



Excel Companion

(Profit Embedded PHD)

User's Guide



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(Profit Embedded PHD)

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About Excel Companion

Overview

With Uniformance Excel Companion you can retrieve Process History Database (PHD) data from Profit Embedded PHD and display it in Microsoft® Excel. You can then use Excel to perform statistical analyses on the data.

Excel Companion Features

Excel Companion provides a windows interface that makes it easy for you to retrieve data from Profit Embedded PHD. The Excel Companion windows enable you to format cells and specify formulas in cells for retrieving and analyzing data that you retrieve from Profit Embedded PHD. There is also a Quick chart feature that enables you to quickly chart-retrieved data.

About this Guide

This guide provides instruction on the tasks associated with retrieving data from Profit Embedded PHD and displaying it in different formats in Excel.

Who Should Use this Guide

This guide is intended for engineers, plant operators, and lab staff who use Excel Companion to monitor plant operations, processes, and to analyze data.

The users of this guide should be familiar with the following Profit Suite components: Profit Embedded PHD, Profit Controller, Profit Optimizer and Profit Tag Explorer (Tag Explorer for ProfitSuite Embedded PHD).

What's in this Guide

The following table shows the information in each section of this guide:

This section...	Contains this information...
About Excel Companion	An overview of Excel Companion and this guide.
Getting Started	What you need to get started using Excel Companion.
Defining Queries	How to define parameter by which data is retrieved.
Getting Data	How to retrieve different types of data using Excel Companion.
Customizing Data	How to specify what parts of data to retrieve.
Working with Data	How to display the data.
Managing Files	How to copy, save, and move files.
Advanced Features	Visual Basic Code.
Glossary	The terms used in this guide.
Index	A detailed index of this guide.

Conventions Used in this Guide

The following typographic and stylistic conventions are used throughout this guide:

This...	Indicates this...
Click	To position the mouse over a topic, button, box, or window area and then click the left mouse button.
Double-click	To position the mouse over a topic, button, box, or window area and then click the left mouse button twice in succession.
Shift-click	To press the Shift key while clicking items in contiguous order with the left mouse button. Used to select and drag multiple items.
Ctrl-click	To press the Ctrl key while clicking non-contiguous items with the left mouse button.
Right-click	To position the mouse over a topic, button, box, or window area and then click the right mouse button.
Shift-right-click	To press the Shift key while right-clicking. Used to access the shortcut menu when multiple items are selected.
<i>Italics</i>	A chapter in this guide or another Uniformance document.
Times Bold	Text you type into an Excel Companion box.
Arial Bold	A button you click or a menu command you select in an Excel Companion window.

Contact Us

If you have any comments or concerns about this documentation, please email us at: support@honeywell.com

Ensure that you type **Uniformance Documentation** as the subject line of your e-mail message.

Getting Started

System Requirements

Refer to the *Uniformance Database System Specification and Technical Data* document to view the system requirements for Excel Companion.

Supported Versions of Excel

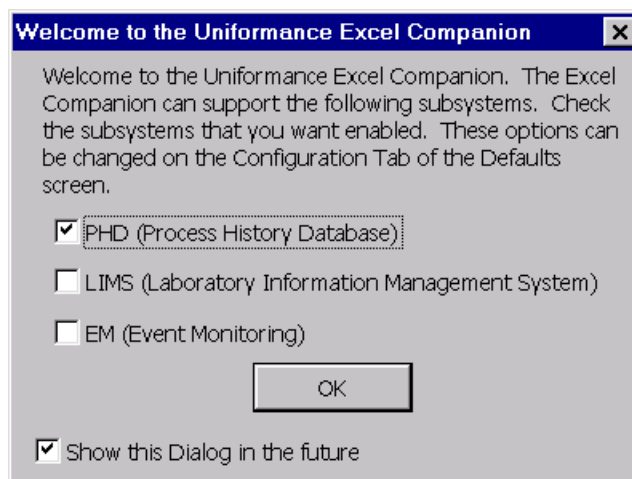
Excel 97 and Excel 2000 are supported with the Excel Companion. The same add-in (Uniformance97.xla) is used for both Excel 97 and Excel 2000.

Starting Excel Companion

Depending on the installation method used, Excel Companion will start when you open Excel, without having to manually select it as an Excel Add-in. If there is an Excel Start icon in your Microsoft Office directory, you do not need to Add-in Excel Companion.

To start Excel Companion

1. From the Windows taskbar, click **Start, Programs** and then select **Excel**. The Welcome to Uniformance Excel Companion window appears:



2. Click the PHD subsystem and unclick the LIMS and EM subsystems.

If you do not want to see this dialog each time you start the Excel Companion uncheck the 'Show this Dialog in the future' checkbox.

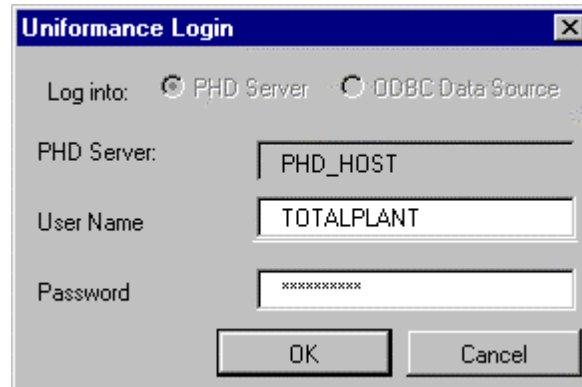
3. Click **OK**.
Excel Companion launches.

Logging In

Depending on the security settings in PHD, when you query a new PHD host, the Excel Companion tries to query the PHD Host without logging in. If successful, you do not have to log in to PHD. Otherwise, the PHD login box appears.

To log in to a data source

1. From the Uniformance menu, select **Connection**, and then select **Login**.
The Uniformance Login window appears:

The image shows a Windows-style dialog box titled "Uniformance Login". At the top, there are two radio buttons: "PHD Server" (which is selected) and "ODBC Data Source". Below this, there are three text input fields. The first is labeled "PHD Server:" and contains the text "PHD_HOST". The second is labeled "User Name" and contains the text "TOTALPLANT". The third is labeled "Password" and contains a series of asterisks "XXXXXXXXXX". At the bottom of the dialog box, there are two buttons: "OK" and "Cancel".

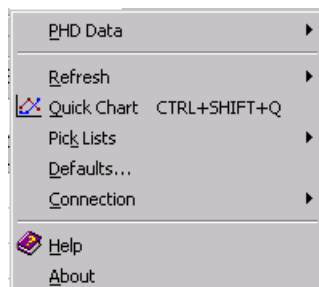
2. Click **PHD Server**.
3. In the PHD Server box, select a server.
4. In the User Name box, type your user name.
5. In the Password box, type your password.
6. Click **OK**.
You are connected to the specified server.

Navigating Excel Companion

All standard Excel menus and toolbars are available to you when you use Excel Companion.

Using the Menu

In addition to the standard Excel menus, Excel Companion provides the Uniformance menu:

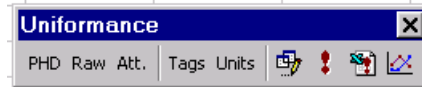


Use the Uniformance menu commands as follows:





Click...	To...
PHD Data	Get PHD data, raw data, or tag attributes.
Refresh	Update the data in a spreadsheet.
Quick Chart	Create a Quick chart to display data.
Pick Lists	This menu command does not work with Profit Embedded PHD.
Defaults	Change your system defaults or enable or disable subsystems.
Connection	Check the status of a database connection or log in to a different server.
Help	Get help using Uniformance Excel Companion.
About	Learn about Uniformance Excel Companion.

Using the Toolbar

As well as the standard Excel toolbars, an extra toolbar appears when you use Excel Companion.



The Uniformance toolbar offers some of the same functions as the Uniformance menu. Use the toolbar as follows:

Click...	To...
PHD	Get PHD data.
Raw	Get raw data.
Att.	Get tag attributes.
Tags	This function does not work with Profit Embedded PHD.
Units	This function does not work with Profit Embedded PHD.
	Make changes in an Excel Companion window.
	Refresh only the selected data in a spreadsheet.
	Refresh the data in the entire spreadsheet.
	Create a Quick chart to display retrieved data.

Understanding Excel Companion Windows

The Excel Companion windows enable you to retrieve data from Profit Embedded PHD.

There are three different windows you can use to retrieve different types of data. When you retrieve data from Profit Embedded PHD, you can choose between getting PHD data, raw data, or tag attribute data.

Using Excel Companion Windows

Using the Excel Companion windows, you can:

- § Using Profit Tag Explorer, Select tags for which to retrieve data.
- § Specify retrieved attributes of tags.
- § Select aggregates for the retrieval of data.
- § Specify presentation formats to display data.
- § Select times and intervals for data retrieval.
- § Specify cells on the spreadsheet as outputs for the data.
- § Specify cells on the spreadsheet as calculations of the data.

Accessing the Excel Companion Windows

You can access the following three Excel Companion windows to retrieve data by using menu commands or using the toolbar. Refer to the section on *Using the Toolbar* for information about the toolbar commands. Access the windows as follows:

Click...	To...
PHD Data, then click Data	Access the Excel Companion Get PHD data window.
PHD Data, then click Raw	Access the Excel Companion Get PHD Raw data window.
PHD Data, then click Attributes	Access the Excel Companion Get Attributes window.

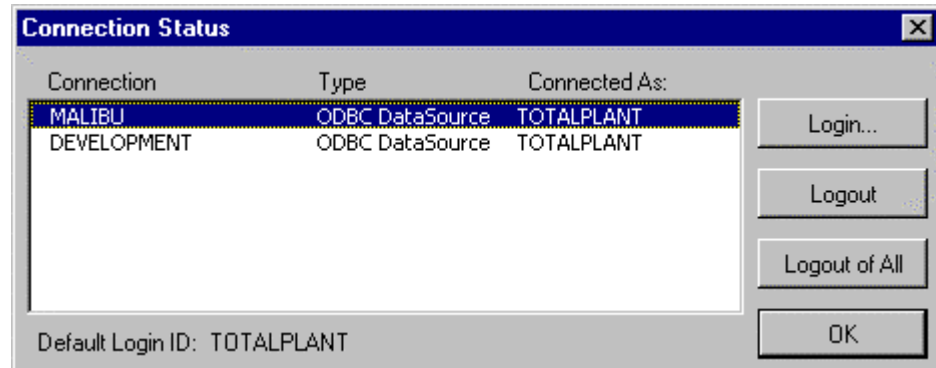
Logging Out

Excel Companion will automatically log you out when Excel is closed. If you want to explicitly log out of a connected data source, you can do so through the Connection Status Dialog.

To disconnect from a data source

1. From the Uniformance menu, select **Connection, Status**.
The Connection Status window appears:


Click **Logout of All** to disconnect from all connected servers.



Click the server from which you want to logout.

Click **Logout** to disconnect from the selected server.

To close Excel Companion

-  § In the upper-right corner of the open Excel window, click the **Close** icon.

Defining Queries

Overview

Before you can retrieve data using Excel Companion, you must select the tags for which to retrieve data and define the parameters by which data is retrieved. You do this in the Excel Companion windows. Refer to the *Understanding Excel Companion Windows* section for more information about using these windows.

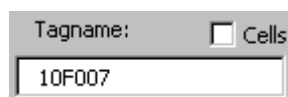
Selecting Tags

Before you can retrieve data in Excel, you must select tags. There are three ways to specify the tags for which you want data retrieved. You can:

- § In an Excel Companion window, in the Tagname box, type the tagname.
- § Use Profit Tag Explorer to copy and paste, or drag tags into the Tagname box of an Excel Companion window. Refer to the *Profit Tag Explorer User Guide* for information about using Profit Tag Explorer.
- § On the spreadsheet, select a range of tags.

Typing Tagnames

If you know the tags for which you want to retrieve data, you can just type the tagnames into the Tagname box. In Excel Companion windows, the Tagname box looks like this:



To type tagnames

2. In an Excel Companion window, in the Tagname box, type the tagname for which to retrieve data.



Click the **right arrow** icon to move the tagname to the Selected Tags - Units box.

Repeat steps 1 and 2 for each tag you wish to select.

Notes:



§ Click the **left arrow** icon to remove a selected tagname from the list of Selected Tags.



§ Click the **double left arrow** icon to remove all tags from the list.

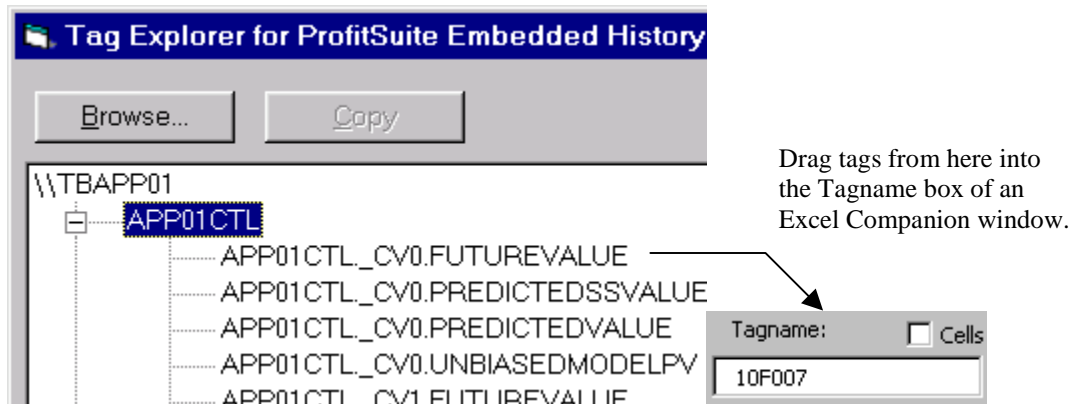
Using Profit Tag Explorer

You can open Profit Tag Explorer and drag, or copy and paste tags into the Tagname box of an Excel Companion window. To open Profit Tag Explorer click Start/Programs/Honeywell HiSpec Solutions/Profit Tag Explorer or click the **Profit Tag Explorer** desktop shortcut icon.

To get tags using Profit Tag Explorer

1. In the Profit Tag Explorer window, click a tag and drag it into the Tagname box or the Selected Tags list of the Excel Companion window.
2. With Profit Tag Explorer open, you can continue to click and drag tags into the Excel Companion window.

For information about searching for tags in Profit Tag Explorer, see the *Profit Tag Explorer User Guide*.



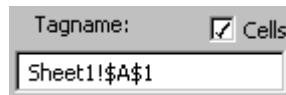
Selecting a Range

You can select a range of tags from cells on a spreadsheet. This is ideal if you want to retrieve data for a large number of tags, or if you want to resample tags for which you have already retrieved data in a spreadsheet.

To select a range of tags

1. Open the Excel Companion window for the type of data you want to retrieve. See the *Understanding Excel Companion Windows* section for more information about the types of data you can retrieve using Excel Companion windows.

In the Tagname box, click to select the Cells check box.



In an open spreadsheet, click the range of cells that contain the tagnames for which you want to retrieve data.

The cell address appears in the Tagname box.

Setting Parameters

Before getting data, specify the parameters by which to retrieve data. You set the parameters in the Excel Companion windows to define the data you want to retrieve. See the *Understanding Excel Companion Windows* section for information about the types of data that you can retrieve using the Excel Companion windows.

Specifying Parameters

Depending on what kind of data you want to retrieve and which Excel Companion windows you are using, you can specify some or all of the following parameters:

For detailed information about specifying most of these parameters, see the *Uniformance Visual PHD User Guide*.

Set this parameter...	To...
PHD Host	Specify the server from which to retrieve PHD data.
Tag Names	Specify the tags for which you want to retrieve data.
Units	This parameter does not work with Profit Embedded PHD.
Start Time	Specify the start time from which data will be retrieved.
End Time	Specify the end time at which data retrieval will stop.
Interval	Specify the frequency with which data will be retrieved during the period specified in the Start and End time.
Aggregates	Specify the aggregates for the retrieval of data.
Minimum Confidence	Specify the minimum confidence for the retrieved data.
Interval Relative to Timestamp	Specify the offset for the data retrieval for the interval After, Around, or Before the timestamp.
Attributes	Specify the tag attributes for which to retrieve data.
Properties	Specify the properties for which to retrieve data.
Return	Specify in the Show area which attributes are retrieved.
Presentation	Specify in the Presentation area how the data will be presented.
Filter	Specify in the Filter or Show area which data will be filtered out of the retrieved sample.

Specifying Data Presentation

You specify the presentation format for retrieved data in the Excel Companion windows when you get data. There are three presentation formats you can use that display data as follows:

This presentation format...	Displays data like this...
Matrix	Data from each tag appears in its own section. The selected items for a tag appear in grouped columns.
Merged Matrix	Data appears as one timestamp on each row. This makes it easy to compare data from different tags for the same time.
Record	Data looks like raw data. Each row contains a single value for a single tag at a single timestamp.
Merged Record	Data looks like raw data. Each row contains all values for a single tag at a single timestamp.

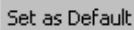
Using the ‘Static’ Option

Each Excel Companion function has a ‘static’ option to control the way in which Excel will refresh the function. Without the ‘static’ option, Excel will treat the function similar to built-in Excel functions. It will refresh if a parameter it depends on changes. With the ‘static’ option set for a function, it will refresh only when explicitly told to by using the Uniformance Refresh or Refresh All commands. This functionality can be useful to limit the frequency of refreshing time-consuming queries.

Setting Defaults

If you always use the same settings and parameters to retrieve data, you can save your settings as defaults so you don’t have to set them every time you retrieve data.

To set defaults

A rectangular button with a light gray background and a thin black border. The text "Set as Default" is written in a small, black, sans-serif font.

1. In any open Excel Companion window, click **Set As Default**.
The parameters and show options you specified in the Excel Companion window are now the defaults. Some parameters cannot be specified this way; you must use the Defaults window.
2. From the Uniformance menu, select **Defaults** to open the Defaults window. In the Defaults window, you can set defaults for each type of data retrieval and for Excel Companion in general.

Getting Data

Overview

Using Excel Companion, you can retrieve:

§ PHD data from Profit Embedded PHD

Retrieving PHD Data

You can retrieve data from Profit Embedded PHD then view and analyze it in Excel.

There are three types of data you can retrieve from Profit Embedded PHD:

Retrieve this data...	To get...
PHD	Snapshot or aggregate values at regular intervals.
Raw	Data exactly as it was stored in PHD.
Attributes	Tag configuration data for informational purposes.

Getting PHD Data

You can retrieve data from Profit Embedded PHD and display it in an Excel spreadsheet. This data can be snapshot or aggregate values retrieved at regular intervals, which is useful for regular monitoring of plant operations.

To get PHD data

1. On the Uniformance toolbar, click **PHD**.
The Get PHD Data window appears:

You can also get PHD data by clicking **PHD Data, Get PHD Data** from the Uniformance menu.

For information about the available aggregates, see the *Visual PHD User Guide*.

In the Tagname box, type, or insert a tagname, using one of the methods discussed in the *Selecting Tags* section.



Click the **right arrow** icon to move the tagname to the Selected Tags - Units box.

Notes:

§ Tag Explorer does not work with Profit Embedded PHD.

§ Unit Pick List does not work with Profit Embedded PHD.



In the Aggregates area, click the available aggregates you want to retrieve and click the **right arrow** icon to add them to the Selected box. Repeat this step to add all the aggregates you want to retrieve.

In the Show area, click to select the check box of the tag properties to show in your spreadsheet.

In the Start Time box, select a Start Time at which data retrieval will begin.

In the End Time box, select an End Time at which data retrieval will finish.

In the Interval box, select the Interval at which data will be retrieved within the specified duration.

Click **Cell** in each Time box to specify a cell in the spreadsheet to show the times.

Click **OK** to retrieve data.

Or

Click **Advanced** to further define the data retrieval.

To define advanced get PHD data settings

1. In the Get PHD Data window, click **Advanced**.

The window expands to show the advanced settings:

The screenshot shows the 'Get PHD Data' dialog box with the 'Advanced' tab selected. The dialog is divided into several sections:

- Tagname:** A text box with a 'Cells' checkbox and a 'Selected Tags - Units' list.
- Units:** A text box with a 'Unit Pick List' button.
- Aggregates:** A section with 'Available' and 'Selected' lists. The 'Available' list includes Snapshot, Average, Minimum, Maximum, and First.
- Start Time:** A dropdown menu set to 'YESTERDAY'.
- End Time:** A dropdown menu set to 'TODAY'.
- Interval:** A dropdown menu set to '1M'.
- Minimum Confidence:** A dropdown menu set to '25'.
- Interval Relative to Timestamp:** A dropdown menu set to 'Before'.
- PHD Host:** A dropdown menu set to 'PHD_HOST'.
- Output Starting Cell:** A text box with a '-' button.
- Always open in Advanced mode:** A checked checkbox.
- Show:** A section with checkboxes for Tagname, Description, Units, Timestamp, Value, and Confidence.
- Presentation:** A section with a 'Format' dropdown set to 'Merged' and checkboxes for Column Headings, Filter out identical values, Invert Time-scale, and Static.

Buttons at the bottom include Help, Basic..., Set as Default, OK, and Cancel.

Notes:

§ Tag Explorer does not work with Profit Embedded PHD.

§ Unit Pick List does not work with Profit Embedded PHD.

In the Minimum Confidence box, select the minimum acceptable confidence for the retrieved data. In the above example, data that is at least 25% accurate is returned.

In the Interval Relative to Timestamp box, select the offset applied when retrieving data.

See the *Specifying Parameters* section for information about setting the offset.

In the PHD Host box, select the server from which to retrieve data.

Click the **Output Starting Cell** box.

A cell reference window appears:



Click the worksheet and a cell on the spreadsheet to identify it as the starting cell for the data retrieval.

Click .

The cell address appears in the Output Starting Cell box.

In the Presentation area, click to select a presentation format for the retrieved data.

See the *Specifying Data Presentation* section for more information about presentation formats.

Click **OK**.

The retrieved data appears in the spreadsheet.

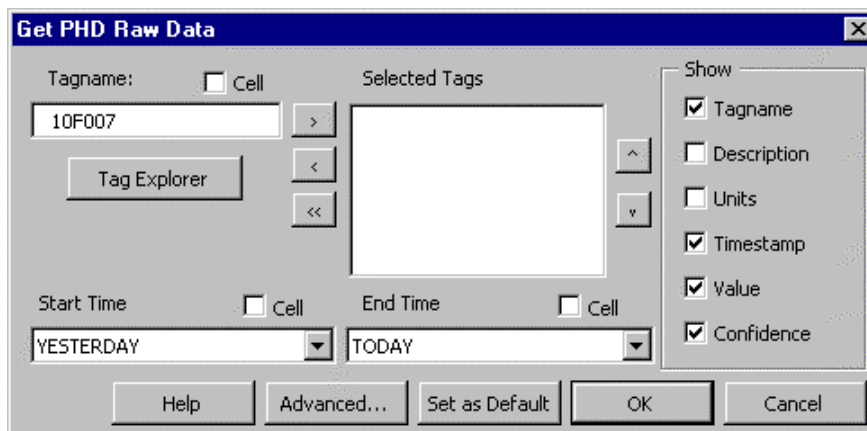
Getting Raw Data

You can get raw data from Profit Embedded PHD and display it in an Excel spreadsheet. Data is retrieved exactly as it was recorded in Profit Embedded PHD. This information can help you troubleshoot plant operations.

To get raw data

1. On the Uniformance toolbar, click **Raw**.
The Get PHD Raw Data window appears:

You can also get Raw data by clicking **PHD, Get Raw Data** from the Uniformance menu.



In the Tagname box, type or insert a tagname using one of the methods discussed in the *Selecting Tags* section.



Click the **right arrow** icon to move the tag to the Selected Tags box.

Notes:

§ Tag Explorer does not work with Profit Embedded PHD.

In the Show box, click to select the check boxes of the tag properties to show in your spreadsheet.

In the Start Time box, select a Start Time at which data retrieval will begin.

In the End Time box, select an End Time at which data retrieval will finish.

Click **Cell** in each Time box to specify a cell in the spreadsheet to show the times.

Click **OK**.

Or

Click **Advanced** to further define your data retrieval.

To define advanced get raw data settings

1. In the Get PHD Raw Data window, click **Advanced**.
The window expands to show the advanced settings:

Notes:

- § Tag Explorer does not work with Profit Embedded PHD.

In the Minimum Confidence box, select the minimum acceptable confidence for the retrieved data. In the above example, data that is at least 25% accurate is returned.

In the PHD Host box, select the server from which to retrieve data.

Click the **Output Starting Cell** box.

A cell reference window appears:

Click a worksheet and a cell on the spreadsheet to identify it as the starting cell for the data retrieval.

Click

The cell address appears in the Output Starting Cell box.

In the Return area, select how you want Outliers to be returned. Outliers are first data points outside the selected time interval. Your choices for controlling how outliers are returned are as follows:

Return checkbox	Explanation
Prior Outlier	The first data point prior to the Start time is included in the returned data.
Post Outlier	The first data point after the End time is included in the returned data.
Outlier only if closer	<p>If 'Prior Outlier' is selected, it is only returned if it is closer to the Start Time than the first data point after the start time.</p> <p>If 'Post Outlier' is selected, it is only returned if it is closer to the End Time than the first data point before the end time.</p>
Most Recent value only	Only the most recent value is returned.

In the Presentation area, click to select a presentation format for the retrieved data. See the Specifying Data Presentation section for more information about presentation formats.

Click **OK**.

The retrieved data appears on the spreadsheet.

Getting Tag Attributes

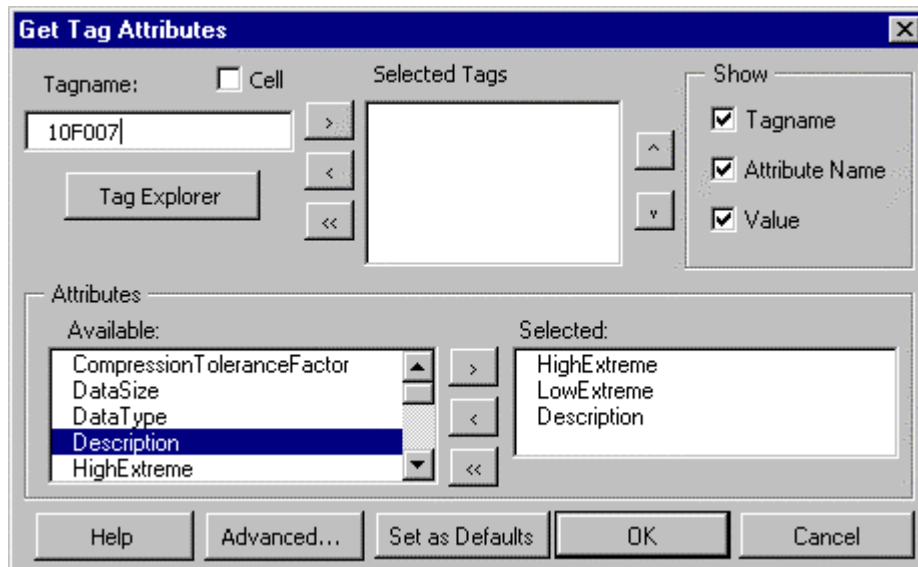
You can retrieve Tag Attributes from PHD to get configuration information about a tag.

To get tag attributes

1. On the Uniformance toolbar, click **Att.**
The Get Tag Attributes window appears:

You can also get Tag Attributes data by clicking **PHD Get Tag Attributes** from the Uniformance menu.

For information about the available tag attributes, see the *Visual PHD User Guide*.



In the Tagname box, type or insert a tagname using one of the methods discussed in the *Selecting Tags* section.



Click the **right arrow** icon to move the tag to the Selected Tags box.

Notes:

§ Tag Explorer does not work with Profit Embedded PHD.

In the Show area, click to select the check boxes of the tag properties to show in the spreadsheet.



In the Attributes box, select the attributes you want to retrieve for a tag, and then click the **right arrow** icon to move them to the Selected box.

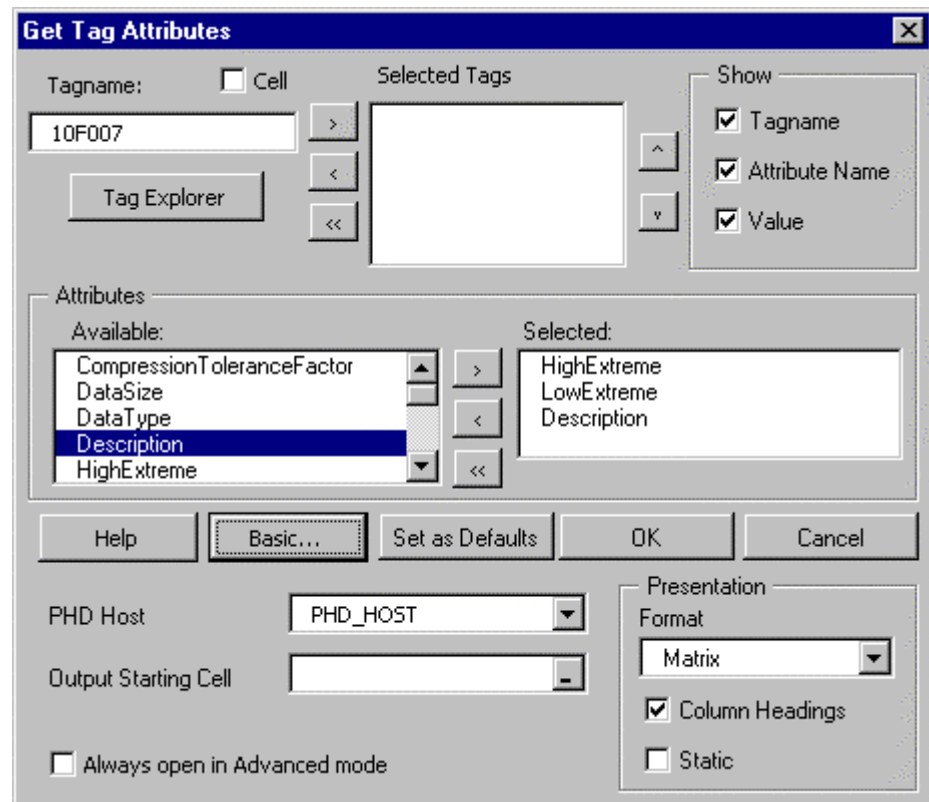
Click **OK** to retrieve data.

Or

Click **Advanced** to further define your data retrieval.

To define advanced get tag attributes settings

1. In the Get Tag Attributes window, click **Advanced**.
The window expands to show the advanced settings:



Notes:

§ Tag Explorer does not work with Profit Embedded PHD.

In the PHD Host box, select the server from which to retrieve data.

Click the **Output Starting Cell** box.

A cell reference window appears:



Click a worksheet and a cell on the spreadsheet to identify it as the starting cell for the data retrieval.

Click .

The cell address appears in the Output Starting Cell box.

In the Presentation area, click to select a presentation format for the retrieved data.

See the *Specifying Data Presentation* section for more information about presentation formats.

Click **OK**.

The retrieved tag attributes appear in the spreadsheet.

Getting Data from Multiple Sources

You can retrieve data from multiple sources, but not simultaneously. For each data source you must complete all the steps required to retrieve data. See the *Getting Data* section for information about selecting servers and data sources when you retrieve data.

Working with Data

Overview

You can work with retrieved data by:

- § Using cells to perform function calls.
- § Viewing it in numerical values.
- § Viewing it in a chart.
- § Updating it to monitor changes.
- § Comparing it to other retrieved data.
- § Adding graphics to help illustrate the processes involved.
- § Analyzing it using the functionality of Excel.

Using Cells

The Excel Formula bar displays the constant value or formula used in the active cell. You can modify the contents of the active cell in the Formula bar.

When you get data using any of the Excel Companion windows, you can specify the spreadsheet cells to act as function parameters. By identifying parameters in cells, you can easily modify them in the Formula bar in Excel, so you don't have to return to the Excel Companion window to make the changes. You can also use a cell as a reference to multiple functions so that, by changing a single cell, you can change multiple functions at once.

Setting Parameters in Cells

When you set the parameters for data retrieval in the Excel Companion windows, you sometimes have the option to specify a cell in the spreadsheet for that parameter.

To specify a cell

1. After setting the data retrieval parameter, click to select the **Cell** check box. See the *Getting Data* sections for information about setting data retrieval parameters.

A cell reference box appears:



On the spreadsheet, click the worksheet and the cell to which you want to attach the parameter.

Click .

The cell address appears in the cell reference box.

Close the cell reference box.

The cell address appears in the parameter box in the Excel Companion window.

When you retrieve data, the value for that parameter appears in the specified cell on the spreadsheet.

Setting Calculations in Cells

When you set calculations for data retrieval in the Excel Companion windows, you sometimes have the option to specify a cell in the spreadsheet for that calculation. Excel companion supports PHD calculation strings, for example TAG1+TAG2 where tag1 and tag2 are both valid tags in PHD. Valid calculation strings are handled like any ordinary tagname by Excel Companion and PHD.

To specify a calculation in a cell

1. After setting the calculation in the Tagname box of an Excel Companion window, click to select the Cell check box.

A cell reference box appears:



On the spreadsheet, click the worksheet and the cell to which you want to attach the calculation.

Click .

The cell address appears in the cell reference box.

Close the cell reference box.

When you retrieve data, the calculation value appears in the cell.

Viewing Data

You can view retrieved data in any of the presentation formats discussed in the Specifying Data Presentation section. You can also create a Quick chart to view retrieved data in a graphical format.

Using Quick Chart

A Quick chart is a graphical representation of data and is ideal for seeing all of the retrieved data at once. Quick chart creates a standard Excel chart, which you can modify.

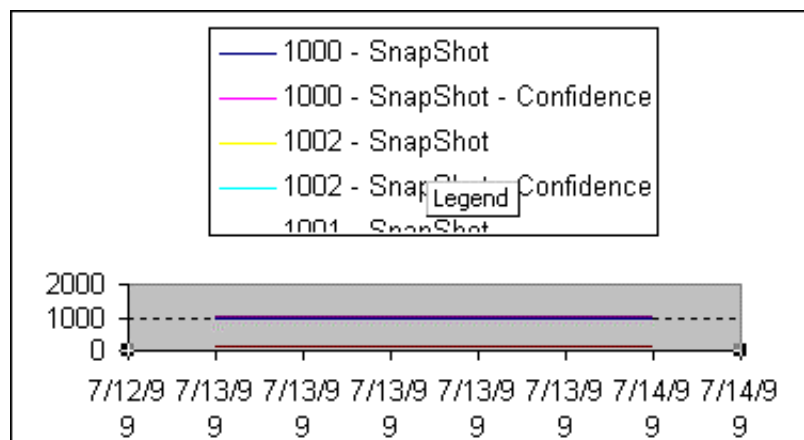
To create a Quick chart

1. In the spreadsheet, select the data that you want to view in a chart.



On the Uniformance toolbar, click the **Quick Chart** icon.

A chart showing the selected data appears on the spreadsheet:



To modify properties of a Quick chart

- § Right-click the **Quick Chart** to access the shortcut menu.
Use the Quick chart shortcut menu commands as follows:

Click...	To...
Format Plot Area	Change the appearance of the plot area on a chart.
Chart Type	Select the type of chart to display in the spreadsheet. You can use standard charts or custom charts.
Source Data	Specify the data that is displayed in the chart using the cell addresses from the spreadsheet.
Chart Options	Add titles, X and Y-axes values, gridlines, legends, and labels to a chart.
Location	Change the position of the chart on a spreadsheet.
3-D View	Give the chart a 3-dimensional appearance.
Chart Window	Change the appearance of the chart window.
Clear	Clear the data in a chart.

Comparing Data

How you compare data depends on the presentation format you specified when you retrieved the data. See the

Specifying Data Presentation section for more information about the presentation formats.

Updating Data

You can update all the data in your spreadsheet, or update only data of interest. Data is updated by the time intervals specified when you retrieved the data.

To update all data in a spreadsheet



- § On the Uniformance toolbar, click the **Refresh All** icon.
All data on the spreadsheet is updated.

To update selected data in a spreadsheet

1. On the spreadsheet, click the cells containing the data you want to update.



- On the Uniformance toolbar, click the **Refresh** icon.
The selected data is updated.

Using Graphics in Excel

Use graphics in Excel to illustrate the plant processes for which you retrieved data.

Using the Uniformance Graphics Library

You can insert graphics into your spreadsheet from the Uniformance Graphics Library as you would any other clipart, using the Insert, Picture menu command in Excel.

Refer to the *Uniformance Graphics Library User Guide* for information about the Uniformance graphics.

Using PHD Data Controls

You can use Visual PHD data controls to retrieve data in a spreadsheet in a graphical format. You must program these controls using Visual Basic.

For information about PHD Data controls, refer to the *Uniformance Visual PHD User Guide*.

Analyzing Data

Use the functionality of Excel to analyze retrieved data. See the Windows documentation for information about working with Excel.

Managing Files

Opening Files

You open files in Excel Companion as you do in Excel. See the Windows documentation for information about working with Excel.

Printing Files

You print files in Excel Companion as you do in Excel. See the Windows documentation for information about working with Excel.

Saving Files

You save files in Excel Companion as you do in Excel. See the Windows documentation for information about working with Excel.

Advanced Features

Using Advanced Features

Advanced users or developers can use Visual Basic application code to access some Excel Companion features that assist in the retrieval of data. To use these features, Excel Companion must be loaded and referenced in your project. Type the following code into your Visual Basic project:

Type...	To...
UNIF_PHDGetData()	Launch the Get PHD Data window. If the active cell is over top of an existing PHDGetData() function, the window will populate with the function parameters.
UNIF_PHDGetRaw()	Launch the Get PHD Raw window. If the active cell is over top of an existing PHDGetRaw() function, the window will populate with the function parameters.
UNIF_PHDGetAttrib()	Launch the Get PHD Attributes window. If the active cell is over top of an existing PHDGetAttrib() function, the window will populate with the function parameters.
UNIF_tagexp()	This feature does not work with Profit Embedded PHD.
UNIF_units()	This feature does not work with Profit Embedded PHD.
UNIF_function_refresh()	Refresh the Uniformance function under the active cell. If the active cell is not on top of a Uniformance function, nothing happens.
UNIF_workbook_refresh()	Refresh all Uniformance functions in the current workbook.
UNIF_edit_formula()	Launch and populate the Uniformance window that corresponds to the function under the active cell. If the active cell is not over a Uniformance function, nothing happens.
UNIF_quick_chart()	Creates a Quick chart that corresponds to the function under the active cell. If the active cell is not over a Uniformance function, nothing happens.

Glossary

Data Source

A type of target system where data is either manipulated using a non-procedural language, such as SQL, or where the data manipulation can be mapped in a non-procedural manner.

Database

A set of operating system files, treated as a unit, in which a server stores a set of data dictionary tables and user tables.

The disk space corresponding to this set of files.

A subset of database objects necessary to support a single database application.

PHD

Process History Database.

Profit Embedded PHD

Historizes select Profit Controller and Profit Optimizer parameters.

PHD Server

Also called PHD host.

Stores all data collected from a source system and services requests for data retrieval. Contains the Real-Time Database and the History Database (archive).

Receives data from one or more RDIs. The data is first placed in the real-time database, then stored to the history database. The PHD server is part of the plant network or intranet. As a Uniformance Desktop user, you will need to identify this server by name to retrieve PHD data.

Raw Data

Raw data is actual data that is held in the queue and stored in the archive. Raw data is also referred to as actual stored data. Data may have been processed (if options such as smoothing or compression have been set), but includes no interpolation (filtering, resampling, or other actions that can be performed on the data by PHD). Raw data in the archive includes a value, timestamp, and confidence factor.

Retrieved Data

Raw data retrieved from the queue and archive which is then processed and used in an application such as Process Trend or Excel.

Tag

An entity that is being collected and historized. A tag is equivalent to a parameter on the source system (for example, FC100.PV).

Enterprise (Oracle) PHD uses three types of tags:

- § Process Tags - data collected by PHD real-time interface (point.parameter).
- § Virtual Tags - calculations based on collected, manual input and other virtual tags.
- § Manual Input Tags - data collected and input manually into PHD tags.

Profit Embedded PHD uses Process Tags.

Tagname

The name given to a tag.

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