sensor (MEMS) |
| Range | 260 - 1260 hPa |
| Accuracy | ±0.5 hPa |
| Resolution | 0.1 hPa |
| Carbon Dioxide (CO₂) | |
| Operating Principle | Photoacoustic |
| Range | 400 ~ 2000 ppm |
| Accuracy | ± (50 ppm + 5 % of reading) (-10°C~ 60°C) |
| Resolution | 1 ppm |
| PM2.5 & PM10 | |
| Operating Principle | Laser Scattering |
| Range | 0 ~ 1000 µg/m ³ |
| Accuracy | 0~100(±10µg/m ³), 100~1000(±10 %) (-10°C~ 60°C) |
| Resolution | 1 µg/m ³ |
| Formaldehyde (HCHO)² | |
| Operating Principle | Electrochemical |
| Range ³ | 0 ~ 1.25 mg/m ³ |
| Accuracy | ±10 % |
| Resolution | 0.01 mg/m ³ |
| Working Life | 6 Years |
| Ozone (O₃)² | |
| Operating Principle | Electrochemical |
| Range | 0 ~ 10 ppm |
| Accuracy | ±5 % FS |
| Resolution | 0.01 ppm |
| Working Life | 2 Years |
| Other Interfaces | |
| Display | 4.2-inch Black & White E-Ink Screen |
| Button | 1 × Power Button + 1 × Reset Button |
| LED & Buzzer | 1 × Traffic Light Status & Alarm Indicator + 1 × Buzzer |
| USB | 1 × Type-C Port for Power Supply, Configuration or Console |
| Software | |

| | |
|-------------------|---|
| Power On/Off | <ol style="list-style-type: none"> 1. Mobile App via NFC 2. PC software via NFC or USB Type-C port 3. Power Button |
| Configuration | <ol style="list-style-type: none"> 1. Mobile App via NFC 2. PC software via NFC or USB Type-C port 3. Downlink |
| Advanced Features | Calibration, Threshold Alarm, Data Storage (18,000 entries), Data Retrievability, Data Retransmission, Smart Screen Mode, Button Lock |

Physical Characteristics

| | |
|-----------------------|---|
| Power Supply | 5V/1A by Type-C Port |
| Operating Temperature | -20°C - 60°C (E-Ink Screen: 0°C - 40°C) |
| Relative Humidity | 10% - 90% (non-condensing) |
| Ingress Protection | IP30 |
| Housing & Color | ABS (UL94 HB), White |
| Weight | 148g |
| Dimension | 100.8 × 114 × 22 mm (3.97 × 4.49 × 0.87 in) |
| Installation | Wall Mounting via 3M Tape or Screws |

Approvals

| | |
|---------------|---------------|
| Regulatory | CE, FCC, ISED |
| Environmental | RoHS |

Note:

1. Reference to IAQ rating guideline (conversion from mg/m³ to ppm by the factor is about 0.5):

| IAQ Rating | TVOC (mg/m ³) | Air Quality |
|--------------|---------------------------|---|
| ≤1.99 | <0.3 | Very Good |
| 2.00 to 2.99 | 0.3 to 1.0 | Good |
| 3.00 to 3.99 | 1.0 to 3.0 | Medium (not recommended for exposure > 12 months) |
| 4.00 to 4.99 | 3.0 to 10.0 | Poor (not recommended for exposure > 1 months) |
| ≥5.00 | >10.0 | Bad (not recommended) |

2. HCHO or O₃ sensor is alternative option and both support replacement.

3. For HCHO at 760 mmHg and 20°C, 1 ppm = 1.25 mg/m³.

◆ Ordering Information

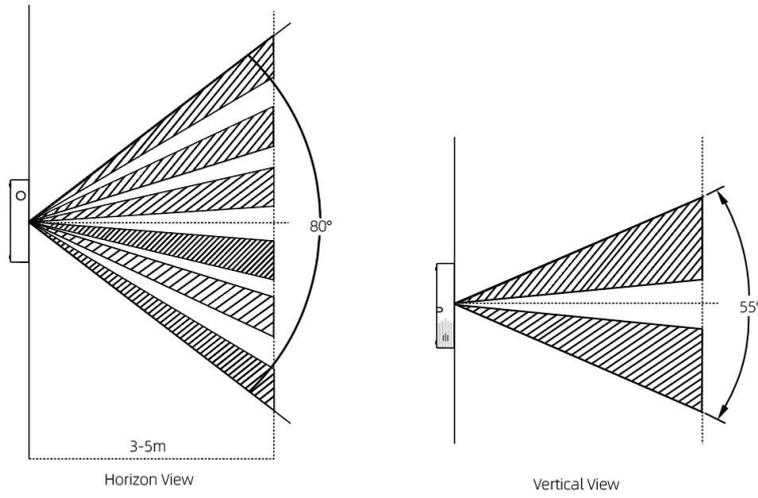
| Model | PN | Description |
|-------|---------|--|
| IAQ11 | HCHO-IR | Temperature, Humidity, Light, Motion, CO ₂ , TVOC, Pressure, PM2.5, PM10, HCHO |

O₃

Temperature, Humidity, Light, Motion, CO₂, TVOC, Pressure, PM2.5, PM10,

O₃

◆ PIR Area



◆ Dimensions (mm)

