

Exhibitor Software

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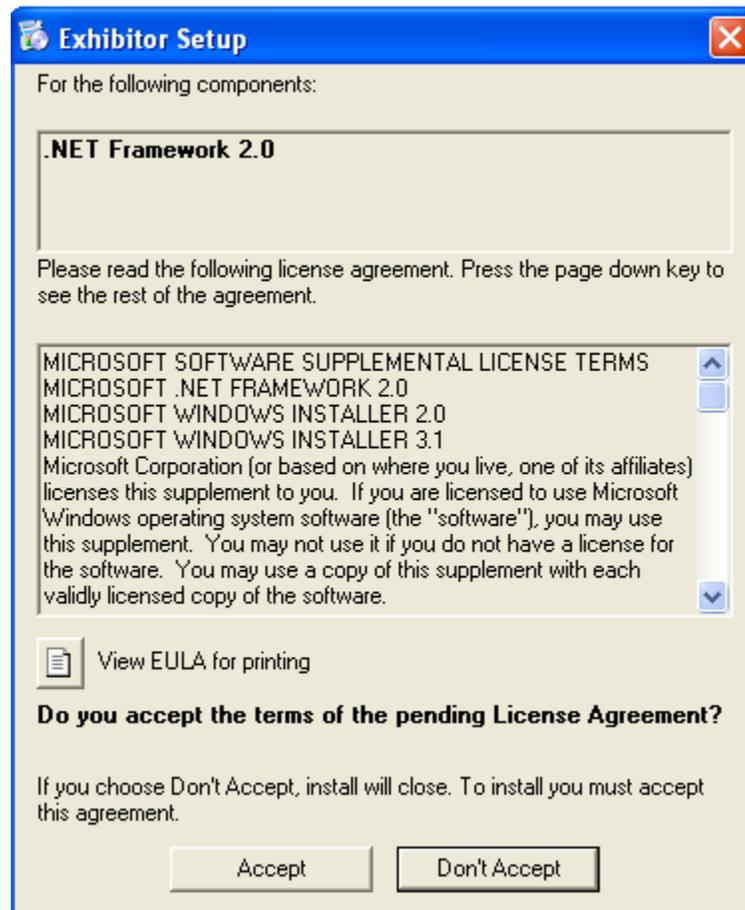
2 Exhibitor Software

The Exhibitor Software is a program for viewing and exporting both real-time and recorded data from the recorder.

3 Installation

This program will run on Windows XP/2000/7 and later. It is not compatible with earlier versions of Windows.

1. Insert the Exhibitor CD into the CD drive. The setup program should launch automatically if your system is set to auto play CDs. If not, select the CD directory and run the setup.exe file.
2. Exhibitor Software needs .NET Framework 2.0. If .NET Framework 2.0 is not installed on the PC, it will be installed first. This will take several minutes. Make sure you have network access.
- 3.



4. After .NET Framework 2.0 is installed, the installation will launch "Welcome to Exhibitor Setup Wizard".
5. Accept the license agreement and the default install directory or modify as needed.
6. Decide whether you want a desktop icon and check the box if you do.
7. Accept the default install directory or modify as needed.

4 Using Exhibitor Program

4.1 Starting the Program

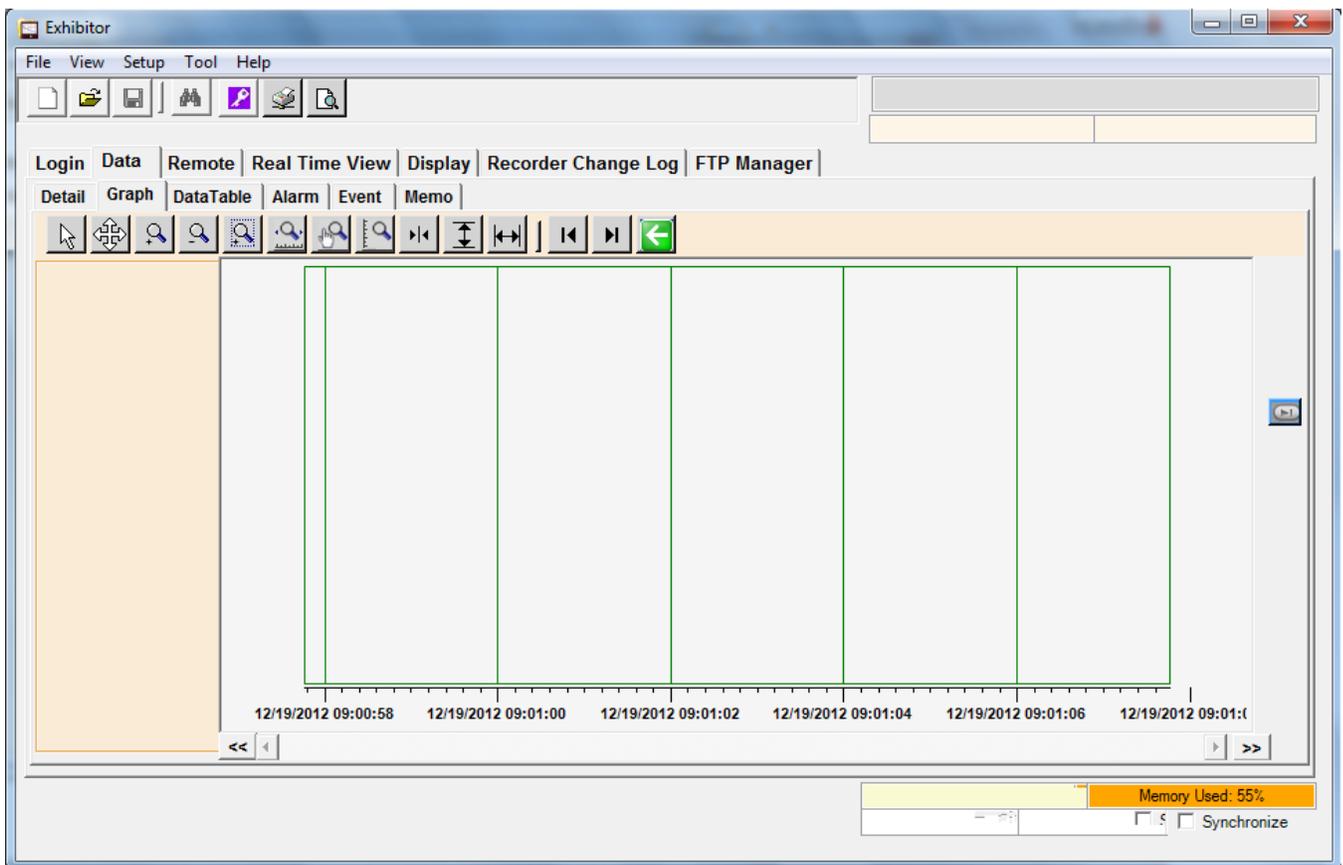
The Exhibitor software has the following main features:

- It can display information from existing data file in summarized, tabular and graphic formats.
- It is capable of monitoring an external device (through the OPC server). The user can manage different widgets.
- It can export the data to Excel.

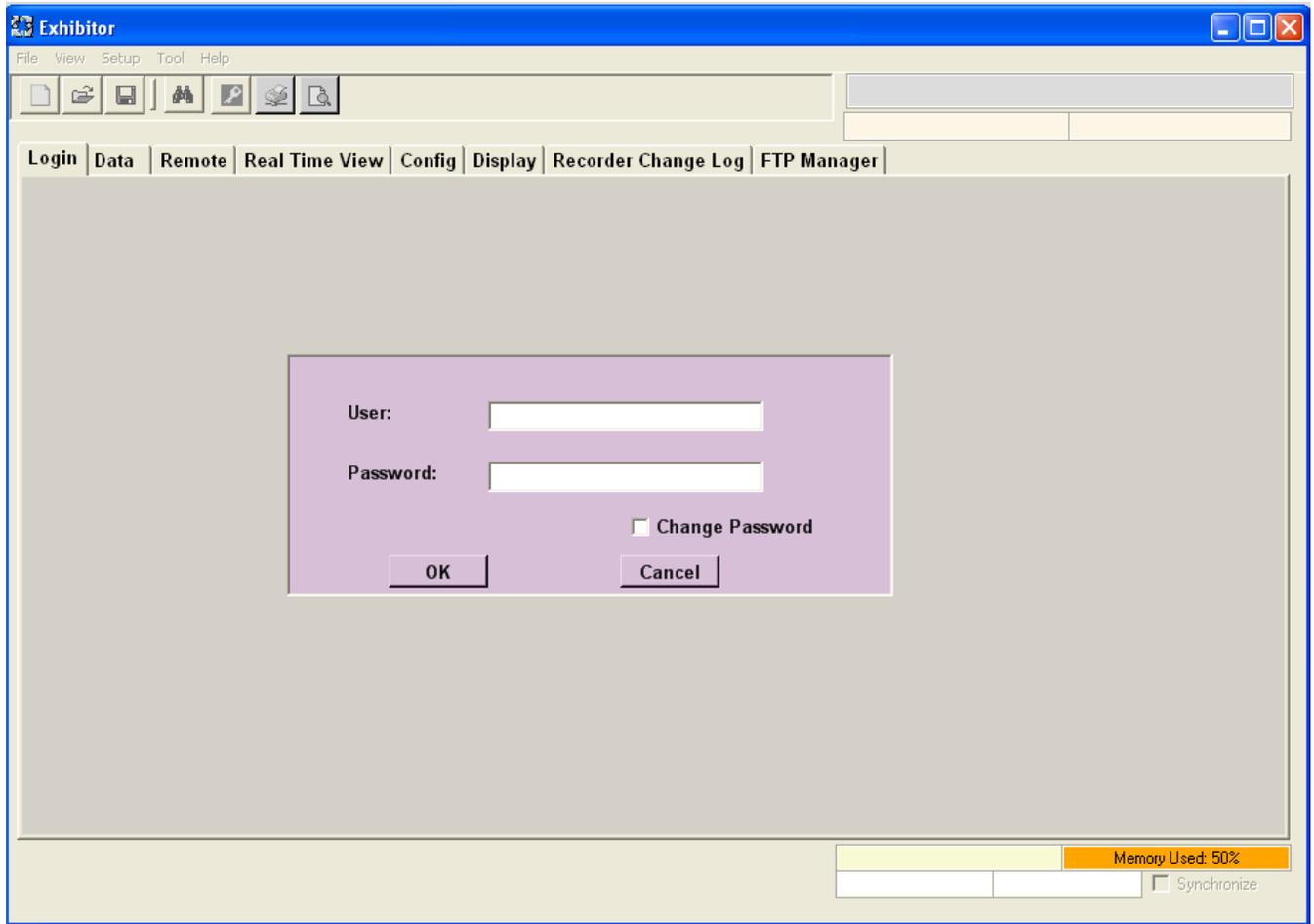


To start the program, click the desktop icon if installed (shown left), or use the Window's Start menu. This will launch the main dialog.

If the security is not enabled, the main dialog starts in the Data, Graph page.



Otherwise, it starts in the Login page.



To enable the master password, please see Chapter 3.3 System Setup.

There are five major tabs in the workspace:

| | |
|---------------------|---|
| Login | Login to the program |
| Data | Show data in a file |
| Remote | Show remote device values |
| Real Time View | Show all widgets in a project file |
| Config | Connect to the device and view Config file |
| Display | Display the device |
| Recorder Change Log | Compare config file remotely and locally and display the difference |
| FTP Manager | Allow files to be transferred and deleted |

The Data tab page has six sub tab pages:

| | |
|-----------|---|
| Detail | Shows each individual channel graph and summary of all channels |
| Graph | Shows a graphic representation of the data |
| DataTable | Shows all data points in a table |
| Alarm | Shows all alarm points in a table |
| Event | Shows all events in a table |
| Memo | Shows all memos in a table |

Remote tab page has three sub tab pages:

| | |
|------------------|---|
| Device Manager | Connects to multiple OPC server and displays all selected items |
| Design Page | Creates different widgets and displays real time value |
| Real Time Record | Creates record widget and records data point to a file |

The pull-down menu items are:

| | |
|-------|---|
| File | Allows the user to open a data file or exit the program |
| View | View the Exhibitor log in file |
| Setup | Allows the user to customize the program |
| Tool | Connects to one OPC server and displays all items on it |
| Help | Provides help file or information about the software |

The icons from left to right are: New, Open File, Search, Log Off., Print and Print Preview.



- Clear the screen



- Open a data file



- Save the opened file. This is useful for split files



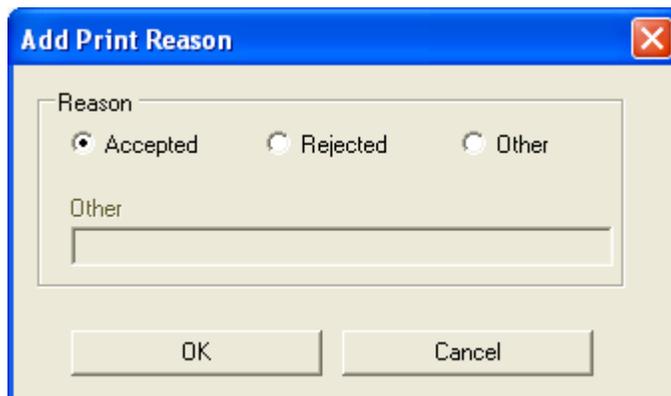
- Search the data points within a time frame. Only works in Detail page



- Log off the user

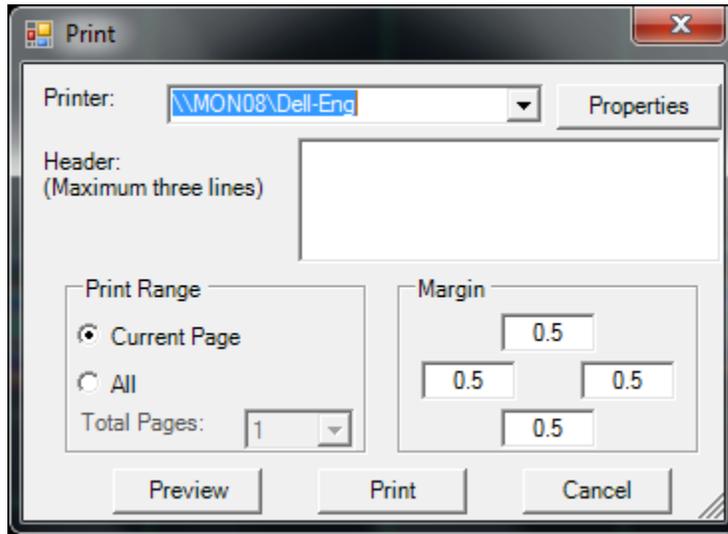


- Print. Used to print graph, table and Recorder Change log. If the security is enabled, a print reason dialog is displayed. Default reasons are “Accepted” or “Rejected”. Selecting “Other” allows a custom message to be entered.



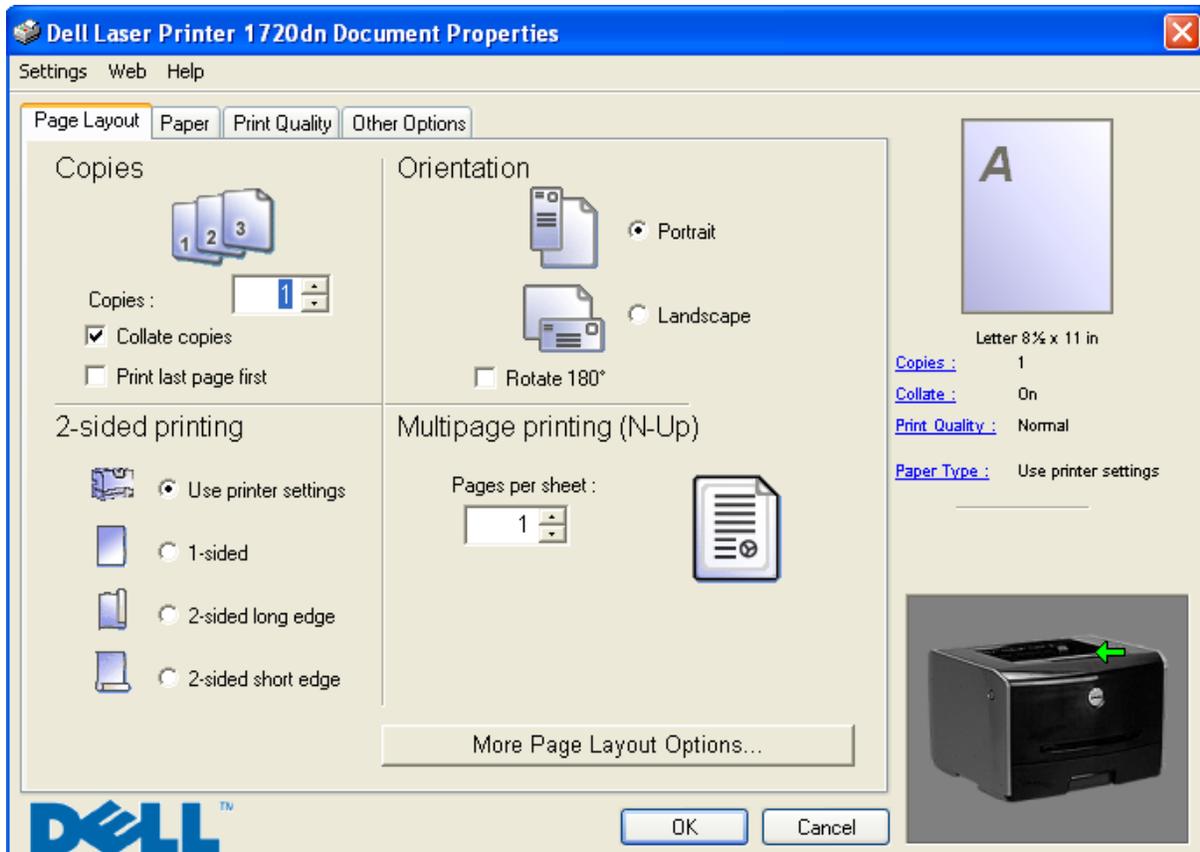
The selected reason remains for the current session. If the security is not enabled, the print reason is not required.

After clicking OK, the following dialog pops up for selecting print options.

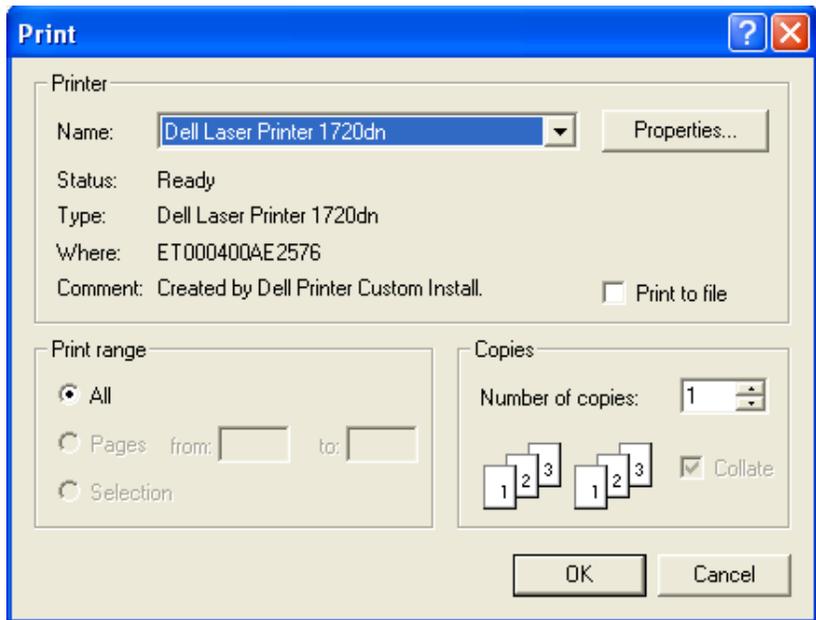


The user can choose the printer, put the header on the printed graph, change margins or select the print range. The default print page is the current page. If the user wants to print all, he/she needs to input the total number of pages to print. The program will scale the loaded data file to fit the selection.

To change printer specific options eg: page orientation, click the “Properties” button.



Exhibitor uses regular Microsoft print dialog to print table or Recorder Change Log,



- Print Preview. Allows the user to preview the data as it will be printed.

4.2 Logging in to the Program

The password option is disabled by default when the software is installed. The Login page is not enabled. This option can be modified in the password dialog, which is explained in the next section - System Setup. The User can be added as well.

If the password option is enabled, the user has to login first. Otherwise, the program cannot do anything.

To change the password, check the check box **Change Password** when logging in. The password change dialog will appear (as shown below).



When changing the password, the user id is grayed out. Type the new password and confirm it. If the two don't match, you will have to try again.

After a user logs in, the log in information will show on the bottom of the window.



4.2.1 System Set-Up

There are a number of items that can be set up before using the program, although these default to useable options. From the top menu select "Setup".

The Setup menu has the following options.

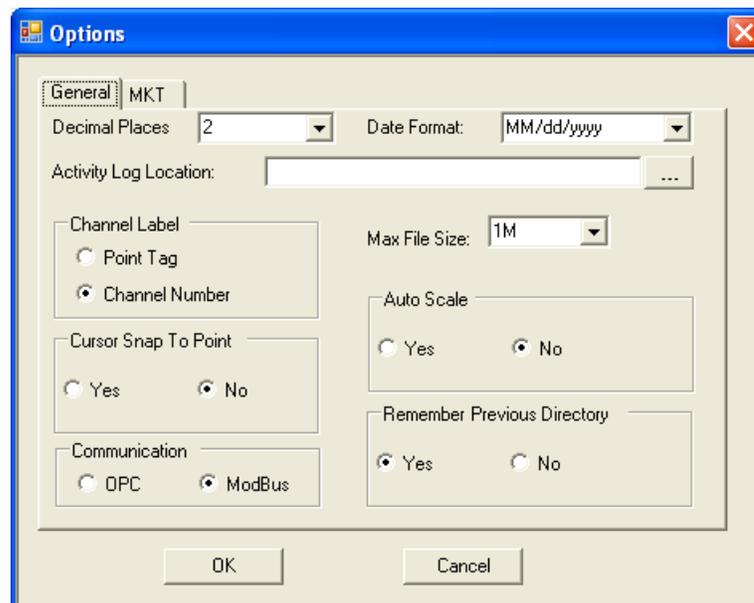
4.2.1.1 Language–

The default is English. It is simple to add language files (see Appendix A). If there is a language file in the Exhibitor installation directory that contains languages besides English, these will be shown and the user can select the language.

4.2.1.2 Options

Allows the user to setup some options. There are two tabs – General and MKT

4.2.1.2.1 General Tab



Decimal Places – Determines how numeric data will be displayed. Default is 3.

Activity Log Location – The backup location to save Exhibitor activity log.

Date Format – The date format can be MM/dd/yyyy, dd/MM/yyyy or dd MMM, yyyy

Channel Label – Determines if the program will displays the channel number or channel engineer units for the buttons on the graph page.

Max File Size – If the PC does not have enough memory, this option decide if the data file will be opened partial or complete.

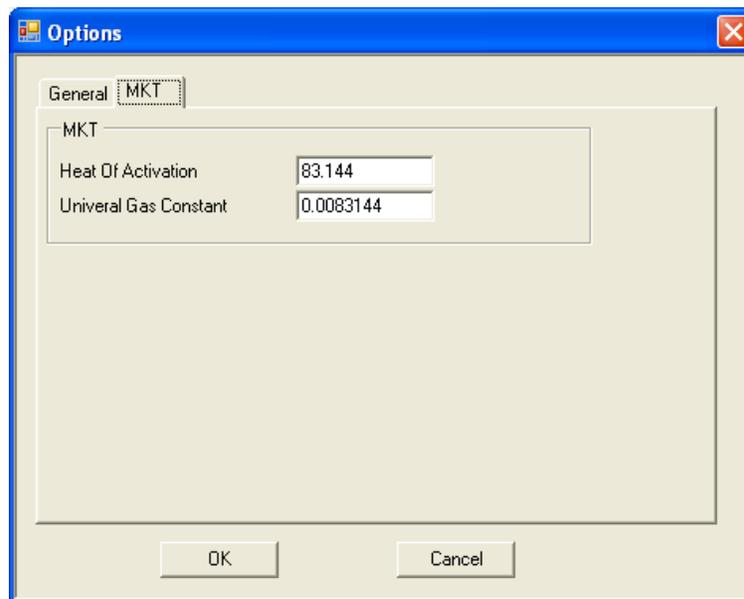
Auto Scale – Determines if the data points will scale to fit the vertical (Y)-Axis for all channels (yes) or if the vertical axis scale will be set to the maximum (default) value (no).

Cursor Snap To Point – If Yes the cursor on the graph will snap to the nearest actual data point. If No the cursor will interpolate between points

Remembers Previous Directory – Determines if the program needs to remember the last opened directory when opening the data file.

Communication – Decide what communication will be used between PC and the device
Once choices have been selected click “OK” to save or “cancel” to exit without saving.

4.2.1.2.2 MKT



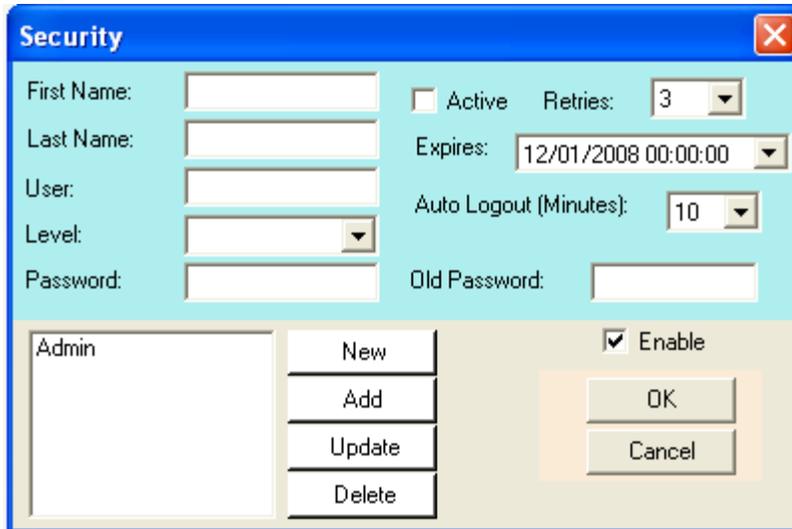
MKT – Mean Kinetic Temperature is a simplified way of expressing the overall effect of temperature fluctuations during storage or transit of perishable goods. The MKT is widely used in the pharmaceutical industry. This window allows the user to enter the Activation Energy and Universal Gas Constant used in the calculations.

4.2.2 Features

Allows the user to upgrade from the free demo (default) version to the Lite or Full version. Select Update and enter your serial number in the spaces. Upgrades can be purchased from your distributor. Use the pull-down menu Help – About to see what feature you have.

4.2.3 Security

Allows the program to enable the password option and add, update or delete users.



The user can enter the user name, check active or not, choose the user level, expiration date, and enter a password. Once all the options are selected/chosen, click the “Add” button. This user will be added to the user list. Similarly a user can be highlighted in the list and the user parameters will be displayed. Any parameter may be changed and can be saved by clicking the “Update” button.

The options when adding or editing a user are:

| | |
|------------|--|
| First Name | The user’s first name. |
| Last Name | The user’s last name |
| Active | If the user is active, their user name and password have to match when logging in to the program. If not active, the user cannot log in to the system. |
| Retries | The number of times the user can try to login before the user login fails. |
| Level | There are three User Levels: User, Manager and Administrator |



User: Cannot access setup and Tool -> OPC Client. The tab pages that he has access are Login, Data, Design Page and Real Time View. In the Design Page, the user can view real time display, but cannot change the widgets.

Manager: Access to everything except Password and Language.

Admin: Access everything.

Expires The user’s login privilege will expire on this date.

| | |
|--------------|--|
| Password | Enter the password to be used for this user. |
| Auto Logout | The program will automatically logout the user after this amount of time. |
| Old Password | The user needs to type the correct old password in order to change the password. |
| New Add | Clear all area except the user list box. Adds a user to the user list. The list box on the bottom left on the dialog shows all users. |
| Update | Modifies a user's password/ data. |
| Delete | Choose one of the users in the list box and click delete. That user will be deleted from the list. |
| Enable | Enables the password option. The check box is disabled if there is no user in the list. After adding at least one user, the check box will be enabled. |

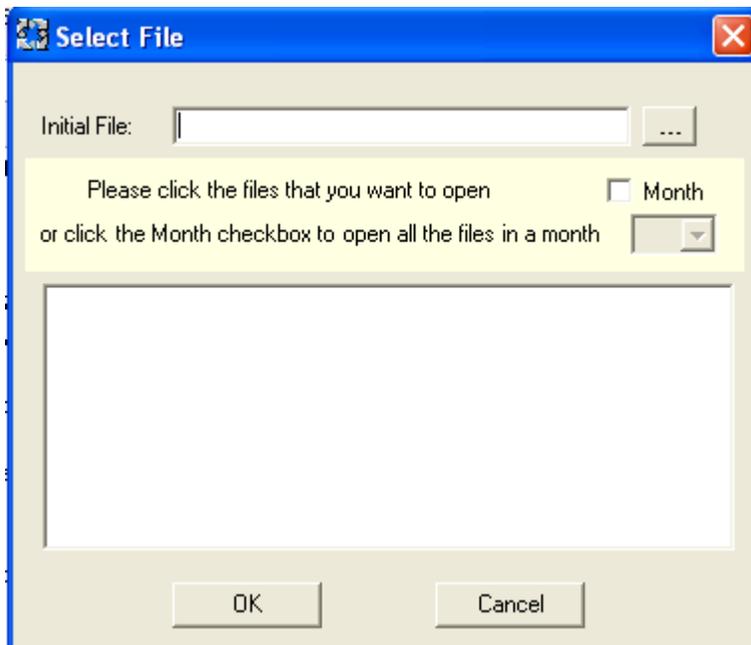
After no mouse activity for 5 minutes, the user is automatically logged out.

If the user wants to login as a different user name, he/she can click the **Log Off** button. The program goes to the login page and the user can re-login.

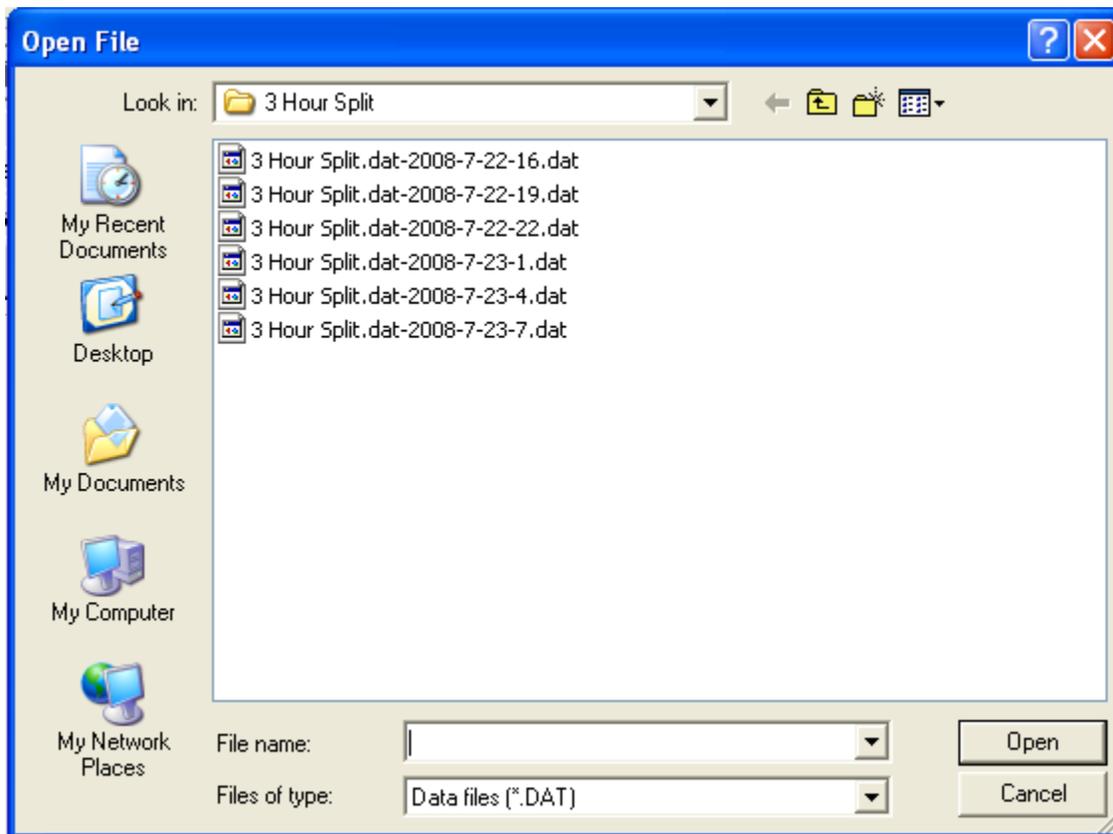
The **Log Off** button looks like this: .

4.3 Loading Data File

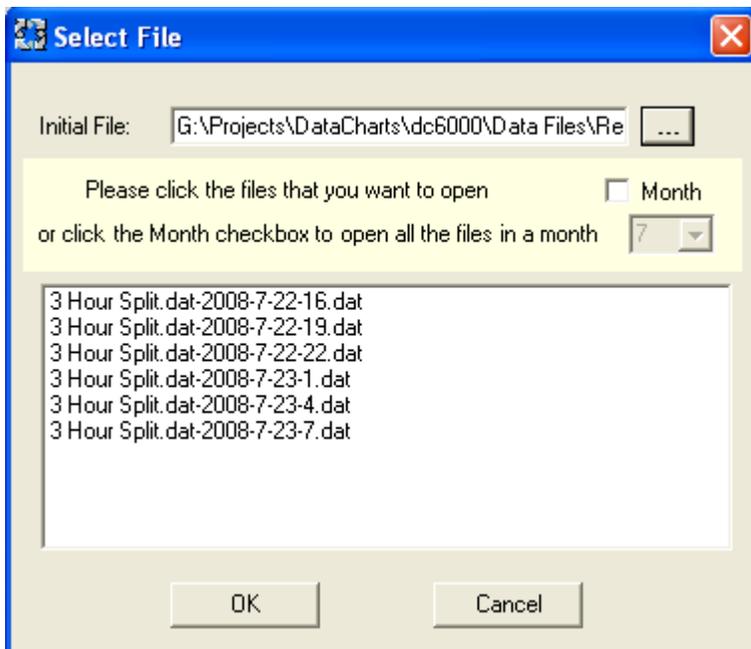
To load a data file, click File->Open or click the file open icon . The datachart has file split feature so the following dialog appears.



Click the button beside the initial file box. A file open window pops up.

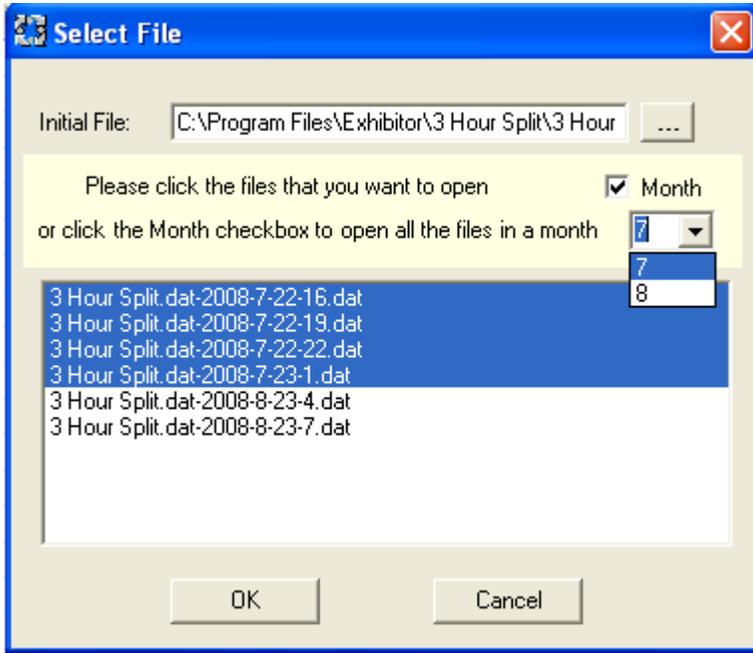


Click any file and all the files that split from that file will be listed.



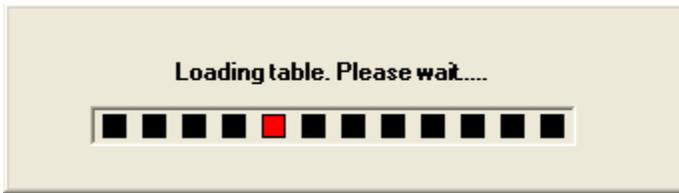
Click a file to select a single file or hold Ctrl key and click to select multiple files. After click button OK, the selected files are opened.

The files may be split to different months. The Select File window has an option Month. The drop down list lists all the months that the file split to.



By selecting different month, all the listed files that are recorded in that month will be highlighted.

If the file being loaded is bigger than 100000 bytes(100k), a progress bar appears.

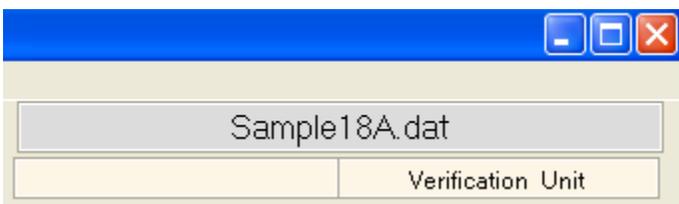


There are six tab pages for loading data files.



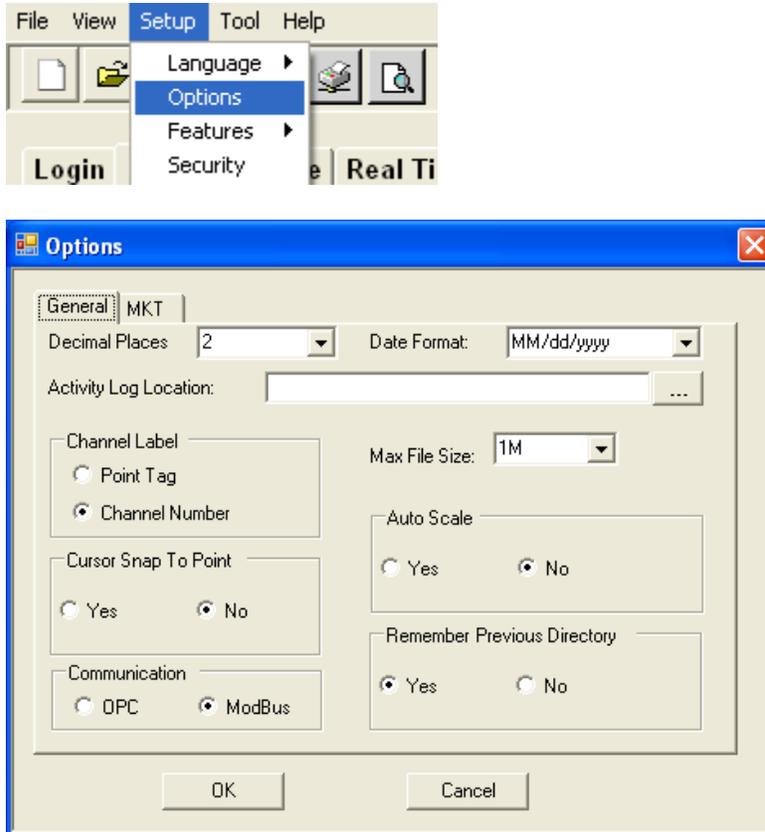
- Detail Shows each channel in different tag page and a summary table
- Graph Shows all channels in one graph
- DataTable Shows all data points in a table
- Alarm Shows all alarm points in a table
- Event Shows all events in a table
- Memo Shows all memos in a table

File name (Sample18A.dat) and unit tag (Verification Unit) show on the top right of the window.

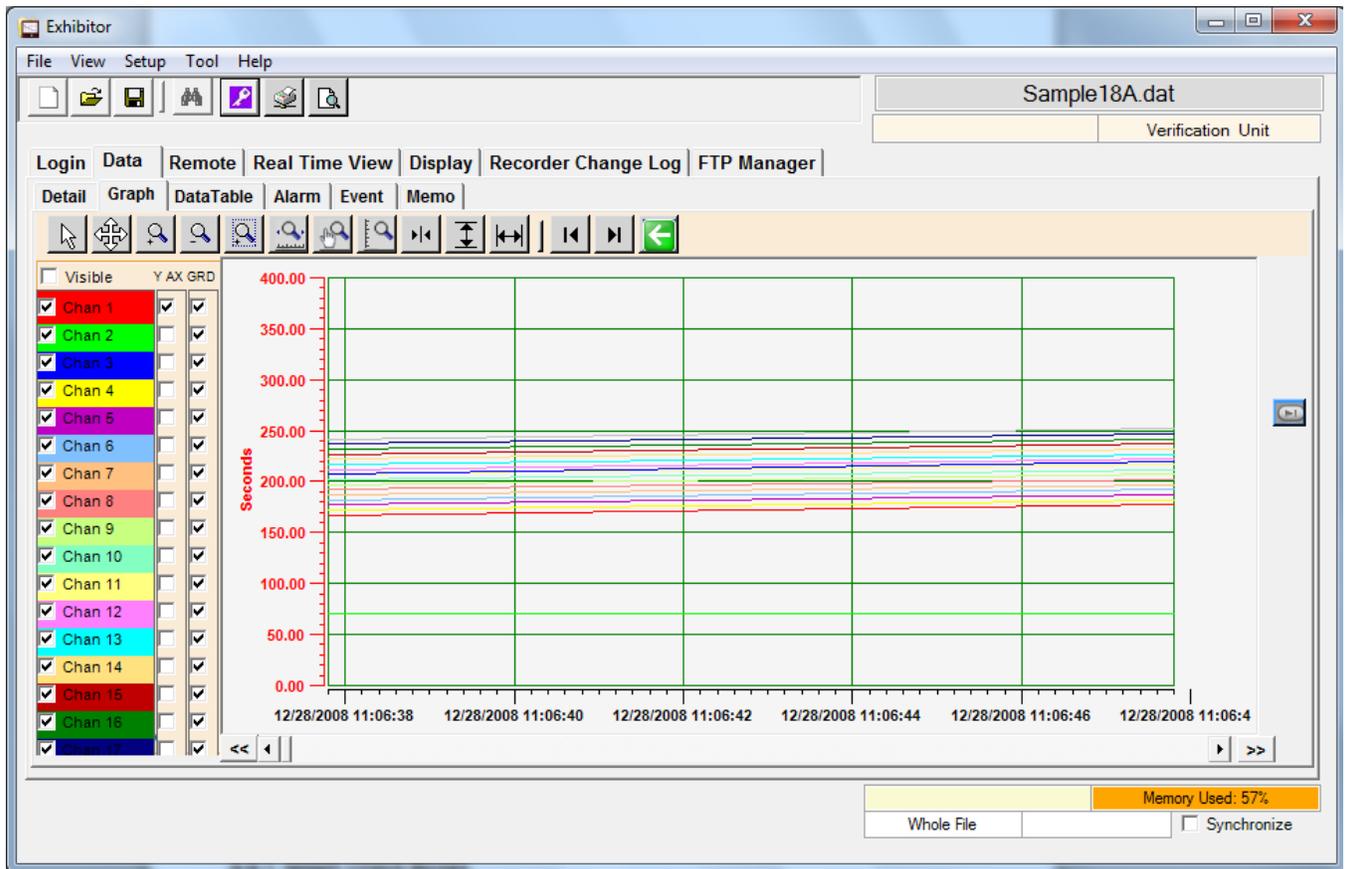


4.4 Graph Window

In the example below, the file Sample18A.dat was loaded with the all the settings that are on Options dialog.



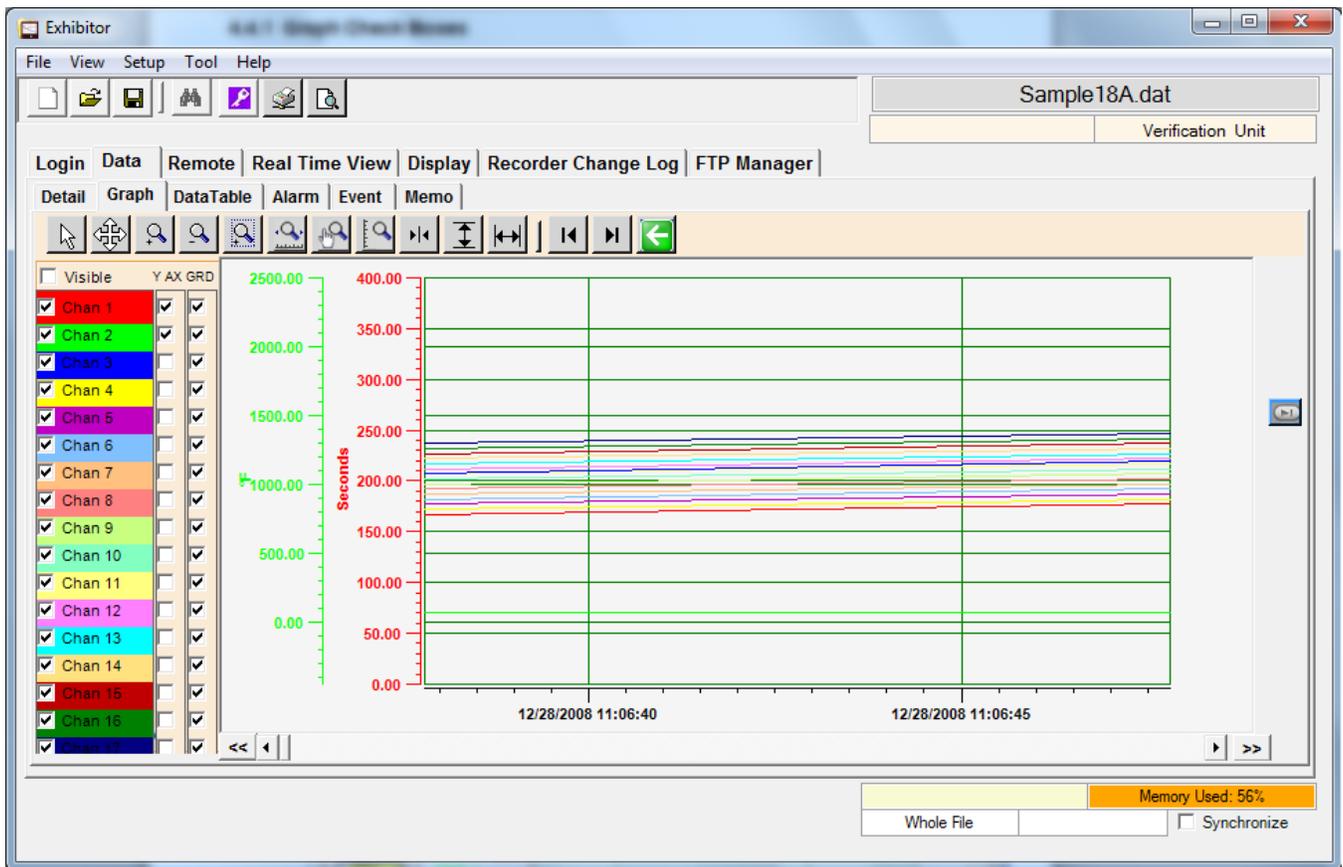
There are eighteen channels (show below).



4.4.1 Graph Check Boxes

There are a series of check box along the left side of the Graph window. Each check box represents a channel with the correct color of that channel. Each channel has its own Y-Axes. Each channel has its own horizontal grid line. The maximum and minimum of the Y-Axes is defined in the configuration in the data file. The configuration also defines the channel color and engineering unit. In the above example, maximum of channel 1 is about 297. Minimum is about 7. Its engineer units is Seconds and color is green.

If you check both Chan 1 and Chan 2 check boxes, the graph changes as seen in the below dialog. The vertical scale is that of the selected channel and it appears in the color of that channel



Each time different check box is selected, the graph will change accordingly.

A text box “Scale Visible” appears when the mouse moves to the check boxes.



If the mouse moves to the next row of the check box, a text box “Gridline Visible” appears.

4.4.2 Graph Buttons

The graphic area is fully interactive. Data can be zoomed and scrolled, the interaction controlled by the icons above the graph.



- Select

This is the default cursor. It is used to scroll the trends horizontally and vertically by simply holding down the right mouse button in the graphics area and dragging the cursor. Traces can be scrolled individually by clicking and dragging the vertical scales or together by clicking and dragging in the graphics area.



- Stretch

Click this button to stretch (zoom) or shrink the graph along the x-axis (time) and y-axis (scale). Traces can be zoomed individually by holding down the right mouse and dragging the individual vertical scales or together by dragging in the graphics area.



- Zoom In

Click this button to zoom in the graph.



- Zoom Out

Click this button to zoom out the graph.



- Zoom Window

Click this button to zoom to a user-defined window. When clicked, the cursor will turn into a draw window tool. Draw a window around the area of interest by holding the right mouse button and dragging the window. On release, the window area will fill the graphics screen.



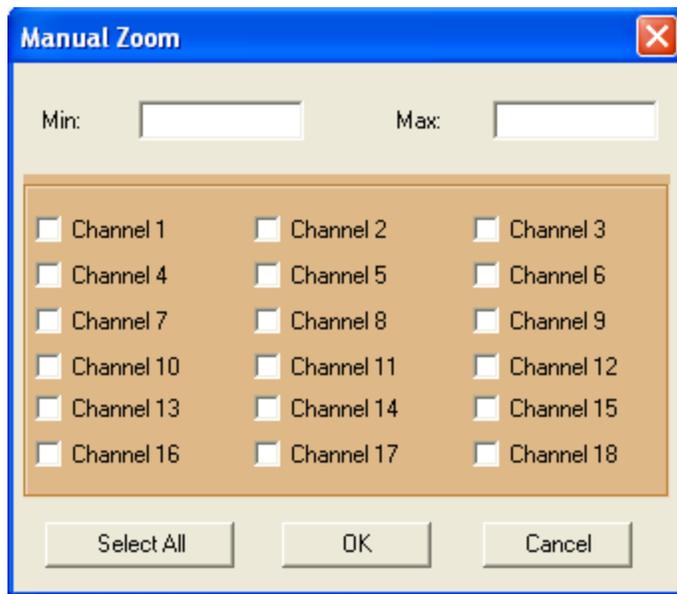
- Zoom X-Axes to Fit

Click this button to fit all data on X-Axes into one screen.



- Manual Zoom

Click this button to manually zoom the selected channels with the user entered min and Max on Y-Axes. Enter the minimum and maximum values for the vertical scale and select the channels to apply this to, and then click “OK”.



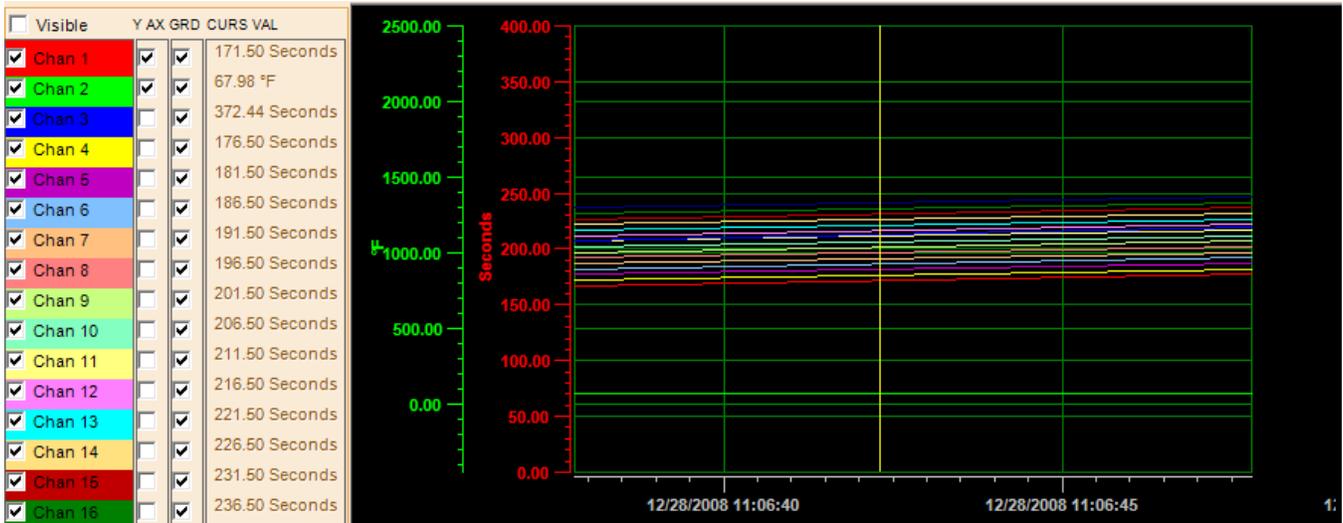
- Zoom Full Scale

Click this button to get the minimum and maximum value on the selected channel data points to be the minimum and maximum values on the vertical scale. For example if the span of channel 1 data is 50 to 100 then the vertical scale will zoom to 50 to 100 irrespective of the full scale value.



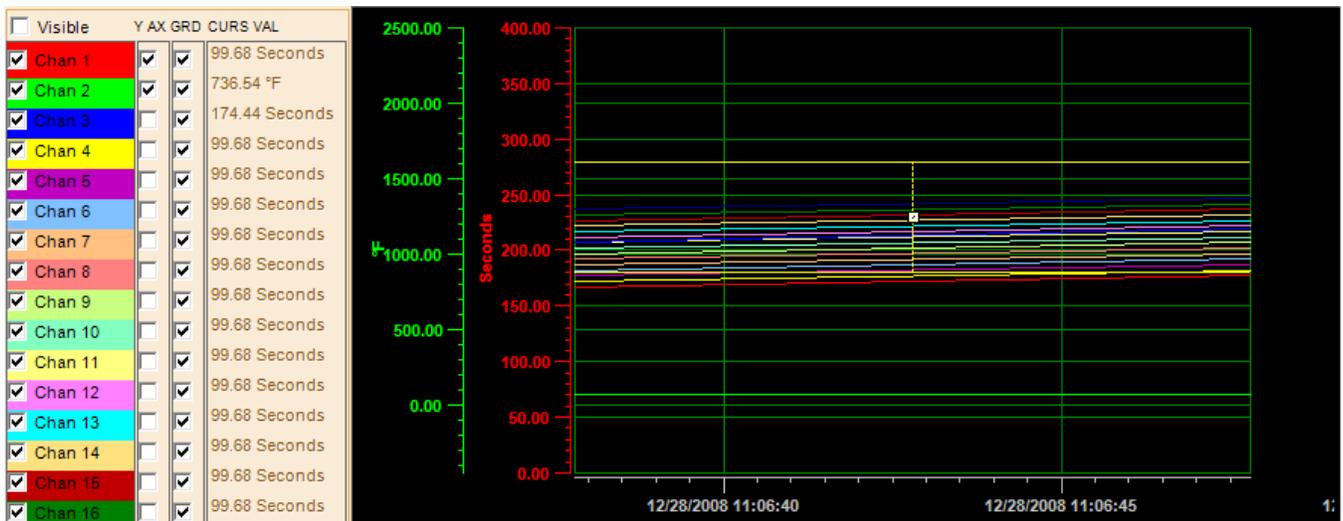
- Cursor

Click this button to enable the cursor. A vertical cursor line appears. The data values and engineer units of all channels displays on the left side of the graph. As the cursor is dragged along the time base, the cursor will track the trace and the displayed values are updated.



- Peak - Peak

The cursor style can be changed to “Peak – Peak” by clicking this button.

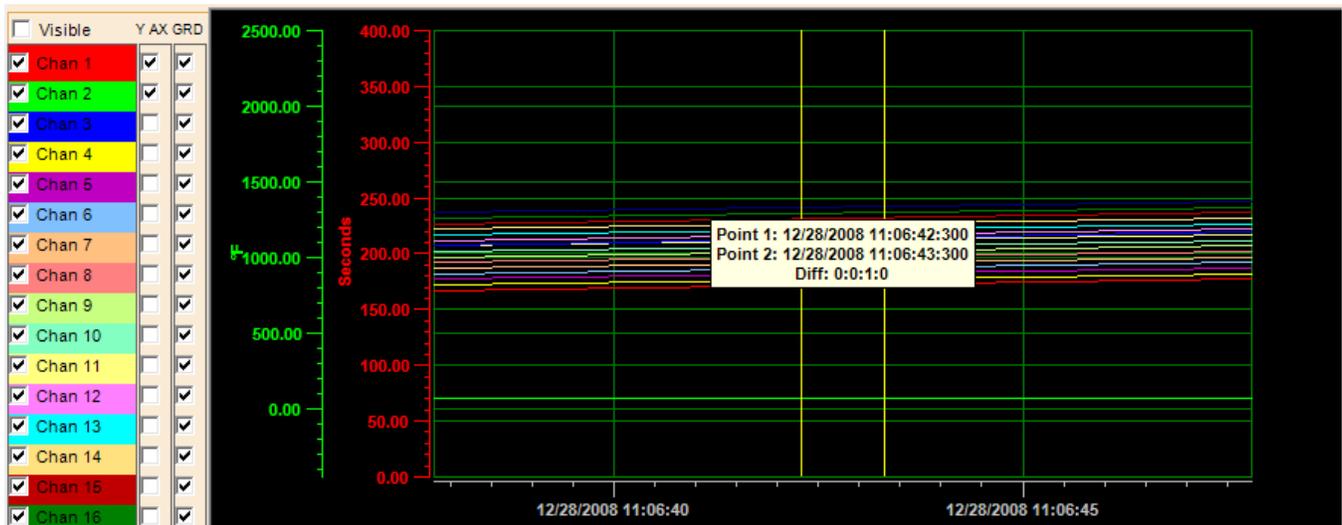


It brings up two cursors along the Y axis (scale). These cursors can be dragged independently and the list will show the difference between them for all channels.



- Period

It brings up two cursors along the X axis (time). These cursors can be dragged independently and the list will show the time of each and the difference between them. The list box of the channel values disappears.



- Scroll to Ends

Click either the left or right scroll button to jump to the start or end of the data.

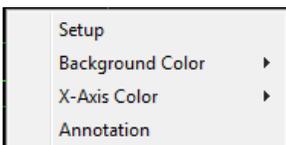


- Restore to Original Axes

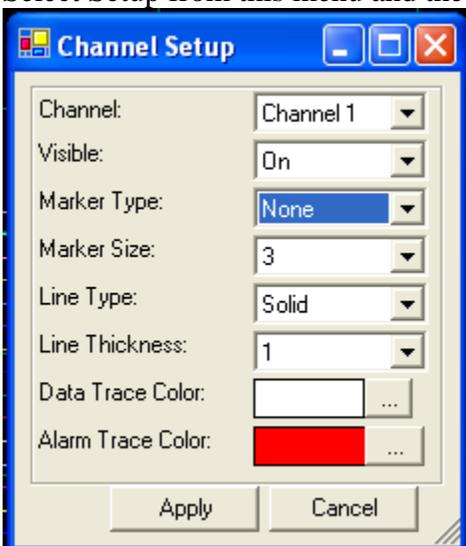
Click this button to restore the X and Y-axes to the original values when the data file was first loaded.

4.4.3 Channel Set Up

Right click the mouse anywhere on the graph to display a pop-up menu.



Select Setup from this menu and the Channel Setup dialog will appear.





The third row of check boxes determines the visibility of y-axes gridline. A text “Gridline Visible” appears when the mouse is in the boxes.



Marker Type

Identifies the actual points recorded. The trace is extrapolated between these points. The points can be marked by a square, circle or diamond. The user can also select None for no marker.

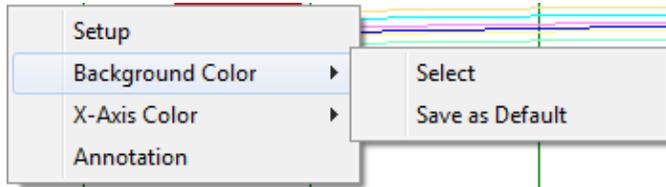
Marker Size

Adjusts the size of the marker on the points.

| | |
|--------------------------|---|
| Line Type | Identifies the trace type. It can be solid, dashed or dotted. |
| Line Thickness | Adjusts the thickness of the trace. |
| Data Trace Color | Changes the trace color for the selected channel. |
| Alarm Trace Color | Changes the alarm trace color for the selected channel. |

4.4.4 Graph Background Color

Right click the mouse anywhere on the graph to display the pop-up menu. Highlight **Background Color** and there will be two menu items.



Choose “**Select**” to open the Color dialog, which allows the user to select a different background color.



If “**Save as Default**” is selected, the selected background color will be saved to the registry. The next time Exhibitor is run, the graph will use that color as the default background.

4.4.5 X-Axes Color

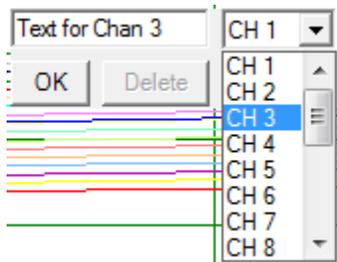
Right click the mouse anywhere on the graph to display the pop-up menu and highlight **X-Axes Color**. Similar to **Background Color**, there are two menu options: **Select** and **Save as Default**. Choosing “**Select**” will open the color dialog to allow the user to change the X-Axes color. Choosing “**Save as Default**” will save the selected color to the registry to be used next time the software is run.

4.4.6 Annotation

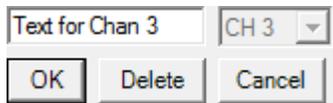
Right click the mouse anywhere on the graph to display the pop-up menu.
Select **Annotation** from this menu and the Annotation setup window will appear.



The annotation text can be entered in the first box, then choose which channel the annotation is attached to.



Click button OK, the annotation is created on the graph with the matched color from the channel. It has a dotted line. One end is the point when the mouse is right clicked and the pop up menu appears. Click the annotation text and the annotation can be dragged and moved. By double clicking the text, the annotation can be edited.



You can change the text or delete the annotation.

The created annotations are saved when the file is closed and can be reopened .

4.4.7 Other Information

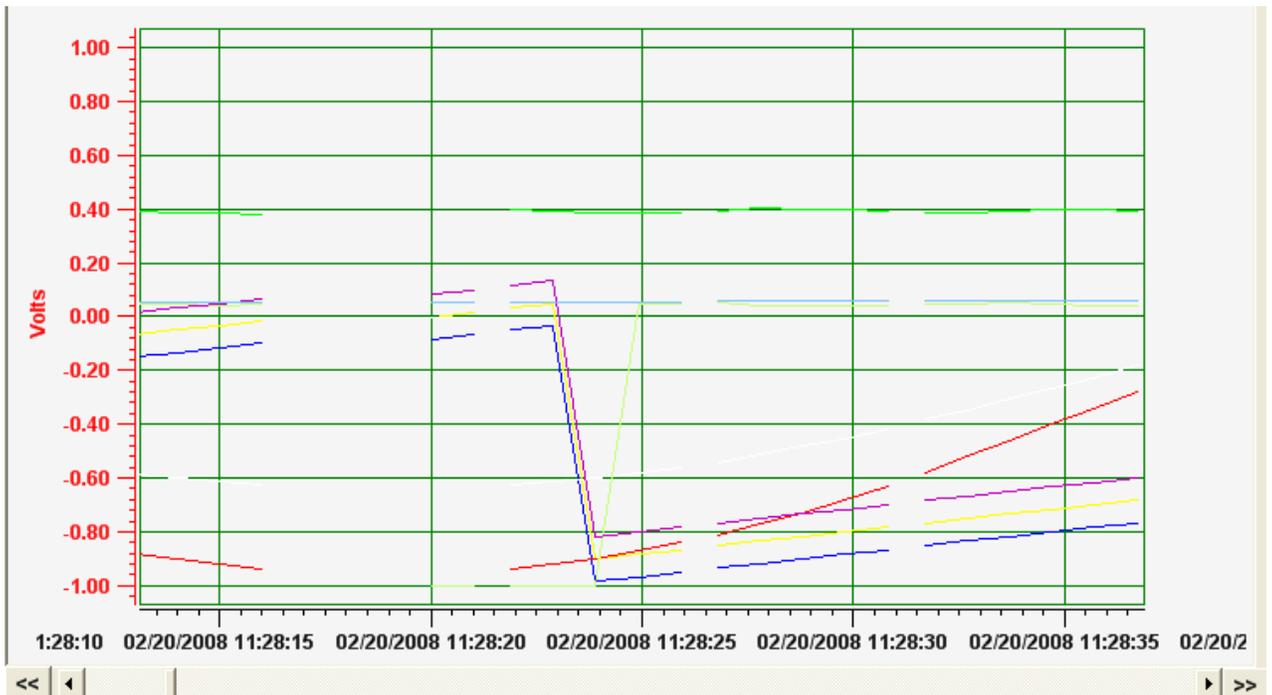
There is a scroll bar and two buttons under the trend graph.

Scroll Bar Scrolling the scroll bar will move the trend to the correct position.
For example, if the scroll bar is moved to 15% and the total data points for each channel are 1000, the 150th data point will be the 1st data on the screen.



- Discontinued Button

These will appear if there is a gap between the discontinued data points.



Click these two buttons to have the trend step over the time discontinuities.

Memory Use Information A text box indicates how much memory is used on the PC.

Memory Used: 53%

If the used memory is over 65%, the data file will stop loading. There is a forward button to continue loading the file.

Forward Button

Clicking this button will enable the program to continue loading the data file. If the file was loaded all at once, this button will be disabled.

Synchronize - **Synchronize Choice**

Checking this option will synchronize the Graph page and the individual channel graph in Detail page. If the trend in the Graph page is moved, stretched or zoomed, the individual graph in Detail page will do the same.

If a whole file is opened, a text “Whole File” is displayed on the bottom. Otherwise, “Partial File” is displayed.

Whole File

Key Functions

| | |
|-------------------|--------------------------------|
| Page Up | Moves the y-axes one page up |
| Page Down | Moves the y-axes one page down |
| Up Arrow | Moves the y-axes up |
| Down Arrow | Moves the y-axes down |

| | |
|--------------------------|---------------------------------|
| Left Arrow | Moves the x-axes left |
| Right Arrow | Moves the x-axes right |
| Shift + Page Up | Moves the x-axes one page left |
| Shift + Page Down | Moves the x-axes one page right |

4.4.8 Detail Window

This page shows the individual channels and summary table.



Each channel graph has the same graph buttons as the trend graph in the Graph tab page. It also has the scrollbar and data discontinuity buttons. Their functions are as same as in the Graph tab page.

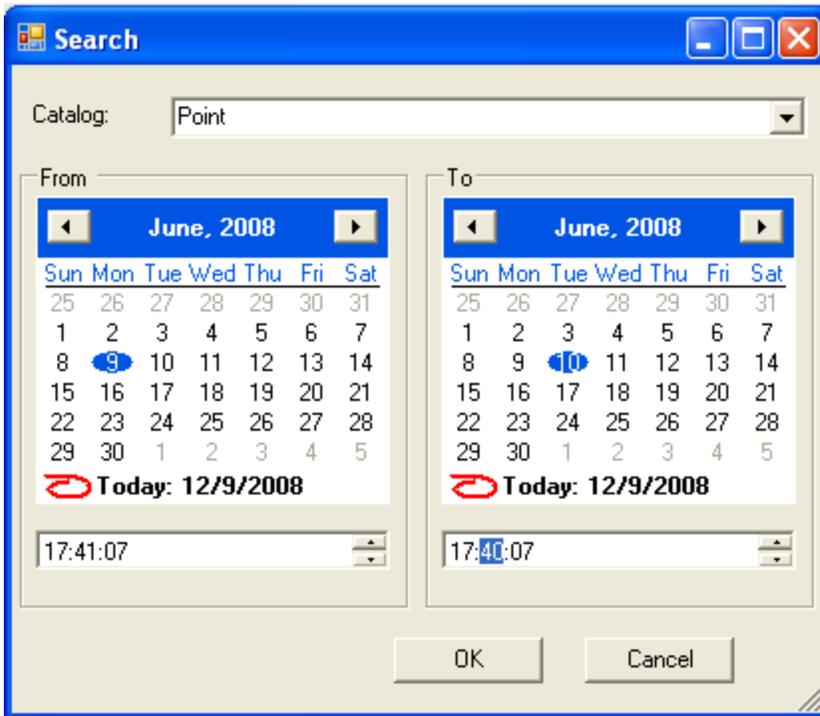
On the bottom of the graph of each channel, there are additional text boxes that indicate information for that channel.

| | |
|----------------|---------|
| Channel Tag: | Tag 1 |
| Engineer Unit: | Seconds |
| Maximum: | 297.00 |
| Minimum: | 7.00 |
| Average: | 153.86 |

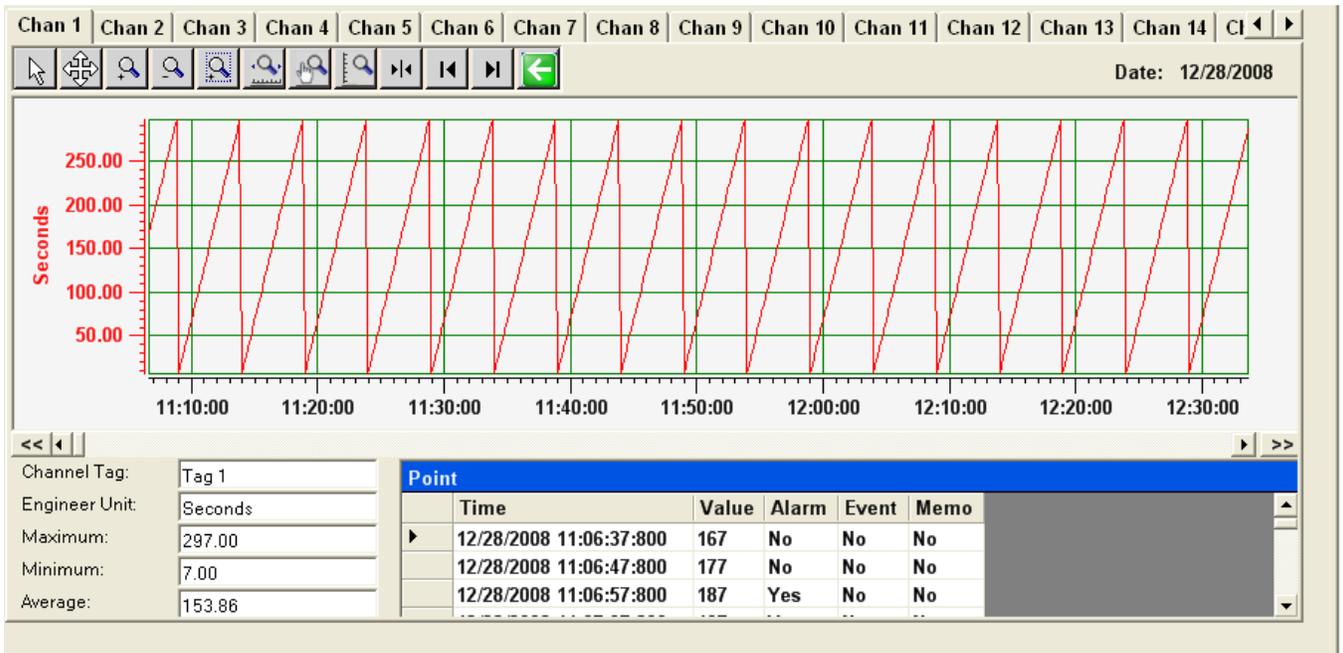
Beside these text boxes is a table that is empty after the file is loaded. To fill the table with data, click the search button on the top of the dialog.



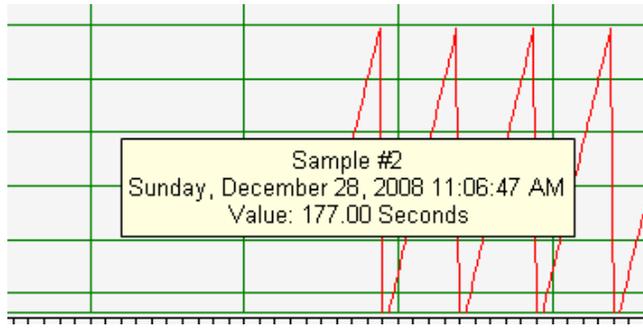
A search dialog will appear with the start time and end time for that channel.



Select a start date and end date and click OK. The table will be filled with all data points on that channel between the specified start time and end time.



Clicking on any value cell will allow the user to add a message on that data point on the graph.



The summary table summarizes the information for all channels which is opened on the data table.

| Chan | Tag | Engineer Unit | Max | Min | Average | Start Time | Stop Time |
|---------|--------|---------------|--------|-------|---------|-------------------------|-------------------------|
| Chan 1 | Tag 1 | Seconds | 297.00 | 7.00 | 153.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 2 | Tag 2 | °F | 358.17 | 65.67 | 86.84 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 3 | Tag 3 | Seconds | 639.13 | 22.88 | 334.97 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 4 | Tag 4 | Seconds | 302.00 | 12.00 | 158.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 5 | Tag 5 | Seconds | 307.00 | 17.00 | 163.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 6 | Tag 6 | Seconds | 312.00 | 22.00 | 168.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 7 | Tag 7 | Seconds | 317.00 | 27.00 | 173.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 8 | Tag 8 | Seconds | 322.00 | 32.00 | 178.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 9 | Tag 9 | Seconds | 327.00 | 37.00 | 183.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 10 | Tag 10 | Seconds | 332.00 | 42.00 | 188.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 11 | Tag 11 | Seconds | 337.00 | 47.00 | 193.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 12 | Tag 12 | Seconds | 342.00 | 52.00 | 198.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 13 | Tag 13 | Seconds | 347.00 | 57.00 | 203.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |
| Chan 14 | Tag 14 | Seconds | 352.00 | 62.00 | 208.86 | 12/28/2008 11:06:37:800 | 12/28/2008 12:33:37:800 |

Complete File

The note on the bottom indicates if the summary table is for complete file or partial file.

4.4.9 DataTable Window

The DataTable Window shows the time and value of every data sample on each channel. This window is also used to save the table to a .csv file. It can also be used to highlight a specific point on the graph.

| Col[1] | Row[7] | Time | Chan1 | Chan2 | Chan3 | Chan4 | Chan5 | Chan6 | Chan7 | Chan8 | Chan9 |
|--------|--------|-------------------------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| | | 12/28/2008 11:06:37:800 | 167.00 | 68.11 | 362.88 | 172.00 | 177.00 | 182.00 | 187.00 | 192.00 | 197.00 |
| | | 12/28/2008 11:06:47:800 | 177.00 | 67.83 | 384.13 | 182.00 | 187.00 | 192.00 | 197.00 | 202.00 | 207.00 |
| | | 12/28/2008 11:06:57:800 | 187.00 | 68.27 | 405.38 | 192.00 | 197.00 | 202.00 | 207.00 | 212.00 | 217.00 |
| | | 12/28/2008 11:07:07:800 | 197.00 | 68.27 | 426.63 | 202.00 | 207.00 | 212.00 | 217.00 | 222.00 | 227.00 |
| | | 12/28/2008 11:07:17:800 | 207.00 | 68.39 | 447.88 | 212.00 | 217.00 | 222.00 | 227.00 | 232.00 | 237.00 |
| | | 12/28/2008 11:07:27:800 | 217.00 | 68.08 | 469.13 | 222.00 | 227.00 | 232.00 | 237.00 | 242.00 | 247.00 |
| | | 12/28/2008 11:07:37:800 | 227.00 | 68.15 | 490.38 | 232.00 | 237.00 | 242.00 | 247.00 | 252.00 | 257.00 |
| | | 12/28/2008 11:07:47:800 | 237.00 | 67.76 | 511.63 | 242.00 | 247.00 | 252.00 | 257.00 | 262.00 | 267.00 |
| | | 12/28/2008 11:07:57:800 | 247.00 | 67.64 | 532.88 | 252.00 | 257.00 | 262.00 | 267.00 | 272.00 | 277.00 |
| | | 12/28/2008 11:08:07:800 | 257.00 | 67.32 | 554.13 | 262.00 | 267.00 | 272.00 | 277.00 | 282.00 | 287.00 |
| | | 12/28/2008 11:08:17:800 | 267.00 | 67.05 | 575.38 | 272.00 | 277.00 | 282.00 | 287.00 | 292.00 | 297.00 |
| | | 12/28/2008 11:08:27:800 | 277.00 | 67.13 | 596.63 | 282.00 | 287.00 | 292.00 | 297.00 | 302.00 | 307.00 |
| | | 12/28/2008 11:08:37:800 | 287.00 | 67.09 | 617.88 | 292.00 | 297.00 | 302.00 | 307.00 | 312.00 | 317.00 |
| | | 12/28/2008 11:08:47:800 | 297.00 | 67.09 | 639.13 | 302.00 | 307.00 | 312.00 | 317.00 | 322.00 | 327.00 |
| | | 12/28/2008 11:08:57:800 | 7.00 | 67.21 | 22.88 | 12.00 | 17.00 | 22.00 | 27.00 | 32.00 | 37.00 |
| | | 12/28/2008 11:09:07:800 | 17.00 | 67.21 | 44.13 | 22.00 | 27.00 | 32.00 | 37.00 | 42.00 | 47.00 |
| | | 12/28/2008 11:09:17:800 | 27.00 | 67.56 | 65.38 | 32.00 | 37.00 | 42.00 | 47.00 | 52.00 | 57.00 |
| | | 12/28/2008 11:09:27:800 | 37.00 | 67.41 | 86.63 | 42.00 | 47.00 | 52.00 | 57.00 | 62.00 | 67.00 |
| | | 12/28/2008 11:09:37:800 | 47.00 | 67.45 | 107.88 | 52.00 | 57.00 | 62.00 | 67.00 | 72.00 | 77.00 |

Report/Print

Include Columns

Time
 Chan1
 Chan2
 Chan3

FILTER

Date Time
 Selection

From: 12/28/2008 11:06:37
To: 12/28/2008 12:33:37

Export Time Format:
hh:mm:ss:ms

Interval Report

Minute

Chan1

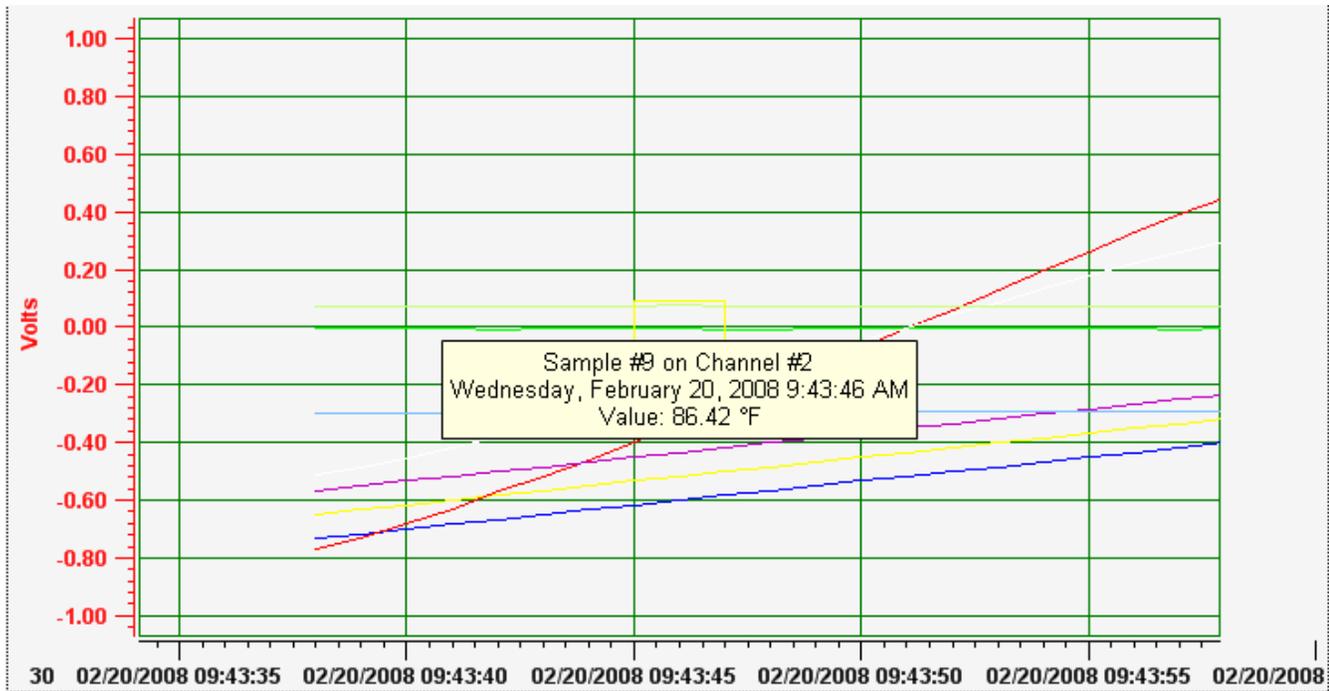
4.4.9.1 MKT Values

To calculate the MKT values – Select the channel to use for the MKT by selecting it from the drop down menu at the bottom right of the window. The select the number of contiguous points in the left hand data pane you wish to use for the calculation as shown above. Click the “MKT” button on the bottom right and the MKT value will appear in the text window. If the “MKT” button is clicked without selectin data, the calculation will be done on ALL points of the designated channel.



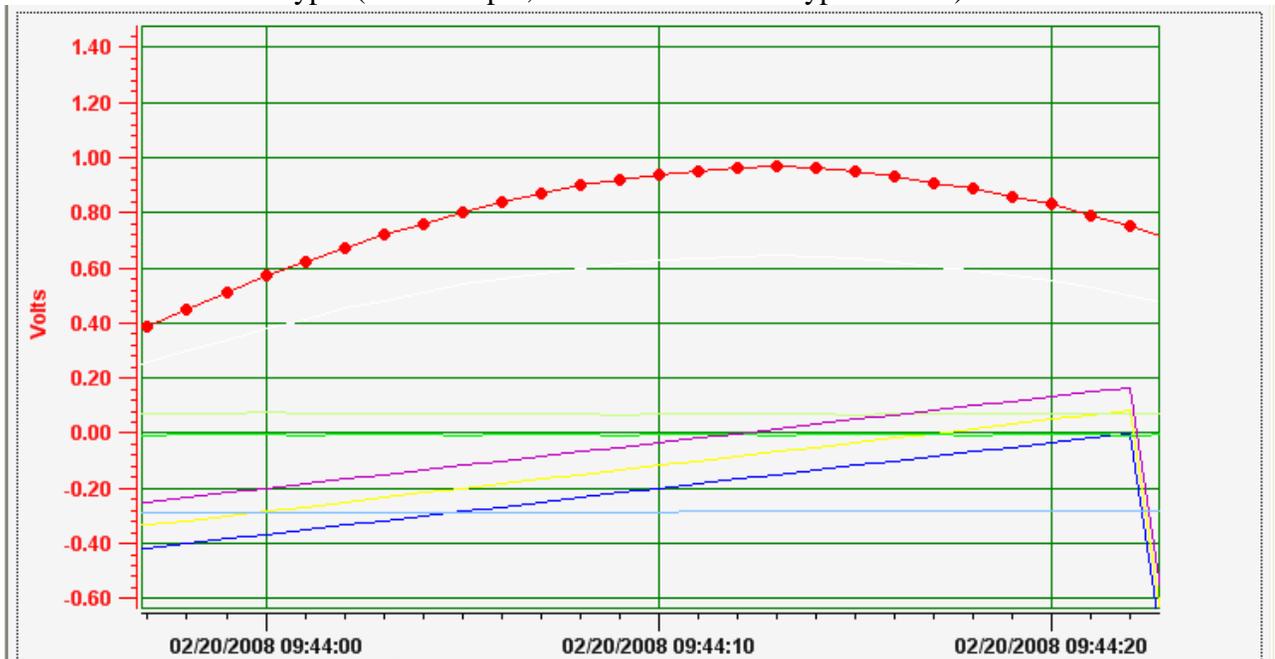
4.4.9.2 Jumping to A Specific Point on The Graph

If you double click a value in any channel data column in the DataTable, the program will jump to the Graph Tab and highlight that point on the graphic window. The graph will be automatically scaled to show the unique point highlighted by a rectangular box as shown below:



Move the cursor into the rectangle for precise information about the point.

The graph is also synchronized with the Data Table. It is necessary to turn the channel markers on in order to identify actual data points – Right Click in the graphic area, select “Setup”, select the channel and a marker type. (For example, channel 1 – marker type = circle).



Move the cursor over any data point. The cursor will become a “hand”. Double click the marker. The Data Table window will open and the corresponding row on the data table will be highlighted.

| Col[8] | Row[2] | Time | Chan1 | Chan2 | Chan3 | Chan4 | Chan5 | Chan6 | Chan7 | Chan8 | Chan9 |
|--------|--------|-------------------------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| | | 12/28/2008 11:06:37:800 | 167.00 | 68.11 | 362.88 | 172.00 | 177.00 | 182.00 | 187.00 | 192.00 | 197.00 |
| | | 12/28/2008 11:06:47:800 | 177.00 | 67.83 | 384.13 | 182.00 | 187.00 | 192.00 | 197.00 | 202.00 | 207.00 |
| | | 12/28/2008 11:06:57:800 | 187.00 | 68.27 | 405.38 | 192.00 | 197.00 | 202.00 | 207.00 | 212.00 | 217.00 |
| | | 12/28/2008 11:07:07:800 | 197.00 | 68.27 | 426.63 | 202.00 | 207.00 | 212.00 | 217.00 | 222.00 | 227.00 |
| | | 12/28/2008 11:07:17:800 | 207.00 | 68.39 | 447.88 | 212.00 | 217.00 | 222.00 | 227.00 | 232.00 | 237.00 |
| | | 12/28/2008 11:07:27:800 | 217.00 | 68.08 | 469.13 | 222.00 | 227.00 | 232.00 | 237.00 | 242.00 | 247.00 |
| | | 12/28/2008 11:07:37:800 | 227.00 | 68.15 | 490.38 | 232.00 | 237.00 | 242.00 | 247.00 | 252.00 | 257.00 |
| | | 12/28/2008 11:07:47:800 | 237.00 | 67.76 | 511.63 | 242.00 | 247.00 | 252.00 | 257.00 | 262.00 | 267.00 |
| | | 12/28/2008 11:07:57:800 | 247.00 | 67.64 | 532.88 | 252.00 | 257.00 | 262.00 | 267.00 | 272.00 | 277.00 |
| | | 12/28/2008 11:08:07:800 | 257.00 | 67.32 | 554.13 | 262.00 | 267.00 | 272.00 | 277.00 | 282.00 | 287.00 |
| | | 12/28/2008 11:08:17:800 | 267.00 | 67.05 | 575.38 | 272.00 | 277.00 | 282.00 | 287.00 | 292.00 | 297.00 |
| | | 12/28/2008 11:08:27:800 | 277.00 | 67.13 | 596.63 | 282.00 | 287.00 | 292.00 | 297.00 | 302.00 | 307.00 |
| | | 12/28/2008 11:08:37:800 | 287.00 | 67.09 | 617.88 | 292.00 | 297.00 | 302.00 | 307.00 | 312.00 | 317.00 |
| | | 12/28/2008 11:08:47:800 | 297.00 | 67.09 | 639.13 | 302.00 | 307.00 | 312.00 | 317.00 | 322.00 | 327.00 |
| | | 12/28/2008 11:08:57:800 | 7.00 | 67.21 | 22.88 | 12.00 | 17.00 | 22.00 | 27.00 | 32.00 | 37.00 |
| | | 12/28/2008 11:09:07:800 | 17.00 | 67.21 | 44.13 | 22.00 | 27.00 | 32.00 | 37.00 | 42.00 | 47.00 |
| | | 12/28/2008 11:09:17:800 | 27.00 | 67.56 | 65.38 | 32.00 | 37.00 | 42.00 | 47.00 | 52.00 | 57.00 |
| | | 12/28/2008 11:09:27:800 | 37.00 | 67.41 | 86.63 | 42.00 | 47.00 | 52.00 | 57.00 | 62.00 | 67.00 |
| | | 12/28/2008 11:09:37:800 | 47.00 | 67.45 | 107.88 | 52.00 | 57.00 | 62.00 | 67.00 | 72.00 | 77.00 |

4.4.9.3 Creating Report

The Exhibitor has the ability to create custom reports to be saved as a .CSV file (Comma delimited). The user can select the entire data set (beware of large files) or highlighted rows in the table. The filters can be used to choose specific dates and times. The user can also select which columns from the table to export.

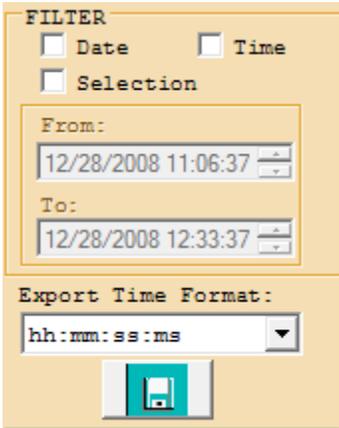
To export all data, simply click the Export button . To select multiple rows from the DataTable, click the left edge of the starting row to export. This will highlight the row. Then scroll to the last row to export and hold down the shift key, and click the left edge of the last row. This will highlight all the rows between the start and the end. Then click the Excel™ button or Export button. The spreadsheet will open automatically if using Excel™ or you can open the exported file later if the Export button is clicked.

The report can be further customized by selecting which columns to include in the report. This is done via the Report dialog box.



The Include Columns check boxes determine which columns of the data table will be exported to the spreadsheet. Simply select the data you want.

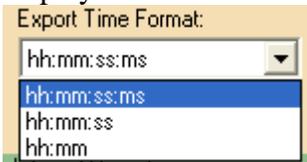
Below the Include Columns window is the Filter. This is yet another easy way to limit what data is exported to the spreadsheet. You can filter data by Date or Time or Both simply by checking the relative boxes as shown below. Clicking Selection will include the selected rows from the data table.



The From: and To: data entry areas default to the start and end times of the data in the table to be exported and can be edited by the user to specify an exact time frame for export. Once all parameters are set, press the Excel™ button and the data will open in an Excel™ spreadsheet.

All these customization works for printing point table too.

When exporting, the user can select the desired Time Format in which the time will be displayed in Excel.



There is also an option to view only an interval report. Select the desired interval.



- Minute – View the first data point of every minute.
- 15 Minute – View the first data point of every 15 minutes.
- ½ Hour – View the first data point of every half hour.
- Hour – View the first data point of every hour.
- Day – View the first data point of every day.

Sample rate is displayed below the Report/Print.

4.4.10 Alarm Table Window

The Alarm Table is for alarm points. If there are no alarms, the window will be empty.

| Alarm | | |
|-------|-------------------------|--------------------|
| | Time | AlarmString |
| ▶ | 12/28/2008 11:06:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:08:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:11:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:13:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:16:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:18:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:21:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:23:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:26:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:28:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:31:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:33:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:36:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:38:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:41:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:43:50:900 | Chan1 Alarm1 Reset |
| | 12/28/2008 11:46:50:900 | Chan1 Alarm1 High |
| | 12/28/2008 11:48:50:900 | Chan1 Alarm1 Reset |

4.4.11 Event Table Window

The Event Table is for events. If there are no events, the window will be empty.

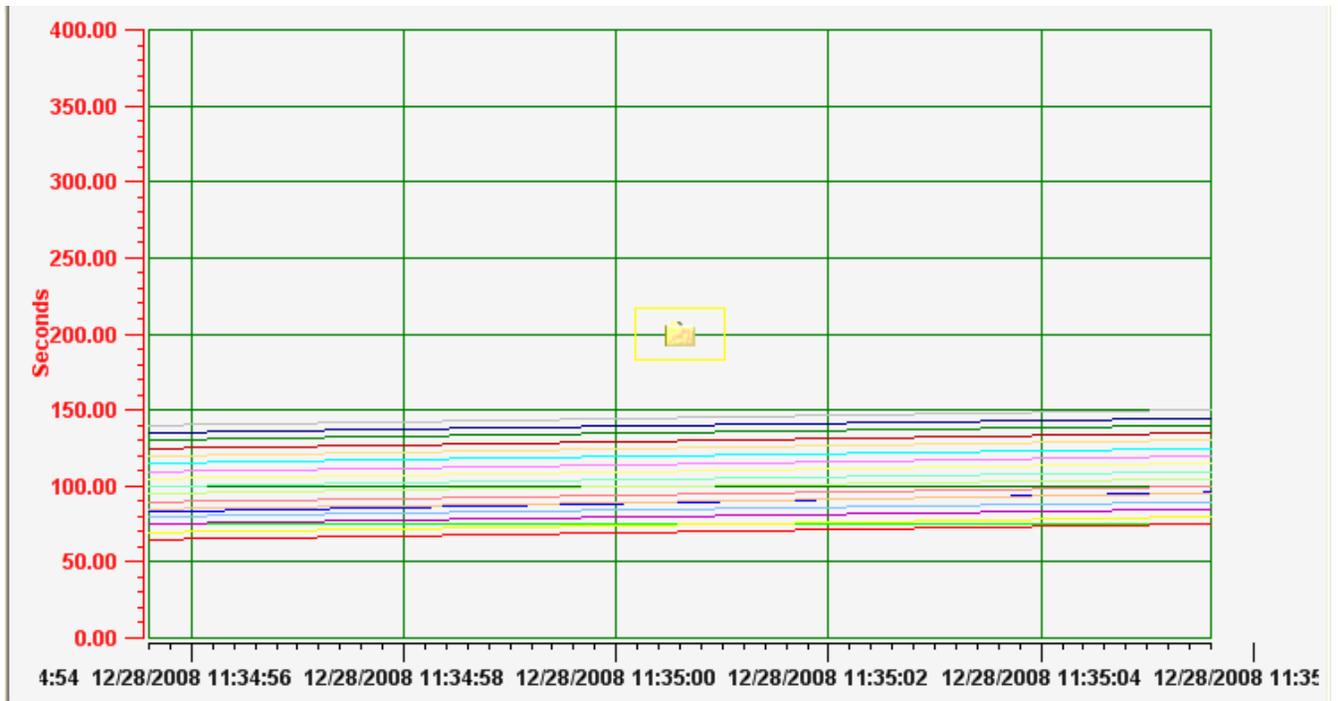
| Event | | |
|-------|-------------------------|--------------------|
| | Time | EventString |
| ▶ | 12/28/2008 11:06:37:700 | Admin Record Start |
| | 12/28/2008 11:06:40:800 | Admin Config Saved |
| | 12/28/2008 12:33:39:200 | Admin Record Stop |

4.4.12 Memo Table Window

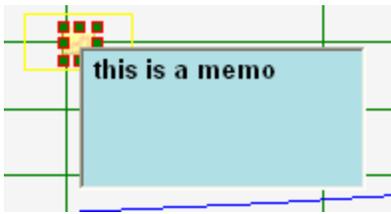
The Memo Table is for memos. It shows all memos in the data file.

| Memo | | | | | | |
|------|----|------|-------------------------|------------|------------------------|---|
| Type | ID | Time | Control | MemoString | Channel | |
| ▶ | 4 | 6 | 12/28/2008 11:35:00:600 | 1 | File:Sample18A.dat.bmp | 0 |

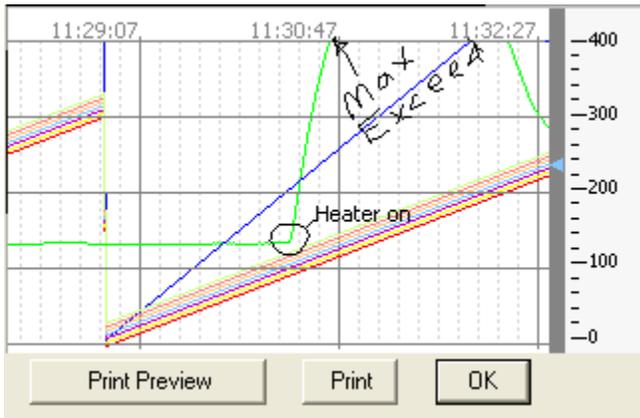
Each memo is indicated on the graph as a yellow folder image. Double-click any cell in the memo table row and the graphic window will open with that folder highlighted.



Double-click the yellow folder to see the content of the memo. If it is a message, a textbox will display the memo.



If it is an image, it will be displayed in a graph.



You can print or print preview the image.

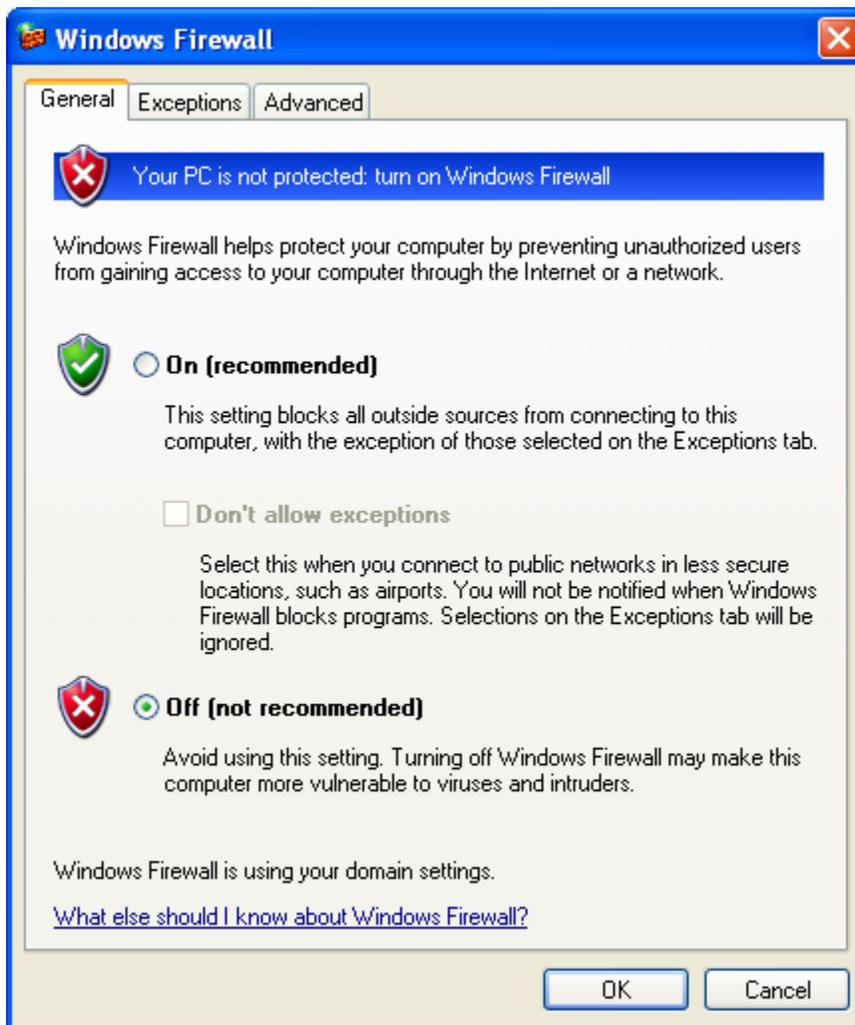
4.5 Real Time Display

Exhibitor can display data through OPC or Modbus.

4.5.1 OPC

Microsoft's COM is the key for communication between OPC clients and OPC servers. DCOM permits OPC clients transparent access to OPC servers on remote computers. Default DCOM settings vary from system to system. Generally, default DCOM settings on the server machine restrict OPC client applications from accessing a remote OPC server.

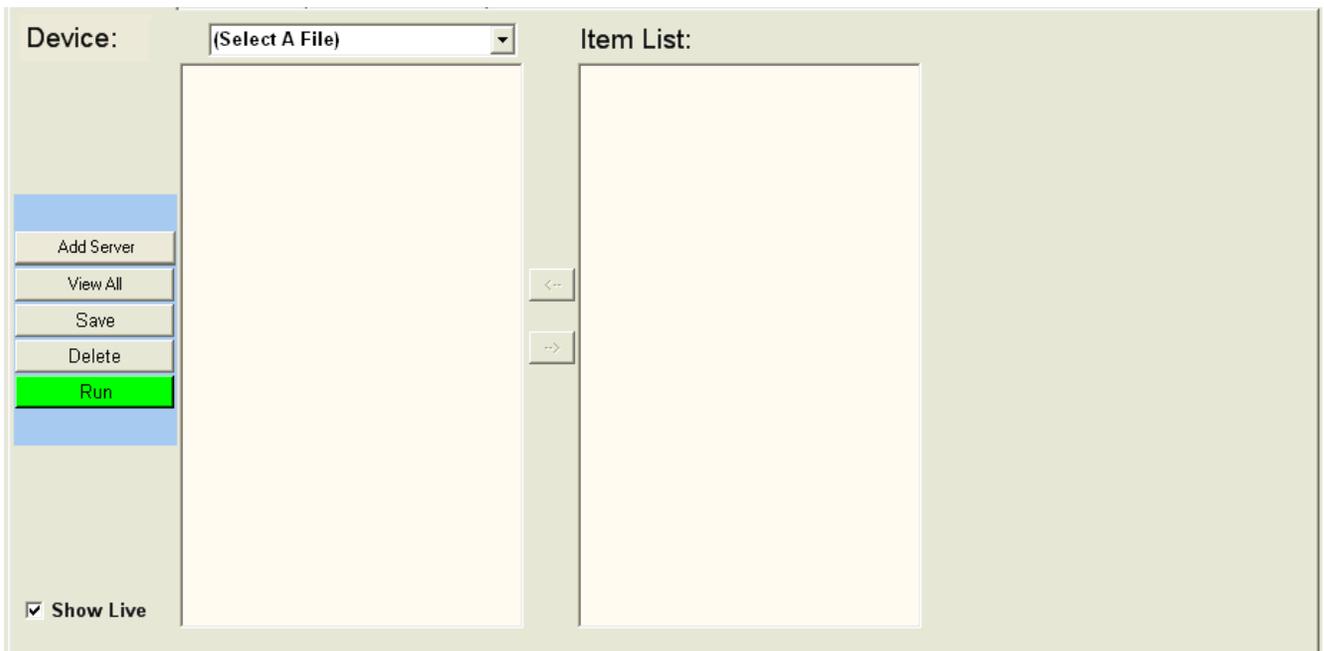
If you have difficulty connecting the Exhibitor application to an OPC server, temporarily turn off your computer's firewall. To do so, click the Control Panel -> Security Center->Windows Firewall.



There are four ways to see real time data within the program: Device Manager Window, Design Page Window and Real Time View and OPC Client (under the Tools pull-down menu).

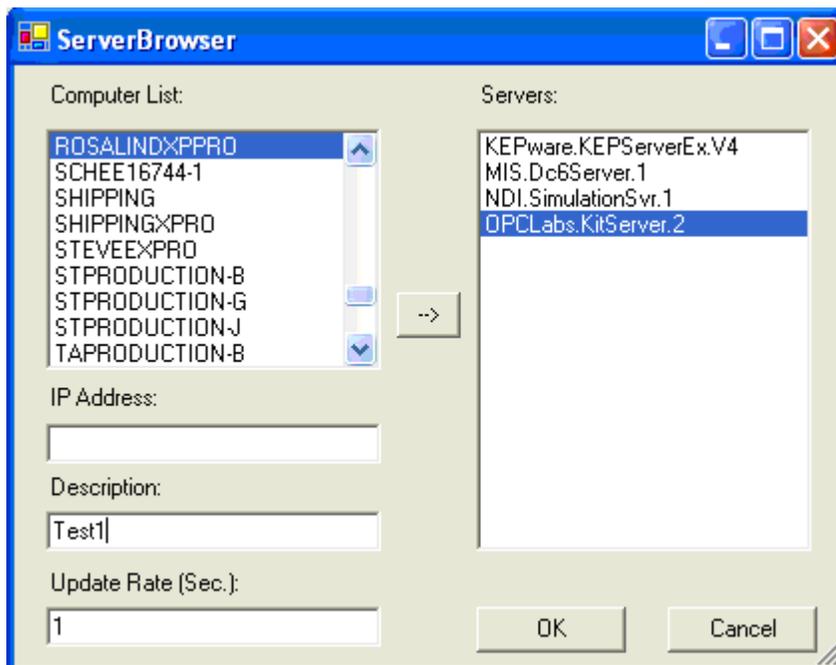
4.5.2 Device Manager Window

This window can show multiple servers (maximum 50). Each server can have multiple items (maximum 100).

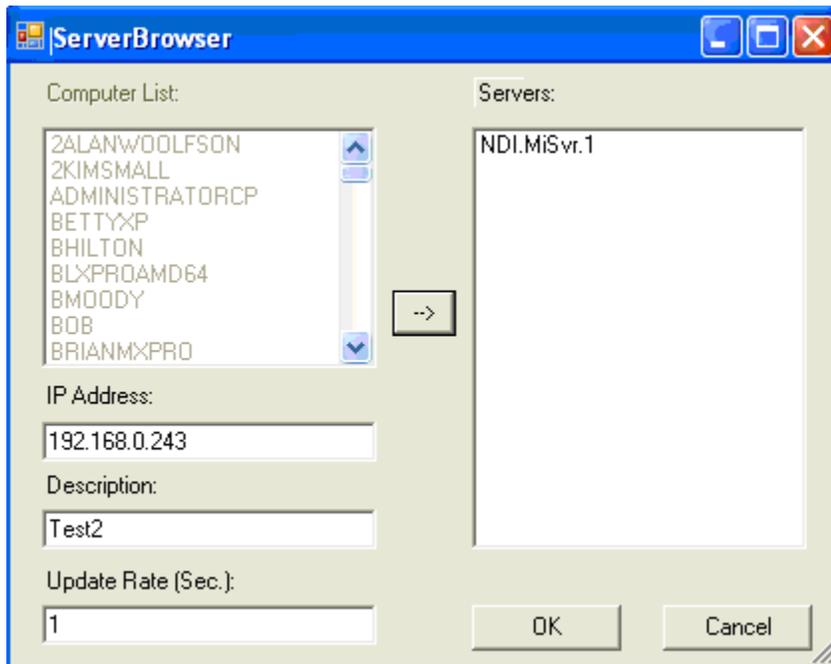


4.5.2.1 Add Server

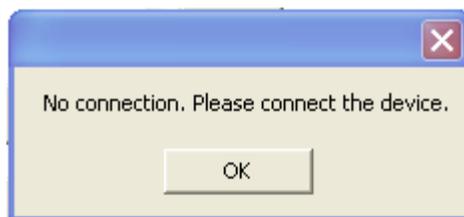
1. Click the **Add Server** button. The ServerBrowser will appear.



2. Select a computer from the computer list (ROSALINDXPPRO for example) OR enter an IP Address (192.168.0.243 for example).
- 3.



4. Enter a description (Test1 or Test2 for example).
5. Enter an Update Rate in seconds (Default is 1).
6. Then click the arrow button between Computer List and Servers.
If there is no connection between the local PC and the device, a message will pop up.



7. If connection is ok, the list box displays all servers on the device. Select a Server from the Servers list (OPCLabs.KitServer2 or NDI.MiSvr.1 for example).
8. Click OK. The server name with the description is added to the Device list in the Device Manager window.



9. Double-click the server name or right click it and select Add Item from the menu to view all items under this server.



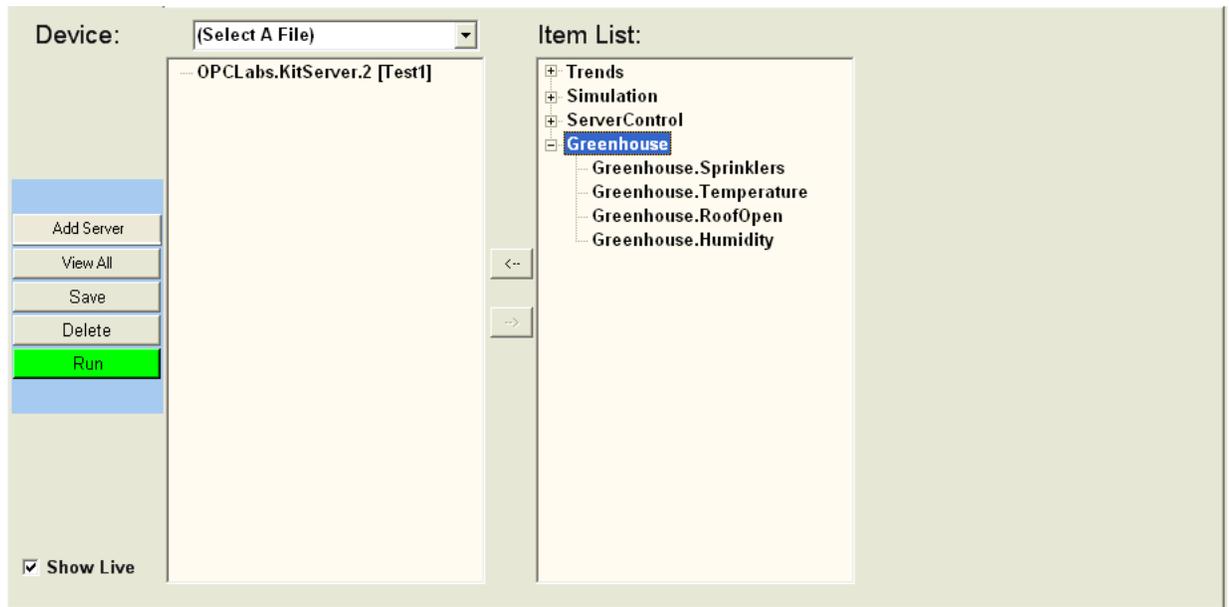
There are two other items in this menu.

Update Rate – Modifies the server update interval. The default is 1 second.

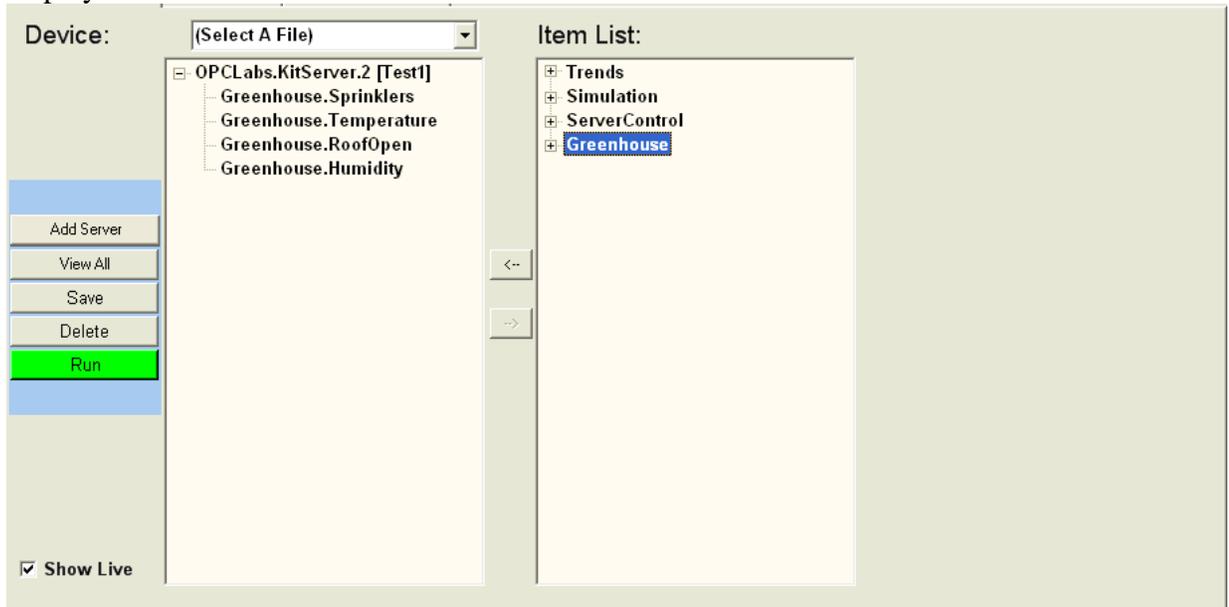


Delete Server – Deletes this server from the Device list.

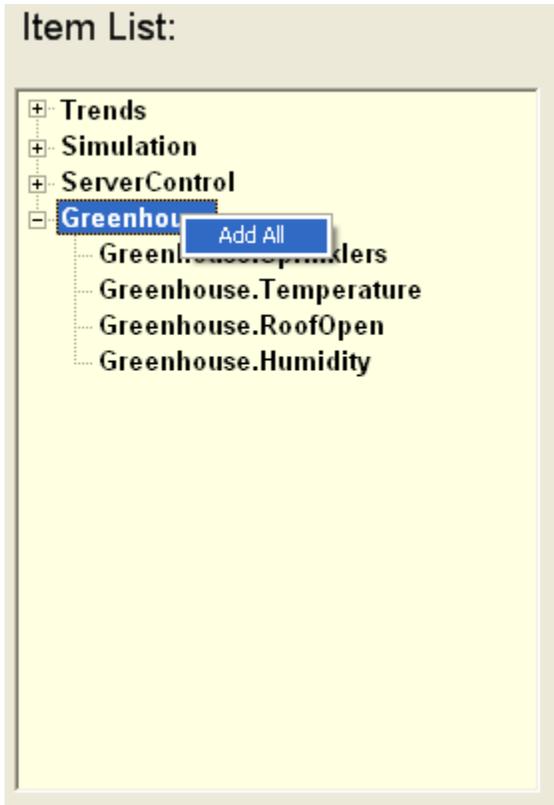
10. The Item List on the right side of the window will show all the items under this server. Click any server to expand child nodes.



11. Select an item from the Item List and click the left arrow button between Device and Item List  to add the item to the server in Device list. If the root node in the Item List tree is chosen, all children under the root are added to the server. Only the added items are displayed to the user.



You can also right-click an item in the Item List and select Add All for a root node or Add for a child item.



To delete an item from Device, right click it and choose Delete Item.

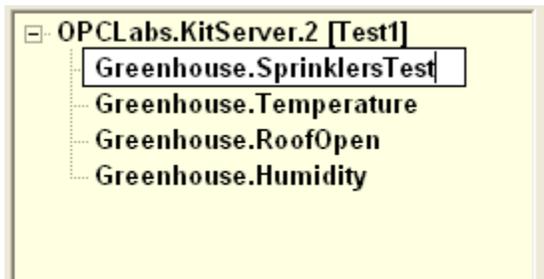


OR

Click the right arrow button between Device and Item List.



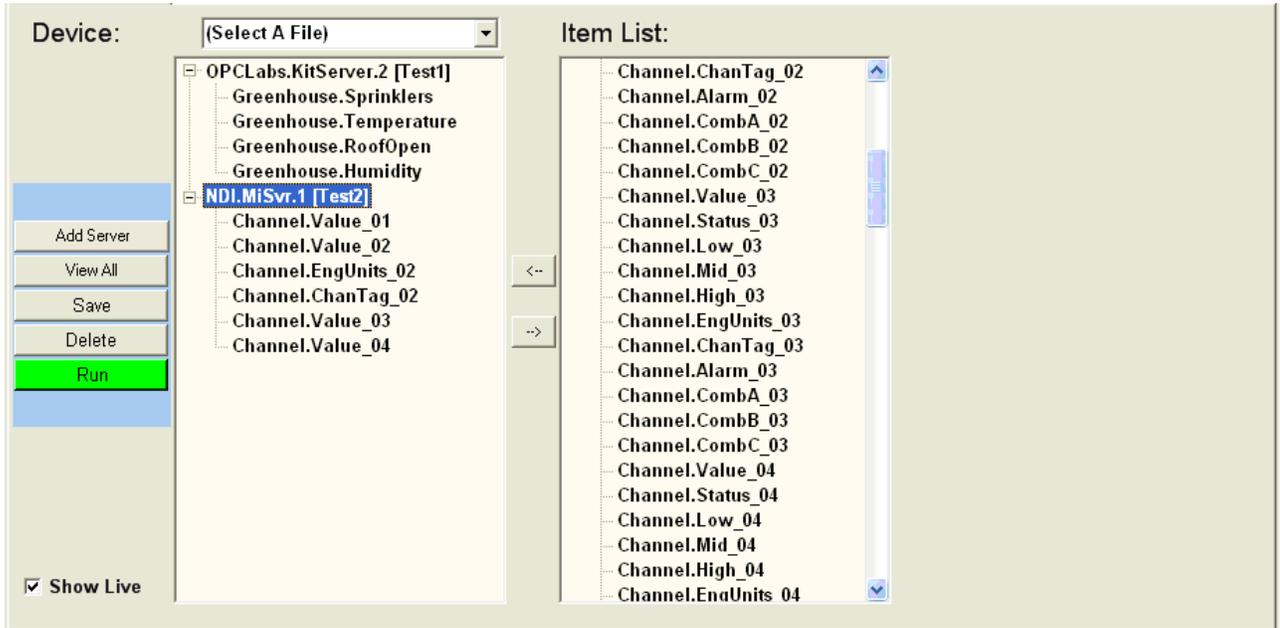
If you want to rename an item to make more sense to yourself, right click the item and choose Rename as show above. The item becomes editable. Then type the name.



When adding another server, previously selected servers will disappear from the list, but they still exist. They are just hidden.

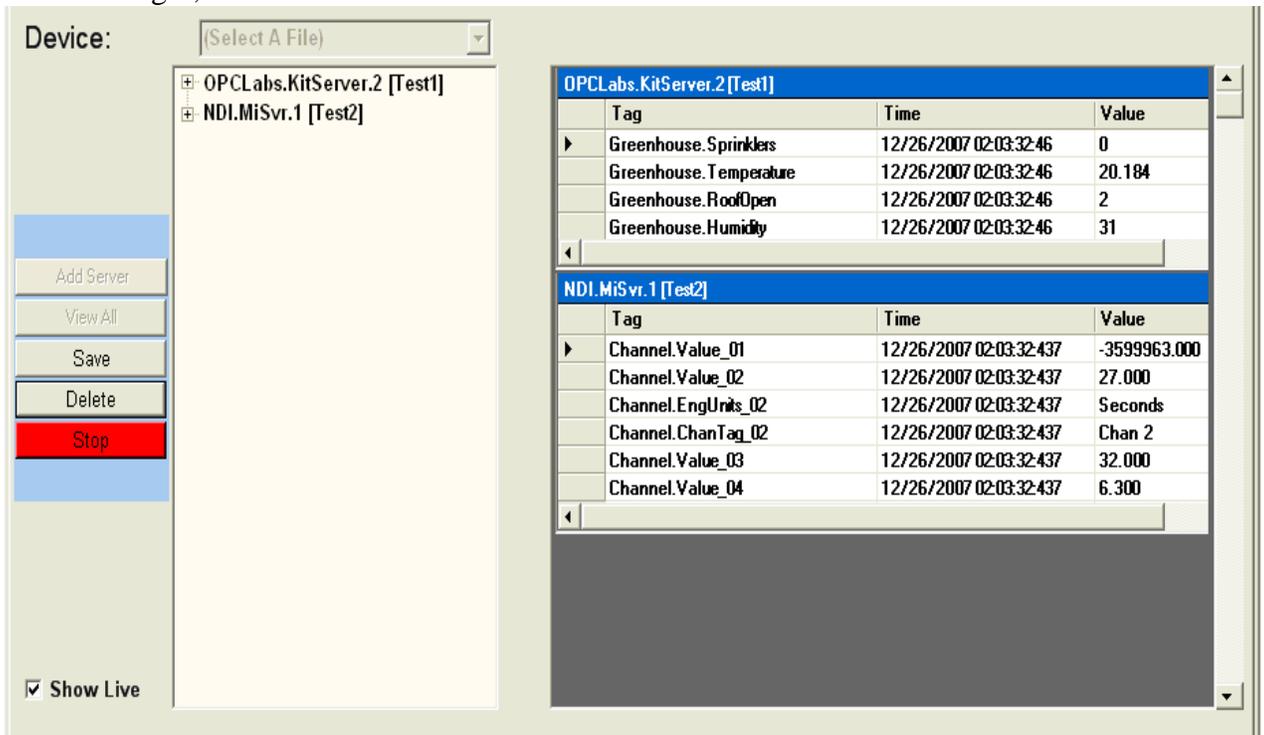
To view all added servers, click the **View All** button.

All added servers will be listed in the left window. Double-click any server to expand the tree and show all children.



4.5.2.2 Running the Servers

1. Click the **Run** button. A table with the server and its selected items replaces the Item List on the right side of the window.
2. Check the **Show Live** check box if it is unchecked. The default is unchecked. After checking it, the table shows the real time value.

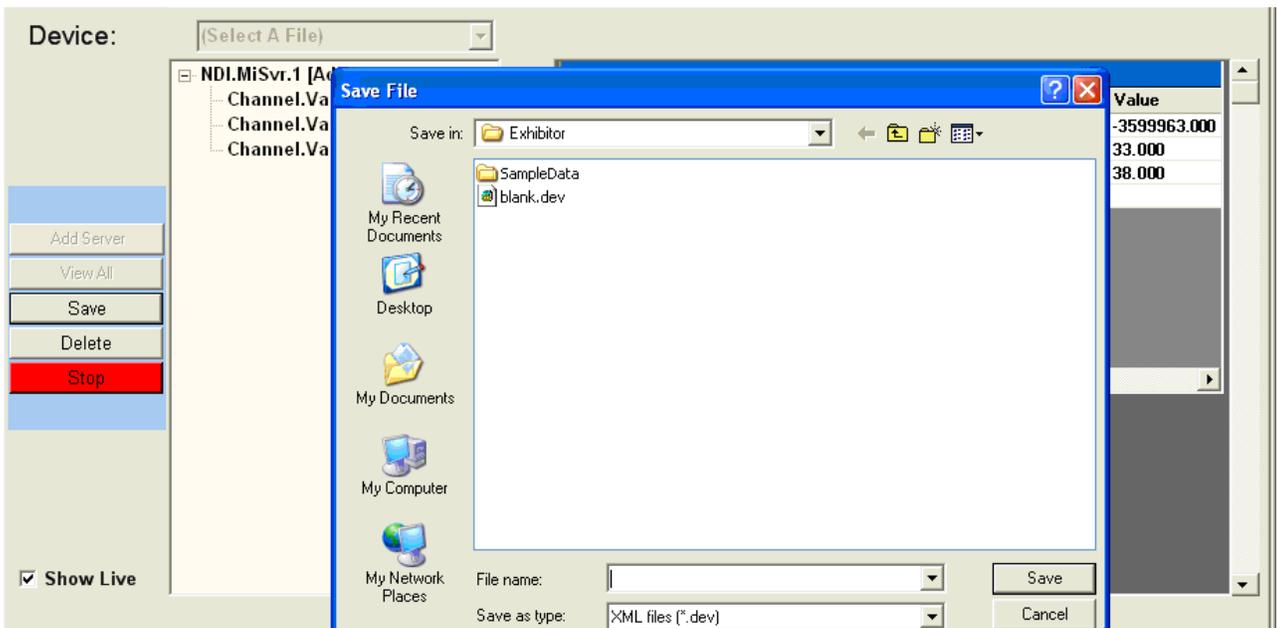


If you want to modify the Device list, you have to click Stop button. The table is gone and the Item List comes back.

4.5.2.3 Save OPC Device

The program can save all added Device Servers and reload them. This saves time and you don't have to go to the Server Browser window to add servers and reconnect.

1. Click the **Save** button.
2. Select a Save in location
3. Enter a File name (e.g. dev2). The extension of the file is .dev.
4. Click Save.

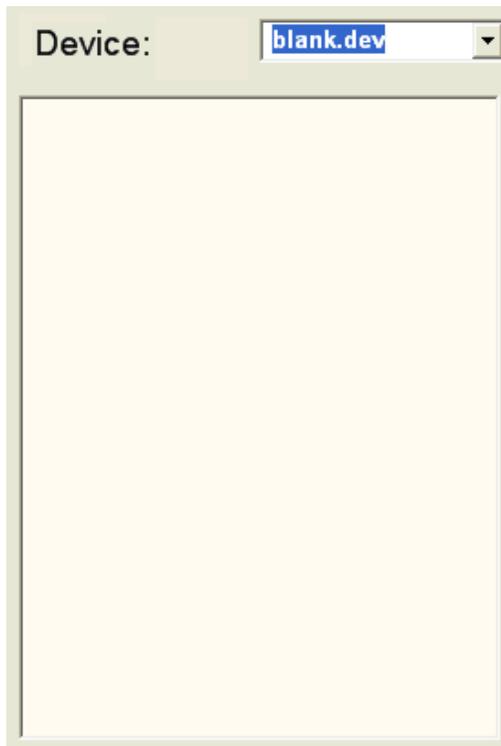


The File name (e.g. dev2.dev) will be added to the Device combo box.



4.5.2.4 Reload Saved Device

1. Select blank.dev from the OPC Device combo box. All items in the left window will be gone.



2. Select the desired saved Device (e.g. dev2.dev) from the Device combo box. All Device Servers are added to the left window.



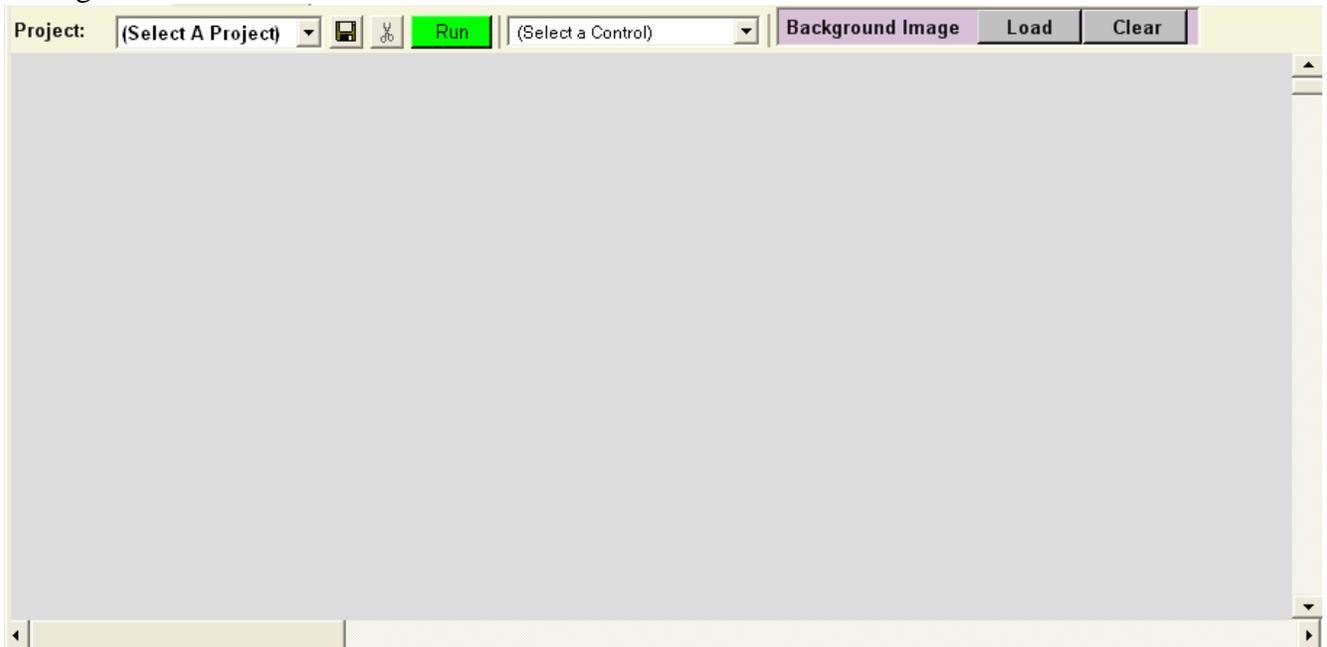
4.5.2.5 Delete Saved Device

1. Click the **Delete** button.
2. Select a file to delete from the list and then click **OK**.



4.5.3 Design Page Window

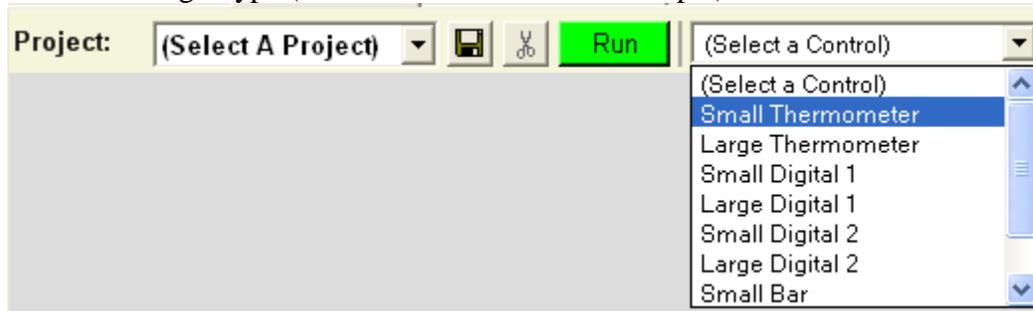
The user can customize different widget and show different items. All items are based on Device Manager window.



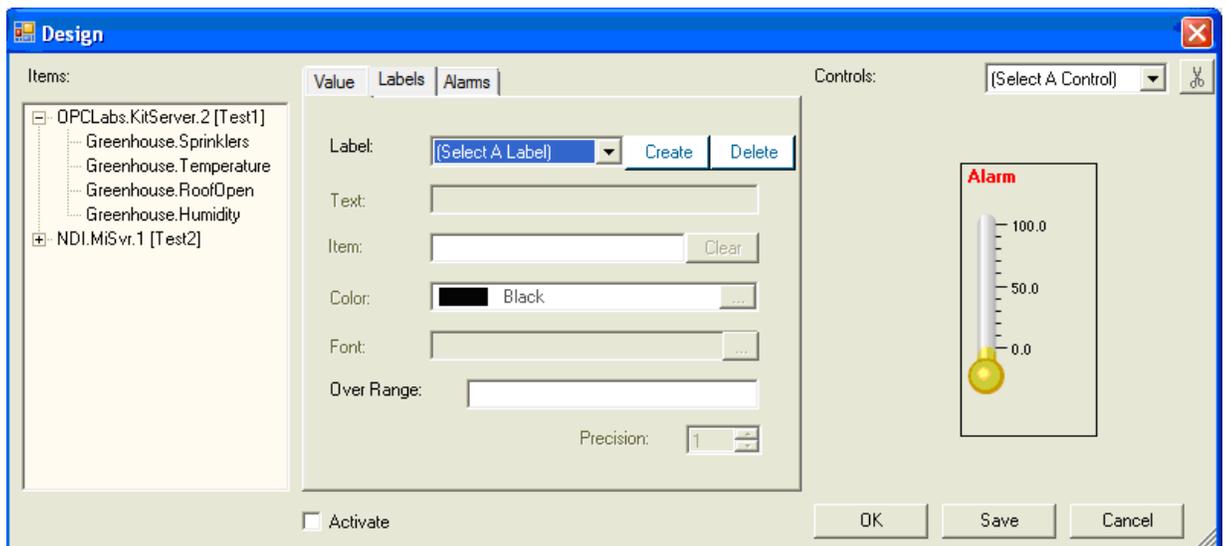
4.5.3.1 Creating a Widget

1. Click the (Select a Control) combo box.

2. Select a widget type (Small Thermometer for example).



3. The Design Window appears.

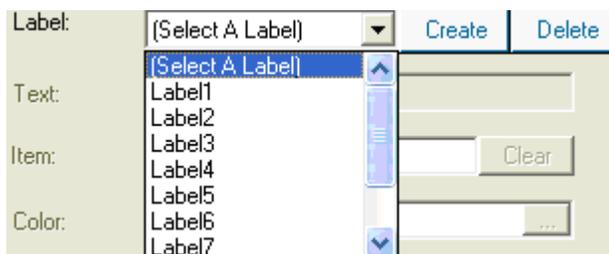


There are three major parts on this window:

- Items** – Item tree is based on Device Manager window
- Widget Setup** – Configure the Labels, Scale and Alarms on the widget
- Widget** – Customize the widget

4. First set up your labels. Labels can be Text (e.g. Engineering Units) or an Item.

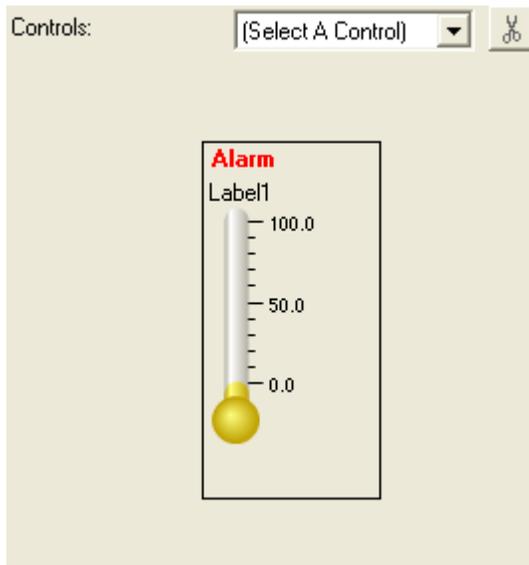
With the Labels tab selected, click the Label combo box and select a label. Then click the **Create** button.



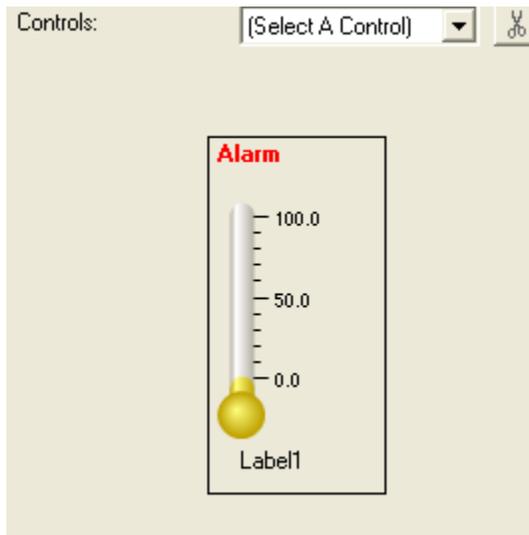
For example, create Label1.

The label can be deleted by clicking the **Delete** button.

All Labels are created on the top left corner on the widget.



If you put the mouse cursor over Label1 the cursor becomes a hand. Then you can drag the label to move it to where you want.

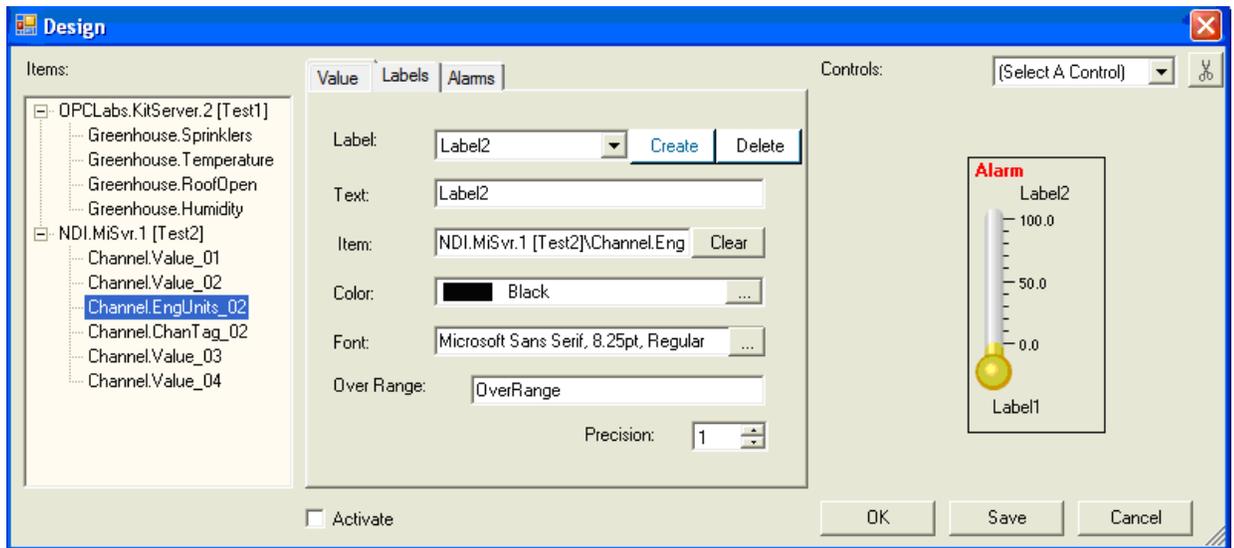


To make Label1 Text, type text into the Text box and you will see Label1 change to the text you typed in the widget on the right.

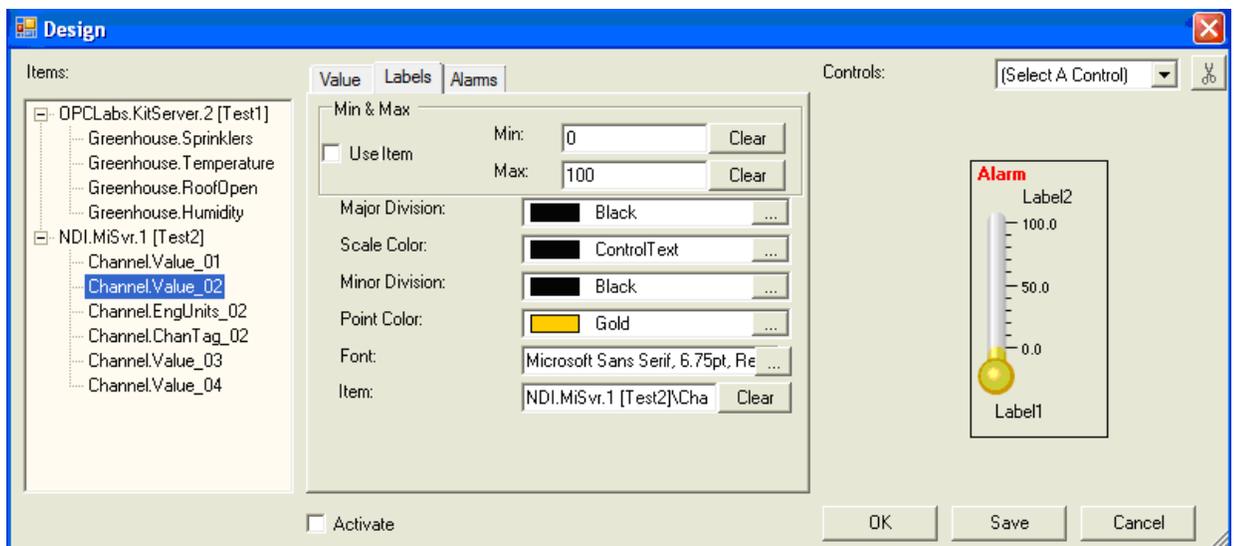
For more advanced details within a widget, you can add more Labels, which can indicate titles or values such as max and min.

For instance, you can follow the same steps to create Label2, but instead of making the label text, select an Item from the list on the left to make the Label2 equal to that Item.

The example below shows Label2 assigned to the Item ChannelEngUnit_02. This label will continuously change as the value of ChannelEngUnit_02 changes.



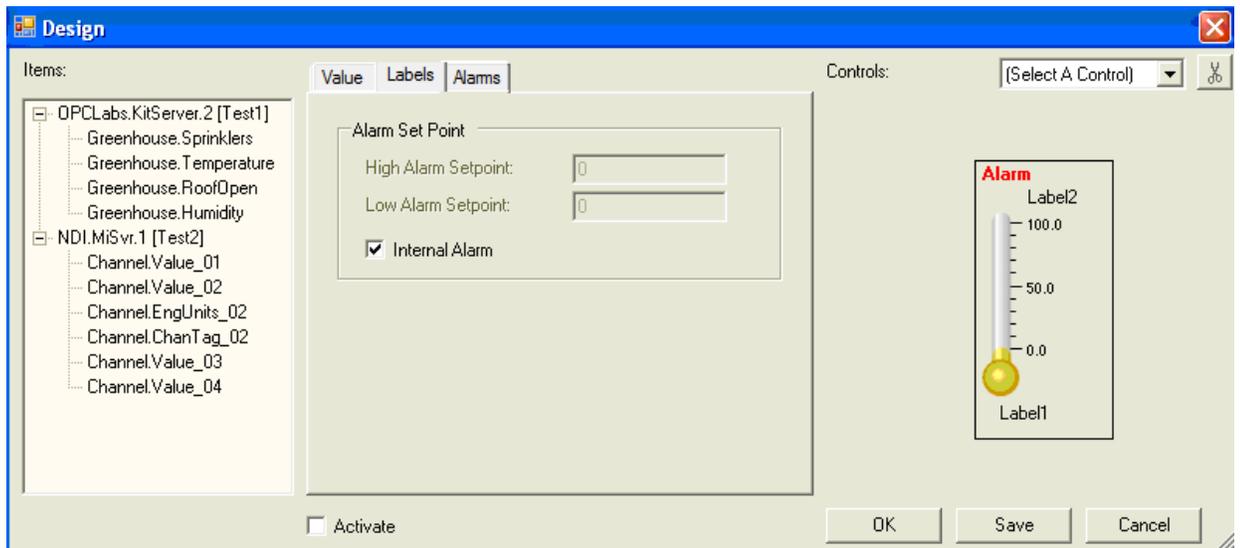
- Next select the Scale tab to configure the Scale, which actually assigns a value for the widget.
To assign item to the scale, click the Item text box so the cursor is in there. Then click any item (ChannelValue_02 for example) from the item list.



You can configure Min and Max by assigning a number or an item. By default, they are assigned by 0 and 100. To assign an item, click the Use Item check box. Click in the Min or Max text box, and then select an item.

You can also change the color of different divisions, the scale and the point.

- Next select the Alarms tab to configure the Alarms.



There are two ways to configure alarm set points. By default, it is set by internal alarms. That means that the alarm set point is configured by the device. This only applies to the widget that its scale is assigned by ChannelCom* item. A red label **Alarm** appears on the top of the widget if there is an alarm.

If you want to configure the set point yourself, uncheck Internal Alarm check box and enter the numbers in the two Set Point text boxes.

7. Once you are done setting up the widget, check the **Activate** check box.
8. Click the **OK** button.

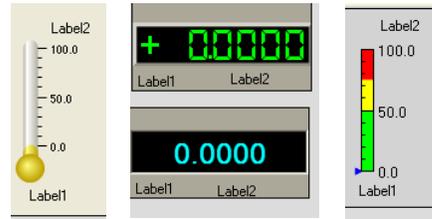
The configured widget is added to the main design page.



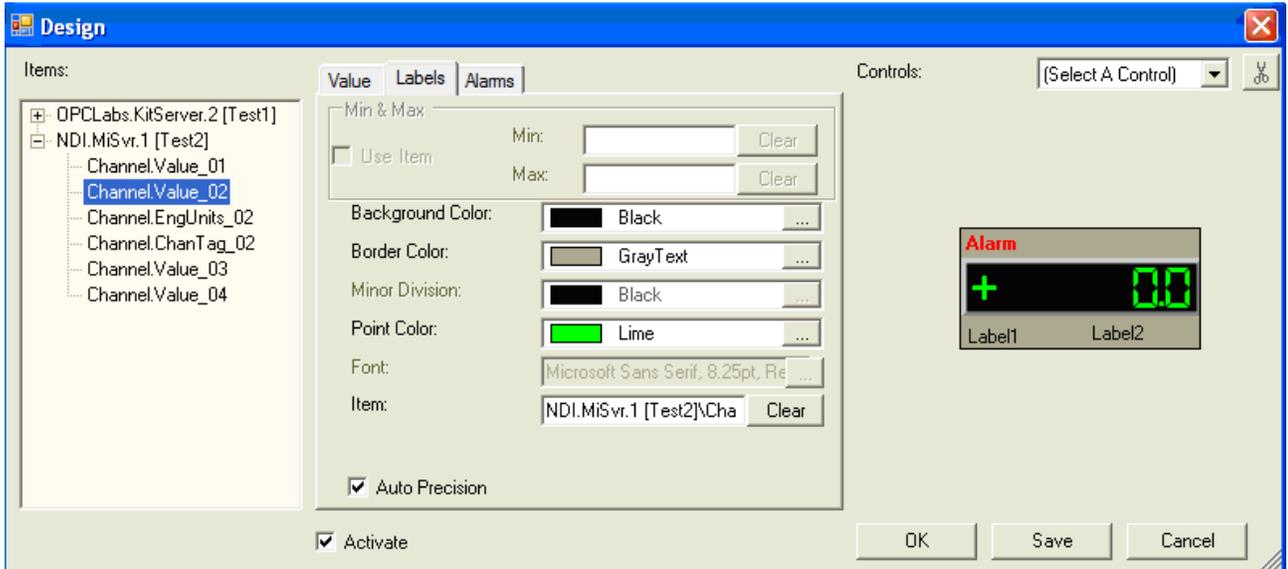
Double-click the widget to go back to the design window so you can change the configurations.

4.5.3.2 Widget Types:

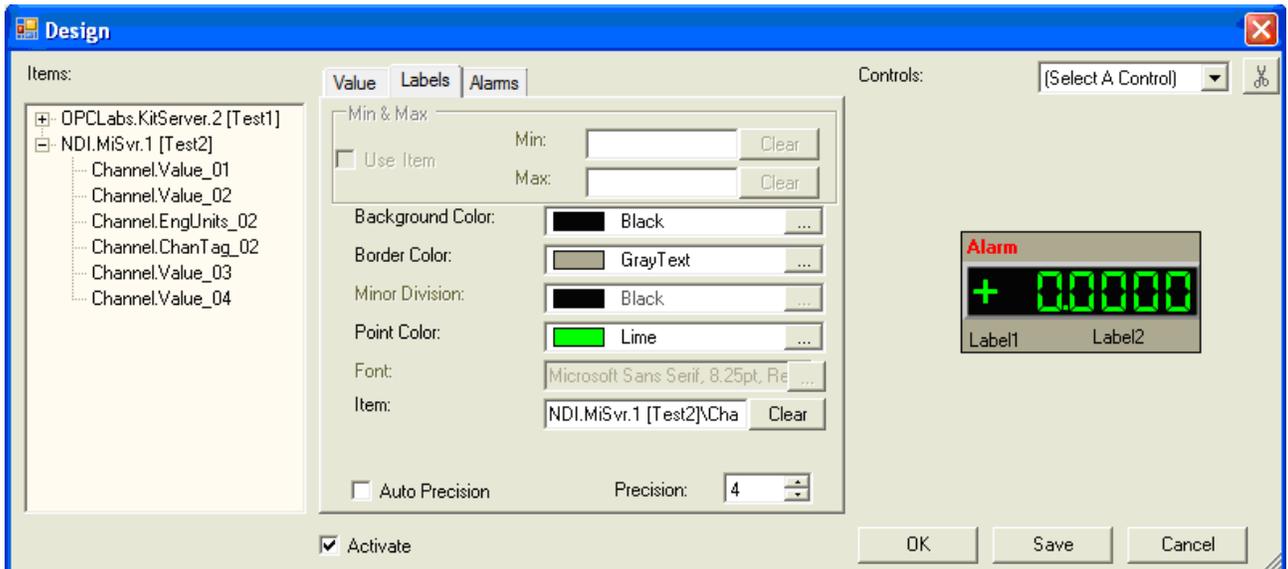
- Thermometer (Small or Large)
- Digital (Small or Large, type 1 or 2)
- Bar (Small or Large)
- Trend



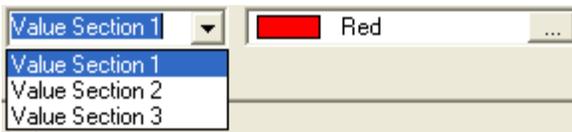
Digital widgets do not have Min and Max. These two areas are disabled. You can also choose Auto Precision for the scale value:



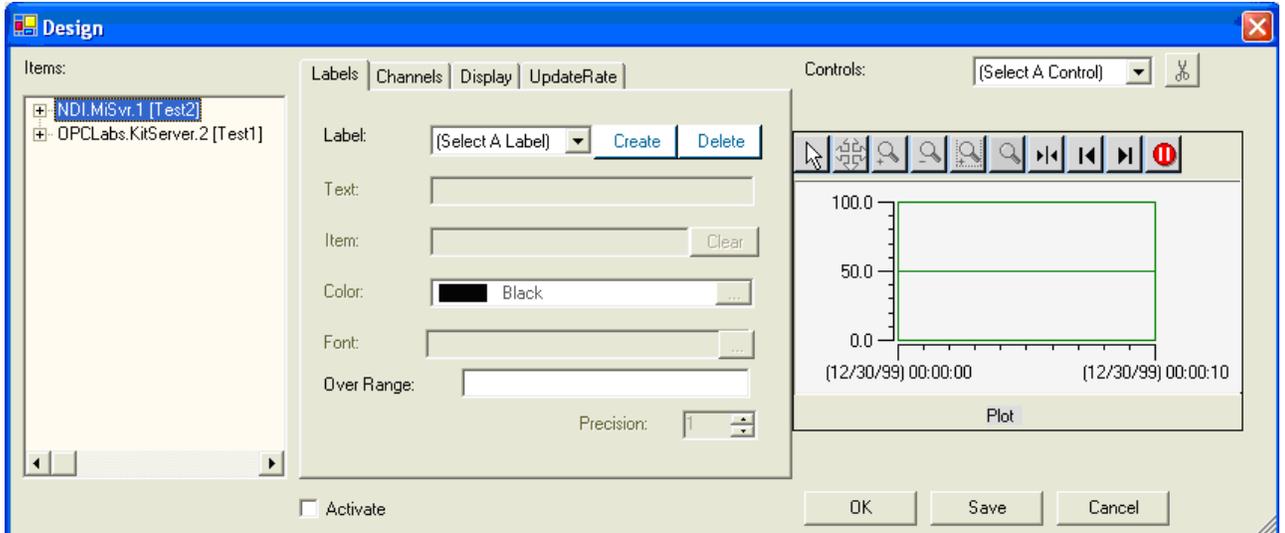
Or customize the precision yourself.



Bar widgets have scales with three value sections for alarms. They can be assigned different colors.



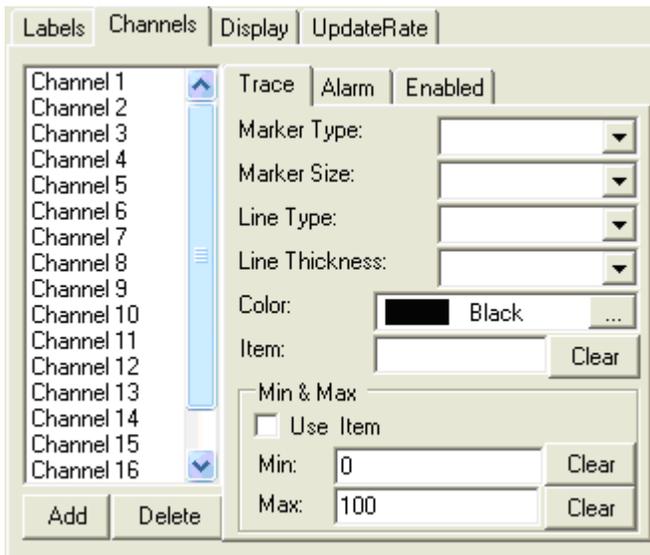
4.5.3.2.1 The Trend widget has additional tabs to configure Channels, the Display and UpdateRate.



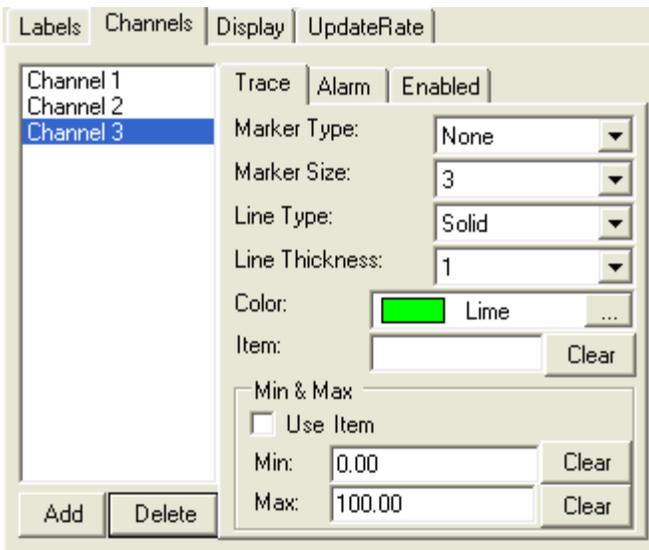
The created labels are movable and assigned to items like other widgets.

The trend widget has eighteen channels by default. **Each channel needs to be configured separately.**

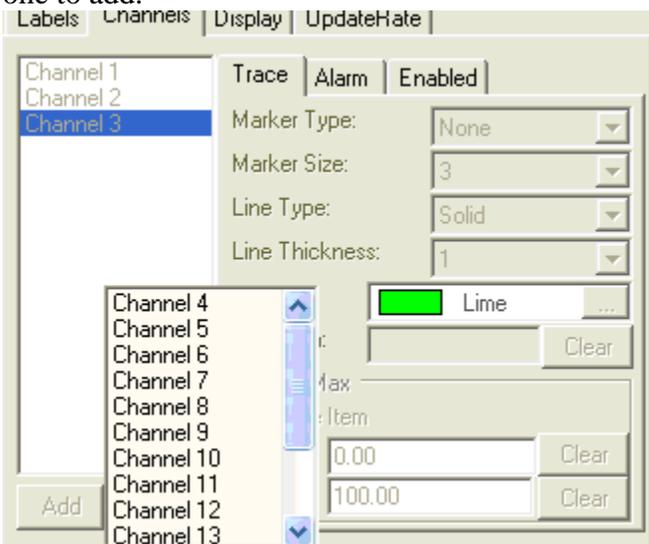
4.5.3.2.1 To configure Channels click on the Channels tab.



Delete any channels not wanted by clicking on the channel and then clicking the **Delete** button.

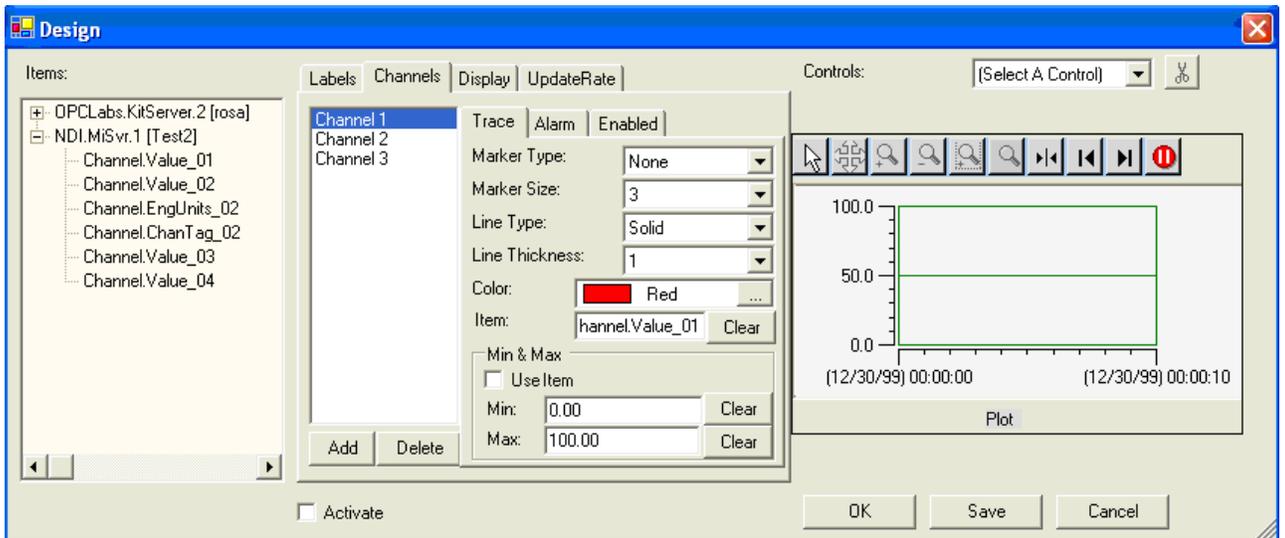


To add channels, click the **Add** button and a list of the additional channels will appear. Select one to add.

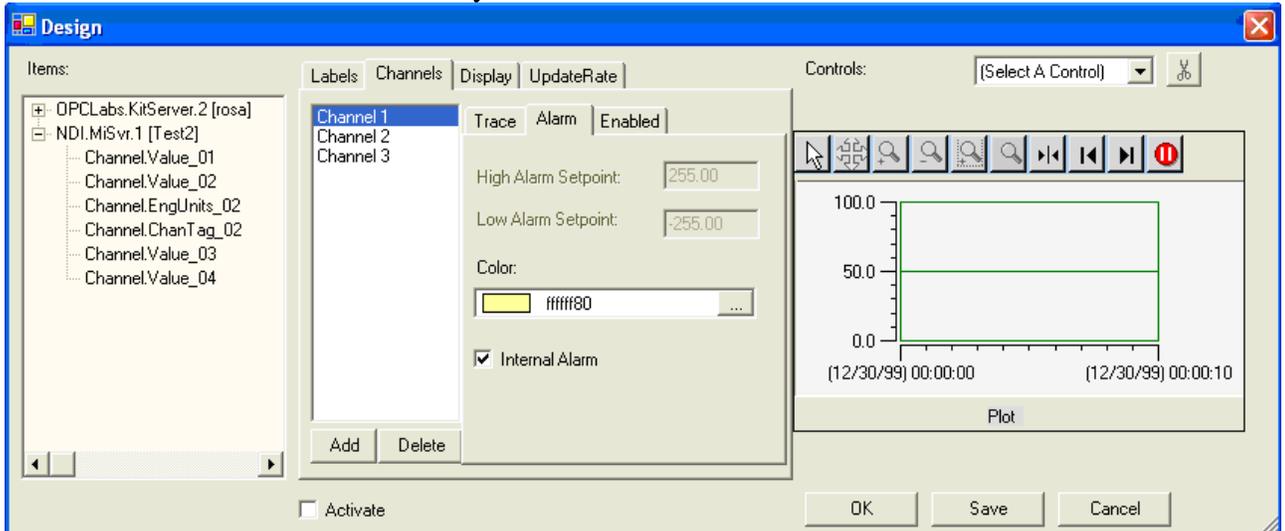


To configure a specific channel:

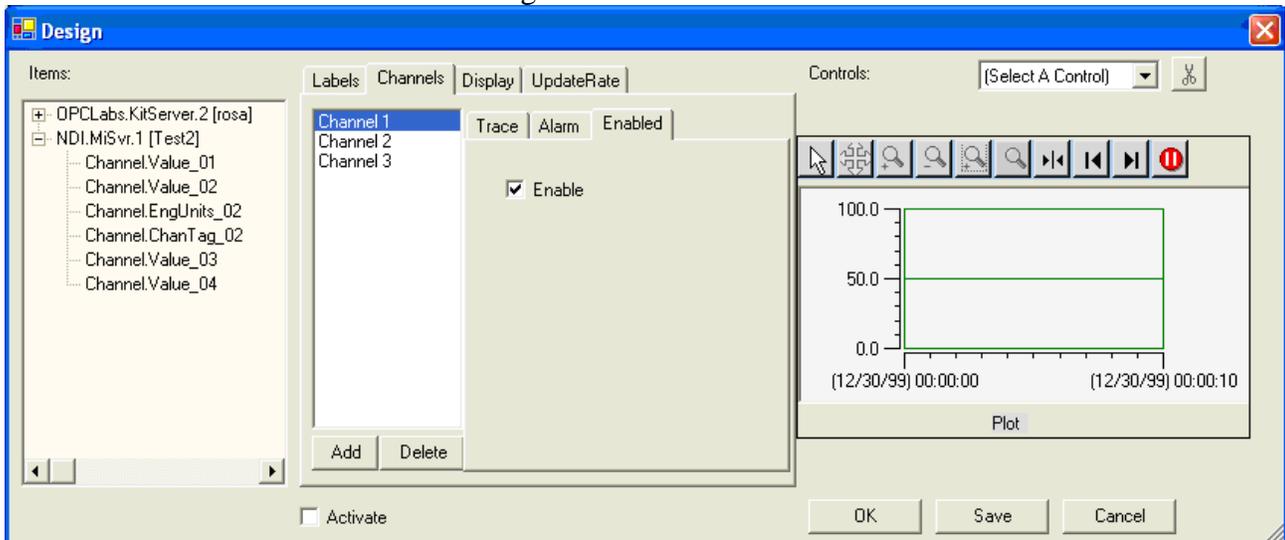
- Select the Channel from the list
- Select the Marker Type, Marker Size, Line Type and Line Thickness.
- Change the trace color if desired.
- Assign an Item to the channel by clicking in the Item text box and then clicking on an Item from the Item list.
- Set the Min and Max for the y-axes. You can enter specific numbers or assign an item.



- Click on the Alarm tab. Configure the alarm set points and color. The alarm color is the same as the channel trace color by default.

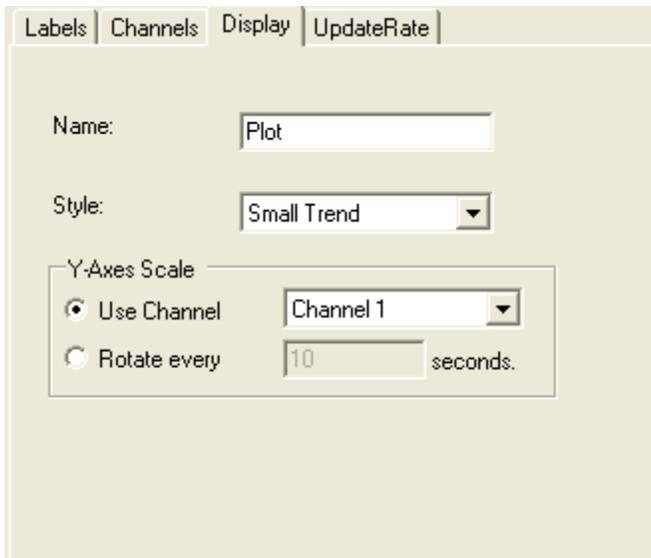


- Click on the Enabled tab. Unchecking the Enable check box makes the trace invisible.



Follow the same steps to configure additional channels.

4.5.3.3 To configure the Trend Display Setting, click on the Display tab.

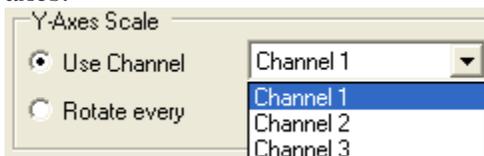


Enter a name that will be the name of the trend graph.

There are three trend styles. The only difference is trend size.



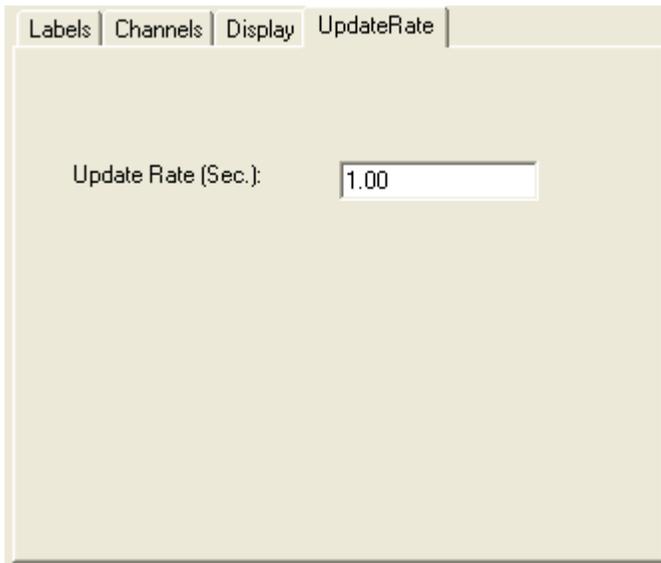
Each channel has its own y-axes. You can let the trend only show one specific channel y-axes:



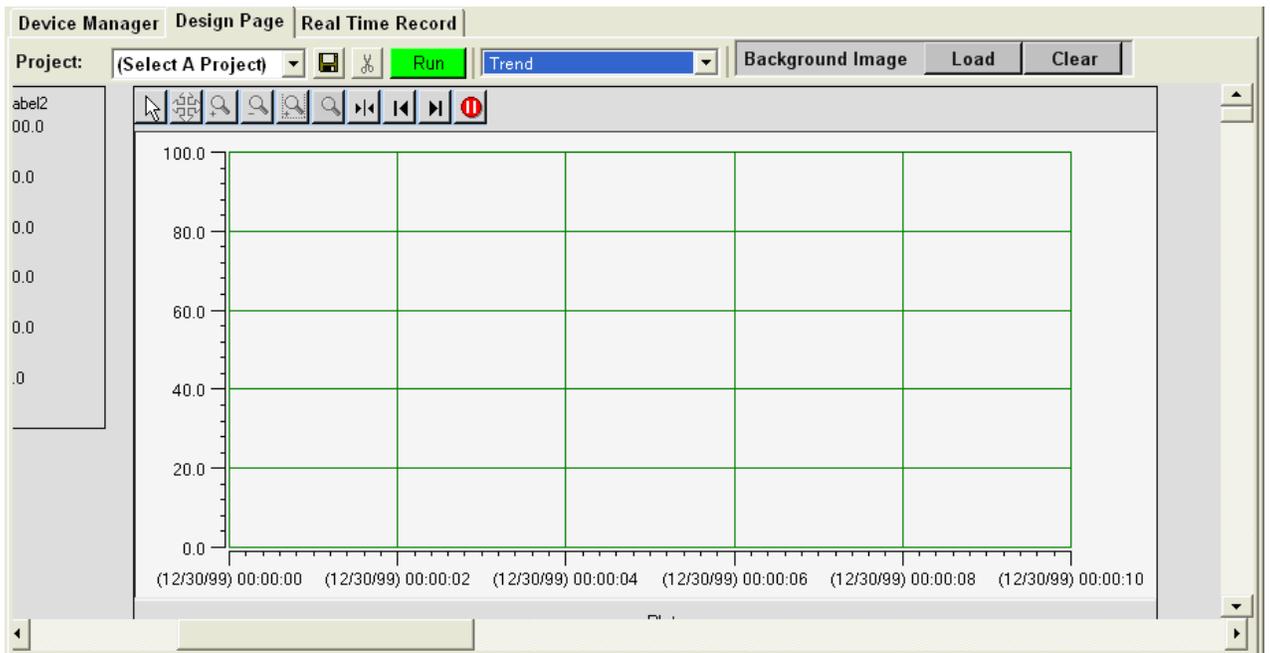
OR rotate all channel y-axes at a specific time interval (10 seconds for example).



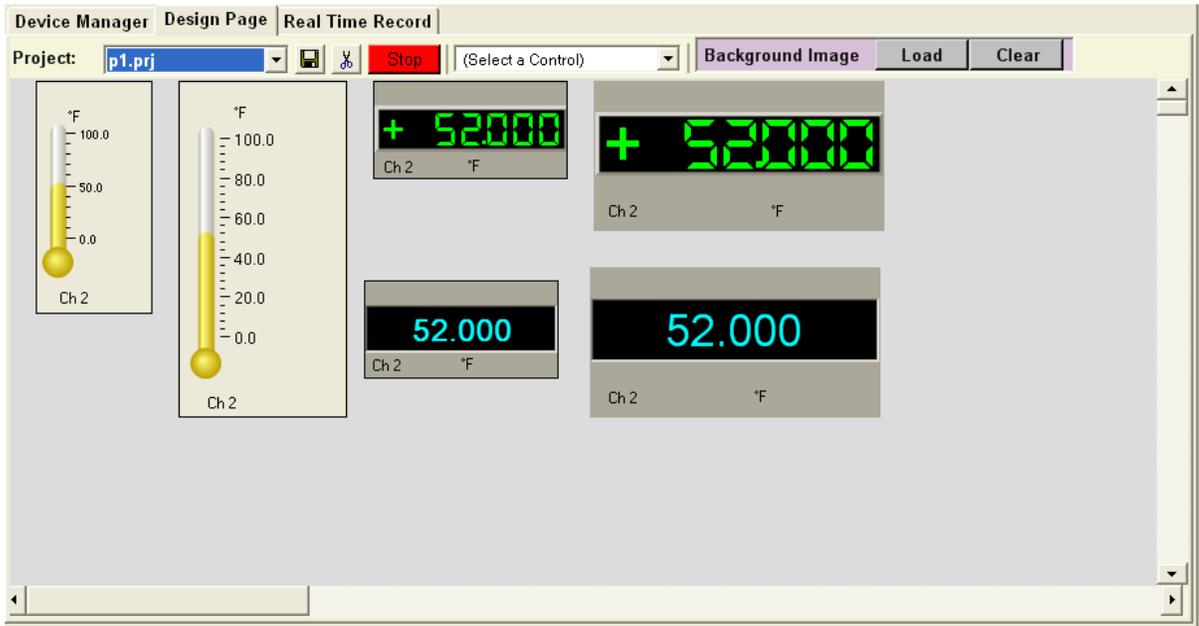
To configure the Trace Update Rate, click on the UpdateRate tab.
The Update Rate is set to 1 second by default.



Once the trend is configured make sure to check the **Activate** check box and click the **OK** button. The trend will be added to the main Design Page window.

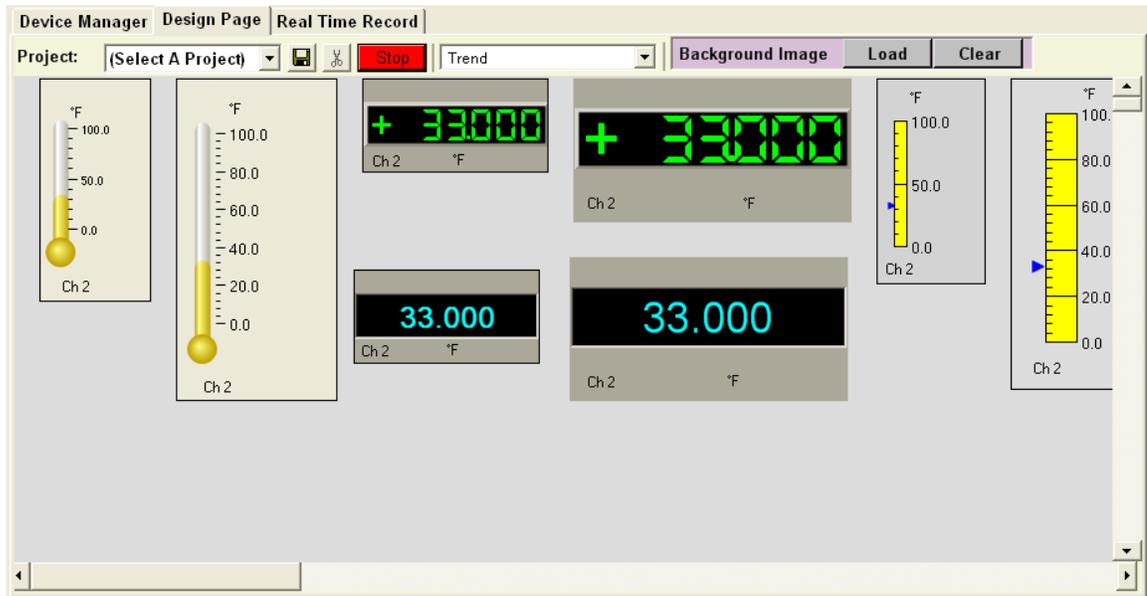


Once you have added all your widgets to the Design Page (an example with 6 widgets is shown below), you can move these widgets around by putting the mouse cursor over a widget and dragging the widget to a new location.

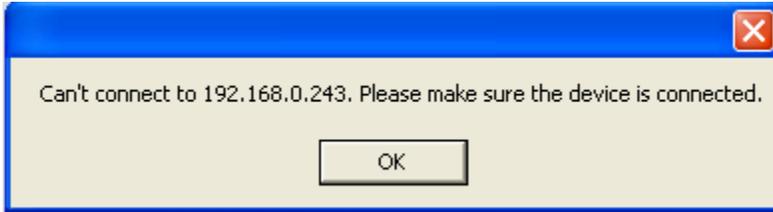


The main Design page has vertical and horizontal scroll bars, which can be used to see all widgets.

All the widgets don't show any real value yet. You must click on the **Run** button on the **Device Manager** or **Design Page** first. Once you hit **Run**, you will see real values in the **Design Page**.



If there is no connection, an error message will pop up similar to the following:



There are some graph buttons on the top of the trend widget. They have the same functionalities like the graph for the file open. To make these buttons work, click the red Pause button.



After that, the trend stops displaying data and the graph buttons become enabled. Now you can interact with the graph.



Click the green button to resume trending live data.

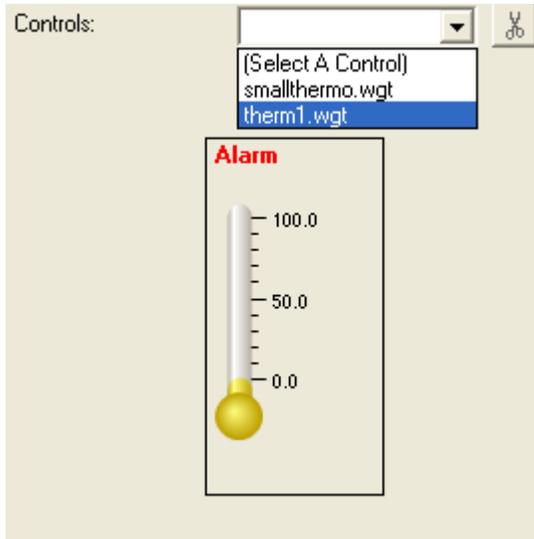
3.5.1.2.2 Save Widget Configuration

Exhibitor can save the widget configuration and reload it to save time.

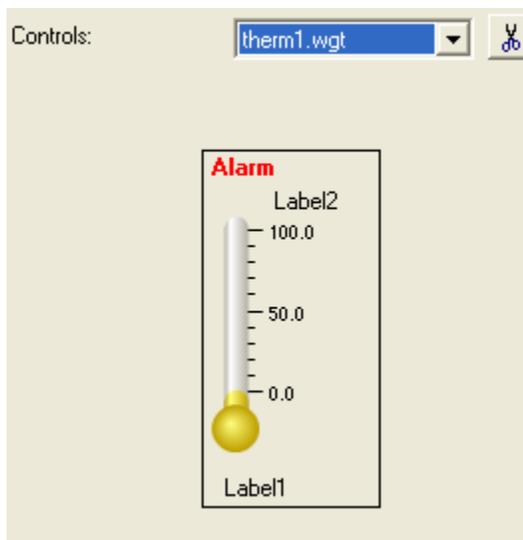
1. Once a widget is created, click the **Save** button.
2. In the Save File dialog select a Save in location and File name (e.g. therm1).
3. Then click the Save button. The widget is saved with a .wgt extension.
4. The File name will then be listed in the Controls combo box.



To reload the saved File name, click in the Controls combo box and select .wgt file.



The widget will load into the Design Page like the following:



Widgets are saved in the installation directory. You can open Windows Explorer and go to the directory to delete the file. Or you can select the file from the Controls combo box and click the cut button. 

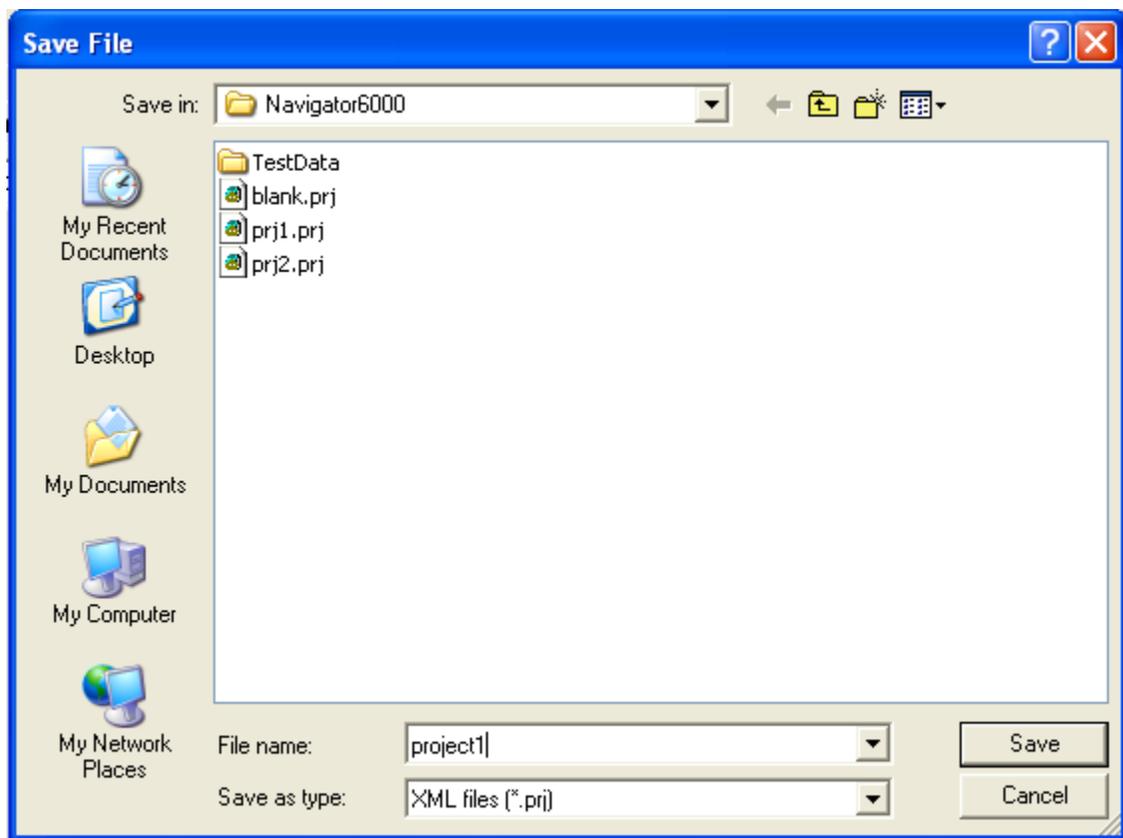
3.5.1.2.3 Save Created Widgets On Design Page

All created widgets on the Design Page can be saved to a project file and reloaded later. This saves a lot of time from having to recreate and reconfigure widgets.

1. Once you have created all your widgets and want to save the design, click the Save button on the Design page to save the page as a Project.



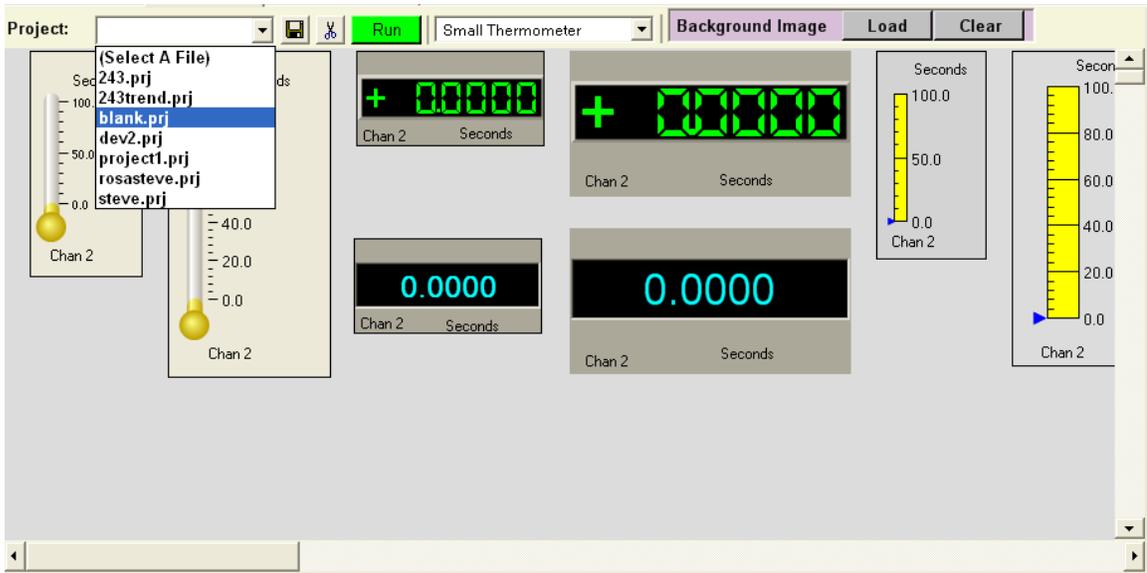
2. In the Save File dialog select a Save in location and File name.
3. Then click the Save button. The Project is saved with a .prj extension.



4. The File name will then be added to the Project combo box.

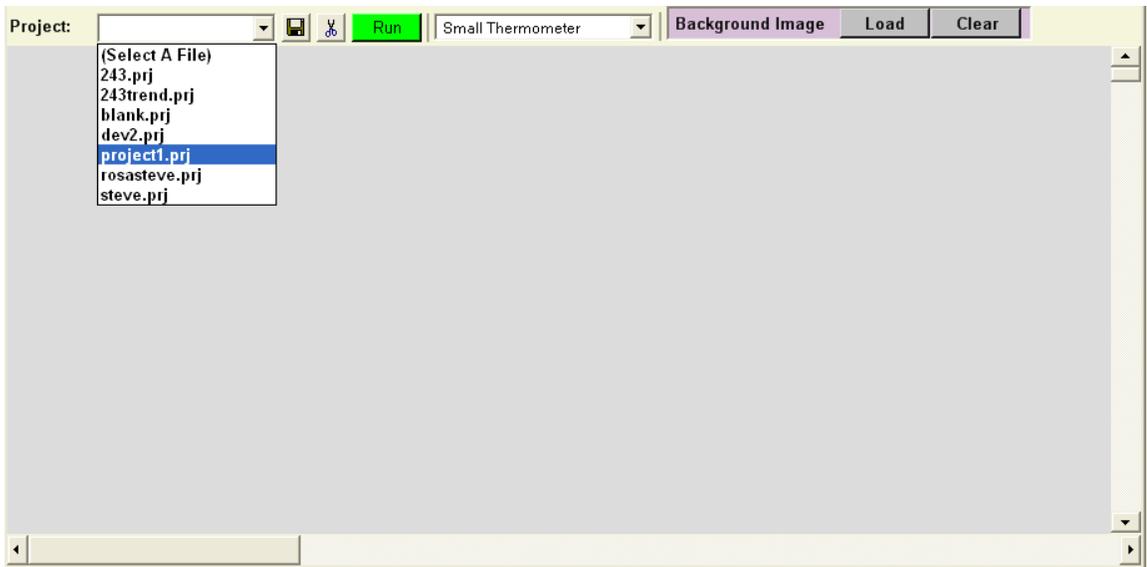


You can empty the Design Page by selecting blank.prj from the **Project** combo box.

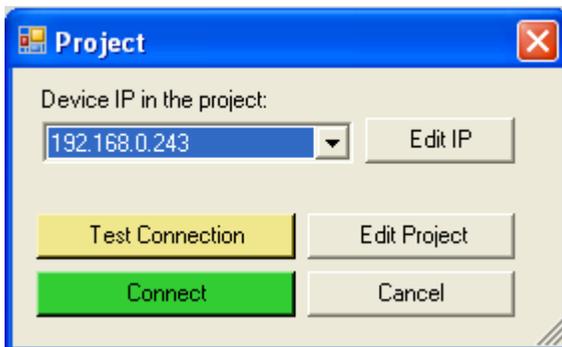


The Design Page will become the default empty page.

To reload a saved Project, select a Project from the Project list.



A Project dialog appears.



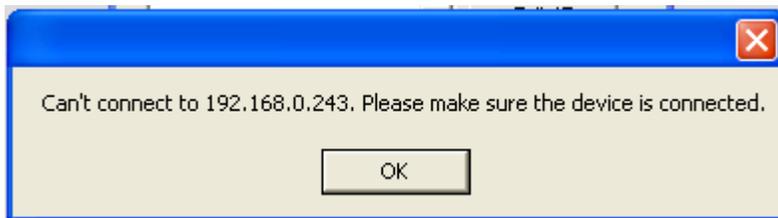
It has IP address for all the devices that are in the project.

The user can change the IP address by clicking the **Edit IP** button.



It is recommended that the user click the **Test Connection** button first before clicking **Connect**.

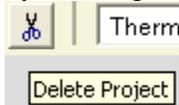
If there is no connection between the PC and the device, a message will be displayed.



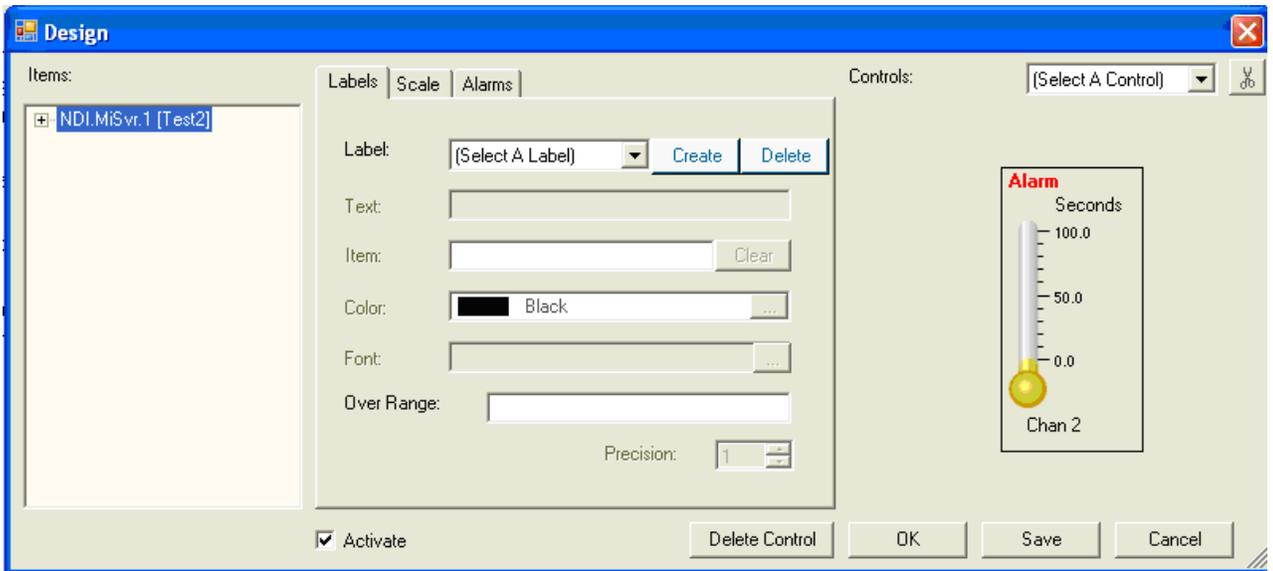
The **Edit Project** button will create all widgets in the project but no connection to the device. The widgets will not show real time values.

Clicking the **Connect** button loads the project and connects to the devices in the project. All widgets in the Project are loaded to the Design Page.

Projects are saved under the installation directory. They can be deleted from that directory or by clicking the **Delete Project** button.



To delete a single widget from a Project, double-click it. The widget design dialog appears. Click the **Delete Control** button.



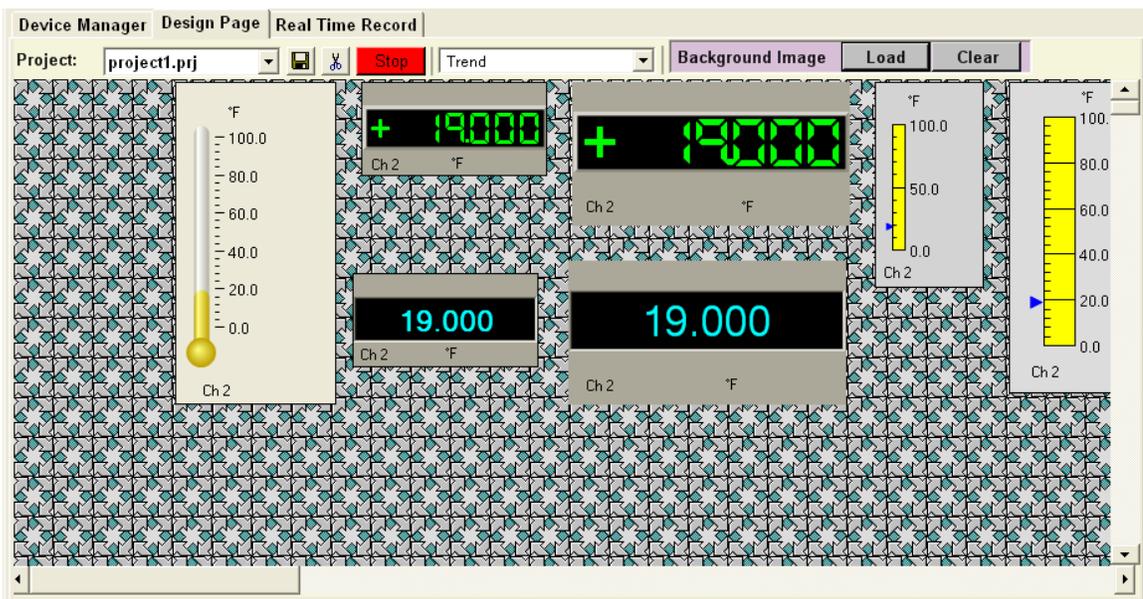
This widget will be deleted from the Design Page.

3.5.1.2.4 Save Background Image

The user can add or delete a background image.



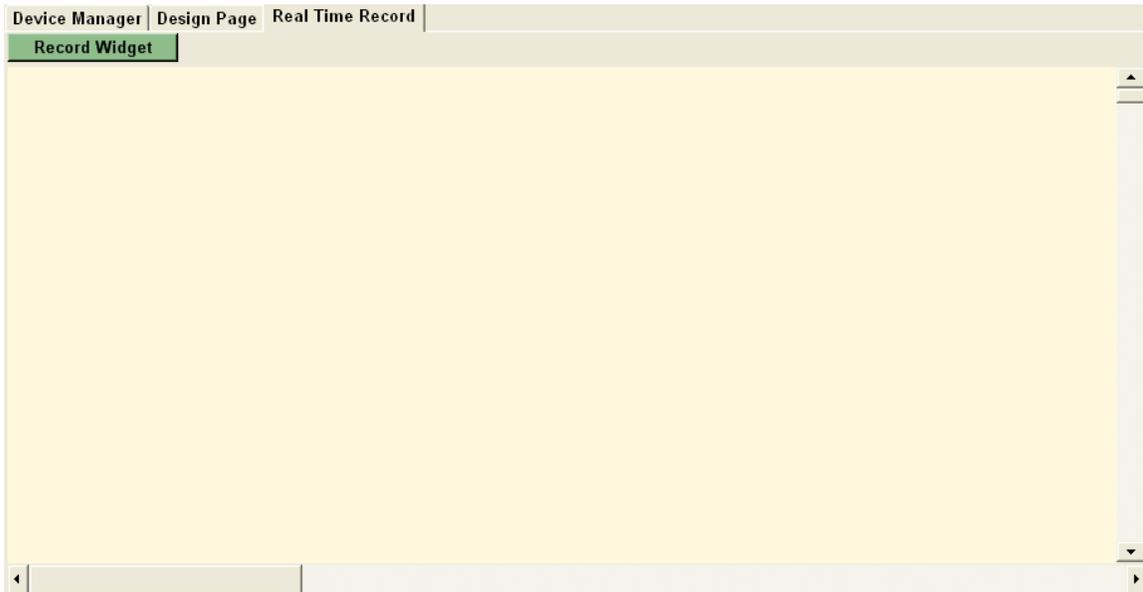
- Click this button to choose an image file. The background will change accordingly.



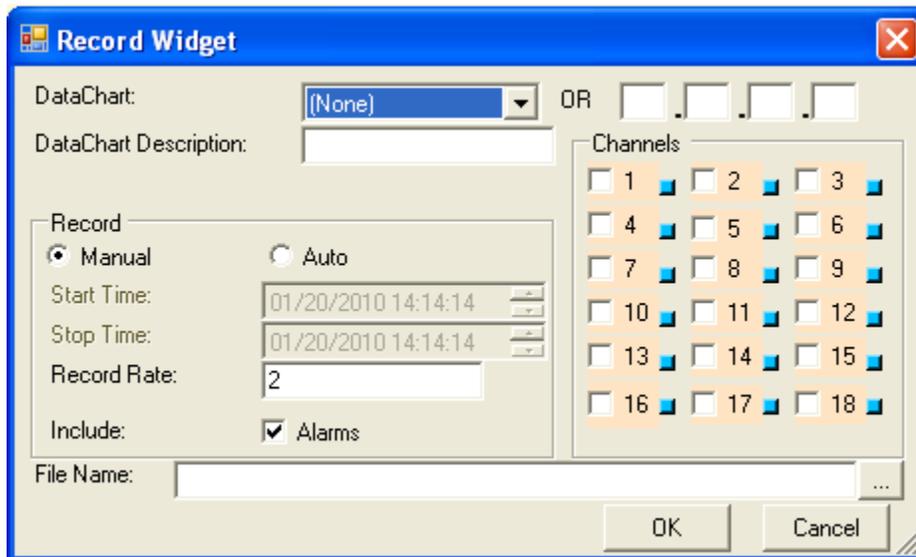
- Click this button to delete the background image.

4.5.4 Real Time Record

The user can create record widgets and record data from different device.



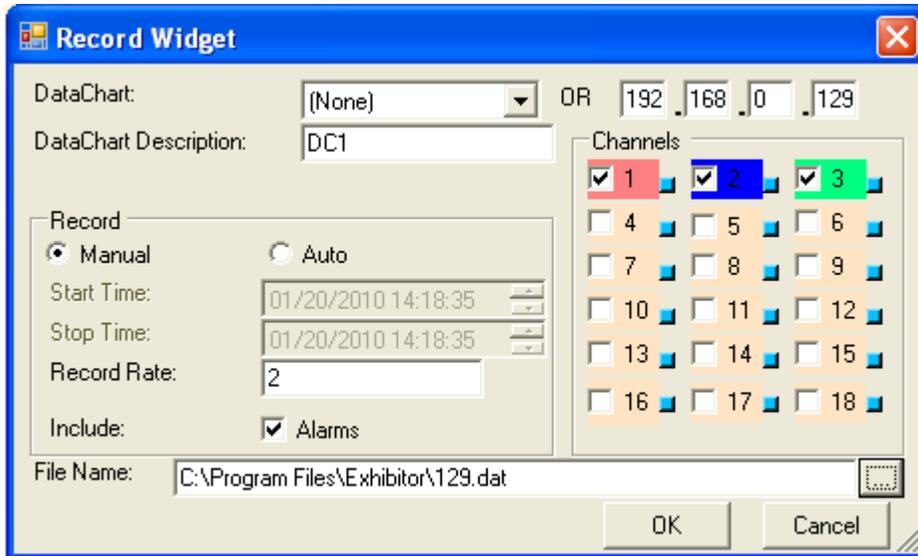
1. Click the **Record Widget** button to create a record widget. A Record Widget dialog appears.



- Either choose the data device from the first combo box or enter the IP to the four text boxes on the top right.
- Enter the description.
- Choose record status: Manual or Auto.
- Enter the record rate.
- Select the channels that are going to record. Clicking the little blue button beside each channel to change the channel color.
- Decide whether or not to include Alarms.

- To indicate the File Name to which to save, click the Browse button (...). Another window will appear allowing you to chose a File Name that already exists or type in a new File Name.

The following is a record widget example.



Click OK. This record widget is generated on the main dialog.

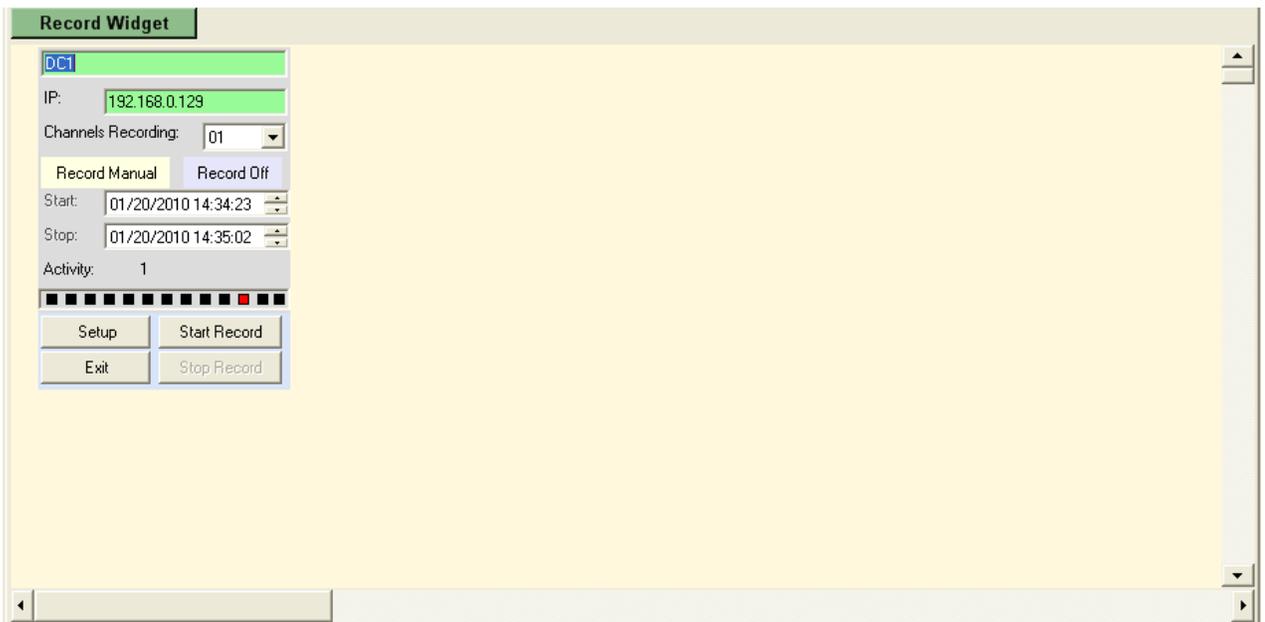


2. Clicking the Setup button will go back to the Record Widget setup dialog. You can modify the record widget setup.
3. Click the Start Record button to have the widget start recording.

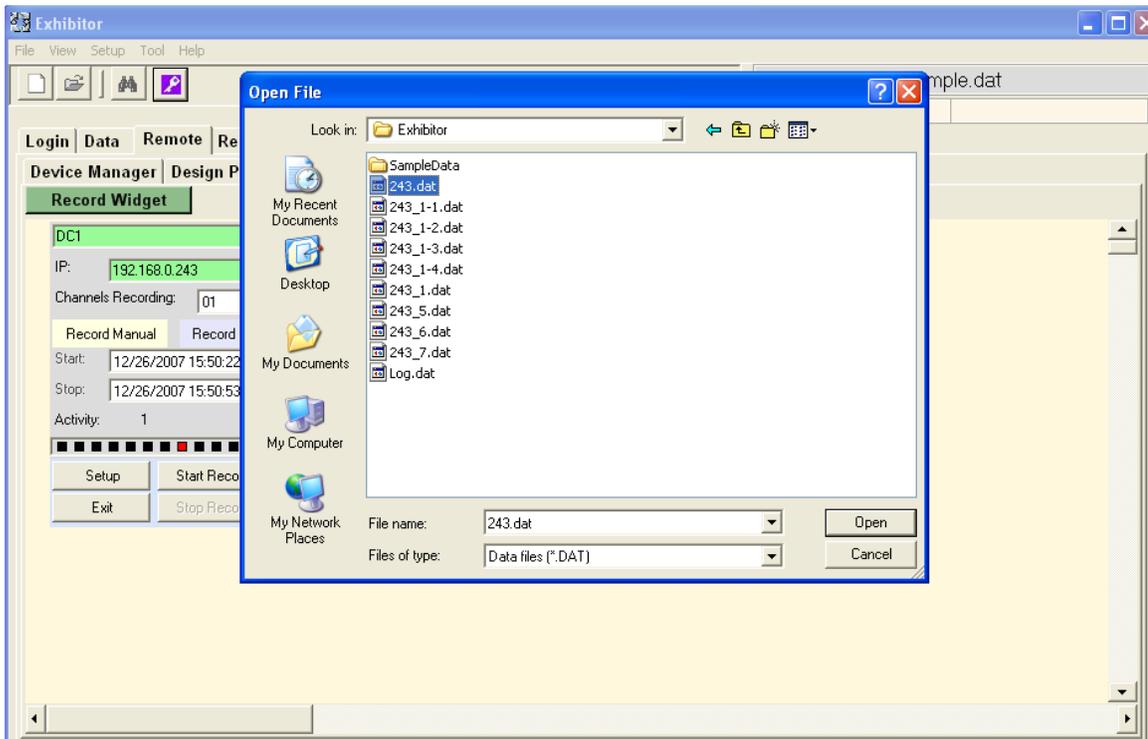


The red text **Record On** indicates it is recording. The number after Activity indicates how many times the data is written to the file. This number multiplied by 600 is the approximate number of data points on the file.

4. Click the **Exit** button and the widget will be deleted.
5. Click the **Stop Record** button and the widget will stop recording. The red text **Record On** will change to Record Off. The color also changes.



6. Click the **Open** button on the top or click **File -> Open** to open the saved file.



All saved data is shown on the Data tab page.

Multi record widgets can be created to record data from different recorders.

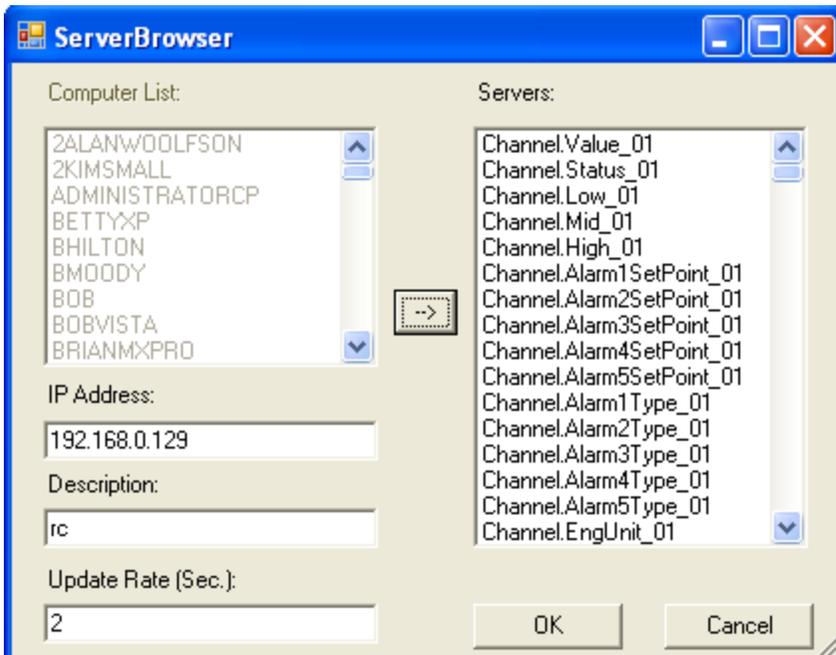
4.5.5 Modbus

Exhibitor can also display data through Modbus.

4.5.5.1 Device Manager Window

The same device manager window that is used by OPC is used by modbus to display real time data.

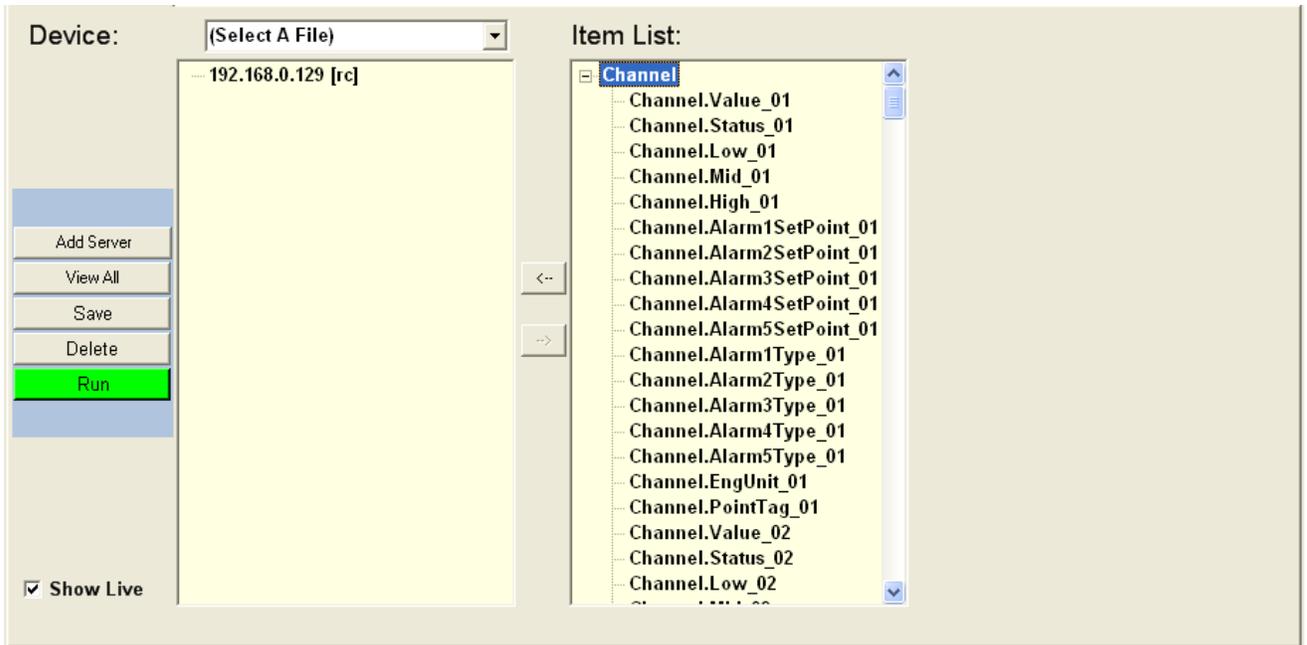
Click the Add Server button to pop up the server browser window. Enter the IP address of the device that you want to communicate to. Click the arrow button in the middle. All items will be listed on the servers list window.



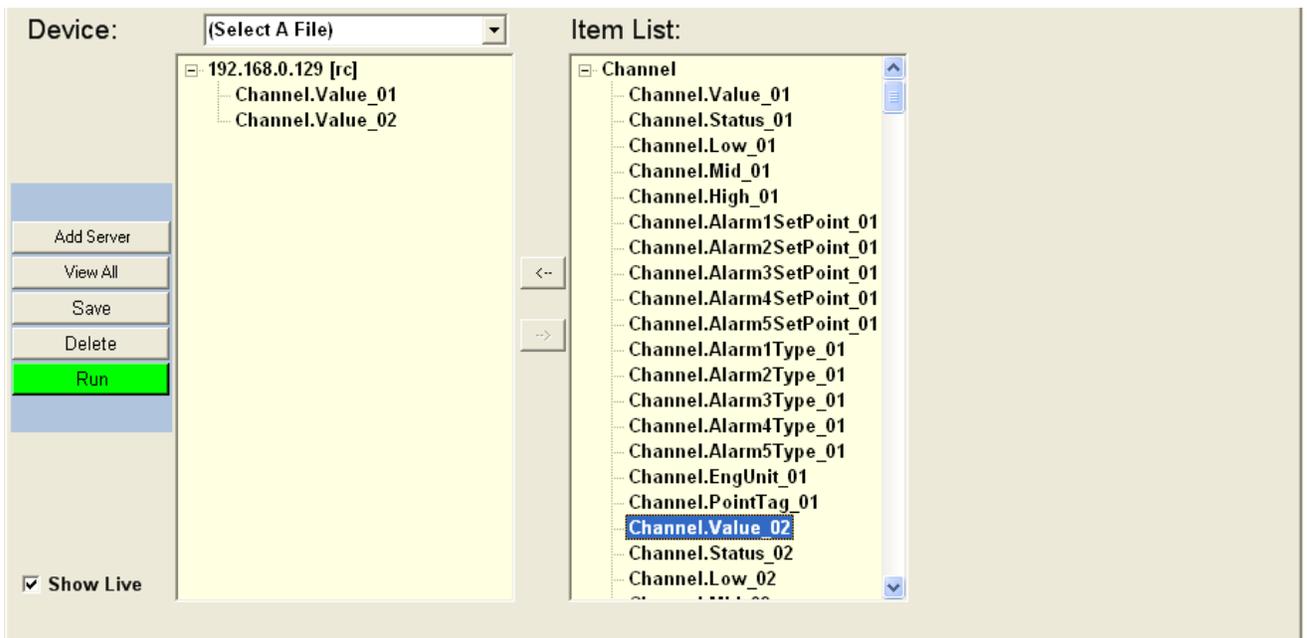
Click the OK button, the device's IP address is listed on the device list on Device Manager window.



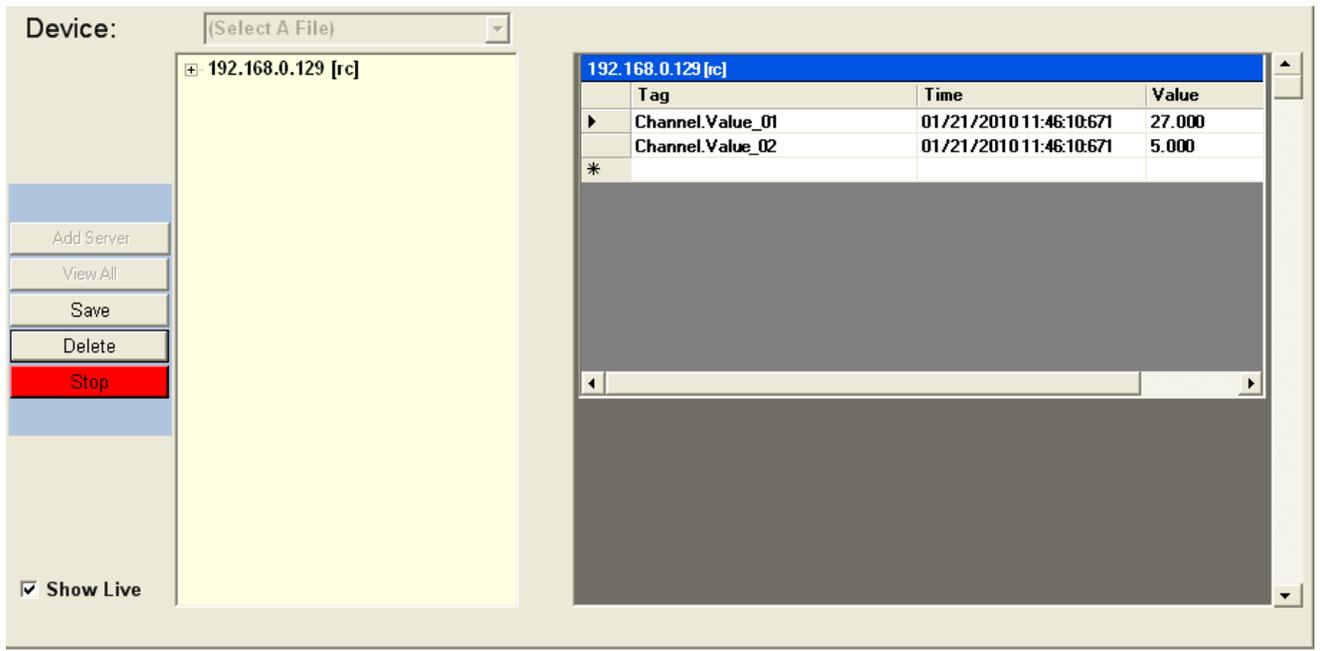
Double click the IP address, all the items are listed on the item list.



Double click any items that you want to display to add under the server.



Click button Run to display.



Right click the IP address and the item can do all the same functions in OPC.

All the buttons on the window do the same function as in OPC.

4.5.5.2 Design Page Window

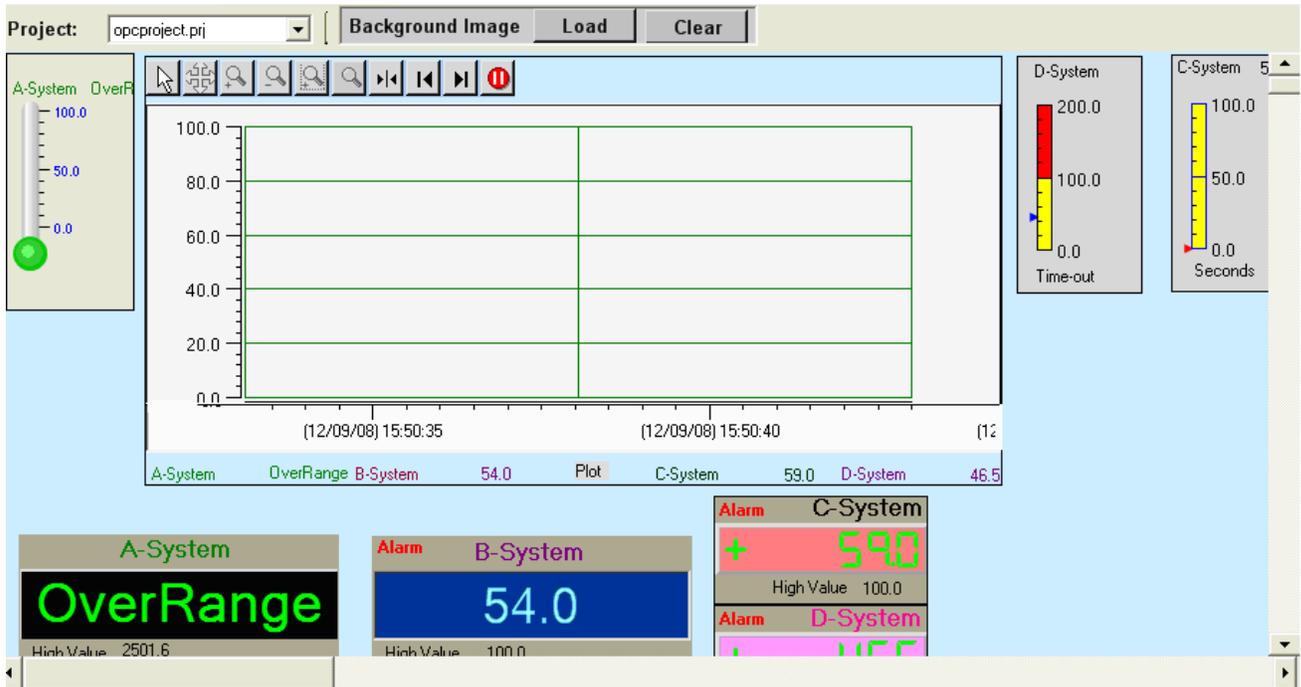
Use the same procedures to create widgets, save widget projects and load the saved widget project.

4.5.5.3 Real Time Record

Use the same procedures to create a record widget and start recording.

4.5.6 Real Time View

The user can view project files on this page. It is almost the same as the Design Page except the widget cannot be modified.



The user can also change the background image.

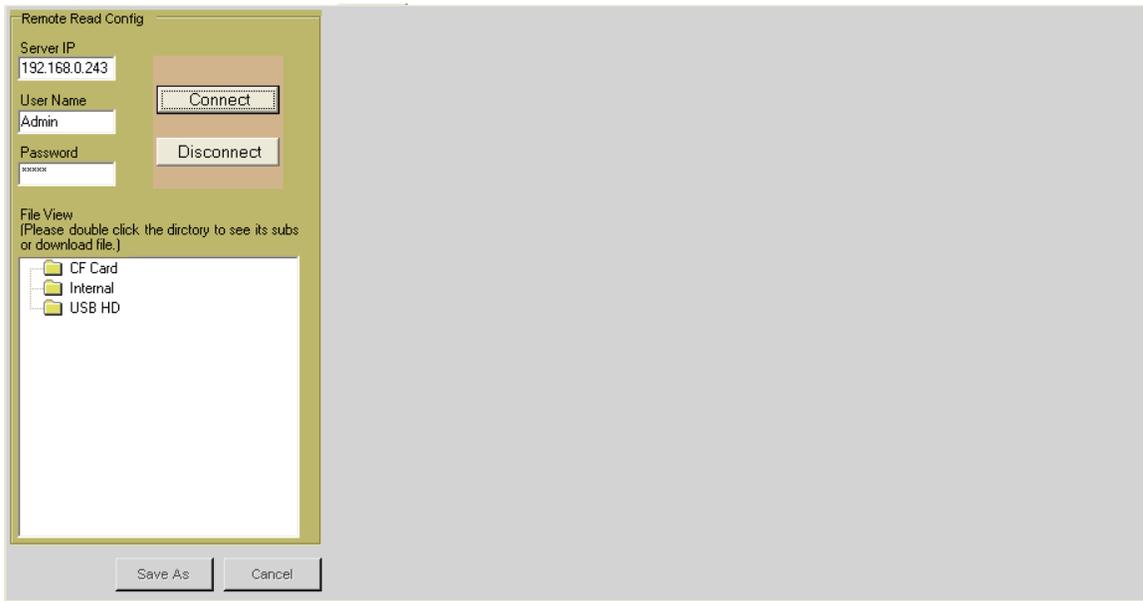
4.5.7 Config

In this page, the user can do the following things:

- Download any files from the device
- Upload any files to the device
- Remotely view Config files on the device
- Modify a Config and save it to your local PC

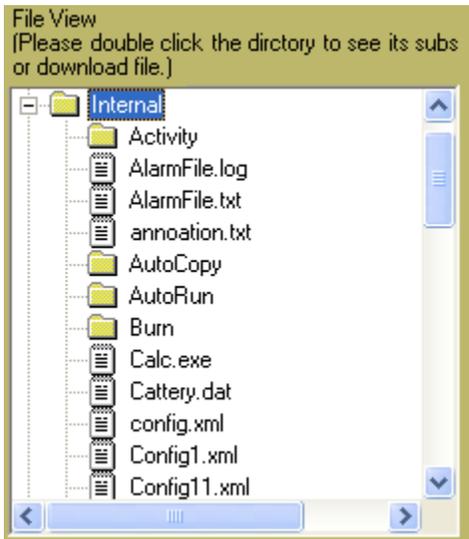


Enter the **Device IP, User Name and Password**. The password is the web access password on the device. Then click the **Connect** button.



The File View box shows the drives on the device. “Internal” is the “SD Card” drive on the device.

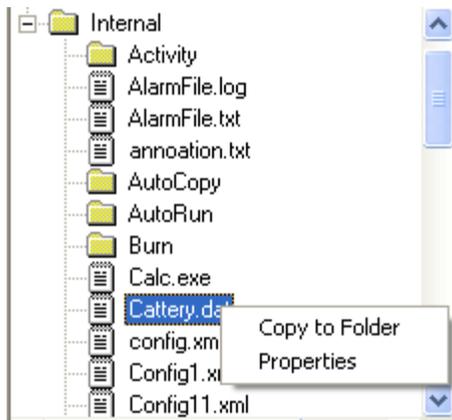
Double-click a drive and all files and directories under it will be displayed.



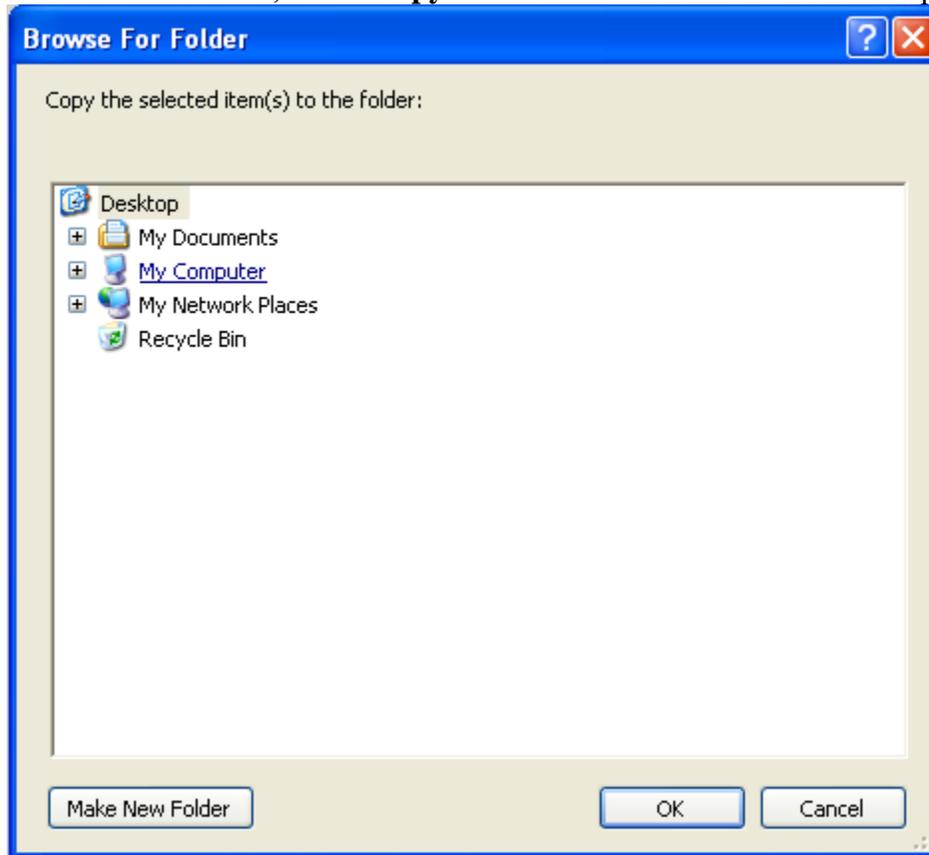
The yellow folder image indicates it is a folder. The text paper indicates it is a file.

4.5.7.1 Download File to Device

Right click any file to display a pop-up menu.

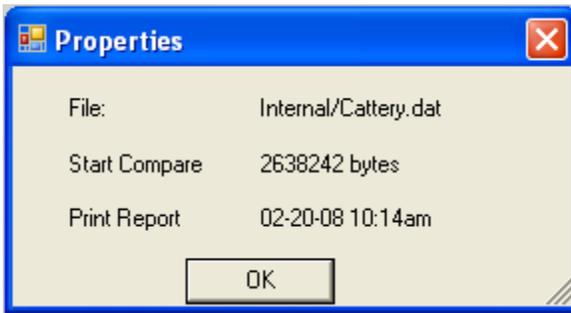


To download the file, click “**Copy to Folder**”. A browse window will appear.



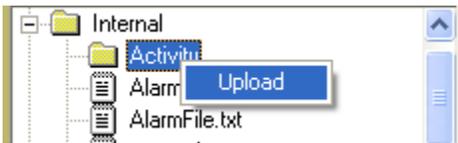
Choose the location that you want to download to. Then click OK.

NOTE: The other menu item from the pop-up menu is “**Property**”. This will display a window with the properties of the file.

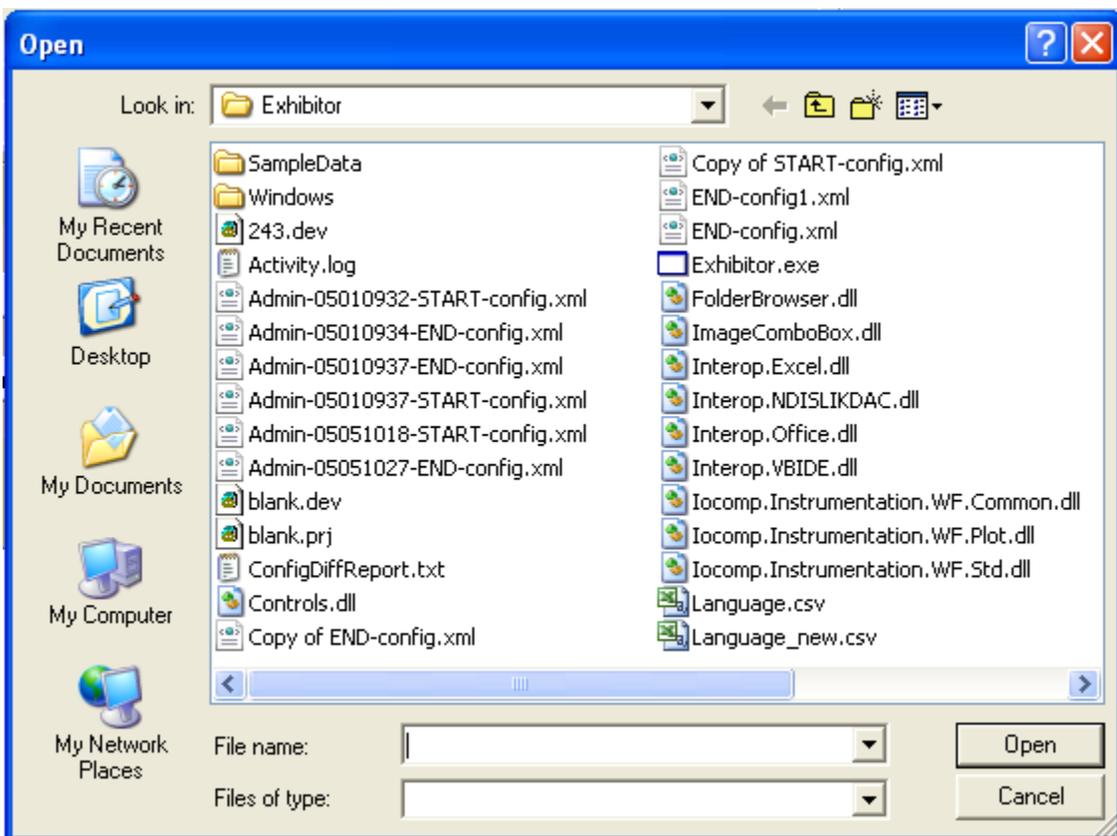


4.5.7.2 Upload File to Device

Right click any directory in the File View box to display a pop-up menu with **Upload**.



Select **Upload** to display the Open dialog window. Choose a file.



The selected file will copy to the selected directory on the device.

4.5.7.3 Remote View Config File

Double click a config file (*.xml) and its contents will display in the page. Some information, like Display, View and Record will not display.

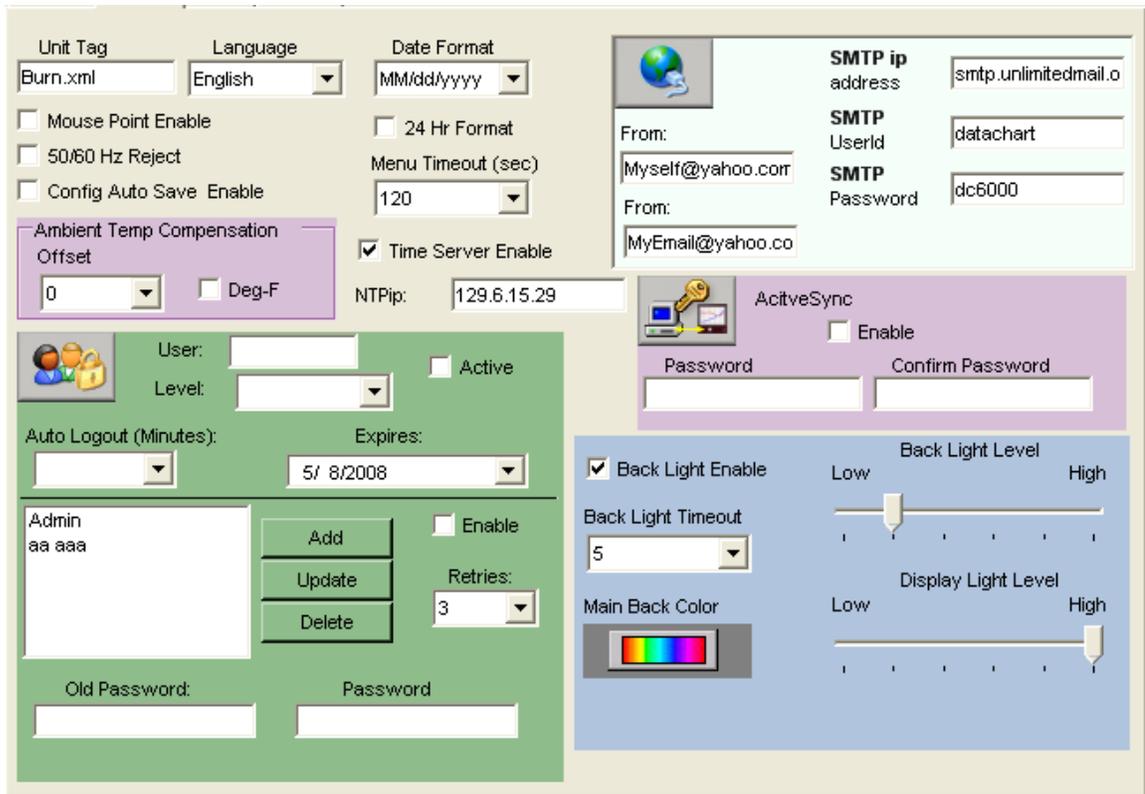


4.5.7.4 Channel tab

To view the setup on each channel, select a different channel number from the list.

4.5.7.5 System tab

Displays the device system setup.



4.5.7.6 Alarm tab

Displays the alarm information.

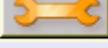
| Alarm | Type | SetPoint | Enable | |
|-------|------|----------|--------------------------|---|
| 1 | none | 0 | <input type="checkbox"/> |  |
| 2 | none | 0 | <input type="checkbox"/> |  |
| 3 | none | 0 | <input type="checkbox"/> |  |
| 4 | none | 0 | <input type="checkbox"/> |  |
| 5 | none | 0 | <input type="checkbox"/> |  |

Channel ChannelEnable

MasterEnable AlarmMute EmailNotify

Click the Setup button to display the individual alarm information.



| Alarm | Type | SetPoint | Enable | |
|-------|------|----------|--------------------------|---|
| 1 | none | 0 | <input type="checkbox"/> |  |
| 2 | none | 0 | <input type="checkbox"/> |  |
| 3 | none | 0 | <input type="checkbox"/> |  |
| 4 | none | 0 | <input type="checkbox"/> |  |
| 5 | none | 0 | <input type="checkbox"/> |  |

Channel ChannelEnable

MasterEnable AlarmMute EmailNotify

Channel Alarm Alarm Type

SetPoint Dead Band Delay (sec)

Rate Of Change (sec) Audio File

Event Msg Enable

Enable
 Notify
 Record

Contact


Select a different channel to view that individual channel's alarm information.

There is **Setup** button on the bottom right. Click it to show **Contact Setup** information.

| Alarm | Type | SetPoint | Enable | |
|-------|------|----------|--------------------------|--|
| 1 | none | 0 | <input type="checkbox"/> | |
| 2 | none | 0 | <input type="checkbox"/> | |
| 3 | none | 0 | <input type="checkbox"/> | |
| 4 | none | 0 | <input type="checkbox"/> | |
| 5 | none | 0 | <input type="checkbox"/> | |

Channel: ChannelEnable

MasterEnable AlarmMute EmailNotify

Channel: Alarm: Alarm Type:

SetPoint: Dead Band: Delay (sec):

Rate Of Change (sec): Audio File:

Event Msg: Enable

Enable Notify Record

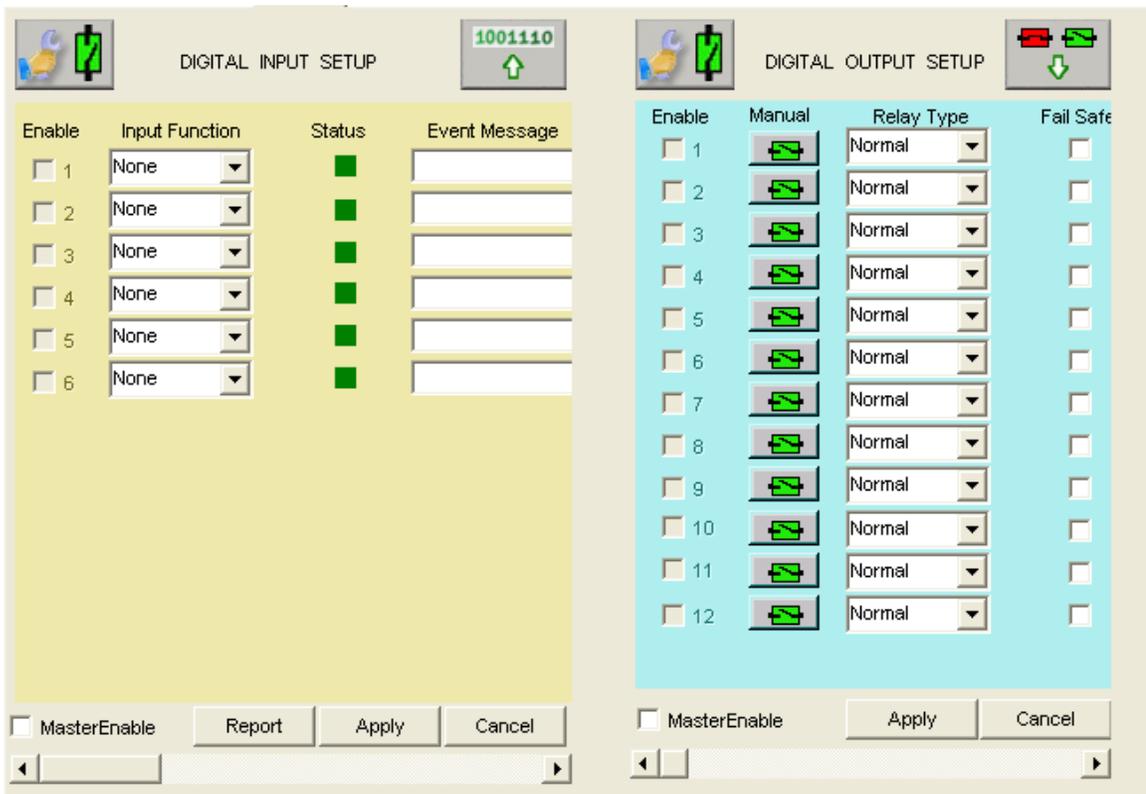
Contact:

| Enable | Manual | Relay Type | Fail Sat |
|-----------------------------|--------|------------|--------------------------|
| <input type="checkbox"/> 1 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 2 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 3 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 4 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 5 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 6 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 7 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 8 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 9 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 10 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 11 | | Normal | <input type="checkbox"/> |
| <input type="checkbox"/> 12 | | Normal | <input type="checkbox"/> |

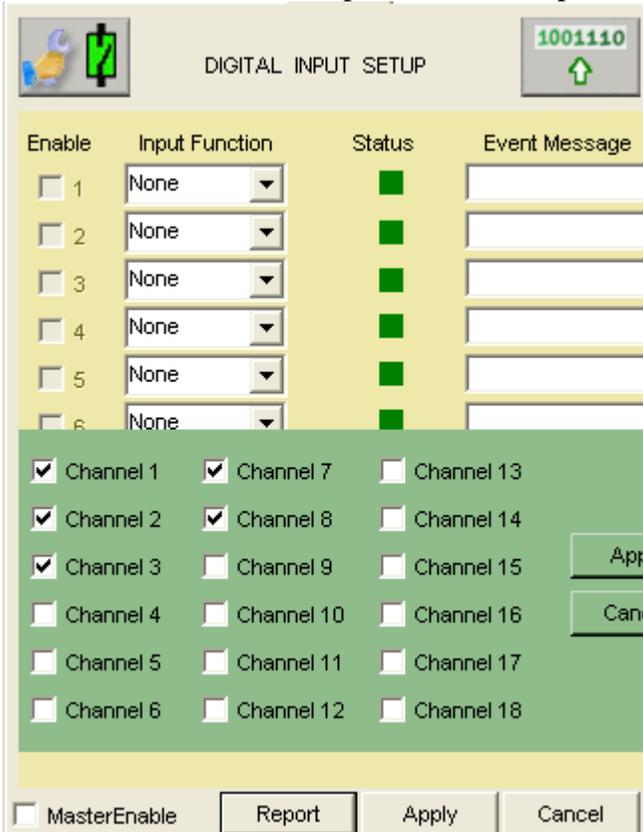
MasterEnable

4.5.7.7 DigitalIO tab

Displays digital in and digital out information.



If the user clicks on the Report button, a Report On Cmd panel will appear.



4.5.7.8 Save Modified Config to Local PC

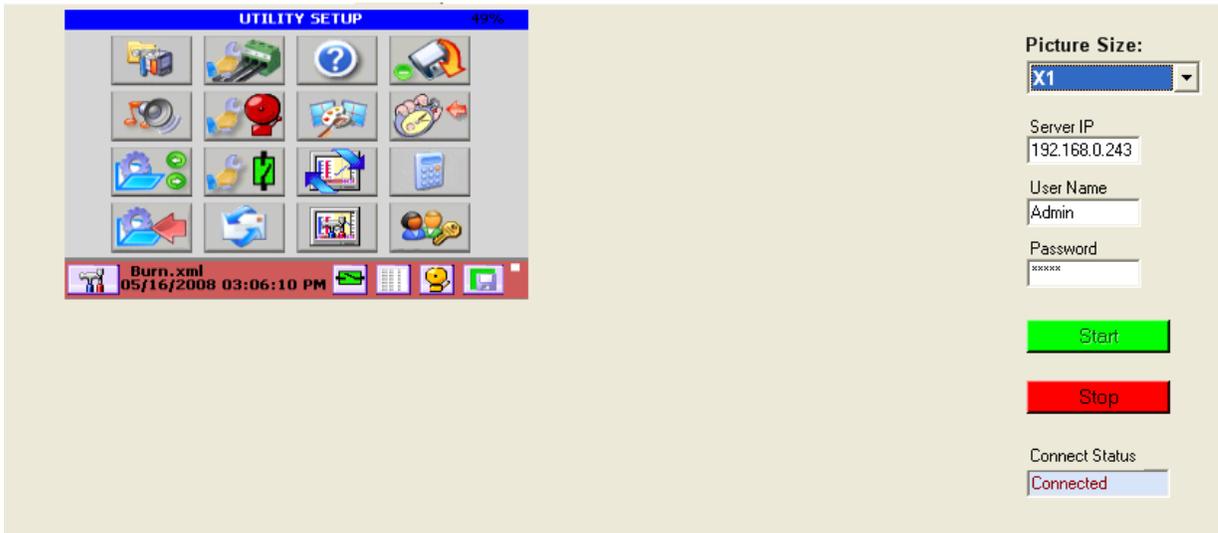
There is a SaveAs button on the bottom left. Clicking it will save all the changes in the displayed config to the local PC.

4.5.8 Display Window

The Display window shows live display from the connected device. Similar to the Config page, the Server IP, User Name and Password are required. Enter this information and press **Start**.



The user can change the size by selecting a different option from the **Picture Size** pull-down box.



Press the **Stop** button to stop the live display.

4.5.9 Recorder Change Log

After the user logs into the device, he/she can change the configuration. After logging out, the modified configuration is saved in the device. The user can use this page to view the changes remotely or locally.

To view change logs locally, the files must be copied from the recorder and brought to the local PC. Use the **Local** button to browse to these files.

To get the data from a recorder, the recorder must be attached to the local area network. The recorder IP address, User Name and Password are required to connect to the device. Once these are entered, click the **Remote** button to get a listing of all the change sessions. The Server IP, User Name and Password are required to connect to the device. Click **Remote** button to get a listing of all the change activities.

| Sessions | |
|------------------|-------|
| 10/14/2008 02:35 | Admin |
| 10/14/2008 04:12 | Admin |
| 10/14/2008 09:33 | Admin |
| 10/14/2008 09:33 | Admin |
| 10/14/2008 09:37 | Admin |
| 10/14/2008 09:39 | Admin |
| 10/14/2008 01:33 | rosa1 |
| 10/14/2008 09:39 | rosa1 |

Select the item from the session list box then click the **Start Compare** button to show the changes made.

Server IP
192.168.0.161

User Name
Admin

Password
xxxxxx

Sessions

| | |
|------------------|-------|
| 10/14/2008 02:35 | Admin |
| 10/14/2008 04:12 | Admin |
| 10/14/2008 09:33 | Admin |
| 10/14/2008 09:37 | Admin |
| 10/14/2008 09:39 | Admin |
| 10/14/2008 01:33 | rosal |
| 10/14/2008 09:39 | rosal |

Start Compare

CHANGE LOG REPORT 12/9/2008 4:02 PM

Unit ID: MONARCH DC6000
 User Logged In: Admin
 Start Config File: Admin-10140235-START-config.xml
 Start Time: 10/14/2008 02:35
 End Config File: Admin-10140237-END-config.xml
 End Time: 10/14/2008 02:37

| | BEFORE | AFTER | |
|-----------------|-----------------------|-----------------------|----|
| Channels | | | |
| Channel | | | |
| Number | 4 | 4 | |
| Point | | | |
| Totalize | | | |
| ResetStart | 10/14/2008 2:31:52 PM | 10/14/2008 2:36:52 PM | << |
| Alarms | | | |
| Alarm | | | |
| Number | 3 | 3 | |
| Channel | 3 | 2 | << |
| Type | Low | High | << |
| SetPoint | 30 | 20 | << |
| Alarm | | | |
| Number | 3 | 3 | |
| Channel | 4 | 2 | << |
| Alarm | | | |
| Number | | 3 (New Added Alarm) | <+ |
| Alarm | | | |

- There are three different symbols on the report.
- << = Before value and After value are changed.
 - <<- = After value is missing.
 - <<+ = New added item in After value.

Press the **Print** button  (in the menu bar at the top of the page) to print the report to the printer or **Print Preview** button  to preview it. If the security is enabled, the print signature will add to the print output. The following is an example of print preview with security enabled.

CHANGE LOG REPORT

12/9/2008 4:02 PM

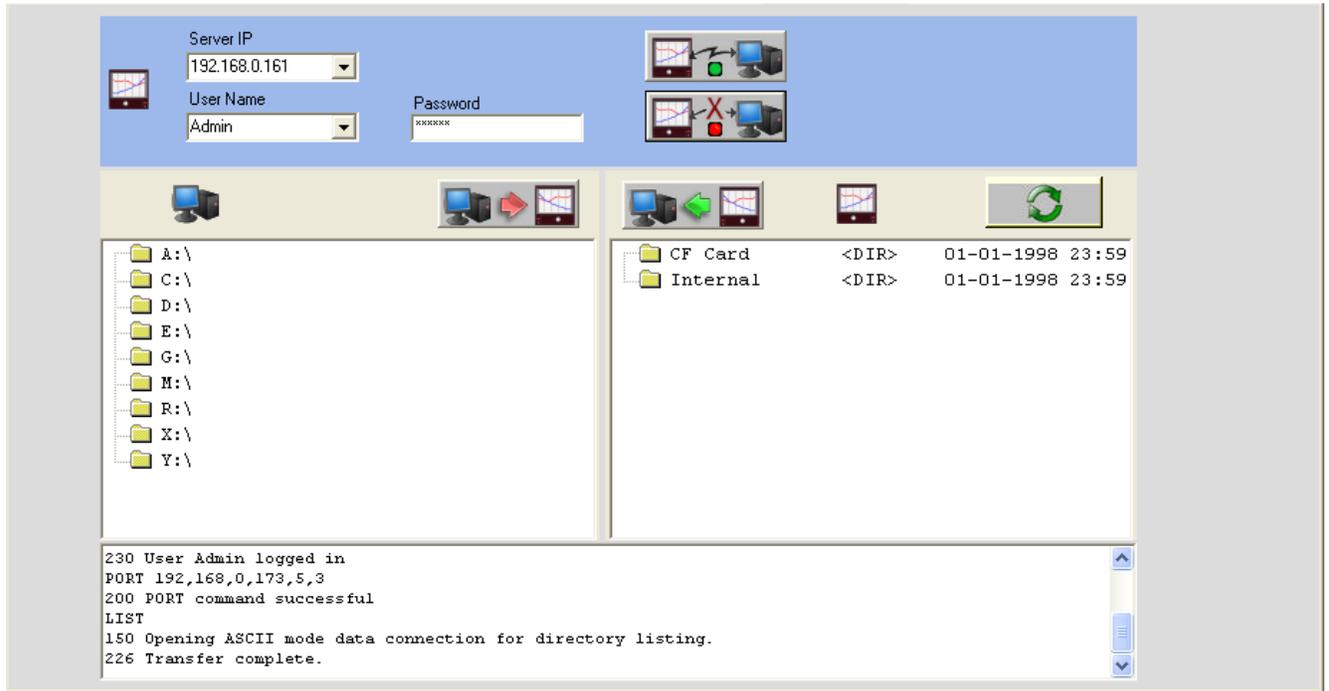
Printed By: Admin
 Printed Date: 12/09/2008 16:02:57
 Reason: Accepted
 Unit ID: MONARCH DC6000
 User Logged In: Admin
 Start Config File: Admin-10140235-START-config.xml
 Start Time: 10/14/2008 02:35
 End Config File: Admin-10140237-END-config.xml
 End Time: 10/14/2008 02:37

| | BEFORE | AFTER | |
|-----------------|-----------------------|-------------------------|----|
| Channels | | | |
| Channel Number | 4 | 4 | |
| Point | | | |
| Totalize | | | |
| ResetStart | 10/14/2008 2:31:52 PM | 10/14/2008 2:36:52 PM | << |
| Alarms | | | |
| Alarm | | | |
| Number | 2 | 2 | |
| Channel | 2 | 2 | << |
| Type | Low | High | << |
| SetPoint | 30 | 20 | << |
| Alarm | | | |
| Number | 2 | 3 | |
| Channel | 4 | 2 | << |
| Alarm | | | |
| Number | | 2 (New Added Alarm) | <+ |
| Alarm | | | |
| Number | | 3 (New Added Alarm) | <+ |
| Displays | | | |
| Display | | | |
| Name | | 111 (New Added Display) | <+ |

4.6 FTP Manager

The FTP manager is a file manager for uploading and downloading files from remote recorders. FTP is short for File Transfer Protocol a standard for file transfer over the internet.

The window is shown below:



The functions of the program are as follows:

- 1 Connection information. The **Server IP** is the address of the recorder. You also need the **User Name** and **Password**. The program remembers User Names and IP addresses and you can use the drop down menu to select previous entries. Once set up you need to connect to establish a link to the recorder. See 5 below
- 2 Local file listing - Displays files and child folders in your current local directory. The current active file or folder is highlighted in blue.
- 3 Remote file listing - Displays files and child folders in your current remote (recorder) directory. The current active file or folder is highlighted in blue.
- 4 Upload and Download buttons to initiate transfer of highlighted files from source to destination. Be careful about loading files to the recorder.
- 5 Connect and Disconnect buttons – will initiate the actual connection to the recorder. The button with the green dot is connect, the one with the red dot is disconnect.
- 6 Refresh button – this will update the directory listings on the local and remote windows.
- 7 Right click mouse button option to delete a file or folder on the recorder.
- 8 Communication List – shows the communication between Exhibitor and the recorder.

Note that when you mouse over any file or folder, a pop up bar will show the details of the item file size and last modified date and time.

The FTP Manager allows for file manipulation between the local PC (computer) and the remote recorder. It functions much like Windows Explorer™ and allows files to be uploaded or downloaded between devices, allows files to be moved, copied and deleted. Proceed with CAUTION to prevent accidental deletion of system files that could stop the recorder from operating.

Once the program is launched enter the IP Address of the recorder (or select it if it has already been entered before) and enter the user name and password.

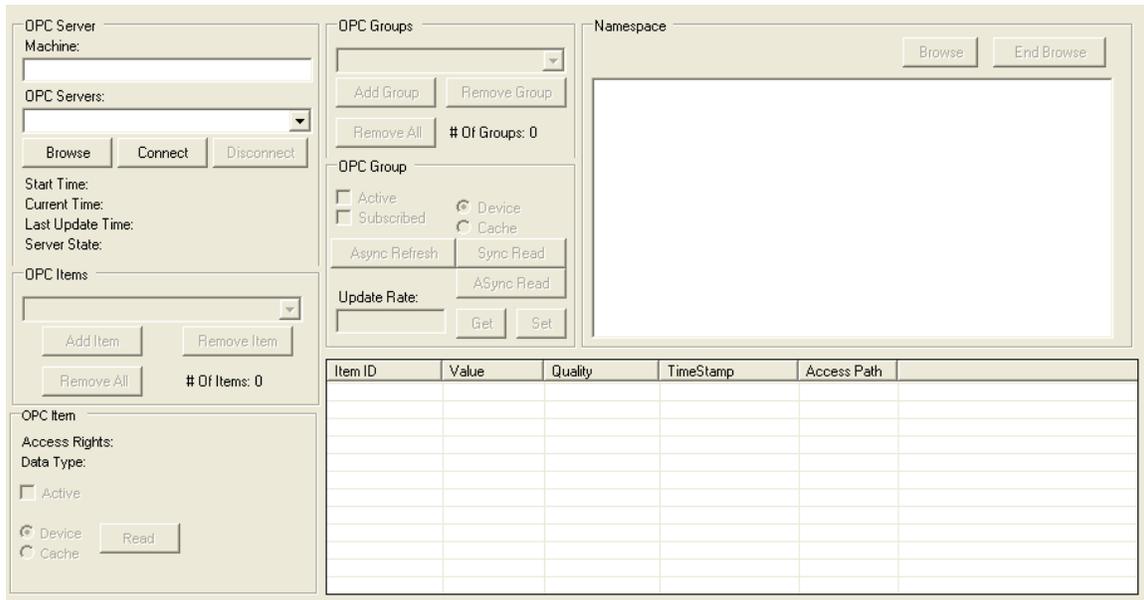


Click the Connect Icon and if the recorder is active on the network connection will be made and the file directory will be displayed. Files may be moved between the recorder and the local PC and may be deleted on the recorder. Be careful when uploading files to the recorder or deleting files. It is recommended you work with data and configuration files only.

Note: If there is no FTP activity more than about 1 minute and 20 seconds, Exhibitor sends out a message to keep the connection alive.

4.7 OPC Client Window

Go to the **Tool** drop down and select **OPC Client**. This window can connect to one OPC server and displays all items on it.

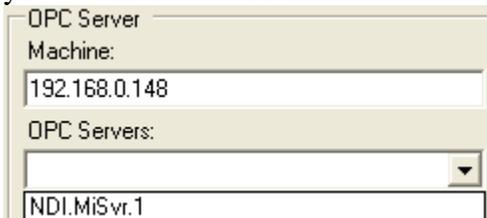


The following are the steps to view the items on a server.

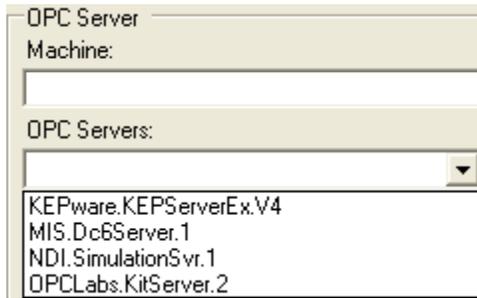
1. Connect to a server

There are three ways to connect to a server:

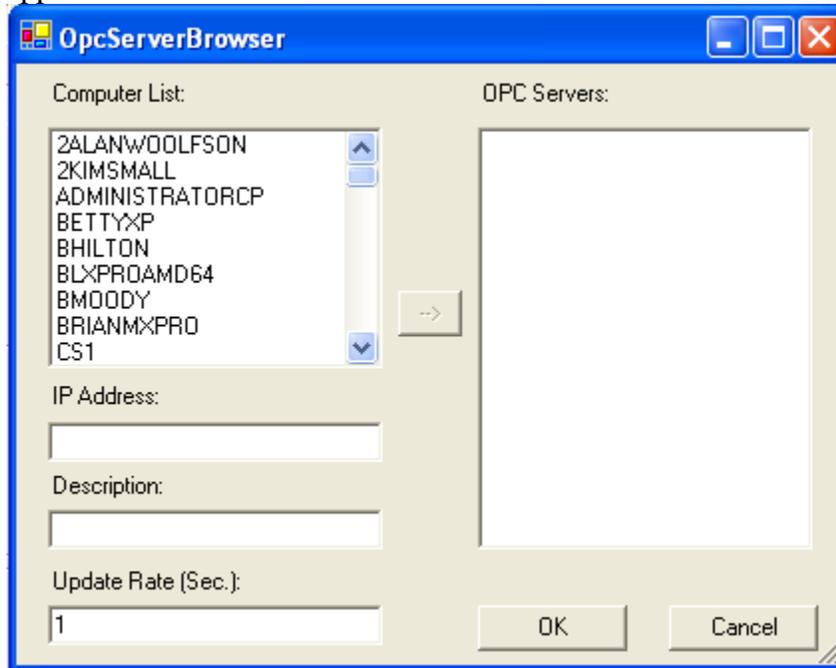
Enter the machine's IP address that the server is on, and then click the combo box under OPC Server. All OPC servers will be listed in the combo box. Then click the server that you want to connect to.



If you only want to connect to the server that is on the local PC that is running this program, you can click the combo box under OPC Server. All OPC servers will be listed.



Click the Browse button beside the Connect button. The OpcServerBrowser dialog appears.



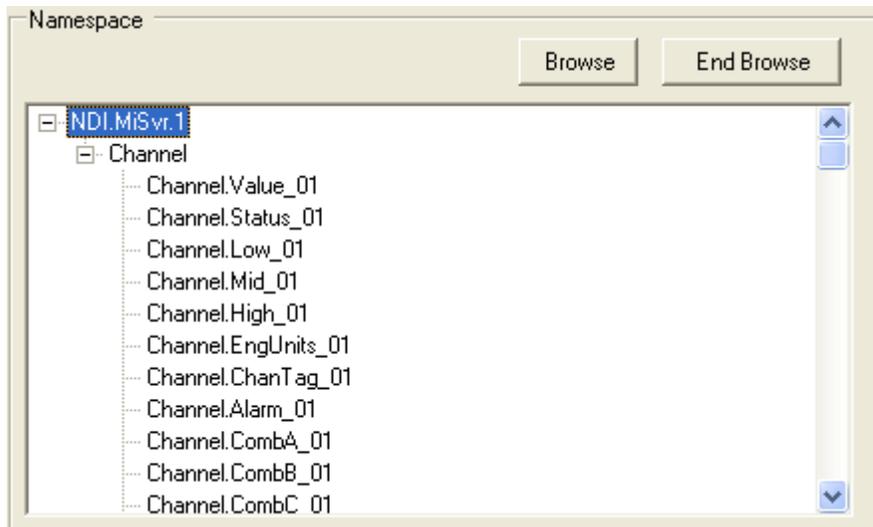
You can enter the IP address or choose one of the computers that list on the Computer List. You can enter the IP address or choose one of the computers listed in the list box. Then click the right arrow key between Computer List and OPC Servers. All OPC servers on that machine will be listed in the OPC Server's list box to let the user choose. Before you click OK button, you must enter a description.

The update rate is the time interval that the server to update its items value. The default is 1 second.

After you choose a server, click the Connect button.

2. Browse Items

On the Namespace group, click the Browse button. All servers and all items will be listed. Click the server name to expand the tree.



3. Add Group

Add a group before subscribing. Click the Add Group button in OPC Groups.



4. Add OPC Items

Double-click any OPC item in the browse window in Namespace group. That item will be added to the table below the browse window.

OPC Groups

_MI_Group_0

Add Group Remove Group

Remove All # Of Groups: 1

_MI_Group_0

Active Subscribed Device Cache

Async Refresh Sync Read

Update Rate: 1000 ASync Read

Get Set

Namespace

Browse End Browse

[-] NDI.MiSvr.1

[-] Channel

- Channel.Value_01
- Channel.Status_01
- Channel.Low_01
- Channel.Mid_01
- Channel.High_01
- Channel.EngUnits_01
- Channel.ChanTag_01
- Channel.Alarm_01
- Channel.CombA_01
- Channel.CombB_01
- Channel.CombC_01

| Item ID | Value | Quality | TimeStamp | Access Path |
|-------------------|-------|-----------------------------|-------------|-------------|
| Channel.Value_01 | | Bad, Non-specific, Limit OK | 12:00:00 AM | |
| Channel.Status_01 | | Bad, Non-specific, Limit OK | 12:00:00 AM | |
| Channel.Low_01 | | Bad, Non-specific, Limit OK | 12:00:00 AM | |
| Channel.CombA_01 | | Bad, Non-specific, Limit OK | 12:00:00 AM | |
| Channel.CombB_01 | | Bad, Non-specific, Limit OK | 12:00:00 AM | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

5. Subscribe The Items

Check the Subscribed checkbox. The table will display the real time values.

OPC Groups

_MI_Group_0

Add Group Remove Group

Remove All # Of Groups: 1

_MI_Group_0

Active Subscribed Device Cache

Async Refresh Sync Read

Update Rate: 1000 ASync Read

Get Set

Namespace

Browse End Browse

[-] NDI.MiSvr.1

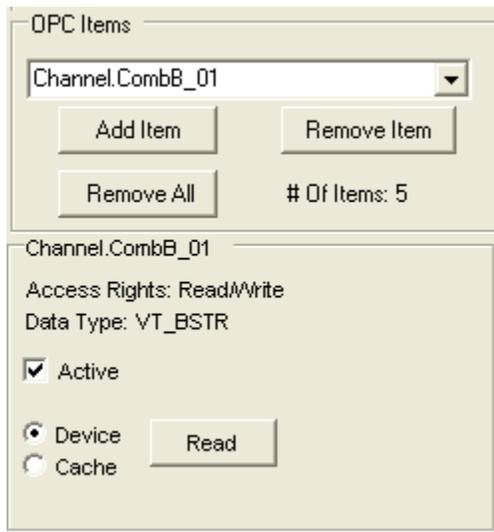
[-] Channel

- Channel.Value_01
- Channel.Status_01
- Channel.Low_01
- Channel.Mid_01
- Channel.High_01
- Channel.EngUnits_01
- Channel.ChanTag_01
- Channel.Alarm_01
- Channel.CombA_01
- Channel.CombB_01
- Channel.CombC_01

| Item ID | Value | Quality | TimeStamp | Access Path |
|-------------------|-----------------------------|------------------------------|------------|-------------|
| Channel.Value_01 | 0 | Good, Non-specific, Limit OK | 9:06:25 AM | |
| Channel.Status_01 | 0 | Good, Non-specific, Limit OK | 9:06:25 AM | |
| Channel.Low_01 | 0 | Good, Non-specific, Limit OK | 9:06:25 AM | |
| Channel.CombA_01 | 0.000,0,1.5,194,140,0,11... | Good, Non-specific, Limit OK | 9:06:25 AM | |
| Channel.CombB_01 | 0.000,5000,0.000,10000,0... | Good, Non-specific, Limit OK | 9:06:25 AM | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Now the OPC client is working. You can view the selected OPC server.

On the OPC Items, you can select individual items and see some information, like access rights, data type and activity. You can also remove the selected item or remove all items in the group.



5 Appendix A – Language File

Adding a language is a simple process. Exhibitor uses an Excel™ compatible file (Language.csv), that resides in the Exhibitor program directory, to read all text that is displayed in the program. The first column is the English word. To add a language, simply add a column and make sure the first entry in the column is the language. When the **Setup – Language** option is chosen, the program reads the first row of this spreadsheet and displays the languages available. (Make sure the language.csv file is closed.)

The image below shows the format and an example of the hypothetical language file. It has English, German and Spanish. The letter ‘G’ is added in front of the text for German and ‘S’ is added for Spanish. Selecting either German or Spanish from the **Setup-Language** menu will replace the English text with the corresponding German or Spanish text. The edited file must reside in the program directory.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|----|-------------------------|--------------------------|--------------------------|---|---|---|---|---|---|---|---|---|---|---|
| 1 | English | Germany | Spanish | | | | | | | | | | | |
| 2 | Navigator6000 | GNavigator6000 | SNavigator600 | | | | | | | | | | | |
| 3 | File | GFile | Sfile | | | | | | | | | | | |
| 4 | Open | Gopen | SOpen | | | | | | | | | | | |
| 5 | Exit | Gexit | Sexit | | | | | | | | | | | |
| 6 | View | Gview | Sview | | | | | | | | | | | |
| 7 | Zoom In | Gzoom In | Szoom In | | | | | | | | | | | |
| 8 | Zoom Out | Gzoom Out | Szoom Out | | | | | | | | | | | |
| 9 | Zoom Window | Gzoom Window | Szoom Window | | | | | | | | | | | |
| 10 | Setup | Gsetup | Ssetup | | | | | | | | | | | |
| 11 | Language | Glanguage | Slanguage | | | | | | | | | | | |
| 12 | Preferences | GPreferences | SPreferences | | | | | | | | | | | |
| 13 | Decimal Places | GDecimal Places | SDecimal Places | | | | | | | | | | | |
| 14 | Auto Scale | GAuto Scale | SAuto Scale | | | | | | | | | | | |
| 15 | Yes | Gyes | Syes | | | | | | | | | | | |
| 16 | No | Gno | Sno | | | | | | | | | | | |
| 17 | Help | Ghelp | Shelp | | | | | | | | | | | |
| 18 | About | Gabout | Sabout | | | | | | | | | | | |
| 19 | New | Gnew | Snew | | | | | | | | | | | |
| 20 | Save | Gsave | Ssave | | | | | | | | | | | |
| 21 | Print Table | Gprint Table | Sprint Table | | | | | | | | | | | |
| 22 | Search | Gsearch | Ssearch | | | | | | | | | | | |
| 23 | OnLine | GOnLine | SOnLine | | | | | | | | | | | |
| 24 | Detail | Gdetail | Sdetail | | | | | | | | | | | |
| 25 | Graph | Ggraph | Sgraph | | | | | | | | | | | |
| 26 | DataTable | GDataTable | SDataTable | | | | | | | | | | | |
| 27 | Alarm | Galarm | Salarm | | | | | | | | | | | |
| 28 | Event | Gevent | Sevent | | | | | | | | | | | |
| 29 | OPC Client | GOPC Client | SOPC Client | | | | | | | | | | | |
| 30 | Device Manager | Gdevice Manager | Sdevice Manager | | | | | | | | | | | |
| 31 | Design Page | Gdesign Page | Sdesign Page | | | | | | | | | | | |
| 32 | Synchronize | GSynchronize | SSynchronize | | | | | | | | | | | |
| 33 | Select | Gselect | Sselect | | | | | | | | | | | |
| 34 | Stretch | Gstretch | Sstretch | | | | | | | | | | | |
| 35 | Zoom To Fit | GZoom To Fit | SZoom To Fit | | | | | | | | | | | |
| 36 | Cursor | Gcursor | Scursor | | | | | | | | | | | |
| 37 | Go to Beginning | GGo to Beginning | SGo to Beginning | | | | | | | | | | | |
| 38 | Go to End | GGo to End | SGo to End | | | | | | | | | | | |
| 39 | Print Preview and Print | GPrint Preview and Print | SPrint Preview and Print | | | | | | | | | | | |
| 40 | Read to File | GRead to File | SRead to File | | | | | | | | | | | |