



Instructions On Using Modbus Client Program

This script provides instruction on using the Modbus Client program to assist the end user when configuring Modbus data communications to a WebMaster controller.

This script is written based on the assumption that the end user is knowledgeable in Modbus communications, computer programming and networking.

Before attempting this procedure, the end user must have the Modbus TCP/IP Instruction Manual, (http://www.walchem.com/OLWHUDWXUH_180277_Modbus_V5.pdf) and the Modbus Client Program. (http://www.modbustools.com/modbus_poll.asp)

1. The WebMaster supports TCP/IP communications. The Modbus/TCP information is only available over the Ethernet interface. Therefore, you must **first make sure that the WebMaster controller is communicating via Ethernet.**

1.1. If the WebMaster is connected to a LAN, try to communicate to it using a PC that is also connected to the LAN. Two ways to do this.

- a. Open Internet Explorer, type in the IP address of the WebMaster, and see if the connection completes. You can go to the WebMaster keypad and through the Communications menu, verify the WebMaster Ethernet IP address. If it does not connect, attempt ii) below.
- b. To ping the WebMaster by IP address: From your computer's Command prompt, type ping <WebMaster IP Address>

After pinging your WebMaster, one of the following happens:

- c. You will receive 4 replies from the WebMaster that include the IP address of the WebMaster, which indicates that the controller is responding to network requests. If this is successful, proceed to Step 2 below.
- d. You receive an error message such as Request timed out or Unknown host.

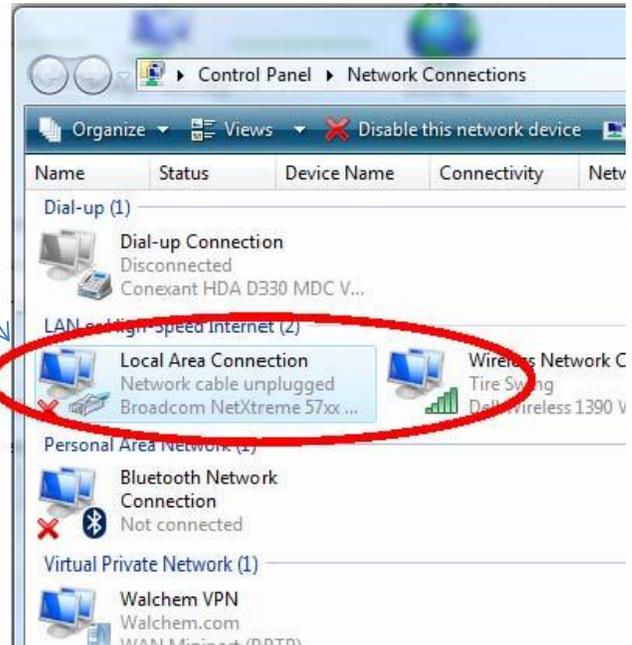
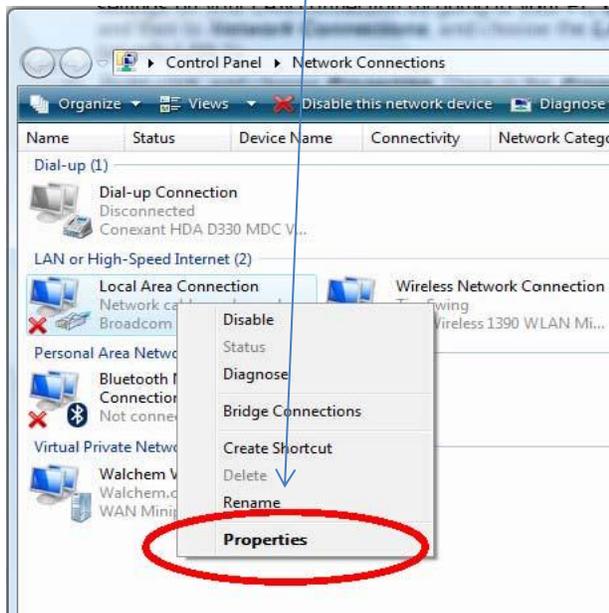
If you receive an error message, the WebMaster is not responding. Check the IP address of the controller using the keypad. If it's correct, the Ethernet jack may be faulty or the Core Interface board should be replaced.

1.2. If the WebMaster is not on a LAN, then directly connect to it using a PC and an Ethernet crossover cable. Your PC must have a network connection that gives your PC the same core IP address as the controller. To change your PC's IP address for this connection follow the steps below.

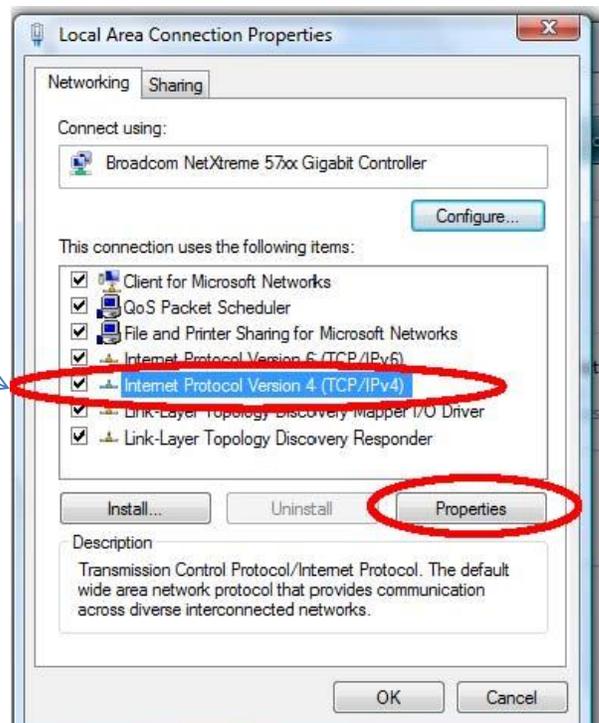


a. Change the settings on your LAN connection by going to your PC Control Panel and then to Network Connections, and choose the LAN connection.

b. Right-click, and choose Properties.

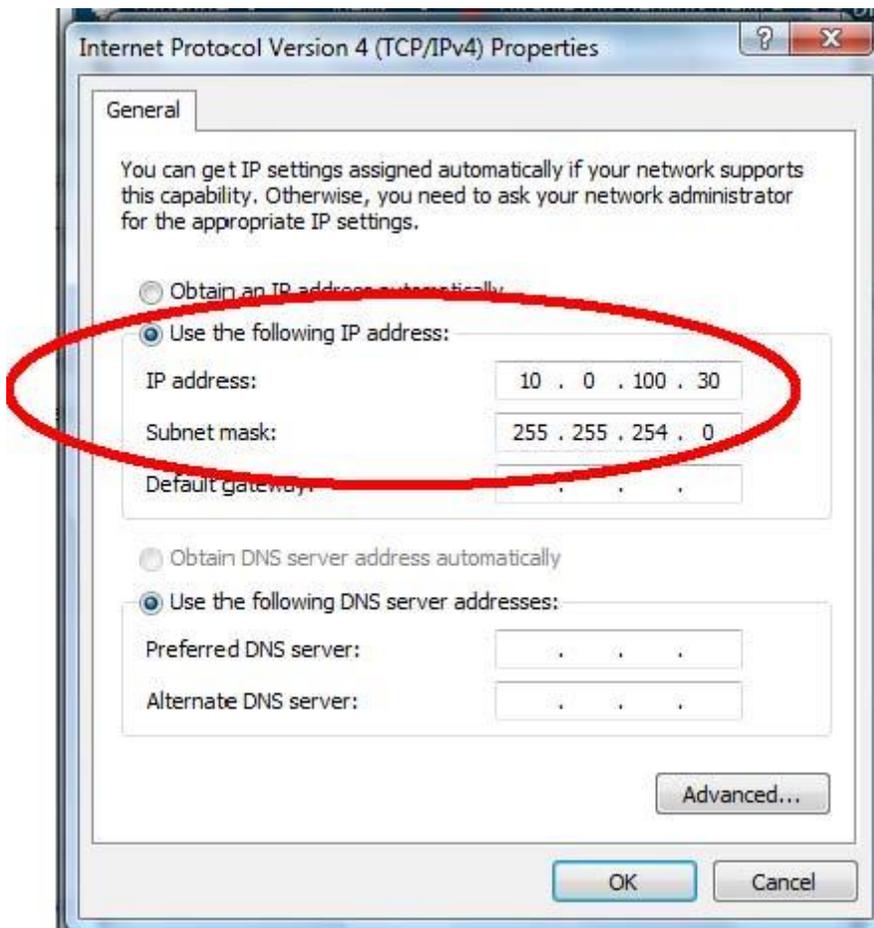


c. Once in the Properties, select TCP-IP, and click Properties.





- d. Once in this screen, click Use the following IP address. Enter an IP address for your PC. For example, the WebMaster factory default IP address is 10.0.100.29. So, you could give your PC the IP address 10.0.100.30. Also type in the same exact Subnet Mask address as that of the WebMaster. The default is usually 255.255.254.0. You can always go to the WebMaster, and through the keypad you can get to the Communications menu and verify the WebMaster Ethernet IP and Subnet Mask addresses.



- e. When done, click on OK.
- f. Again, open Internet Explorer, type in the IP address of the WebMaster, and see if the connection completes. If it does, proceed to Step 2 below.
- g. If you can not connect via the LAN and you can not connect via Ethernet crossover cable, then the WebMaster core interface board housing the Ethernet jack is faulty.



2. Verify that the Modbus feature is enabled in the WebMaster.

- a. Connect to the WebMaster with a PC, go to the Advanced Communications Menu, and verify that Modbus is Activated. Here is a partial view of the Advanced Communications Menu.

The screenshot shows the WebMasterONE Demo interface. The 'Modbus Status' is highlighted with a red circle and shows 'ACTIVATED'. The interface includes a navigation menu on the left, a main content area with various settings, and a status bar at the bottom.

Other Network Settings:		Description
Primary DNS IP Address:	146.115.8.19	
Secondary DNS IP Address:	146.115.8.20	
Modbus Status:	ACTIVATED	
Ethernet MAC Address:	000A6C010EAD	

Secure Tunnel Settings:		Description
Secure Tunnel:	Don't Use Tunnel	(Needs ReStart)
Gateway Server:	w700.walchem.com	(Don't Modify)
Gateway Port:	1194	(Don't Modify)

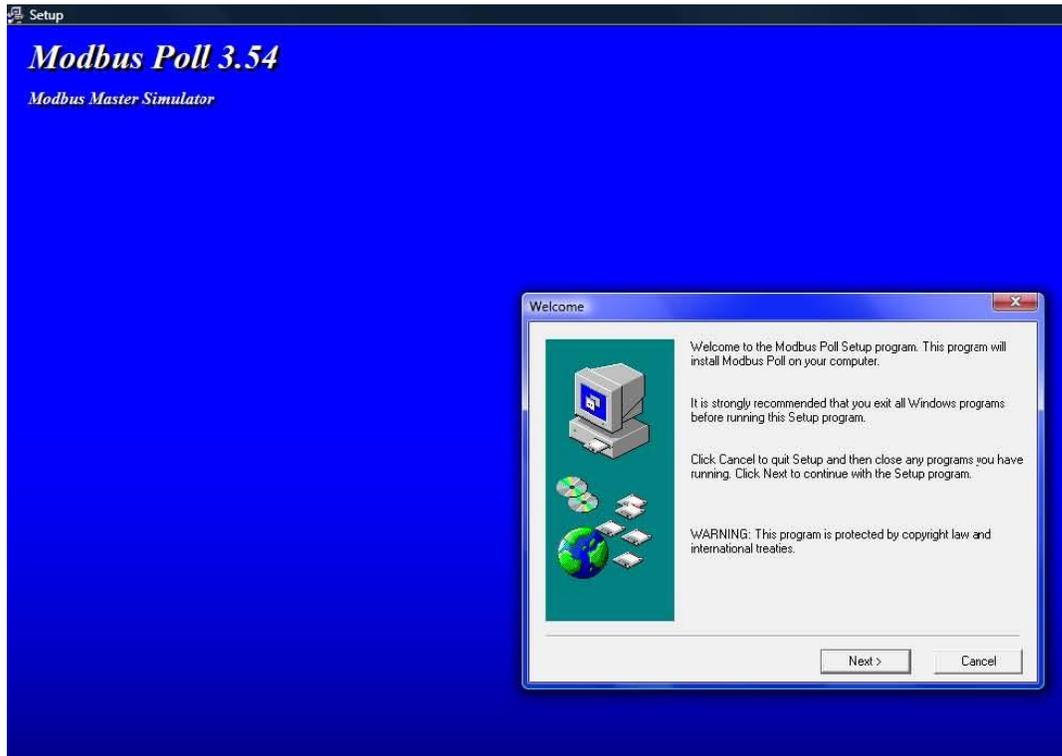
ASMTTP Settings:		Description
ASMTTP User Name:	w700_2@mindspring.com	
ASMTTP Password:	w700_800	
Use ASMTTP for Email:	<input checked="" type="checkbox"/>	Check if your SMTP server requires authentication

- b. An alternate way to determine if Modbus is enabled is to go to the WebMaster keypad and press Next until the Modbus menu appears. Then press Enter and if enabled the display will say Modbus Key Entered.
- c. Proceed to Step 3.

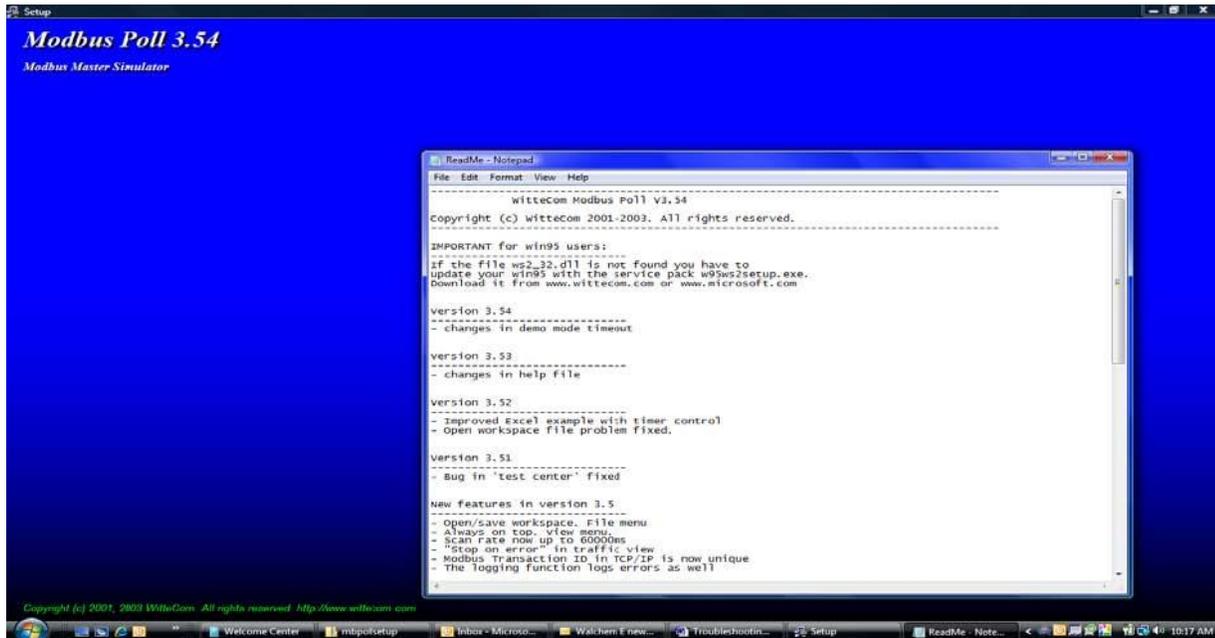


3. Install the Modbus Poll Application on your PC

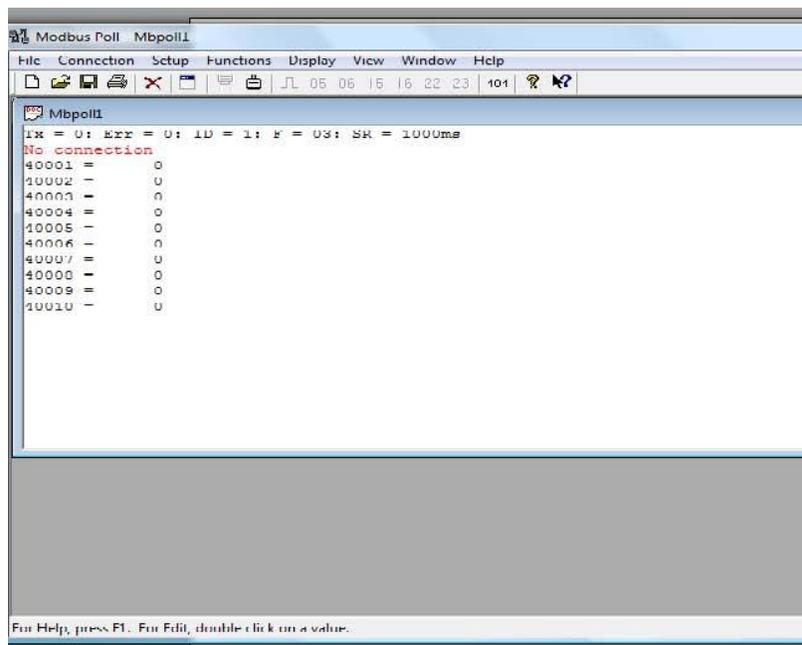
- a. The application file is provided separately. Once it is installed on your PC, open up the application and you will see the following screen:



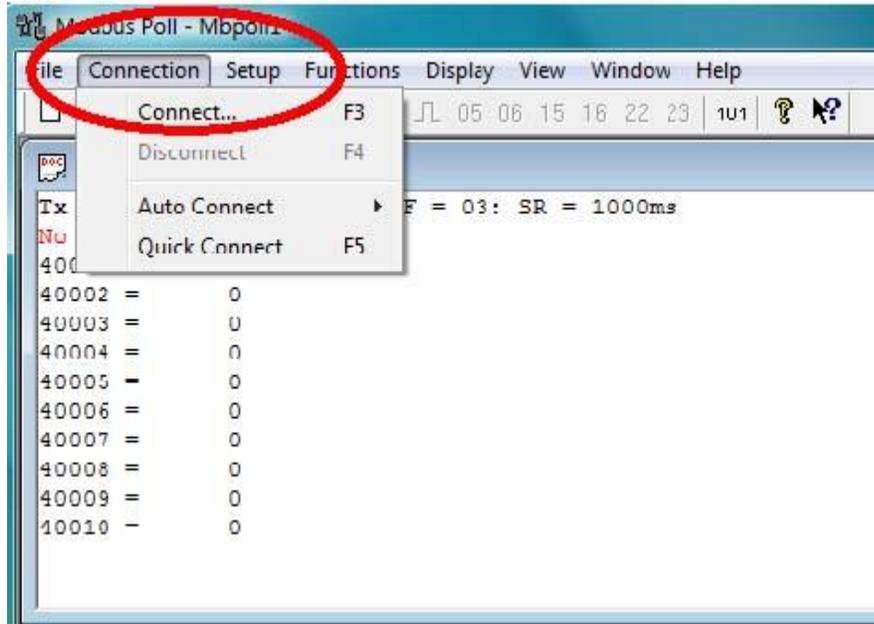
- b. Continue to follow the menus until the set-up is complete and you press the Finish button.
- c. The following screens will now appear:



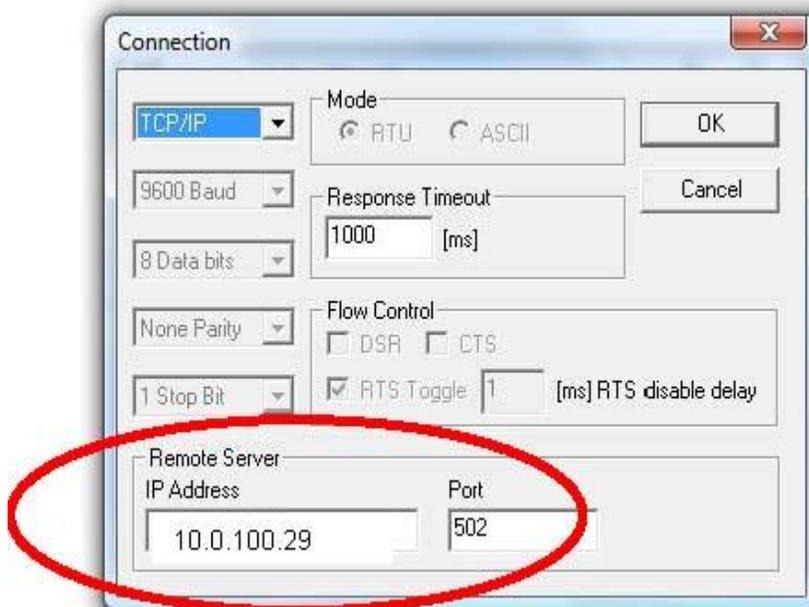
- d. Close out the Readme screen by clicking the “X” in the upper right hand corner of the Readme screen. You will now see the screen below.



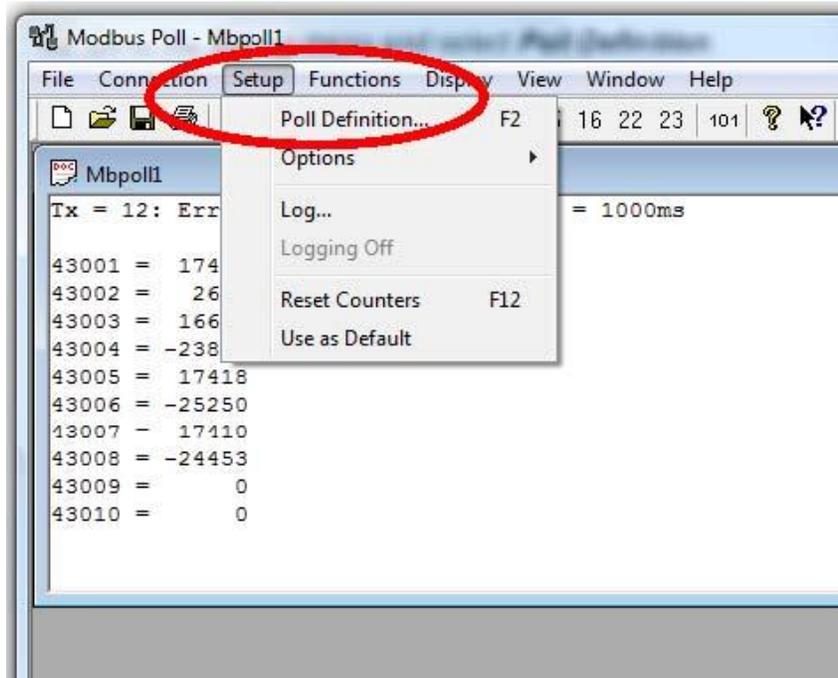
- e. Click on the Connection pull down menu and then press Connect...



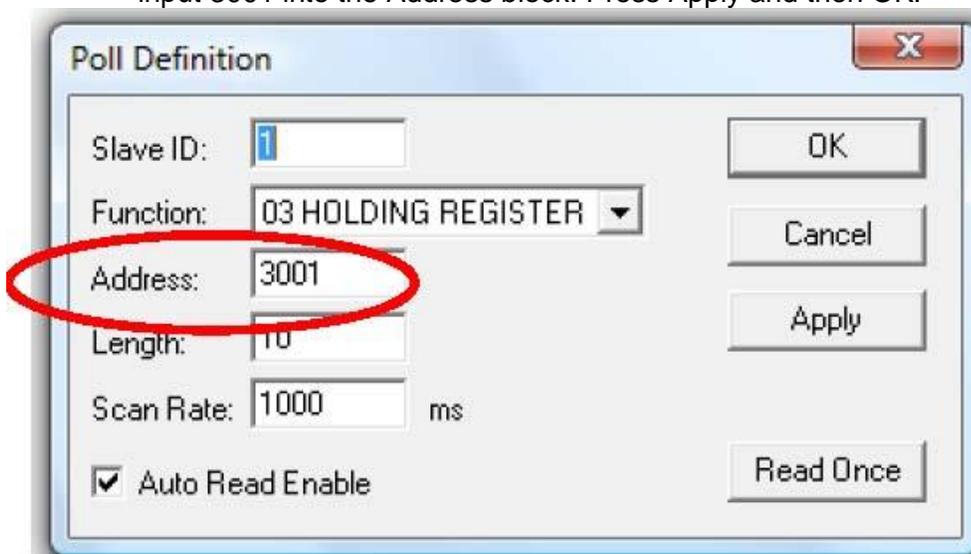
- f. Enter the IP Address of the WebMaster that you wish to communication with in the Remote Server block shown below. Port 502 must be used. Press OK



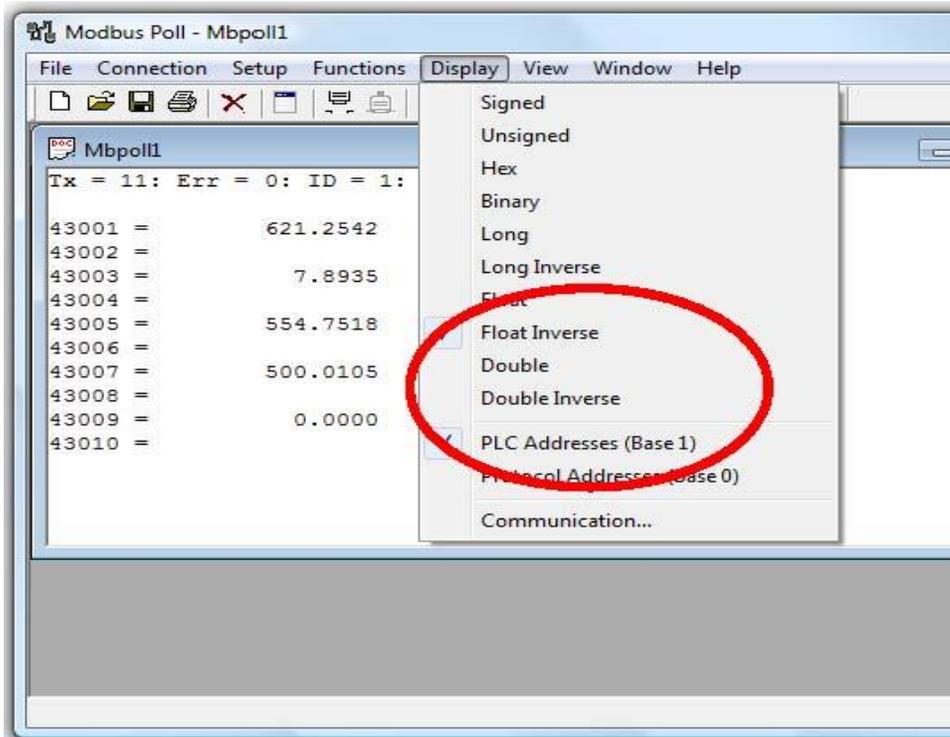
- g. Go to the Set-up menu and select Poll Definition.



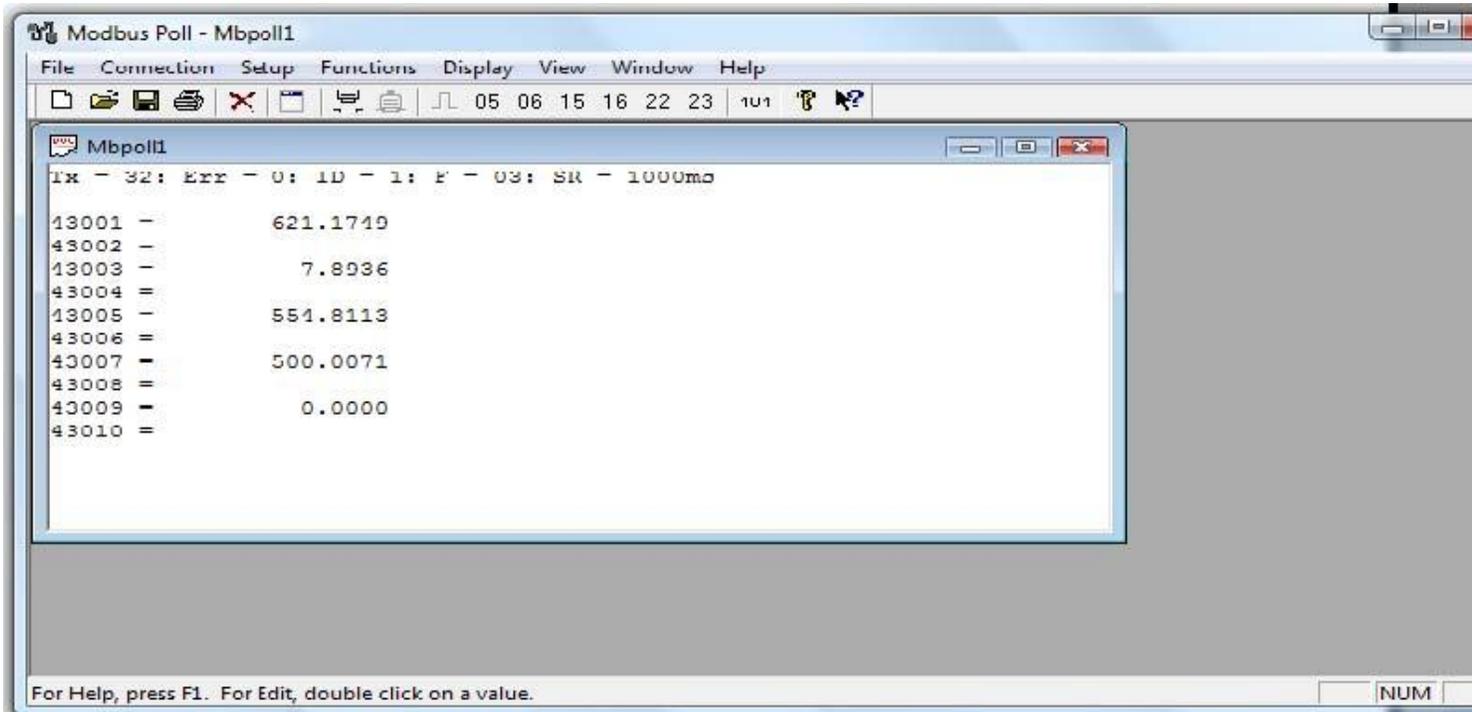
- h. Go to the Modbus TCP/IP manual to find the Address you are looking for. As an example, input 3001 into the Address block. Press Apply and then OK.



- i. The screen below will pop up. Go to Display menu and select Float Inverse and PLC Addresses (Base 1).



- j. You have connected to the WebMaster and requested Registers 3001 to 3010 to show their values. Register 3001 is the WebMaster Sensor [1] current reading. Verify the WebMaster display matches Register 3001 value. If they match the Modbus communication is successful.





- k. If the user is requesting data from a certain Address, and is not getting it, some HMI software needs to look for the normal address – 1...try that (see Section 4.6.1 of the Modbus TCP/IP manual)