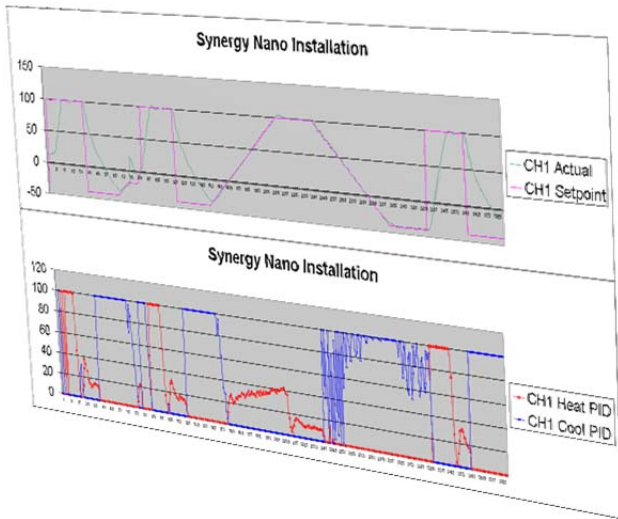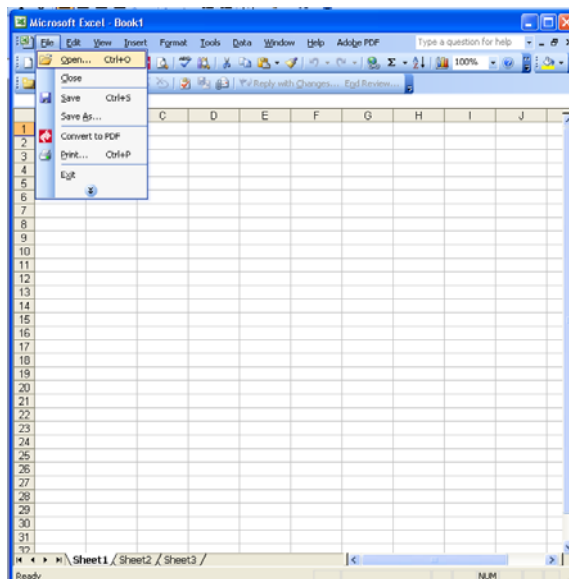## Graphing Synergy Log Files in Microsoft® Excel

Overview

Synergy Controllers including the Synergy Nano, Synergy Quattro, and Micro 2 function as both test chambers controllers and data loggers. A log data file can be exported from the internal controller database to a USB Flash disk or the built-in ftp server in Comma Separated Variable (CSV) format. See application note 45 for information concerning the Synergy Controller's ftp server.
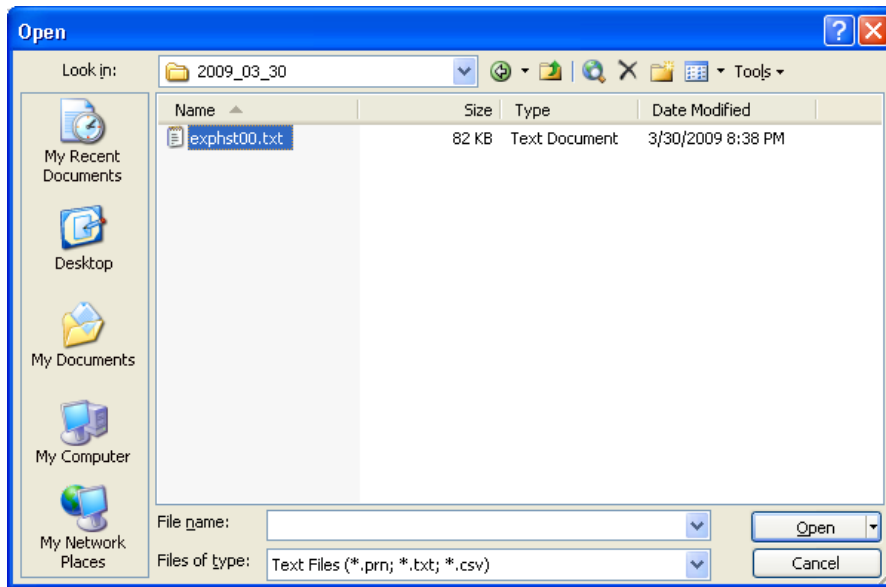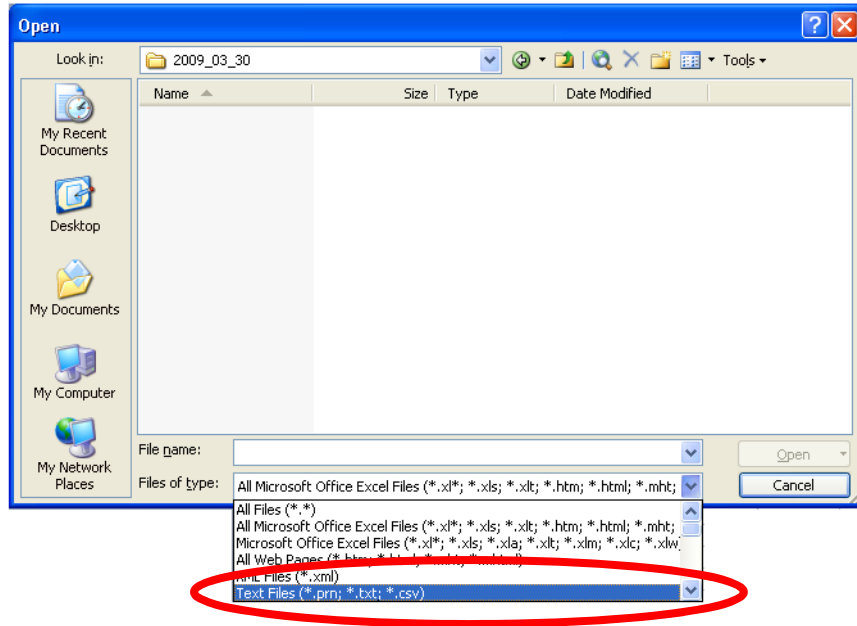
This application note shows some shortcuts in Microsoft Excel that can be used to convert the data from the log file into a graph. Note that Microsoft Excel 2003 was used in the screenshots but other versions will also work. Also note that in version 3.0.7 of the Synergy Controller software, the controllers can plot the test results automatically and send them to a network printer and by e-mail.

A video demonstration of this application note is available on our website.
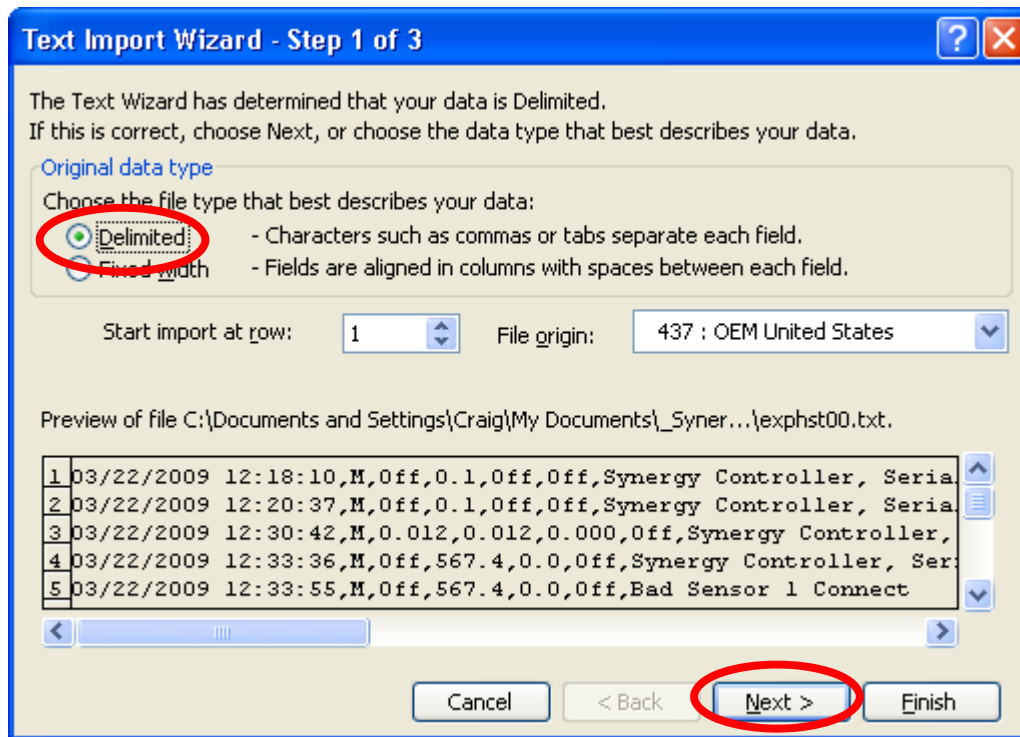
To begin, open Excel, and select Open from the File menu to bring up this dialog:
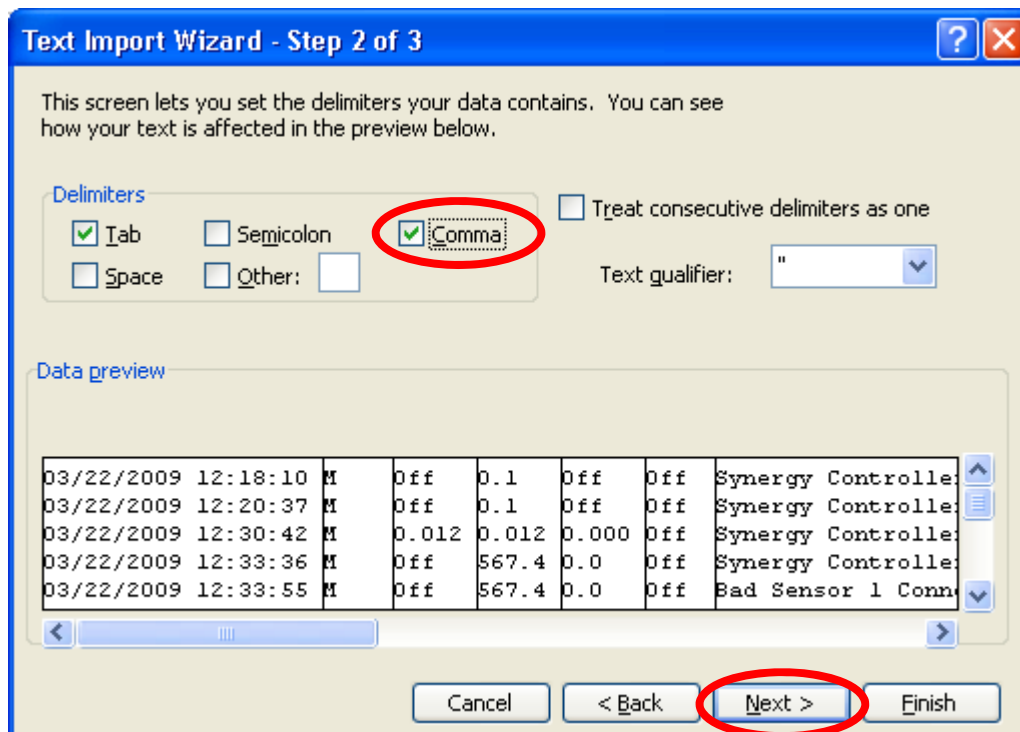
Select Text Files from the Files of Type menu as shown below and choose the exphst00.txt file from the list.
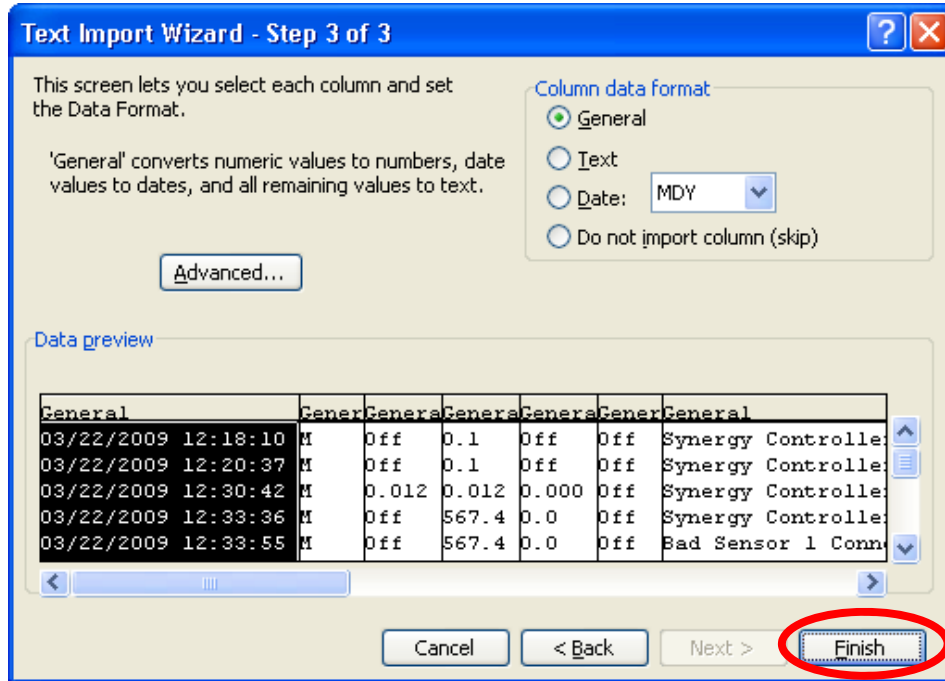
Excel detects that the file is not an Excel file and opens the Text Import Wizard.
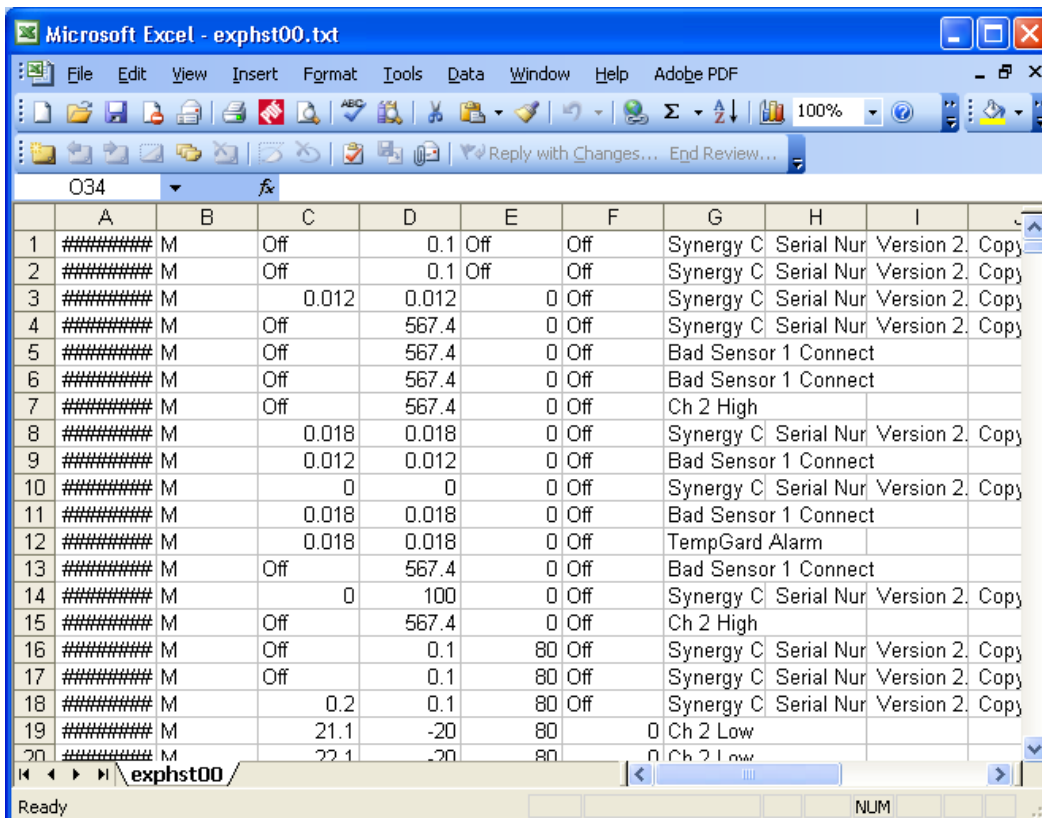Select **Delimited** and click next as shown below.

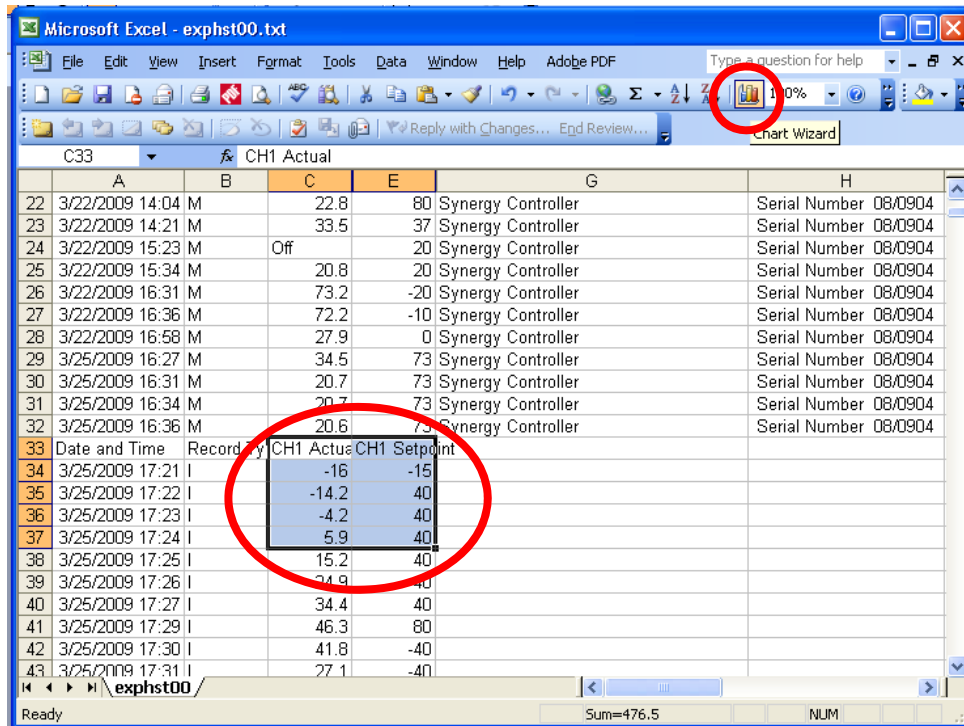Check the **Comma** check box as shown below and click Next >
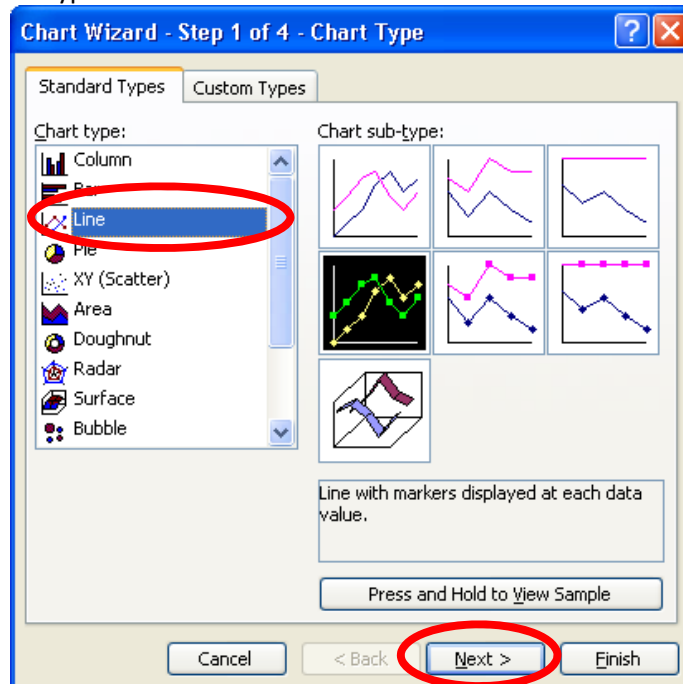
Then Click **Finish.**

The spreadsheet will open as shown below. You will probably have to adjust the width of some fields to be able read the headings and columns. This can be down by selecting the partition in the row above row 1 and dragging the partition to the desired width of the cell.
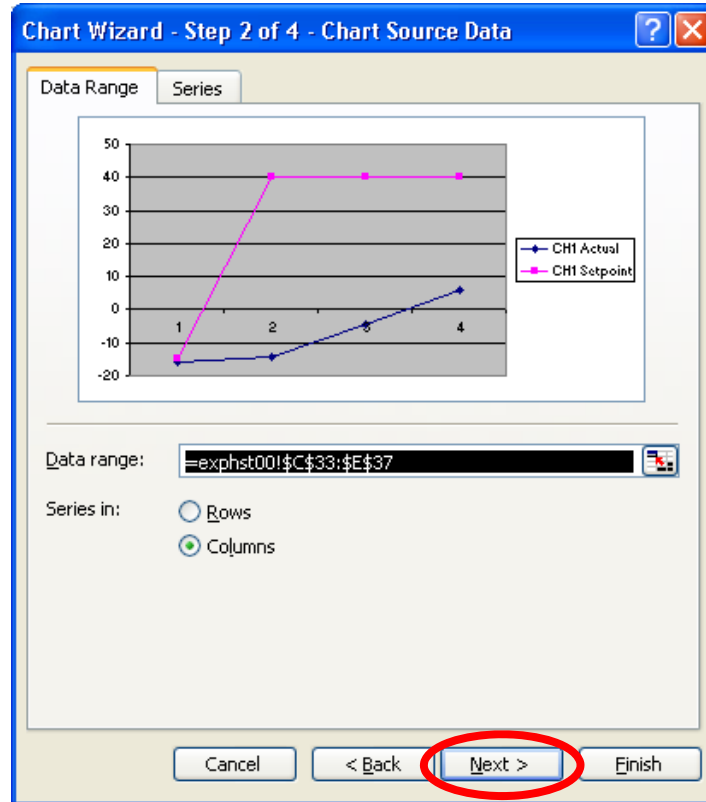
To begin charting select a box with two headings and a few rows as shown below and click the **Chart Wizard** button. Note that selecting a small set of data like this makes it more likely that the Excel Chart Wizard will identify the headings correctly. The box is easily expanded later to cover the whole test.
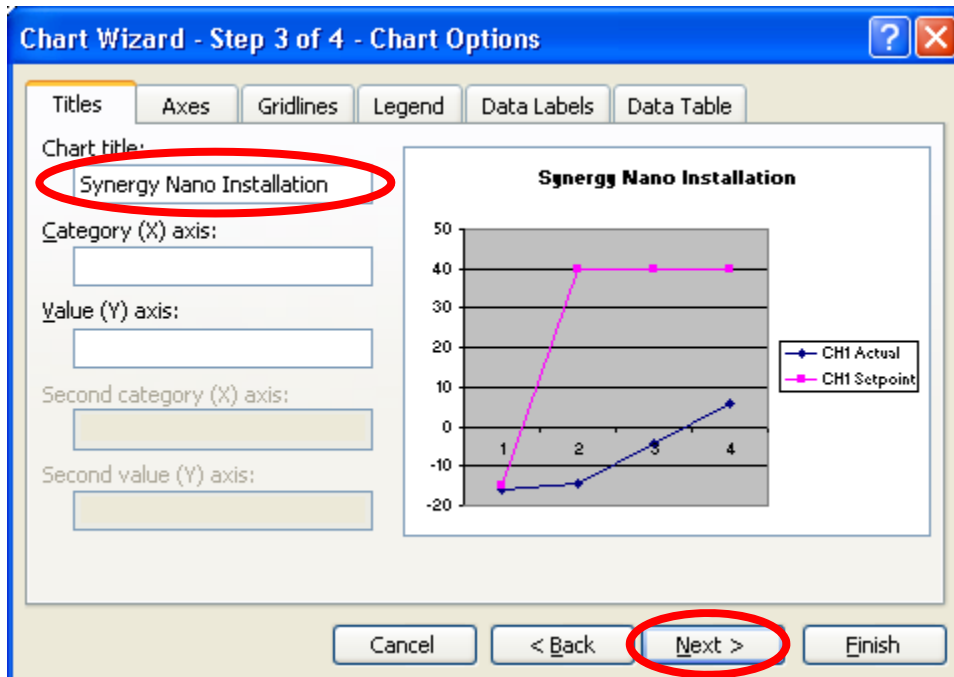

Select **Line** from the Chart type list in the Chard Wizard screen as shown below and click Next>:
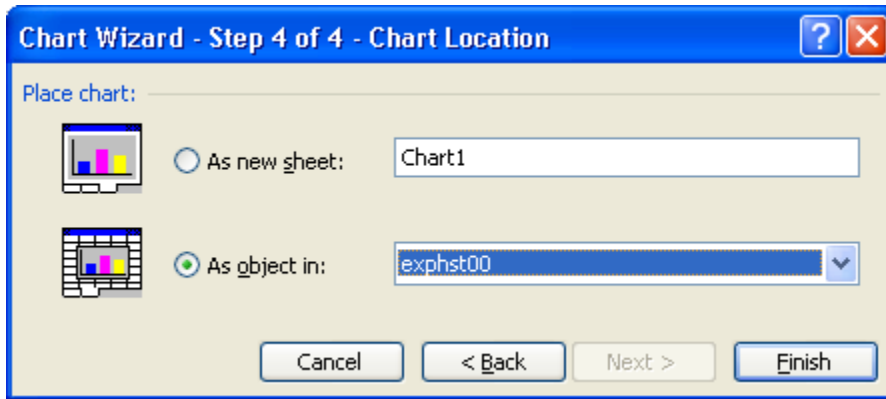
Make sure the column headings are shown at the legend on the right side of the **Chart Wizard**, and then click **Next >**.
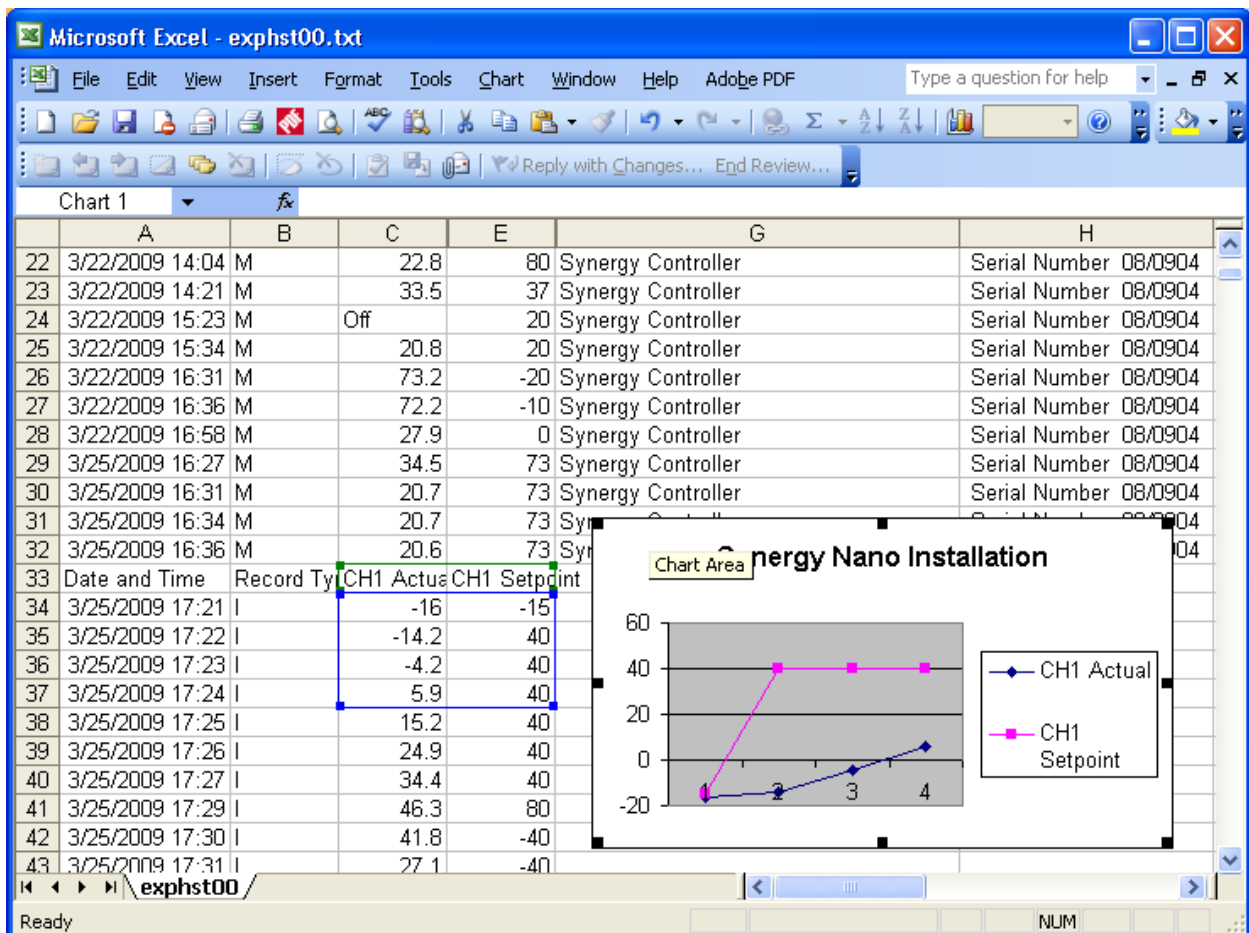

Add **Chart titles** in the Chart Wizard and then click **Next >** to continue. Note that Chart and axis labels are optional.
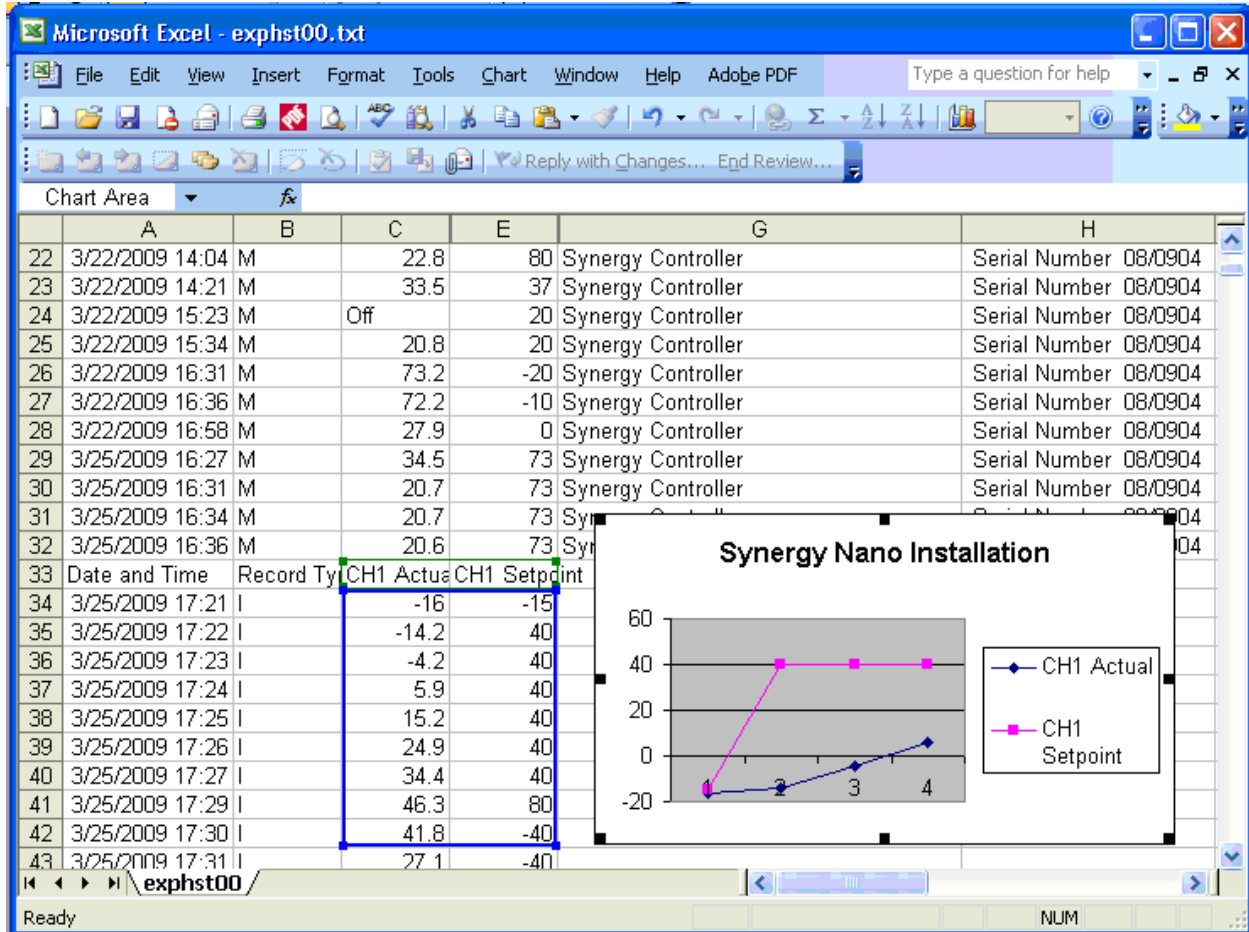
You can choose to put the new chart on a new sheet or on the current sheet. Make your choice and then click **Finish**.

The chart will be displayed as shown below. Note the green box around the column heading cells and the blue box around the data cells.
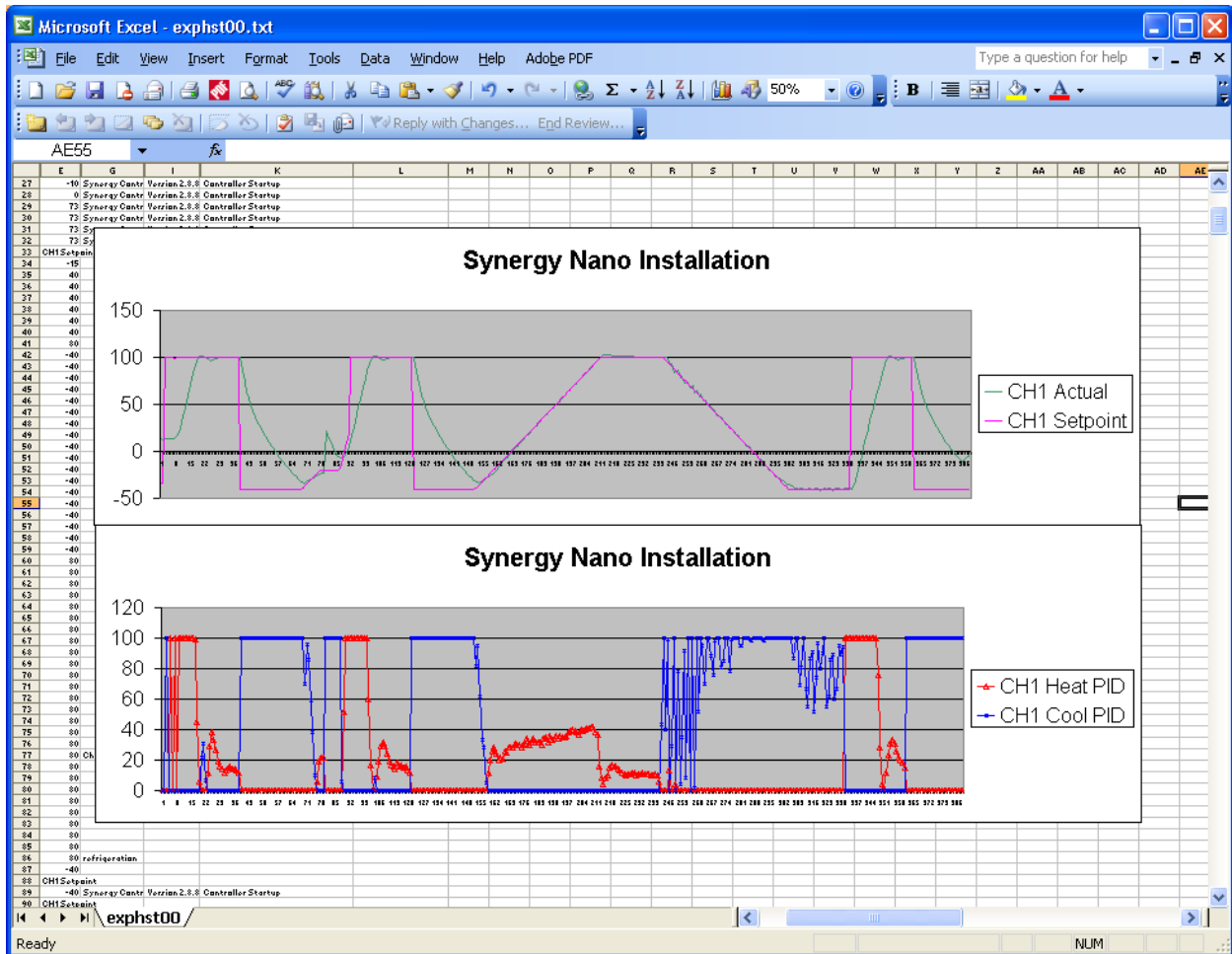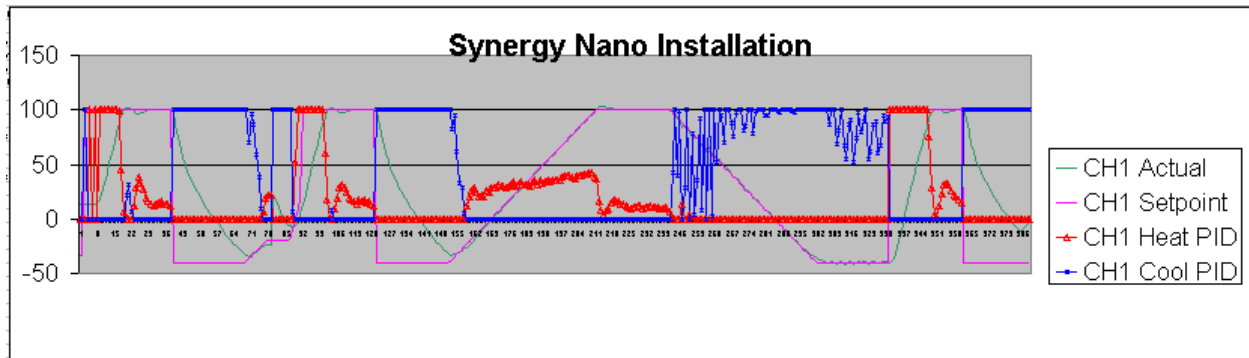
The edge of the green box around the column heading cells can now be dragged to the left or right to include any required additional columns. Likewise, the blue box around the data cells can be dragged to select more columns and/or rows.

Sometimes it's useful to create variations of a chart to show only the controller PID outputs or only the Process Variables. Using "copy and paste" the graph can be easily duplicated and any series easily removed from the master as shown below. In the example below, a master graph is used to create two new graphs, the first one shows the temperature (Setpoint and Process Variables) and the second shows the Controller PID values (Heat and Cool)

Once you have created the graph copies, you can easily delete or modify the data series of the graph. To do this, pop up the graph menu by selecting the graph with the right mouse button and select **Source Data** from the list as shown below. Then use the **Source Data** dialog to **Add** or **Remove** data series as required.

Follow this link to view a video demonstration of this application note.

About the Synergy Controller Family

Tidal Engineering's Synergy Controllers, both the Synergy Micro 2 and the ¼ DIN Synergy Nano provide state-of-the-art usability and connectivity for environmental test control and data acquisition and combine the functions of a chamber controller and a data logger and are designed to improve test efficiency by supporting both factory automation and test and measurement protocols and standards.

Synergy Controller feature highlights includes:

➔ Color touch screen
➔ Ethernet, RS-232 and GPIB communications
➔ Built in 100 MB Data logger with USB drive support
➔ Data Acquisition, up to 64 T-type thermocouples (Optional)
➔ Built-in Web Server for remote control; WebTouch Remote ™
➔ Compatible with Synergy Manager for PC based control, monitoring and programming.
➔ Built-in FTP Server for factory automation and test and measurement applications

For more information regarding these controllers please see the full Synergy Controller Technical Manual on our website at http://www.tidaleng.com/synergy.htm

About Tidal Engineering

Headquartered in Randolph, NJ, Tidal Engineering Corporation has been designing and building award-winning embedded hardware and software for test and measurement and data acquisition applications since 1992. The company is recognized for technical expertise in such areas as Embedded IEEE 488, and turnkey SCADA (Supervisory Control and Data Acquisition) systems.

Tidal Engineering Corporation
2 Emery Avenue
Randolph, NJ 07869
Tel: 973/328-1173
Fax: 973/328-2302
www.TidalEng.com
info@tidaleng.com