

DCMlink Software



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Section 1: Installing DCMLink

1.1 Installation Overview

DCMLink Software should be installed on a computer that meets the system requirements. The following steps detail how to uninstall and reinstall. Reinstall if the software is to be removed, updated or repaired only.

1.2 New Installation

- 1.2.1** If the user has a previous version already installed, please uninstall it first from the Control Panel >Add Remove Programs. Next, please delete the DCMLink shortcut from the Desktop.
- 1.2.2** Locate and then open the DCMLink.exe located in the installation folder found in the DCMLink installer (sent to customer via web link, CD or USB media).

NOTE:

Installation of DCMLink requires administrator privileges.

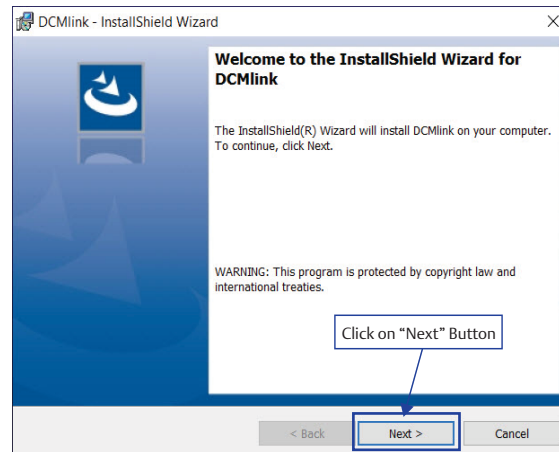
Figure 1 DCMLink Installer

Name	Date modified	Type	Size
ISSetupPrerequisites	7/16/2020 7:56 PM	File folder	
DCMLink Software v2.4 Installation.exe	7/16/2020 2:15 PM	Application	3,81,229 KB

Double Click on DCMLink Software v2.4 Installation.exe

1.2.3 Click Next button.

Figure 2 DCMLink Installation Initialization



1.2.4 There are 2 options for **installation**. Click on one option and then click **Next**.

- DCMLink SOLO
- DCMLink SNAP-ON

NOTE:

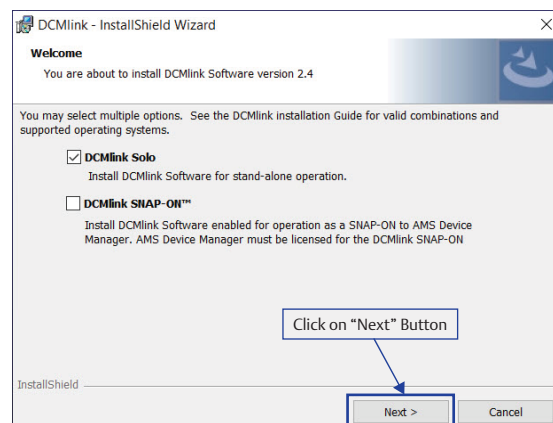
Both SOLO and SNAP-ON can be installed in one installation by selecting both options.

1.2.4.1 DCMLink SOLO

NOTE:

Install DCMLink software for stand-alone operation.

Figure 3 DCMLink SOLO Option

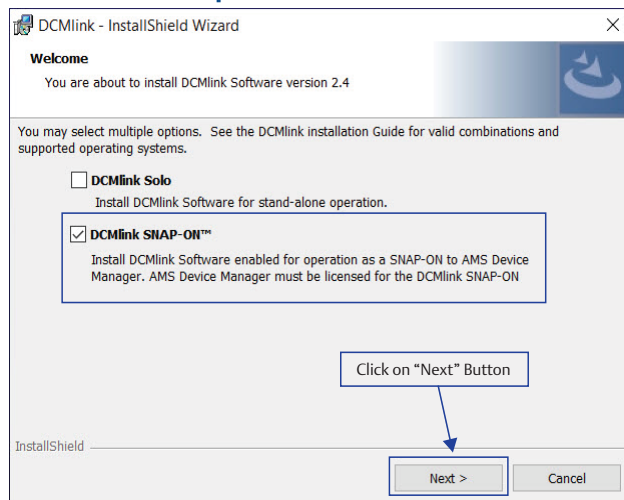


1.2.4.2 DCMLink SNAP-ON

NOTE:

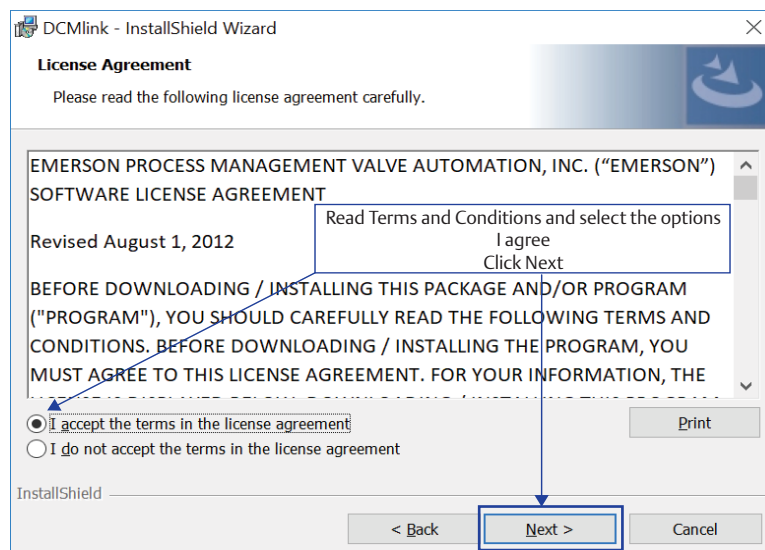
Install DCMLink software enabled for operation as a SNAP-ON to AMS Device Manager. AMS Device Manager must be licensed for the DCMLink SNAP-ON.

Figure 4 DCMLink SNAP-ON Option



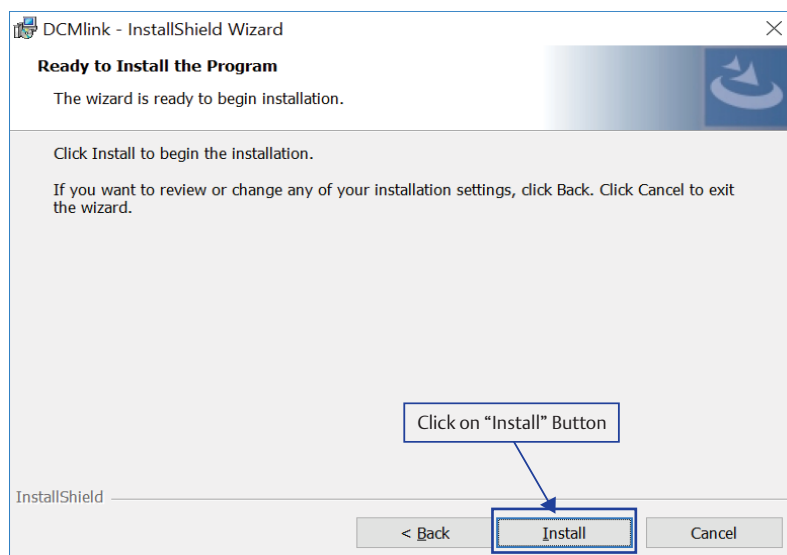
1.2.5 Read Terms and Conditions and select **accept** and click **Next**.

Figure 5 Terms of Use



1.2.6 Next, click **Install**.

Figure 6 Install DCMLink



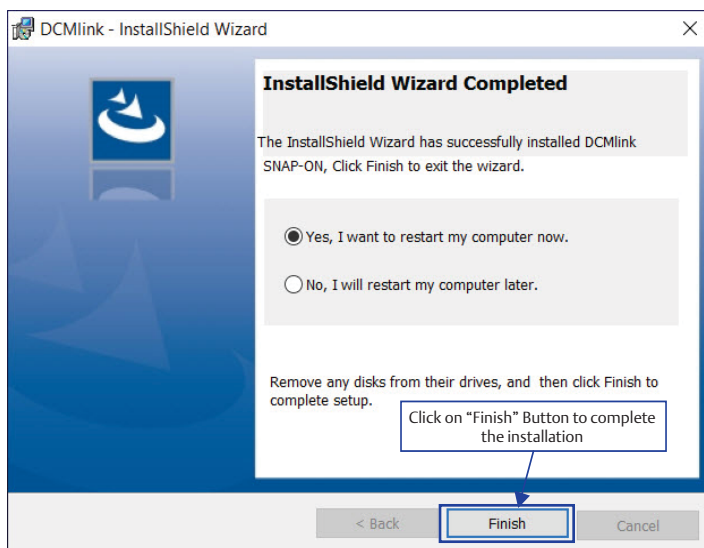
1.2.7 Installation will begin.

Figure 7 Installation Progress Bar



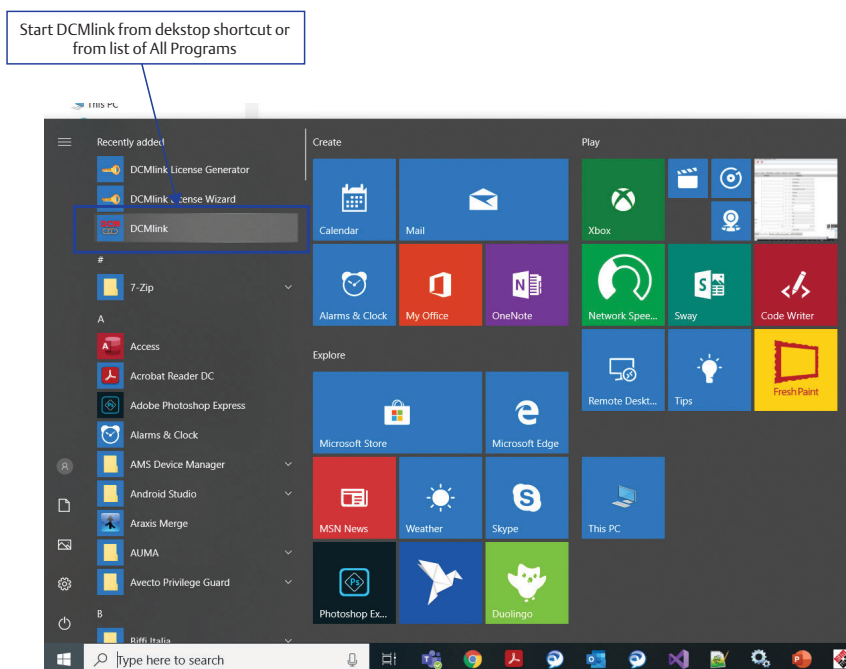
1.2.8 Click **Finish** to complete installation.

Figure 8 Completing the Installation



1.2.9 Start DCMLink application from desktop shortcut or from the list of **All Programs**.

Figure 9 DCMLink Start Menu Shortcut



1.3 DCMLink Auto Update

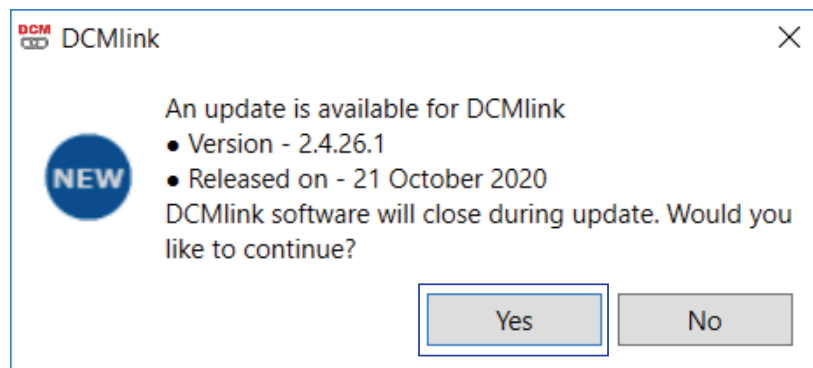
- 1.3.1 If any new version of DCMLink is available, all users will get a notification about it. User is notified about update on launching DCMLink application or using menu option Help->Check for Updates.

NOTE:

User with Administrative rights will only be able to launch DCMLink Updater.

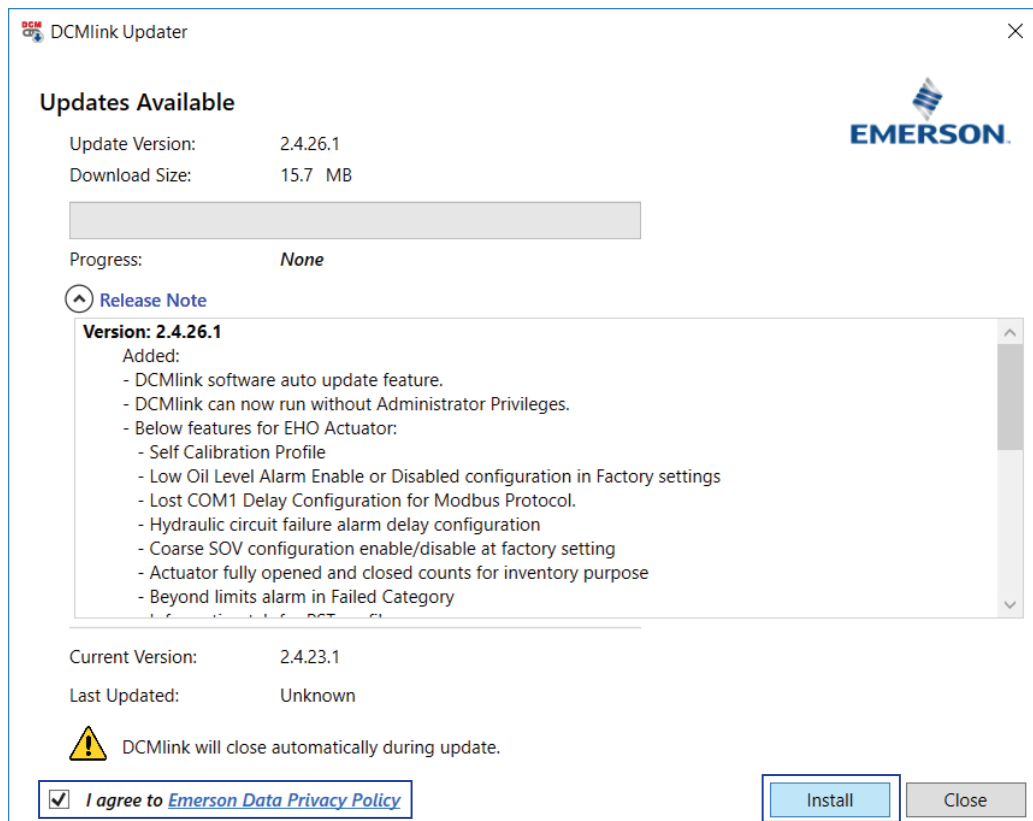
- 1.3.2 To install DCMLink updates, click on 'Yes'.

Figure 10 Update Notification



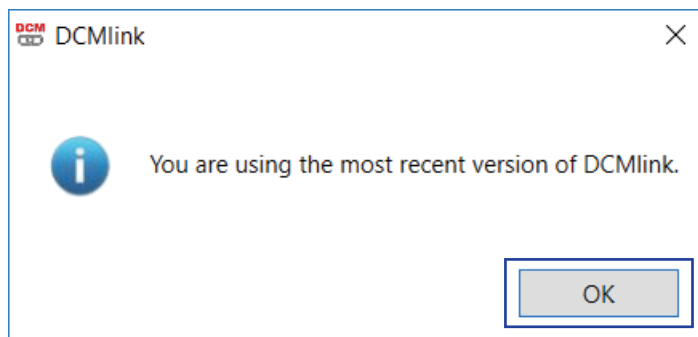
- 1.3.3 On Launching DCMLink Updater below screen is shown, that specify the size of download, available version, Release Note and other information. To proceed with Update user, need to agree to “Emerson Data Privacy Policy” and Click on “Install”.

Figure 11 DCMLink Updater



- 1.3.4 Once Update operation is completed. DCMLink Application gets Closed. After update if user “Check For Update” again, below screen will be shown.

Figure 12 Latest Version Notification



Section 2: License Activation Wizard

2.1 License Features

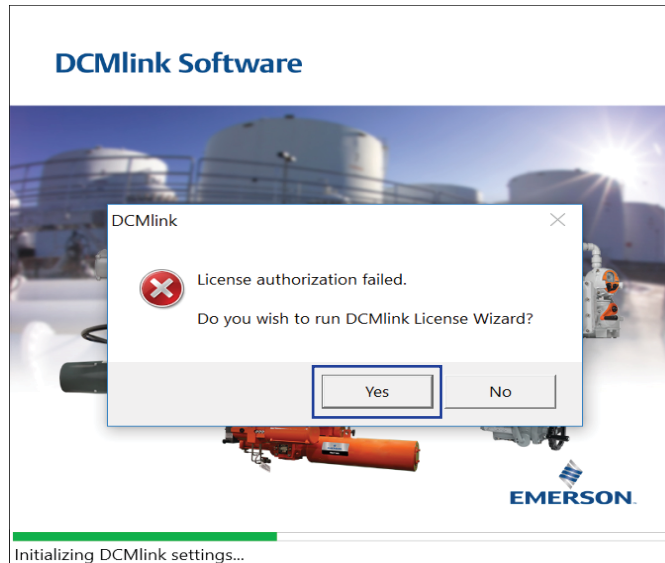
Table 1. DCMLink License Features

Feature	Product Name		
	SOLO		SNAP-ON
	SOLO Standard Unlimited	SOLO Advanced (Under Development)	SNAP-ON Unlimited
Modbus Master	✓	✓	Not Applicable
Modbus Slave	✓	✓	Not Applicable
Modbus TCP-IP	✓	✓	Not Applicable
Bluetooth	✓	✓	Not Applicable
HART Modem	Not Supporting	✓	✓
HART Multiplexer	✓	✓	✓
Standard Diagnostics (Torque Profile, Step Response)	✓	✓	✓
Standard Diagnostics (Partial Stoke Test)	✓	✓	✓
Status Monitor	✓	✓	✓
Configuration	✓	✓	✓
Calibration	✓	✓	✓
Database with Number of Tags	Unlimited	Unlimited	Unlimited

2.2 Obtaining Your License

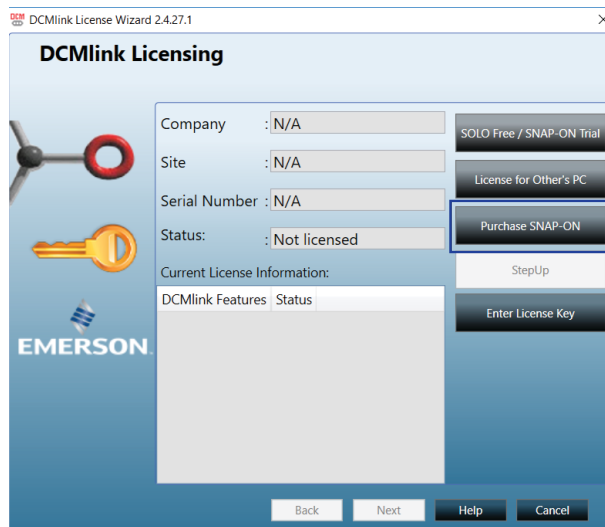
- 2.2.1 Double click DCMLink icon. The user will be prompted to run the License Wizard and click **Yes**.

Figure 13 Running License Wizard



- 2.2.2 Next click on "Purchase SNAP-ON" button.

Figure 14 Request New License



- 2.2.3** Enter the contact details. All fields are required. If the user does not have a fax number, please enter telephone number. This information will be used to request a license key.

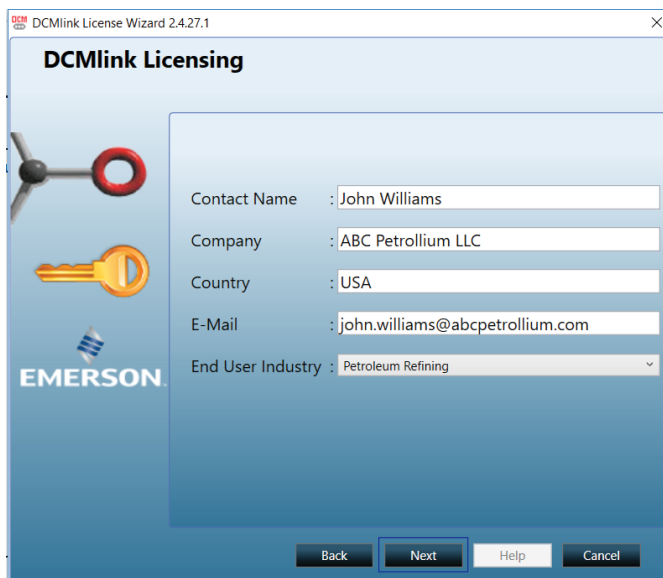
Figure 15 Input License Information



The screenshot shows the 'DCMLink Licensing' window of the 'DCMLink License Wizard 2.4.27.1'. The window has a blue header with the title 'DCMLink Licensing'. On the left side, there is a graphic of a key and the Emerson logo. The main area contains several input fields: 'Contact Name' with the value 'John Williams', 'Company' with 'ABC Petrollium LLC', 'Country' with 'USA', 'E-Mail' with 'john.williams@abcpetrollium.com', and 'End User Industry' with a dropdown menu showing 'Petroleum Refining'. At the bottom, there are four buttons: 'Back', 'Next', 'Help', and 'Cancel'.

- 2.2.4** Select delivery method, and click **Next**.

Figure 16 Review License Information



This screenshot is identical to Figure 15, showing the 'DCMLink Licensing' window. The 'Next' button at the bottom is highlighted with a blue border, indicating it is the next step in the process.

2.2.5 Provide the serial number and REP order number (e.g. DEMO).

Figure 17 Input Serial Number / REP Order Number

The screenshot shows the 'DCMLink Licensing' window of the 'DCMLink License Wizard 2.4.28.1'. On the left, there is a graphic with a red ring, a yellow key, and the Emerson logo. The main area contains the text: 'Please enter the serial number or REP order number provided with the DCMLink software.' Below this text is a text input field containing the word 'DEMO'. At the bottom, there are four buttons: 'Back', 'Next', 'Help', and 'Cancel'.

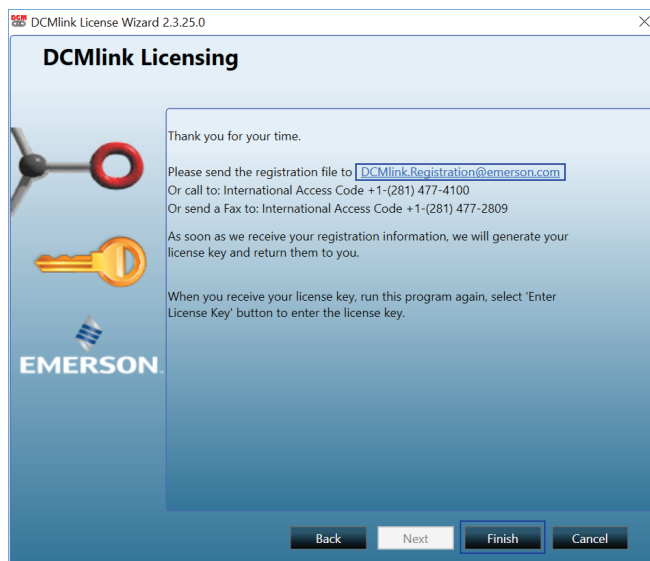
2.2.6 After the registration form is completed, the information can be saved and/or printed. Click **Save** to generate a license key request file. Once complete, click **Next**.

Figure 18 Input Received License Key

The screenshot shows the 'DCMLink Licensing' window of the 'DCMLink License Wizard 2.4.26.1'. On the left, there is a graphic with a red ring, a yellow key, and the Emerson logo. The main area contains the text: 'The information you entered on the previous screens must now be faxed or e-mailed to the DCMLink Registration Center'. Below this text, there are two sections: 'To Print Registration Form' and 'To Save Registration Form'. Each section has a button ('Print' and 'Save' respectively) and a description of the action. At the bottom, there are four buttons: 'Back', 'Next', 'Help', and 'Cancel'.

2.2.7 The license request has now been sent to the DCMLink Registration Center. Click **Finish**.

Figure 19 Finishing the License Key Request



2.2.8 To obtain license, send license registration file to the email address mentioned in the above screen. User can also send a scanned copy of the printed registration form or call the number shown above to obtain the license key (please have the registration code/file ready).

2.3 Activating License Key File

- 2.3.1 After the user receives the license key file, please re-run the License Wizard by double-clicking on DCMLink icon and, click **Enter License Key**.

Figure 20 Entering the License Key File

The screenshot shows the 'DCMLink Licensing' window of the DCMLink License Wizard 2.4.28.1. On the left is the Emerson logo. The main area contains input fields for 'Company' (ABC Petroleum LLC), 'Country' (Houston), 'Serial Number' (DEMO), and 'Status' (Not licensed). Below these is a table for 'Current License Information' with columns 'DCMLink Features' and 'Status'. On the right, there are buttons for 'SOLO Free / SNAP-ON Trial', 'License for Other's PC', 'Purchase SNAP-ON', 'StepUp', and 'Enter License Key' (which is highlighted with a blue border). At the bottom are 'Back', 'Next', 'Help', and 'Cancel' buttons.

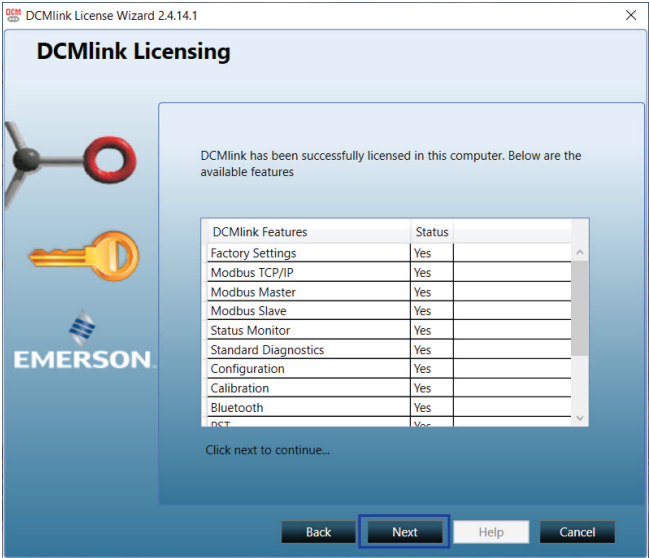
- 2.3.2 Click **Import from File** and select the license key file with the .lic extension. This is the license key file the user received via the DCMLink registration. Once loaded, click **Next**.

Figure 21 Import Existing License Key File

The screenshot shows the 'DCMLink Licensing' window of the DCMLink License Wizard 2.4.26.1. On the left is the Emerson logo. The main area has a section 'Here is your DCMLink registration code:' with four input fields containing '1NUDR0043F5', 'FZDW00883C0', 'AENN00FF939', and 'U2660078'. Below this is a section 'Please enter your license key here:' with four input fields containing 'EC160043', 'FX9V00FF', 'N4CE0688', and 'RKDNBF39'. At the bottom right is an 'Import from file' button. At the bottom are 'Back', 'Next' (highlighted with a blue border), 'Help', and 'Cancel' buttons.

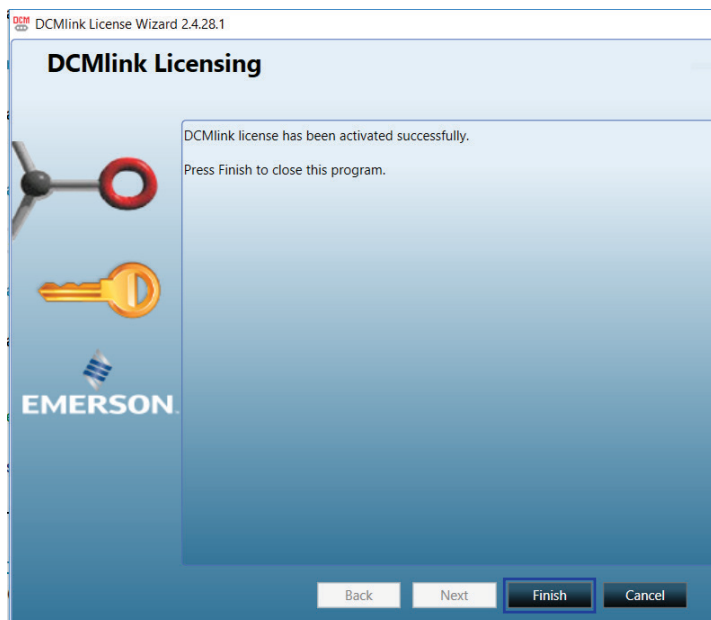
2.3.3 Once the license key has been imported, the installed DCMLink features will be shown on this window. Click **Next**.

Figure 22 Available Features Review



2.3.4 DCMLink is now successfully licensed. Click **Finish**.

Figure 23 Complete License



2.4 Activating Temporary License

DCMlink allows the use of a time-limited or temporary license that permits the use of certain software features for the duration of the license. Consult the following steps to activate this temporary license.

NOTE:

By default, DCMlink Standard provides unlimited and SNAP-ON for 90 days trial. After the 90-day trial period, the user needs to request a permanent license for SNAP ON.

2.4.1 Click on SOLO Free/SNAP-ON Trial button and click **Next**.

Figure 24 Temporary license



2.4.2 Fill all details and click on **Next** button.

Figure 25 Temporary License Loaded

DCMLink License Wizard 2.4.28.1

DCMLink Licensing

Trial license for: ☒ This Computer ☐ Other's Computer

Enter the registration details:

Contact Name : James Williams

Company : ABC Petroleum

Country : United States

Email : james.williams@emerson.com

Interested in : ☒ SOLO (no expiration) ☒ SNAP-ON (90 days trial)

Industry : Petroleum Refining

Back Next Help Cancel

2.4.3 Confirm all user details and agree to Emerson Data Privacy Policy.

Figure 26 Temporary License is Complete

DCMLink License Wizard 2.4.28.1

DCMLink Licensing

Contact Name : James Williams

Company : ABC Petroleum

Country : United States

Email : james.williams@emerson.com

Industry : Petroleum Refining

Operating System : Microsoft Windows NT 6.2.9200.0

Registration Code : 1NSMP00F076-VW4V007B9A7-WTWJ006C221-HL

Volume Serial Number : CE70-4532

DCMLink Revision : 2.4.28.1

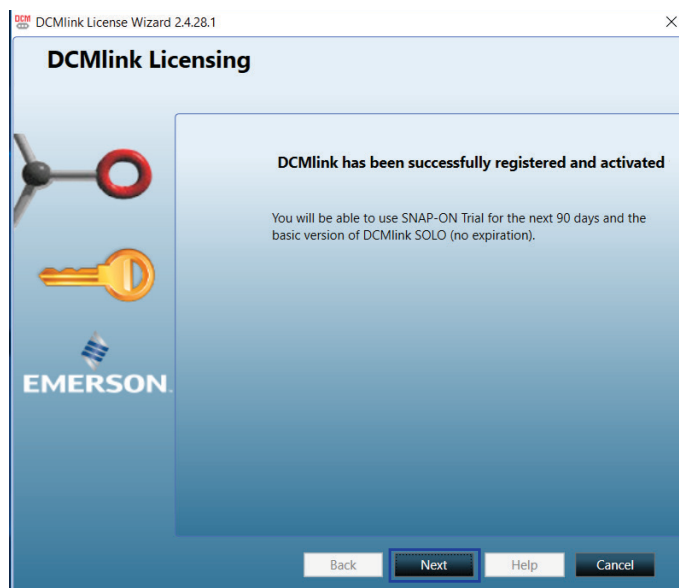
Interested In : SNAP-ON (trial) & SOLO (no exp.)

☒ By submitting this form I agree to [Emerson Data Privacy Policy](#)

Back Next Help Cancel

- 2.4.4 License Manager will try to connect with Emerson server. If Internet connectivity is present, then Trial license is activated.

Figure 27 Trial License Activated



- 2.4.5 If Internet connectivity is not present, then save Registration file and follow steps to activate Trial license for Remote Computer.

Figure 28

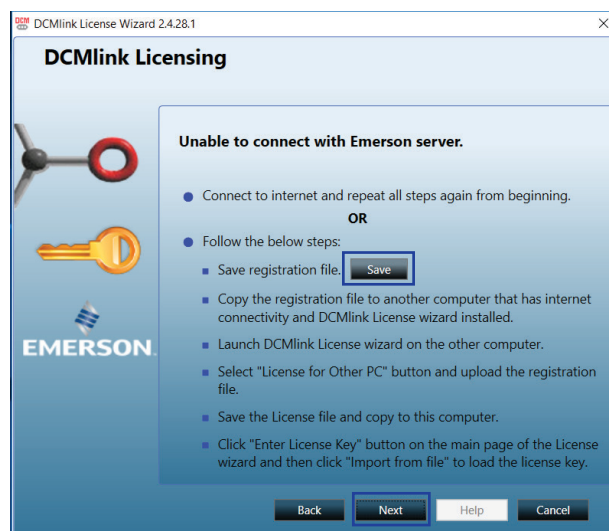
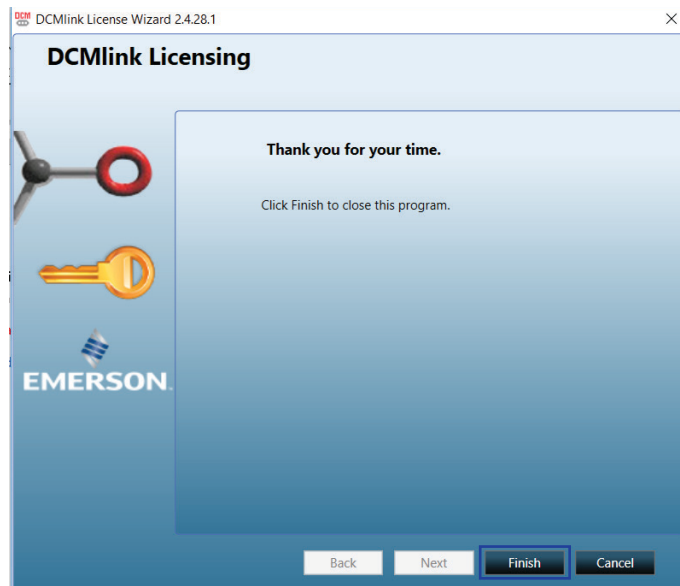


Figure 29



2.5 Activate License Key for Other PC

Using this option DCMLink allows to generate license key for another computer. To do so, Internet connectivity and another computer's Registration file is Required.

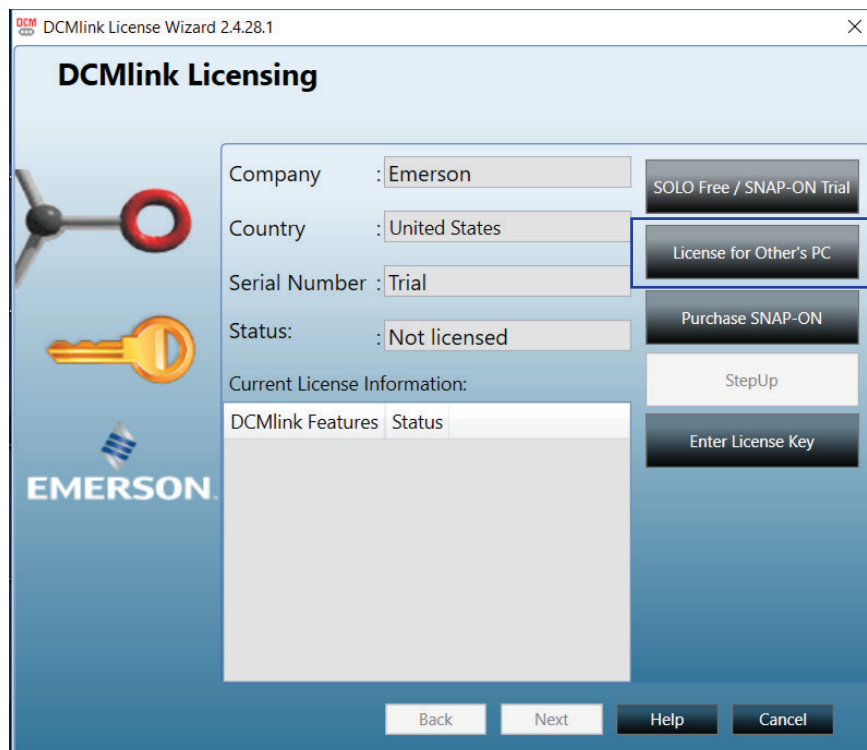
Consult the following steps to activate this temporary license.

NOTE:

To do so, this computer shall be connected to Internet.

2.5.1 Click on License for Other's PC button and click **Next**.

Figure 30



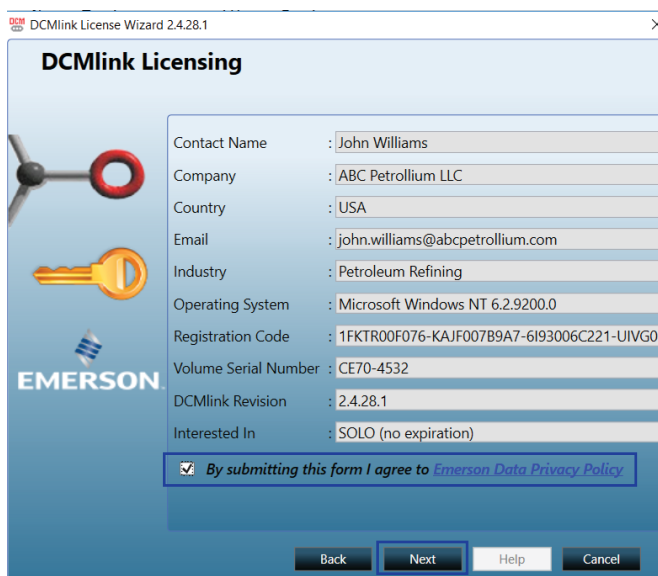
2.5.2 Upload Registration file of Computer whose license needs to be generated and click **Next**.

Figure 31



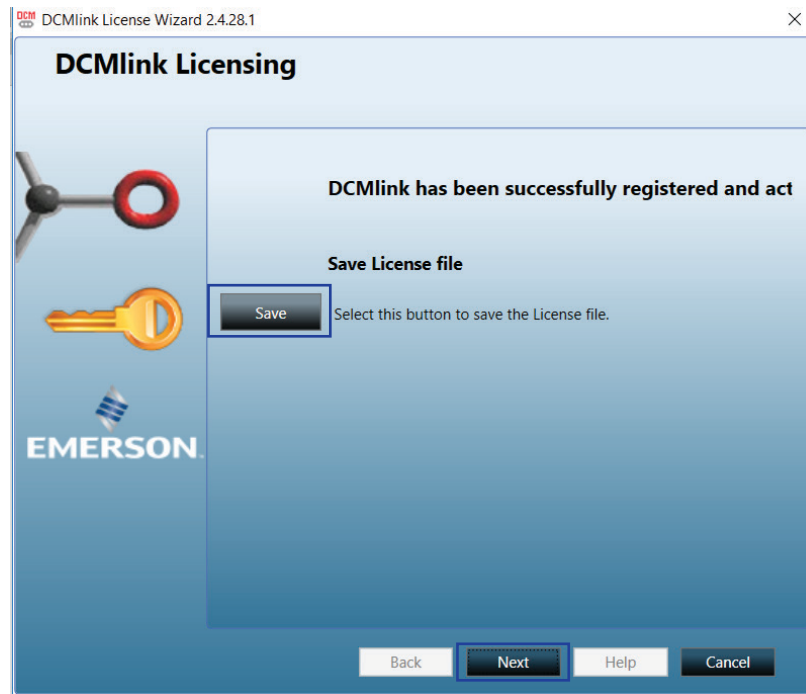
2.5.3 Verify all details and agree to Emerson Data privacy policy and click **Next**.

Figure 32



2.5.4 Save trial License key and click **Next**.

Figure 33



NOTE:

1. Carry this License file to your system.
2. To Activate the License on your system, follow all steps as mentioned in “2.3 Activating License Key” section.

Section 3: Setting Up DCMLink Networks

3.1 Setup Modbus Network

NOTE:

For Modbus, there are three types of connections available. First is the Modbus Master, second is RDM slave mode (only for TEC2000) and third one is TCP/IP (user needs CAM09/209 card). Refer to the following wiring connection to connect DCMLink to the respective actuator.

⚠ CAUTION

Before working on the wiring connections, power down the actuator.

For TEC2000:

Separate Terminal Chamber (STC) contains terminal block for wiring connection. Pinch bar to rotate the STC cover in a counter-clockwise direction, this will open the STC cover and the user will see the terminal block in STC.

Figure 34 **TEC2000 Terminal Chamber**

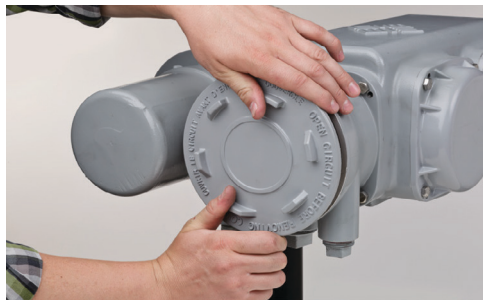
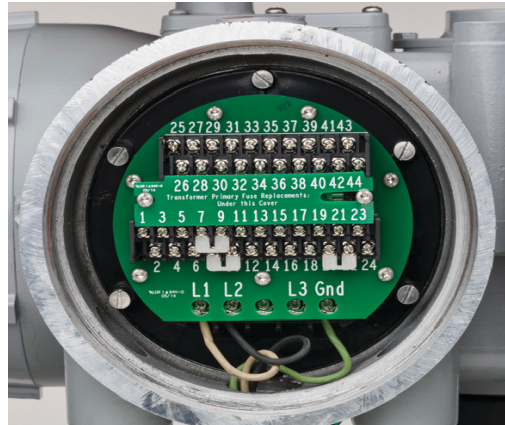


Figure 35 **Opening TEC2000 Terminal Chamber**



- a. STC – With Terminal Block Numbering

Figure 36 **Opened TEC2000 Terminal Chamber**

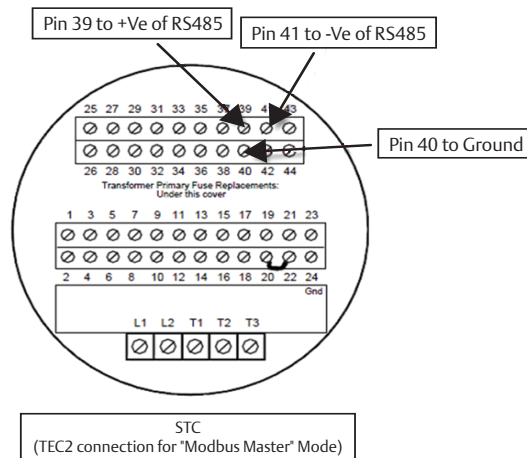


1. **For TEC2:**
Please refer to the following for different wiring connections:
- a. For **Modbus Master** Mode:
- Pin 39 to +Ve of RS485
 - Pin 41 to -Ve of RS485
 - Pin 40 to Ground of RS485 [Optional]

NOTE:

The pins above should be used only for the CAM205 or CAM228.
For the TEC2, the recommended connection is the dedicated **DCMLink port**.
For more information on the pin layout, consult the TEC2 Instruction and Operation Manual.

Figure 37 Modbus Connection on STC



- b. For **Modbus Master** Mode (Using DCMLink dedicated pins). Another way to connect DCMLink with TEC2 is by using DCMLink dedicated pins (36, 37, and 38). The following are the dedicated pin details:
- Pin 36 to +Ve of RS485
 - Pin 38 to -Ve of RS485
 - Pin 37 to Ground of RS485 [Optional]

NOTE:

For this section "b" only, connection baud rate is 115200.

- c. For **Modbus Master** Mode on HART CAM216:
- Pin 39 to +Ve of RS485
 - Pin 40 to -Ve of RS485

3.1.1 After wiring the connections with the actuator, check the serial port number on PC. For this, right-click on **My Computer** and go to "**Manage-> Computer Management -> System Tools -> Device Manager-> Ports -> Communication Port (Port Number)**"

2. For MPA:

Table 2. CAM Card Pin Configuration

Without CAM05, or any other protocol CAM card	With CAM05, or any other protocol CAM card
Pin 19 is +Ve of RS485 Modem	Pin 25 is +Ve of RS485 Modem
Pin 18 is -Ve of RS485 Modem	Pin 24 is -Ve of RS485 Modem

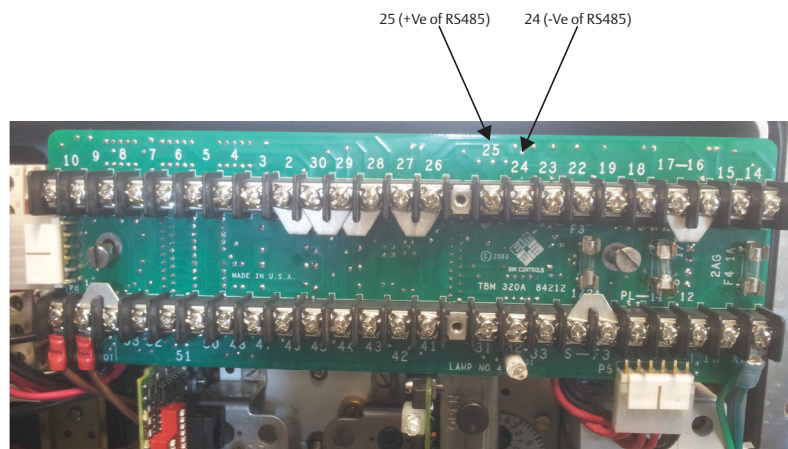
Figure 38 MPA Modbus Connection



3. For M2CP:

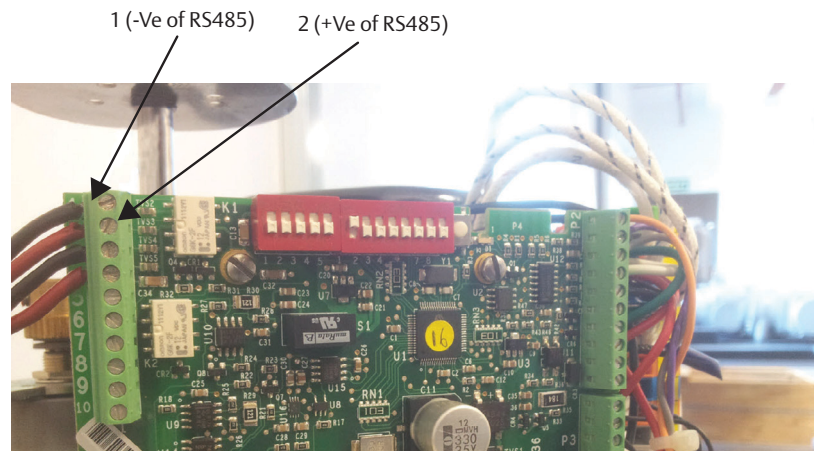
- Pin 25 is +Ve of RS485 Modem
- Pin 24 is -Ve of RS485 Modem

Figure 39 M2CP Modbus Connection



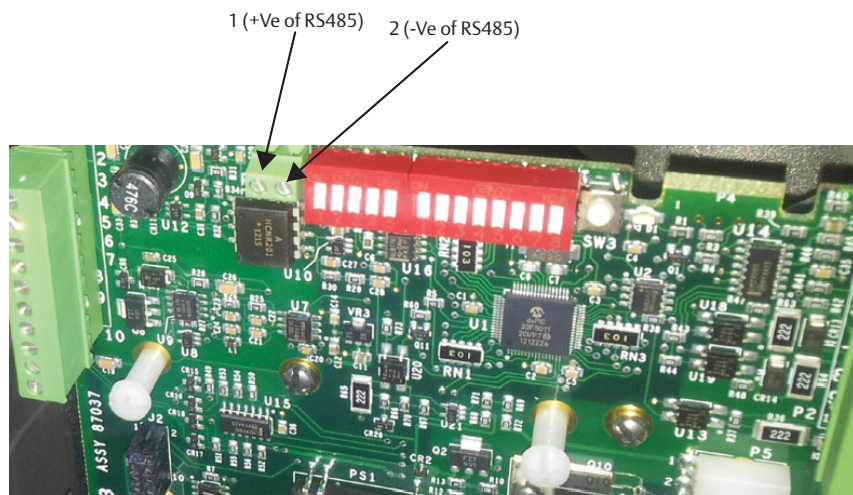
4. **For HQDCM32 Series:**
 - Pin 1 is -Ve of RS485 Modem
 - Pin 2 is +Ve of RS485 Modem

Figure 40 HQ DCM32 Modbus Connection (1)



5. **For HQDCM33 Series:**
 - Pin 1 is +Ve of RS485 Modem
 - Pin 2 is -Ve of RS485 Modem

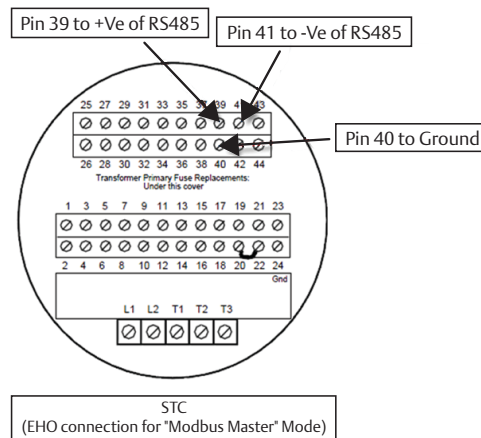
Figure 41 HQ DCM33 Modbus Connection (2)



6. **For EHO:**

- Pin 39 to +Ve of RS485
- Pin 41 to -Ve of RS485
- Pin 40 to ground of RS485 [Optional]

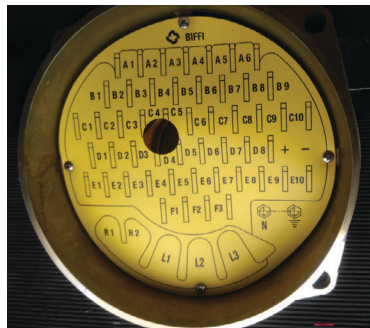
Figure 42 EHO Modbus Connection



7. **For XTE3000:**

- Pin: A1+, A2- OR
- Pin: A5+, A6-

Figure 43 XTE3000 Modbus Connection



NOTE:

For XTE3000, the user will need the Modbus Bus Card.

NOTE:

- COM port settings shall match with device(s)
 - The Baud rate, parity, Stopbits shall match
 - All devices connected to the same COM port shall use the same settings
 - Use multiple COM ports incase if different settings are required
-

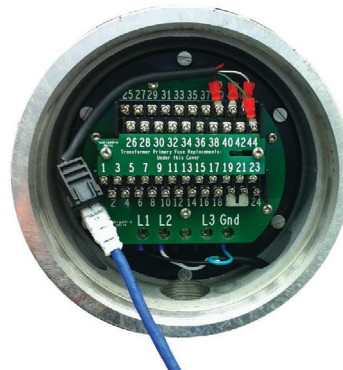
3.2 Modbus TCP/IP Settings

3.2.1 The user needs to use Modbus TCP/IP CAM card to utilize this feature.

NOTE:

For TEC2000 and TEC2, the user will need to use a CAM209 Card.
For M2CP, MPA, EHO and HQ, the user will need a CAM09 Card.

Figure 44 CAM209 Connected to TEC2000 Actuator



NOTE:

Details on the configuration of CAM09/209 is found on the document.

3.3 RDM Connection Settings

The DCMLink fully supports the RDM mode connection with TEC2000 actuator.

3.3.1 For this, select serial COM Port number and select timeout delay as per actuator COM Port settings.

NOTE:

RDM Slave Mode is only available for the TEC2000 actuator.

3.3.2 DCMLink works with below settings to connect with TEC2000 in RDM mode:

- STC pin numbers:
 - Pin 21 to +Ve of RDM Slave Mode
 - Pin 23 to -Ve of RDM Slave Mode
- Baud Rate: 9600
- Parity: None
- Stop Bits: 1

These parameters are not allowed to be modified.

3.4 Setup Bluetooth Network

DCMLink allows the detection and configuration of devices connected via Bluetooth. Using the Bluetooth device scanner in the navigation bar, the user can perform a device scan by following the steps and screenshots shown.

NOTE:

The user needs to have Bluetooth enabled on computer to allow the use of this function. User can check if computer has Bluetooth function enabled or not. If the bluetooth function is not present, please consult the system administrator or IT.

- 3.4.1** On the navigation bar, the Bluetooth node will be populated. The name of the Bluetooth node in DCMLink will be the same as the name of the Bluetooth at the operating system level. The user cannot change the name of the Bluetooth name from the DCMLink, but it is possible to change this from the operating system.

Figure 45 DCMLink Home Screen with Bluetooth

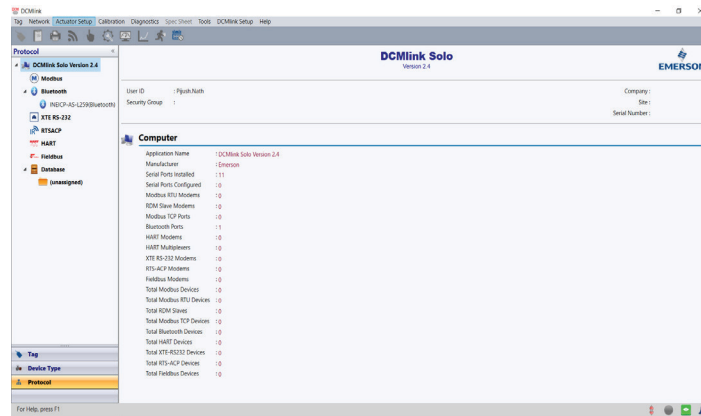
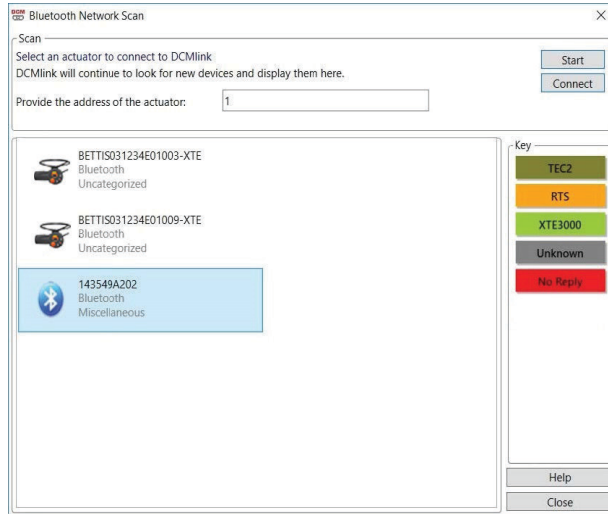


Figure 46 Scanning the Bluetooth Network



3.5 Setup HART Network

3.5.1 Attaching HART Modem

A HART modem is a communication device that allows DCMLink to communicate with the actuator. The following section provides necessary information for attaching the HART modem to the computer and actuator.

NOTE:

HART modem drivers, needed for the HART modem to work, are installed during DCMLink installation.

3.5.1.1 HART Modem Installation for DCMLink SOLO

HART modem attaches to USB port usually found on the back of the computer or the serial port.

- Locate the serial port or USB port where modem will be connected.
- Make note of the port where HART modem is attached.
- Attach HART modem directly to the serial port, USB port, or to a cable connected to serial port or USB port.
- Use the modem cable assembly to connect HART modem to the actuator, or to signal wiring.
- To communicate with actuator, locate the signal wires or the terminals of the actuator.
- Clip cable assembly to wires or terminals.
- Refer to document **HART IOM** for more information on using the HART modem.

3.5.1.2 HART Modem Installation for DCMLink SNAP-ON

The HART modem attaches to USB port usually found on the back of the computer or the serial port.

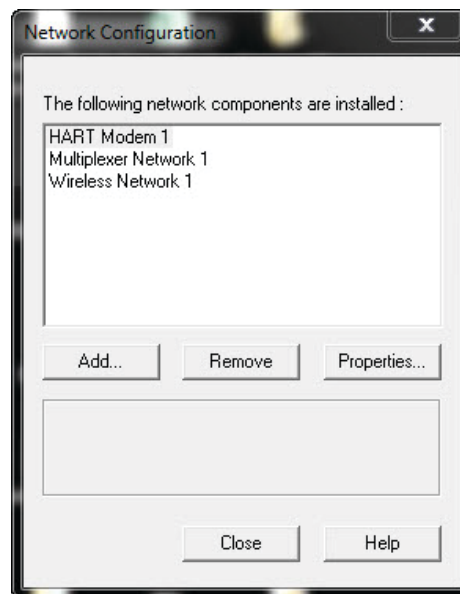
- Locate serial port or USB port where modem will be connected.
- To configure HART modem, refer to AMS manual.

Steps for installing stand-alone AMS:

Before adding DD to AMS, HART Modem on AMS needs to be configured. (Ensure that HART Modem drivers are already installed before configuring Modems on AMS). Follow steps below:

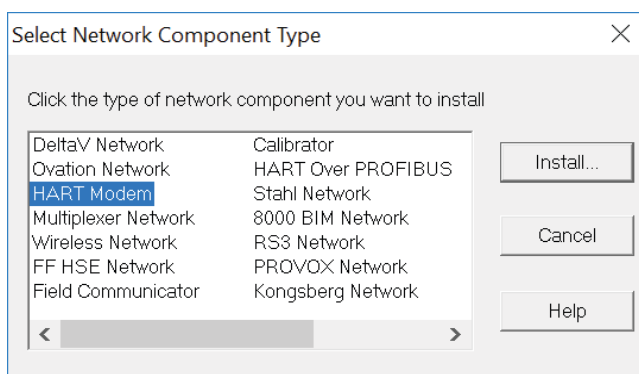
- Network Configuration:
 - Open **Start Menu**
 - Click **Programs**
 - Click **AMS Device Manager**
 - Click **Network Configuration**

Figure 47 Network Configuration



- Select **Network Component Type** and click **Add**.
- For HART device: **HART Modem**.

Figure 48 Select Network Component Type



- Click **Install** and follow screen instructions.

Figure 49 Add HART Modem Wizard-Start

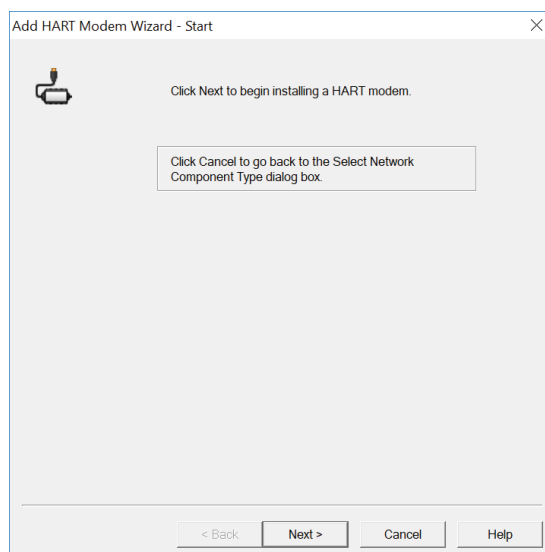
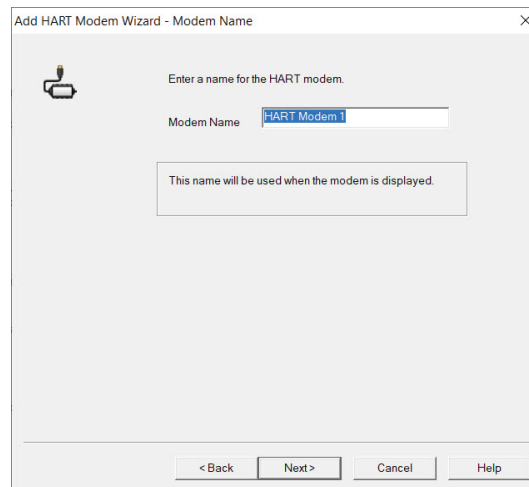


Figure 50 Add HART Modem Wizard-Modem Name



Add HART Modem Wizard - Modem Name

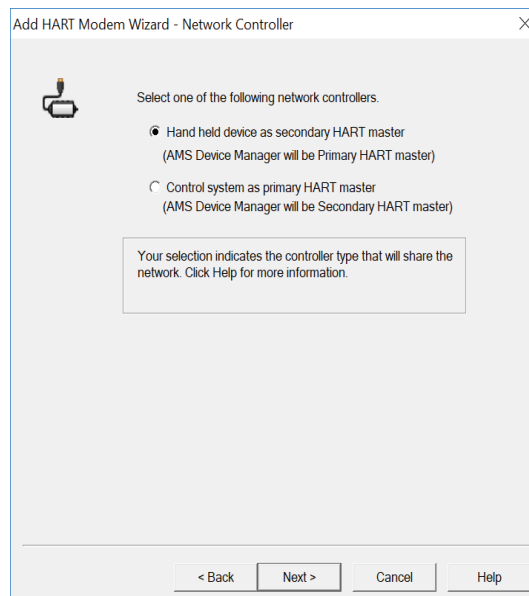
Enter a name for the HART modem.

Modem Name

This name will be used when the modem is displayed.

< Back Next > Cancel Help

Figure 51 Add HART Modem Wizard-Network Controller



Add HART Modem Wizard - Network Controller

Select one of the following network controllers.

- ☒ Hand held device as secondary HART master
(AMS Device Manager will be Primary HART master)
- ☐ Control system as primary HART master
(AMS Device Manager will be Secondary HART master)

Your selection indicates the controller type that will share the network. Click Help for more information.

< Back Next > Cancel Help

- Select one **COM Port** from the list.

Figure 52 Add HART Modem Wizard-Connection

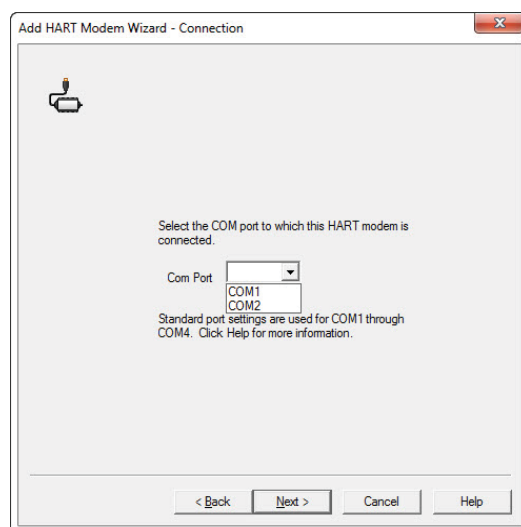
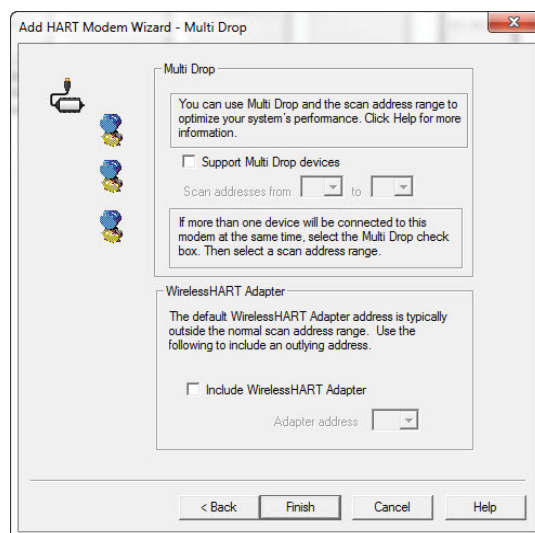
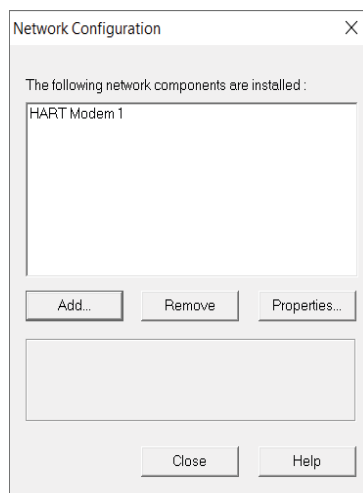


Figure 53 Add HART Modem Wizard-Multi Drop



- When finished **HART Modem** will be shown on the **Network Configuration Screen**.

Figure 54 Network Configuration



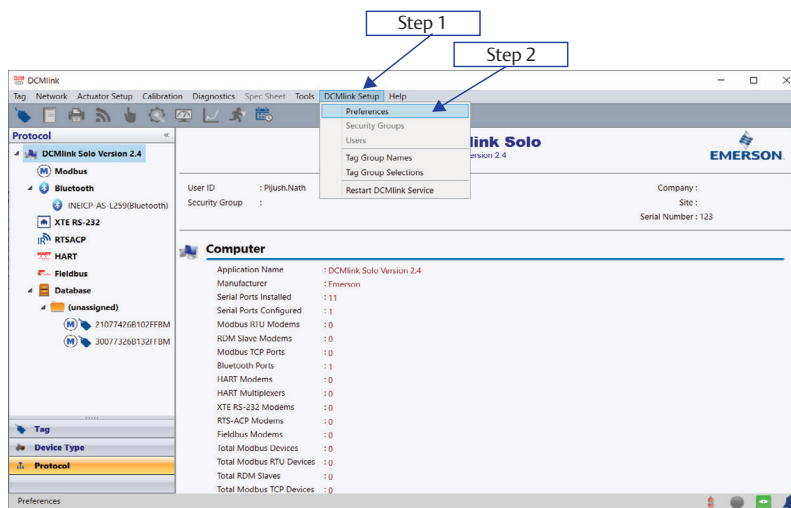
3.5.2 Multiplexer Networks for DCMLink SOLO

3.5.2.1 Configuring Communications **HART MUX** (Multiplexer) Setting

3.5.2.1.1 From the menu bar, click **DCMLink Setup**.

3.5.2.1.2 Click **Preferences**.

Figure 55 Preferences in Menu Bar

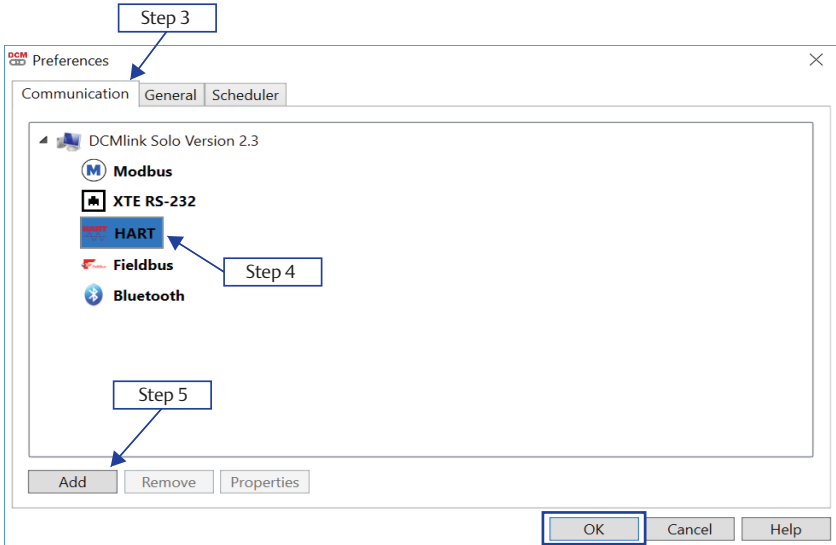


3.5.2.1.3 On **Preferences** window, click **Communication** tab.

3.5.2.1.4 Click on the **HART** protocol.

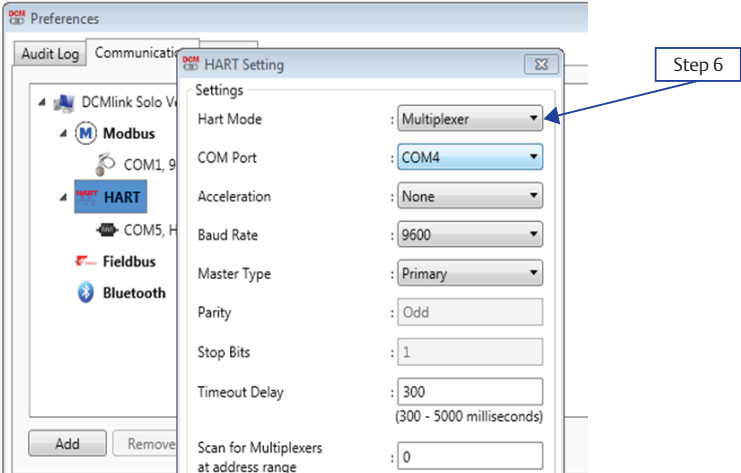
3.5.2.1.5 Click **Add**.

Figure 56 Communication with HART Mode



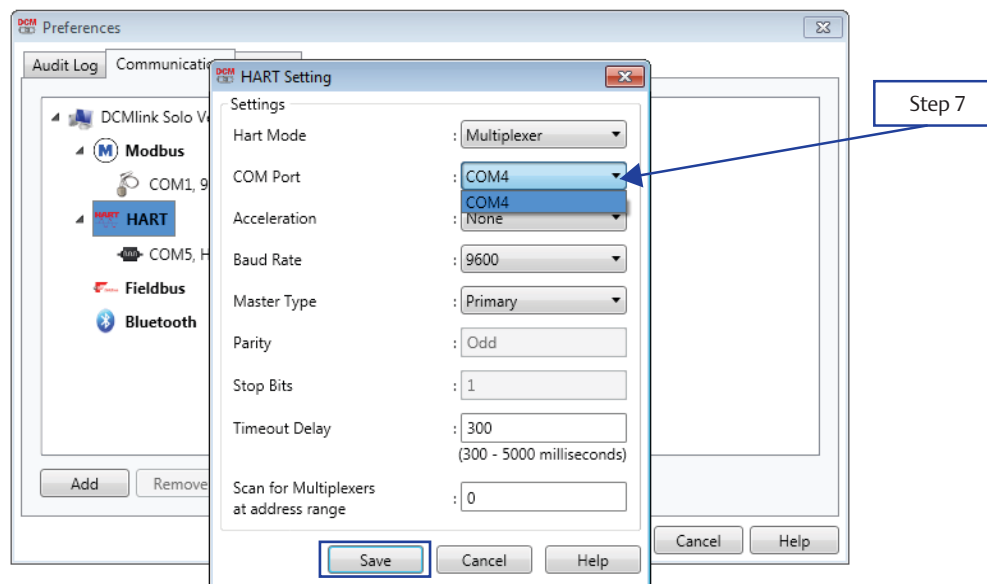
3.5.2.1.6 Click **HART Mode** and select option **Multiplexer**.

Figure 57 Configuring HART Port through Modem



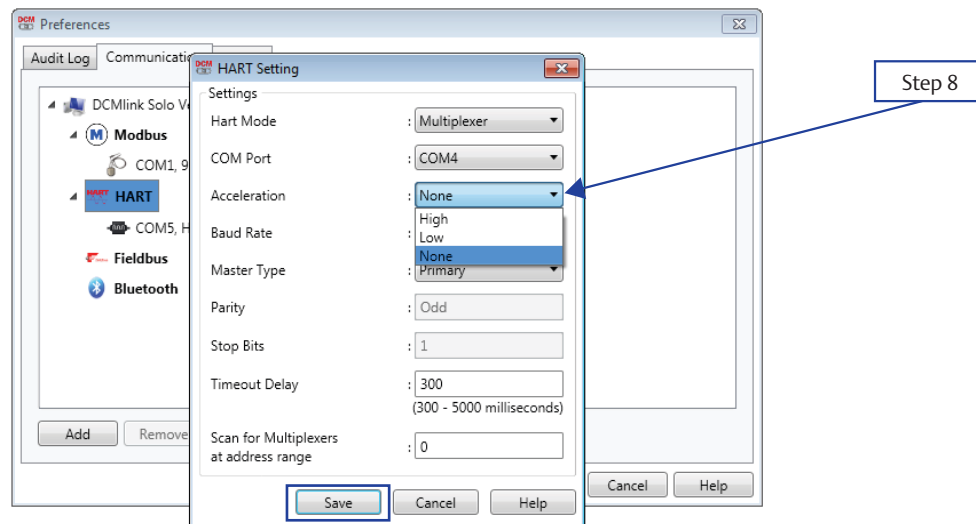
3.5.2.1.7 Select **COM Port** connected to the actuator.
COM Port is generated because of RS485 Modem.

Figure 58 COM Port selection



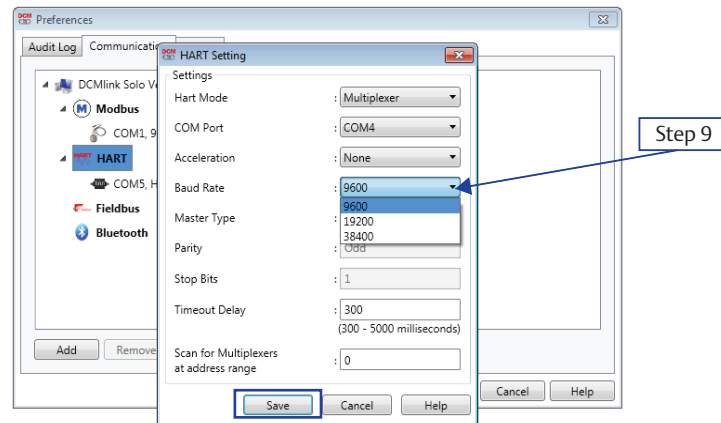
3.5.2.1.8 Select Acceleration. High, Low, None

Figure 59 Acceleration selection



3.5.2.1.9 Baud rate:
Available Baud rate is 9600, 19200 or 38400.

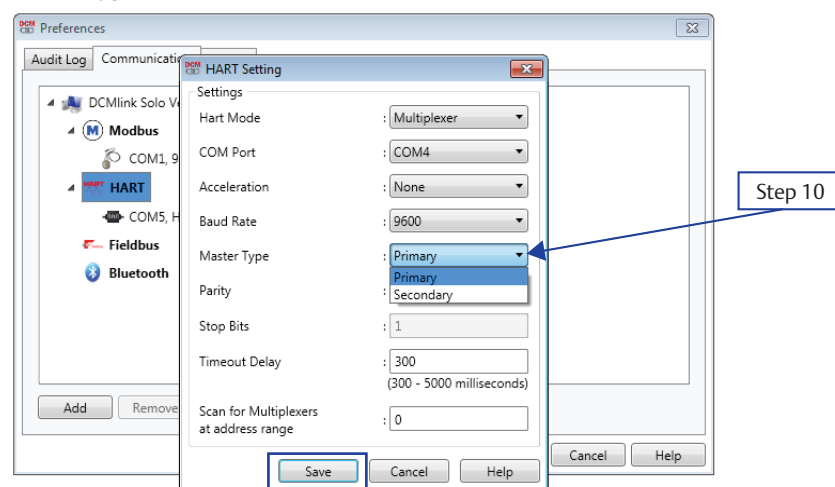
Figure 60 Baud Rate selection



3.5.2.1.10 Select Master Type:

- **Primary:** Primary master is communicating device, such as HART capable control system permanently wired to field instrument.
- **Secondary:** Secondary master is not permanently wired to field instrument. A hand-held communicator or a HART modem attached to computer running DCMLink software typically communicates as secondary.

Figure 61 Master Type selection

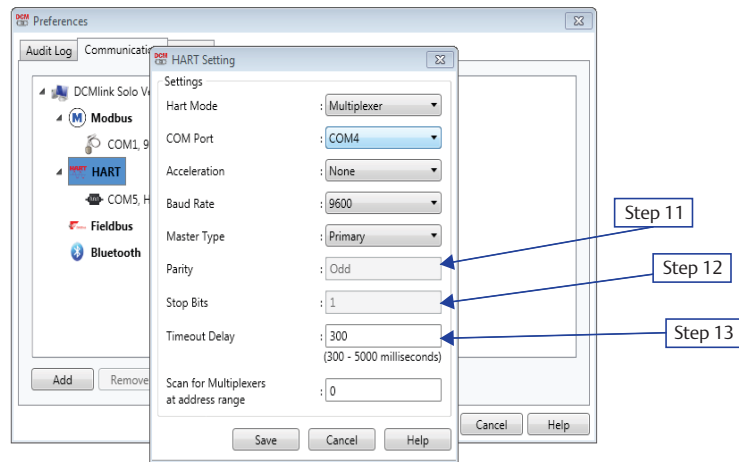


3.5.2.1.11 Parity is fixed at **Odd**.

3.5.2.1.12 Stop Bits is fixed at **1**.

3.5.2.1.13 Should be user editable text box the default value should be **300 ms** and the range should be **300 - 5000 ms**.

Figure 62

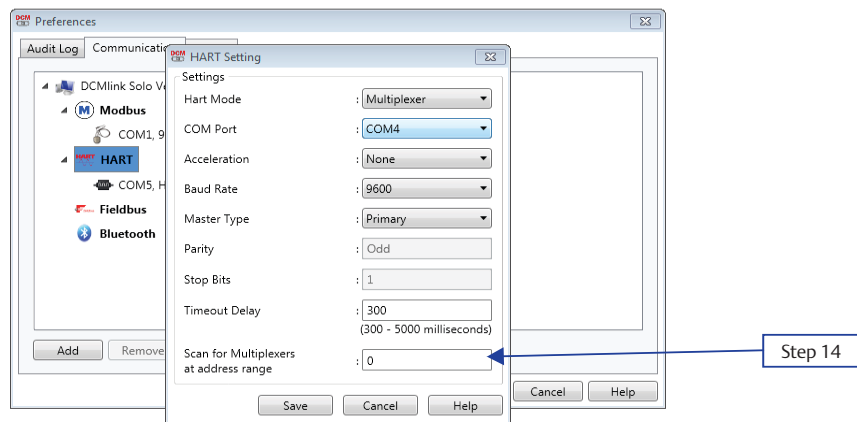


3.5.2.1.14 Scan for Multiplexer at address range. Add address range from 0 to 63.

NOTE:

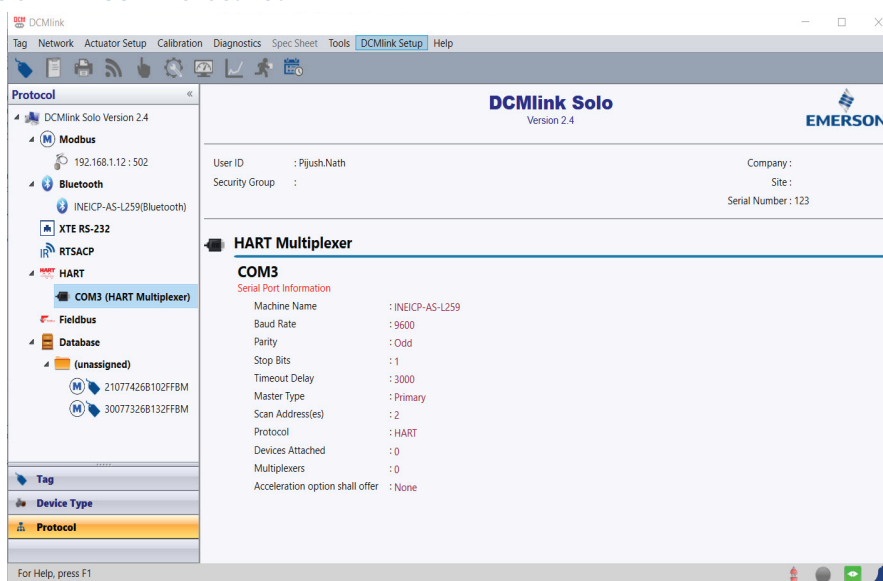
The Multiplexer address is used by DCMLink internally while detecting the connected Multiplexer in Network.

Figure 63



3.5.2.1.15 Click **Save**.

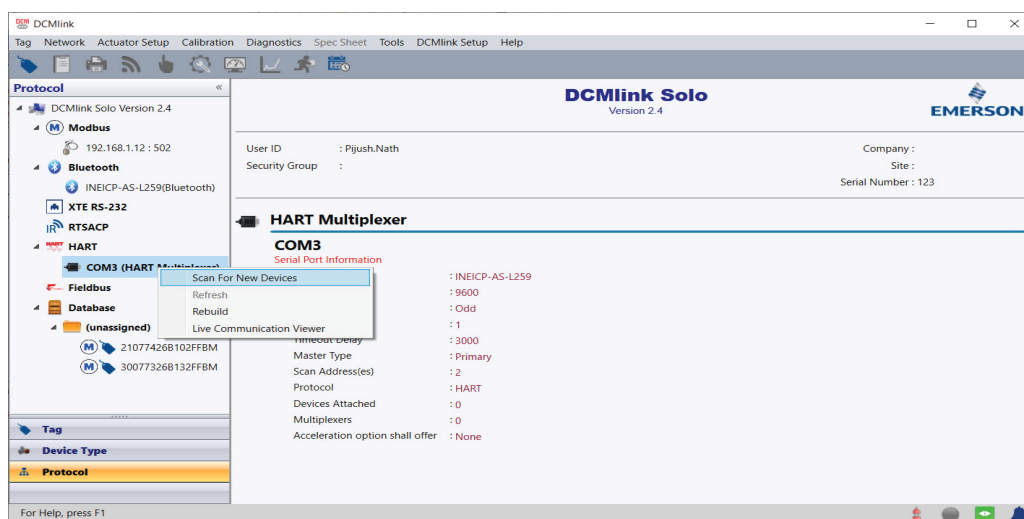
Figure 64 COM Port saved



3.5.2.1.16 On **Protocol Selection View** (navigation pane), right-click on the newly created COM# Port.

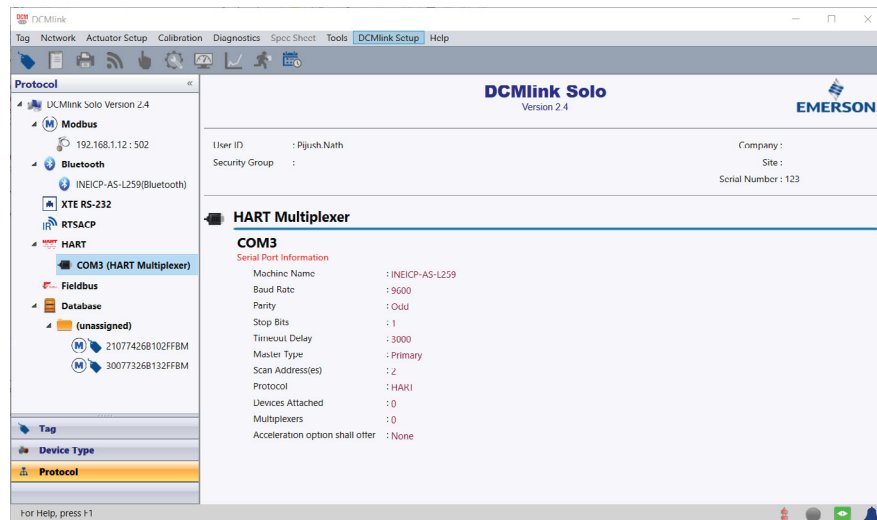
3.5.2.1.17 Click **Scan For New Devices**.

Figure 65 Scan for New Devices



3.5.2.1.18 View after HART MUX is configured.

Figure 66 View after HART MUX configuration



3.5.2.2 Adding Actuator to Multiplexer

NOTE:

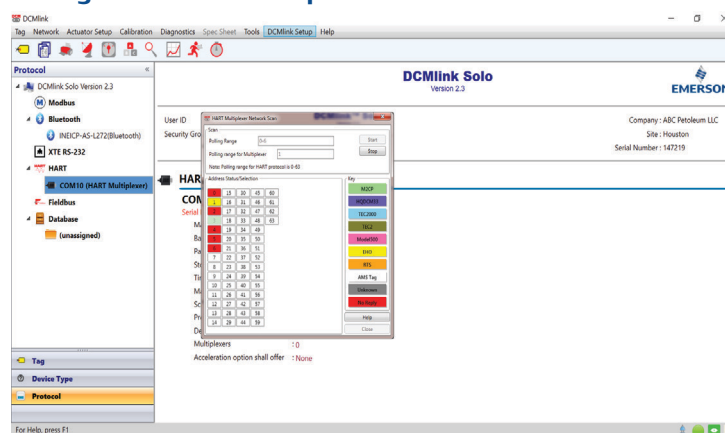
DCMLink Solo must be licensed with a Tag Limit sufficient for the number of connected actuators.

Depending upon the multiplexer, DCMLink Solo can support up to 256 individual loop channels per multiplexer. User can connect one actuator to each loop channel.

To add a new actuator to a multiplexer:

- **Connect HART signal** wiring to the **multiplexer**.
- **Apply power** to the actuator and multiplexers.
- Right click the **multiplexer symbol** and select **Reset and Rescan the Multiplexer** from the drop-down menu.
- If the actuator is recognized by the software, actuator symbol appears beneath the multiplexer on the device connection diagram. If no symbol appears, then the software does not recognize the actuator. Check physical connections and actuator loop power.

Figure 67 Adding Actuator to Multiplexer



3.5.3 Setup Wireless Network

3.5.3.1 Wireless Gateway

— Set Up Gateway Internet Access for AMS Session

NOTE:

A special **CROSSOVER CABLE** must be used for this application.

- Connect crossover Ethernet cable between computer and Ethernet #1 port on Gateway.
- On PC navigate to: **Control Panel > View Network Connections > Local Area Connection > Properties > Internet Protocol Version 4 (TCP/IPv4) > Properties.**
- Select **Use the following IP Address** and enter 192.168.1.12 (subnet mask will come up) select **Ok** and then **Ok** on the next prompt.
- Open Internet Explorer and enter the following address: **HTTPS://192.168.1.10** and hit enter. (*If Security certificate message comes up, you may have to select **Diagnose Connection Problem**).
- Select **Continue to Website** and enter for Username **admin** and Password **default**.
- Select **Explorer** in left margin to read devices (this process might take up to 15 minutes).
 - Set up a computer using a HART Modem
- Install all software/drivers necessary for HART modem prior to connection.
- Open AMS Device Manager and navigate to **Configuration > Add > HART Modem > Install > Next > Next** and select **Hand held device as secondary HART master**, then select the correct COM port for HART modem.
- Go to **Wireless HART adapter block** and check **include Wireless HART adapter** then click finish.

3.5.3.2 Wireless THUM

— THUM Programming – Join to Gateway Network Using a PC

Using the **Wireless HART THUM Kit** (Part No 87263), set up the THUM as shown below:

- Set up computer Internet for Gateway.
- **Plug HART modem** into computer.
- **Open AMS** and navigate to **Device Connection icon > HART modem > THUM >** to read the parameters.
- Select **Configure > Join Device to Network > Enter Network ID** and enter the Network ID inside the cover of the Gateway, click **next**.
- Enter Join Key (Number shown on THUM Tag). All Three remaining Join Keys are eight (8) zeros.
- Select **Network Configuration** on AMS menu and select **Add**.
 - Running AMS to Change the Device Setpoint.
- Navigate and start your AMS Device Manager application.
- Locate and select the **Device Connection View** in the middle of the toolbar.
- Double click **Wireless Network** to see devices.

NOTE:

The message **Network disruption was detected** means no devices are sensed by gateway. If no devices show up on the screen, right click on **Wireless Network** and select **Rebuild and Identify hierarchy**.

- **Expand Gateway > myNet > THUM** and double click on the device logo.
- **Set Time** in the lower left hand corner of the screen to Current from the drop down box select Yes when prompted to continue.
- Expand **Online** on the **Configure/Setup Screen > Detailed Setup > Valve Control > Setpoint** and select the **Change Setpoint** method.
- Select **Yes** and click **next** when the writing wetpoint requires placing the device in out of service mode... Prompt shows up.
- Enter the desired setpoint for the device and click **Next**.
- After receiving the **write setpoint success** message, select **next**, then **finish** to complete the change setpoint method.

3.5.3.3 Installation of Optional THUM Wireless Adapter

1. Component Installation on M2CP

Table 3. Attach wires from the Wireless HART THUM to the CAM16 J4

CAM 16	THUM
I-	White
I+	Yellow

Table 4. Connect Wireless THUM to 320B Board

320B	THUM
26	Red
29	Black

2. Component Installation on HQ33

Table 5. Attach wires from the Wireless HART THUM to the CAM16

CAM 16	THUM
I-	White
I+	Yellow

Table 6. Connect Wireless THUM to DCM33 Board

HQ	THUM
P3-3	Red
P3-4	Black

3. Component Installation on TEC2000/TEC2/EHO

Table 7. Connect Wireless THUM to Actuator

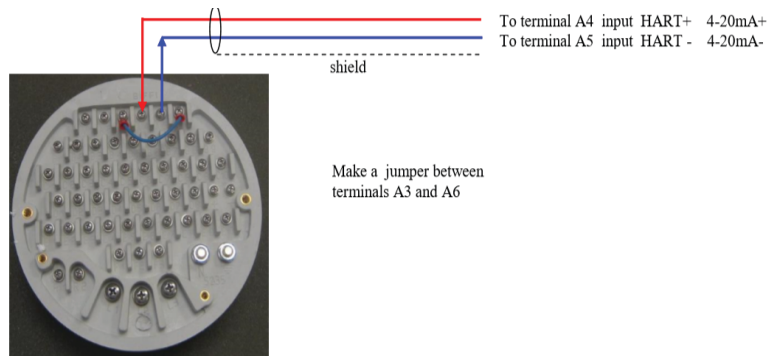
STC	THUM
9	Red
10	Black 1200 Ohm Series Resistor
24	Green (Optional)
43	Yellow
44	White

4. Connect to XTE3000 Actuator

Table 8.

SW5 Pin 1	SW5 Pin 2	SW5 Pin 3	SW5 Pin 4	Connections Mode
OFF	OFF	ON	ON	Point to Point
OFF	OFF	ON	ON	Split Ranging
ON	ON	OFF	OFF	Multidrop

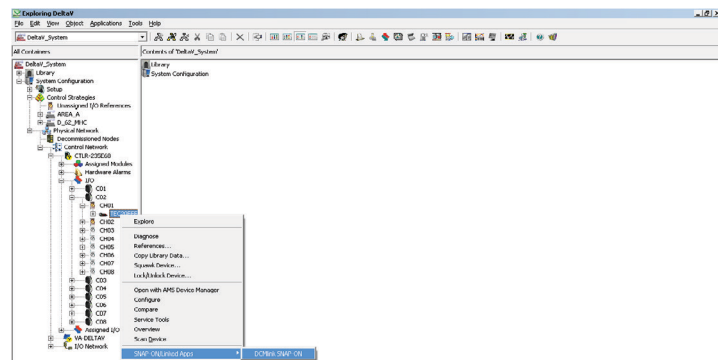
Figure 68



3.5.4 Setup DeltaV Network

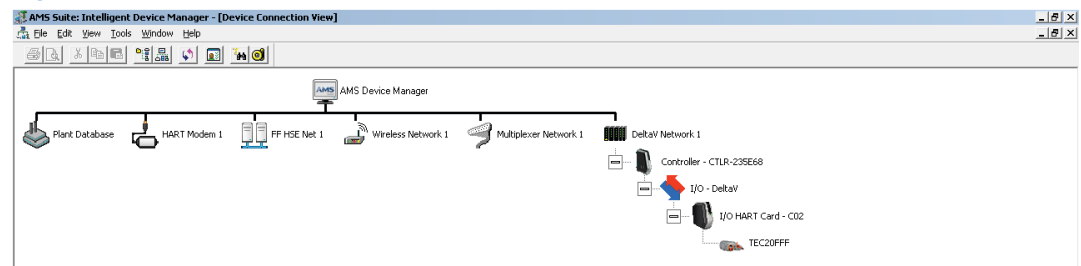
- Connect actuator, DeltaV HART Network.
- Using DeltaV Explorer navigate to actuator.

Figure 69 DeltaV Explorer



- Right click on the actuator and from Context menu user can launch AMS. Once AMS is launched, actuator can be seen under **Navigation view of AMS**.

Figure 70 Actuator on AMS

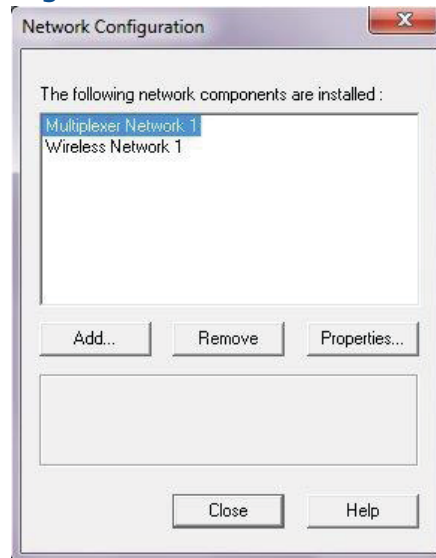


- User can now **launch DCMLink**.

3.6 Multiplexer Networks for DCMLink SNAP-ON

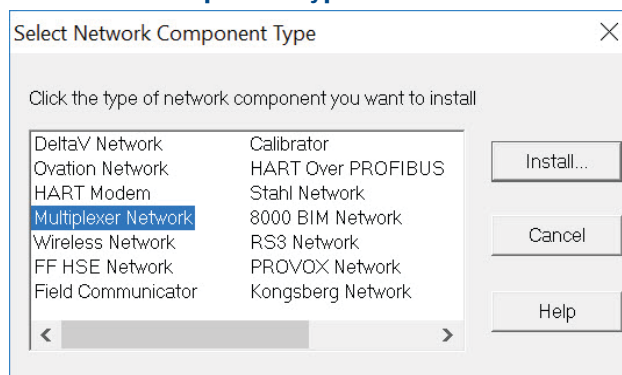
Once connection is completed with MUX, user needs to configure AMS.
To configure AMS:

Figure 71 Network configuration



- Select **Network Component Type** and click **Add**.
- For HART device: **HART Multiplexer**.

Figure 72 Select Network Component Type



- Click **Install** and follow screen instructions.

Figure 73 Add HART Multiplexer Wizard-Start

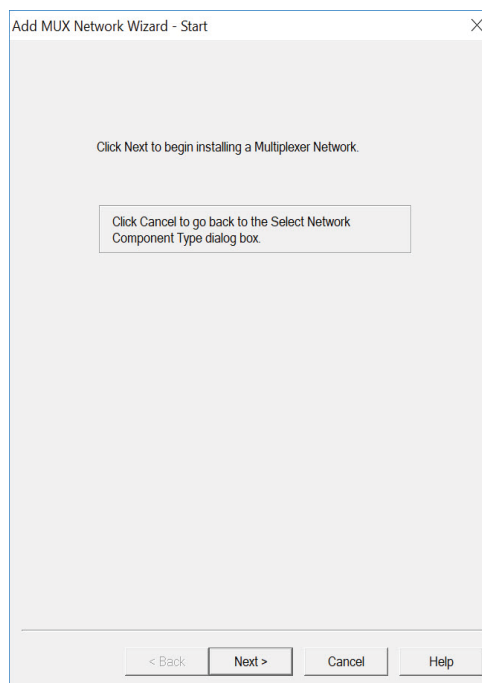


Figure 74 Add HART Multiplexer Wizard-Modem Name

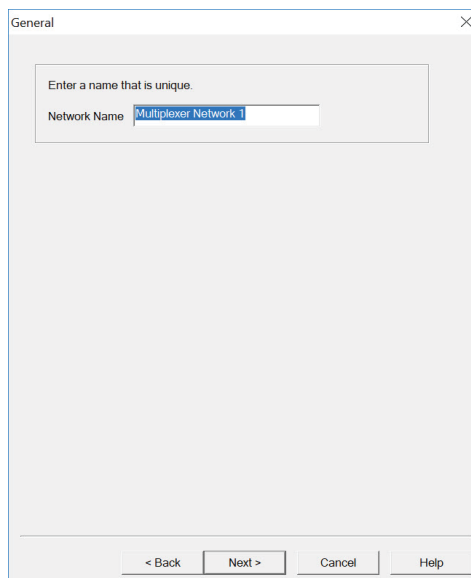


Figure 75 Add HART Multiplexer Wizard-Network Controller

Connection

Mux Network Parameters

COM Port: COM3

Network timeout: 1000 ms.

Baud Rate: 19200

Communication retries: 2

HART Busy retries: 5

Multiplexer address range

RS485 addresses from: 1 to 1

Multiplexer HART Master Mode

☒ Primary master (Handheld Communicator is Secondary master)

☐ Secondary master (control system is Primary master)

☒ Use Device Tags for devices on this Network

< Back Finish Cancel Help

- Select one **COM Port** from the list.
- When completed you will see a **HART Multiplexer** added into the **Network Configuration Screen**.

Figure 76 Network Configuration

Network Configuration

The following network components are installed :

Multiplexer Network 1

Add... Remove Properties...

Close Help

3.6.1 Multiplexer Networks for DCMLink Snap-ON

3.6.1.1 Setting Up Multiplexer Network

DCMLink uses an RS485 Modem to communicate with different actuators through HART multiplexers. Depending upon the multiplexer, DCMLink can support up to 256 individual loop channels per multiplexer. Refer to Table 9 to determine the number of multiplexers and actuators that may be connected to a network.

Table 9. Maximum Number of Multiplexers and HART Devices per Network

Multiplexer Type	Maximum Number of Multiplexers Per Network	Maximum Number of Loops Per Multiplexer
MTL4841 Communications Module	31	256
Pepperl+Fuchs	32	255
Each MTL4841 module receives digital data from a maximum of 16 MTL4842 HART Interface Modules. In turn, each MTL4842 module accesses data from a maximum of 16 HART devices.		

The following procedure to set up a multiplexer network:

- Connect physical equipment. Set all multiplexers and the RS485 converter to the same baud rate.

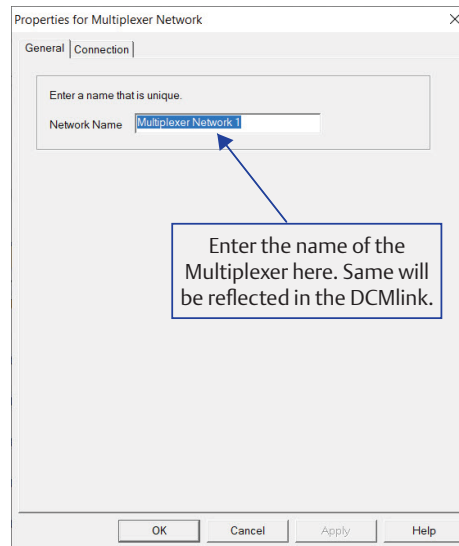
NOTE:

For details about wiring and connecting equipment, refer to the appropriate instruction guide.

- Apply power to the RS485 converter, multiplexers and actuators.

3.6.1.2 Changing the Multiplexer Tag and Descriptor

Figure 77 Changing the Multiplexer Tag and Descriptor

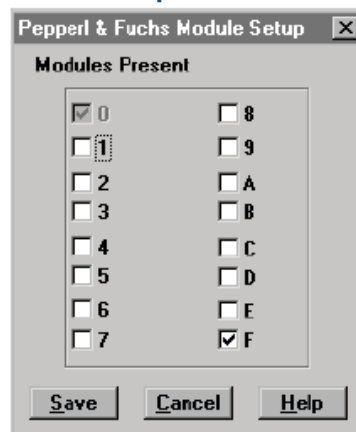


3.6.1.3 Setting Up Pepperl+Fuchs Multiplexer

When adding or removing a submodule from a Pepperl+Fuchs multiplexer, user must reconfigure the multiplexer to indicate the changes. **To setup Pepperl+Fuchs multiplexer:**

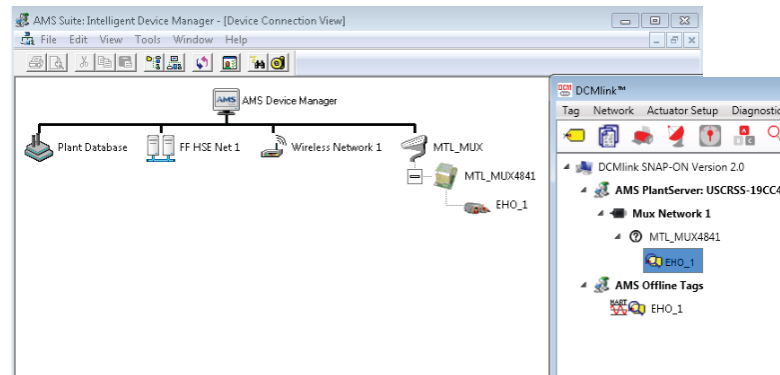
- On each Pepperl+Fuchs slave module, **Set Slave Address** switch to an unused value so that each module has its own individual setting.
- On **Pepperl+Fuchs Module Setup screen**, check those modules that are installed.

Figure 78 Pepperl+Fuchs Module Setup Screen



3.6.1.4 Setting Up MTL Multiplexer

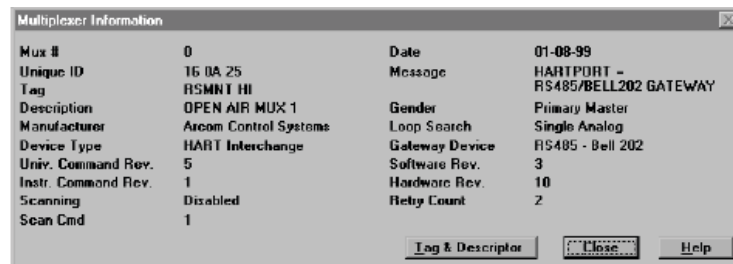
Figure 79 MTL Multiplexer



3.6.1.5 Viewing Multiplexers Status

User can view the status and add a tag and descriptor to each multiplexer on the network. For a Pepperl+Fuchs multiplexer, user can also define which modules are included in the multiplexer.

Figure 80 Multiplexer Information Window



Multiplexer fields:

- **Mux #:** The multiplexer address, determined by the address switch settings on the multiplexer or communications module.
- **Unique ID:** The last six digits of a unique ID number assigned to the multiplexer by the manufacturer.
- **Tag:** A name assigned to the multiplexer from the tag and descriptor screen.
- **Description:** A description assigned to the multiplexer from the Tag and Descriptor screen.
- **Manufacturer:** The multiplexer manufacturer, Emerson, MTL, ELCON, or P&F.

- **Device Type:** HART Interchange for a 2530H1 HART Interchange Multiplexer, MTL4841 Communications Module for a MTL4840 HART Maintenance System, KFD HART Multiplexer System for a Pepperl+Fuchs multiplexer, or an ELCON Mux.
- **Univ. Command Rev.:** The HART command language revision number, always 5.
- **Instr. Command Rev.:** The multiplexer or communications module firmware revision number.
- **Scanning:** Alert scanning. Should always be disabled when not viewing the Network Scan window.
- **Scan Cmd:** HART command level returned to the multiplexer or communications module by the instrument if an alert occurs. May be a1 or a3.
- **Date:** The date data was entered.
- **Message:** A message programmed into the multiplexer or communications module software.
- **Gender:** Whether the multiplexer or communications module is a primary master or secondary master.
- **Loop Search:** Currently the multiplexer or communications module only searches for single analog loops, those loops where the instrument polling address is 0.
- **Gateway Device:** HART signaling scheme. Always RS485 - Bell 202.
- **Software Rev.:** Revision number of the software installed in the multiplexer or communications module.
- **Hardware Rev.:** Hardware revision level.
- **Retry Count:** Number of times multiplexer or communications module attempts to send a command to the instrument. Should be 2 after initialization.

3.7 AMS SNAP-ON Setup

AMS SNAP-ON is a software application that is installed as an integral part of AMS Device Manager to extend its functionality. AMS SNAP-ON adds the diagnostic test capabilities of DCMLink software to AMS Device Manager.

A USB hardware key is not used for installing AMS DCMLink SNAP-ON. However, AMS Device Manager must be licensed for the AMS DCMLink SNAP-ON. To install AMS DCMLink SNAP-ON, user must first have installed a properly licensed copy of AMS Device Manager.

3.7.1 User Setup

- Installing DCMLink SNAP-ON.
- Starting AMS DCMLink SNAP-ON.

⚠ CAUTION

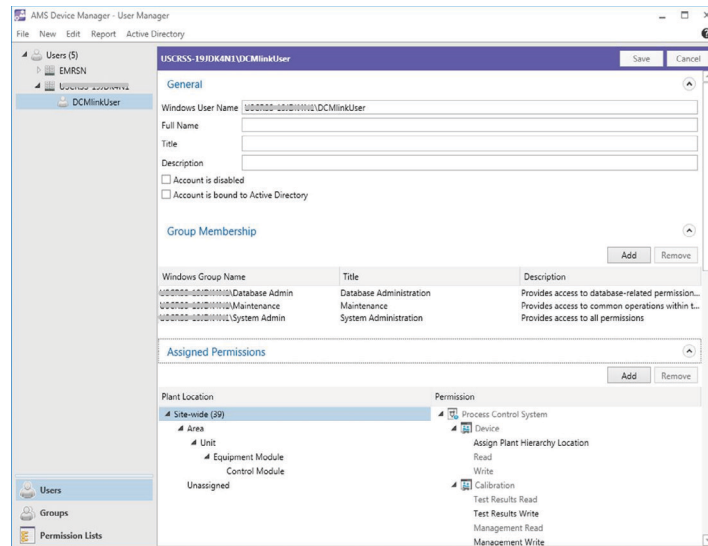
Do not run DCMLink SOLO at the same time when using AMS Device Manager or AMS DCMLink SNAP-ON. Running both simultaneously may cause communication errors.

NOTE:

To successfully use DCMLink SNAP-ON, user must be familiar with using AMS Device Manager. Refer to the **AMS online User's Guide**.

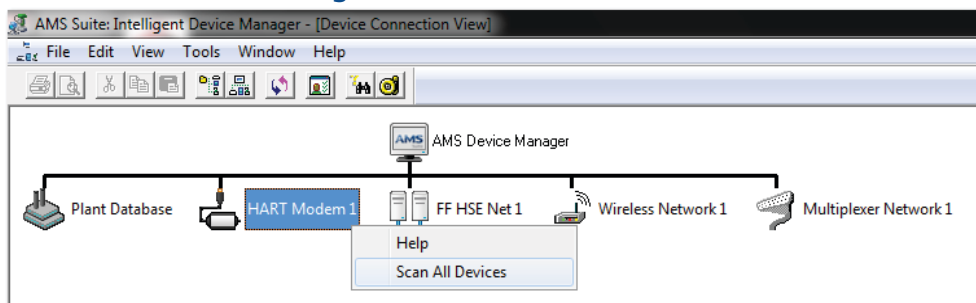
- To make DCMLink SNAP-ON work on AMS 12.5 or below, please ensure to add Computer-Name (DCMLinkUser) as the domain and password (DCMLink@123) to the AMS User Manager dialog. After adding the user to the AMS, make sure to add groups and select all groups for the DCMLinkUser, followed by granting of permissions. See below for a screen capture.
- For AMS 13.0 and above, add user login to AMS User Manager dialog. This will launch AMS 13.0 and above using the user login credentials directly from the system.

Figure 81 AMS Device Manager -User Manager



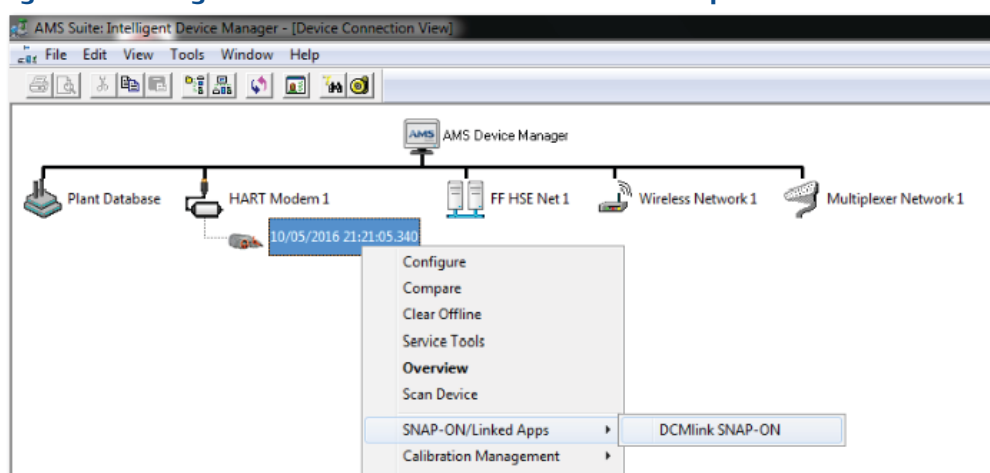
- Start AMS Device Manager by selecting **Start> Programs > AMS > AMS system** from the Windows taskbar.
- The AMS Explorer or Device Connection View window displays.
- AMS displays the communication devices (modem, multiplexer) that are connected to the PC running AMS and the AMS DCMLink SNAP-ON. Right-click device icon and select **Scan All Devices** to locate connected HART instruments.

Figure 82 AMS Device Manager Device Connection View



- When actuator icon appears, right-click the actuator icon and select **SNAP-ON/Linked Apps > DCMLink** from the context menu.

Figure 83 Right-Click Communications Device Icon to Open Menu



3.8 Troubleshooting Communication Issues

Table 10. Installation Issues Question and Answer Table

Section	Question and Answer
Serial Ports	Question: DCMLink software does not detect all of my serial ports. How do I enable DCMLink Software to use a port that it doesn't automatically detect?
	Answer: In the PreferenceSetting.XML file, ModbusSettings section, user can add a entry for ModbusSetting. If the user makes this change while DCMLink Software is running, the user will have to exit and restart the software for this change to take effect.
COM Port	Question: DCMLink Software isn't detecting the COM port. What could be causing this problem?
	Answer: Close DCMLink and relaunch application. If the problem persists, restart the computer. Alternatively, the user can try programs, such as Allen Bradley or competitive valve suppliers, etc., that may be using the COM port. Other causes may include: The power saving option is set and has caused the port to use the low power option. You need to set the power saving to none and delete and reinstall the COM port. The COM ports hardware is malfunctioning. To solve this, please contact your System Administrator
Communication Errors in DCMLink	Question: I am getting communication errors when performing operations with DCMLink. What can I do to fix the errors?
	Answer: In the PreferenceSetting.XML file, ModbusSetting section, try changing the value of delay [Timeout delay]. If you make this change while DCMLink Software is running, the user will have to exit and restart the software for this change to take effect.

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