

HMUX-4-DS User Manual

Introduction

The HMUX-4-DS, 4 Channel, Dual Speed HART® Multiplexer is designed to access your HART devices using Ethernet so you can view, configure, and troubleshoot your devices remotely.

System Diagram

The complete system consists of a HART-IP Client running on a computer or mobile device with an Ethernet connection, the Ethernet network, the HMUX-4-DS, a 24Vdc power supply, and up to 4 HART devices.

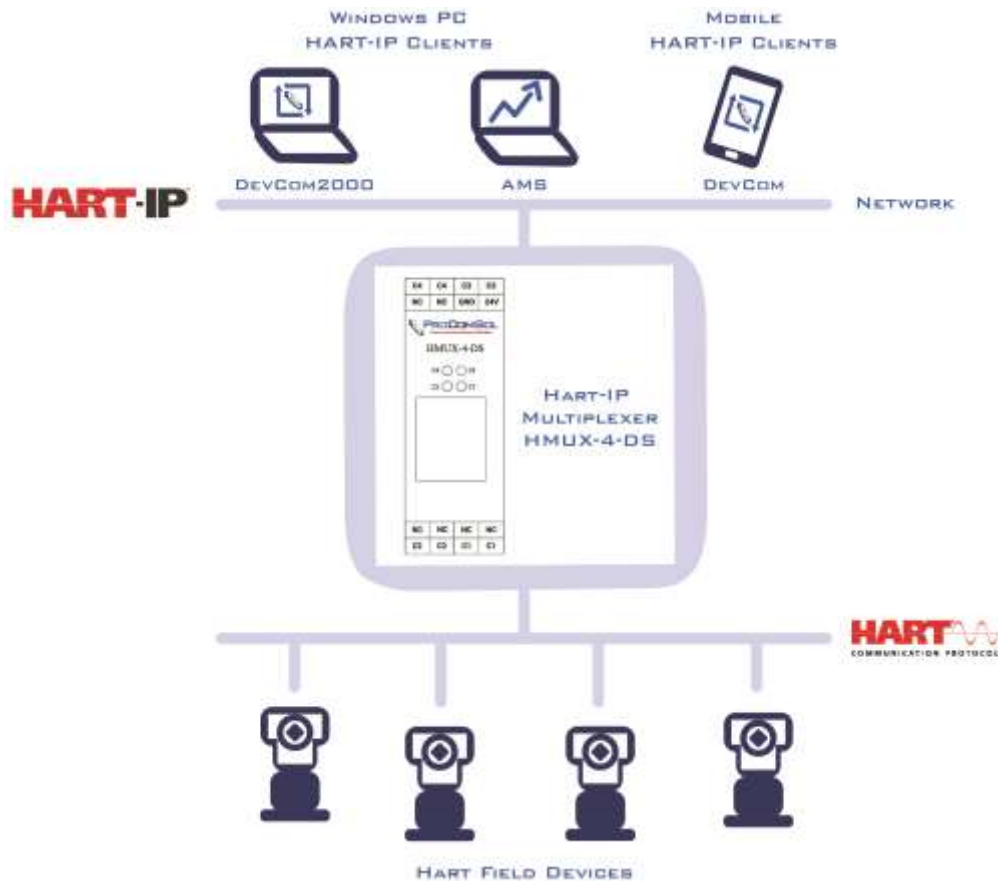


Figure 1. HART Multiplexer System Diagram

Wiring Diagram

Screw terminals provide the interface connections to the HMUX-4-DS. The connections are simply the Ethernet CAT5, +24Vdc power supply, and up to 4 HART device loops. The loops must contain 250 ohms of resistance per the HART specification. There is no polarity.

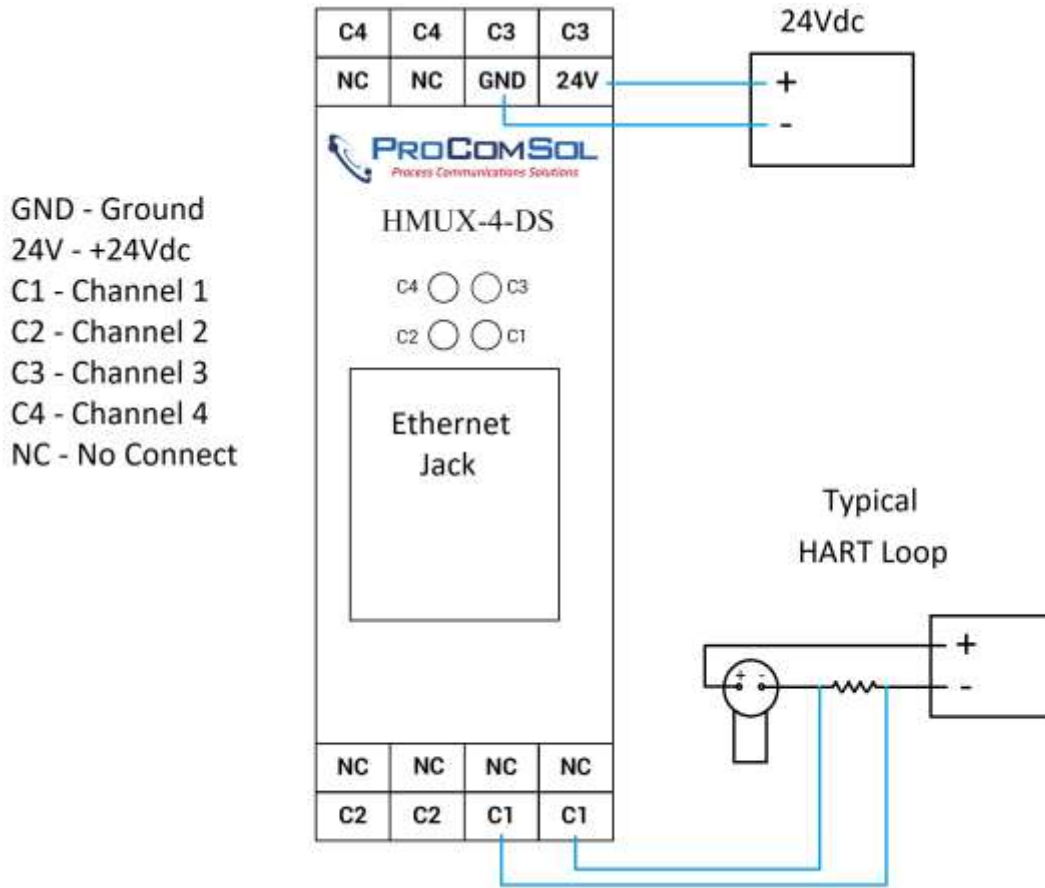


Figure 2. Wiring Diagram

Ethernet Connection

Connect a CAT5 cable with a RJ45 connector to the Ethernet Jack. The cable must be connected to an Ethernet Router or Switch in the network.

Power Connection

Connect the 24Vdc power supply to the HMUX-4-DS at GND and 24V terminals. There is no power switch, so the unit will turn on as soon as power is applied.

HART Connections

The HMUX-4-DS HART connections can be made in one of two ways: across the loop load resistor (A – B) or across the HART transmitter terminals (C – D). See Figure 3.

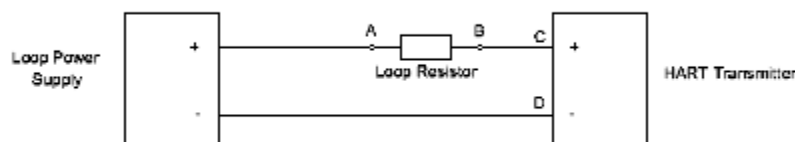


Figure 3. HART Connections

HMUX-4-DS Configuration via Web Interface

The HMUX-4-DS is designed to work “out of the box”. The default settings will work for your system in most cases. However, the default settings can be changed using a web browser.

IP Address

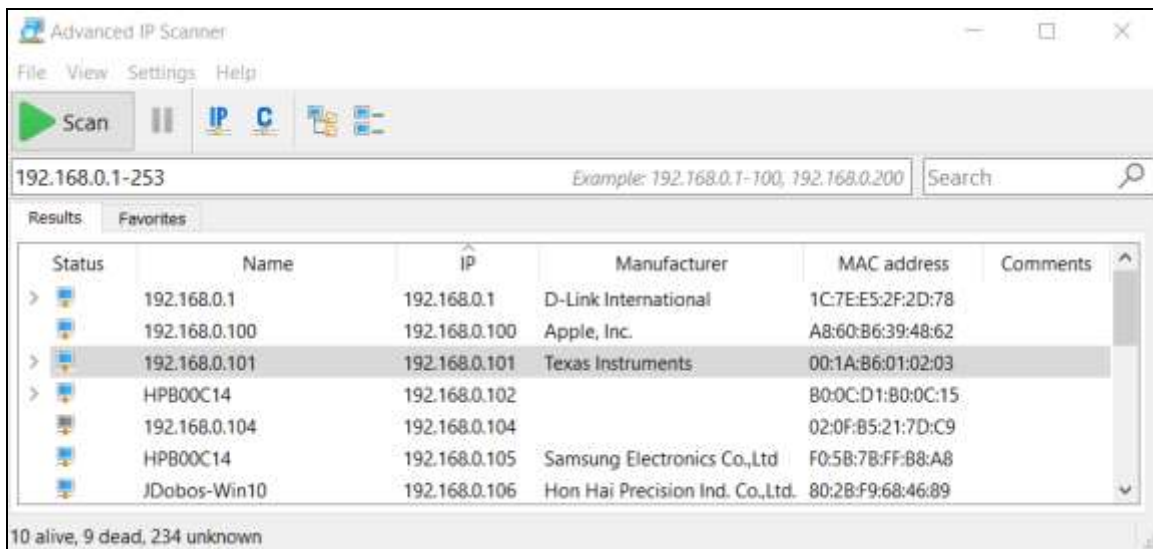
Connect the HMUX-4-DS to your Ethernet network. The default setting requires the network DHCP to assign an IP address to the HMUX-4-DS. In order to connect your browser to the unit, you need to determine its IP address assignment. There are many ways to do this. A simple way is use a utility such as Advanced IP Scanner. It is a free utility that is included with the HMUX-4-DS.

Advanced IP Scanner Instructions

Install from disk or download from <http://www.advanced-ip-scanner.com>

Launch “Advanced IP Scanner”

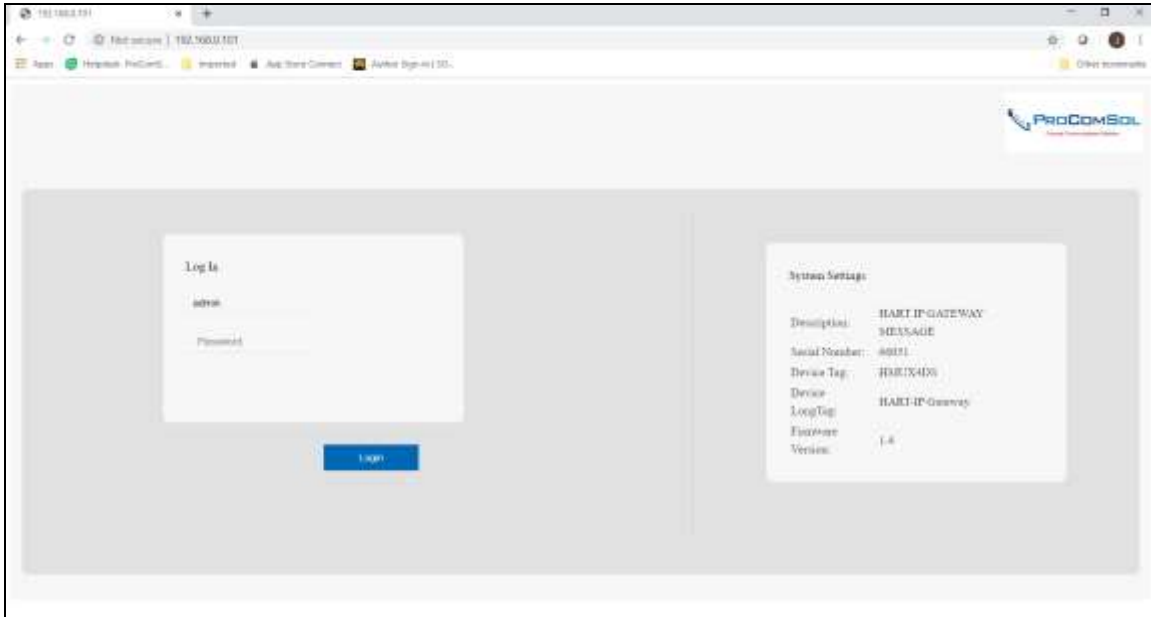
Press “Scan” to scan network.



The HMUX-4-DS can be found by looking for “Texas Instruments” as the device manufacturer. Note this IP address. It is 192.168.0.101 in the example above.

Browser Settings

Launch your browser and enter the IP address assigned by the DHCP. You should then see a screen similar to the one below:

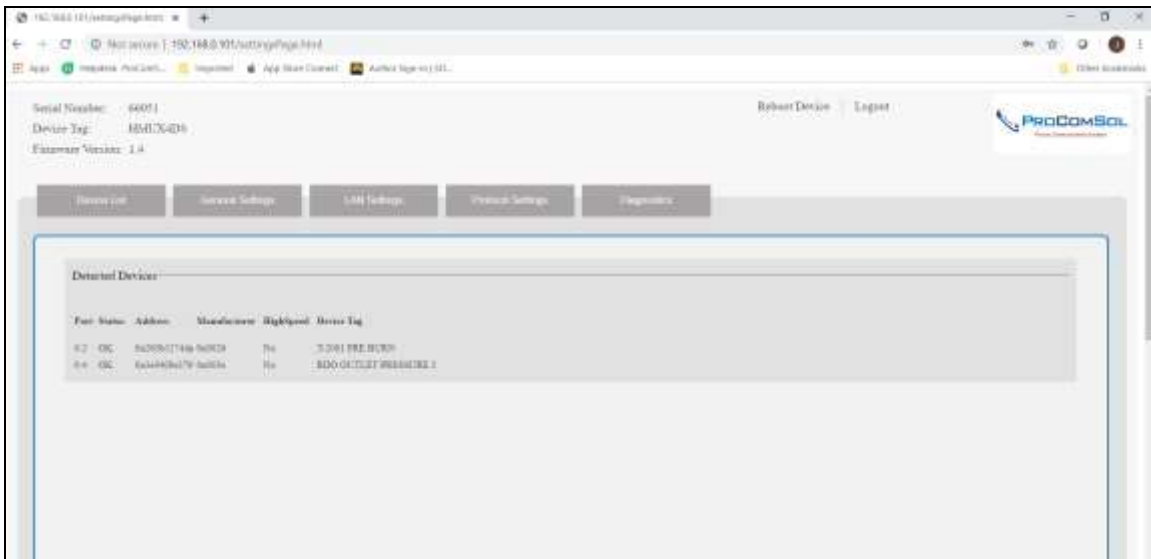


Password

The default password is “root” without the quotation marks. It can be changed by the user. This process is described in Section “General Settings”.

Settings Main Menu

After the correct password is entered you will see the screen below:

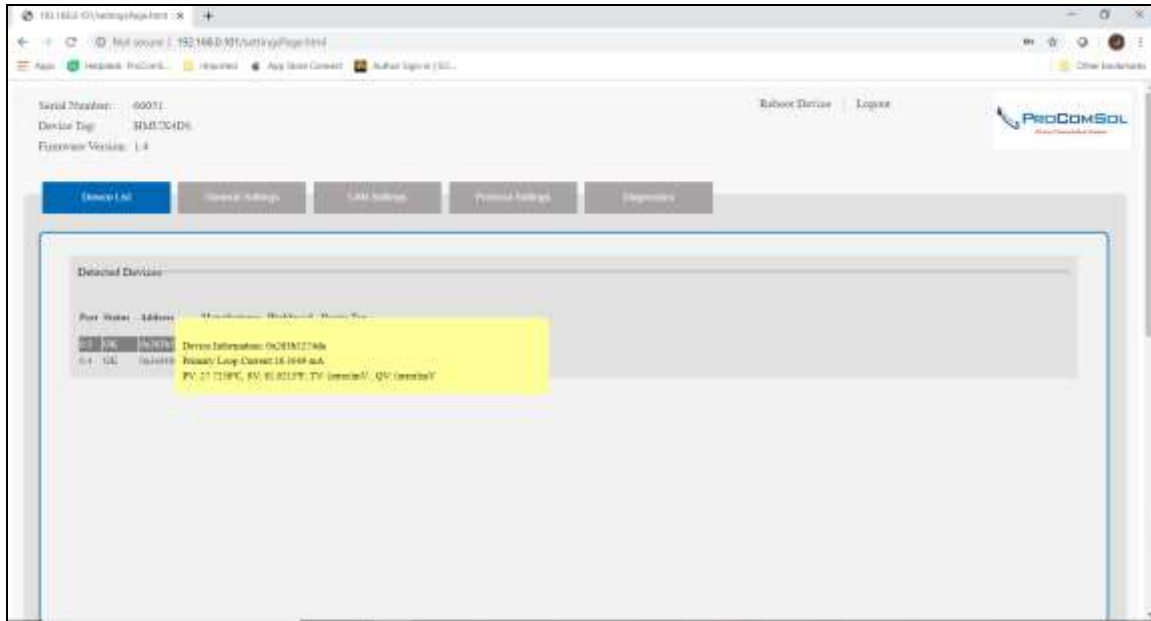


Note that you will only see devices on this list if they are connected to the HMUX-4-DS and the loops are properly setup with loop resistance. The above devices are an example only - you will see your own devices.

Browser Menu Items

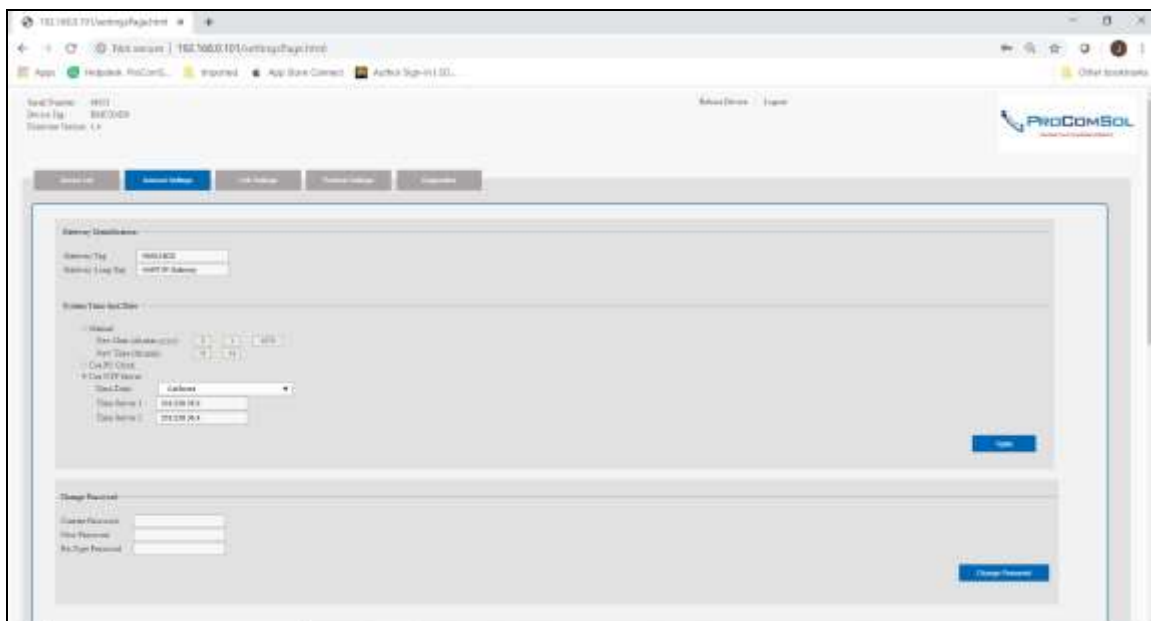
Device List

The Device List shows the HART devices connected to the HMUX-4-DS and basic device information. You can get measurement information by clicking on the device of interest. Below is an example:



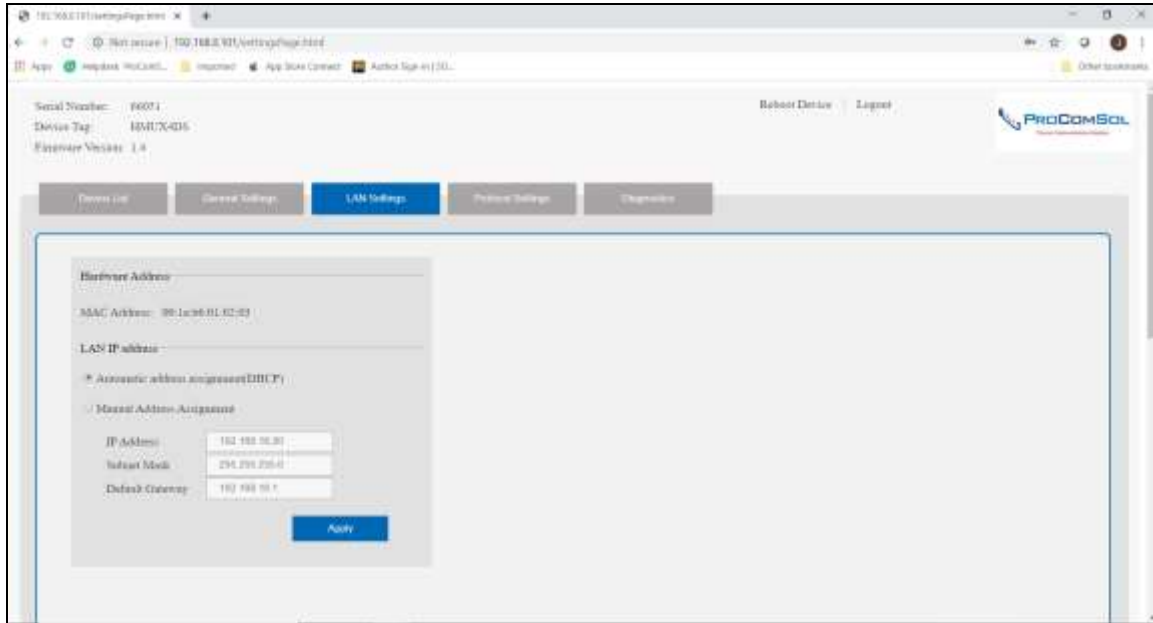
General Settings

Click this button to get additional setting options such as HART Tag settings for the HMUX-4-DS and clock settings. You can even change the HMUX-4-DS password from this page.



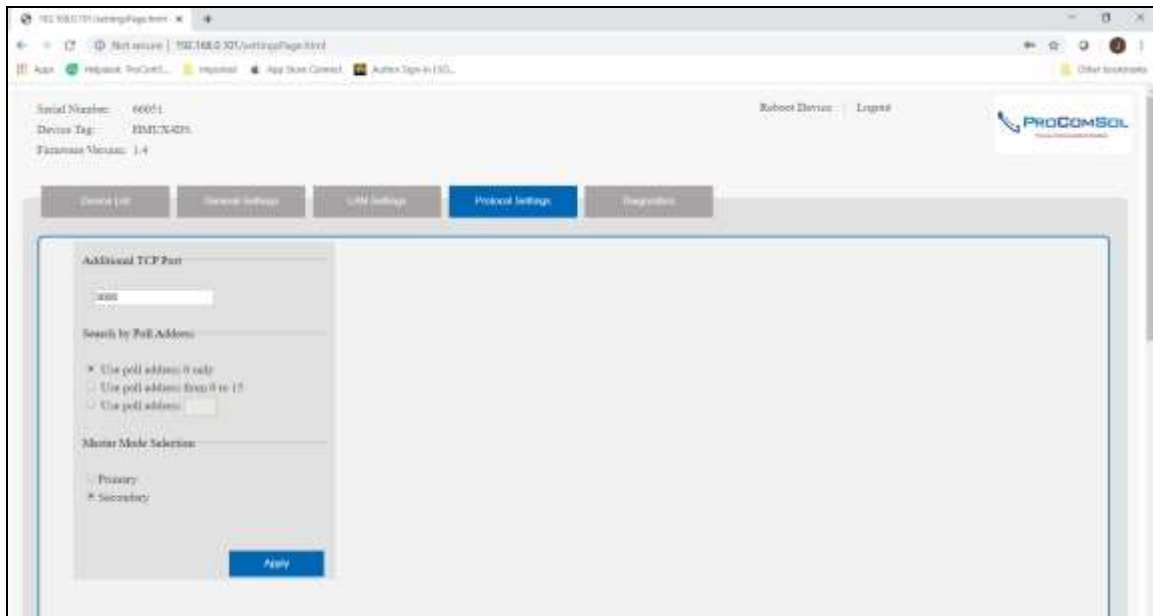
LAN Settings

Click this button to access the settings related to the Ethernet. This is where you would assign a static IP address instead of using the address assigned by the network DHCP.



Protocol Settings

Click this button to access settings related to HART-IP. This also includes polling settings for finding the HART devices connected to the HMUX-4-DS.



Diagnostics

Click this button to show diagnostic messages related to the HMUX-4-DS performance. This information could be helpful in determining why a connected HART device cannot be found for instance.

Miscellaneous

- Reboot Device

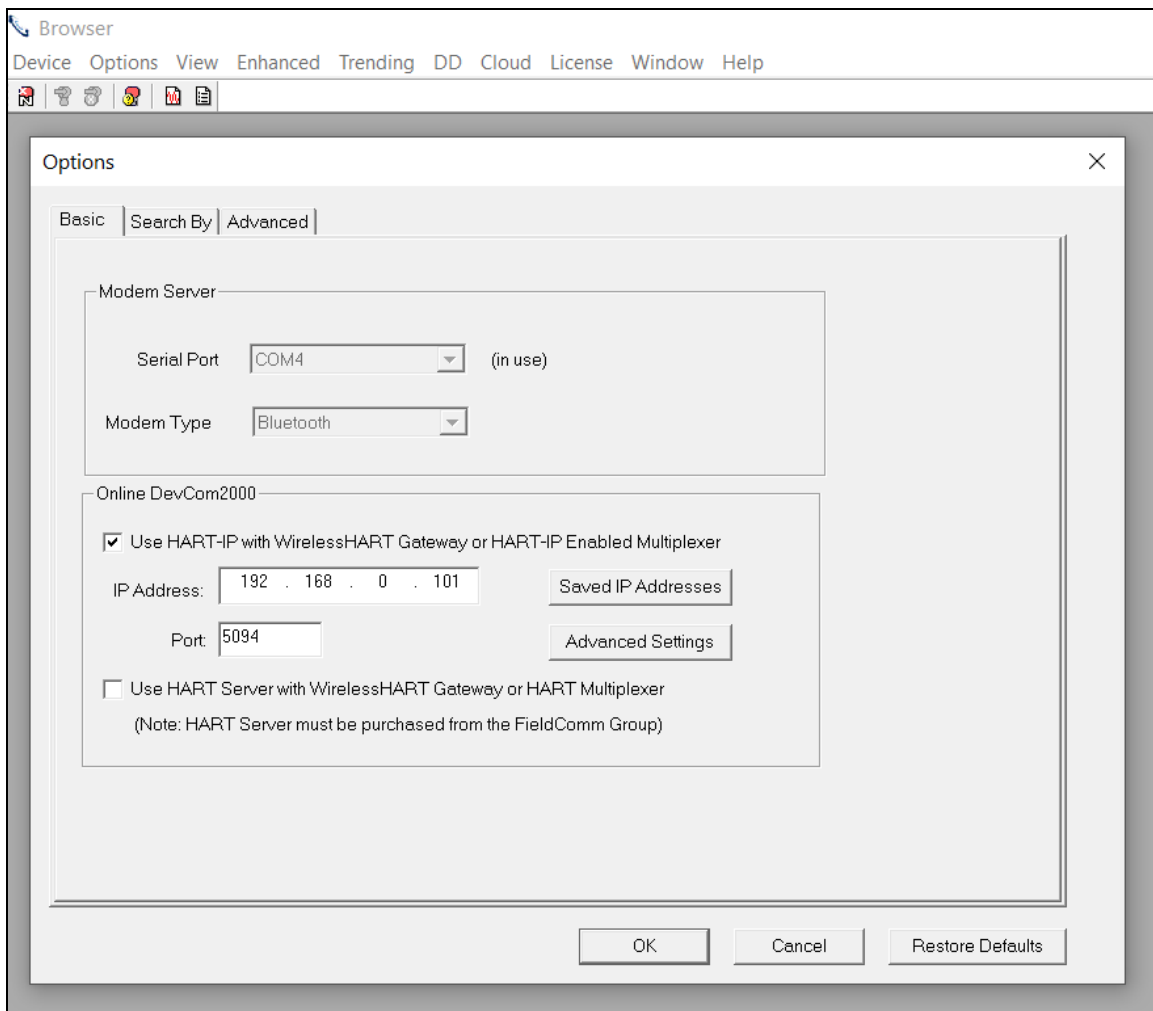
Click this button to reset the HMUX-4-DS without disconnecting power. Allow 5 minutes for devices to be re-discovered before attempting HART-IP communications.

- Logout

Click this button to return the browser screen to the initial state. The user must enter a valid password to log back in.

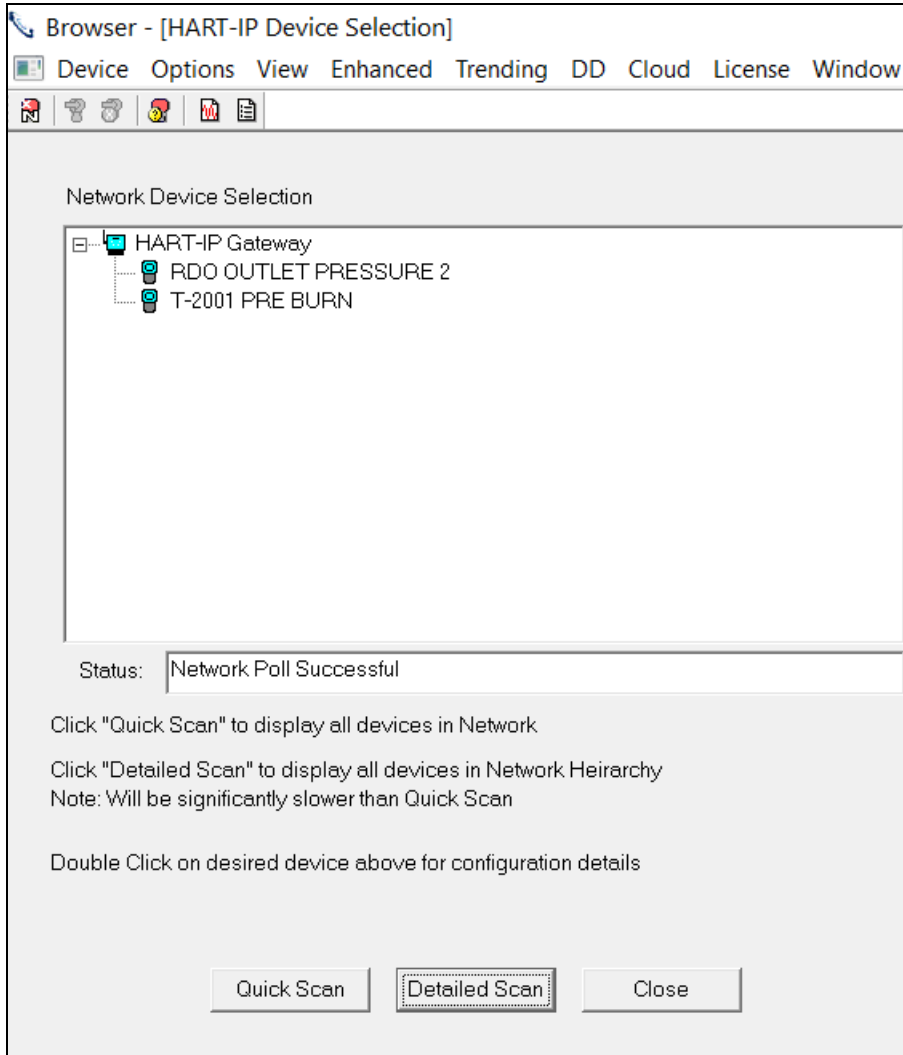
HART-IP Settings for DevCom

Configuring your HART-IP client (such as the DevCom family of HART Communicator Apps) is straightforward. Simply enter the IP address assigned to the HMUX-4-DS and make sure the HART-IP Port is set to the default HART-IP Port number which is 5094. Below is an example for DevCom2000:



Network Hierarchy in DevCom

Once the IP address and port are set in the HART-IP client, click New Device to see the network Hierarchy. Below is an example in DevCom2000:



Individual Device

Double click on the device of interest in the hierarchy to open a HART Communicator instance in DevCom2000. You can now view and edit device parameters, get device status, and save the complete device configuration to disk. Just like if you were at the device with a HART communicator.

Troubleshooting

Problem:

No devices show in the Device List

Verify the following:

1. Loop power supply is on.
2. Loop resistance between 250 ohms and 1Kohms.
3. Loop current within HART limits.
4. If multi-drop configuration, all transmitters in loop have unique addresses.

Warranty

The HMUX-4-DS is warranted for 1 year for materials and workmanship. Contact Support at ProComSol, Ltd if having any problems. An RMA (Return Material Authorization) number obtained from ProComSol, Ltd is required on all returned items.

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