Flagship Automation Ltd.

DQCsys Client User Manual

Revision 1.11

For DQCsys Client Revision 5.00

September 1, 2011

www.DQCsys.com

Document Revision Table

Revision	Description	Date
1.00	Initial Release	June 11, 2011
1.10	Updated manual for DQCsys Client Revision B4.10: - Added Chapter 4 Create Reports - Several images were updated to reflect the current user interface	July 8, 2011
1.11	Updated manual for DQCsys Client Revision 5.00: - Update 3.1 Plot Information and 3.2 Project Field Sections - Several images were updated to reflect the current user interface	September 1, 2011

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Introduction

Welcome to DQCsys Client User Manual. This manual will cover the features and usage of DQCsys Client, software designed for distributed quality control systems. However, it does not cover the installation, Please see DQCsys Client Quick Start Guide to get started using DQCsys Client.

DQCsys Client Requirements

The following sections list the requirements to run DQCsys Client.

Software Requirements

The following software is available free to download and is required for DQCsys Client to run properly.

- Microsoft SQL Server 2008 Native Client must be installed on every computer that DQCsys Client is used. The server client is needed to access and retrieve data from SQL server.

  The download links for Microsoft SQL Server 2008 Native Client are available below. Please note that X86 Package is the most common.

  For Microsoft Windows 32bit: X86 Package
  For Microsoft Windows 64bit: X64 Package, IA64 Package

System Requirements

The hardware requirements for the supported operating systems, Windows XP Pro SP3 and Windows 7 Pro, are listed below.

Operating System: Windows XP Pro SP3
CPU Required: 1.5 GHz or faster
Memory Required: 1 GB RAM or higher required
Monitor Required: 1024x768 Capable Monitor
Installation and Operation: 1G or higher free hard drive space required

Operating System: Windows 7 Pro
CPU Required: 1.5 GHz or faster
Memory Required: 2 GB RAM or higher required
Monitor Required: 1024x768 Capable Monitor
Installation and Operation: 1G or higher free hard drive space required

1 Setup DQCsys Client

When DQCsys Client is launched, the user must first configure searches to obtain data. This data can then be plotted and analysed on the DQCsys **Client** window. (Figure 1-1)

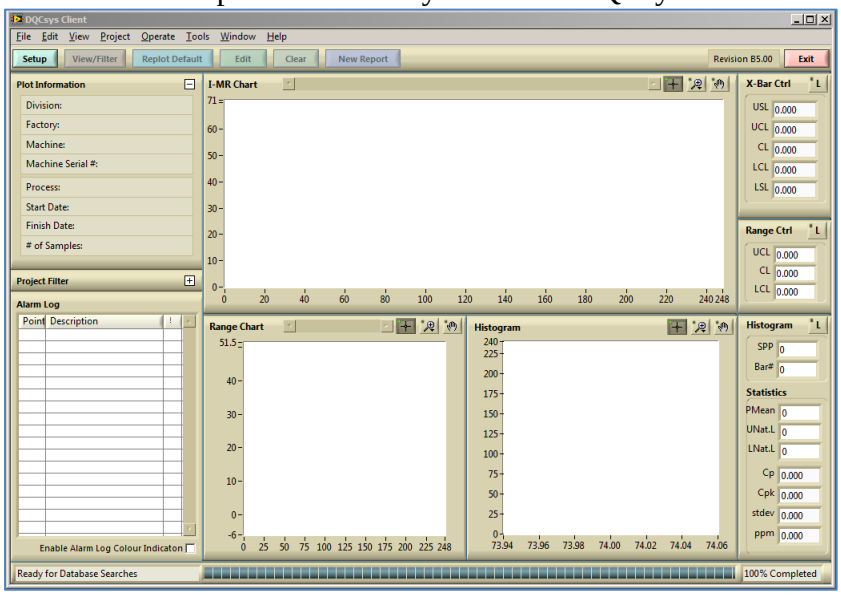


Figure 1-1: The **DQCsys Client** Window

1.1 Accessing the Setup Window

The **Setup** window allows the configuration and execution of searches to obtain data from the SQL Server. This window can be accessed by the following steps.

1. Click the **Setup** button (Figure 1.1-1) on the DQCsys Client window (Figure 1-1).

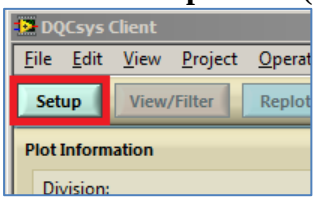


Figure 1.1-1: The **Setup** Button

2. The **DQCsys Client Setup** window will appear. (Figure 1.1-2)

Figure 1.1-2: The **DQCsys Client Setup** Window

1.2 Setup Database Connection

The database connection must be setup in the **DQCsys Client Setup** window to indicate which sever to connect to. The database path, user ID, and password of the SQL server is needed.

Please note that the previously used database connection will be remembered and displayed in the **Database Path** field. If the **Database Path** field displays green text, then DQCsys Client can connect to the databases. If the text is red, DQCsys Client cannot connect to that database path.

Database connections can be managed in the **Manage Database Connections** window. This window can be accessed by the following steps:

1. Click **Configure** button. (Figure 1.2-1)

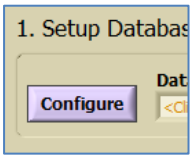


Figure 1.2-1: The **Configure** button

2. The **Manage Database Connections** window appears. (Figure 1.2-2)

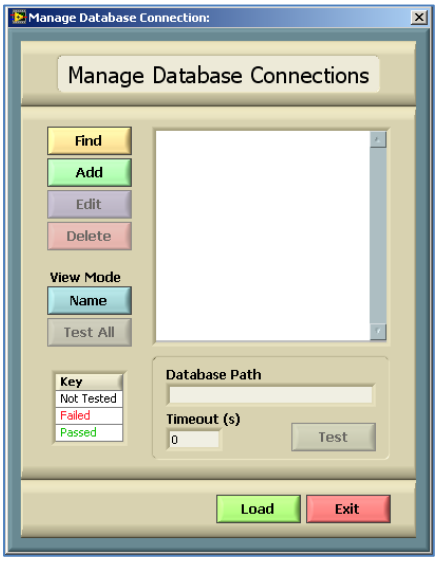


Figure 1.2-2: The **Manage Database Connections** Window

1.2.1 Find Database Connection

Database connections can be searched in the **Manage Database Connections** window by the following steps.

1. Click the **Find** button on **Manage Database Connections** window. The **Find Database Server Connection** window will appear. (Figure 1.2.2-1)

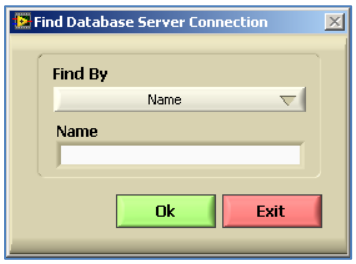


Figure 1.2.1-1: The **Find Database Server Connection** Window

2. Select whether to search by Connection Name or Database Path. Enter in the field below the **Find By** menu. Click **OK**.

3. If the database connection is found, it will selected in the **Manage Database Connection** window.

1.2.2 Add Database Connection

New database connections can be added in the **Manage Database Connections** window by the following steps.

1. Click the **Add** button on **Manage Database Connections** window. The **Add Database Connection** window will appear. (Figure 1.2.2-1)

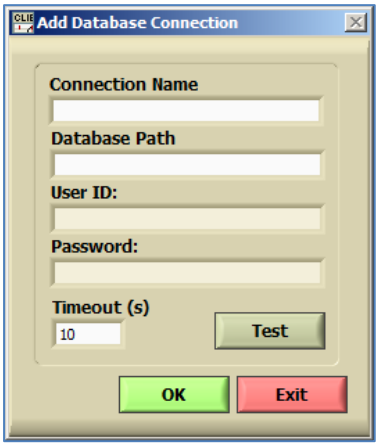


Figure 1.2.2-1: The **Add Database Connection** Window

2. Enter the following fields:
   - **Connection Name:** A unique name to identify the database connection
   - **Database Path:** The computer name of the server followed by a black slash and the server's name For Example: COMPUTERNAME\SQLEXPRESS
   - **User ID & Password:** For SQL Server Authentication, A user account in need to access remote connections. The user should be properly configured to view DQCsys Databases.
   - **Timeout (s)**: How long to wait when attempting to connect to the database.

3. Click **Test** button to determine if the server can be accessed successfully.

4. Click **OK** to save the database connection.

1.2.3 Edit Database Connections

Database connection can be edited in the **Manage Database Connections** window by the following steps.

1. Select a Database Connection from the list-box. (Figure 1.2.3-1)

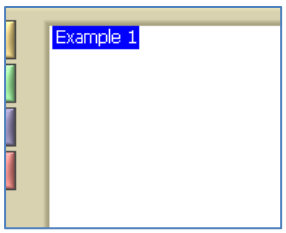


Figure 1.2.3-1: The list-box on **Manage database Connection** window.

2. Click the **Edit** button on **Manage Database Connections** window. The **Edit Database Connection** window will appear. (Figure 1.2III.2)

Figure 1.2III.1: The **Edit Database Connection** Window

3. Make any desired adjustments, and then click the **Test** button to determine if DQCsys Client can connect to the specified database path. Click **OK** to save any changes made .

1.2.4 Delete Database Connection

Unwanted database connections can be deleted in the **Manage Database Connections** window by the following steps.

1. Select a Database Connection from the list-box (Figure 1.2.4-1).

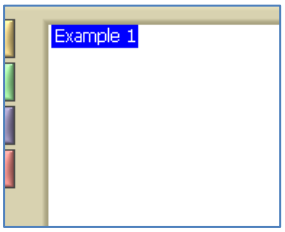


Figure 1.2.4-1: The list-box on **Manage database Connection** window.

2. Click the **Delete** button on **Manage Database Connections** window. A confirmation popup appears. Click **Delete** to complete this action.

1.2.5 Change View Mode

Depending on the preference, users can switch between viewing the Connection Name and Database Path on the list-box. Click The button labelled "View Mode" on the **Manage Database Connection** window to switch the view mode. (Figure 1.2.5-1)

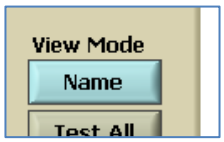


Figure 1.2.5-1: The **View Mode** Button

1.2.6 Test Selected Database Connection

Individual database connections can be tested in the **Manage Database Connections** window by the following steps.

1. Select a Database Connection from the list-box on **Manage Database Connection** window. (Figure 1.2.6-1)

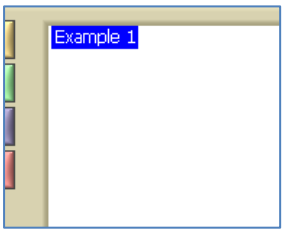


Figure 1.2.6-1: The list-box on **Manage database Connection** window. "Example 1" is currently selected.

2. Click the **Test** button on **Manage Database Connection** window. A popup will display the result of the test. In addition, the database connection will appear green or red depending on the test's success. (Figure 1.2.6-2)

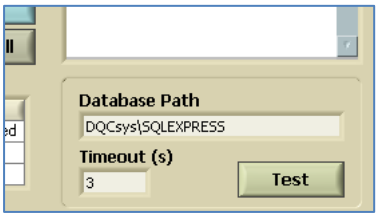


Figure 1.2.6-2: The **Test** Button on **Manage database Connection** window.

1.2.7 Test All Database Connections

All database connections can be tested in the **Manage Database Connections** window by the following steps.

1. Click the **Test All** button on **Manage Database Connections** window. (Figure 1.7-1)

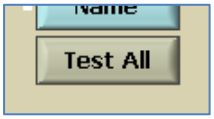


Figure 1.2.7-1: The **Test All** Button

2. A popup warns that the test many take a while. Click **Proceed**. A display appears on top indicating the process. (Figure 1.2.7-2)

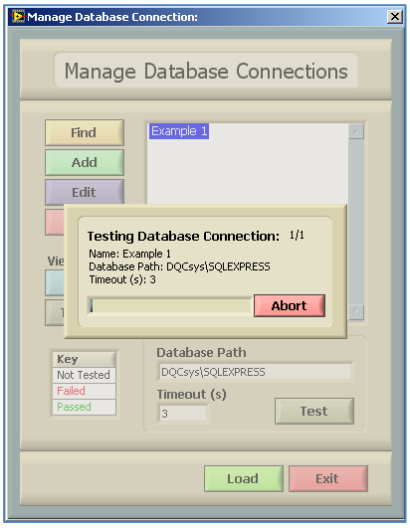


Figure 1.2.7-2: Testing All Database Connections

3. The results are coloured occurring to the key on the **Manage Database Connections** window. (Figure 1.2.7-3)

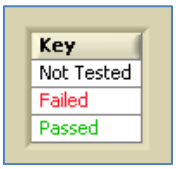


Figure 1.2.7-3: The Test All Result **Key**

1.2.8 Load Database Connections

Database connections can loaded from the **Manage Database Connections** window to the **DQCsys Client Setup** window by the following steps.

1. Select a Database Connection from the list-box on **Manage Database Connection** window. (Figure 1.2.8-1)

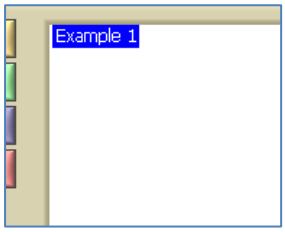


Figure 1.2.8-1: The list-box on **Manage Database Connection** window. “Example 1” is currently selected.

2. Click the **Load** button located on **Manage Database Connection** window. (Figure 1.2.8-2)

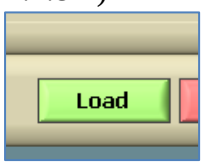


Figure 1.2.8-2: The **Load** Button located on **Manage database Connection** window

3. The **DQCsys Client Setup** window will display the loaded database connection's database path. (Figure 1.2.8-3) Proceed to 1.3 Select Setup Profile & Process to continue the setup configuration.

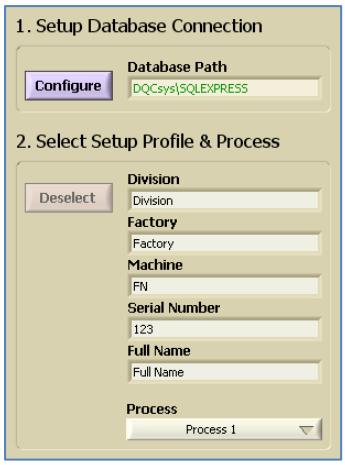


Figure 1.2.8-3: The **DQCsys Client Setup** Window

1.3 Select Setup Profile & Process

The setup profile is automatically selected if the connected database has only one profile, see Figure 1.2.8-3. If more than one setup profile is detected, then the user must manually select the profile. (Figure 1.3-1)

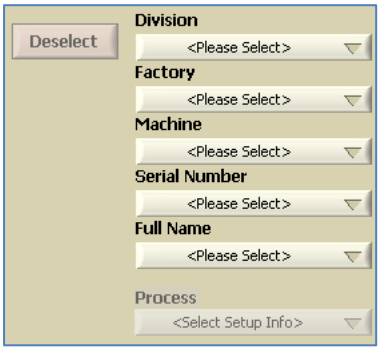


Figure 1.3-1: Manual Selection of Setup Profile

The user must select each field until a single profile is targeted. To deselect another profile, click the **Deselect** button on the **DQCsys Client Setup** window.

After a setup profile is selected, the user must select the desired process to view, plot, and analysis data from using the **Process** Selector (Figure 1.3-1).

1.4 Search Filters

Searches made to the connected database can be refined to limit the amount of data extracted into DQCsys Client. The two types of search filters are the **Parameter Filter** and the **Date\Time** Filter. (Figure 1.4-1)

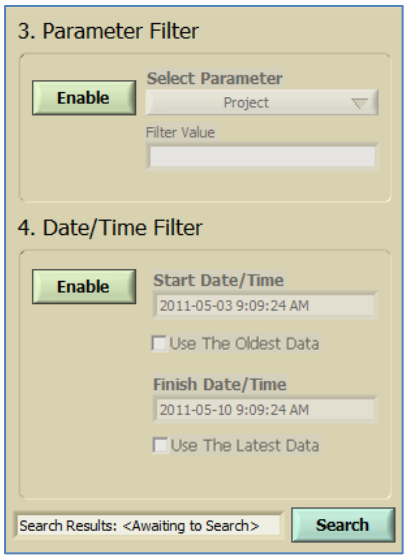


Figure 1.4-1: Filter & Search Sections of **DQCsys Client Setup**

1.4.1 Parameter Filter

The Parameter Filter is used to specify the database records that match a certain parameter value.

The following parameters are available to refine the search: the project name, the part number, the data point, the X-Bar Control Limit, the X-Bar Lower Control Limit, the Lower Spec, and the Project Fields that were configured in DQCsys Operator.

The following steps indicate how to use this filter.

1. Click the corresponding **Enable button** to enable the parameter filter. Click the **Disable** button to disable this filter. (Figure 1.4-1)

2. Text parameters have only the option to search by a specific value. (Figure 1.4.1-1) Numeric parameters have also the option to search by a range of values. (Figure 1.4.1-2)

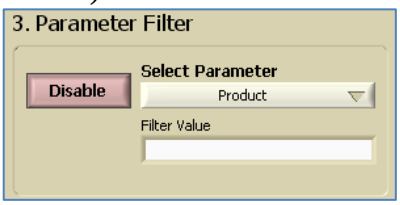


Figure 1.4.1-1: Text Parameters: Specific Value Filter

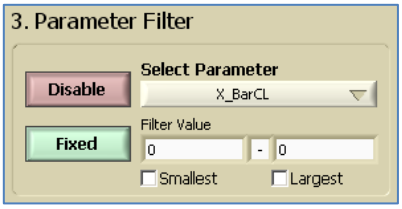


Figure 1.4.1-2: Numeric Parameter: Specific Value Filter and Range Filter

1.4.2 Date\Time Filter

The Date\Time Filter is used to specify the database records are within a date and time interval. The following steps indicate how to use this filter.

1. Click the **Enable button** to enable the date\time filter (Figure 1.4.2-1). Click the **Disable** button to disable this filter.

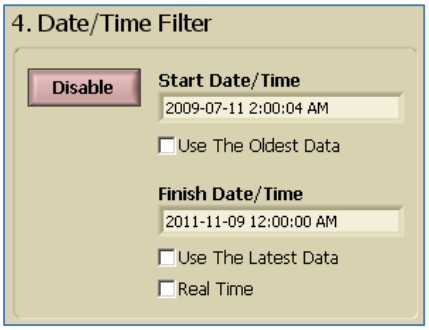


Figure 1.4.2-1: The **Date\Time** Filter Enabled

2. To select a specific date, click on the **Start** or **Finish Date/Time** control. A date\time input window appears, select the year, month, day, and time. Click **OK**. (Figure 1.4.2-2)

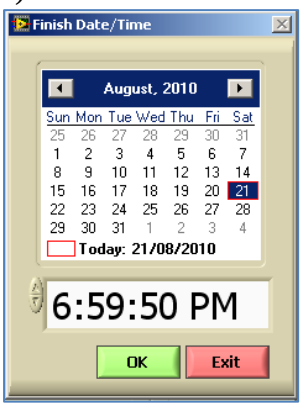


Figure 1.4.2-2: The **Date\Time Input** Window

1.5 Search

Database records can be searched for in the **DQCsys Client Setup** window by the following steps. Please note that searching can be done only after selecting a database connection and setup profile.

1. Click the **Search** button located on the **DQCsys Client Setup** window. A message will indicate the success of the search and how much was found. (Figure 1.5-1)

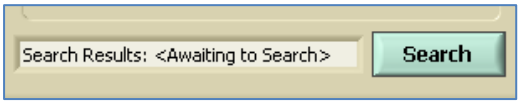


Figure 1.5-1: The **Search** button

2. After a successful search, the **View** and **Plot** buttons are accessible. These buttons allow viewing the raw data in a chart or plotting of the searched data. (Figure 1.5-2)

Figure 1.5-2: View and Plot functions are available after a successful search.

2 View & Filter Searched Data

The searched data can be viewed and refined before and after plotting it. A search must be made before data from it can be viewed, see 1.5 Search.

2.1 Accessing the View Searched Data Window

The **View Searched Data** window displays specific details of each record obtained from the SQL server such as date\time, project information and recipe used. Filters are available to narrow the records by numerical values and intervals. This window can be accessed by the following steps.

1. Click the **View** button (Figure 1.5-2) on the **DQCsys Client Setup** window or the **View/Filter** button (Figure 2-1) on **DQCsys Client** window. Please note that the latter option can be done after the searched data has been plotted.

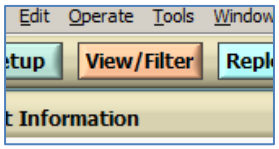


Figure 2-1: The **View** Button on **DQCsys Client** Window

2. The **View Searched Data** window (Figure 2-2) appears.

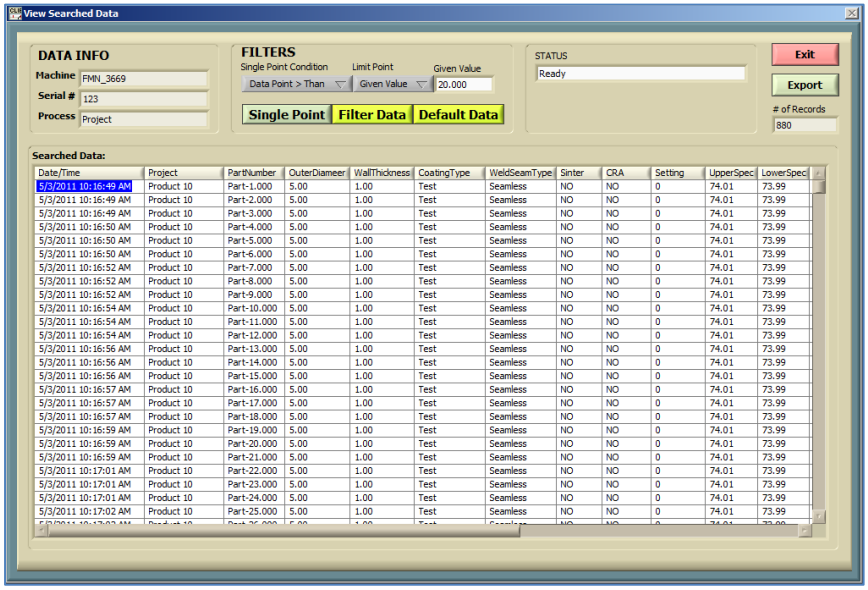


Figure 2-2: The **View Searched Data** Window

2.1 Numerical Plot Filters

Searched data can be refined using numerical plot filters in the **View Searched Data** window. The two types available are the Single Point Filter and the Window Filter.

2.1.1 Single Point Filter

The Single Point Filter (Figure 2.1.1) compares the searched data with a specified point and retains only the points which meet the specified condition. Please note to switch from this filter to the Window Filter, click the **Single Point** button (Figure 2.1.1-1)

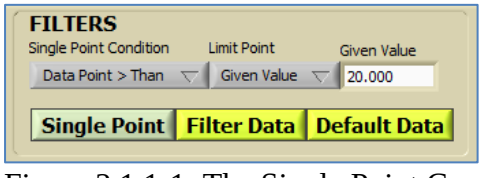


Figure 2.1.1-1: The Single Point Condition Filter

The following steps describe how to use the Single Point Filter:

1. Select the desired single point Condition and limit point. The limit point can be inputted or specified by the data's recipe specifications (Figure 2.1.1-1).

2. Click the **Filter Data** button (Figure 2.1.1-2) to apply the filter.

Figure 2.1.1-2: The **Filter Data** button on the **View Searched Data** Window

2.1.2 Window Point Condition Filter

The Window Filter (Figure 2.1.2) compares the searched data with a specified interval and retains only the points which meet the specified condition. Please note that to switch from the Window Filter to the Single Point Filter, click the **Single Point** button (Figure 2.1.2-2).

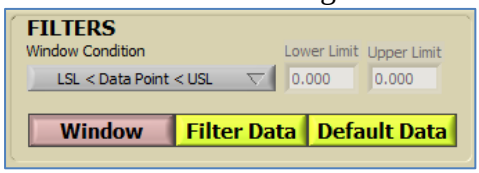


Figure 2.1.2-2: The Window Condition Filter

The following steps describe how to use the Window Filter:

1. Select the desired Window Condition. The boundary values can be inputted or specified by the data's recipe specifications (Figure 2.1.2-1)

2. Click the **Filter Data** button (Figure 2.1.1-1) to apply the filter.

2.2 Reset to Default Data

Applied numerical filters can be removed in the **View Searched Data** window by the **Default Data** button (Figure 2.2-1).

Figure 2.2-1: The **Default Data** button

2.3 Export Searched Data

The data displayed on the **View Searched Data** can be exported to a Microsoft Excel File by clicking the **Export** button (Figure 2.4-1).

Figure 2.4-1: The **Export** Button

2.4 Re-plot Filtered Data

The viewed and filtered data can be plotted if the **View Searched Data** window was accessed through the **View/Filter** button (Figure 2-1) by clicking the **Exit** button on the **View Searched Data** window. A popup will then ask to re-plot the data.

3 Plot and Analyse

The searched data can be plotted and analysed in the **DQCsys Client** window by the following steps which continue from 1.5 Search.

1. Click the **Plot** button on the DQCsys Client Setup window (Figure 3-1)

Figure 3-1: The **Plot** Button

2. The **DQCsys Client** window will process and display the searched data. (Figure 3-2)

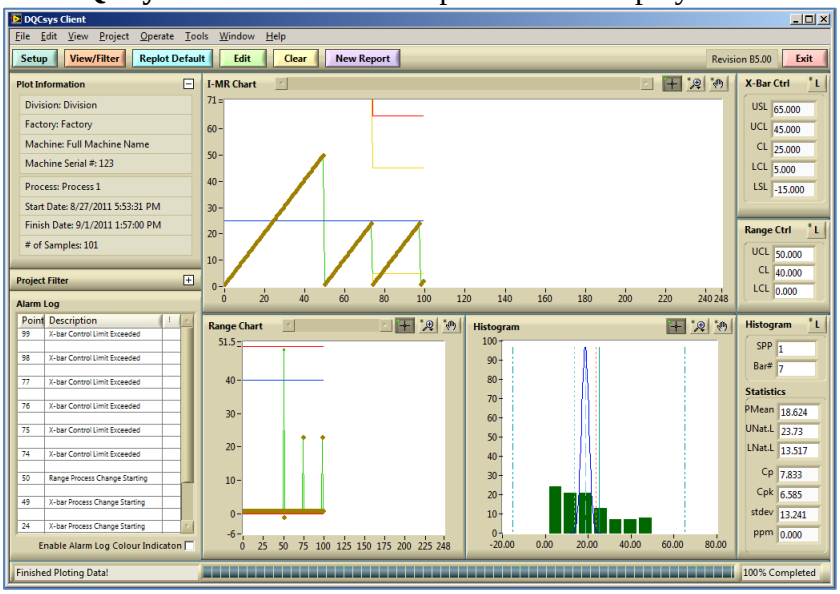


Figure 3-2: The Plotted Data on **DQCsys Client** Window

3.1 Plot Information

The **Plot Information** section (Figure 3.1-1) on the **DQCsys Client's** Sidebar presents additional details on the current plotted data. The following information is displayed: the division, factory, machine name, machine serial number, the process name, the start and stop date and time, and the total number of samples plotted.

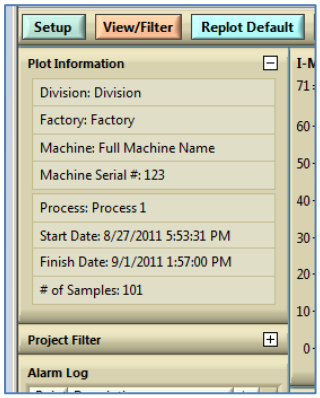


Figure 3.1-1: The Plot Information Section on **DQCsys Client's** Sidebar

To hide or show the **Plot Information** section, click the surrounding area of the text "Plot Information". (Figure 3.1- 2)

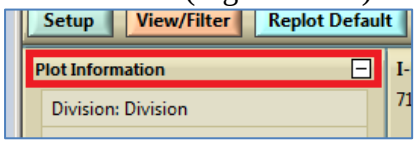


Figure 3.1-2: Click the region outlined in red to hide or show the **Plot Information** section.

3.2 Project Filter

The Project Filter section (Figure 3.2-1) on the **DQCsys Client** Sidebar allows the current plot data be filtered according to the Project and Project Fields' values.

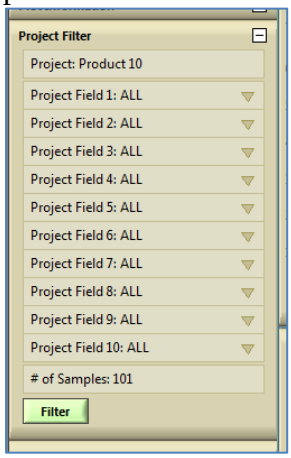


Figure 3.2-1: The **Project Filter** Section on **DQCsys Client's** Sidebar

To hide or show the **Project Filter** section, click the surrounding area of the text "Project Filter". (Figure 3.2- 2)

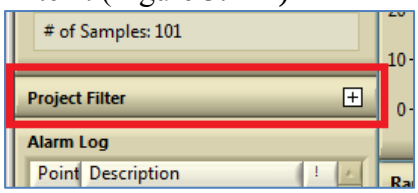


Figure 3.2-2: Click the region outlined in red to hide or show the **Project Filter** section.

The filter fields on the **Project Filter** sections are dynamically adjusted according to the current plotted data. If more than one Project or Project Fields' value is detected, then its filter field becomes a selector (Figure 3.2-3).

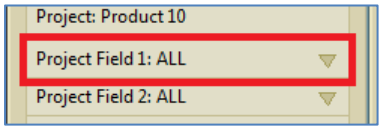


Figure 3.2-3: A selector field on the **Project Filter** section

This selector can then be used to filter out the samples that did not have the selected value. (Figure 3.2-4) Select the ALL value to not filter the samples based on that field.

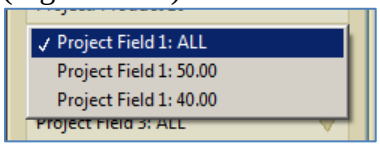


Figure 3.2-4: Selecting a specific filter value.

Once a new value is chosen, click the **Filter** button below (Figure 3.2-5) to filter the samples and then plot the result.

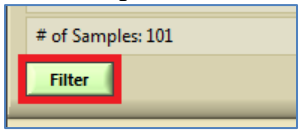


Figure 3.2-5: The **Filter** Button.

All Project Filters applied can be removed by clicking the **Replot Default** button (Figure 3.2-6) on the **DQCsys** Client window.

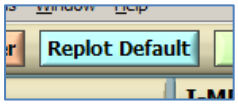


Figure 3.2-6: The **Replot Default** button

3.3 Alarm Log

The Alarm Log (Figure 3.3-1) indicates if the plotted data points exceed control and specification lines with the corresponding graphs. Process changes and shifts are also detected. This point number is specified on the multi-column list-box and corresponding to the data point on the I-MR Chart and **Range Chart**.

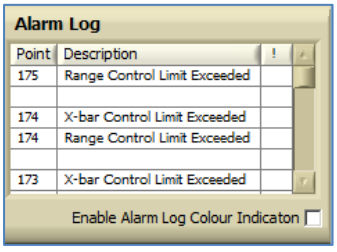


Figure 3.3-1: The **Alarm Log** on **DQCsys Client** window.

Selecting a point on the log will shift the I-MR and Range charts into the view of that point. Please note that the charts may need to be zoomed in before to utilize this feature, see 3.4 Chart Graphical Control for the details on the graphical tools available.

By clicking the **Enable Alarm Log Colour Indication** checkbox (Figure 3.3-2) below the Alarm Log, colour coating which corresponds to the type of alarm will be used in the next plotting of data. Please note plotting may take a significantly longer time to process with this feature enabled.

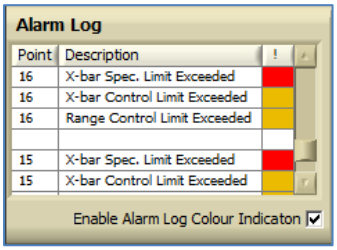


Figure 3.3-2: The **Alarm Log** with colour indication enabled.

3.4 Chart Graphical Control

The I-MR Chart, the Range Chart and the Histogram‘s scales can be controlled using the tools located on the top right corner of each graph.

The magnify glass tool allows the corresponding graph too be zoomed in using various different modes. (Figure 3.4-1)

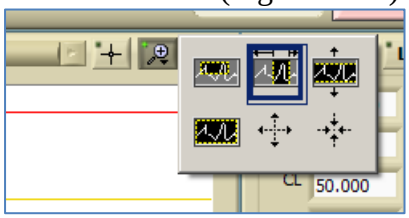


Figure 3.4-1: The magnify glass tool mode selection.

The hand tool allows the corresponding graph to be maneuvered and repositioned. (Figure 3.4-2)

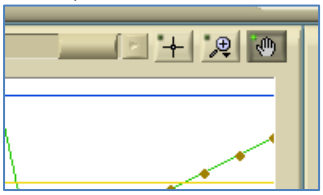


Figure 3.4-2: The grab tool is selected

The scales of the corresponding graph’s scale can be changed manually by clicking the first or last number on the x-axis and or on the y-axis. (Figure 3.4-3)

Figure 3.4-3: The last number on the x-axis is selected.

3.5 Legend Display

The graphs legend can be displayed when clicking the corresponding graph’s Legend button which is located on the right column of the **DQCsys Client** window. (Figure 3.5-1)

Figure 3.5-1: The **Legend** button

For example, clicking the **Legend** button located next to the Label "X-Bar Ctrls' would display the window in Figure 3.5-2.

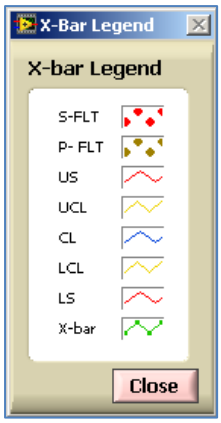


Figure 3.5-2: The **X-bar Legend** Window

3.6 Clear DQCsys Client

The plotted data can be cleared by click the **Clear** button located on **DQCsys Client** window. (Figure 3.6-1)

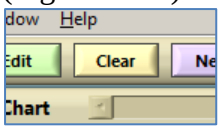


Figure 3.6-1: The **Clear** and **Edit** Button on the **DQCsys Client** Window

3.7 Edit Controls

The data can be re-plotted with edited controls and specifications by first clicking the **Edit** button (Figure 3.7-1) located on **DQCsys Client** window.

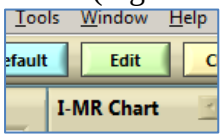
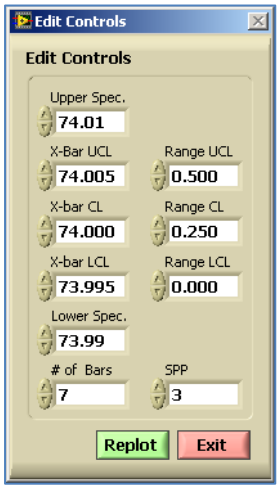


Figure 3.7-1: The **Clear** button.

Then the **Edit Controls** window (Figure 3.7-2) will appears allowing the controls to be



edited.

Figure 3.7-2: The **Edit Controls** window

Click the **Replot** button on the **Edit Controls** window, to re-plot the data with the modifications made. Note that the resulting graphs will have the same controls used for each data point.

The following describes each control:

Parameter	**Full Name**	**Applies to…**
Upper Spec. (US)	Upper Speciation	X-Bar & Histogram Chart
Lower Spec. (LS)	Lower Speciation	X-Bar & Histogram Chart
X-Bar UCL	X-Bar Upper Control Limit	X-Bar Chart
X-Bar CL	X-Bar Control Limit	X-Bar Chart
X-Bar LCL	X-Bar Lower Control Limit	X-Bar Chart
Range UCL	Range Upper Control Limit	Range Chart
Range CL	Range Control Limit	Range Chart
Range LCL	Range Lower Control Limit	Range Chart
# of Sample	Total number of Samples	Histogram Chart
# of Bars	Number of Bars	Histogram Chart
SPP	Samples per Point	X-Bar & Range Chart

4 Create Reports

Plotted data and its relevant information can be exported from DQCsys Client to a single paged report. Reports are HTML files; webpages, that are stored within the user's documents. They can be viewed and printed using a web browser such as Internet Explorer. Figure 4.1 show a sample report.

Every report DQCsys Client creates is based on a stored template. This template can be customized; however, knowledge of HTML and or a web development application may be required. See DQCsys Application Note 102 for more technical information on how DQCsys Client utilizes this template.

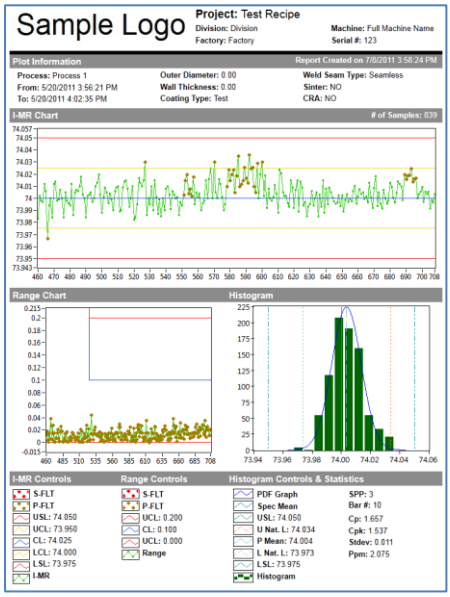


Figure 4.1: A sample report generated by DQCsys Client

The following steps will guide how to create a new report:

1. Click the **New Reports** button on the **DQCsys Client** window to start the **New Report Wizard**; see Figure 4.2**.**

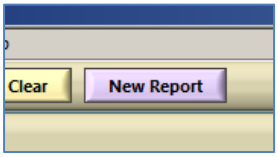


Figure 4.2: The **New Report** Button

2. On the **Name** page, enter the report name; see Figure 4.3. The process name is suggested by the wizard as the filename of the report. However the filename can be changed.

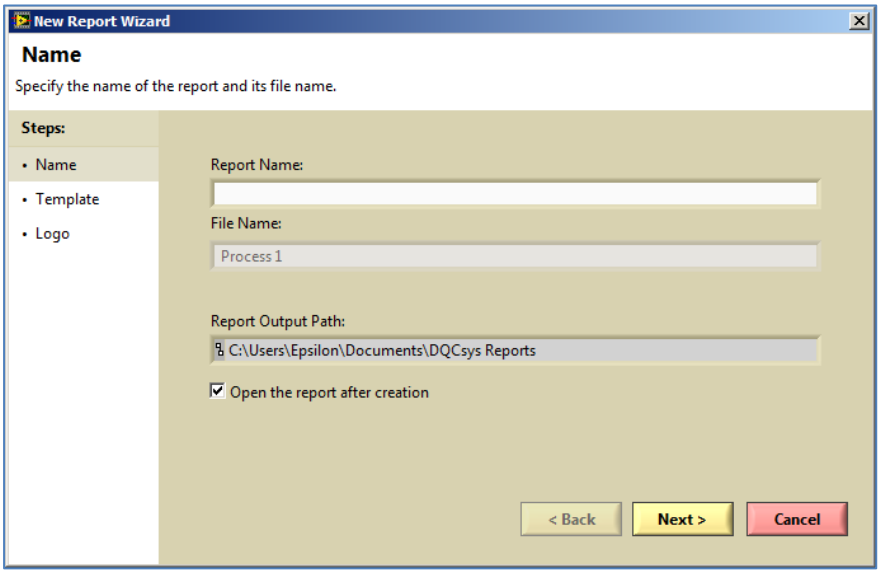


Figure 4.3: The **Name** Page on the **New Report Wizard**

3. Review the report output path as this will be the location of the new report. By checking the **Open the report after creation** checkbox, the new report will open to the default web browser after the wizard is finished.

4. Click **Next** > to proceed to the **Template** page; see Figure 4.4.

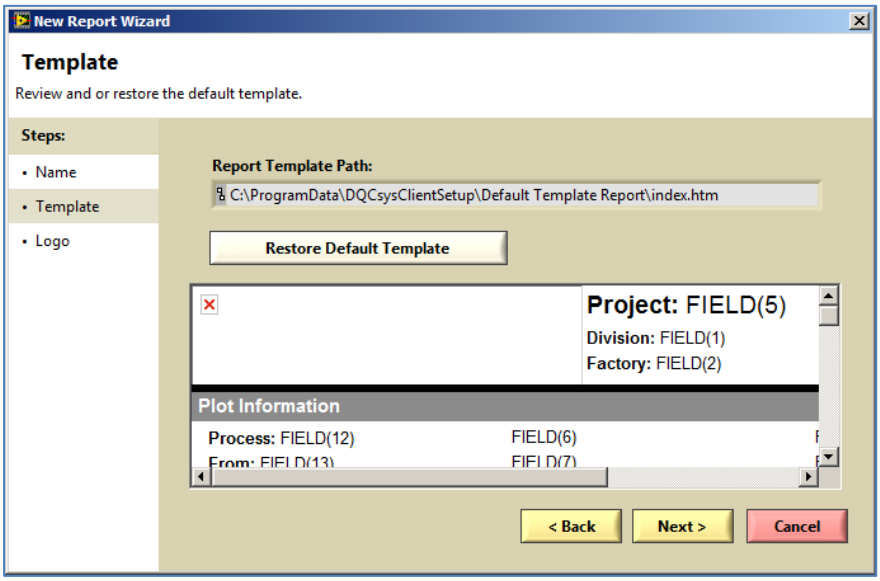


Figure 4.4: The **Template** Page on the **New Report Wizard**

5. The **Template** page displays the path and preview of the report template. Modifications can be made to this template, see DQCsys Application Note 102 for more details. The default template can be always restored by clicking **Restore Default Template**.

6. Click **Next >** to proceed to the **Logo** page; see Figure 4.5.

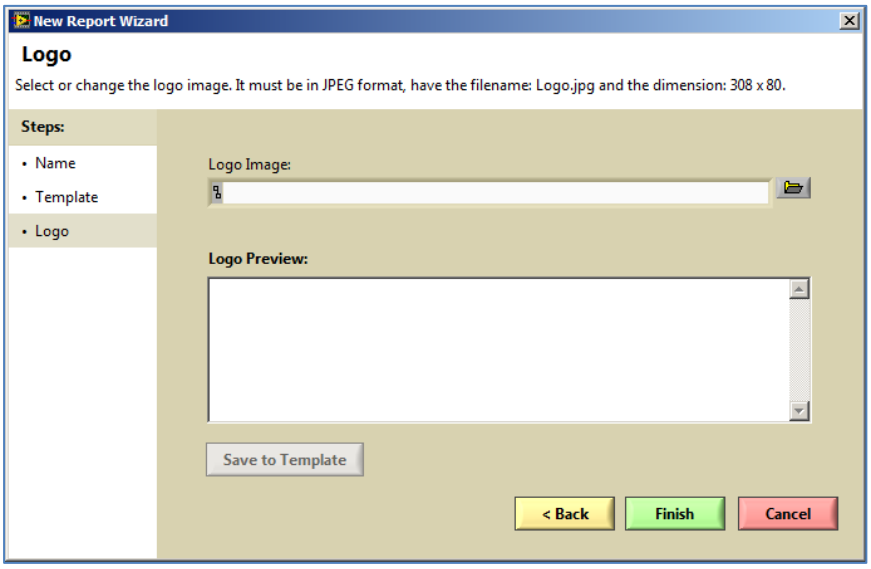


Figure 4.5: The **Logo** Page on the **New Report Wizard**

7. If a logo image was not previously saved to the template, the **Logo Image** and **Logo Preview** fields will be blank. If this is the case, follow these steps:
    a. Click the folder button located right of the **Logo Image** field; see Figure 4.6.

Figure 4.6: The Folder Button

    b. The **Open** dialog will appear, navigate and select an image for the template's logo. The image must follow these constraints:
        - The image must be in JPEG format
        - The image must have the filename: Logo.jpg
        - The image must have a width of 308 pixels and height of 80 pixels
    c. Click **OK**. The image will then be then displayed in the **Logo Preview**.
    d. Click **Save to Template** to finish logo setup.
8. Click **Finish** when done to create the new report. All reports created will be saved under the **DQCsys Reports** folder in the user's documents.

