

8 Channel Multifunction RS485 Module command

Default state : Slave ID is 0x01 ,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

Channel 2: AT+R2

Channel 3: AT+R3

Channel 4: AT+R4

Channel 5: AT+R5

Channel 6: AT+R6

Channel 7: AT+R7

Channel 8: AT+R8

Open :

Channel 1 : AT+O1

Channel 2 : AT+O2

Channel 3: AT+O3

Channel 4: AT+O4

Channel 5: AT+O5

Channel 6: AT+O6

Channel 7: AT+O7

Channel 8: AT+O8

Close:

Channel 1 : AT+C1

Channel 2 : AT+C2

Channel 3 : AT+C3

Channel 4 : AT+C4

Channel 5: AT+C5

Channel 6: AT+C6

Channel 7: AT+C7

Channel 8: AT+C8

Toggle (Self-locking)

Channel 1: AT+T1

Channel 2: AT+T2

Channel 3: AT+T3

Channel 4: AT+T4

Channel 5: AT+T5

Channel 6: AT+T6

Channel 7: AT+T7

Channel 8: AT+T8

Latch (Inter-locking)

Channel 1: AT+L1

Channel 2: AT+L2

Channel 3: AT+L3

Channel 4: AT+L4

Channel 5: AT+L5

Channel 6: AT+L6

Channel 7: AT+L7

Channel 8: AT+L8

Momentary (Non-locking)

Channel 1: AT+M1

Channel 2: AT+M2

Channel 3: AT+M3

Channel 4: AT+M4

Channel 5: AT+M5

Channel 6: AT+M6

Channel 7: AT+M7

Channel 8: AT+M8

Delay

Channel 1: AT+D1=XXXX

Channel 2: AT+D2=XXXX

Channel 3: AT+D3=XXXX

Channel 4: AT+D4=XXXX

Channel 5: AT+D5=XXXX

Channel 6: AT+D6=XXXX

Channel 7: AT+D7=XXXX

Channel 8: AT+D8=XXXX

XXXX refers to the 0000 to 9999 figures, Unit is seconds

Return command : OpenX, CloseX (X = 1/2/3/4/5/6/7/8)

Example 1:

Send command "AT+D1=0010", Channel 1 is "Open", after delay of 10 seconds, channel 1 is "Close"

Send command "AT+D2=0100", Channel 2 is "Open", after delay of 100 seconds, channel 2 is "Close"

Example 2:

Send command "AT+L1", Channel 1 is "Open", other Channels is "Close"

Send command "AT+L2", Channel 2 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 correct, the default slave address is 01, and the Slave ID is set to see the bottom.

3 Jumper switch status: M0's two pads must be disconnected, M1 M2 is random, as shown



4 If you don't remember the Slave ID, use the command Read Slave ID : FF 03 00 FF 00 01 A1 E4
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	0x00-0x2F	0x06	0x0001-0x0008		0x01	0x00	2Bytes CRC	
Close	0x00-0x2F	0x06	0x0001-0x0008		0x02	0x00	2Bytes CRC	
Toggle (Self-locking)	0x00-0x2F	0x06	0x0001-0x0008		0x03	0x00	2Bytes CRC	
Latch Inter-locking)	0x00-0x2F	0x06	0x0001-0x0008		0x04	0x00	2Bytes CRC	
Momentary (Non-locking)	0x00-0x2F	0x06	0x0001-0x0008		0x05	0x00	2Bytes CRC	
Delay	0x00-0x2F	0x06	0x0001-0x0008		0x06	0x00-0xff	2Bytes CRC	
Open all	0x00-0x2F	0x06	0x0000		0x07	0x00	2Bytes CRC	
Close all	0x00-0x2F	0x06	0x0000		0x08	0x00	2Bytes CRC	

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Remarks:

1 Momentary mode, delay time is 1 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):

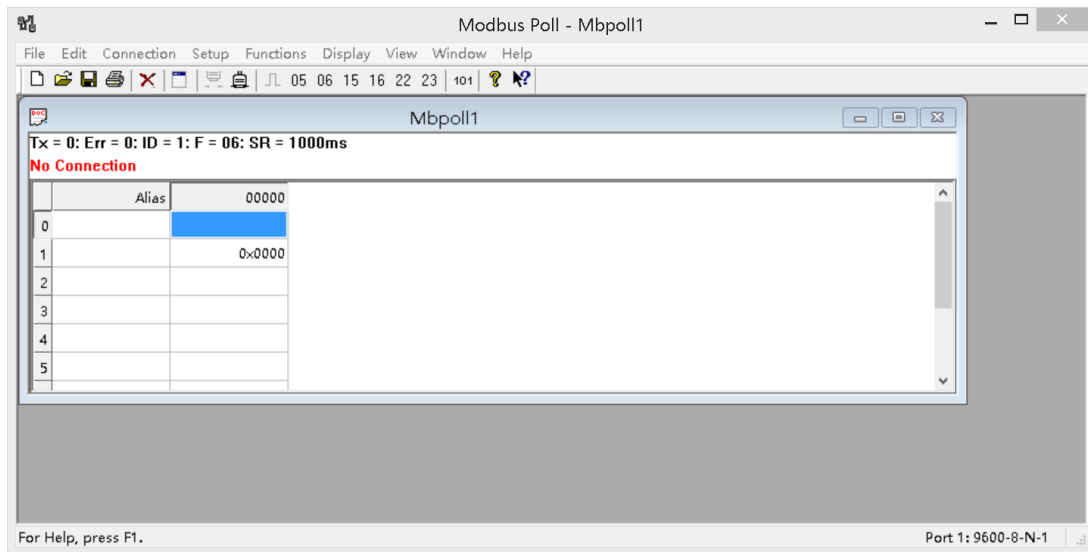
Bytes Number	1	2	3	4	5	6	7	8
MODBUS Definitions	Slave ID	Function	Address		Data		CRC Check	
Function	Device Address	Function	Starting register address		Register length		CRC Check	
Read Channel 1 State	0x00-0x2F	0x03	0x0001		0x0001			
Read Channel 2 State	0x00-0x2F	0x03	0x0002		0x0001			
Read 2 consecutive channels status	0x00-0x2F	0x03	0x0001-0x0003		0x0002			
Read 3 consecutive channels status	0x00-0x2F	0x03	0x0001-0x0002		0x0003			
Read all 8 channels status	0x00-0x2F	0x03	0x0001		0x0008			

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

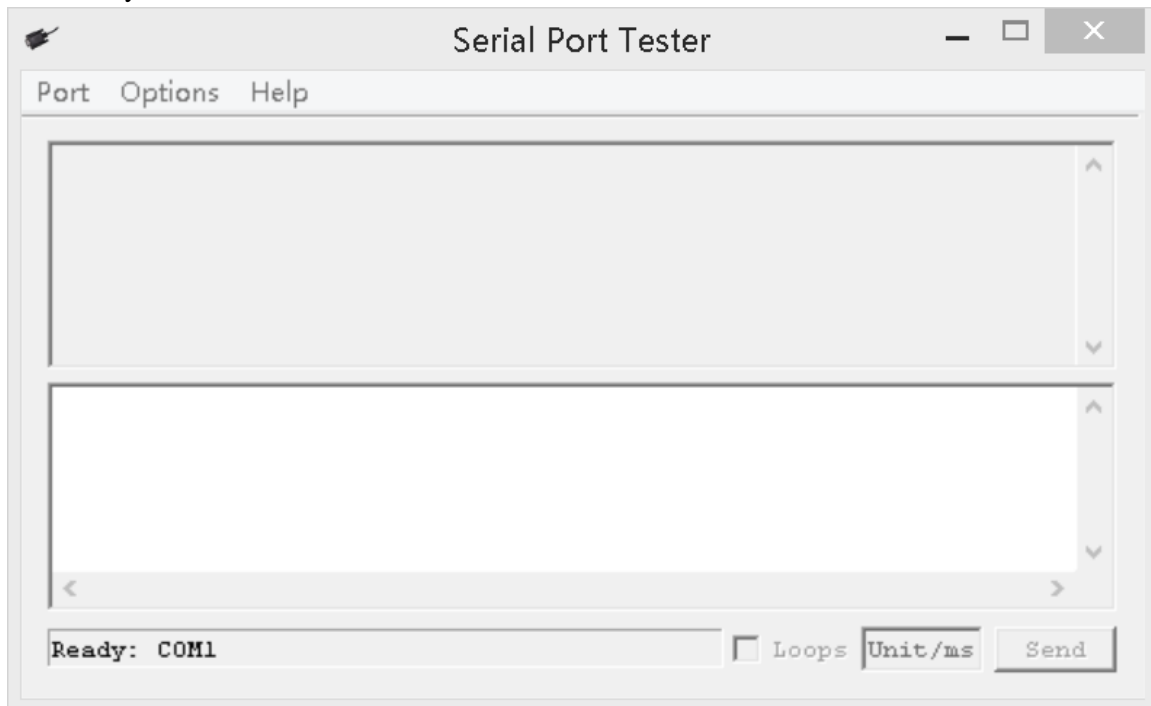
Bytes length	1	1	1		2
MODBUS Definitions	Slave ID	Function	data length	data	CRC16 Check
Function	Device Address	Function	data length	Relay state 0x0001 open 0x0000 close	CRC16 Check
Channel 1 open	0x00-0x1F	0x03	0x02	0x0001	
Channel 1 close	0x00-0x1F	0x03	0x02	0x0000	
Channel 2 open	0x00-0x1F	0x03	0x02	0x0001	
Channel 2 close	0x00-0x1F	0x03	0x02	0x0000	
Channel 1 open Channel 2 open	0x00-0x1F	0x03	0x04	0x0001 0x0001	
Channel 1 open	0x00-0x1F	0x03	0x04	0x0001 0x0000	

Channel 2 close					
Channel 1 close	0x00-0x1F	0x03	0x04	0x0000 0x0001	
Channel 2 open					
Channel 1 close	0x00-0x1F	0x03	0x04	0x0000 0x0000	
Channel 2 close					

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 (Slave ID is 1,DIP switch state)

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

Channel 2 Open : 01 06 00 02 01 00 29 9A

Channel 2 Close : 01 06 00 02 02 00 29 6A

Channel 2 Toggle : 01 06 00 02 03 00 28 FA

Channel 2 Latch : 01 06 00 02 04 00 2A CA

Channel 2 Momentary : 01 06 00 02 05 00 2B 5A

Channel 2 Delay 10 seconds : 01 06 00 02 06 0A AB AD

Channel 2 Delay 100 seconds : 01 06 00 02 06 64 2A 41

[Read state \(assuming that the channel 1 is open, the channel 2 is close\).](#)

Read channel 1 state : 01 03 00 01 00 01 D5 CA

Return open: 01 03 02 00 01 79 84

Read channel 2 state : 01 03 00 02 00 01 25 CA

Return close: 01 03 02 00 00 B8 44

Read channel 1 and channel 2 state : 01 03 00 01 00 02 95 CB

Return channel open and channel 2 close : 01 03 04 00 01 00 00 AB F3

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)
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Returns data

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

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