## Product Introduction

Atmospheric pressure sensor adopts original imported sensors, stable measurement data, high precision, strong anti-interference ability, long service life, can accurately measure the value of atmospheric pressure, while the built-in temperature and humidity sensors, suitable for a variety of environments under the air pressure and temperature and humidity measurement.

## Use Case Scenarios

It is widely used in greenhouses, environmental protection, weather stations, ships, docks and other outdoor locations.

## Features

1.  Designed for real-time monitoring of environmental temperature, humidity and air pressure.

2.  Wall-mounted, easy to use.

3.  Provides RS485 communication interface and DC5V power supply.

## Product Specifications

| Specifications | |
| --- | --- |
| Model | UB-ATHP-N1 |
| Power Supply | DC 5V |
| Max Current | 139mA（@5V） |
| Measuring Range | Pressure: 26~126kPa<br>Temperature: -40℃~80℃<br>Humidity: 0~100%RH |
| Accuracy | Pressure: ±50Pa<br>Temperature: ±0.2℃（@0~65℃）<br>Humidity: ±2%RH（@10~90%RH） |
| Working Environment | -40~60℃，0~80%RH |
| Connector | Audio |
| Communication Protocol | RS485 Modbus RTU Protocol |
| RS485 Address | 0xC1, 0xCE |
| Baud Rate | 1200 bit/s,2400 bit/s, 4800 bit/s, 9600 bit/s (default), 19200 bit/s |

## Wiring Instruction



## Communication protocols

**1. 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 (default), 19200 bit/s |

## 2. 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 0xC1 & 0xCE.
- 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 |

## 3. Register Address

| Register Address | | | | |
|---|---|---|---|---|
| Address (hex) | Content | Register Length | Function Code | Description of definitions |
| 0x0000 (for C1) 0x0001 (for CE) | Pressure | 1 | 03 | Unsigned integer data, divided by 10 |
| 0x0001 (for C1) 0x0002 (for CE) | Temperature | 1 | 03 | Signed integer data, divided by 10 |
| 0x0002 (for C1) 0x0000 (for CE) | Humidity | 1 | 03 | Unsigned integer data, divided by 10 |
| 0x0064 | Address | 1 | 03/06 | 1 ~ 255 |

## NOTE

1. Do not pull the sensor lead wire, do not drop or hit the sensor violently.

2. Do not place the transmitter directly under high temperature environment.

3. Prohibit the transmitter to be placed in steam, water mist, water curtain or condensation environment for a long time.