

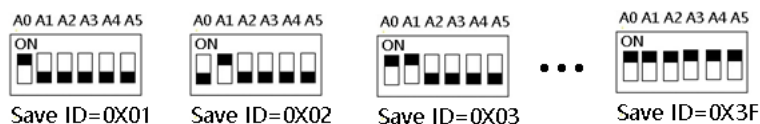
## N4DOK32 Modbus RTU Command

**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-A5)



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

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 contents	Numb er of bytes	Register value	Remarks
03 06 16(0X10)	0x0001-0x0020 (1-32)	Output port status(byte)	2	0X0000 0X0001	Support all commands
	0X0070-0X0071 (112-113)	Output port status(bit)	2	0 1	0X0070:0-15 channels 0X0071: 16-31 channels Only support open and close commands. 1 open 0 close
	0x00FE	Baud rate	2	0x0000-0 x0005	0~5 0:1200 1:2400 2:4800 3:9600 (default) 4:19200 5: Factory reset

**Output port status (byte) control command (function code 06/16, HEX format)::**

Bytes Number	1	2	3	4	5	6	7	8
MODBUS	Slave ID	Function	Address		Data		CRC Check	

Definitions						
Function	Device Address	Function	Channel number	Command	Delay time	CRC Check
Open	0x00-0x3F	0x06	0x0001-0x0020	0x01	0x00	2Bytes CRC
Close	0x00-0x3F	0x06	0x0001-0x0020	0x02	0x00	2Bytes CRC
Toggle (Self-locking)	0x00-0x3F	0x06	0x0001-0x0020	0x03	0x00	2Bytes CRC
Latch Inter-locking)	0x00-0x3F	0x06	0x0001-0x0020	0x04	0x00	2Bytes CRC
Momentary (Non-locking)	0x00-0x3F	0x06	0x0001-0x0020	0x05	0x00	2Bytes CRC
Delay	0x00-0x3F	0x06	0x0001-0x0020	0x06	0x00-0xff	2Bytes CRC
Open all relays	0x00-0x3F	0x06	0x0000	0x07	0x00	2Bytes CRC
Close all relays	0x00-0x3F	0x06	0x0000	0x08	0x00	2Bytes CRC

Remarks:

1 Momentary mode, delay time is 1 seconds

2 Delay mode, delay time is 1-255 seconds

Return command:

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

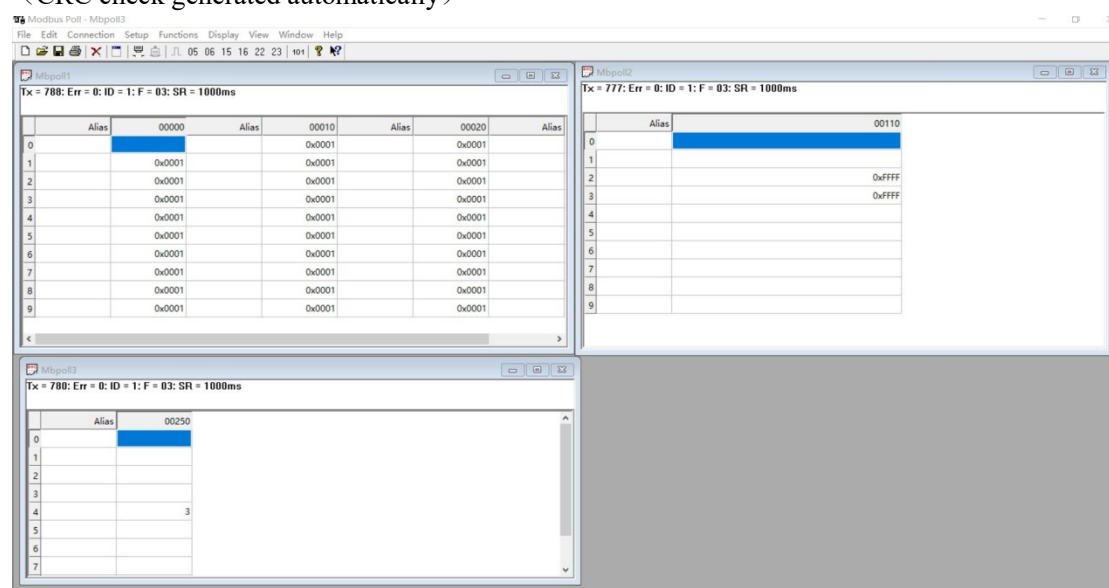
**MODBUS 03 Command (Read status command ,HEX):**

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 32 channels status	0x00-0x2F	0x03	0x0001		0x0020			

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



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

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

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

Open all channels: 01 10 00 01 00 20 40 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00  
01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01  
00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 EF DB

Close channels 1-4: 01 10 00 01 00 04 08 02 00 02 00 02 00 02 00 CB 5A

Close channels 5-8: 01 10 00 05 00 04 08 02 00 02 00 02 00 02 00 3A 95

Close channels 9-12: 01 10 00 09 00 04 08 02 00 02 00 02 00 02 00 2A 85

Close channels 13-16: 01 10 00 0D 00 04 08 02 00 02 00 02 00 02 00 DB 4A

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Read channel 1 state : 01 03 00 01 00 01 D5 CA
Return open: 01 03 02 00 01 79 84
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Read channel 2 state : 01 03 00 02 00 01 25 CA
Return close: 01 03 02 00 00 B8 44
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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

**Read channel 1-32 state:**   01 03 00 01 00 20 15 D2

Returns all channel states (all open): 01 03 40 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00  
01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01  
00 01 00 01 00 01 00 01 00 01 00 01 00 01 89 9E

Returns the status of all channels (all closed): 01 03 40 00 00 00 00 00 00 00 00 00 00 00 00 00  
00  
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 C9 E8

Send data

RS485 address (Station address) (1)	Function (1)	Register address (2)	Read number (2)	CRC16(2)
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RS485 address (Station address) (1)	Function (1)	Number of bytes (1)	data (n)	CRC16(2)
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Register address: 0x0070 corresponds to channel 1-16 output port status  
0x0071 corresponds to the 17-32 channel output port status  
Read number: 0x0001-0x0002

For example: Read 1-16 channel output port status:

Send data(RS485 address is 1): 01 03 00 70 00 01 85 D1

Returns data: 01 03 02 02 02 38 E5

01 RS485 address, 03 Function, 02 length, 38 E5 crc16

0202 refers to the status of the output port, the second and tenth bits are 1, and the other bits are 0. So channels 2 and 10 are open, and the other channels are closed.

For example: Read 17-32 channel output port status:

Send data(RS485 address is 1): 01 03 00 71 00 01 D4 11

Returns data: 01 03 02 08 02 3E 45

01 RS485 address, 03 Function, 02 length, 3E 45 crc16

0802 Refers to the output port status, the 2nd and 12th bits are 1, and the other bits are 0. So channels 18 and 28 are open, and the other channels are closed.

## 2. Write Output port status(One bit, one channel)

Send data

RS485 address (Station address) (1)	Function (1)	Register address (2)	Read number (2)	CRC16 (2)
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Returns data

RS485 address (Station address) (1)	Function (1)	Number of bytes (1)	data (n)	CRC16 (2)
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RS485 address: 0x01-0xFE

Function code 0x06

Register address: 0x0070 corresponds to channel 1-16 output port status

0x0071 corresponds to the 17-32 channel output port status

Read number: 0x0001-0x0002

For example: Open channel 1/2/3, other channels close:

Send data(RS485 address is 1): 01 06 00 70 00 07 C9 D3

Returns data: 01 06 00 70 00 07 C9 D3

01 RS485 address, 06 Function, C9 D3 crc16

00 70 refers to the registers of 1-16 channels; 0007 refers to 1-3 channels open and 4-16 channels closed.

For example: Open channel 17/20/28, other channels close:

Send data(RS485 address is 1): 01 06 00 71 08 09 1E 17

Returns data: 01 06 00 71 08 09 1E 17

01 RS485 address, 06 Function, 1E 17 crc16

00 71 refers to the registers of 17-32 channels; 0809 refers to 17/20/28 channels open and other channels closed.

### 3. Read baud rate

Send data

RS485 address (Station address) (1)	Function (1)	Register address (2)	Read number (2)	CRC16(2 )
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Returns data

RS485 address (Station address) (1)	Function (1)	Number of bytes (1)	data (n)	CRC16(2 )
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RS485 address (Slave ID) : 0x01~0xFE

Function code 0x03

Register address: 0x000FE

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

### 4. Write baud rate

Send data

RS485 address (Station address) (1)	Function (1)	Register address (2)	Setting Content (2)	CRC16(2 )
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Returns data

RS485 address (Station address) (1)	Function (1)	Register address (2)	Register value (2)	CRC16(2 )
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RS485 address (Slave ID) : 0x01~0xFE

Function code 0x06

Register address: 0x00FE

Setting Content: 2Bytes(0-4)

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: 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 5.

For example: 01 06 00 FE 00 05 28 39