![Kiwi technology Inc. logo]

Product Brief

Model: LAS-302

CO2 and T/ RH% Sensor

1. Description

LAS-302 series is designed to measure carbon dioxide, temperature, and humidity by LoRa® long-range and low-power wireless connectivity. It is an integrated LoRa® wireless technology, CO2 sensor, and T/RH% sensor know-how and high-performance MCU solution for various IoT market usage. LAS-302 series has two models, LAS-302V1 and LAS-302V2. They only differ in the CO2 sensor and corresponding power consumption. LAS-302V1 is designed as a low power consumption version with the S11 CO2 module. LAS-302V2 adopt the S8 CO2 module, it could only support AC adapter power-in. Customers can choose according to product needs. With a calibrated CO2 sensor module, compensated temperature and humidity sensor integration, the data is ready for use. Besides, with the low power consumption CO2 module, the wireless devices could be achieved, and it is convenient for installation. It is perfect for monitoring air quality in schools, office buildings, greenhouses, factories, hotels, hospitals, transportation lines, and anywhere high levels of carbon dioxide are generated.

2. Features

- Support multiple air quality sensors (option)
- Support PIR sensor (option)
- Wireless transmission to server
- Easy to replace the battery without special tools
- Easy settings for user from web configuration
- Support both battery and AC adapter power in

3. Applications

- Schools
- Office buildings
- Factories
- Hotels
- Hospitals
- Department Store

4. Product Specifications

CORE	
MODEL NAME	LAS-302
MCU	TLM922S
MEMORY	16 Kbytes
FLASH	128 Kbytes
CO2 SENSOR PARAMETERS	
MEASUREMENT RANGE	400 to 10000ppm......note1
ACCURACY	± (70ppm +3% of reading) ......note2~3 Extended range +-10% of reading ......note2~4
RESOLUTION	1 ppm@400ppm,25°C 2 ppm@3000ppm,25°C
TEMPERATURE SENSOR PARAMETERS	
MEASUREMENT RANGE	0~50°C
ACCURACY	±0.6°C at 5°C to 50°C ± 0.9°C at 0°C to 5°C
RESOLUTION	0.1°C
HUMIDITY SENSOR PARAMETERS	
MEASUREMENT RANGE	5~85% RH
ACCURACY	±5.0 %RH at 25°C, 50%RH
RESOLUTION	0.1 % RH
NETWORK COMMUNICATION	
LoRa	TLM992S
LoRa FREQUENCY RANGE	920.6~928MHz for JPN
LoRa DATA RATE	0.244～18.2 Kbps
LoRa TRANSMIT POWER	-2~+20 dBm
LoRa SENSITIVITY	-137 dBm
ANTENNA	Embedded 2dBi
MEASURING BEHAVIOR	
MEASURING AND TRANSMISSION INTERVAL...note5	Detect and report every 1 minute(default) Adjustable period, minute base, up to 60 minutes
I/O	
INTERFACE	DC5V micro USB power in x1 Reset button x1

POWER INPUT	DC5V adapter input through micro USB......note6
MECHANISM	
DIMENSION (MM)	95 x 94 x 27 mm
WEIGHT (w/o ACCESSORIES)	140g
ENVIRONMENT	
OPERATION TEMPERATURE	0 ~ 50 °C
STORAGE TEMPERATURE	-40 ~ 70 °C
CERTIFICATE	TELEC, VCCI

Note 1: Sensor is designed to measure in the range 400-5000ppm, extended range up to 10000ppm, which is specified in the table accuracy. Nevertheless, exposure to concentrations below 400ppm may result in Incorrect operation of ABC algorithm and shall be avoided for model with ABC on.

Note 2: 15-35°C, 0-80%RH, after 3 ABC periods

Note 3: Specification is referenced to uncertainty of calibration gas mixtures ($\pm$1%).
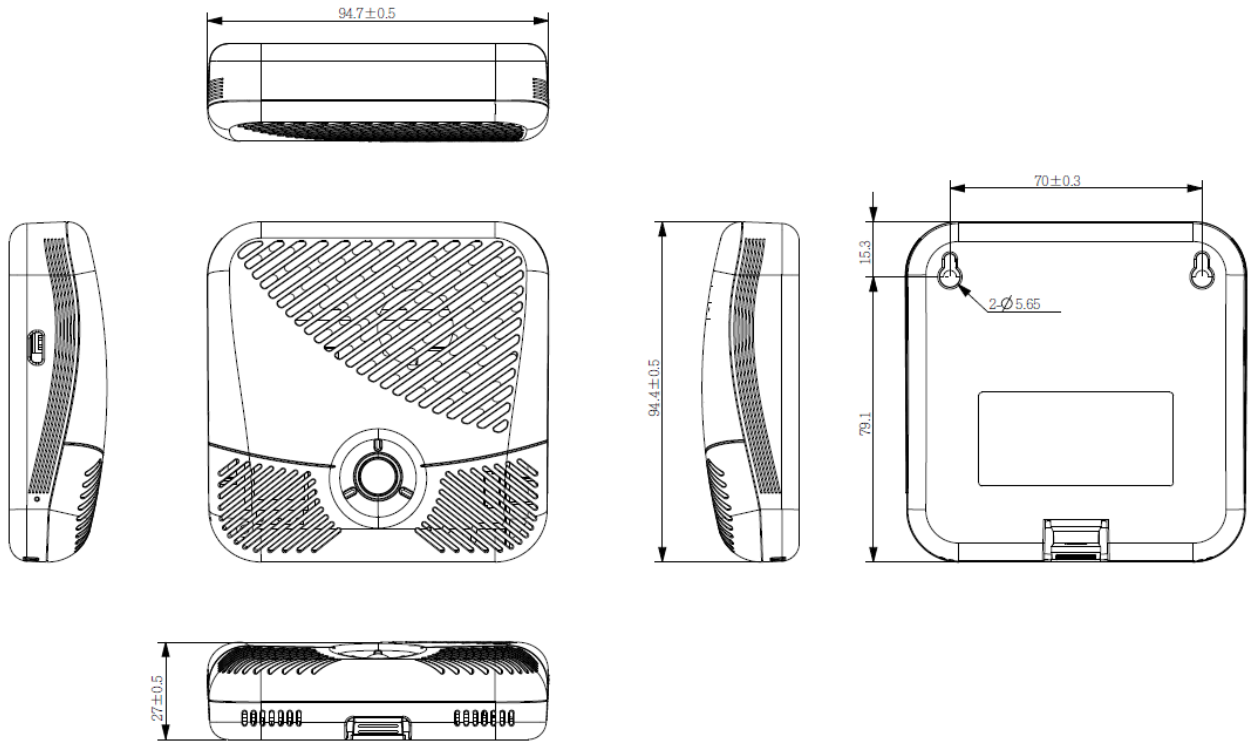
Note 4: Extended range accuracy is not calibrated or guaranteed, it is extrapolated from calibrated range.

Note 5: The setting of the measuring interval, recording interval, and transmission interval should be the same.

Note 6: There are two types of power adapter, the part numbers are ATM012T-W050UU and PSAA05A-050QL6 separately.

5. Mechanical Drawing

Unit: mm

6. Ordering list

MODEL NAME	DESCRIPTION
LAS-302 V1	CO2 sensor adopt the ultra-low-power sensor module(S11)
LAS-302 V2	CO2 sensor adopt the low-power sensor module(S8)