

Installation

Operation

Maintenance Manual

Modbus gateway

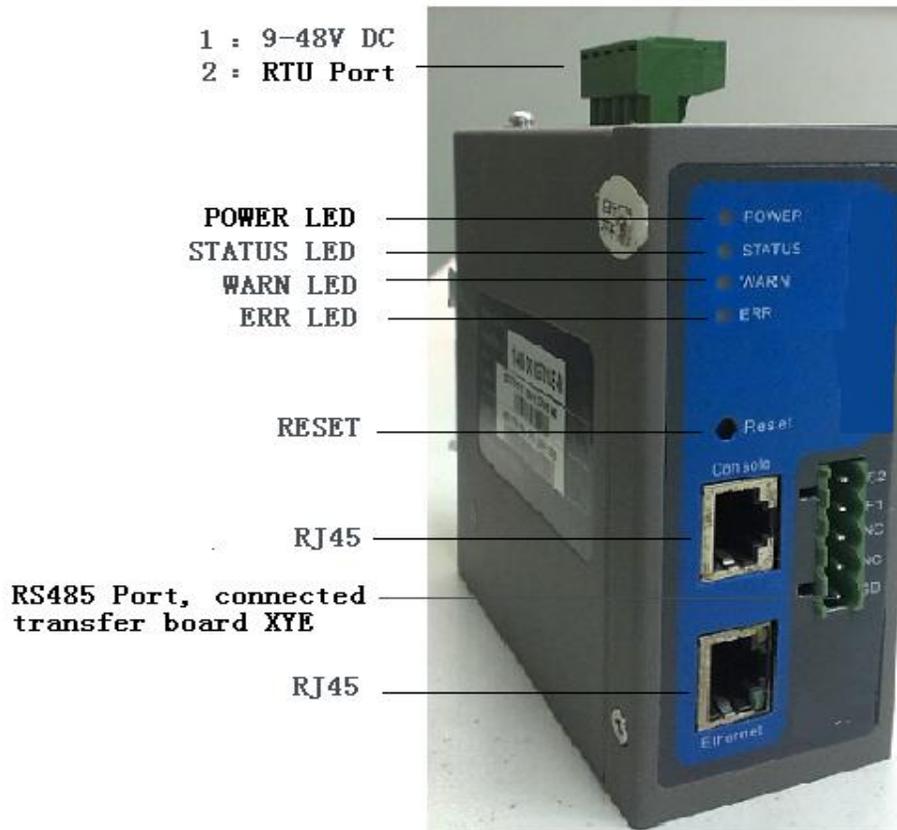
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1 Overview

This product is used for VRF system, PC software controlled Modbus gateway via TCP or RTU to monitor the indoor unit.

2 Introduction



Interface specification:

Ports	Illustrate
Power Port	Access to 9 ~ 48 V DC power supply
Serial Ports	Access to serial cable, and Serial ports can be configured
Ethernet Port	Ethernet port has 10/100M adaptive and direct/cross adaptive characteristics
RTU Port	PC software control interface
RESET	This operation can make the product to restore factory settings by pressing this button
RS485 Port	The port between Gateway and XYE terminals

3 Installation

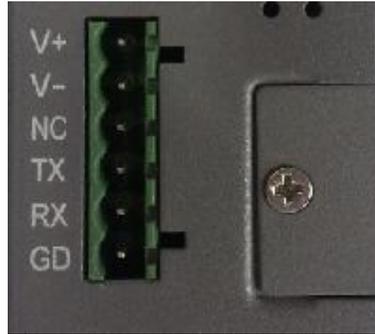
See the Modbus gateway Rail shown in left figure, and put the Rail on the guide rail as is shown in right figure.

Then the Modbus gateway can move on the guide rail.



4 Terminal block

4.1 Connection terminals to PC



V+	The positive power supply 9~48V DC
V-	The negative power supply 9~48V DC
NC	None connect
TX/485-	RS485-
RX/485+	RS485+
GD	Grounding

4.2 XYE connection to communication port of outdoor units



F2	RS485- (connect to Y)
F1	RS485+(connect to X)
NC	None connect
NC	None connect
GND	Grounding

4.3 Connection terminals of power supply

When the installation completed, the 9 ~ 48V DC power supply connected to the gateway InRouter. Find whether the Power LED is lit on InRouter panel at this time, if the LED is not lit, please contact technical support engineer of manufacturer immediately.

You can set it up after the power LED indicates normally.

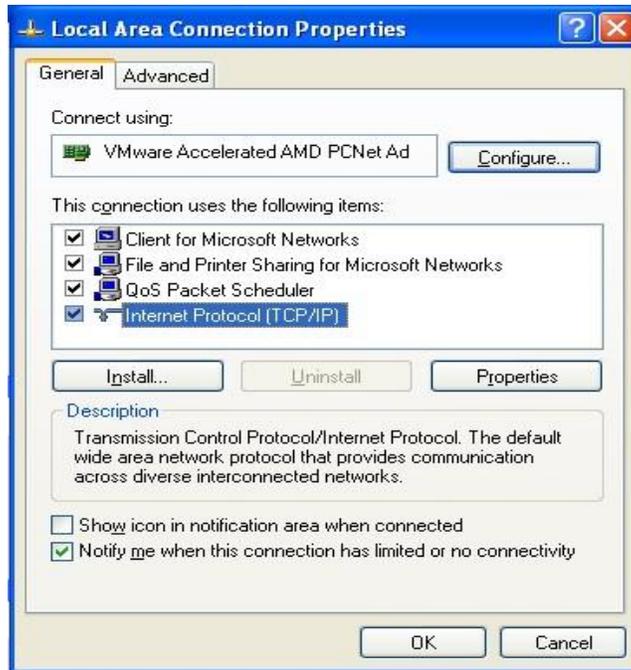
5 Operation

5.1 Communications configuration of Computer and Modbus gateway

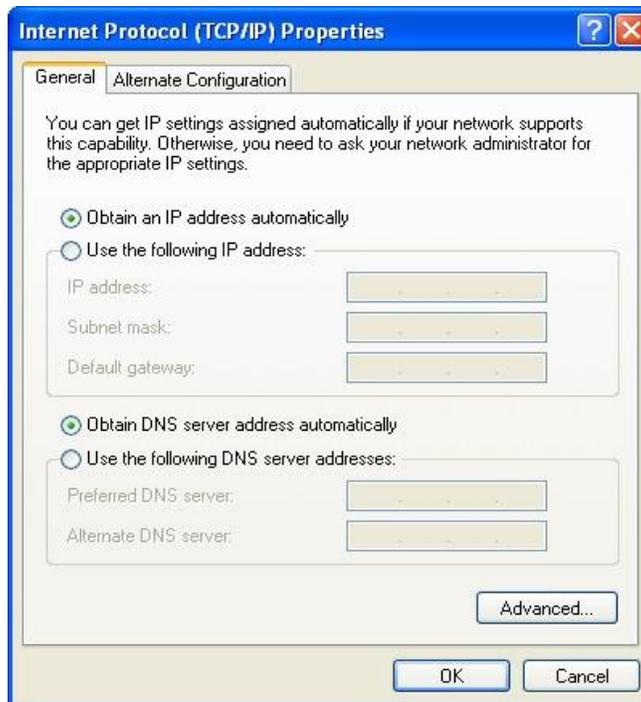
- 1) Open the Control Panel, then double-click the "Network Connections" icon to enter the "Network Connections" screen.
- 2) Double-click "Local Area Connection" and enter "Local Area Connection Status" screen:



- 3) Click the "Properties" button on the screen, enter the "Local Area Connection Properties" screen:



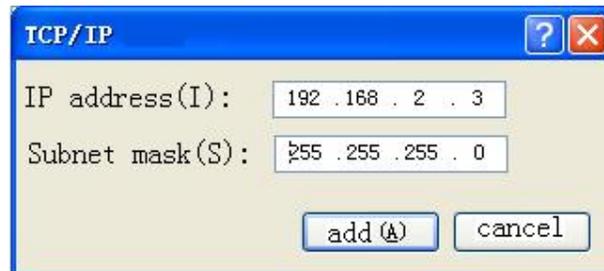
- 4) Select "Internet Protocol (TCP / IP)", then click the "Properties" button and confirm your computer to automatically obtain IP address and DNS server address:



Click "OK", InRouter will assign an IP address 192.168.2.X and 192.168.2.1 gateway for your computer (router's default address).

Note: You can also manually add the IP address.

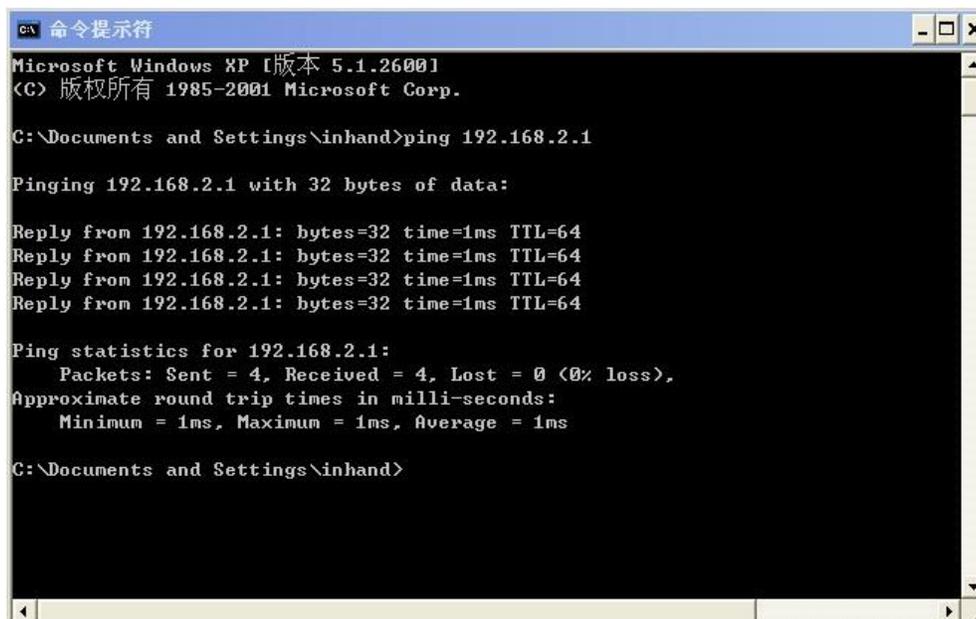
Click "Advanced" icon on the screen, , and then click "Add" button, such as next figure, add an IP address 192.168.2.X, as is shown below.



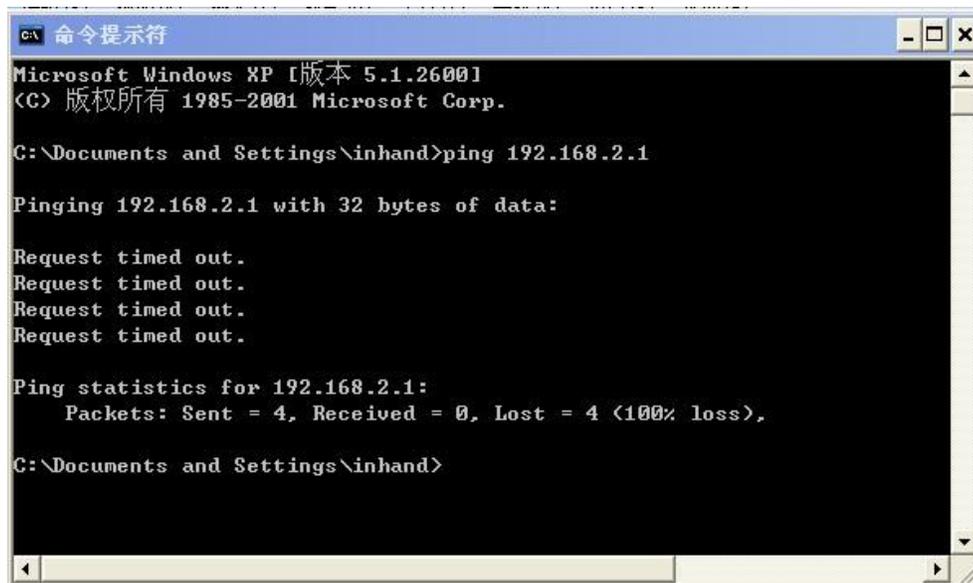
After configuring TCP / IP protocol, you can use the Ping commands to check whether your computer and the router is connected correctly. For example, execute the Ping command in Windows XP environment:

Ping 192.168.2.1

If the screen displays as the following figure, indicates your computer has been successfully establish a connection with the router.



If the screen displays as the following figure indicates the router is not connected, you can itemized checks the steps 1 and 2.



```
命令提示符
Microsoft Windows XP [版本 5.1.2600]
(C) 版权所有 1985-2001 Microsoft Corp.

C:\Documents and Settings\inhand>ping 192.168.2.1

Pinging 192.168.2.1 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

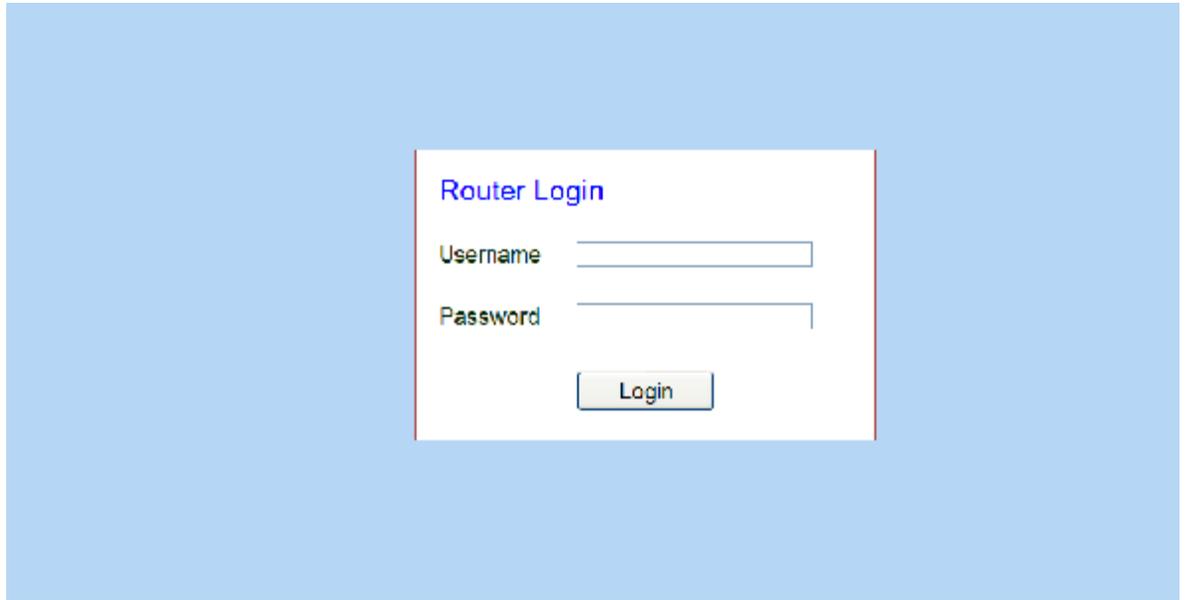
Ping statistics for 192.168.2.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\Documents and Settings\inhand>
```

5.2 Configuring Modbus gateway (router)

After completing the steps above, you can configure the router:

- 1) Open your browser and enter the router's IP address in the address bar, such as <http://192.168.2.1> (the router's default settings). Then you will see the login screen shown in the following figure, enter your user name and password (default setting is adm/123456), then click Login:



You can enter the router's user interface after successful login.

		System Status
Name	Router	
Model	IR701UE00	
Serial Number	IG7011108128676	
Description	www.inhand.com.cn	
Current Version	1.3.5.r2789(test)	
Current Bootloader Version	1.1.6.r2397	
Router Time	2013-09-16 15:08:47	
PC Time	2013-09-16 15:09:01	<input type="button" value="Sync Time"/>
Up time	0 day, 00:12:23	
CPU Load (1 / 5 / 15 mins)	0.00 / 0.00 / 0.00	
Memory consumption Total/Free	13.35MB / 3,876.00KB (28.36%)	

2) Changing the router's configuration:

Note: After changing the configuration, please click "Apply" for the changes to take effect.

The following example shows how to change the router's IP address:

- Ø Click the "Network" => "LAN " menu, as shown below:

System Network Services Firewall QoS Tools Status

LAN

MAC Address: 00:18:05:00:92:88 [Default]

IP Address: 192.168.2.2

Netmask: 255.255.255.0

MTU: Default [1500]

Detection host: 0.0.0.0

LAN Mode: Auto Negotiation [v]

WOL MAC Address: [] Device List

Multi-IP Settings

IP Address	Netmask	Description

[Apply] [Cancel]

Ø Changing router's IP address to 192.168.2.1:

System Network Services Firewall QoS Tools Status

LAN

MAC Address: 00:18:05:00:92:88 [Default]

IP Address: 192.168.2.1

Netmask: 255.255.255.0

MTU: Default [1500]

Detection host: 0.0.0.0

LAN Mode: Auto Negotiation [v]

WOL MAC Address: [] Device List

Multi-IP Settings

IP Address	Netmask	Description

[Apply] [Cancel]

3) When finished, click the "Apply" button on lower left corner of the screen, appears the following screen:

The screenshot shows a web-based configuration interface for a LAN. The title is "LAN". There are several input fields: a MAC address field containing "00:18:05:00:92:88" with a "Default" button next to it; an IP address field containing "192.168.2.2"; a netmask field containing "255.255.255.0"; a dropdown menu for "Default" with "1500" selected; a gateway field containing "0.0.0.0"; and an "Auto Negotiation" dropdown menu. Below these fields is a "Device List" label and an empty input field. At the bottom, there is a table with two columns: "Netmask" and "Description". A modal dialog box is overlaid on the right side of the interface, containing the text "Executing..." and "Please wait for 9 Seconds ..." with a loading spinner.

IP has changed at this time, you need to enter the new IP address to get into the router again (192.168.2.1).

- 4) Click the "System" => "Basic Setup" menu, to set the "language" and "Host Name";
- 5) Click the "System" => "Time" menu, synchronize the system clock;
- 6) Click the "System" => "Admin Access" menu, set the "User Name" and "Password";
- 7) Click the "Services" => "Modbus Gateway" menu, set the "Modbus" and "Centralized controller" data, as shown below:

MODBUS gateway IOM Manual

Enable	<input checked="" type="checkbox"/>
Modbus type	RTU ▼
Modbus slave addr	1
Modbus serial baudrate	19200 ▼
Modbus serial databit	8 ▼
Modbus serial parity	None ▼
Modbus serial stopbit	1 ▼
AC serial baudrate	4800 ▼
AC serial databit	8 ▼
AC serial parity	None ▼
AC serial stopbit	1 ▼

Air condition list

Index	System ID	Device address
<input type="button" value="Apply"/> <input type="button" value="Cancel"/>		

Data Descriptions:

Modbus Type: RTU mode and TCP mode

Modbus slave address: Modbus address

Modbus serial Baudrate: Select the communication baud rate between Modbus gateway and PC

Modbus serial Parity: Select the communication parity bit between Modbus gateway and PC

Modbus serial Stopbits: Select the communication stop bit between Modbus gateway and PC

Centralized controller serial Baudrate: Select the communication baud rate between Modbus gateway and XYE (the indoor unit)

Centralized controller serial Databit: Select the communication data bit between Modbus gateway and XYE (the indoor unit)

Centralized controller serial Parity: Select the communication parity bit between Modbus gateway and XYE (the indoor unit)

Centralized controller serial Stopbit: Select the communication stop bit between Modbus gateway and XYE (the indoor unit)

The following figure shows that the Modbus gateway scanned three indoor units: 0 # and 42 # indoor unit of 0 # system, 1# indoor unit of 3 # system.

Enable	<input checked="" type="checkbox"/>
Modbus type	RTU
Modbus slave addr	1
Modbus serial baudrate	19200
Modbus serial databit	8
Modbus serial parity	None
Modbus serial stopbit	1
AC serial baudrate	4800
AC serial databit	8
AC serial parity	None
AC serial stopbit	1

Air condition list

Index	System ID	Device address
1	0	0
2	0	42
3	3	1

Apply Cancel

Note: Please use the default parameters if there is no special condition.