

LETTER of AGREEMENT

Basic communication parameters

Code	8-bit binary
Data bit	8-bit
Parity bit	no
Stop bit	1 person
Error checking	CRC (Redundant Cyclic Code)
Baud rate	2400bit/s, 4800bit/s, 9600 bit/s can be set, the factory default is 4800 bit/s

Data frame format definition

Modbus-RTU communication protocol is adopted, the format is as follows:

Initial structure ≥ 4 bytes of time

Address code = 1 byte

Function code = 1 byte

Data area = N bytes

Error check = 16-bit CRC

Ending structure ≥ 4 bytes of time

Address code: It is the address of the transmitter, which is unique in the communication network (factory default 0x01).

Function code: The function instruction of the command issued by the host, this transmitter only uses the function code 0x03 (reading register data).

Data area: The data area is the specific communication data. Note that the high byte of the 16bits data comes first!

CRC code: two-byte check code.

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Host inquiry frame structure:

Address code	Function code	Register start address	Register length	Low check bit	Check code high
1byte	1byte	2byte	2byte	1byte	1byte

Slave response frame structure:

Address code	Function code	Number of valid bytes	Data area	Second data area	Nth data area	Check code
1byte	1byte	1byte	2byte	2byte	2byte	2byte

5.3 Register address

Register address	PLC or configuration address	Content	Operating	Function code	Default	Range
0000H	40001	Real-time rain and snow status	Read only	03	0	0or1
0031H	40050	Lower limit of heating temperature	Read/write	03/06	15℃	-30~70℃
0032H	40051	Heating temperature difference	Read/write	03/06	25℃	0~70℃
0033H	40052	Current alarm, reset delay	Read/write	03/06	1s	0~60000s
0034H	40053	Current sensitivity	Read/write	03/06	800	500~3500

5.4 Communication protocol example and explanation

Example: 1) Read the rain and snow status of the device address 0x01 Inquiry frame:

Address Code	Function Code	Starting Address	Data length	Check Code Low	Check Code High
0x01	0x03	0x00 0x00	0x00 0x01	0x84	0x0A

Response frame: Normal response to rain and snow

Address Code	Function Code	Returns the number of valid bytes	Data area	Check Code Low	Check Code High
0x01	0x03	0x02	0x00 0x00	0xB8	0x44

Rain and snow state description:

Rain and snow status code	Rain and snow
0x00	normal
0x01	Call the police

2) Read the alarm reset time of device address 0x01

Inquiry frame:

Address Code	Function Code	Starting Address	Data Length	Check Code Low	Check Code High
0x01	0x03	0x00 0x33	0x00 0x01	0x74	0x05

Response frame: The current alarm reset delay is 1 second.

Address Code	Function Code	Returns the number of valid bytes	Data Area	Check Code Low	Check Code High
0x01	0x03	0x02	0x00 0x01	0x79	0x84

Set the alarm reset delay of device address 0x01 (in 10 seconds)

Inquiry frame:

Address Code	Function Code	Write Address	Data Area	Check Code Low	Check Code High
0x01	0x06	0x00 0x33	0x00 0x0A	0xF9	0xC2

Response frame: The current alarm reset delay is 10 seconds.

Address Code	Function Code	Write Address	Data Area	Check Code Low	Check Code High
0x01	0x06	0x00 0x33	0x00 0x0A	0xF9	0xC2

Alarm reset delay setting description

If this value is set to 10S, if the rain and snow are detected for more than 10S, the device will detect that the device has detected rain and snow and output an alarm state. If the rain and snow are detected for less than 10 seconds, the device does not consider it to be detected. To the rain and snow; when the rain and snow return to normal state, the same reason.

Default: 1 second

3) Range: 0~60000 seconds

4) Read the current sensitivity of device address 0x01

5) Inquiry frame:

Address Code	Function Code	Starting Address	Data Length	Check Code Low	Check Code High
0x01	0x03	0x00 0x34	0x00 0x01	0xC5	0xC4

Answer frame: The current alarm reset delay is 800 seconds.

Address Code	Function Code	Returns the number of valid bytes	Data Area	Check Code Low	Check Code High
0x01	0x03	0x02	0x03 0x20	0xB9	0x6C

Set the current sensitivity of device address 0x01 (take 1500 as an example)

Inquiry frame:

Address Code	Function Code	Write Address	Data Area	Check Code Low	Check Code High
0x01	0x06	0x00 0x34	0x05 0xDC	0xCA	0xAD

Response frame: Current sensitivity bit 1500

Address Code	Function Code	Write Address	Data Area	Check Code Low	Check Code High
0x01	0x06	0x00 0x34	0x05 0xDC	0xCA	0xAD

Sensitivity setting description

The sensitivity value is inversely proportional to the actual sensitivity. The larger the setting value, the less sensitive the device detection is. The smaller the sensitivity value is, the more sensitive the device detection is. However, it should be noted that the sensitivity value is too small and it is easy to cause false alarms. It is recommended to use the factory default values.

Default: 800

Range: 500-3500