TCP Modbus Converter

Modbus TCP to Modbus RTU

Modbus RTU to Modbus TCP

WE-62C

USER MANUAL

Version 1.0

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TCP Modbus Converter WT-62C User Manual

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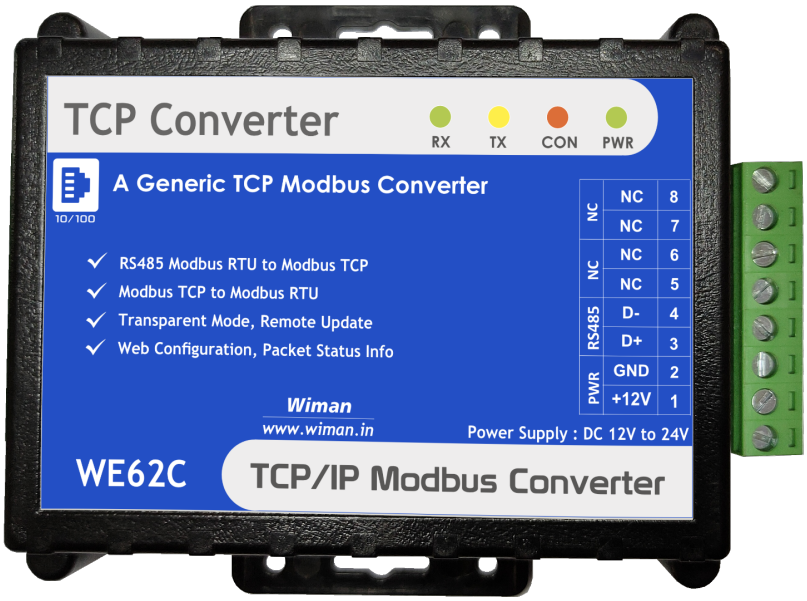
1 Introduction

In Industrial Internet of Things (IIoT), protocol conversion has been the key to connecting legacy and different vendor devices to networks. The most common protocol conversion is Modbus-RTU-to-Modbus-TCP conversion, and is usually required when metering devices, mostly using Modbus RTU, need to be integrated with SCADA systems, mostly using Modbus TCP. Generally, two ways of Conversion will be required

- ✓ Modbus RTU to Modbus TCP
- ✓ Modbus TCP to Modbus RTU



PIN Details

Pin No.	Pin Name	Description
1	**+12V**	DC IN - Input voltage: 12V~24V/1A.
2	**GND**	Ground
3	**RXD / D+ / A**	RS232 Txd / RS485 Data+
4	**TXD / D- / B**	RS232 Rxd / RS485 Data-
5	**NC**	NC
6	**NC**	NC
7	**NC**	NC
8	**NC**	NC
RJ45	**LAN**	10/100 Mbps

2 Hardware Description

2.1 Specifications

System	
CPU	ARM Cortex
SRAM	32 Kbytes
Flash Memory	256 Kbytes
WDT(watchdog)	Yes
LAN Port	
RJ45 Port	10/100 Mbps Auto Negotiable
Serial ports	
RS232 Utility port	RS-232: TxD, RxD, GND (use for device configuration and debug)
RS485	RS-485: D+, D- (use for communication with other devices)
Baud Rate	Supports 2400,4800,9600,19200,38400,57600,115200
Power	
Operating Voltage	12VDC to 24VDC
Mechanical	
Casing	Plastic
Dimensions (W x L x H)	90mm x 100mm x 25mm
Environmental	
Operating Temperature	-25 ℃ +55℃
Ambient Relative Humidity	5 ~ 95% RH, non-condensing

2.2 LED Status

<table>
<tr><th>LED</th><th>NAME</th><th>DESCRIPTION</th></tr>
<tr><td>GREEN</td><td>POWER</td><td>Light when Power on the device</td></tr>
<tr><td>RED</td><td>GSM</td><td>
<table>
<tr><th>LED Status</th><th>Connection State</th></tr>
<tr><td>Flashing (ON for 100ms and OFF for 100ms)</td><td>LAN Network Not Connected</td></tr>
<tr><td>Flashing (ON for 500ms and OFF for 500ms)</td><td>LAN Connected to Device</td></tr>
<tr><td>Double Blink Once at every 3sec</td><td>IP is Connected to Server/Client</td></tr>
</table>
</td></tr>
<tr><td>GREEN</td><td>COM TX</td><td>Blink on data Transmission in RS485/RS232 port</td></tr>
<tr><td>YELLOW</td><td>COM RX</td><td>Blink on data Reception in RS485/RS232 port</td></tr>
</table>

3 Getting Started

Basic Requirement for Testing

Hardware

1. TCP Modbus Converter WT-62C (With Power Setup)
2. USB to RS485 Converter
3. LAN Cable

Software

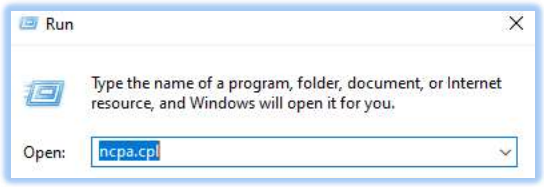
1. Modbus Simulator (Act as Slaves): Modbus Slave or Mod Sim or ModRSsim
2. Modbus Scanner (Act as Polling): Modbus Poll or Mod Scan

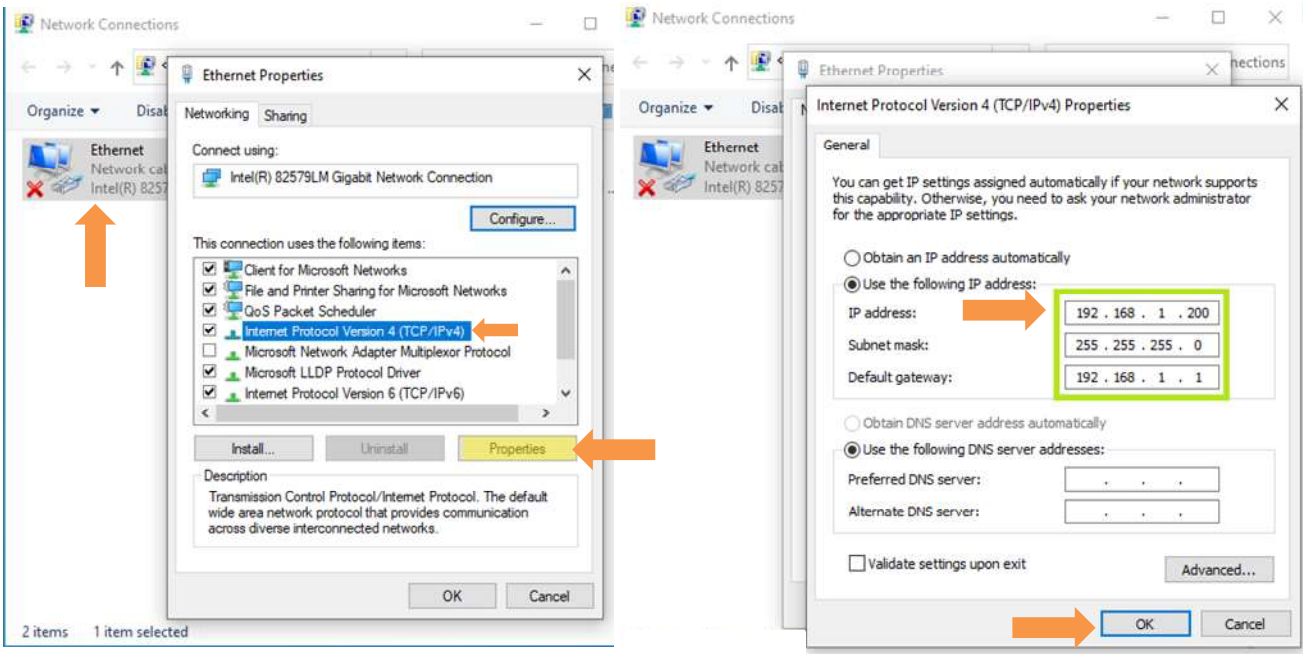
Step 1: Set IP in Laptop / Desktop to Access Device Configuration

- Device Factory default IP: **192.168.1.100 : 255.255.255.0 : 192.168.1.1**

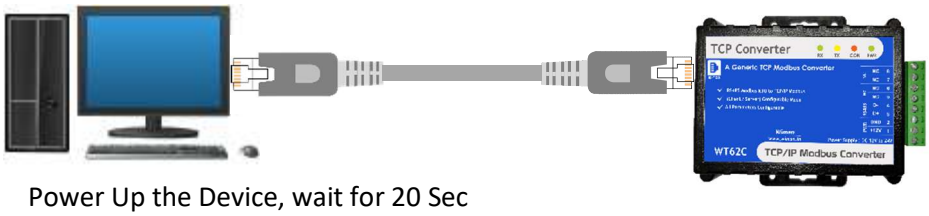
Run -> ncpa.cpl

- Open Ethernet Adaptor (Double Click) and Set the IP Address





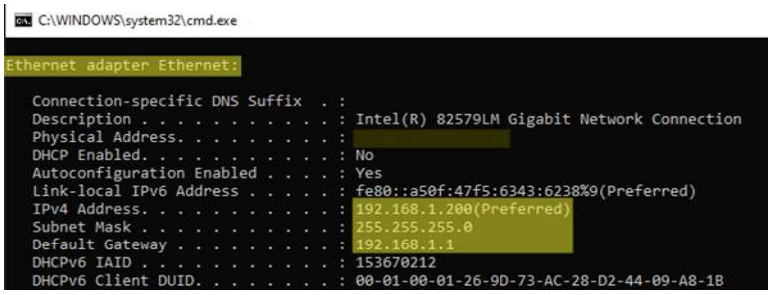
Step 2: Connect LAN Cable to the device and PC



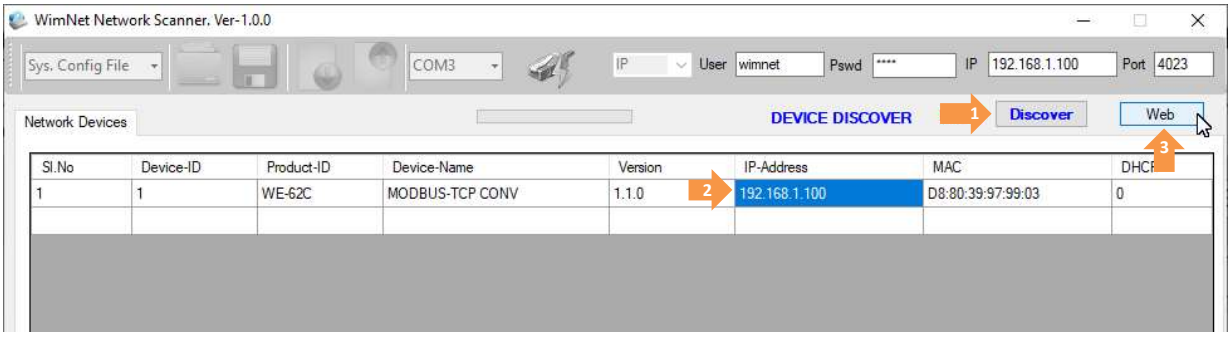
- ✓ Power Up the Device, wait for 20 Sec
- ✓ Check CON LED (RED) Status – ON and OFF every 500ms, Else wait for this Status

Step 3: Check IP is Connected to the Network

Run -> Cmd -> **ipconfig/all**

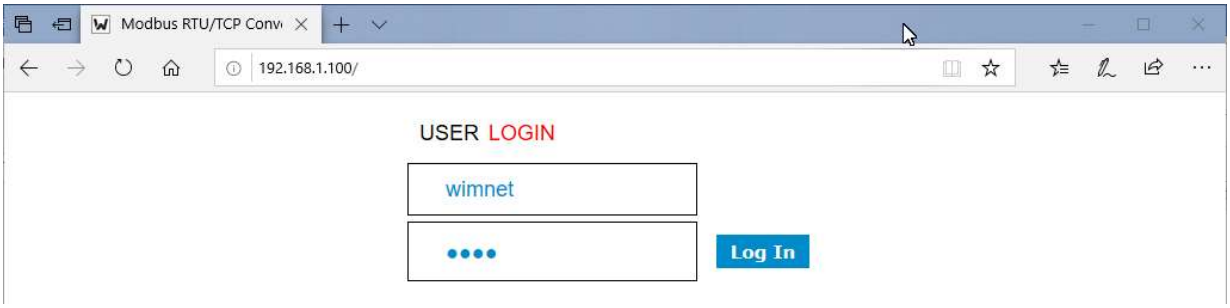


Step 4: Using **WimNet** Network Scanner Tool (To find List of Devices in network)

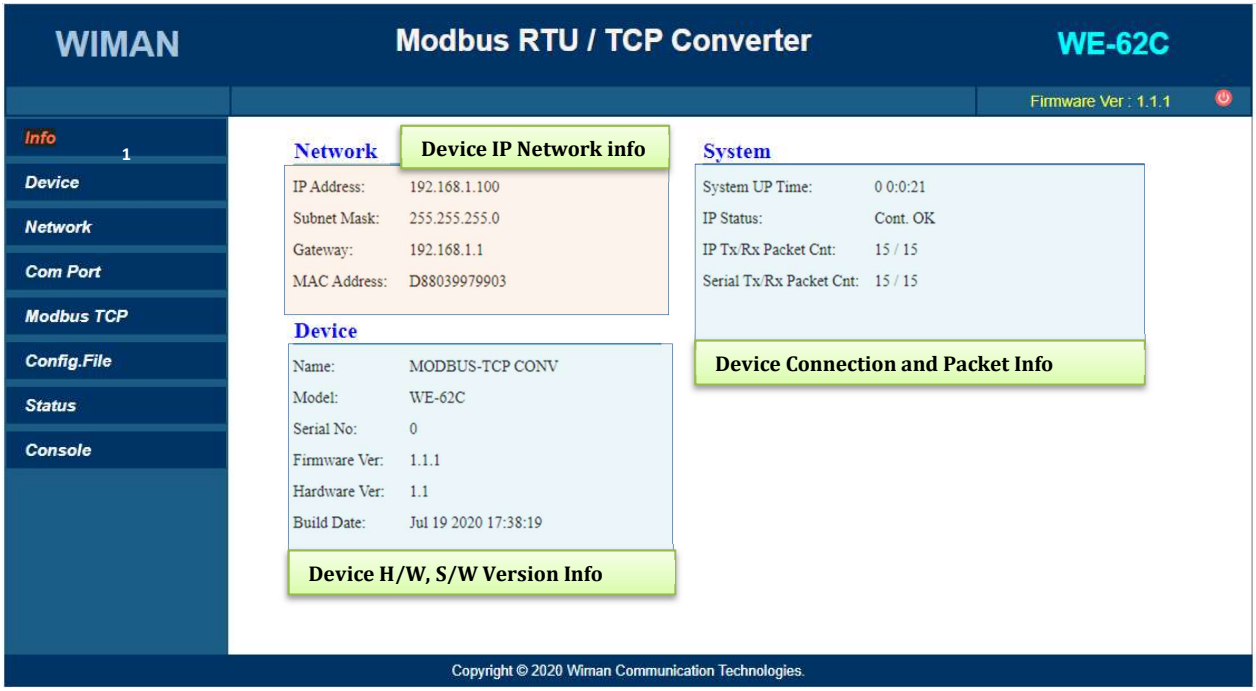


- ✓ Scanner Software will List out the devices connected in the Network or Laptop – Directly
- ✓ Select the Specific IP and Click Web, It Opens the Configuration Web Portal in Web Browser

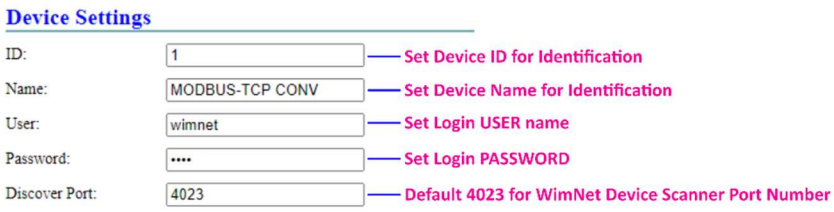
Step 5: Login with Credentials (User name: **wimnet** | Password: **1234**)



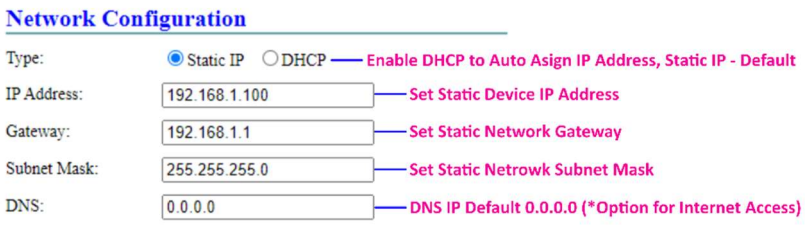
3.1 Info & Device Setting



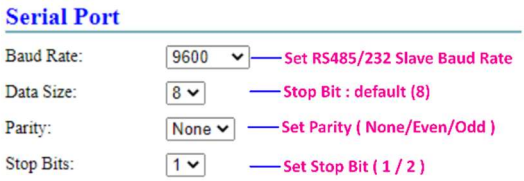
Edit for Device Setting



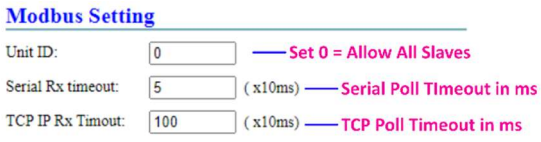
Edit for Device IP Settings



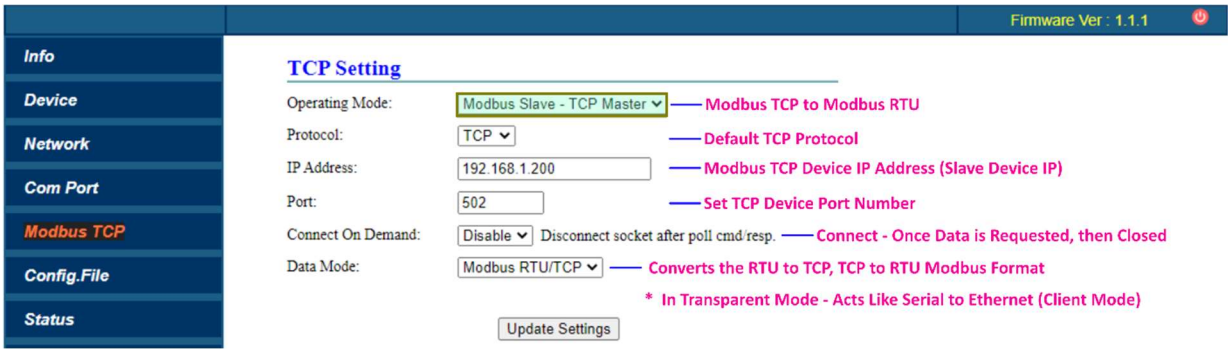
Edit Serial (RS485/232) Com Settings

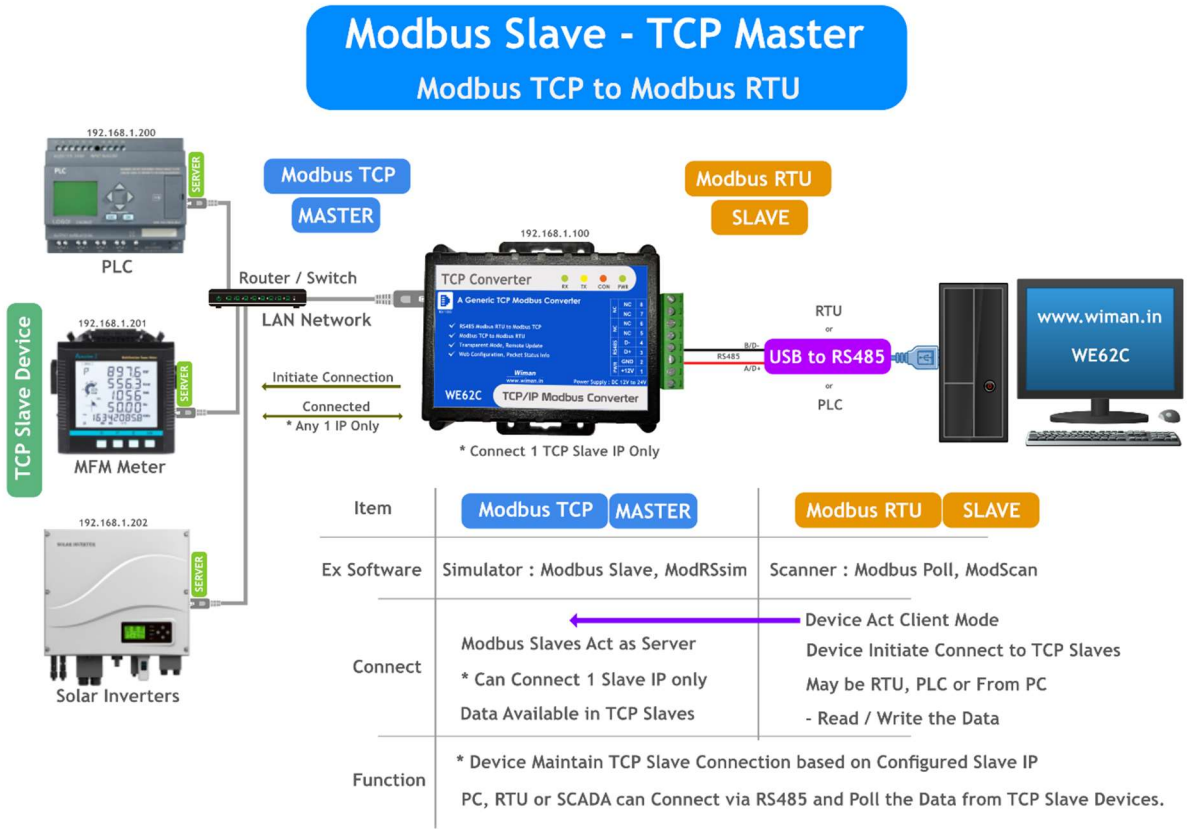


Edit Modbus ID and Timeout Setting



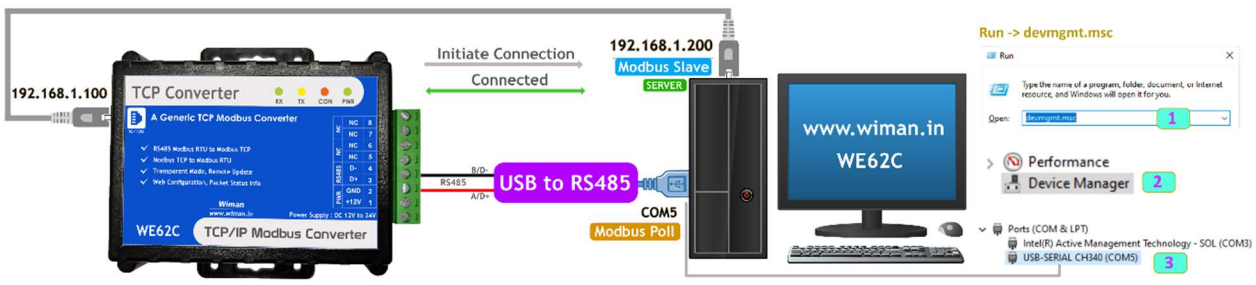
3.2 Modbus Slave – TCP Master (Modbus TCP to Modbus RTU)



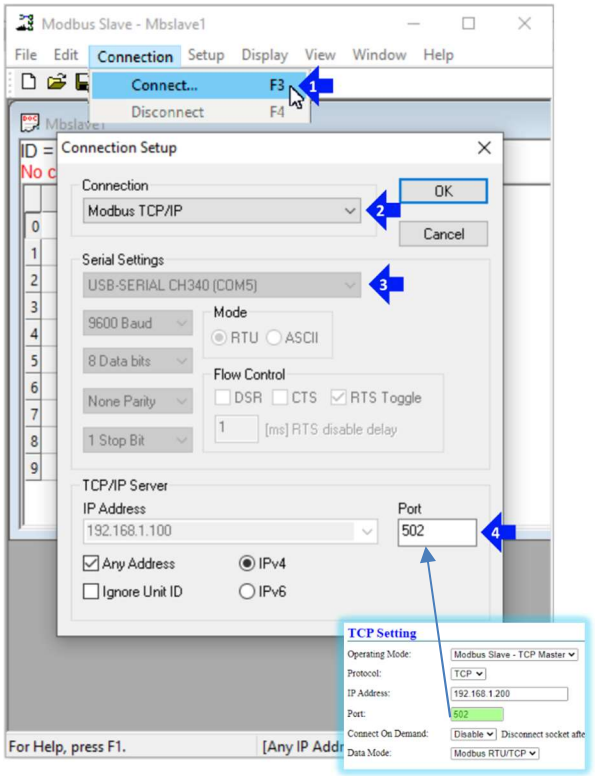


Test Connection Setup

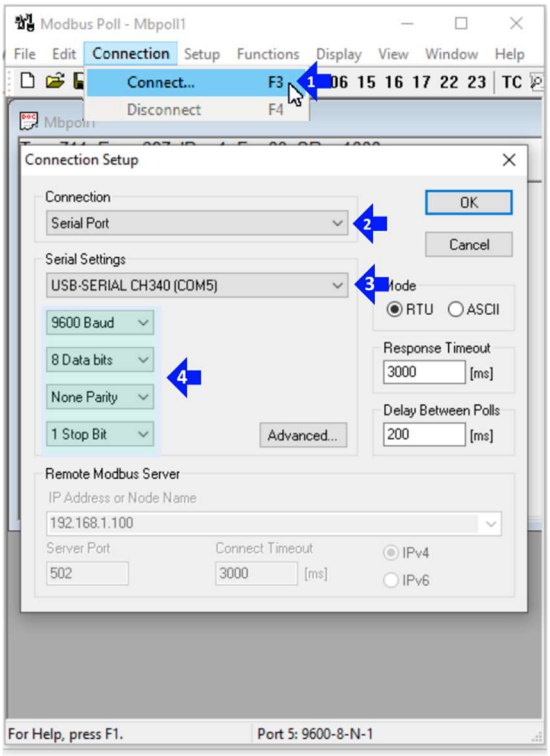
Software Used for Testing - Simulator: **Modbus Slave** and Scanner: **Modbus Poll**



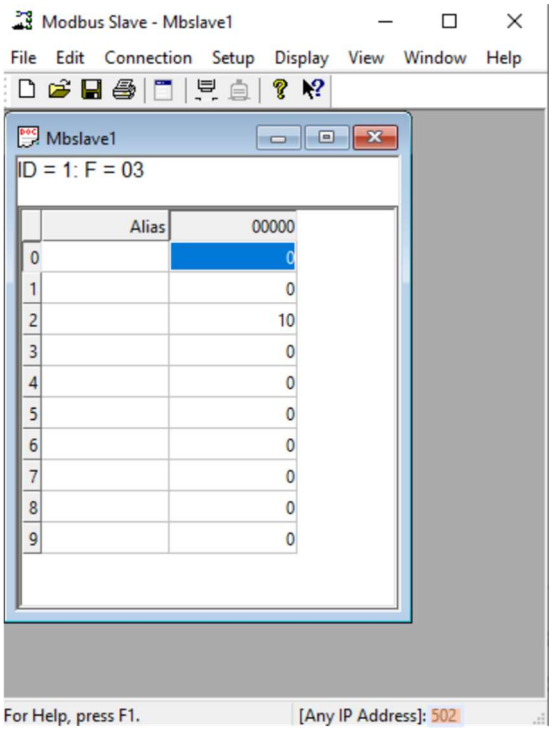
Simulator: Modbus Slave (TCP Connection)



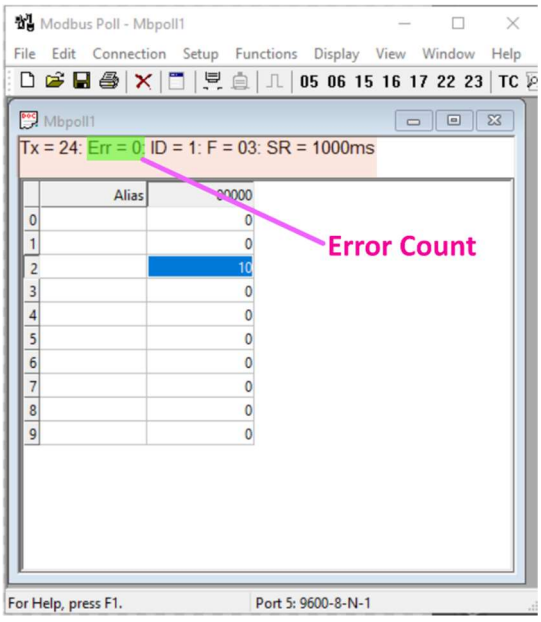
Scanner: Modbus Poll (RS485 Connection)



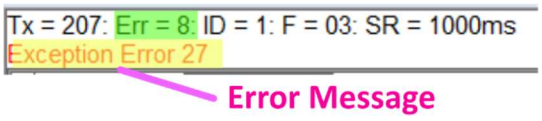
Modbus Slave Starts (Server) ready to give for Poll



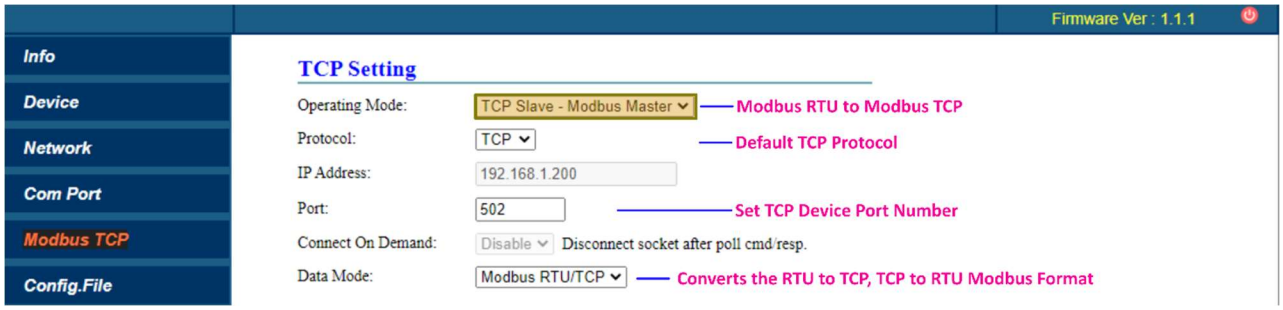
Modbus Poll Successfully Connected and Read

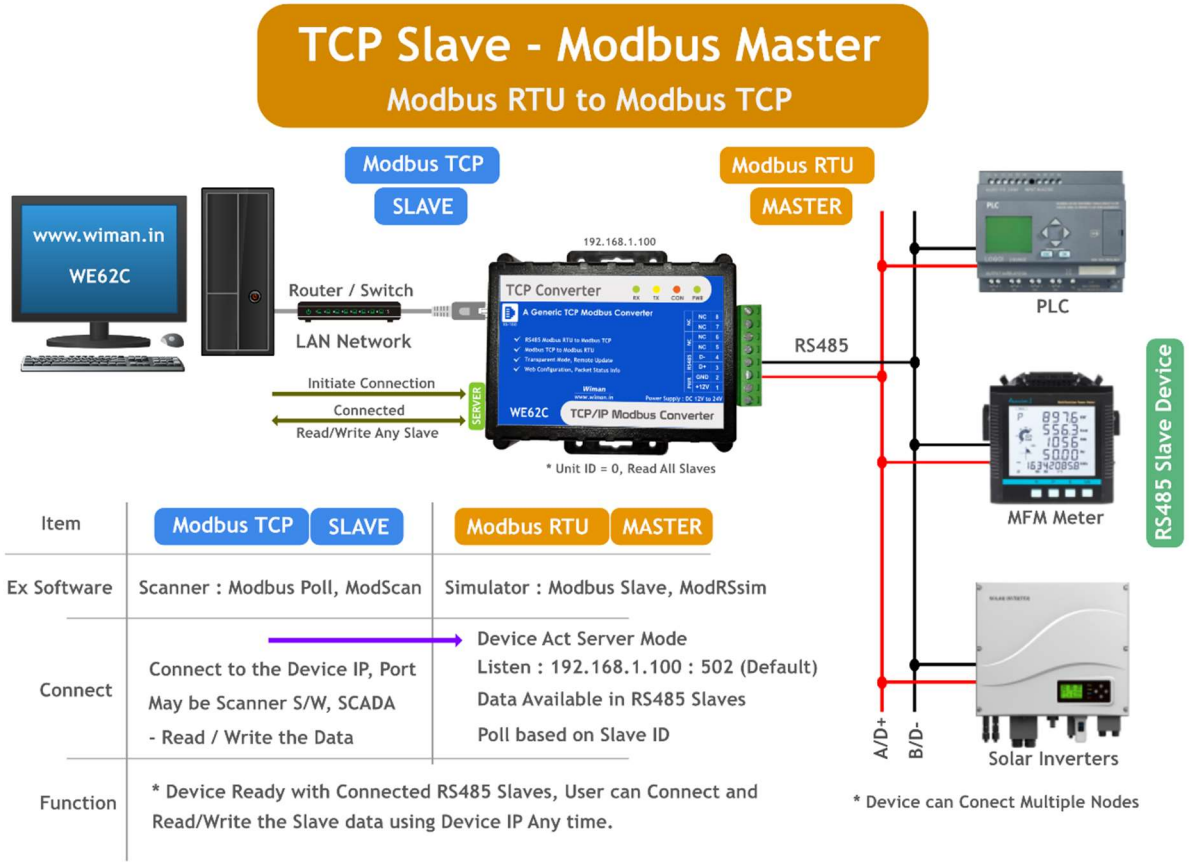


If Modbus Slave is Not Connected



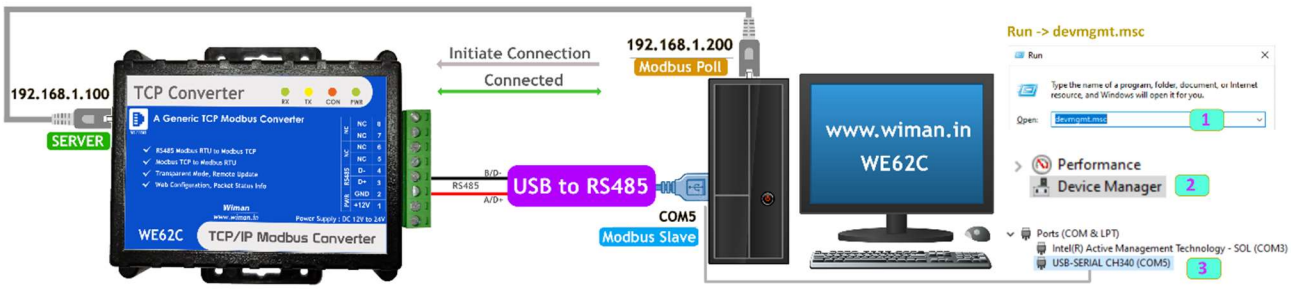
3.3 TCP Slave – Modbus Master (Modbus RTU to Modbus TCP)



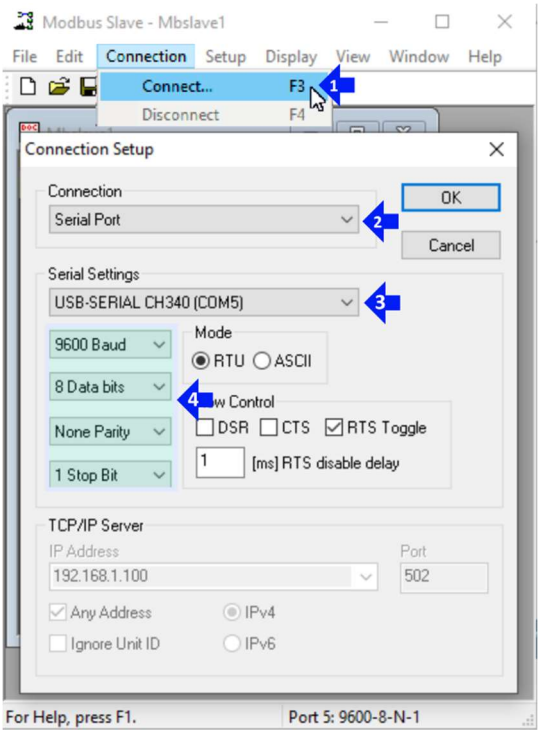


Test Connection Setup

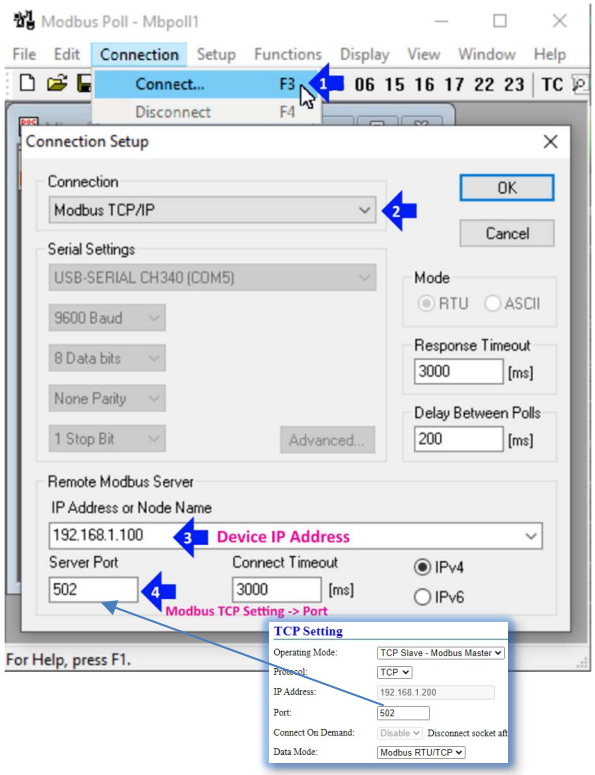
Software Used for Testing - Simulator: **Modbus Slave** and Scanner: **Modbus Poll**



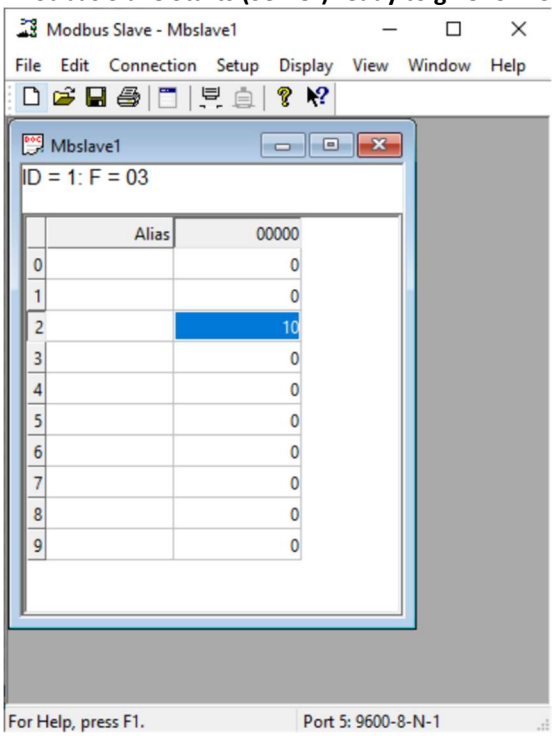
Simulator: Modbus Slave (RS485 Connection)



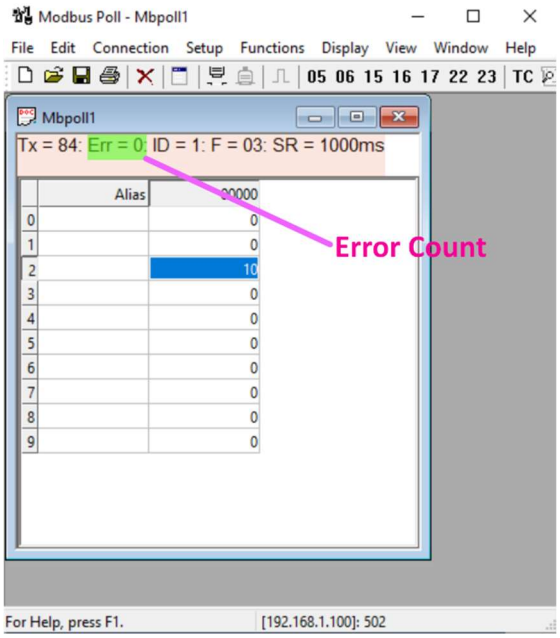
Scanner: Modbus Poll (TCP Connection)



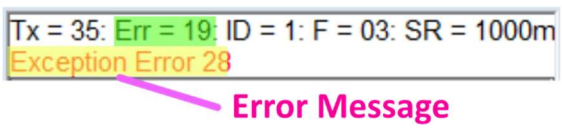
Modbus Slave Starts (Server) ready to give for Poll



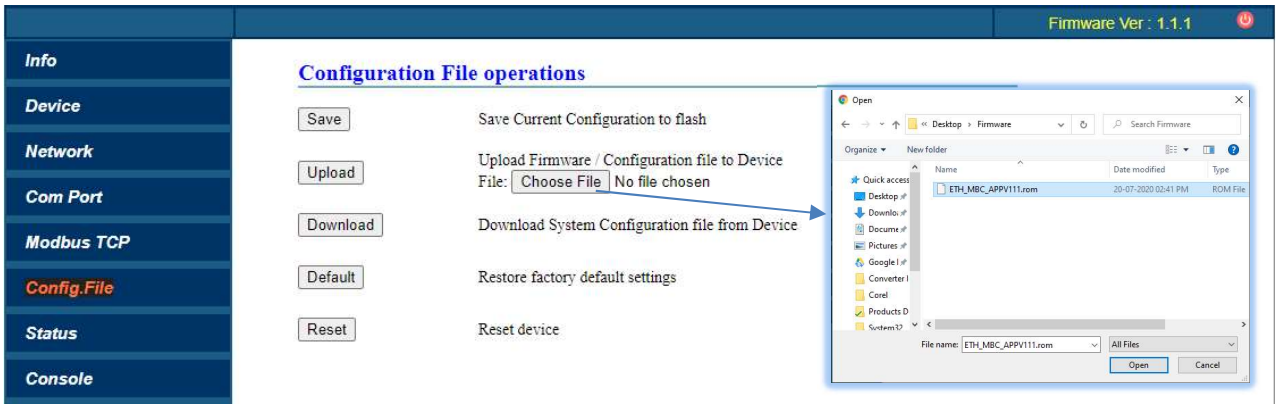
Modbus Poll Successfully Connected and Read



If Modbus Slave is Not Connected

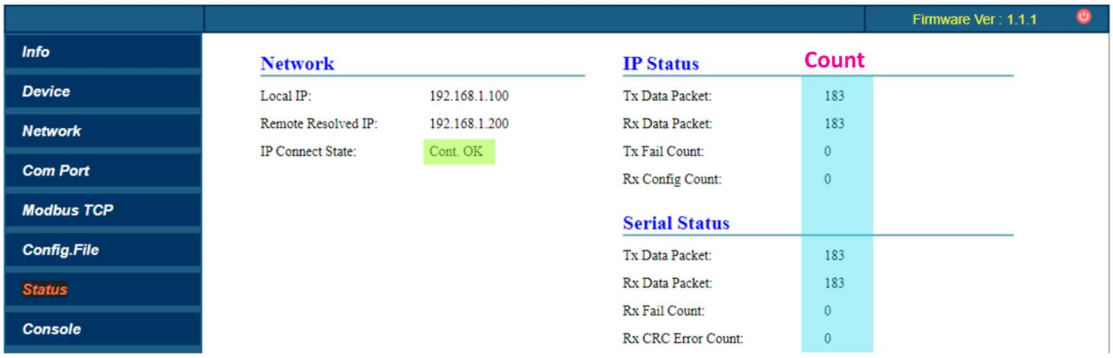


3.4 Configuration File Operations



Save	**Any Settings Updated, Have to Save the Configuration in Device**
Upload	**Update Firmware/Configuration file to the Device - File open** Choose File
Download	**Take Backup/Download the Configuration file from device to PC**
Default	**Restore the Factory Setting – Set by Manufacture**
Reset	**Reset the Device (Software RESET)**

3.5 Device Packet Status Info



3.6 Console – Read/Write Commands