Indoor Ambience Monitoring Sensor

Featuring LoRaWAN®

AM30x

◆ Introduction

AM30x is a compact indoor ambience monitoring sensor for measurement of temperature, humidity, light, CO_2 concentration, 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 Milesight LoRaWAN® gateway and Milesight Development Platform solution, users can manage all sensor data remotely.

AM30x can be used in offices, stores, classrooms, hospitals, etc.

◆ Features

- Integrated with multiple sensors like humidity, temperature, CO_2, 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 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 and Milesight Development Platform

◆ Specifications

Model	AM307	AM308(L)
Wireless Transmission		
Technology	LoRaWAN®	
Antenna	Internal Antenna	
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	
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, 5m	
Status	Vacant/Occupied	
Light		
Operating Principle	Photodiode	
Range	0-60000 Lux (Determine as 6 levels, 0-5)	
TVOC		
Operating Principle	MOX (MEMS)	
Range[1]	1.00 ~ 5.00 (IAQ Rating)	
Accuracy	±1	
Resolution	0.01	
Barometric Pressure		

Operating Principle	Piezoresistive absolute pressure sensor (MEMS)	
Range	260 - 1260 hPa	
Accuracy	±0.5 hPa	
Resolution	0.1 hPa	
Carbon Dioxide (CO_2)		
Operating Principle	Nondispersive Infrared (NDIR)	
Range	400 ~ 5000 ppm	
Accuracy	± (30 ppm + 3 % of reading) (0°C~ 50°C, 0% to 85%RH)	
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
Other Interfaces		
Display	AM307 & AM308: 4.2-inch Black & White E-Ink Screen AM308L: Not Support	
Button	1 × Power Button + 1 × Reset Button	
LED & Buzzer	1 × Traffic Light Status Indicator + 1 × Buzzer	
USB	1 × Type-C Port for Power Supply, Configuration or Console	
Software		
Configuration	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	1. 4 × 2700 mAh ER14505 Li-$SOCl_2$ Replaceable Batteries 2. 5V/1A by Type-C Port	
Battery Life[2] (10 min interval, 25°C)	Around 3.9 Years (SF7, EU868 &US915) Around 3.1 Years (SF10, EU868) Around 2 Years (SF10, US915)	Around 1.3 Years (SF7, EU868 & US915) Around 1.2 Years (SF10, EU868) Around 1 Year (SF10, US915)

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	182.5g (With Batteries)	222.6g (With Batteries)
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	

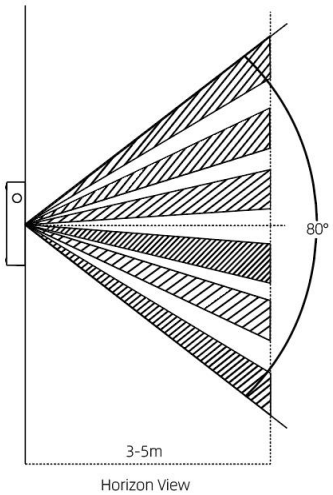
Note:

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

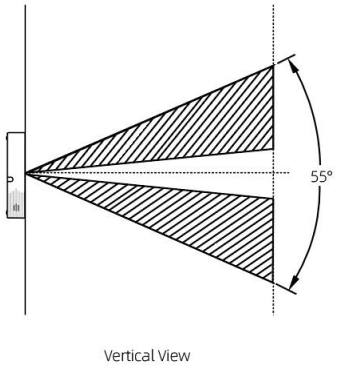
IAQ Rating	Air Quality
≤1.99	Very Good
2.00 to 2.99	Good
3.00 to 3.99	Medium (not recommended for exposure > 12 months)
4.00 to 4.99	Poor (not recommended for exposure > 1 months)
≥5.00	Bad (not recommended)

2. The battery life is tested under laboratory conditions and for guideline purposes only.

◆ PIR Area



Horizon View



Vertical View

◆ Dimensions (mm)