

# Indoor Ambience Monitoring Sensor

Featuring LoRaWAN®

## AM319(L)



### ◆ Introduction

AM319(L) is a compact indoor ambience monitoring sensor for measurement of temperature, humidity, light, CO<sub>2</sub> concentration, HCHO/O<sub>3</sub> 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. AM300 series is widely used for offices, stores, classrooms, hospitals, etc.

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

### ◆ Features

- Integrated with multiple sensors like humidity, temperature, CO<sub>2</sub>, 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
- Store locally 18, 000 historical records and support retransmission to prevent data loss
- Compliant with standard LoRaWAN® gateways and network servers
- Quick and easy management with Milesight IoT Cloud

## ◆ Specifications

<b>Wireless Transmission</b>	
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 C
<b>Sensors</b>	
<b>Temperature</b>	
Operating Principle	Digital CMOSens® technology (MEMS)
Range	-20°C~60°C
Accuracy	± 0.2°C
Resolution	0.1°C
<b>Humidity</b>	
Operating Principle	Digital CMOSens® technology (MEMS)
Range	0% ~ 100% RH
Accuracy	± 2% RH
Resolution	0.5% RH
<b>Motion</b>	
Operating Principle	Passive infrared (PIR)
Detection Range	80 ° Horizontal, 55 ° Vertical, 5m
Status	Vacant/Occupied
<b>Light</b>	
Operating Principle	Photodiode
Range	0-60000 Lux (Determine as 6 levels, 0-5)
<b>TVOC</b>	
Operating Principle	MOX (MEMS)
Report Mode <sup>1</sup>	IAQ Rating or Concentration Value
IAQ Rating	Range: 1.00 - 5.00
	Accuracy: ±1
	Resolution: 0.01
Concentration	Range: 0 - 2000 µg/m <sup>3</sup>
	Accuracy: 20 µg/m <sup>3</sup> ±15% of readings (1 - 500 µg/m <sup>3</sup> )
	Resolution: 1 µg/m <sup>3</sup>

<b>Barometric Pressure</b>	
Operating Principle	Piezoresistive absolute pressure sensor (MEMS)
Range	260 - 1260 hPa
Accuracy	±0.5 hPa
Resolution	0.1 hPa
<b>Carbon Dioxide (CO<sub>2</sub>)</b>	
Operating Principle	Photoacoustic
Range	400 ~ 2000 ppm
Accuracy	± (50 ppm + 5 % of reading) (-10°C~ 60°C)
Resolution	1 ppm
<b>PM2.5 &amp; PM10</b>	
Operating Principle	Laser Scattering
Range	0 ~ 1000 µg/m <sup>3</sup>
Accuracy	0~100(±10µg/m <sup>3</sup> ), 100~1000(±10 %) (-10°C~ 60°C)
Resolution	1 µg/m <sup>3</sup>
<b>Formaldehyde (HCHO)<sup>2</sup></b>	
Operating Principle	Electrochemical
Range <sup>3</sup>	0 ~ 1.25 mg/m <sup>3</sup>
Accuracy	±10 %
Resolution	0.01 mg/m <sup>3</sup>
Working Life	6 Years
<b>Ozone (O<sub>3</sub>)<sup>2</sup></b>	
Operating Principle	Electrochemical
Range	0 ~ 10 ppm
Accuracy	±5 % FS
Resolution	0.01 ppm
Working Life	2 Years
<b>Display &amp; Configuration</b>	
Display	AM319: 4.2-inch Black & White E-Ink Screen AM319L: Not Support
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
<b>Physical Characteristics</b>	

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
Dimension	100.8 × 114 × 22 mm (3.97 × 4.49 × 0.87 in)
Installation	Wall Mounting via 3M Tape or Screws
<b>Approvals</b>	
Regulatory	CE, FCC, ISED
Environmental	RoHS, Works with WELL

**Note:**

1. Reference to IAQ rating guideline (conversion from mg/m<sup>3</sup> to ppm by the factor is about 0.5):

IAQ Rating	TVOC (mg/m <sup>3</sup> )	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 O<sub>3</sub> sensor is alternative option and both support replacement.

3. For HCHO at 760 mmHg and 20°C, 1 ppm = 1.25 mg/m<sup>3</sup>.

