MODBUS RTU

Supported series : MODBUS RTU CONTROLLER

Website : http://www.modbus.org

HMI Setting:

Parameters	Recommend	Option	Notes
PLC type	MODBUS RTU		
PLC I/F	RS485	RS232/RS485	
Baud rate	9600	9600~115200	
Parity	Even	Even, Odd, None	
Data bits	8	7, 8	
Stop bits	1	1, 2	
HMI St. No.	0		Does not apply to this protocol
PLC St. No.	1	0-255	

Online Simulator	YES	Broadcast command	YES
Extend address mode	YES		

PLC Setting:

Communication mode	Modbus RTU protocol

Device Address:

Bit/Word	Device type	Format	Range	Memo
B	0x	DDDDD	1 ~ 65535	Output bit
B	0x_multi_coils	DDDDD	1 ~ 65535	Write Multiple Coils
B	1x	DDDDD	1 ~ 65535	Input bit (read only)
B	3x_Bit	DDDDDdd	1 ~ 6553515	Input Register bit (read only)
B	4x_Bit	DDDDDdd	1 ~ 6553515	Output Register bit

B	6x_Bit	DDDDDdd	1 ~ 6553515	Output Register bit
W	3x	DDDDD	1 ~ 65535	Input Register (read only)
W	4x	DDDDD	1 ~ 65535	Output Register
DW	5x	DDDDD	1 ~ 65535	4x double word swap
W	6x	DDDDD	1 ~ 65535	4x single word write
W	4x_32Bit	DDDDD	1 ~ 65535	4x High/low byte swap

NOTE:

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

If 4x has 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

0x_multi_coils 0x01 Read coil   0x0f write multiple 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)
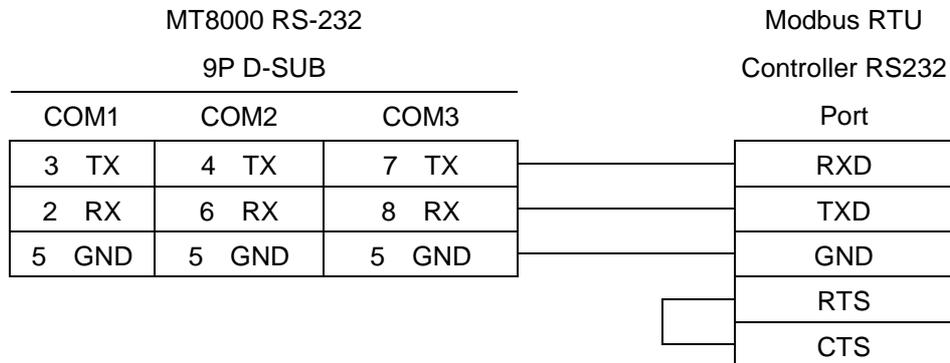
3xbit is equivalent to 3x

4xbit is equivalent to 4x

6x   0x03 Read holding register   0x06 write single register

(note: use 6x device is limited to device of one word only)

Wiring Diagram:

MODBUS RS232 PORT

MT8000 RS-232 9P D-SUB			Modbus RTU Controller RS232 Port

COM1	COM2	COM3	
3 TX	4 TX	7 TX	RXD
2 RX	6 RX	8 RX	TXD
5 GND	5 GND	5 GND	GND
			RTS
			CTS

MODBUS RS422/485 PORT

MT8000 COM1 RS-485 4w	Modbus RTU Controller RS422 Port
1 RX-	TX-
2 RX+	TX+
3 TX-	RX-
4 TX+	RX+
5 GND	GND

MT8000 RS-485 2Wire 9P D-SUB		Modbus RTU Controller RS485

COM1	COM3	
1 RX-	6 Data-	D-
2 RX+	9 Data+	D+
5 GND	5 GND	GND
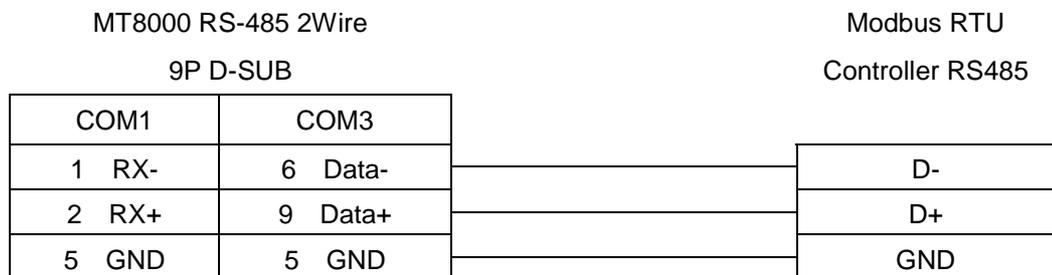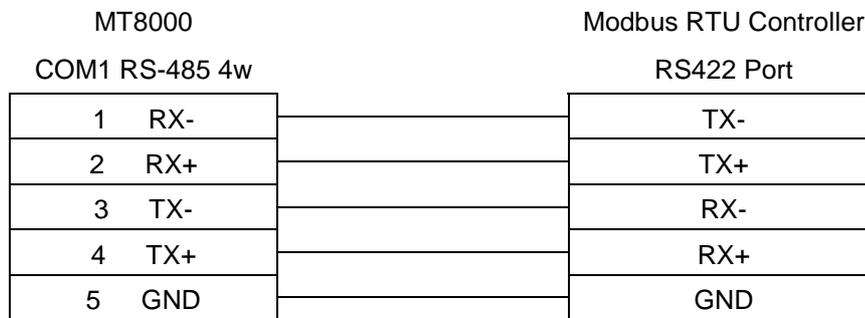
Driver Version:

Version	Date	Description
V1.90	Dec/24/2009	Fixed when receiving data from modbus rtu over 8 bytes, LW9570 can not calculate correctly.