QingPing LoRaWAN CO2 Sensor Datasheet

Overview

Description

The QingPing LoRaWAN CO2 Sensor is a remote monitoring device that uses non-dispersive infrared (NDIR) spectral analysis to accurately measure CO2 levels. Aside from CO2 levels, it also monitors temperature and relative humidity, providing a comprehensive overview of the indoor environment in real time.

Readings are displayed on a high-resolution LED screen with a reading reporting interval of 10 minutes (min) and 24 hours (max) and a reading recording interval of 1 minute (min) and 1 hour (max). It has a built-in buzzer that can be set to sound an alarm when the reading exceeds the limit. When the CO2, temperature, and humidity readings reach the set threshold, the device goes offline, or the battery power runs out, an alarm notification is sent.

To ensure reliable data gathering and monitoring, the battery is designed to last over an extended period. It can run for up to 99 days without charging or replacing the battery.

This remote monitoring device is built in a sleek and compact design suitable for any environment. It is simple to set up, operate, and integrate with other smart devices or

management platforms. It can be used in a variety of settings, including homes, schools, hospitals, and factories, to name a few.

Moreover, QingPing complies with Class A LoRaWAN specifications and supports various LoRaWAN bands, including EU433, EU868, RU864, CN470, KR920, IN865, AU915, US915, AS923-1/2/3/4.

Features

1. **Battery-operated:**

    - Type: **Lithium Ion** (Rechargeable)

    - Capacity: **2600 mAh**

2. Power supply interface (5V, 1A): **USB-C**

3. Has built-in sensors for remote monitoring: **CO2**, **Temperature**, and **Humidity**

4. CO2 sensor measurements:

    - Range: **400 ~ 5000 ppm**

    - Accuracy: **±50ppm or ±5%**

5. Temperature sensor measurements:

    - Range: **-10 ~ 50° C**

    - Accuracy: **±0.5° C**

6. Humidity sensor measurements:

    - Range: **0 - 95%RH**

    - Accuracy: **±3%RH**

7. LoRaWAN-based remote monitoring device that complies with **Class A** specification

8. Dimension: **77mm x 77 mm x 28 mm**

9. Screen size: **61 mm x 49 mm**

Application

    With the current environmental issue, the importance of maintaining indoor air quality, particularly carbon dioxide (CO2) levels, has recently been widely recognized. When indoor CO_2 levels are too high, it usually indicates poor ventilation, which can lead to the accumulation of other airborne contaminants, such as volatile organic compounds (VOCs) and an increased risk of infection from airborne viruses.

    Indoor CO_2 monitoring solutions have become an important issue in current environmental protection and health management, but the solution still faces many implementation challenges, such as coverage, cost-effectiveness, installation, and maintenance.

1. **Low Power Consumption**: Can operate for up to 99 days without charging or battery replacement.

2. **Long Range**: Can transmit data over long distances, making it suitable for indoor environments with obstacles that may interfere with wireless signals.

3. **Cost-Effective**: Less expensive in general than other wireless technologies, making them an affordable solution for in-building connectivity.

4. **Easy Deployment and Maintenance**: Simple to deploy and manage. Devices can be easily added or removed, making network management easier.

5. **Reliable**: Designed for high reliability and can automatically switch to backup channels if interference is detected.

6. **Customized data recording and reporting intervals**:

    - Reading reporting interval: 10 minutes (Minimum), 24 hours (Maximum)

    - Reading recording interval: 1 minute (Minimum), 60 minutes (Maximum)

7. **Alarm function**: An alarm notification is sent when the CO2, temperature, and humidity readings reach the set threshold, when the device goes offline, or when the battery power runs out.

Specifications

Mounting

With its compact and sleek design, QingPing can be easily mounted. It has a back opening that is paired with an adhesive hook, making it easier to mount.

Hardware

Interfaces

The QingPing power supply interface is USB-C. Additionally, it boasts a longer operating range and battery life of up to 99 days.

Sensor Characteristics

CO2 Sensor Specification

Parameter	Value
Range	400 ~ 9999 ppm
Accuracy Tolerance	±15%

LEDs Status

Color	CO$_2$	Status
🟢	400 ~ 1000 ppm	Normal
🟡	1000 ~ 1400 ppm	Slightly higher CO$_2$ concentration
🔴	1400+ ppm	Higher CO$_2$ concentration

Temperature Sensor Specification

Parameter	Value
Range	-20 ~ 50°C
Accuracy Tolerance	±0.5°C @ 0°C ~ 50°C
Accuracy	0.1°C

Humidity Sensor Specification

Parameter	Value
Range	0 ~ 99.9%RH (non-condensing)
Accuracy Tolerance	±5%RH @ 10% ~ 90%RH
Accuracy	1% RH

RF Characteristics

Operating Frequencies

Region	Frequency Band
Europe	EU868, EU433
Canada	US915
North America	US915
Australia	AU915
Asia	AS923-1/2/3/4
China	CN470
India	IN865
Korea	KR920
Russia	RU864

Mechanical Characteristics

77 mm

28mm