

Fundamental PI Instruction Manual

Using PI to Track and Trend Data

Abstract

The purpose of this manual is to provide fundamental knowledge on how to use PI ProcessBook and various features of PI. Some features of Microsoft Excel pertaining to PI are also covered to provide ease of access and additional utilization. The features of PI covered in this manual include: activating PI DataLink in Excel, adding PI tags and values to Excel, creating new displays in PI, and trending data in PI ProcessBook.

Revision

Revision	Authors	Date Revised
Rev.0	Stephanie Marshall, Amy Feng, Paul Hagadone, Daniel LaForest	February 24, 2015

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PI-1.0: Set up PI Datalink Add-Ins in Excel

Program: Excel

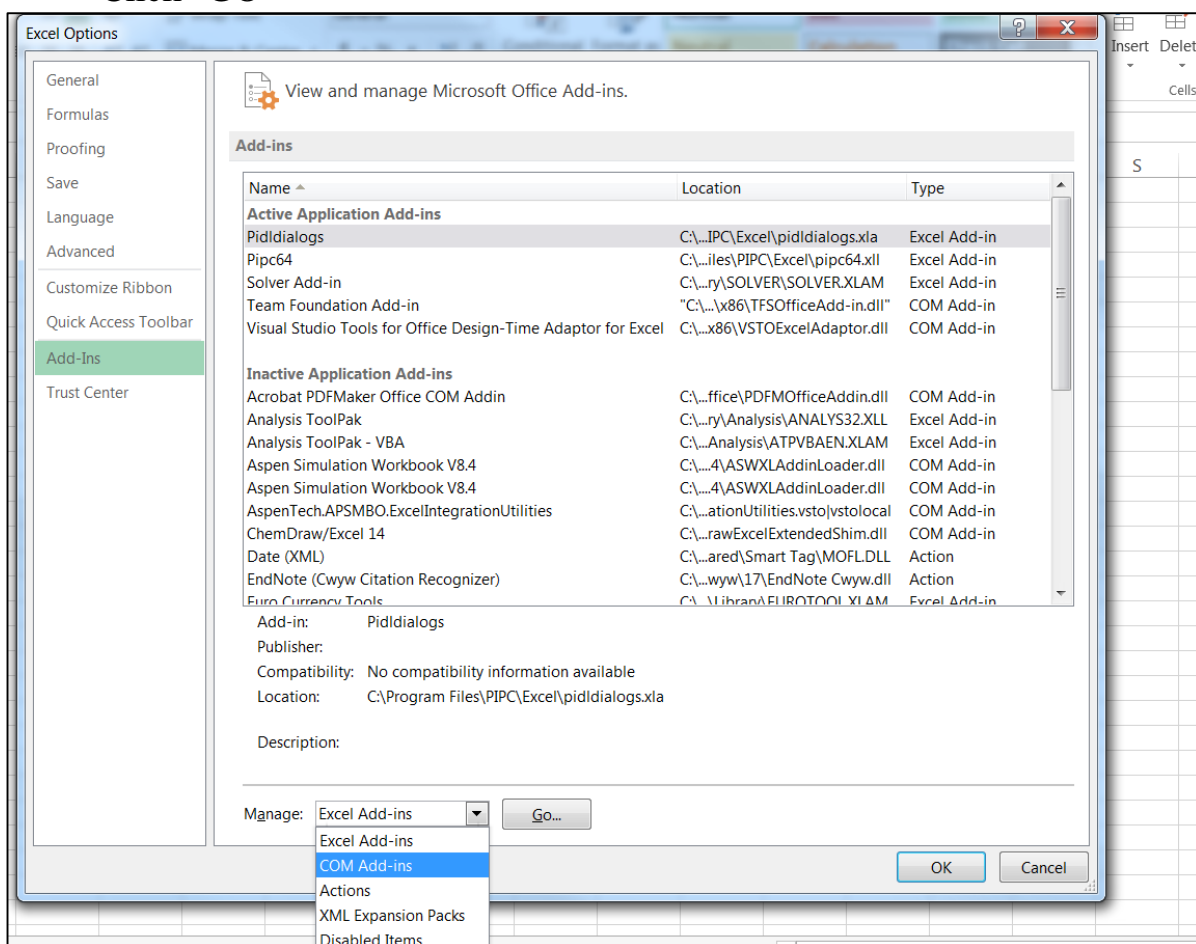
Procedure:

Click on “File”

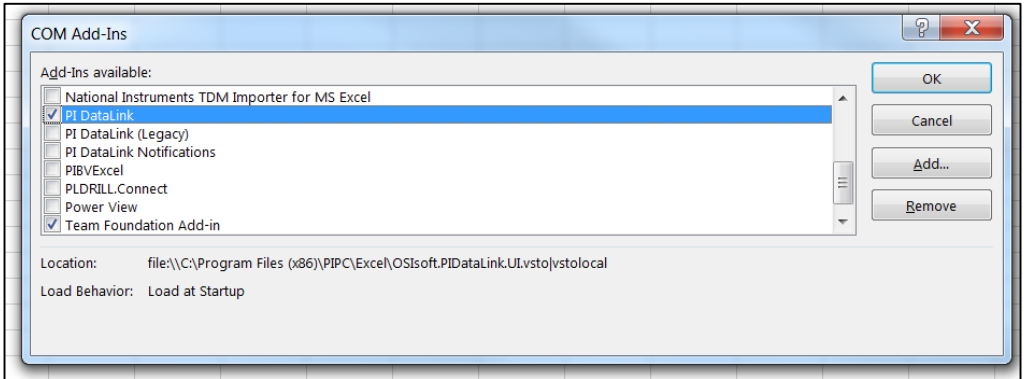
- Click on “Options”
- Click on “Add-Ins” from the left panel

From the “Manage” dropdown menu located on the bottom of the page

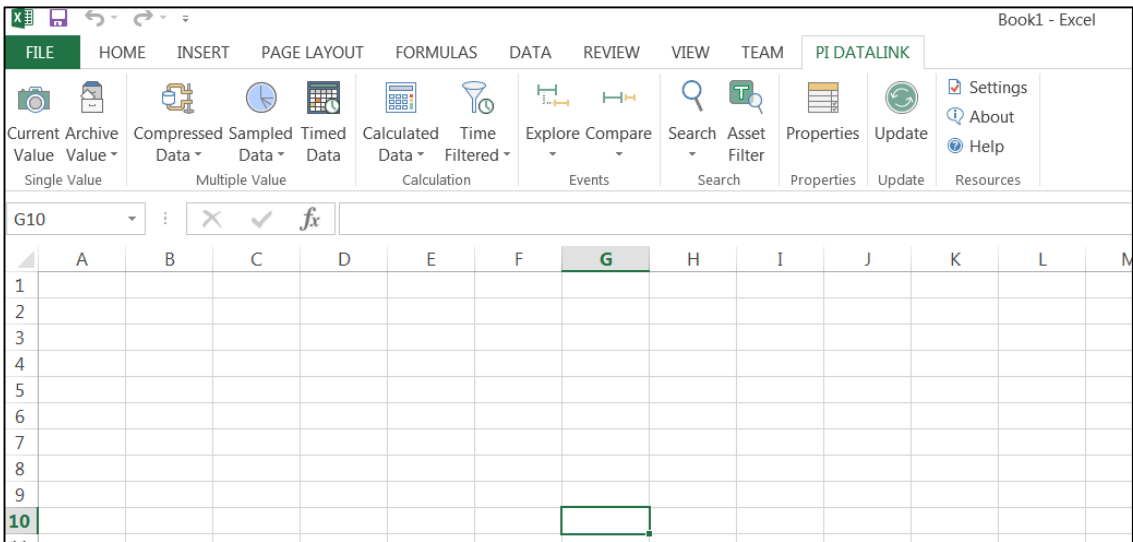
- Select “COM Add-ins”
- Click “GO”



- ❑ From the COM Add-Ins window
 - Check the “PI DataLink” checkbox
 - Click “OK”



- ❑ “PI DATALINK” will appear in the ribbon tool bar



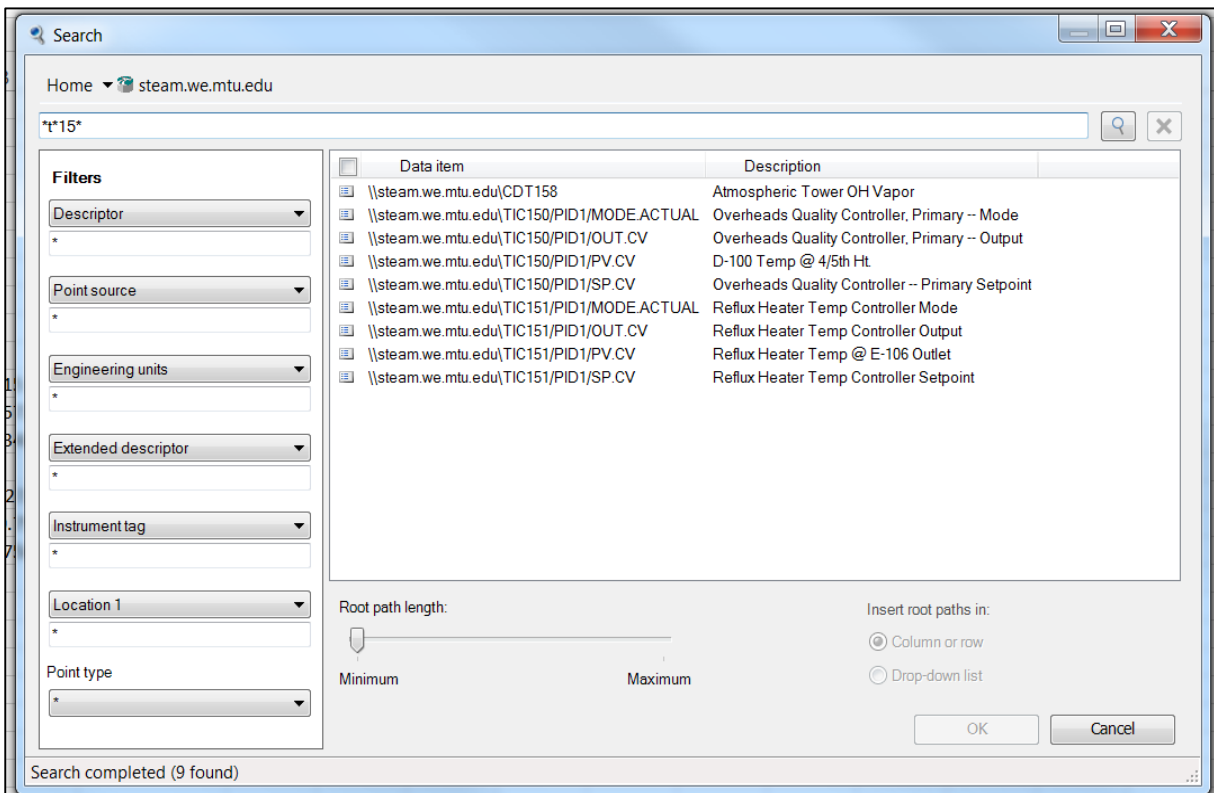
PI-1.1: Add PI Tags to Excel

Screen: Excel

Procedure:

- Click on "Search" from toolbar
- Select the "steam.we.mtu.edu" server to search
- In the top search bar, type in "*T*"
- Select the tag you want
 - Click "OK"
 - The tag will show up in the highlighted cell

Tips: Can search both numbers or letters separately, just add "*" to the beginning (i.e. "*T*15*") to narrow search results if you know what you are searching for



PI-1.2: Get PI Data in Excel over a Time Range

Screen: Excel

Procedure:

- Insert the tag
- Manually enter the Start Time for the corresponding tag
- Manually enter the End Time for the corresponding tag

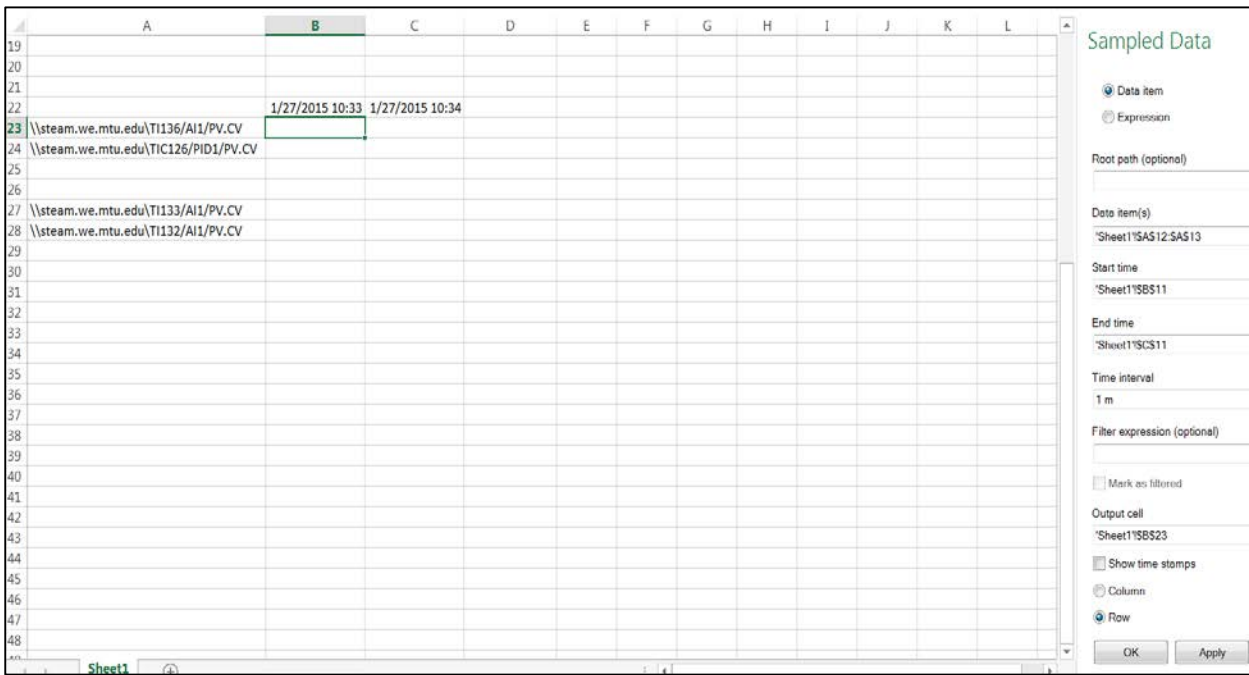
1			
2		1/27/2015 10:33	1/27/2015 10:34
3	\\steam.we.mtu.edu\TI136/AI1/PV.CV		
4	\\steam.we.mtu.edu\TIC126/PID1/PV.CV		
5			
6			
7	\\steam.we.mtu.edu\TI133/AI1/PV.CV		
8	\\steam.we.mtu.edu\TI132/AI1/PV.CV		
9			

PI-1.3: Import PI Values to Excel

Screen: Excel

Procedure:

- Click on “Sampled Data” from the “PI DATALINK” ribbon
- In the “Sampled Data” panel
 - Select “Data Item”



- In the “Data item(s)” field
 - Input/Select the desired PI tags
- In the “Start time” field
 - Input/Select the start time in the tag

- In the “End time” field
 - Input/Select the end time in the tag

Tips: Can drag more than one tag at a time to the field, by selecting more than one cell

- In the “Time Interval” field
 - Input/Select the desired frequency that Excel exports data

Tips: Time Interval: 1m = 1 minute, 1s = 1 second, 1d = 1 day, 1M = 1 month

- In the “Output cell” field
 - Select the desired cell to output
 - Click “OK”
 - The values will be displayed

8			
9			
10			
11		1/27/2015 10:33	1/27/2015 10:34
12	\\steam.we.mtu.edu\TI136/AI1/PV.CV	143.5726929	142.1006927
13	\\steam.we.mtu.edu\TIC126/PID1/PV.CV	169.3482513	168.9866638
14			
15		1/27/2015	1/27/2015
16	\\steam.we.mtu.edu\TI133/AI1/PV.CV	210.750061	210.7730103
17	\\steam.we.mtu.edu\TI132/AI1/PV.CV	211.7588348	211.779007
18			

PI-1.4: Refreshing PI Data in Excel

Screen: Excel

Procedure:

- In Excel
 - Click F9
 - Wait for Excel to refresh

PI-2.0: Create New ProcessBook in PI

Screen: PI ProcessBook

Procedure:

- Click on “File”
 - Click on “New”
 - Select “ProcessBook Entry”
 - Click “OK”
- In the Define ProcessBook Entry window
 - Fill in the “Label” field
 - Select “Display” in the Type field

Tips:

Display – Graphic display

Text – Information Only, no live data

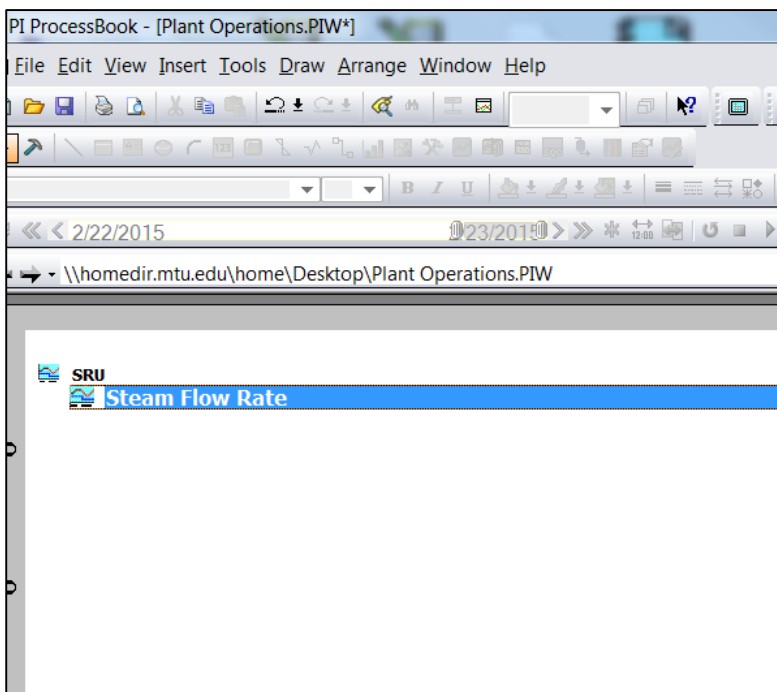
Link/ OS Command – Link provide link feature to shared users, OS is for use in external program

- Choose "1" for the "Level" field
 - Click “OK”
 - A new process book created will be displayed

Tips:

1 – original ProcessBook


2 – Sub-ProcessBook, break down of the original PorceeBook

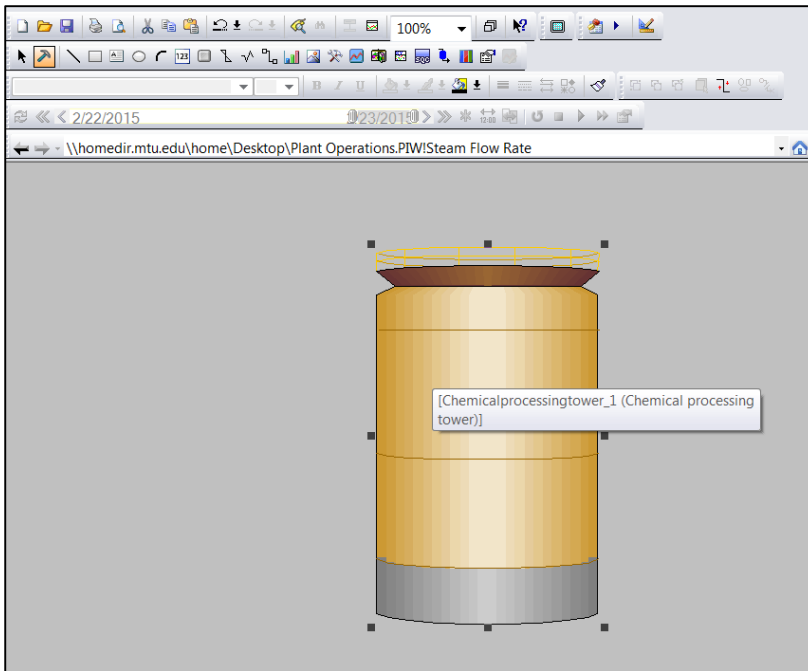


PI-2.1: Build Equipment in PI ProcessBook

Screen: PI ProcessBook

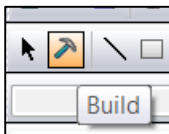
Procedure:

- Select a ProcessBook created/existed
- In the ProcessBook editing window
 - Click on the “Symbol Library”  icon on the toolbar
 - Drag a box on the display screen
 - The symbol library window will be displayed



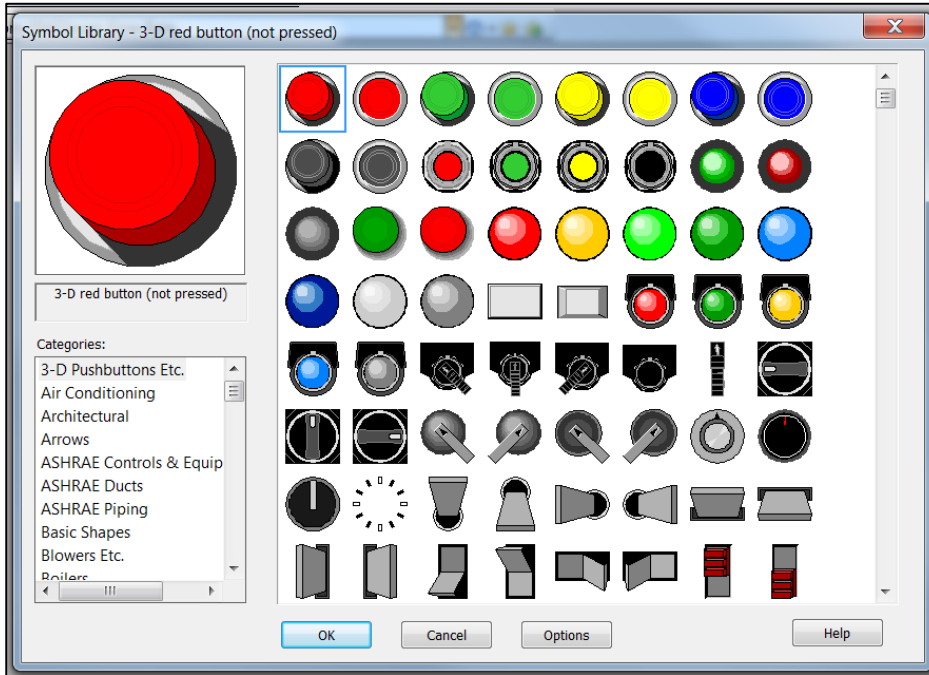
Tips:

1. The size of the box a user drag will be the size of the equipment once selected
2. To resize the equipment, switch the mode “Run” to “Build”, by selecting the “Build” icon from the toolbar



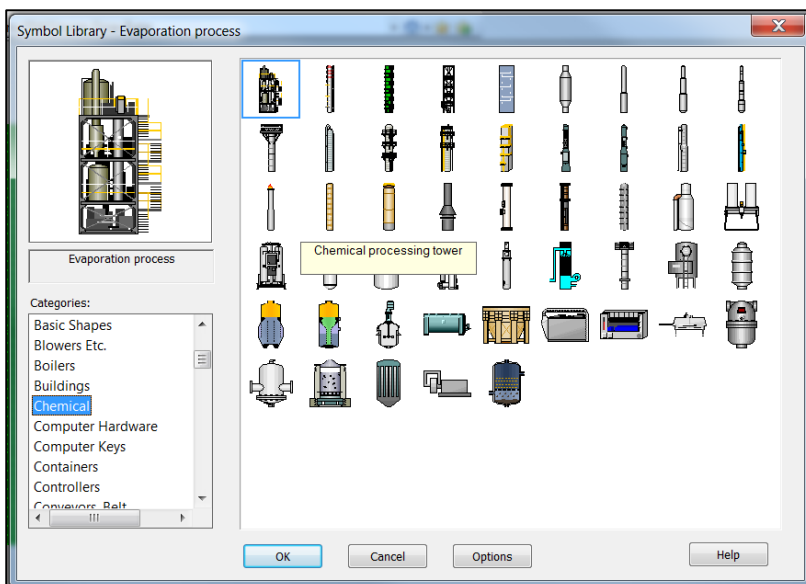
3. User can use either “Run” or “Build” mode to continue building the ProcessBook

- In the Symbol Library window
 - Select a category from the Category list
 - Choose a symbol icon from the selected category
 - Click “OK”



For example, to create a chemical processing tower


- Select the “Chemical” category
- Select the “Chemical Process Tower” symbol icon
- Click “OK”



PI-2.2: Add Values to PI ProcessBook

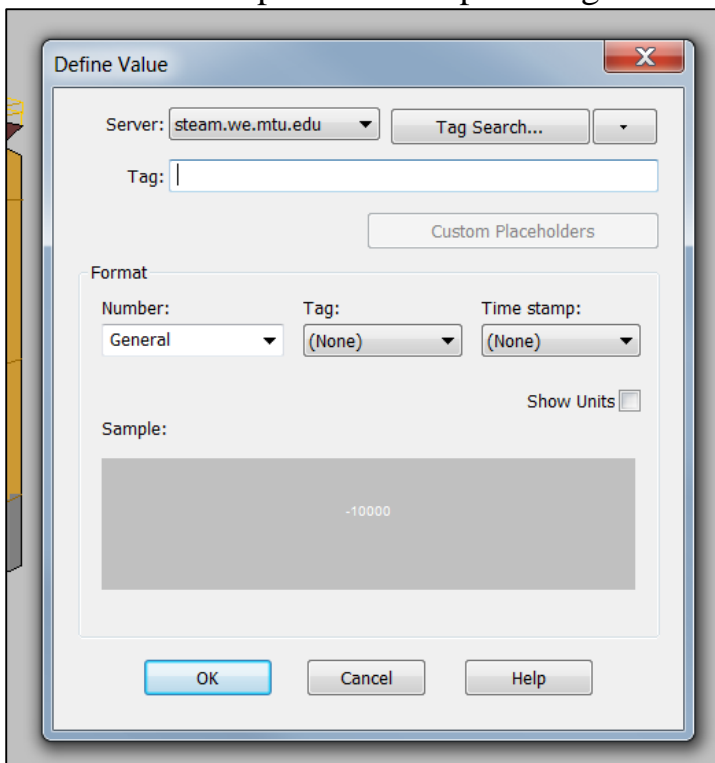
Screen: PI ProcessBook

Procedure:

- ❑ In the ProcessBook edit window
 - Click on the “Value”  icon from the toolbar
 - Drag next to or on the equipment
 - A Define Value window will be displayed
- ❑ In the Define Value window
 - Enter the tag name if known
 - Otherwise, click “Tag Search” to choose a tag
 - Choose General for the “Number” field under the “Format” section
 - Check “Show Units” checkbox
 - Click “OK”

Tips:

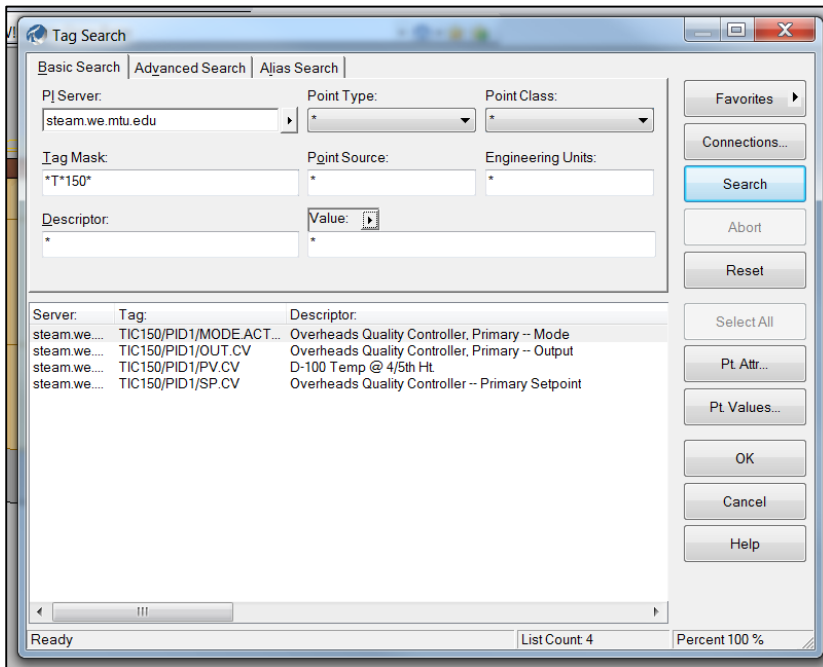
1. Tag - tag description number on display
2. Time stamp – time stamp reading for the tag on display



For example, to search for the “D-100 Temp @ 4/5th Ht.” tag


Search for “*T*150*” in the “Tag Mask” field

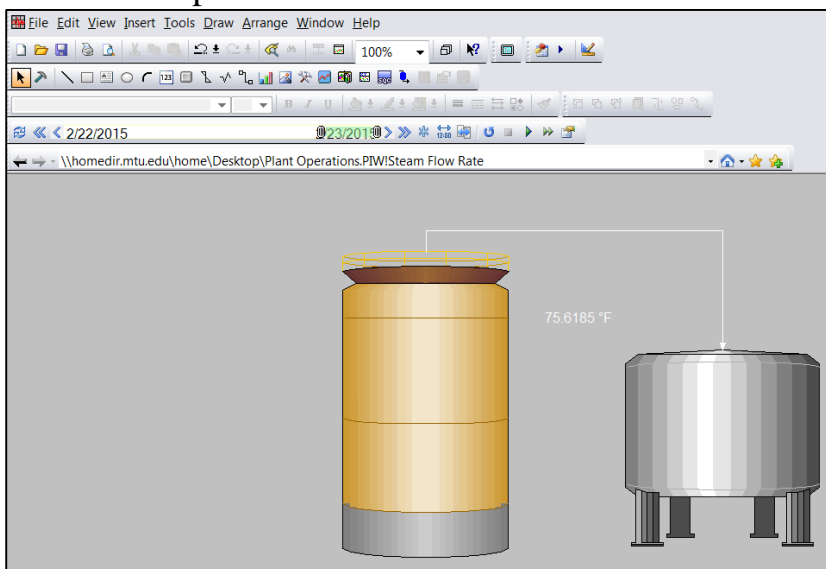
Choose “D-100 Temp @ 4/5th Ht.” tag



A tag with values will be displayed for the equipment created

Once all equipment is created


- Click on the “Connector”  icon
- Click on the first equipment and drag the connector to the next equipment in the process



PI-2.3: Trend Data in PI ProcessBook

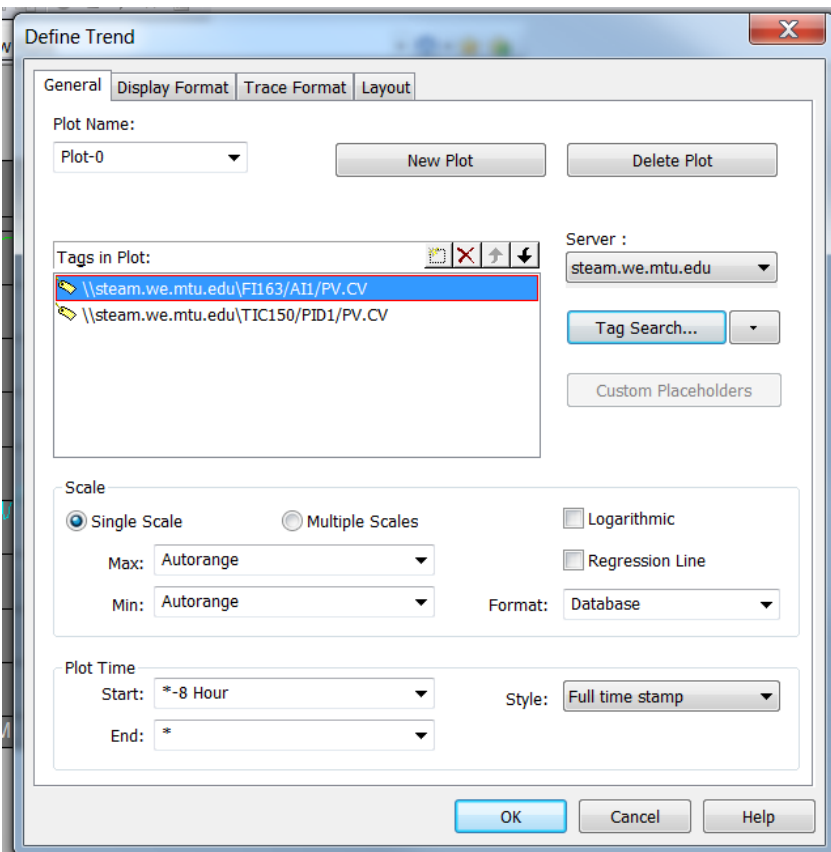
Screen: PI ProcessBook

Procedure:

- In the ProcessBook edit window
 - Click on the “Trend”  icon from the toolbar
 - Drag onto the display screen
 - A Define Trend window will be displayed
- In the Define Trend window
 - Enter the tag name if known
 - Otherwise, click “Tag Search” to choose a tag
 - Click “OK”

For example, to search for the “D-100 Temp @ 4/5th Ht.” tag and the “Reflux Flow” tag

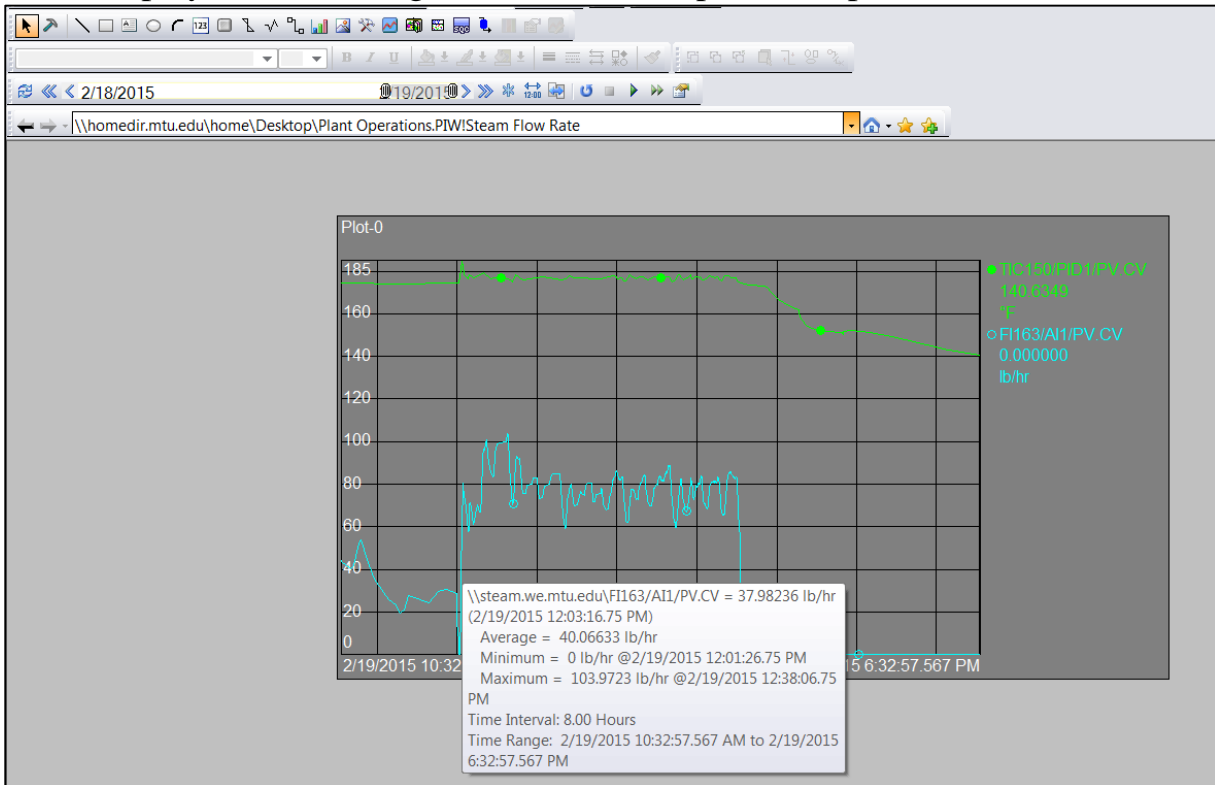
- Search for “*T*150*” in the “Tag Mask” field
- Choose “D-100 Temp @ 4/5th Ht.” tag
- Search for “*F*163*” in the “Tag Mask” field
- Choose “Reflux Flow tag



□ A trend for the tags selected will be displayed

Tips:

1. Arrows below the trend lines can be used to filter historical time stamp
2. In “Run” mode, hover over the trend line, a pop up window will be displayed with the tag values, time stamp, and set points



PI-2.4: Trend Tags on an Existing PI ProcessBook


Screen: PI ProcessBook

Procedure:

- Open an existing PI ProcessBook
 - Click on an existing tag
 - The tag will be highlighted with a red box

Tips:

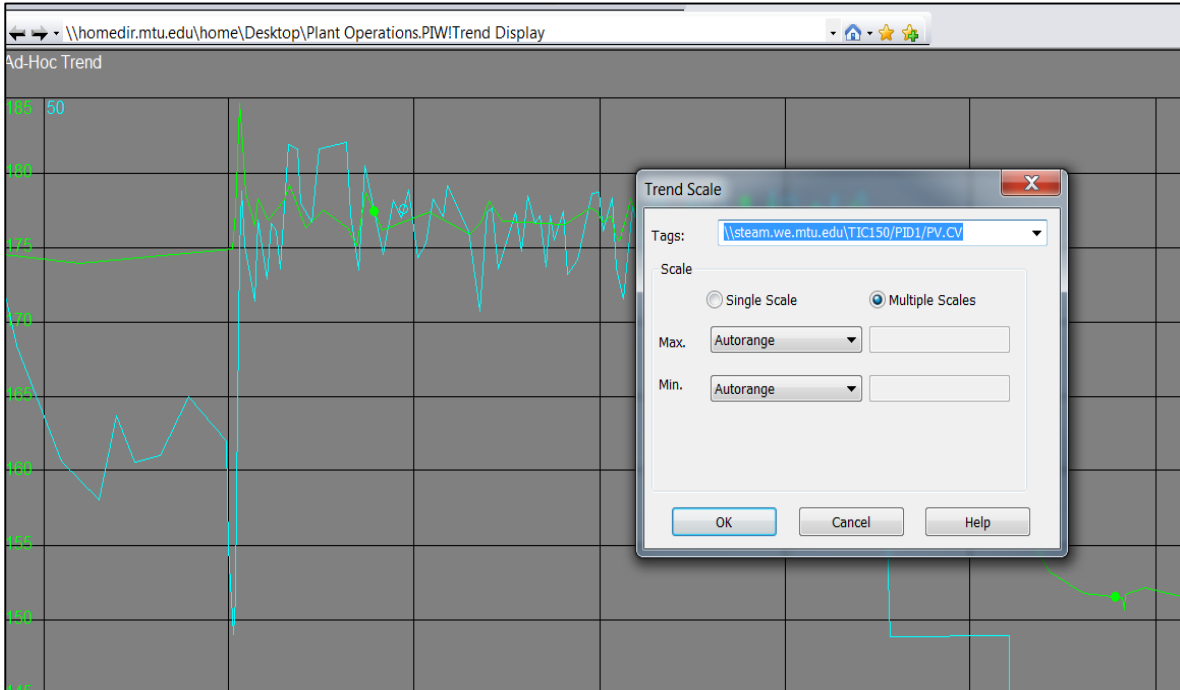
To trend multiple tags at once, hold the “control” key and click on the desired tags

- With the highlighted tag
 - Click on the “Trend Display”  icon from the toolbar
 - A trend window will be displayed

Tips:

If the data does not display over the same range, click on the y-axis to create multiple scales, a Trend Scale window will be displayed

- In the Trend Scale window
 - Choose “Multiple Scale” from the Scale section
 - Click “OK”



For example, create trend for the Temperature tag from TIC-150, and Output tag from TIC-163

- Select the temperature tag from TIC-150 and output tag from TIC-163
- Click on the "Trend Display" icon to build trends

