Temperature and Humidity Sensor User Manual

(Version V1.2)

Contents

1. Port Description---------- 1

- Rear Port Diagram---------- 1

- Port Description---------- 1

- Installation Instructions---------- 2

2. Button Operation Instructions---------- 2

- Default Display---------- 2

- Setting the Sensor ID---------- 3

- Setting the Baud Rate---------- 4

- Setting Temperature Upper/Lower Limits---------- 5

- Setting Humidity Upper/Lower Limits---------- 5

- Setting Temperature/Humidity Calibration Values---------- 6

3. Modbus Register List---------- 7

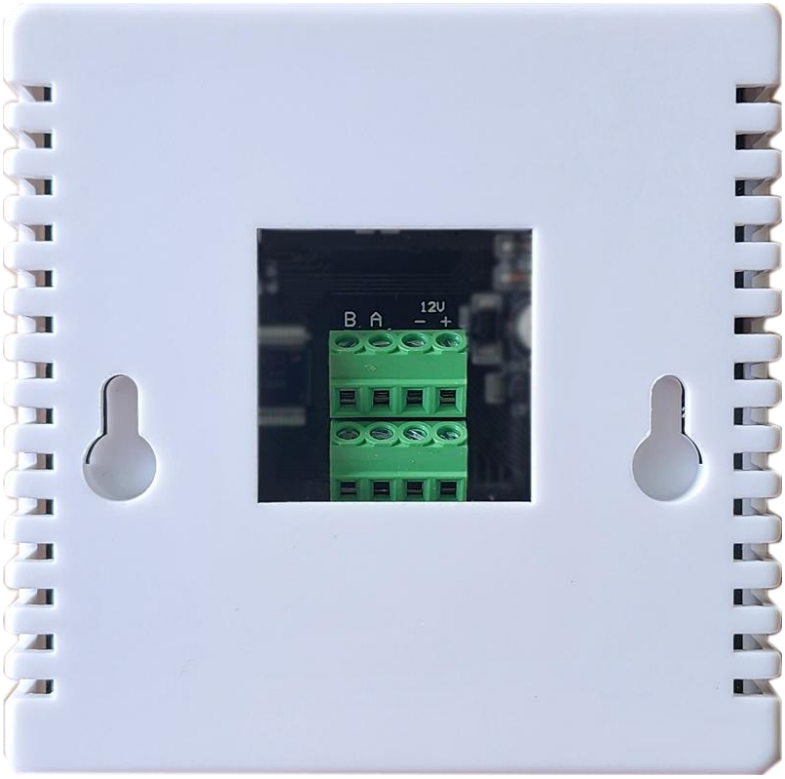
4. Technical Specifications---------- 7

- Technical Support---------- 8

5. Version Update Log---------- 8

1. Port Description

Rear Port Diagram:



Port Description:

As shown in the diagram, from left to right, the ports are labeled:

‘B’, ‘A’, ‘-’, ‘+’

B: RS485-

A: RS485+

- : DC12V power negative

+ : DC12V power positive

Installation Instructions:

- No need to remove the sensor's front or rear cover during wiring.
- Factory default parameters: Device address = 1, Baud rate = 9600.
- RS485 communication requires correct polarity; reversed wiring will prevent communication.
- DC12V power requires correct polarity; reversed wiring will prevent the device from working.

2. Button Operation Instructions

1. Default Display

The default display shows the sensor ID at the top, temperature and humidity in the middle, and four buttons at the bottom: Menu, "+", "-", and Confirm.

2. Setting the Sensor ID

- Long press the Menu button (~3s) to enter the ID setting page.

- Short press Confirm to make the ID number flash.

- Use “+” or “-” to adjust the ID (range: 1–255). Short press changes by 1; long press changes quickly.

- Long press Confirm (~3s) to save; short press Confirm cancels.

3. Setting the Baud Rate

- Long press Menu (~3s) to enter ID setting, then short press Menu to enter the baud rate setting page.

- Short press Confirm to make the baud rate flash.

- Use “+” or “-” to select among 2400, 4800, 9600, 19200.

- Long press Confirm to save; short press Confirm cancels.

4. Setting Temperature Upper/Lower Limits

- Long press Menu (~3s) to enter the menu, then short press to reach the limit setting page.

- Short press Confirm to make the value flash.

- Use “+” or “-” to adjust the range: -20 ~ 99°C.

- Upper/lower limits constrain each other (e.g., if lower limit = 10, upper limit must be ≥ 10).

- Long press Confirm to save; short press cancels.

5. Setting Humidity Upper/Lower Limits

- Same procedure as temperature limit.

- Adjustment range: 0–99% RH.

- Upper/lower limit constraints apply similarly.

6. Setting Temperature/Humidity Calibration

- Long press Menu (~3s), then short press until reaching calibration pages.

- Short press Confirm to make the calibration value flash.

- Use “+” or “-” to adjust.

- Temperature calibration range: -2 ~ 2°C

- Humidity calibration range: -20 ~ 20% RH

- Long press Confirm to save; short press cancels.

3. Modbus Register List

(Read Function Code 03, Write Function Code 06)

Address	**CMD**	**R/W**	Description	**Data Type**	倍率	Range
0	03	R	Temperature	Signed Int16	x10	
1	03	R	Humidity	Signed Int16	x10	
2	03	R	Temperature Upper Limit Alarm Flag	Int16	1	0-1 （1=alarm）
3	03	R	Temperature Lower Limit Alarm Flag	Int16	1	0-1 （1=alarm）
4	03	R	Humidity Upper Limit Alarm Flag	Int16	1	0-1 （1=alarm）
5	03	R	Humidity Lower Limit Alarm Flag	Int16	1	0-1 （1=alarm）
1000	03	RW	Temperature Upper Limit Setpoint	Signed Int16	x1	
1001	03	RW	Temperature Lower Limit Setpoint	Signed Int16	x1	
1002	03	RW	Humidity Upper Limit Setpoint	Signed Int16	x1	
1003	03	RW	Humidity Lower Limit Setpoint	Signed Int16	x1	
1004	03	RW	Baud Rate	Int16		2400、4800、9600、19200
1005	03	RW	Device ID	Int16		1-255
1006	03	RW	Temperature Calibration	Signed Int16	x10	-20 ~ 20
1007	03	RW	Humidity Calibration	Signed Int16	x1	-20 ~ 20

1008	03		Reserved			
1009	03		Reserved			
1010	03	R	Version Number			Default 11H

4. Technical Specifications

Model: SPD-TH485C

Manufacturer: Guangzhou Speed Electronics Technology Co., Ltd.

Dimensions: 86 × 86 × 25.5 mm

Power Supply: DC12V

Current Consumption: <10mA

Interface: RS485

Protocol: Modbus

Baud Rates: 2400, 4800, 9600, 19200

Communication Parameters: 8-N-1 (8 data Bits, No Parity, 1 stop bit)

Temperature Range: -40 ~ 125°C

Temperature Accuracy: ±0.3°C

Temperature Resolution: 0.1°C

Humidity Range: 0–100% RH

Humidity Accuracy: ±3% RH

Humidity Resolution: 0.1% RH

Operating Environment: -20 ~ 80°C

- Technical Support

Website1: http://www.lot-speed.com

Website2: http://www.sensor12345.com

Email 1: support_jerry@ourspeed.com
Email 2: sales@ourspeed.com

5. Version Update Log

Version	Changes	Date
V1.2	1. Added temperature and humidity limit alarm flags. 2. Adjusted Modbus register addresses for temperature limits. 3. Adjusted Modbus register addresses for humidity limits. (Applies to firmware version V20H)	2024-08-27