Manuals+

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WEINTEK MODBUS HMI RTU Controller

Product Specifications

- Supported Series: MODBUS RTU CONTROLLER

- Communication Protocols: MODBUS RTU, RTU over TCP
- PLC Connection Interfaces: RS485, RS232/RS485/USB
- Baud Rate: 9600 (Configurable range: 9600~115200)
- Data Bits: 8
- Parity Options: Even, Odd, None
- Stop Bits: 1 (Configurable: 1, 2)
- PLC Station Number Range: 0-255

Product Usage Instructions

HMI Setting:

Configure the HMI settings as follows:

- PLC Type: MODBUS RTU, RTU over TCP
- PLC Interface: RS-485
- Baud Rate: 9600
- Data Bits: 8
- Parity: Even (Other options: Odd, None)
- Stop Bits: 1 (Other option: 2)
- PLC Station Number Range: 0-255

PLC Setting:

Set up the PLC communication mode and device address as follows:

- Communication Mode: Modbus RTU Protocol
- Device Address Configuration based on Bit/Word Device Types

Note: Refer to the user manual for specific configurations related to device types and address ranges.
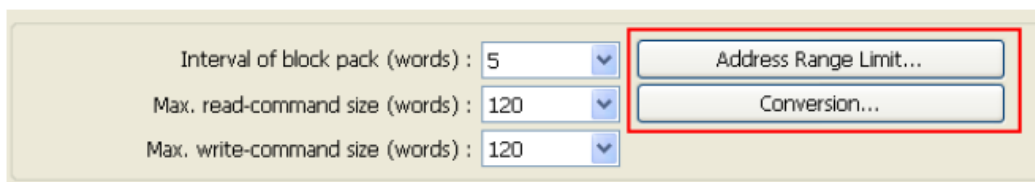
MODBUS RTU, RTU over TCP

Supported Series: MODBUS RTU CONTROLLER Website: http://www.modbus.org

HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	MODBUS RTU, RTU over TCP		
PLC I/F	RS485	RS232/RS485/USB	
Baud rate	9600	9600~115200	
Data bits	8	8	
Parity	Even	Even, Odd, None	
Stop bits	1	1, 2	
PLC sta. No.	1	0-255	

Online simulator	YES	**Broadcast command**	YES
Extend the address mode	YES		

Address Range Limit

The address range for device types 0x, 1x, and 0x_multi_coils can be configured. This option should be used when the controller's bit register address range is not a multiple of 16. For example, if the range is 0x1 ~ 0x6 or 0x9 ~ 0x14, communication will not be possible. To ensure effective communication between the HMI and the controller, please follow the configuration instructions below.

0x-1~6

0x_1-9~14

Conversion

The 3x_Double and 4x_Double address types are added. If [ABCD ->CDAB] check box is selected, please select 3x_Double and 4x_Double address types.

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	0x_single_bit	DDDDD	1 ~ 65535	*Note4
B	1x	DDDDD	1 ~ 65535	Input bit (read only)

B	1x_single_bit	DDDDD	1 ~ 65535	*Note4
B	3x_Bit	DDDDDdd	100 ~ 6553515	Input Register bit (read
B	4x_Bit	DDDDDdd	100 ~ 6553515	Output Register bit
B	6x_Bit	DDDDDdd	100 ~ 6553515	Output Register bit
B	0x_1	DDDDD	1 ~ 65535	
B	0x_2	DDDDD	1 ~ 65535	
B	0x_3	DDDDD	1 ~ 65535	
B	0x_4	DDDDD	1 ~ 65535	
B	0x_5	DDDDD	1 ~ 65535	
B	0x_6	DDDDD	1 ~ 65535	
B	0x_7	DDDDD	1 ~ 65535	
B	0x_8	DDDDD	1 ~ 65535	
B	0x_9	DDDDD	1 ~ 65535	
B	1x_1	DDDDD	1 ~ 65535	
B	1x_2	DDDDD	1 ~ 65535	
B	1x_3	DDDDD	1 ~ 65535	
B	1x_4	DDDDD	1 ~ 65535	
B	1x_5	DDDDD	1 ~ 65535	
B	1x_6	DDDDD	1 ~ 65535	
B	1x_7	DDDDD	1 ~ 65535	
B	1x_8	DDDDD	1 ~ 65535	

B	1x_9	DDDDD	1 ~ 65535	
W	3x	DDDDD	1 ~ 65535	Input Register (read only)
W	3x_MAX1W	DDDDD	1 ~ 65535	Display 32 bits *Note1
DW	3x_MAX2W	DDDDD	1 ~ 65535	*Note1
W	3x_Double	DDDDD	1 ~ 65535	*Note2
QW	3x_QWord	DDDDD	1 ~ 65535	64-bit
W	4x	DDDDD	1 ~ 65535	Output Register
W	4x_MAX1W	DDDDD	1 ~ 65535	Display 32 bits *Note1
DW	4x_MAX2W	DDDDD	1 ~ 65535	*Note1
W	4x_Double	DDDDD	1 ~ 65535	*Note2

Bit/Word	Device type	Format	Range	Memo
W	4x_32Bit	DDDDD	1 ~ 65535	Output Register *Note 1
QW	4x_QWord	DDDDD	1 ~ 65535	64-bit
W	0x_single_coil	DDDDD	1 ~ 65535	*Note3
DW	5x	DDDDD	1 ~ 65535	4x double word swap
W	6x	DDDDD	1 ~ 65535	4x single word write**Note 1**

1: MAX1W and 4X_32Bit read/write 1 word for each packet and display a 32-bit value, whereas MAX2W reads/writes 2 words for each packet.

Note2: Go the [System Parameter Settings] -> [Device Properties] and click [Conversion] to set the data format of device types 3x, 4x, 6x, 3x_double, 4x double.
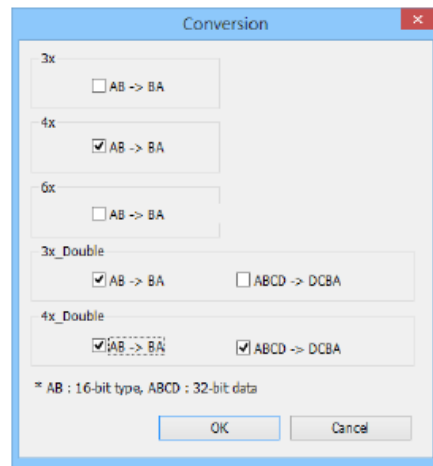
Note3: Read/write a Bit at a time. Value 0 and 1 are used to represent ON or OFF status where 0 means set OFF and 1 means set ON.

Note4: The number of bits to read can be set in Macro; therefore, it is recommended to use 0x address type for functions such as GetData() and SetData(), in order to increase reading speed.

To read/write multiple 0x address tytypesn ma acro, use 0x_multi_coils to increase write speed.

Note5: Please assign all the addresses to Even addresses, or all to Odd addresses, in order to prevent communication failure.

Note 6: EBPro V6.03.02 or later supports 64-bit data type (cMT Series only), but please note that the address limit range is 48 bits in maximum..

NOTE:

Address type "5x" is mapped to Holding Register. The communication protocol of 5x is almost the same as "4x" except that "5x" swaps double word.

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:

| Device type	Read	Write
0x	0x01 Read coil	0x05 Write single coil
0x_multi_coils	0x01 Read coil	0x0f write multiple coils
1x	0x02 Read discrete input	X
3x / 3x_Bit	0x04 Read input register	X
4x / 4x_Bit	0x03 Read holding register	0x10 Write multiple registers
5x	0x03 Read holding register	0x10 Write multiple registers
6x	0x03 Read holding register	0x06 Write a single register
0x_single_coil	0x01 Read coil	0x05 Write single coil

Wiring Diagram

Diagram 1

RS-232

The serial port pin assignments may vary between HMI models. Please click the following link for more information.

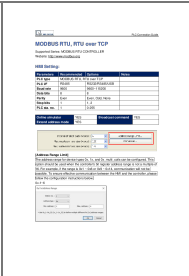| HMI		PLC
Link		RS232
Rx	←	TXD
Tx	←	RXD
GND	←	GND
		RTS
		CTS
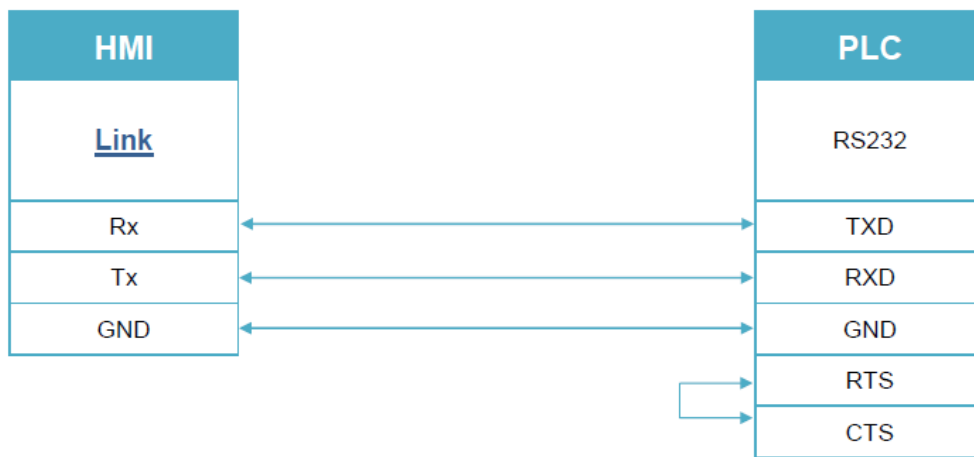
Diagram 2

RS-485 4W

The serial port pin assignments may vary between HMI models. Please click the following link for more information.

HMI		PLC
Link		RS485 4W
Rx-	←	Tx-
RX+	←	Tx+
Tx-	←	Rx-
Tx+	←	Rx+
GND	←	GND

Diagram 3

RS-485 2W

The serial port pin assignments may vary between HMI models. Please click the following link for more information.

HMI		PLC
Link		RS485 2W
Data-	←	D-
Data+	←	D+
GND	←	GND
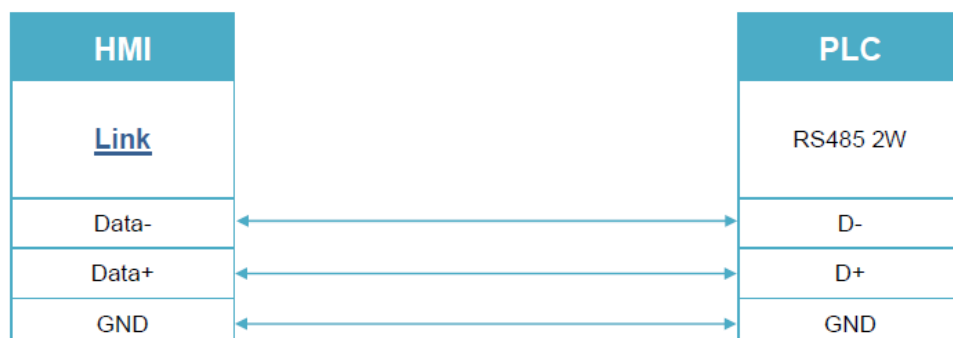
Frequently Asked Questions

- **Q: What is the purpose of the conversion in a PLC setting?**

  A: The conversion setting is used to manage the data format of specific device types such as 3x, 4x, and others. It allows for proper data interpretation and communication between the HMI and the controller.

- **Q: How does address type 5x differ from address type 4x?**

  A: Address type 5x is mapped to Holding Register and swaps double words compared to address type 4x. The communication protocol for both is similar, with the main distinction being the double word swapping in address type 5x.

- **Q: What are the options available for device properties conversion?**

  A: To set the data format of device types like 3x, 4x, and others, navigate to [System Parameter Settings] -> [Device Properties] and click on [Conversion]. This allows you to configure the data format based on your requirements.

Documents / Resources

	[WEINTEK MODBUS HMI RTU Controller](#) [[pdf](#)] Instructions MODBUS HMI RTU Controller, HMI RTU Controller, RTU Controller, Controller

References

- [User Manual](#)

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