UTH-N1 ROOM TEMPERATURE HUMDITY SENSOR

User Manual

1. Features:

Output: RS485
Indicator: LCD
Application: used as room measurement occasions like homes, buildings, museums, industrial field measurement, offices,shopping malls, supermarkets, production workshop, warehouse

2. Specifications:

Power supply: 9~15VDC
Output signal: RS485
Display: LCD
Temperature range: -40~80℃
Humidity range: 0~100%RH
Accuracy: ≤± 0.5℃@25℃,
±3%RH (30~80%RH@ 25℃)
Other humidity range ≤±5%RH
Working temperature range: -20~+60℃, no condensation

3. Communication Setting of UTH-N1 temperature and Humidity Transmitter

UTH-N1 is made with RS232 or RS485 interface， it can communicate with computer directly， and can work with two communication protocols simultaneously.

4. Communication two: standard MODBUS-RTU Protocol

Using standard MODBUS-RTU communication protocol, when using the configuration software, the selected equipment MODBUS-RTU is address type, and the data is integrated 16 bit. It supports MODBUS protocol “03H”, “04H”, “06H” command (03H and 06H is read and write parameter, 04H is read measuring value.)

Parameter register address

parameter	Setting range	Factory setting	Communication command	address
Temperature measured value	-	-	O4H	00H
Humidity measured value	-	-	04H	01H
Local address	0-255	1	03H, 06H	00H
Baud rating	300~19200	9600	03H, 06H	01H
Temp. shift correction	-99.9~99.9	0.0	03H, 06	02H
Humidity shift correction	0~99.9	0.0	03H, 06	03H
Lower limit of temp. transmitting	-99.9~99.9	-40.0	03H, 06	64H
Upper limit of temp. transmitting	-99.9~99.9	80.0	03H, 06	65H

Example 1: Read temperature measured value (measured value=1000)

Send data: 01 04 00 00 00 01 31 CA
Among the data: 01 is local address (sensor address)
04 is communication command
00 00 is register starting address

00 01 means read one number
31 CA is parity check code

Answer data: 01 04 02 03 E8 B9 8E (03 E8 corresponding to measured value)
Among the data: 01 is local address
04 is communication command
02 is return data that is the number of byte of measured value
B9 8E is check code

Example 2: read parameter local address value (local address=1)

Send data: 01 03 00 00 00 01 84 0A
Among the data: 01 is local address
03 is communication command
00 00 is register starting address
00 01 means read one number
84 0A is parity check code

Answer data: 01 03 02 00 01 79 84
Among the data: 01 is local address
03 is communication command
02 is return data that is the number of byte of local address value
79 84 is check code

Example 3: Write parameter local address value (local address=1, write value is 2)

Send data: 01 06 00 00 00 02 08 0B
Among the data: 01 is local address
06 is communication command
00 00 is register address
00 02 is parameter value
08 0B is check code
The answer data is same as send data.

Note： for industrial configuration software
The register address of the temp & Humidity measured values is 3x001 and 3x002
The register of device address is 4x001
The register of baud rating is 4x002
The register of temp shift correction is 4x003
The register of humidity shift correction is 4x004
The register of temp. transmitting lower limit is 4x101
The register of temp. transmitting upper limit is 4x002

5. RS485 communication explanation

The communication cable of RS-484 is adopting shielded twisted-pair cable, one cable end is connected to PC serial communication interface through RS-232/484 module, and anther cable end is connected to the communication terminal of RS-485 module, and the wiring are as following drawing:

The shielding layer of two-core shielded cable had better be connected to device protective GND through single end. When one PC is connected to many instruments, the network topology structure should be mine line, every device must be connected with main line in parallel, in order to reduce the interference of signal reflections. Please use relay modules if the communication distance is too long.

6. Dimensions and Electrical connection

Note:

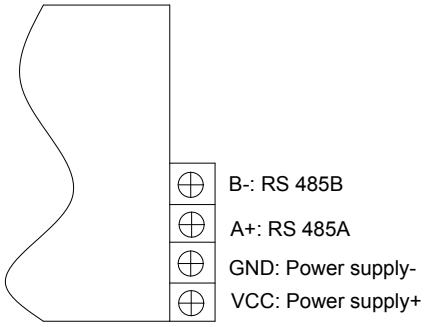
（1）please do not use the hanging hole on the sensor back for installation, in order to avoid PCB short-connected.

（2）Before power supply the sensor, please make sure all wirings are connected correctly. It is strictly prohibited to connect the sensor signal output wire with the power wires wrongly and cause the integrated chip is burned.

（3）For AC power supply, it does not distinguish positive and negative.

Dimensions:120*80*42

Electrical connection:



7. Application Notice and Quality Assurance

(1) This product is not suitable for use in condensation or chemical pollution environment for long time.
(2) The working temperature of the product is -10~80 deg. For the product with indicator, please use it in -20~60 deg.

(3) Please make sure the wirings are correct before power supply.
(4) When connect the sensor to PC data line, please take off the power supply of sensor and PC, to avoid communication line is burned by wrong operation; when disconnect communication data line, please also take off the power supply of sensor and PC.
(5) Please store the sensor at good conditions (propose room temperature and humidity is 30~70%RH).
(6) We provide 12 months quality assurance from the date of shipment for our products. We will also provide repair service after product out of quality assurance times.
(7) Please do not disassembly or repair the products by yourself. Please contact UTOP if you meet any problem, and our technical engineer will give professional suggestion. All results caused by wrong operation for the products will be borne by yourself.

Thanks for choosing our products!

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