

UBIBOT
UB-CO2-P1
WIRELESS
TEMPERATURE
MONITORING
SYSTEM



UBIBOT UB-CO2-P1 Wireless Temperature Monitoring System User Guide

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UBIBOT UB-CO2-P1 Wireless Temperature Monitoring System



Product Usage Instructions

Wiring Instruction:

Connect the sensor to a power supply of DC 5/12V and establish communication using the RS485 Modbus RTU Protocol.

Communication Protocols:

1. Communication Basic Parameters:

- Coding System Data Bit
- Parity Checking Bit Stop Bit Error Checking Baud Rate
- **Baud Rate:** 1200 bit/s, 2400 bit/s, 4800 bit/s, 9600 bit/s, 19200 bit/s (default)

2. **Data Frame Format:** The Modbus-RTU communication protocol is used with specific frame format details.

Introduction

The carbon dioxide sensor is an industrial-grade sensor with high integration. The data is sent from the internal chip of the probe to the computer through the modbus-RS485 interface, and multiple probes can be connected to the bus network to realize real-time monitoring of multiple field environments. It has super stability and anti-interference ability, strong product protection performance and first grade lightning protection, which can be used in agricultural industry and other occasions.

Use Case Scenarios

It is widely used in agricultural greenhouses, intelligent buildings, workshops, warehouses, pharmacies, libraries, museums, laboratories, offices, ventilation ducts and other places where carbon dioxide concentration needs to be monitored.

Features

- High precision, wide range, good consistency.
- Standard audio interface design, easy to plug.
- Super stability and anti-interference.
- The product has strong protective performance and first grade lightning protection.

Specification

| Specifications | | | |
|------------------------|--|---|---|
| Model | UB-CO2-P1 | UB-CO2-P2 | UB-CO2-P3 |
| Measuring Range | CO2: 400~10000ppm (Max: 0~40000ppm) Temperature: -40~70°C Humidity: 0~100%RH | CO2: 400~2000ppm (Max: 0~40000ppm) Temperature: -10~60°C Humidity: 0~100%RH | CO2: 400~2000ppm (Max: 0~10000ppm) |
| Measuring Accuracy | CO2: $\pm(30\text{ppm}+3\%)$ (@400~10000ppm) Temperature: $\pm(0.4^{\circ}\text{C}+1\%)$ (@0~50°C) Humidity: $\pm 3\%\text{RH}$ (@25°C, 0~100%RH) | CO2: $\pm(50\text{ppm}+5\%)$ (@400-2000ppm) Temperature: $\pm 0.8^{\circ}\text{C}$ (@15~35°C), $\pm 1.5^{\circ}\text{C}$ (@-10~60°C) Humidity: $\pm 6\%\text{RH}$ (@15~35°C, 20~65%RH), $\pm 9\%\text{RH}$ (@-10~60°C, 0~100%RH) | CO2: $\pm(40\text{ppm}+3\%)$ (@400-2000ppm) |
| Power Supply | DC 5/12V | DC 5/12V | DC 5/12V |
| Max Current | 267mA(@5V), 86mA(@12V) | 260mA(@5V), 125mA(@12V) | 498mA(@5V), 194mA(@12V) |
| Connector | Audio | | |
| Dimensions | 65*46*29mm | | |
| Cable Length | 3m | | |
| Communication Protocol | RS485 Modbus RTU Protocol | | |
| RS485 Address | 0x61 | | |
| Baud Rate | 1200 bit/s, 2400 bit/s, 4800 bit/s, 9600 bit/s, 19200 bit/s (default) | | |

Wiring Instruction



Communication protocols

Communication basic parameters

| Communication Basic Parameter | |
|-------------------------------|---|
| Coding System | 8-bit binary |
| Data Bit | 8 bits |
| Parity Checking Bit | none |
| Stop Bit | 1 bit |
| Error Checking | CRC Check |
| Baud Rate | 1200 bit/s, 2400 bit/s, 4800 bit/s, 9600 bit/s, 19200 bit/s (default) |

Data Frame Format

The Modbus-RTU communication protocol is used in the following format:

- **Initial structure** ≥ 4 bytes in time.
- **Address code**: 1 byte, default 0x61.
- **Function code**: 1 byte, support function code 0x03 (read-only) and 0x06 (read/write).
- **Data area**: N bytes, 16-bit data, high byte comes first.
- **Error check**: 16-bit CRC code.
- **End structure** ≥ 4 bytes of time.

| Request | | | | | | | |
|---------------|---------------|------------------|------------------|-----------|---------|-----------|---------|
| Slave Address | Function Code | Register Address | No. of Registers | CRC LSB | CRC MSB | | |
| 1 byte | 1 byte | 2 bytes | 2 bytes | 1 byte | 1 byte | | |
| Response | | | | | | | |
| Slave Address | Function Code | No. of Bytes | Content 1 | Content 1 | ... | Content n | CRC |
| 1 byte | 1 byte | 1 byte | 2 bytes | 2 bytes | ... | 2 bytes | 2 bytes |

Register Address

| Register Address | | | | |
|------------------|-------------|-----------------|---------------|-------------------------------|
| Address (hex) | Content | Register Length | Function Code | Description of definitions |
| 0x0028 | CO2 | 2 | 03 | IEEE 754 floating point |
| 0x0032 | Temperature | 2 | 03 | IEEE 754 floating point |
| 0x0036 | Humidity | 2 | 03 | IEEE 754 floating point |
| 0x0064 | Address | 1 | 03/06 | 1 255 (UB-CO2-P1 unsupported) |


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FAQ

Q: Where can the carbon dioxide sensor be used?

A: The sensor can be used in agricultural greenhouses, intelligent buildings, workshops, warehouses, pharmacies, libraries, museums, laboratories, offices, ventilation ducts, and other places where carbon dioxide concentration needs to be monitored.

Documents / Resources

| | |
|--|---|
|  | <p>UBIBOT UB-CO2-P1 Wireless Temperature Monitoring System [pdf] User Guide UB-CO2-P1, UB-CO2-P2, UB-CO2-P3, UB-CO2-P1 Wireless Temperature Monitoring System, UB-CO2-P1, Wireless Temperature Monitoring System, Temperature Monitoring System, Monitoring System, System</p> |
|--|---|

References

- [User Manual](#)

[Manuals+](#), [Privacy Policy](#)

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