Air Temperature & Humidity Probe User Guide

Product Introduction

The temperature and humidity probe is our self-developed product. It's produced and assembled in our own factory.
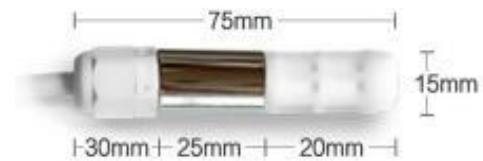
It has exquisite appearance and high measurement accuracy.

Product Size

The size of our temperature and humidity probe is as shown below. Length: 75mm, diameter: 15mm.

The cable is circular, shielded, and durable in extreme high and low conditions.

Product Specifications

Specifications			
Model	UB-ATH-N1 (1st generation)	UB-ATH-N1 (2nd generation)	UB-ATH-P1
Range	Temperature: -40℃~80℃ Humidity: 0~100%RH	Temperature: -40℃~80℃ Humidity: 0~100%RH	Temperature: -40℃~80℃ Humidity: 0~100%RH
Accuracy	Temperature: ±0.3C(0~65℃) Humidity: ±3%RH(10~90%RH)	Temperature: ±0.2℃(0~65℃) Humidity: ±2%RH (10~90%RH)	Temperature: ±0.15℃(20~60℃) Humidity: ±1.5%RH (0~80%RH)
Materials	PE+Stainless steel		
Cable Length	5m/10m/Custom-made		
Power Supply	DC5V~12V		
Connector	Micro-USB/Audio/Custom-made		
Protocol	RS485 ModBus Protocol		
Address	1-247		
Baud Rate	9600		
Communication Method	Asynchronous communication		
Power Consumption	≤0.1W		
Ingress Protection	Waterproof and dustproof		
Thunder Prevention	Level 1		
Match with	WS1 Pro and other future UbiBot products		

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Product Interface Definition
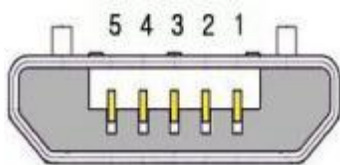
Pin Sequence	Pin Definition
Pin 1	GND
Pin 2	RS485B
Pin 3	RS485A
Pin 4	NC
Pin 5	VCC

Product Working Environment

This product is suitable for indoor and outdoor environments. The recommended environmental conditions are as follows:

Temperature: -40 to 80°C (-40°F to +176°F), Humidity: 0 to100% RH

Please do not place the product directly on the heat source or cold source; Do not keep it stay in the water curtain and condensation environment for a long time; In the dusty or heavy air polluted environment, please clean up the probe in time.

Product Customization Instructions

The probe cable can be customized according to the user's requirements. The external connector of the product can be removed or replaced with other types of connectors . Freezer cable can also be supported.

This product is able to match with our UbiBot products, such as WS1/ WS1Pro(WiFi)/WS1Pro (mobile network) /SP1(WiFi)/SP1(mobile network).

Product Applications

This product is suitable for a variety of applications, such as warehousing and logistics, greenhouses, fruit and vegetable storage, etc.

Communication Protocol

1. Read T/H Command

Query Message from Master(Address=01，Temperature and Humidity)

Address	Function Code (Read)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0x01	0x03	0x00	0x00	0x00	0x02	0xC4	0x0B

Response Message from Slave (Probe) (e.g. Temperature:18.4℃, Humidity:83.1%)

Address	Function Code (Read)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0x01	0x03	0x04	0x00	0xB8	0x03	0x3F	0x3A

2. Read Address Command

Query Message from Master

Address	Function Code (Read)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0x01	0x03	0x00	0x00	0x00	0x02	0xC4	0x0B

Response Message from Slave (Probe): (e.g. Address= 01)

Address	Function Code (Read)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0xFF	0x03	0x02	0x00	0x01	0x50	0x50	0xFF

3. Write Address Command(Change Address= 0x01 to Address = 0x02)

Query Message from Master

Address	Function Code (Write)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0x01	0x06	0x00	0x64	0x00	0x02	0x49	0xd4

Response Message from Slave (Probe)

Address	Function Code (Write)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0x01	0x06	0x00	0x64	0x00	0x02	0x49	0xd4

4. Write Address Command(Change Unknown Address to Address=0x02)

Query Message from Master

Address	Function Code (Write)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0xff	0x06	0x00	0x64	0x00	0x02	0x5c	0x0a

Response Message from Slave (Probe)

Address	Function Code (Write)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0xff	0x06	0x00	0x64	0x00	0x02	0x5c	0x0a

5. Read Version No. Command (Address=1, Read its Version No.)

Query Message from Master

Address	Function Code (Read)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0x01	0x03	0x00	0x88	0x00	0x01	0x04	0x20

Response Message from Slave (Probe) (If the Version No. Is v08)

Address	Function Code (Write)	Starting Address Hi	Starting Address Lo	No.of Registers Hi	No.of Registers Lo	CRC16 LSB	CRC16 MSB
0x01	0x03	0x00	0x88	0x00	0x08	0xc4	0x26