MMI-SB-061, Rev A
July 2012

Subject: Adding Petroleum Measurement to the Micro Motion EtherNet/IP Module

Overview

This documents the method for upgrading the Micro Motion EtherNet/IP Module to add support for the petroleum measurement application. The following general steps are required:

1. Upgrade the configuration file on the Micro Motion EtherNet/IP Module
2. Configure the network address for the EtherNet/IP Module (new installations only)
3. Set up FTP connectivity between the PC and the EtherNet/IP Module (new installations only)
4. Update the FTP Server data on the EtherNet/IP Module
5. Trigger transmitter configuration
6. Verify and complete the upgrade

Products Affected

Micro Motion EtherNet/IP Module

NAMUR NE 53 Rating

This release is rated at NAMUR NE 53 Level 2.

Requirements

- A Micro Motion EtherNet/IP Module, connected to the transmitter with which it will be used
- A PC with the Micro Motion Ethernet Configuration Tool installed
- A web browser
- The serial cable that was shipped with the Micro Motion EtherNet/IP Module
- A USB-to-serial cable (if the PC does not have a serial port)
- A crossover cable (or a regular cable with a switch)
- The distribution file (**EtherNet_IP_Patch_PM_1_00**), with all files extracted

Modbus Programming Restriction

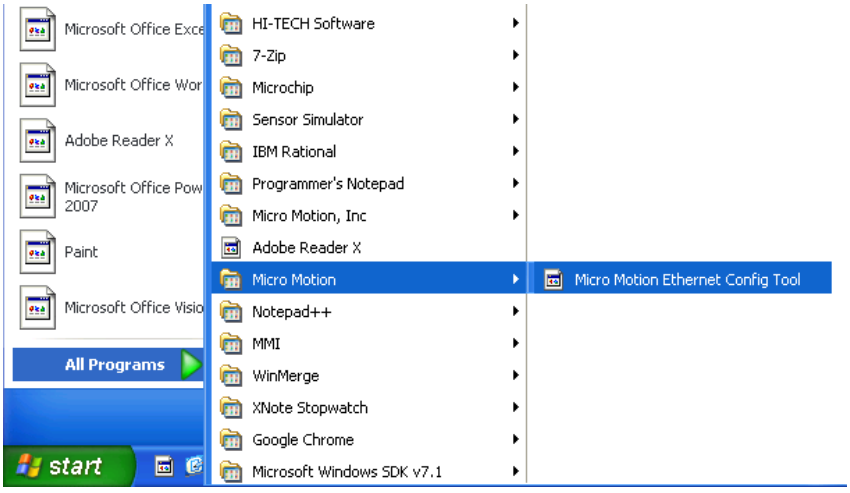
The EtherNet/IP Module communicates with the transmitter using Modbus slot registers on the transmitter. The following slot registers are used:

- 655–750
- 751–846

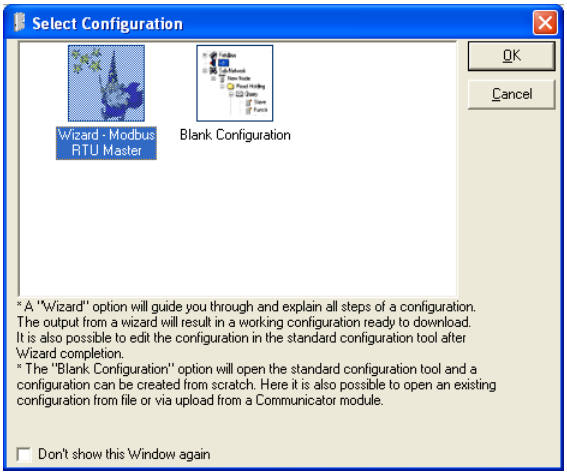
Do not use these slot registers for any other purpose. If you are currently using these slot registers on the transmitter, you must reprogram your Modbus interface to make these registers available.

Step 1: Upgrade the configuration file on the EtherNet/IP Module

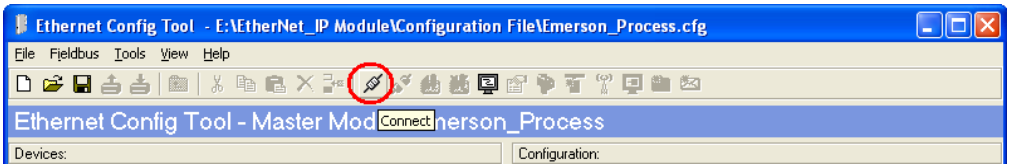
1. Using the configuration cable (RJ-11 to DP9F) that was shipped with the EtherNet/IP Module, connect the PC to the EtherNet/IP Module.
2. At the PC, run the Micro Motion Ethernet Configuration Tool.



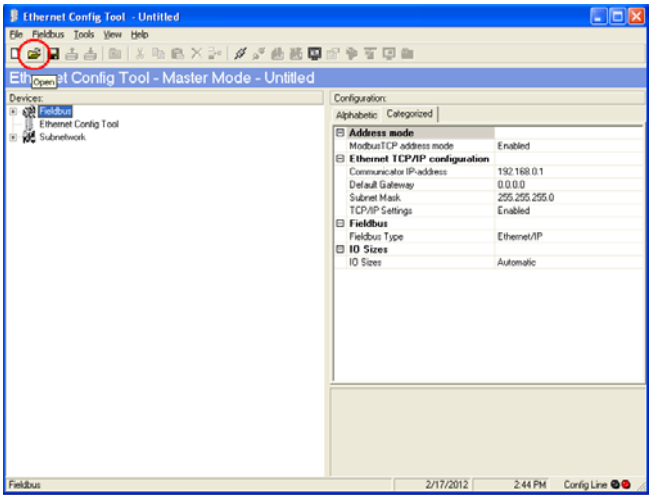
3. When you are asked for the configuration type, click **Cancel**.



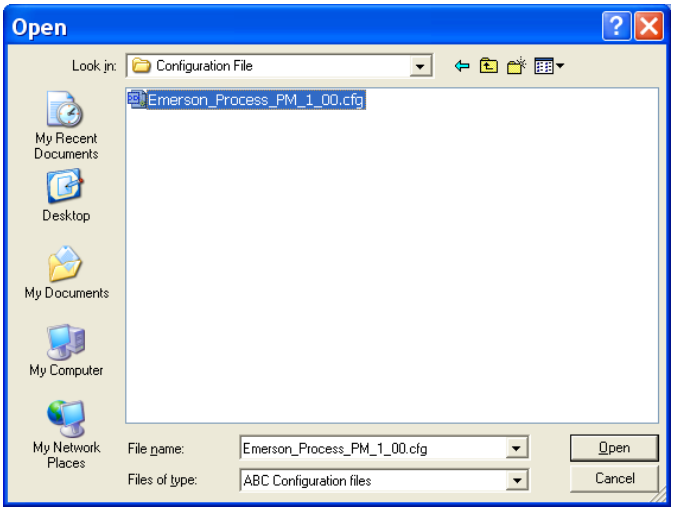
4. Click **Connect**.



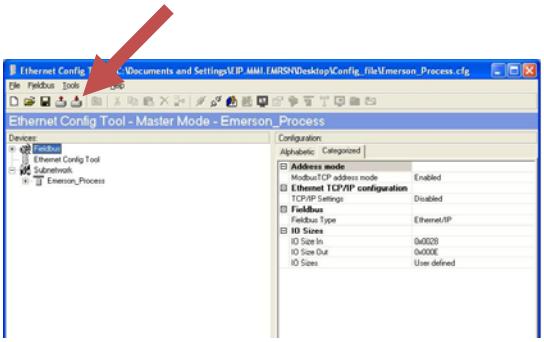
5. Click **Open**.



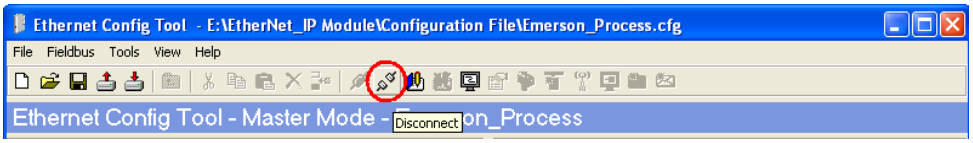
6. Navigate to **Emerson_Process_PM_1_00.cfg** (provided in the distribution file) and select it.



7. Click **Download to EtherNet/IP Device. IMPORTANT: Do not change any settings on this screen.**



8. When the process is complete, click **Disconnect**.



9. Power-cycle the EtherNet/IP Module to complete the download process.

Step 2: Configure the network address for the EtherNet/IP Module

IMPORTANT: This step is required only for new installations. If you have already configured the IP address and other network settings for the EtherNet/IP Module, skip to Step 4.

1. At the EtherNet/IP Module, set the Network Address dipswitches to any non-zero value.

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	DHCP	Subnet	Gateway	IP
OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	(settings determined by 'ethcfg.cfg')			
OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	255.255.255.0	192.168.0.255	192.168.0.1
OFF	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	255.255.255.0	192.168.0.255	192.168.0.2
...	...	...	...	...	...	...	...	...	...	...	...
ON	ON	ON	ON	ON	ON	ON	OFF	OFF	255.255.255.0	192.168.0.255	192.168.0.254
ON	ON	ON	ON	ON	ON	ON	ON	(invalid setting)			

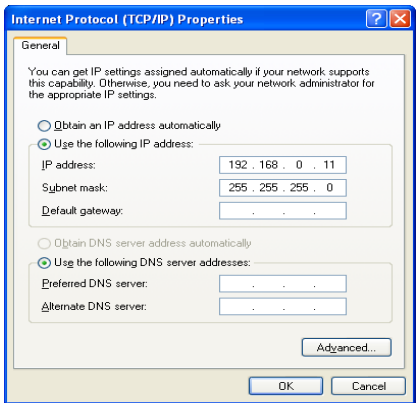
2. Power-cycle the EtherNet/IP Module. This is required to force the module to read the network configuration.

   The IP address of the EtherNet/IP Module is now set to 192.168.0.*x* (where *x* =switch value)

Step 3: Set up FTP connectivity between the PC and the EtherNet/IP Module

IMPORTANT: This step is required only for new installations. If you have already configured the IP address and other network settings for the EtherNet/IP Module, skip to Step 4.

1. At the PC, use Windows to record the current network settings for your PC, then set them as shown below:



IP address: **192.168.0.*y***
Subnet mask **255.255.255.0**
Default gateway: **192.168.0.255**

(*y* = any non-zero value that is different from *x*)

- *Windows XP:* Right-click on **My Network Places** and select **Properties**. Then select **Internet Protocol (TCP/IP)** and click the **Properties** button.
- *Windows 7:* Click **Start > Control Panel > Network and Sharing Center**. Open your network connection and click **Properties**. In the Properties dialog box, **select Internet Protocol Version 4 (TCP/IP v4)** and click **Properties**.

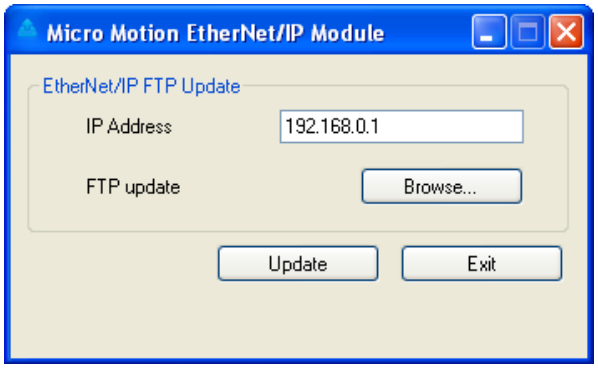
   This places the PC in the same subnet as the EtherNet/IP Module.

2. Connect an Ethernet cable from the PC to the EtherNet/IP Module.

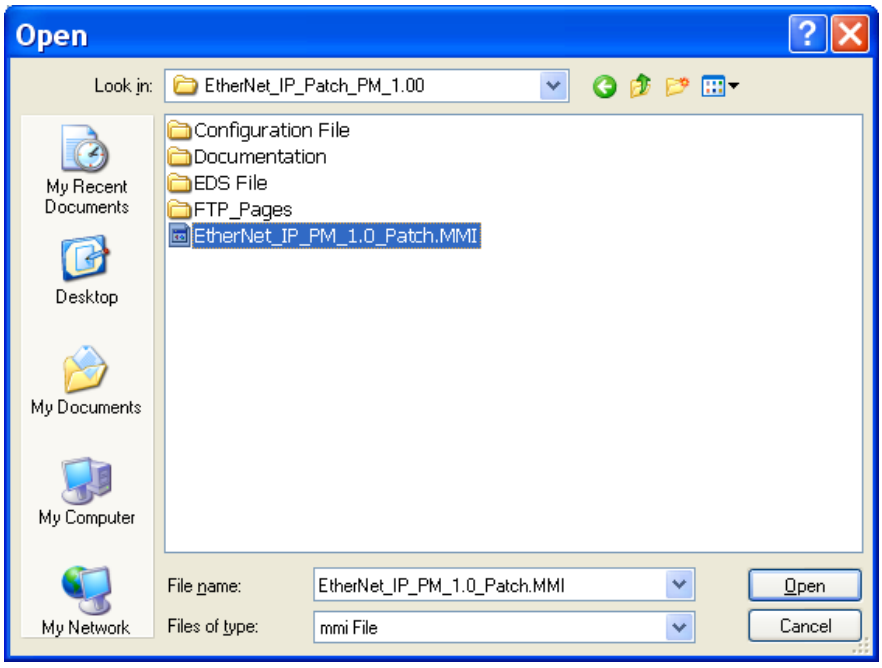
3. At the PC, open a command window and ping **192.168.0.*x***. If this succeeds, continue with Step 4. If it does not succeed, troubleshoot the FTP connection between the PC and the EtherNet/IP Module.

Step 4: Update the FTP Server data on the EtherNet/IP Module

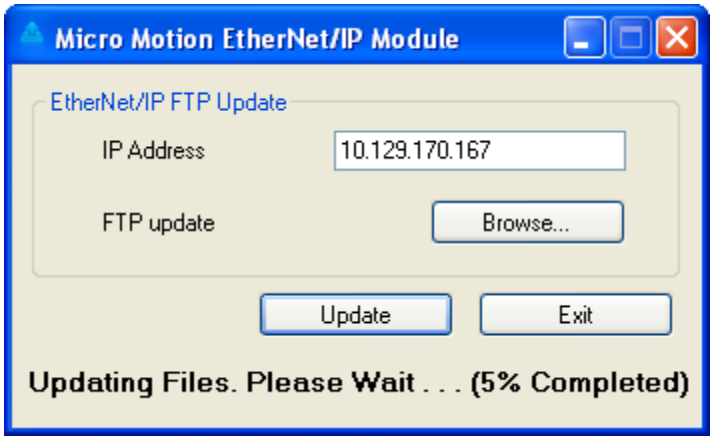
1. At the PC, launch the file named **FTP Upload Utility.exe**, provided in the distribution file.
2. Enter the IP address of the EtherNet/IP Module.



3. Click **Browse** and select the file named **EtherNet_IP_PM_1.0_Patch.MMI**.

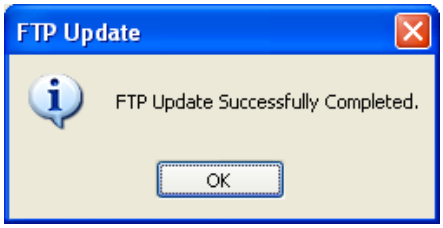


4. Click **Update**. The utility shows the progress of the file transfer.



5. **IMPORTANT: Wait until the file transfer is complete.**

   The following message is displayed when all files have been copied:

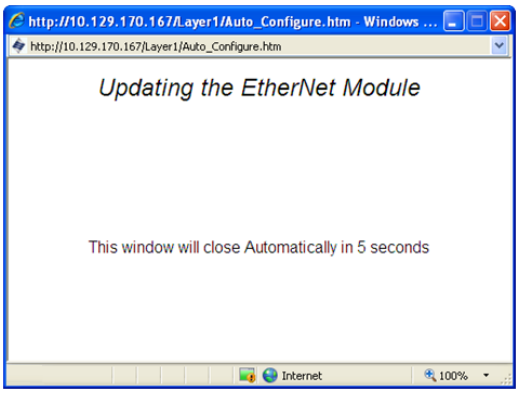


6. Click **OK.** The utility automatically disconnects.
7. Power-cycle the EtherNet/IP Module.

Step 5: Trigger transmitter configuration

1. At the PC, use your browser and a cross-over cable to connect to the EtherNet/IP Module, using the IP address that you configured previously.

2. After authentication, the following window appears:



IMPORTANT: Do not close the window. It will close automatically when transmitter configuration is complete.

Step 6: Verify and complete the upgrade

1. Return your PC to its original IP address, if applicable.

2. Use your browser to connect to the EtherNet/IP Module. The home page now displays a tab for petroleum measurement process variables.

3. Move the EtherNet/IP Module and flowmeter system into production.

Contact Information
Product information is available on the internet at: www.emersonprocess.com/micromotion.

Customer Service Phone Numbers:

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Micro Motion Europe	31 (0) 318 495 555
Micro Motion Asia	65 6777-8211
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Micro Motion Japan	81 3 5769-6803

At Micro Motion we strive to stay on the leading edge of Coriolis technology. Upgrading to our latest MVD technology can pay for itself in a very short time period by improving your process measurement, improving diagnostic coverage, and improving the bottom line results of your process.

Thank you for your continued support.

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