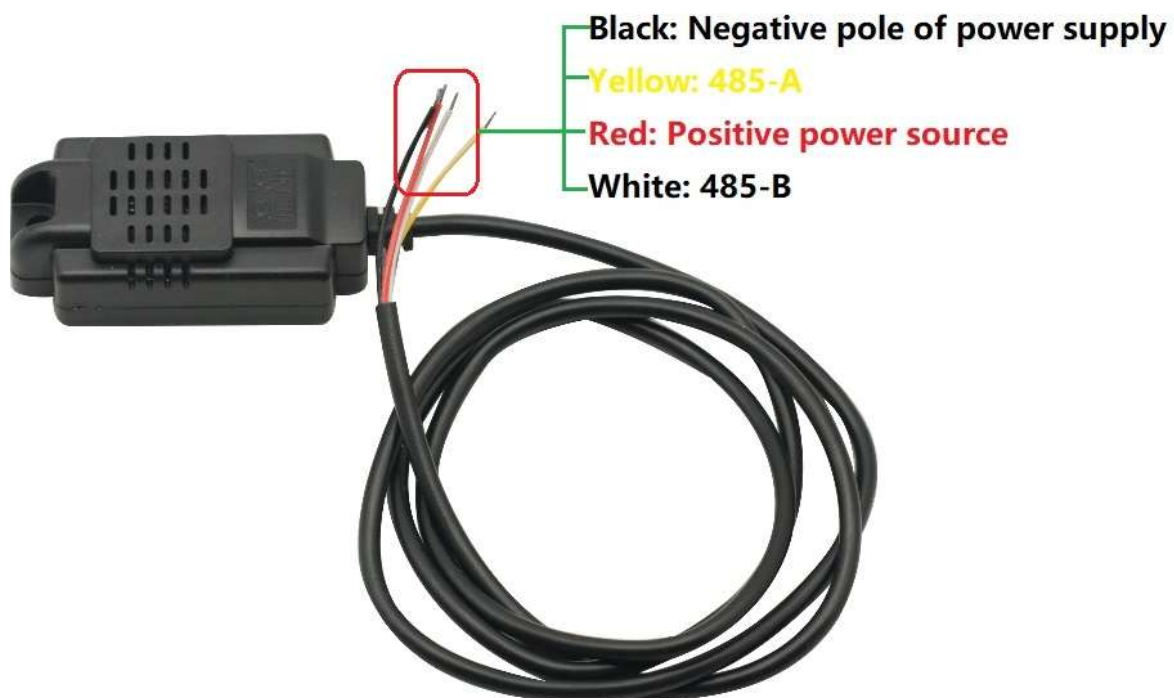**SHT20 Temperature Humidity Sensor Module With RS485 Modbus High Precision Temperature Humidity Monitor Transmitter Sensor Probe DC4-30V**

The product adopts industrial-grade chip, high-precisionSHT20The temperature and humidity sensors, excellent reliability, high precision and interchangeability of the product.usingRS485Hardware interface(With lightning protection design), the protocol layer is compatible with industry standardModbus Rtu -The agreement.This product setMODBUSAgreement with ordinary at an organic whole, the user can choose communication protocols, common agreement with automatic upload function (The connectionRS485Through a serial port is automatically output mode tool temperature and humidity).

Product highlights:

Industrial products, high progressSHT20The temperature and humidity sensors,RS485Communication;

standardMODBUSAgreement with ordinary at an organic whole, the user can choose communication protocol;

Baud rate can decide for themselves;

General agreement with automatic upload function, upload speed can decide for themselves.

Product parameters:

Working voltage:DC4-30 v(the highest do not exceed33 v)

The most powerful:0.2 W.

Working temperature:The temperature- 20℃+ 60℃Humidity,0% RH to 100% RH

Accuracy:The temperature+ / - 0.3℃(25℃)Humidity,(25 + / - 3% RH℃)

Output interface:RS485Communication (standardMODBUSProtocol and custom ordinary), as shown in the agreement

Device address:Can be set up1-247.By default,1

Baud rate:The default9600(the user can set),8Bits of data,1A stop, without checking

Size:60 * 30 * 18

MODBUS Agreement

Register type	Register address	The data content	The number of bytes
The input registers	0x0001	Temperature value	2
	0 x0002	Humidity value	2
Keep a register	0 x0101	Device address (1-247)	2
	0 x0102	Baud rate 0:9 600 And 400 200:	2
	0 x0103	The temperature at(/ 10) 10.0 ~ 10.0	2
	0 x0104	Humidity is revised(/ 10) 10.0 ~ 10.0	2

Function code used for the product:

0x03:Reading a keep register

0x04: Read input register

0x06:Write a single register

0x10:Write more keep registers

Modbus The communication format:

The host to send data frames:

From the machine address	Function code	Register address High byte	Register address The low byte	Register number High byte	Register number The low byte	CRC High byte	CRC The low byte

The response data from the machine frame:

From the machine address	The response function code	The number of bytes	register1data High byte	register1data The low byte	registerNd ata High byte	registerNd ata The low byte	CRC High byte	CRC The low byte

MODBUSThe command frame

Host read temperature command frame(0 x04):

From the machine address	Function code	Register address High byte	Register address The low byte	Register number High byte	Register number The low byte	CRC High byte	CRC The low byte
0 x01	0 x04	0x00	0 x01	0x00	0 x01	0 x60	0 x0a

The response data from the machine frame:

From the machine address	Function code	The number of bytes	The temperature High byte	The temperature The low byte	CRC High byte	CRC The low byte
0 x01	0 x04	0 x02	0 x01	0 x31	0 x79	0 x74

Temperature value= 0 x131,Converted to a decimal305, the actual temperature = 305/10 = 30.5°C
Note: the temperature is a symbol16Hexadecimal number, temperature= 0 xff33,Converted to a decimal - 205., the actual temperature= 20.5°C;

Host read humidity command frame(0 x04):

From the machine address	Function code	Register address High byte	Register address The low byte	Register number High byte	Register number The low byte	CRC High byte	CRC The low byte
0 x01	0 x04	0x00	0 x02	0x00	0 x01	0 xc1	0 xca

The response data from the machine frame:

From the machine address	Function code	The number of bytes	humidity High byte	humidity The low byte	CRC High byte	CRC The low byte
0 x01	0 x04	0 x02	0 x02	0 x22	0 xd1	0 xba

Humidity value= 0 x222,Converted to a decimal546, the moisture content of the actual value= 546/10 = 54.6%;

Continuous read temperature and humidity command frame(0 x04):

From the machine address	Function code	Register address High byte	Register address The low byte	Register number High byte	Register number The low byte	CRC High byte	CRC The low byte
0 x01	0 x04	0x00	0 x01	0x00	0 x02	0 x20	0 x0b

The response data from the machine frame:

From the machine address	Function code	The number of bytes	The temperature High byte	The temperature The low byte	humidity High byte	humidity The low byte	CRC High byte	CRC The low byte
0 x01	0 x04	0 x04	0 x01	0 x31	0 x02	0 x22	0 x2a	0 xce

Read the contents of the registers(0 x03):

Take the case of reading from the machine address:

From the machine address	Function code	Register address High byte	Register address The low byte	Register number High byte	Register number The low byte	CRC High byte	CRC The low byte
0 x01	0 x03	0 x01	0 x01	0x00	0 x01	0 xd4	0 x0f

Response from the machine frame:

From the machine address	Function code	The number of bytes	From the machine address High byte	From the machine address The low byte	CRC High byte	CRC The low byte
0 x01	0 x03	0 x02	0x00	0 x01	0 x30	0 x18

Modify the contents of the registers(0 x06):

To modify the machine address, for example:

From the machine address	Function code	Register address High byte	Register address The low byte	Register values High byte	Register values The low byte	CRC High byte	CRC The low byte
0 x01	0 x06	0 x01	0 x01	0x00	0 x08	0 xd4	0 x0f

Modify the machine address: 0 x08 = 8

The response from the machine frame(And send the same):

From the machine address	Function code	Register address High byte	Register address The low byte	Register values High byte	Register values The low byte	CRC High byte	CRC The low byte
0 x01	0 x06	0 x01	0 x01	0x00	0 x08	0 xd4	0 x0f

Continuously change keep registers(0 x10):

From the machine address	Function code	The starting address High byte	The starting address The low byte	Register number High byte	Register number The low byte	The number of bytes	register1 High byte	register1T he low byte	register2 High byte	register2T he low byte	CRC High byte	CRC The low byte
0 x01	0 x06	0 x01	0 x01	0x00	0 x02	0 x04	0x00	0 x20	0 x25	0 x80	0 x25	0 x09

Modify the machine address: 0 x20 = 32
Baud rate: 0 x2580 = 9600
Response from the machine frame:

From the machine address	Function code	Register address High byte	Register address The low byte	Register number High byte	Register number The low byte	CRC High byte	CRC The low byte
0 x01	0 x06	0x00	0x11	0x00	0 x04	0 xd4	0 x0f

Ordinary version of the agreement

The default baud rates,9600(the user can set),8Bits of data,1A stop, without checking
RS485 communication

A serial port command	instructions
READ	Report triggered a temperature and humidity (27.4°C67.7%, The temperature27.4°C humidity67.7%)
AUTO	Start the temperature and humidity automatically report function (Same as above)
STOP	Stop the temperature and humidity automatically report function
BR: XXXX	Set the baud rate 9600 ~ 19200 (BR: 9600 Baud rate for9600).
TC: XX. X	Set the temperature calibration (10.0 ~ 10.0) (TC: 02.0Revised for temperature2.0°C)
HC: XX. X	Set the humidity calibration (10.0 ~ 10.0) (HC: 05.1 Humidity is revised- 5.1%)
HZ: XXX	Set the temperature and humidity reporting rate (0.5, 1,2,5,10) (HZ: 2 Automatically report rate 2 hz)
PARAM	Read the system current Settings

PARAMinstruction:
TC: 0.0, HC: 0.0, BR: 9600 HZ: 1- >The temperature at0.0Humidity is revised0.0Baud rate9600Report the rate 1 hz
SLAVE_ADD: 1. - >MODBUSFrom the machine address 0 x01