# **Modbus Server**

Quick Start Manual [For WinCon8000]

(Supports 8000, 87000 series modules)



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## **1 Modbus Server**

The Modbus Server supports modbus RTU and modbus TCP protocol which based on the ScanKernel on the WinCon8000. The Modbus Server not only can map the physical I/O automatically to a specific modbus address, but also allows users to define their own variables into it. Therefore users can develop their own application program with eVC++, VB.NET, and C#.NET programming language via the modbus RTU and modbus TCP protocol to share their specific data with modbus client. Moreover, users also can operate the Modbus Server and NAPOPC in coordination to create a fantastic solution which combines SCADA software with on-line data.

The main program of Modbus Server is "MBServer.exe". It automatically calls the "MBTool.DLL" and "ScanKernel.DLL" functions on demand.

Modbus Server V1.01		ок 🗙
General Digital Analog User Defined	d Memo   Modbus RTU	
Port Number 502	Slave NO.	64
	COM Port	COM2 💌
	Baudrate	19200 💌
	Parity	None 💌
	Data Bits	8 (RTU) 💌
	Stop Bits	1 💌

### **1.1 Software & Hardware Installation**

### 1.1.1 Hardware Installation

### 1.1.1.1 Connecting Your PC To The WinCon8000 COM2 Port

If you want to connect the Modbus client on the PC to the Modbus Server on the WinCon8000 via COM2 port (RS-232) directly, please notice the wiring assignments as bellows.

PC	WinCon8000
<u>9-Pin D-Sub</u>	<u>COM2</u>
RXD 2	RXD 2
TXD 3	TXD 3
GND 5	GND 5

### 1.1.1.2 Connecting Your PC To The WinCon8000 COM3 Port

If you want to connect the Modbus Client on the PC to the Modbus Server on the WinCon8000 via COM3 port (RS-485), the maximum distance between the I-7520 (the RS-232/RS-485 converter) and anWinCon8000 is up to 1,200 meters (4,000 feet). The distance between the two is dependent on the baud rate; the rule to follow is the lower you set the baud rate, the longer the distance can be.

### 1.1.1.3 Connecting Your PC To Several WinCon8000 controllers

An additional feature of using the COM3 port of the WinCon8000 is that you can configure an RS-485 network from one PC to link to numerous WinCon8000 controllers. The maximum number of WinCon8000 controllers that can be networked via the RS-485 network is 255.



We recommend add two terminal resistors (try  $220\Omega$ , then  $110\Omega$ , and then  $330\Omega$ ) on the nearest WinCon8000 and the farthest WinCon8000 for long distance RS485 network.

To create an RS-485 network you must first insure that each WinCon8000 has an unique slave number, and each of the WinCon8000s link the "DATA+" to the "DATA+" signal, and the "DATA-" to the "DATA-" signals.

Modbus Server V1.01		ок 🗙
General Digital Analog User Defined	d Memo ) Modbus RTU	
Port Number 502	Slave NO.	
	COM Port	СОМ2 🔽
	Baudrate	19200 💌
	Parity	None 💌
	Data Bits	8 (RTU) 💌
	Stop Bits	1 💌
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### 1.1.2 Software Installation

You can find out the Modbus Server at the "\Compact Flash\MBServer\" of WinCon8000.

You can start the Modbus Server by double clicking the "MBServer.exe" as belows.

Idres (Compact Flash\MBServer		
me	Size	Туре
MBServer >	59.0KB	Application
MBTool	22.0KB	Application Extension
ScanKernel	10.5KB	Application Extension

### **1.2 How To Start The Modbus Server**

Step 1: Double click the "\Compact Flash\MBServer\MBServer.exe".

Step 2: The "ScanKernel" window will pop up automatically and minimize after 3 seconds.

Modbus Server V1.01		ок 🗙
General Digital Analog User Defined	d Memo	
Modbus TCP	Modbus RTU	
Port Number 502	Slave NO.	64 💌
ScanKernel v1.01		ок
Scar	ning Now!	
	Data Bits	8 (RTU)
	Stop Bits	1
		J;
4		

Step 3: In the "General" page, you can choose which protocol you wish the Modbus Server supports. After you check the "Modbus TCP" or "Modbus RTU", the related parameters will become gray color which means disable.

Modbus Server V1.01		ок 🗙
General Digital Analog User Defined	Memo Memo Modbus RTU	
Port Number 502	Slave NO.	64
	COM Port	COM3
	Baudrate	19200 🔽
	Parity	None
	Data Bits	8 (RTU)
	Stop Bits	

Step 4: You can click the "Digital" and "Analog" page to see the modbus address of physical I/O. Modbus Sever will automatically map the physical I/O to specific modbus addresses. The report shows "Address", "Modules", "Slot", and "Channel" four fields.

ligit	al Inpu	ut(1xxxx)			Digit	al Out	put(0xxxx)		
Add	tress	Modules	Slot	Channe	Add	tress	Modules	Slot	Cha -
۲	1	I-8055	Slot 1	Channe	۵.	1	I-8055	Slot 1	Cha
۲	2	I-8055	Slot 1	Channe		2	I-8055	Slot 1	Cha
۲	З	I-8055	Slot 1	Channe		З	I-8055	Slot 1	Cha
•	4	I-8055	Slot 1	Channe		4	I-8055	Slot 1	Cha
۲	5	I-8055	Slot 1	Channe		5	I-8055	Slot 1	Cha
	6	I-8055	Slot 1	Channe		6	I-8055	Slot 1	Cha
۲	7	I-8055	Slot 1	Channe		7	I-8055	Slot 1	Cha
٠	8	I-8055	Slot 1	Channe		8	I-8055	Slot 1	Cha
					1	65	I-87065	Slot 2	Cha
					1	66	I-87065	Slot 2	Cha
					1	67	I-87065	Slot 2	Cha
					1	68	I-87065	Slot 2	Cha
					1	69	I-87065	Slot 2	Cha
					1	70	I-87065	Slot 2	Cha 🖣
4					Î				

dbu	is Ser	ver V1.01	L					ок 🗡
enera	al Dig	jital Analo	g User (	Defined Me	imo			
Analo	og Inp	ut(3xxx)	5.75		Analog Ou	tput(4xxxx	)	
Add	lress	Modules	Slot	Channe	Address	Modules	Slot	Channe
9	129	I-8017	Slot 3	Channe				
٩.	130	I-8017	Slot 3	Channe				
9	131	I-8017	Slot 3	Channe				
٩.	132	I-8017	Slot 3	Channe				
٩.	133	I-8017	Slot 3	Channe				
٩.	134	I-8017	Slot 3	Channe				
۹.	135	I-8017	Slot 3	Channe				
۹.	136	I-8017	Slot 3	Channe				
			-					

### Port Number:

You have to set up the port number for TCP/IP communication. We suggest port number "502" to the default value. You also can adjust the port number to suit with your application.

### Slave No:

Specifies a slave number for the Modbus Server.

### COM Port:

Specifies which "COM Port" number for the Modbus RTU. The default value is 1 and the valid range is from 1 to 255. Please verify the "COM Port" number that the Modbus RTU want to receive from.

#### Baudrate :

Specifies which "Baud Rate" will be looked for. The default setting is "9600".

#### Parity:

Specifies the parity scheme to be used. It is one of the following values.

Value	Description
0	No parity
1	Even
2	Mark
3	Odd
4	Space

### Data Bits:

Specifies the number of bits in the bytes transmitted and received.

### Stop Bits:

Specifies the number of stop bits to be used. It is one of the following values.

Value	Description
1	1 stop bit
2	2 stop bits
3	1.5 stop bits