

MODBUS RTU (zero-based addressing)

Supported Series : MODBUS RTU CONTROLLER

Website : <http://www.modbus.org>

HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	MODBUS RTU (zero-based addressing)		
PLC I/F	RS485	RS232/RS485	
Baud rate	9600	9600~115200	
Data bits	8	7,8	
Parity	Even	Even, Odd, None	
Stop bits	1	1,2	
PLC sta. 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	DDDDD	0 ~ 65535	Output bit
B	1x	DDDDD	0 ~ 65535	Input bit (read only)
B	3x_Bit	DDDDDdd	0 ~ 6553515	Input Register bit (read only)
B	4x_Bit	DDDDDdd	0 ~ 6553515	Output Register bit
B	0x_multi_coils	DDDDD	0 ~ 65535	Write multiple coils
W	3x	DDDDD	0 ~ 65535	Input Register (read only)
W	4x	DDDDD	0 ~ 65535	Output Register
DW	5x	DDDDD	0 ~ 65535	4x double word swap
W	6x	DDDDD	0 ~ 65535	4x single word write

NOTE:

Address type “5x” is mapping to Hold Reg. The communication protocol of 5x is almost the same as “4x” except that “5x” swaps double words.

If 4x contains the following information:

Address	1	2	3	4	5	6	...
Data in word	0x1	0x2	0x3	0x4	0x5	0x6	
Data	0x0201		0x0403		0x0605		

For 5x, it will be:

Address	1	2	3	4	5	6	...
Data in word	0x1	0x2	0x3	0x4	0x5	0x6	
Data	0x0102		0x0304		0x0506		

Modbus RTU function code:

0x	0x01	Read coil	0x05	write single coil
0x_multi_coils	0x01	Read coil	0x0f	write multiple coils
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 registers
5x	0x03	Read holding register	0x10	write multiple registers

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

Wiring Diagram:

The following is the view from the soldering point of a cable.

MODBUS RTU CONTROLLER : RS232

eMT3000 series

COM1 RS232 9P D-Sub Female	COM3 RS232 9P D-Sub Female		RS232 9P D-Sub Female
2 RX	8 RX		TXD
3 TX	7 TX		RXD
5 GND	5 GND		GND
			RTS
			CTS
			short

cMT/mTV series

COM1 RS232 9P D-Sub Female			RS232 9P D-Sub Female
2 RX			TXD
3 TX			RXD
5 GND			GND
			RTS
			CTS
			short



MT8000iE/MT8000XE series except MT8050iE

COM1 RS232 9P D-Sub Female			RS232 9P D-Sub Female
2 RX			TXD
3 TX			RXD
5 GND			GND
			RTS
			CTS
			short

MT6000/8000 series except MT6050i/MT8050i

COM1 RS232 9P D-Sub Female	COM2 RS232 9P D-Sub Female	COM3 RS232 9P D-Sub Male	RS232 9P D-Sub Female
2 RX	6 RX	8 RX	TXD
3 TX	4 TX	7 TX	RXD
5 GND	5 GND	5 GND	GND
			RTS
			CTS
			short

MT6050i/MT8050i/MT8050iE

COM1 RS232 9P D-Sub Female			RS232 9P D-Sub Female
9 RX			TXD
6 TX			RXD
5 GND			GND
			RTS
			CTS
			short
			

The following is the view from the soldering point of a cable.

MODBUS RTU CONTROLLER : RS485 4W

eMT3000 series

COM1 RS485 4W 9P D-Sub Male			RS485 4W 9P D-Sub Male
1 RX-			TX-
2 RX+			TX+
3 TX-			RX-
4 TX+			RX+
5 GND			GND

cMT/mTV series

COM2 RS485 4W 9P D-Sub Female			RS485 4W 9P D-Sub Male
7 RX-			TX-
6 RX+			TX+
9 TX-			RX-
8 TX+			RX+
5 GND			GND

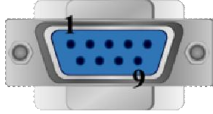
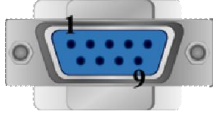
MT8000iE/MT8000XE series except MT8050iE

COM1 RS485 4W 9P D-Sub Male	COM2 RS485 4W 9P D-Sub Male		RS485 4W 9P D-Sub Male
1 RX-	1 RX-		TX-
2 RX+	2 RX+		TX+
3 TX-	3 TX-		RX-
4 TX+	4 TX+		RX+
5 GND	5 GND		GND

MT6000/8000 series except MT6050i/MT8050i

COM1 RS485 4W 9P D-Sub Male			RS485 4W 9P D-Sub Male
1 RX-			TX-
2 RX+			TX+
3 TX-			RX-
4 TX+			RX+
5 GND			GND

MT6050i/MT8050i/MT8050iE

COM1 RS485 4W 9P D-Sub Female			RS485 4W 9P D-Sub Female
1 RX-			TX-
2 RX+			TX+
3 TX-			RX-
4 TX+			RX+
5 GND			GND
			

The following is the view from the soldering point of a cable.

MODBUS RTU CONTROLLER : RS485 2W

eMT3000 series

COM1 RS485 2W 9P D-Sub Male	COM3 RS485 2W 9P D-Sub Male		RS485 2W 9P D-Sub Male
1 RX-	6 Data-		D-
2 RX+	9 Data+		D+
5 GND	5 GND		GND

cMT/mTV series

COM2 RS485 2W 9P D-Sub Female	COM3 RS485 2W 9P D-Sub Female		RS485 2W 9P D-Sub Male
7 RX-	4 Data-		D-
6 RX+	1 Data+		D+
5 GND	5 GND		GND

MTx070iE/MT8100iE/MT8121iE/MT8150iE/MT8121XE/MT8150XE

COM1 RS485 2W 9P D-Sub Male	COM3 RS485 2W 9P D-Sub Male		RS485 2W 9P D-Sub Male
1 RX-	7 Data-		D-
2 RX+	8 Data+		D+
5 GND	9 GND		GND

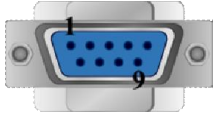
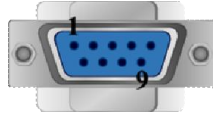
MTx071iE/MTx072iE/MT8101iE/MT8090XE/MT8091XE

COM2 RS485 2W 9P D-Sub Male	COM3 RS485 2W 9P D-Sub Male		RS485 2W 9P D-Sub Male
1 RX-	6 Data-		D-
2 RX+	9 Data+		D+
5 GND	5 GND		GND

MT6000/8000 series except MT6050i/MT8050i

COM1 RS485 2W 9P D-Sub Male	COM3 RS485 2W 9P D-Sub Male		RS485 2W 9P D-Sub Male
1 RX-	6 Data-		D-
2 RX+	9 Data+		D+
5 GND	5 GND		GND

MT6050i/MT8050i/MT8050iE

COM1 RS485 2W 9P D-Sub Female	COM3 RS485 2W 9P D-Sub Female		RS485 2W 9P D-Sub Female
1 RX-	7 Data-		D-
2 RX+	8 Data+		D+
5 GND	5 GND		GND
			

Driver Version:

Version	Date	Description
V1.30	Aug/26/2009	