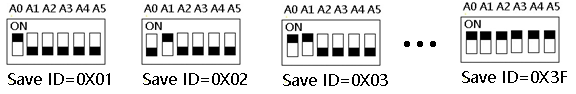
**ETD8A12-12-channel IO input and output controller commamd**

Notice:

1 data must be HEX format

2The slave address (device address) must be consistent with the DIP switch ( A0-A5)



The baud rate is 9600 , 8 data bits, one stop bit, and no parity bit. Each data frame contains 8 bytes

Function code

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16 (2) |
|  | 03 Read |  |  |  |
|  | 06 Write |  |  |  |
|  | 16(0x10)  Write multiple registers |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Function code | Register address | Register content | Number of bytes | Register value | Remark |
| 03 06  16（0x10） | 0x0000~0x000B  （1-11） | Output port status | 2 | 0x0000  0x0001 | 0x0000 Relay Close  0x0001 Relay Open |
| 03 06  16(0X10) | 0x0070  （112） | Output port status | 2 | 0 no output  1 has output | One bit for one channel only supports opening and closing instruction. 1 open 0 close |
| 03 | 0x0080-0x08B  (128-139) | Input port status | 2 | 0X0000  0X0001 | NPN Input  0X0000 Input Off  0X0001 Input On |
| 0X00C0  (192) | Input port status | 2 | 0：Input Off  1：Input On | 0xc0 ：12 channel |
|  |  |  |  |  |  |
| 03 06  16（0x10） | 0X00F8 | Input port status automatic reporting function | 2 | Second | 0: query  1-255: Automatic reporting of 12 channel status. Unit: Second  1: Report every second  10: Report every ten seconds |
| 03 06  16(0x10) | 0X00F9 | Automatic report selection | 2 |  | 0: selection 0x80-0x8B  1: selection 0xC0 |
| 03 06  16(0x10) | 0X00FA | Input and output relationship | 2 | 0X0000-0X0005 | 0x0000 Unrelated  0x0001 Self-locking relationship (default)  0x0002 Interlocking relationship  0x0003 Momentary relationship  0x0004 Interlocking relationship between two channels  0X0005 :Output follows input Association  Other values are the same as 0 |
| 06 | 0x00FB | Reset |  | The address can be 0xff or the current address, and use the following command to reset the current baud rate  FF 06 00 FB 00 00 ED E5 | |
| 03 06  16（0x10） | 0x00FC  (252) |  | 2 | 0-1000 data return delay | Return data interval time after receiving the command (unit MS ) |
| 03 | 0x00FD |  | 2 | RS485 address | DIP switch settings |
| 03 06  16（0x10） | 0x00FE | Baud rate | 2 | 0x0001~0x0005 | 1~5  1 : 2400  2 : 4800  3 : 9600 (default)  4 : 19200  5 : 38400  6: 57600  7:115200  8: Factory reset |
| 03 06  16(0X10) | 0X00FF | Check bit | 2 | 0X0000-0X0002 | 0: None Parity (default)  1: Parity\_Even  2: Parity\_Odd  3: bits,None Parity |

**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 | 0x00-0x3F | 0x06 | 0x0000-  0x000B | | 0x01 | 0x00 | 2Bytes CRC | |
| Close | 0x00-0x3F | 0x06 | 0x0000-  0x000B | | 0x02 | 0x00 | 2Bytes CRC | |
| Toggle (Self-locking) | 0x00-0x3F | 0x06 | 0x0000-  0x000B | | 0x03 | 0x00 | 2Bytes CRC | |
| Latch Inter-locking) | 0x00-0x3F | 0x06 | 0x0000-  0x000B | | 0x04 | 0x00 | 2Bytes CRC | |
| Momentary (Non-locking) | 0x00-0x3F | 0x06 | 0x0000-  0x000B | | 0x05 | 0x00 | 2Bytes CRC | |
| Delay | 0x00-0x3F | 0x06 | 0x0000-  0x000B | | 0x06 | 0x00-0xff | 2Bytes CRC | |
| Open all | 0x00-0x3F | 0x06 | 0x0000 | | 0x07 | 0x00 | 2Bytes CRC | |
| Close all | 0x00-0x3F | 0x06 | 0x0000 | | 0x08 | 0x00 | 2Bytes CRC | |
| Interlock between two channels | 0x00-0x3F | 0x06 | 0x0001-0x000C | | 0x09 | 0x00 | 2Bytes CRC | |

Remarks:

1 Momentary mode, delay time is 1 seconds

2 Delay mode, delay time is 0-255 seconds

3 0x0000-0x000B registers not only support 06 function code, but also support 16 (0X10) function code

4 Interlocking between two channels refers to interlocking of channels 1-2, 3-4, 5-6,7-8,9-10,11-12

Return command：

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

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

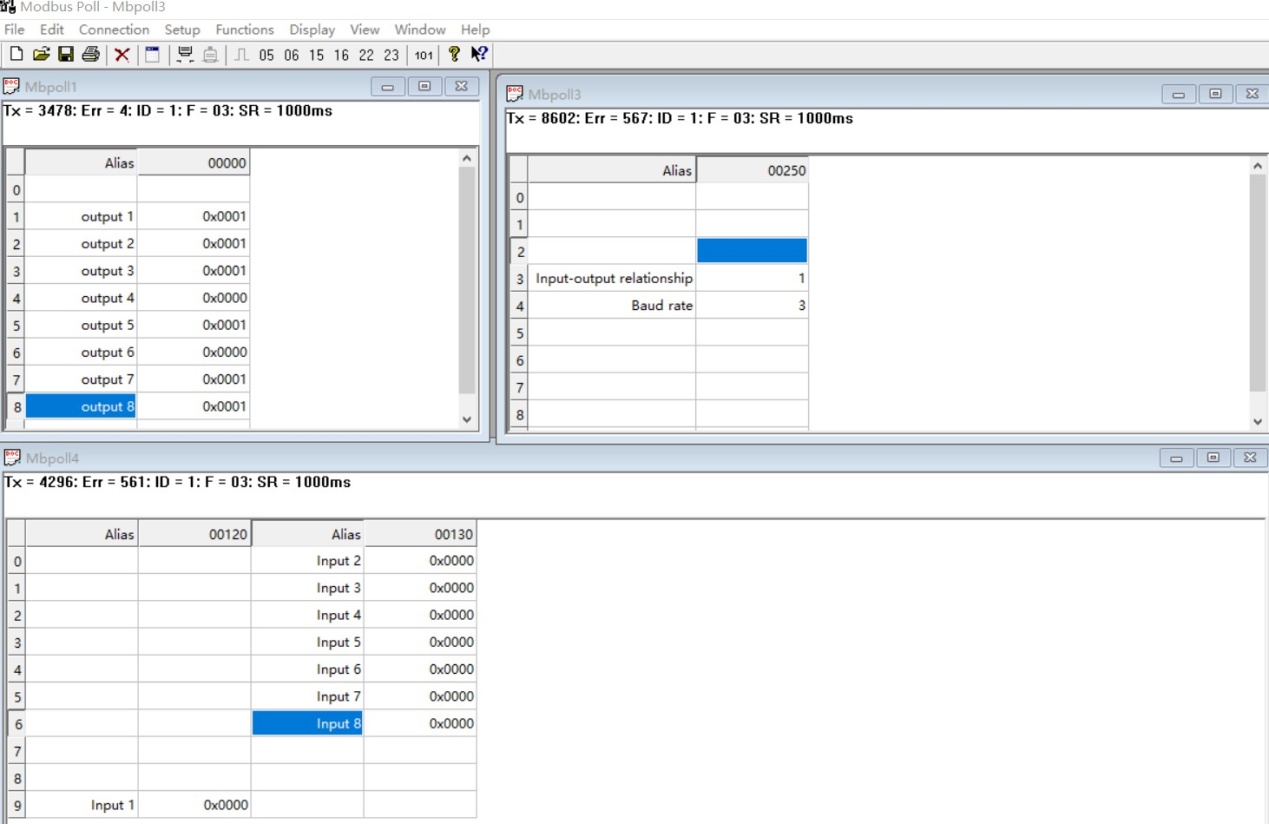
|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Bytes Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| MODBUS Definitions | Slave ID | Function | Address | | Data | | CRC Check | |
| Function | Device Address | Function | Starting register address | | Register length | | CRC Check | |
| Read Channel 1 State | 0x00-0x3F | 0x03 | 0x0000 | | 0x0001 | |  | |
| Read Channel 2 State | 0x00-0x3F | 0x03 | 0x0001 | | 0x0001 | |  | |
| Read 2 consecutive channels status | 0x00-0x3F | 0x03 | 0x0000-0x000A | | 0x0002 | |  | |
| Read 3 consecutive channels status | 0x00-0x3F | 0x03 | 0x0000-0x0009 | | 0x0003 | |  | |
| Read all 12 channels status | 0x00-0x3F | 0x03 | 0x0000 | | 0x000B | |  | |
|  |  |  |  | |  | |  | |
| Read input1 status | 0x00-0x3F | 0x03 | 0x0080 | | 0x0001 | |  | |
| Read input2 status | 0x00-0x3F | 0x03 | 0x0081 | | 0x0001 | |  | |
| Read input3 status | 0x00-0x3F | 0x03 | 0x0082 | | 0x0001 | |  | |
| Read input4 status | 0x00-0x3F | 0x03 | 0x0083 | | 0x0001 | |  | |
| Read the status of 2 consecutive input ports | 0x00-0x3F | 0x03 | 0x0080-0x008A | | 0x0002 | |  | |
| Read the status of 3 consecutive input ports | 0x00-0x3F | 0x03 | 0x0080-0x0089 | | 0x0003 | |  | |
| Read 12 input port status | 0x00-0x3F | 0x03 | 0x0080 | | 0x000B | |  | |
|  |  |  |  | |  | |  | |
| Input and output relationship | 0x00-0x3F | 0x03 | 0x00FA | | 0x0001 | |  | |
| Baud rate | 0x00-0x3F | 0x03 | 0x00FE | | 0x0001 | |  | |
| Check bit | 0X00-0X3F | 0X03 | 0X00FF | | 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 | 0x00-0x3F | 0x03 | 0x02 | 0x0001 |  |
| Channel 1  close | 0x00-0x3F | 0x03 | 0x02 | 0x0000 |  |
| Channel 2  open | 0x00-0x3F | 0x03 | 0x02 | 0x0001 |  |
| Channel 2  close | 0x00-0x3F | 0x03 | 0x02 | 0x0000 |  |
| Channel 1 open  Channel 2 open | 0x00-0x3F | 0x03 | 0x04 | 0x0001 0x0001 |  |
| Channel 1 open  Channel 2 close | 0x00-0x3F | 0x03 | 0x04 | 0x0001 0x0000 |  |
| Channel 1 close  Channel 2 open | 0x00-0x3F | 0x03 | 0x04 | 0x0000 0x0001 |  |
| Channel 1 close  Channel 2 close | 0x00-0x3F | 0x03 | 0x04 | 0x0000 0x0000 |  |
|  |  |  |  |  |  |
| Input 1 On | 0x00-0x3F | 0x03 | 0x02 | 0x0001 |  |
| Input 1 Off | 0x00-0x3F | 0x03 | 0x02 | 0x0000 |  |
| Input 2 On | 0x00-0x3F | 0x03 | 0x02 | 0x0001 |  |
| Input 2 Off | 0x00-0x3F | 0x03 | 0x02 | 0x0000 |  |
| Input 1 On  Input 2 On | 0x00-0X3F | 0x03 | 0x04 | 0x0001 0x0001 |  |
| Input 1 On  Input 2 Off | 0x00-0x3F | 0x03 | 0x04 | 0x0001 0x0000 |  |
| Input 1 Off  Input 2 On | 0x00-0x3F | 0x03 | 0x04 | 0x0000 0x0001 |  |
| Input 1 Off  Input 2 Off | 0x00-0x3F | 0x03 | 0x04 | 0x0000 0x0000 |  |

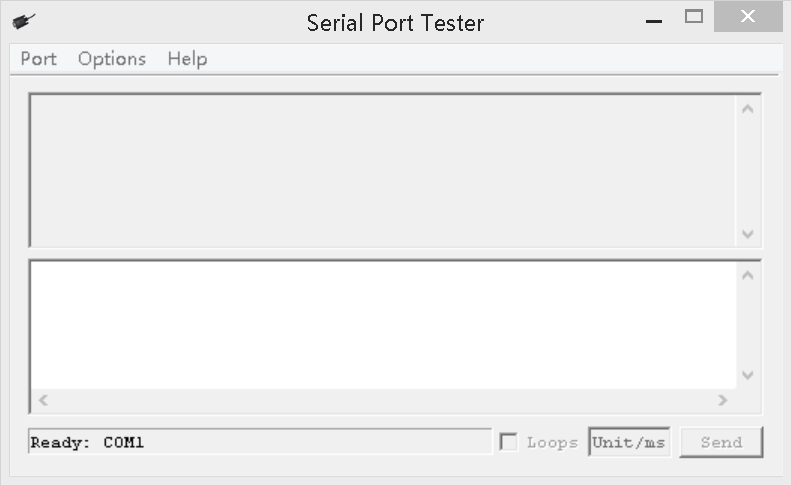
MODBUS commands you can use "Modbus Poll" input, as shown below

（CRC check generated automatically）



You can also use HyperTerminal serial input, as shown below

（Manually add CRC check）



example:

Set channel 1 to open: 01 06 00 00 01 00 88 5A

Set channel 1 to close: 01 06 00 00 02 00 88 AA

Set channel 1 to self-locking mode: 01 06 00 00 03 00 89 3A

Set channel 1 to interlock mode: 01 06 00 00 04 00 8B 0A

Set channel 1 to jog mode: 01 06 00 00 05 00 8A 9A

Set channel 1 to delay 10S : 01 06 00 00 06 0A 0A 6D

Set channel 1 to delay 100S : 01 06 00 00 06 64 8B 81

Interlock between channels 1-2: 01 06 00 00 09 00 8F 9A (open 1 close 2)

Set channel 2 to open: 01 06 00 01 01 00 D9 9A

Set channel 2 to close: 01 06 00 01 02 00 D9 6A

Set channel 2 to self-locking mode: 01 06 00 01 03 00 D8 FA

Set channel 2 to interlock mode: 01 06 00 01 04 00 DA CA

Set channel 2 to jog mode: 01 06 00 01 05 00 DB 5A

Set channel 2 to delay 16S : 01 06 00 01 06 10 DA 66

Set channel 2 to delay 60S : 01 06 00 01 06 3C DB BB

Interlock between channels 1-2: 01 06 00 01 09 00 DE 5A (open 2 close 1)

Open all channels: 01 06 00 00 07 00 8B FA

Close all channels: 01 06 00 00 08 00 8E 0A

16 (0X10) function code (only supports 0x0001-0x000C registers)

Open all：01 10 00 00 00 0C 18 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 DE 8D

Close Channels1-4：01 10 00 00 00 04 08 02 00 02 00 02 00 02 00 36 99

Close Channels 5-8：01 10 00 04 00 04 08 02 00 02 00 02 00 02 00 C7 56

Close Channels 9-12：01 10 00 08 00 04 08 02 00 02 00 02 00 02 00 D7 46

Read state (assuming that the channel 1 is open, the channel 2 is close).

Read channel 1 state ：01 03 00 00 00 01 84 0A

Return open：01 03 02 00 01 79 84

Read channel 2 state ：01 03 00 01 00 01 D5 CA

Return close：01 03 02 00 00 B8 44

Read channel 1 and channel 2 state ：01 03 00 00 00 02 C4 0B

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

Read 1-12 channel input status：01 03 00 80 00 0C 44 27

Return all input channels OFF：01 03 18 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 6C F4

Return input channel 1 ON：01 03 18 00 01 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 A1 68

1. **Read baud rate**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

Function code 0x03

Register address：0x003F

Read number：0x0001

For example:

send data(RS485 address is 1)：01 03 00 FE 00 01 E5 FA

Returns data：01 03 02 00 03 F8 45

01 RS485 address，03 Function，02 length，F8 45 crc16

03 means the current baud rate is 9600bps

Baud rate corresponds to the number: 0: 1200 1: 2400 2: 4800 3: 9600 4: 19200

5:38400 6:57600 7:115200

1. **Write baud rate**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

Function code 0x06

Register address：0x003F

Setting Content：2Bytes(0-7)

For example, Change the baud rate to 4800bps:

send data(RS485 address is 1)：01 06 00 FE 00 02 69 FB

Returns data：01 06 00 FE 00 02 69 FB

Baud rate corresponds to the number: 0: 1200 1: 2400 2: 4800 3: 9600 4: 19200

5:38400 6:57600 7: 115200 8: Factory reset

Note: 1 The baud rate will be updated when the module is powered up again!

2 The factory setting can be restored when the baud rate corresponding to the number is 8. For example: 01 06 00 FE 00 08 E9 FC

1. **Read input and output relation register**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

Function code 0x03

Register address：0x00FA

Read number：0x0001

For example:

send data(RS485 address is 1)：01 03 00 FA 00 01 A4 3B

Returns data：01 03 02 00 01 79 84

01 RS485 address，03 Function，02 length，79 84 crc16

Register corresponding value:

0x0000 Unrelated

0x0001 Self-locking relationship (default)

0x0002 Interlocking relationship

0x0003 Momentary relationship

0x0004 Interlocking association between two channels

0X0005 Interlock between two channels

Other values are the same as 0

1. **Write input and output relation register**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

Function code 0x06

Register address：0x00FA

Setting Content：2Bytes(0-5)

For example, Set the input and output to be unrelated, and change the register value to 0X0000:

Send data(RS485 address is 1)：01 06 00 FA 00 00 A9 FB

Returns data：01 06 00 FA 00 00 A9 FB

Register corresponding value:

0x0000 Unrelated

0x0001 Self-locking relationship (default)

0x0002 Interlocking relationship

0x0003 Momentary relationship

0x0004 Interlocking association between two channels

0X0005 Output follows input Association

Other values are the same as 0

1. **READ Check bit**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

Function code 0x03

Register address：0x00FF

Read number：0x0001

For example:

send data(RS485 address is 1)：01 03 00 FF 00 01 B4 3A

Returns data：01 03 02 00 00 B8 44

01 RS485 address，03 Function，00 length，B8 44 crc16

Register corresponding value:

0x0000 None Parity

0x0001 Parity\_Even

0x0002 Parity\_Odd

0X0003 None Parity

1. **Write** **Check bit**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

Function code 0x06

Register address：0x00FF

Setting Content：2Bytes(0-2)

For example, Set the parity bit to even parity:

Send data(RS485 address is 1)：01 06 00 FF 00 01 78 3A

Returns data：01 06 00 FF 00 01 78 3A

Register corresponding value:

0x0000 None Parity

0x0001 Parity\_Even

0x0002 Parity\_Odd

0X0003 None Parity

Note: The Check bit will be updated when the module is powered up again!

1. **READ delay time**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

Function code 0x03

Register address：0x00FC

Read number：0x0001

E.g:

Send frame (address is 1 ): 01 03 00 FC 00 01 44 3A

Return frame: 01 03 02 00 0A 38 43

01 address code, 03 function code, 02 length, 10 means the current delay is 10\*40=400ms , B9 88 is the CRC16 check code

1. **Set the delay time**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

Function code 0x06

Register address：0x00FC

Setting Content：2Bytes(0-2)

For example, Set the delay time 400ms:

Send data(RS485 address is 1)：01 06 00 FC 00 0A C9 FD

Returns data：01 06 00 FC 00 0A C9 FD

Note:1 The maximum delay is 1000ms;

2 Values exceeding 0x19 are reset to 0x00.

1. **Output port control (bit operation)**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

Function code 0x03

Register address：0x0070 corresponds to channel 1-12 output port status

Read number：0x0001

For example, read the status of 1-12 channels output port

Send frame: (address is 1 ): 01 03 00 70 00 01 85 D1

Return frame: 01 03 02 07 75 7B 93

01 address code, 03 function code, 02 length; 07 75 refers to the output port status, the 1、3、5、6、7、9、10、11 bits are 1 , and the other bits are 0 . So channels1、3、5、6、7、9、10、11 are open, and the other channels are closed.

1. **Write output port status (bit)**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

Function code 0x06

Register address：0x0070

Setting Content：2Bytes

For example, open channels 1 , 2 , and 3 , and close other channels

Send frame (address is 1 ): 01 06 00 70 00 07 C9 D3

Return frame: 01 06 00 70 00 07 C9 D3

Address code 01 , function code 06 , 00 70 refers to the registers of channels 1-12 ; 0007 refers to channels 1-3 open, and channels 4-12 close.

For example, open all channels

Send frame (address is 1 ): 01 06 00 70 0F FF CD A1

Return frame: 01 06 00 70 0F FF CD A1

Address code 01 , function code 06 , 00 70 refers to the register of channel 1-12 ; 0FFF refers to channel 1-12 open.

1. **READ** **Input port status automatic reporting function**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

Function code 0x03

Register address：0XF8

Read number：0x0001

For example, READ Input port status automatic reporting function

Send frame: (address is 1 ): 01 03 00 F8 00 01 05 FB

Return frame: 01 03 02 00 00 B8 44

01 address code, 03 function code, 02 length; 00 00 indicates that it is now the default state and will not be reported automatically.

0x0001-0x00FF indicates the automatic reporting time.

1. **SET Input port status automatic reporting function**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

Function code 0x06

Register address：0x00F8

Setting Content：2Bytes

Send frame (address is 1 ): 01 06 00 F8 00 05 C8 38

Return frame: 01 06 00 F8 00 05 C8 38

00 05 :Automatic report every 5 seconds

1. **READ** **Automatic report selection**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

Function code 0x03

Register address：0XF9

Read number：0x0001

For example, READ Automatic report selection

Send frame: (address is 1 ): 01 03 00 F9 00 01 54 3B

Return frame: 01 03 02 00 00 B8 44

01 address code, 03 function code, 02 length;

00 00 select 0x0080-0x008b register 0x0001-0x00FF indicates the automatic

00 01 select 0x00C0 register

1. **SET Automatic report selection**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

Function code 0x06

Register address：0x00F9

Setting Content：2Bytes

Send frame (address is 1 ): 01 06 00 F9 00 01 98 3B

Return frame: 01 06 00 F9 00 01 98 3B

00 01 : select 0x00c0 register to report automatically

1. **Restore factory**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Setting Content (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address  (2) | Register value (2) | CRC16(2) |

RS485 address 0XFF

Function code 0x06

Register address：0x00FB

Setting Content：2Bytes

Send frame (address is 1 ): FF 06 00 FB 00 00 ED E5

Return frame: FF 06 00 FB 00 00 ED E5

1. **Read address**

Send data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Register address (2) | Read number (2) | CRC16(2) |

Returns data

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| RS485 address  (Station address)  (1) | Function (1) | Number of bytes (1) | data (n) | CRC16(2) |

address 0XFF

Function code 0x03

Register address：0XFD

Read number：0x0001

For example,

Send frame: FF 03 00 FD 00 01 00 24

Return frame: FF 03 02 00 01 50 50