

# Modbus RTU protocol for ATM door system V2

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## Interface description

RS485 port(4Wire): +D, -D, Ground, +12V(from ADIS, not use +12V pin)

Baudrate: 9600kbps

Parity: none;

Data bits: 8;

Stop bits: 1;

Devices: multi\_driver board.

## Modbus RTU standard commands to use

3 (03H) Read 1 holding registers (Read 1 register)

6 (06H) Preset single register (Write 1 register)

Parameter	Modbus Type	Data Type	MODBUS address	Address to be used in the command in Hex	values in Hex	Command Function-code
Slave ID	Holding Reg	Integer	40001	0000H	0-255	6
Sensor Action	Holding Reg	Integer	40002	0001H	Sensor Action: 0x01 – Master(indoor) 0x03 – Pet 0x04 – Stack	6
Mode	Holding Reg	Integer	40003	0002H	Mode: 0x00 – Auto 0x01 – Stacker 0x02 – Lock 0x03 – Pet	3,6
Locked & position status	Holding Reg	Integer	40005	0004H	Locked & position status: 0 – closed with unlocked 1 – closed with locked 2 – open	3

## Command 3 (03H) Read 1 Word:

This command allows the master to read 1 word data from the holding registers in multi\_driver device.

### Send from Master

0	1	2	3	4	5	6	7
Addr	Func	Start Reg Hi Addres of 1 <sup>st</sup> word	Start Reg LO Addres of 1 <sup>st</sup> word	Number of word, Regs Hi (length)	Number of Word, Regs Lo (length)	CRC Low byte	CRC High byte
01	03	00	02	00	01	xx	xx

### Response from Device:

Addr	Func	Byte Count (length)	Reg Hi 0006	Reg Lo 0006	CRC Low byte	CRCHigh byte
01	03	02	00	02	xx	xx

Function 3 Example below:

Example 1: send from Master

01-03-00-02-00-01-25-CA (read "Mode" @ ID=1)

Response from auto slide Device:

01-03-02-00-00-B8-44 (auto mode) or  
 01-03-02-00-01-79-84 (Stacker mode) or  
 01-03-02-00-02-39-85 (locked mode) or  
 01-03-02-00-03-F8-45 (pet mode)

Example 2: Send from Master

01-03-00-04-00-01-C5-CB (read lock & position status)

Response from auto slide Device:

01-03-02-00-00-B8-44 (door closed with unlocked) or  
 01-03-02-00-01-79-84 (door closed with locked) or  
 01-03-02-00-02-39-85 (door open)

## Command 6(06H): Write 1 Word

This command allows master to write 1 word data to a single holding register in autoslide device.

### Send from Master

0	1	2	3	4	5	6	7
Addr	Func	Data Reg # Hi Address of 1 <sup>st</sup> word	Data Reg # LO Address of 1 <sup>st</sup> word	Data Value Hi byte of word	Data Value LO byte of word	CRC Low byte	CRC High byte
01	06	00	00	11	40	xx	xx

### Response from device

Addr	Func	Data Reg #HI 40001	Data Reg # LO 40001	Data Value Hi byte of word	Data Value LO byte of word	CRC Low byte	CRCHigh byte
01	06	00	00	11	40	xx	xx

Function 6 Example below:

Example 1: send: 01-06-00-00-00-02-08-0B (change Slave ID to 0x02 from 0x01)

Response1: 01-06-00-00-00-02- 08-0B

Example 2 send: 02-06-00-00-00-01-48-39 (change Slave ID to 0x01 from 0x02)

Response2: 01-06-00-00-00-02-08-0B

Example 3 send: 01-06-00-01-00-01-19-CA (press master button)

Response3: 01-06-00-01-00-01-19-CA

Example 4 send: 01-06-00-01-00-03-98-0B (to press pet button)

Example 5 send: 01-06-00-01-00-04-D9-C9 (to press stacker button)

Example 6 send: 01-06-00-02-00-00-28-0A (change to auto mode)

Example 7 send: 01-06-00-02-00-01-E9-CA (change to stacker mode.)

Example 7 send: 01-06-00-02-00-02-A9-CB (change to lock mode.)

Response7: 01-06-00-02-00-02-A9-CB ( response: lock mode)

Example 8 send: 01-06-00-02-00-03-68-0B (change to pet mode.)

## Code Name Cause

- 1 ILLEGAL FUNCTION: Function number out of range
- 2 ILLEGAL DATA ADDRESS Parameter ID out of range or not supported
- 3 ILLEGAL DATA VALUE Attempt to write invalid data or not enough data words
- 4 DEVICE FAILURES: N/A
- 5 ACKNOWLEDGE: N/A
- 6 BUSY: N/A
- 7 NEGATIVE ACKNOWLEDGE: N/A

Example: address error response: 01-86-02+2CRC (5 byte include CRC)

### Note:

- 1) dip6 is up (off)
- 2) Function 3 can read only 1 word. It can't read more than 1 word.
- 3) Default Slave Address: 0x01.
- 4) Restore Default Slave Address procedure:
  - a) Switch power off multi\_driver pcb.
  - b) set Dip 1, dip3,dip5,dip7 down( on) & dip2,dip4,dip6 up(off) at multi\_driver device.
  - c) Switch power on multi\_driver device to restore Default Slave address: 0x01.
  - d)set all dip up (off).then power off.
  - d) Reset Dip switch positions as before.
  - e) Power on
- 5) Change Slave address to (1-255): use function 6. After send the function 6 to change Slave address, turn device power off then on. New Slave address becomes available.

Connection below: Rs485 interface:B(D-).A(D+).-(ground),+(+12V, not connect)

