1 channel rs485 commamd

Default state : Slave ID is 1 MODBUS command

AT command (ASCII characters)

Note:
1 In the AT command mode slave ID is invalid
2 AT commands must be uppercase, lowercase invalid
3 Jumper switch status: M0's two pads are soldered together, M1 M2 is random, as shown

9600 Band ,8 Data bits,None Parity,1 Stop Bit

Read Status:
Channel 1: AT+R1

Open :
Channel 1 : AT+O1

Close:
Channel 1 : AT+C1

Toggle (Self-locking)
Channel 1 Open : AT+T1
Channel 2 Close : AT+T2

Latch (Inter-locking)
Channel 1: AT+L1

Momentary (Non-locking)
Channel 1: AT+M1

Delay
Channel 1: AT+D1=XXXX

XXXX refers to the 0000 to 9999 figures, Unit is seconds
Return command : Open1, Close1

Example 1:
Send command "AT+D1=0010", Channel 1 is "Open", after delay of 10 seconds, channel 1 is "Close"
Example 2:
Send command "AT+L1", Channel 1 is "Open", other Channels is "Close"

MODBUS command (function code 06 is Control command,03 is Read status command)

Note :
1 MODBUS command must be HEX
2 Slave ID (device address) must be consistent with the DIP switches (A0-A4)
3 Jumper switch status: M0's two pads must be disconnected, M1 M2 is random, as shown

9600 Band ,8 Data bits,None Parity,1 Stop Bit

MODBUS 06 Command (**Control command** ,HEX):

Bytes Number	1	2	3	4	5	6	7	8
MODBUS Definitions	Slave ID	Function	Address		Data		CRC Check	
Function	Device Address	Function	Channel number		Command	Delay time	CRC Check	
Open	0x00-0XF7	0x06	0x0001		0x01	0x00	2Bytes CRC	
Close	0x00-0XF7	0x06	0x0001		0x02	0x00	2Bytes CRC	
Toggle (Self-locking)	0x00-0XF7	0x06	0x0001		0x03	0x00	2Bytes CRC	
Latch Inter-locking)	0x00-0XF7	0x06	0x0001		0x04	0x00	2Bytes CRC	
Momentary (Non-locking)	0x00-0XF7	0x06	0x0001		0x05	0x00	2Bytes CRC	
Delay	0x00-0XF7	0x06	0x0001		0x06	0x00-0xff	2Bytes CRC	

Remarks:
1 Momentary mode, delay time is 0.5 seconds
2 Delay mode, delay time is 0-255 seconds

Return command
Command is active, return to send commands; instruction is invalid no return.

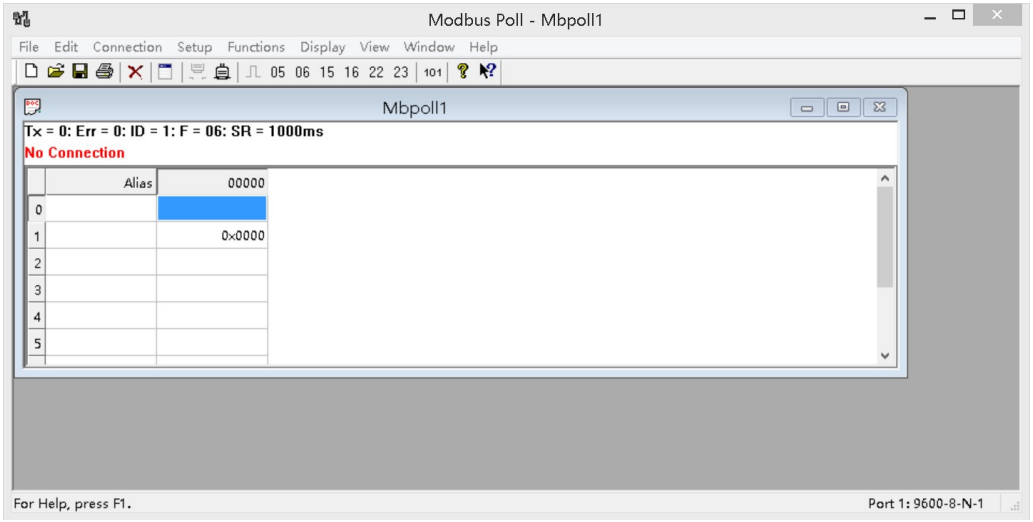
MODBUS 03 Command (**Read status command** ,HEX):

Bytes Number	1	2	3	4	5	6	7	8
MODBUS Definitions	Slave ID	Function	Address		Data		CRC Check	
Function	Device Address	Function	Starting register address		Register length		CRC Check	
Read Channel 1 State	0x00-0XF7	0x03	0x0001		0x0001			

Read status command returns (function code 03, HEX format):

Bytes length	1	1	1		2
MODBUS Definitions	Slave ID	Function	data length	data	CRC16 Check
Function	Device Address	Function	data length	Relay state 0x0001 open 0x0000 close	CRC16 Check
Channel 1 open	0x00-0x1F	0x03	0x02	0x0001	
Channel 1 close	0x00-0x1F	0x03	0x02	0x0000	

MODBUS commands you can use "Modbus Poll" input, as shown below
CRC check generated automatically



You can also use HyperTerminal serial input, as shown below

Manually add CRC check

Examples (Default state : Slave ID is 1)
Channel 1 Open 01 06 00 01 01 00 D9 9A
Channel 1 Close 01 06 00 01 02 00 D9 6A
Channel 1 Toggle 01 06 00 01 03 00 D8 FA
Channel 1 Latch 01 06 00 01 04 00 DA CA
Channel 1 Momentary: 01 06 00 01 05 00 DB 5A
Channel 1 Delay 10 seconds : 01 06 00 01 06 0A 5B AD
Channel 1 Delay 100 seconds: 01 06 00 01 06 64 DA 41

Read state (assuming that the channel 1 is open,).
Read channel 1 state 01 03 00 01 00 01 D5 CA
Return open 01 03 02 00 01 79 84

Set Slave ID(Device Address)

1. Read Slave ID

Send data

Slave ID (Broadcast address) (1)	Function (1)	Register address (2)	Read number (2)	CRC16(2)

Returns data

Slave ID (Broadcast address) (1)	Function (1)	Number of bytes (1)	data (n)	CRC16(2)

Broadcast address 0xff

Function code 0x03

Register address 0x00FF

Read number 0x0001

For example:

send data FF 03 00 FF 00 01 A1 E4

Returns data FF 03 02 00 01 50 50

FF Broadcast address 03 Function 02 length 01 is the current module Slave ID, 50 50 crc16

Note: When using this command, only one temperature module can be connected to the RS485 bus, more than one will be wrong!

2. Write Slave ID

Send data

Slave ID (Device Address) (1)	Function (1)	Register address (2)	Setting Content (2)	CRC16(2)

Returns data

Slave ID (Device Address) (1)	Function (1)	Register address (1)	Register value (2)	CRC16(2)

Function code 0x06

Register address 0x00FF

Setting Content 2Bytes(1-247)

For example, The current Slave ID is 1, We need to change the Slave ID to 3:

Send data(Slave ID is 1) 01 06 00 FF 00 03 F9 FB

Returns data 01 06 00 FF 00 03 F9 FB