

MS7AM307

Indoor Ambience Monitoring Sensor

Featuring LoRaWAN®

MoviSight



◆ Introduction

MS7AM300 series 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. MS7AM300 series is widely used for offices, stores, classrooms, hospitals, etc.

Sensor data is transmitted using LoRaWAN® technology. Combining MoviSight LoRaWAN® gateway and MoviSight IoT Cloud, users can manage all sensor data remotely and visually.

◆ 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 batteries or DC power supply
- Equipped with traffic light indicator and buzzer to indicate device status and threshold alarms
- Able to store locally more than 18, 000 records of 512 KB in total
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with MoviSight IoT Cloud

◆ Specifications

| Model | MS7AM307 | MS7AM319 |
|--|---|-----------------------------|
| Wireless Transmission | | |
| Technology | LoRaWAN [®] | |
| 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 A | OTAA/ABP Class C |
| Sensors | | |
| Temperature | | |
| Range | -40°C - 85°C | |
| Accuracy | ± 1°C | |
| Resolution | 0.1°C | |
| Humidity | | |
| Range | 0% - 100% RH | |
| Accuracy | ± 3% | |
| Resolution | 0.5% RH | |
| PIR | | |
| Detection Area | 80 ° Horizontal, 55 ° Vertical | |
| Detection Range | 5 m | |
| Status | Vacant/Occupied | |
| Light | | |
| Range | 0-60000 Lux (Determine as 6 levels, 0-5) | |
| TVOC | | |
| Range | 0-500 (IAQ Index) | |
| Accuracy | ±15 % | |
| Barometric Pressure | | |
| Range | 300 - 1100 hPa (-40°C - 85°C) | |
| Accuracy | ±0.6 hPa | |
| Resolution | 0.1 hPa | |
| Carbon Dioxide (CO₂) | | |
| Range | 400 - 5000 ppm | 400 - 2000 ppm |
| Accuracy | ± (30 ppm or + 3 % of reading) | ± (50 ppm + 5 % of reading) |
| Resolution | 1 ppm | 1 ppm |

| PM2.5 & PM10 | | |
|--|--|---|
| Range | — | 0 - 1000 $\mu\text{g}/\text{m}^3$ |
| Accuracy | — | 0-100($\pm 10\mu\text{g}/\text{m}^3$), 100-1000($\pm 10\%$) |
| Resolution | — | 1 $\mu\text{g}/\text{m}^3$ |
| Formaldehyde (HCHO)¹ | | |
| Range | — | 0 - 6 mg/m^3 |
| Accuracy | — | $\pm 10\%$ |
| Resolution | — | 0.01 mg/m^3 |
| Ozone (O₃)² | | |
| Range | — | 0 - 10 ppm |
| Accuracy | — | $\pm 5\%$ FS |
| Resolution | — | 0.01 ppm |
| Display & Configuration | | |
| Display | 4.2-inch Black & White E-Ink Screen | |
| Button | 1 × Power Button + 1 × Reset Button | |
| LED & Buzzer | 1 × Traffic Light Status Indicator + 1 × Buzzer | |
| Configuration | 1. Mobile App via NFC 2. PC software via NFC or USB Type-C port | |
| Physical Characteristics | | |
| Power Supply | 4 × 2700 mAh ER14505 Li-SOCl ₂ Replaceable Batteries or Type-C Port | 5V/1A by Type-C Port |
| Battery Life ³ | Around 3 Years (10 min interval) | — |
| Operating Temperature | -20°C - 60°C (E-Ink Screen: 0°C - 40°C) | |
| Relative Humidity | 10% - 90% (non-condensing) | |
| Ingress Protection | IP30 | |
| Dimension | 100.8 × 114 × 22 mm (3.97 × 4.49 × 0.87 in) | |
| Installation | 3M Tape Mounting, Wall Screw Mounting, 86 Box Mounting | |

¹ This function is valid in the measurement of either HCHO or O₃.

² O₃ electrochemical sensor working life is 2 years and HCHO sensor working life is 5 years; they both support replacement.

³ Test under laboratory conditions and for guideline purposes only.