

MODBUS RTU (zero-based addressing)

MODBUS RTU CONTROLLER

<http://www.modbus.org>

HMI Setting:

Parameters	Recommend	Option	Notes
PLC type	Modbus RTU		
Com port	RS485	RS232/RS485	
Baud rate	9600	9600~115200	
Parity bit	Even	Even, Odd, None	
Data Bits	8	7,8	
Stop Bits	1	1,2	
HMI Station No.	0		Does not apply to this protocol
PLC Station No.	1	0-255	

Online Simulator	YES	Broadcast command	YES
Extend address mode	YES		

PLC Setting:

Communication mode	Modbus RTU protocol
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Device address:

Bit/Word	Device Type	Format	Range	Memo
B	0x	dddddd	0-65535	Output bit
B	1x	dddddd	0-65535	Input bit (read only)
B	3x_Bit	dddddd(dd)	0-6553515	Input Register bit (read only)
B	4x_Bit	dddddd(dd)	0-6553515	Output Register bit
W	3x	dddddd	0-65535	Input Register (read only)
W	4x	dddddd	0-65535	Output Register
DW	5x	dddddd	0-65535	4x double word swap
W	6x	dddddd	0-65535	4x single word write

NOTE:

Address type “5x” are mapping to Hold Reg. The communication protocol of 5x almost same as “4x” except “5x”making double word swap.

If 4x have following information

Address	1	2	3	4	5	6	...
Data in word	0x1	0x2	0x3	0x4	0x5	0x6	
Data	0x20001		0x40003		0x60005		

For 5x, it become

Address	1	2	3	4	5	6	...
Data in word	0x2	0x1	0x4	0x3	0x6	0x5	
Data	0x10002		0x30004		0x50006		

Modbus RTU function code:

0x	0x01 Read coil	0x05 write single coil
1x	0x02 Read discrete input	N/A for write operation
3x	0x04 Read input register	N/A for write operation
4x	0x03 Read holding register	0x10 write multiple register
5x	0x03 Read holding register	0x10 write multiple register

(Note: reverse word order in double word format)

3xbit is equivalent to 3x

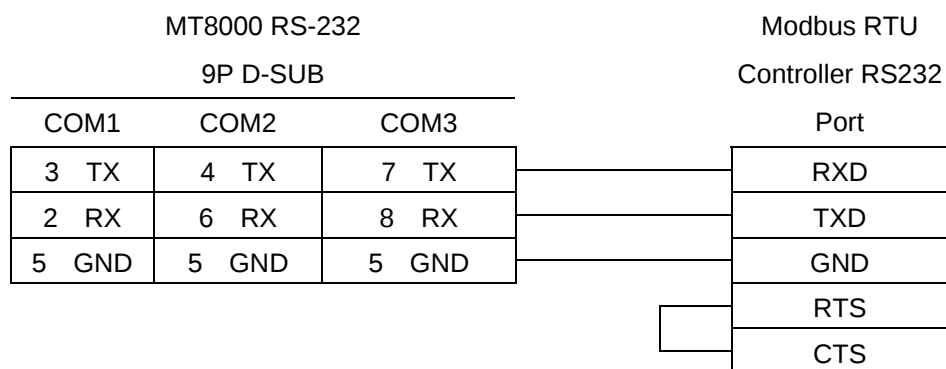
4xbit is equivalent to 4x

6x	0x03 Read holding register	0x06 write single register
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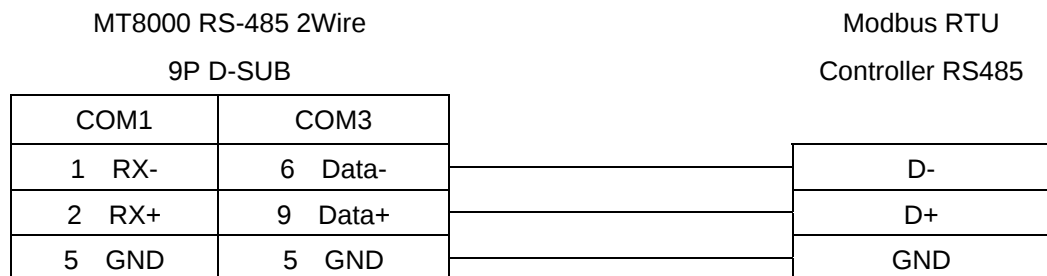
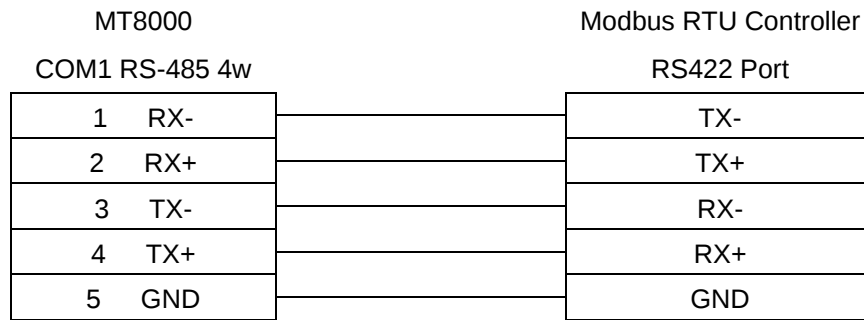
(Note: use 6x device is limited to device of one word only)

Wiring diagram:

MODBUS RS232 PORT



MODBUS RS422/485 PORT



Note: MODBUS RTU (adjustable) usage

Users can decide the address range via setting value on Parameter 1. For example, when users set 5 to Parameter 1, the address range become 5~65535.

System Parameter Settings

Device Model General Security Font Extended Memory Printer Server

Device list :

No.	Name	Location	Device type
Local HMI	Local HMI	Local	MT6104T/MT8080T/MT8104T (64
Local PLC 1	MODBUS RTU (Adjustable)	Local	MODBUS RTU (Adjustable)

Device Properties

Name : MODBUS RTU (Adjustable)

☐ HMI ☒ PLC

Location : Local Settings ...

PLC type : MODBUS RTU (Adjustable)
V.1.10, MODBUS_RTU_ADJUST.so

PLC I/F : RS-232 PLC default station no. : 1

COM : COM1 (9600,E,8,1) Settings ...

COM Port Settings

COM : COM 1

Baud rate : 9600

Data bits : 8 Bits

Parity : Even

Stop bits : 1 Bit

Timeout (sec) : 1.0

Turn around delay (ms) : 0

Send ACK delay (ms) : 0

Parameter 1 : 5

Parameter 2 : 0

Parameter 3 : 0

OK Cancel