

Thermostat Universal Interface Protocols V1.0（BHT-3000）

This protocol takes standard MODBUS as a reference, mainly use for communication between thermostat and upper computer. This protocol doesn't describe the MODBUS. As to standard MODBUS, please refer to the relevant standard documents.

1. Basic description

No	Parameter	Protocol provision
1	Operating mode	RS-485, master-slave; thermostat is the slave machine
2	Physical interface	A(+), B(-) two-wire system
3	Baud rate	9600 bps for standard
4	Byte format	9 format (8 data bits +1 stop bit+None parity)
5	Modbus	RTU
6	Transmission mode	RTU format (Please refer to standard MODBUS)
7	Thermostat address	1—255;
8	Command code	03, 06(03—read thermostat, 06—set thermostat)
9	CRC check code	CRC—16 (Please refer to standard MODBUS)
10	CRC verification mode	CRC—16 (Please refer to standard MODBUS)

2. Read the thermostat frame format

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
Thermostat address (default is 0X01)	03	Set register start address high byte	Set register start address low byte	Set register value high address	Set register value low address	CRC high	CRC low

Command	Byte	Description	Register address
03	High Byte	00	40001
	Low Byte	Setting Power On/off: 0—means closed, 1—means open	
	High Byte	00	40002
	Low Byte	Temperature for internal sensor*10	
	High Byte	00	40003
	Low Byte	Hand:1 Automatic:0	
	High Byte	00	40004
	Low Byte	Heating status: 0: Not Heating 1: Heating	
	High Byte	00	40005
	Low Byte	Setting Temperature-hand*10	
	High Byte	00	40006
	Low Byte	Weekly Program Setting Temperature	
	High Byte	00	40007
	Low Byte	Setting lock:0-unlock 1-lock	

3. Set the thermostat frame format

Byte 1	Byte 2	Byte 3	Byte 4	Byte 5	Byte 6	Byte 7	Byte 8
Thermostat address (default is 0X01)	06	Set register start address high byte	Set register start address low byte	Set value high address	Set value low address	CRC high	CRC low

Command	Byte	Description	Register address
06	High Byte	00	40001
	Low Byte	Setting Power On/off: 0—means close, 1—means open	
	High Byte	00	40003
	Low Byte	Hand:1 Automatic:0	
	High Byte	00	40005
	Low Byte	Setting Temperature-hand*10	
	High Byte	00	40006
	Low Byte	Weekly Program Setting Temperature	
	High Byte	00	40007
	Low Byte	Setting lock:0-unlock 1-lock	

Remark:

1. When thermostat sends collected temperature data to upper computer, the value of collected temperature should be multiplied by 10 and sent completely by the format of HEX because the accuracy is 0.5℃.

For example: When the collected temperature is 25.5℃, the value sent by thermostat to the upper computer will be 255.

Similarly, When upper computer sends set temperature data to thermostat, the value of set temperature should be multiplied by 10 and sent completely by the format of HEX because the accuracy is 0.5℃.

For example: When the set temperature is 25.5℃, the value sent by upper computer to the thermostat should be 255..

E.G.: Read Temper= 25.5° C

The send(or receive) value is 25.5*10=255

2. How to change thermostat IP address?

During power off, press button M and button Clock for 5 seconds at the same time into high senior options.

Press M to item C.

Then press up and down to change the relative value. The default is 0x01.