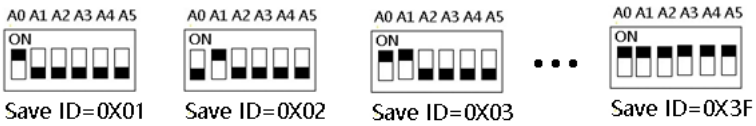
8 channel Rail RS485 Relay commamd

1 This version has 2 Command modes, MODBUS RTU Command and AT Command.
2 The default Command is the MODBUS RTU Command, compatible with older versions.
3 Switch to AT command by shorting the M0 pad.
4 The default baud rate is 9600BPS. You can also select the baud rate by shorting the M1 and M2 pads.

			
9600BPS(default)	**2400BPS**	**4800BPS**	**19200BPS**

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)



3 Jumper switch status: M0's two pads must be disconnected , 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	0x00-0x 2F	0x06	0x0001-0x0008		0x01	0x00	2Bytes CRC	
Close	0x00-0x 2F	0x06	0x0001-0x0008		0x02	0x00	2Bytes CRC	
Toggle (Self-locking)	0x00-0x 2F	0x06	0x0001-0x0008		0x03	0x00	2Bytes CRC	
Latch Inter-locking)	0x00-0x 2F	0x06	0x0001-0x0008		0x04	0x00	2Bytes CRC	

Momentary (Non-locking)	0x00-0x 2F	0x06	0x0001- 0x0008	0x05	0x00	2Bytes CRC
Delay	0x00-0x 2F	0x06	0x0001- 0x0008	0x06	0x00-0x ff	2Bytes CRC
Open all	0x00-0x FE	0x06	0x0000	0x07	0x00	2Bytes CRC
Close all	0x00-0x FE	0x06	0x0000	0x08	0x00	2Bytes CRC

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 com
mands; instruction is invalid no return.

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

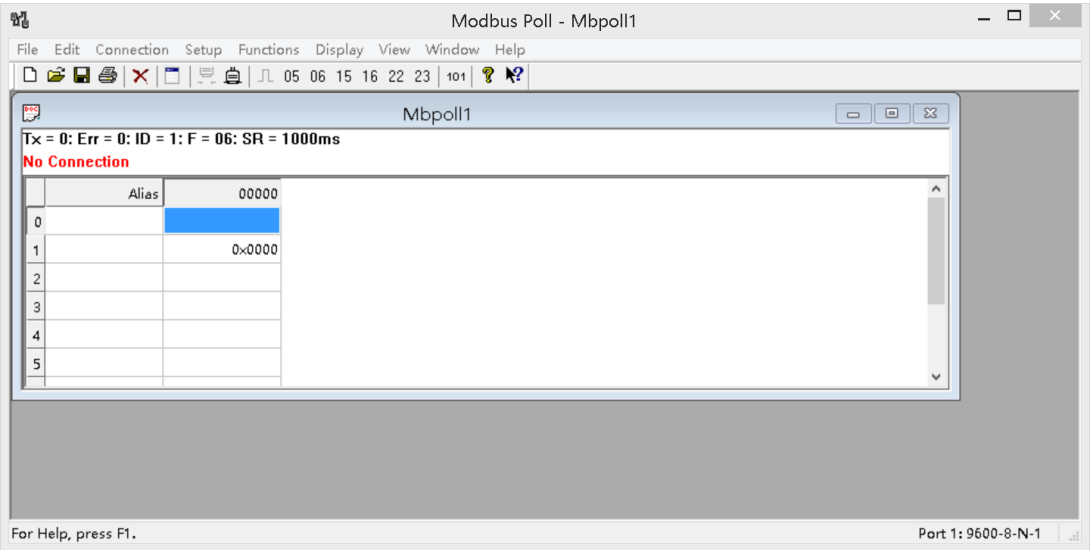
Bytes Number	1	2	3	4	5	6	7	8
MODBUS Definitions	Slave ID	Function	Address		Data		CRC Check	
Function	Device Address	Function	Starting register address		Register length		CRC Check	
Read Channel 1 State	0x00-0x2F	0x03	0x0001		0x0001			
Read Channel 2 State	0x00-0x2F	0x03	0x0002		0x0001			
Read 2 consecutive channels status	0x00-0x2F	0x03	0x0001-0x00 03		0x0002			
Read 3 consecutive channels status	0x00-0x2F	0x03	0x0001-0x00 02		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 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

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

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, 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

All Relays Open
AT+AO

All Relays Close
AT+AC

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"