Compliant with standard MODBUS-RTU protocol

Communication format: 8 bits of data, no parity, 1 bit stop bit, baud rate 9600 (factory default)

1、Master-slave mode host query:

Query Data	Device Address	Function Code	Memory start address	Number of data	CRC16 (L)	CRC16(H)	Sample
Temperature	0XXX	0X03	0X0000	0X0001	CRCL	CRCH	010300000001840A Response: Address0302 Temperature H Temperature L CRCL CRCH
Humidity	0XXX	0X03	0X0001	0X0001	CRCL	CRCH	010300010001D5CA Response: Address 0302 Humidity H Humidity L CRCL CRCH
Dew point	0XXX	0X03	0X0002	0X0001	CRCL	CRCH	01030002000125CA Response: Address 0302 Dew point H Dew point L CRCL CRCH
Temperature and humidity	0XXX	0X03	0X0000	0X0002	CRCL	CRCH	010300000002C40B Response: Address 0304 Temperature H Temperature L Humidity H Humidity L CRCL CRCH
Temperature and humidity Dew point	0XXX	0X03	0X0000	0X0003	CRCL	CRCH	01030000000305CB Response: Address 0306 Temperature H Temperature L Humidity H Humidity L Dew point H Dew point L CRCL CRCH
Device Address	FF	0X03	0X0030	0X0001	CRCL	CRCL	FF030030000191DB Response: Address 0302 Address H Address L CRCL CRCH
Baud rate	0XXX	0X03	0X0031	0X0001	CRCL	CRCL	010300310001D5C5 Response: Address 0302 Baud Rate Code H Baud Rate Code L CRCL CRCH

2、The transmitter address can be changed through the serial port

Change the address (01-FE, hexadecimal) and modify the communication baud rate (Modify the **baud rate with special care, a wrong modification may result in failure to communicate**).

Note: CRCH is CRC parity high byte, CRCL is CRC parity low byte.
Note: The **baud rate code corresponds to the actual baud rate as follows**

Baud Rate Code	03	04	05	06	07	08	09
Baud rate (kbps)	1200	2400	4800	9600	19200	38400	57600

Modify communication parameters	**Device Address**	**Function Code**	**Memory start address**	**Set parameter H**	**Set parameter H**	**CRC16 (L)**	**CRC 16(H)**	**Sample** After setting, the new address takes effect immediately after power off and reboot.
Address	Original address	0X06	0X0030	New address H	New address L	CRCL	CRC H	For the transmitter with address 01 change the address to 02 operation: 0106003000020804 Answer: The return value is the same as the issued command, which means the setting is successful;
Baud rate	Address	0X06	0X0031	Baud rate code H	Baud rate code L	CRCL	CRC H	The communication baud rate is changed to 38400 operation as: 010600310008D9C3 Answer: The return value is the same as the issued command, which means the setting is successful;

3. Data H (high byte) and data L (low byte) are the respective current temperature and humidity values:

- To upload data, divide by 10, e.g. humidity upload hex 0311, convert decimal to 785, which means 78.5%.
- Temperature conversion, such as temperature upload hex 00FC, convert decimal to 252, which means 25.2℃.
- Sub-zero temperature conversion, such as temperature upload hexadecimal FFF8C, converted to decimal -116, said -11.6 ℃.
- Dew point conversion, such as dew point upload hex 0037, convert decimal to 55, which means 5.5℃.

4. Abnormal response:

Machine Address	Abnormal function code (function code + 0x80)	Exception code 01 or 02 or 03 or 04	CRCL	CRCH

Modbus exception code		
Code	Name	Meaning
01	Illegal functions	For the device, the function code received in the interrogation is not permitted
02	Illegal data address	For the device, the data address received in the interrogation is a disallowed address. In particular, the combination of register number and transmission length is invalid.
03	Illegal data values	For devices, the value of the number of disallowances contained in the data field is asked. It indicates an error in the structure of the remaining part of the combination request, such as an incorrect implied length. It in no way indicates that the data item in the register being submitted for storage has a value outside the application, since the Modbus protocol does not know the exact meaning of any particular value of any particular register.
04	Slave equipment failure	A non-recoverable error is generated when the device is attempting to perform the requested operation.

5、baud rate and address change (mandatory measures)

Default parameters: Address: 0x01 Baud rate:9600

Steps:

(1) The device is powered off and short-circuits pins 4 and 5 of the KEY logo on the circuit board.

(2) After the device is re-powered, the device keeps the default parameters to change the new baud rate and address.

(3) The device is powered off, disconnect pins 4 and 5, and the address and baud rate changed after re-powering.

Note: 4 and 5 pins position