CorsairHMI Operator

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Operating the Corsair Interface

CorsairHMI software is a powerful interface program that can be used in many different types of industries. Each Corsair program must be developed to meet the needs of a user. Because of that everyone's Corsair program looks and operates differently. This manual is to show features of the program that are general to most situations. If information more specific to your installation is required you might contact the firm that did the integration work.
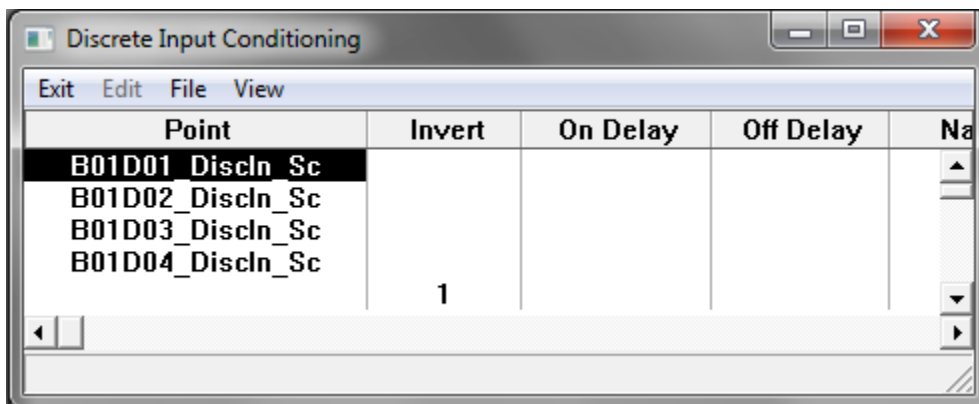
Screens
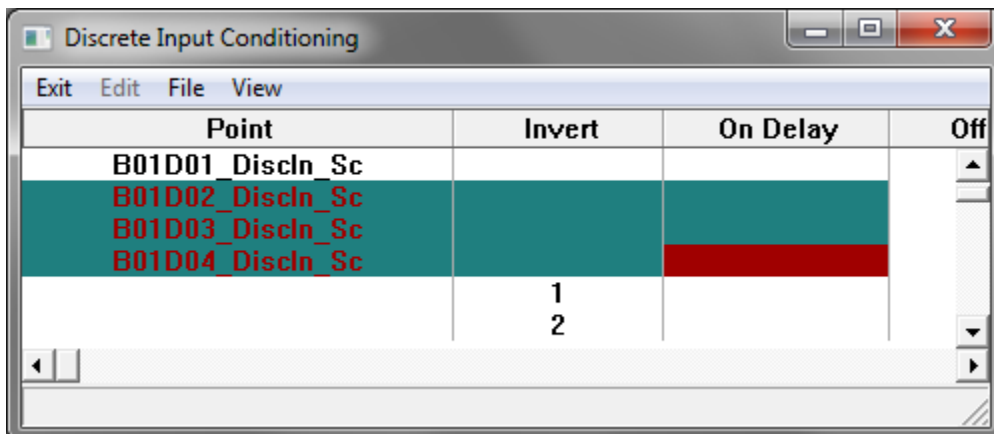
A

M

Control-Q

Control-P

Control-T

Sheets

Sheets are Corsair windows that show data in positions called 'cells'. Cells are arranged in rows that go across the computer screen and columns that go up and down. One cell is shown in a different color than the others. This is the 'current cell'. The current cell may be changed with the arrow keys or by clicking on another cell. The sheet can scroll horizontally or vertically to see cells that are beyond the edge of the window.


Some cells of a sheet are editable. If the current cell is editable the 'F2' key will open the window that edits the value. The same thing can be accomplished by a second click on the current cell.

The operator can select a range of cells on a sheet.   He moves to the upper left cell of the desired range and presses the '.' key. Then he arrows down and right to get the rest of the range.

Range selection is one option for printing. Control + P opens the sheet printing window.
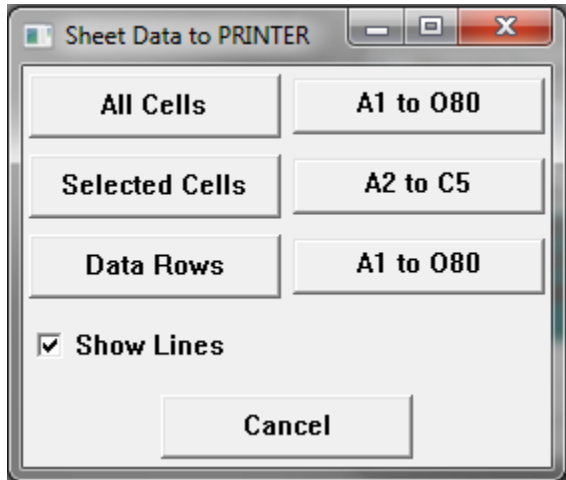
The first option is to print the entire sheet. The second option is to print the range of selected cells.

The third option is to print all the rows of the sheet that have data. When the computer gets to a blank row when all the other rows below it are blank it stops printing.

A similar sheet operation works with the 'File' 'To Clipboard' menu option.
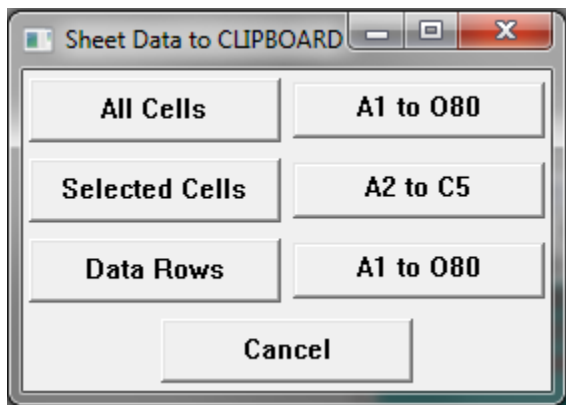
This operation puts the data into the Windows clipboard in a way that is compatible with commercial spreadsheet programs.

A similar operation is available to export sheet data to a CSV delimited test file that can be used by other programs.

Operating a Setpoints Sheet

Most PLC projects have variable setpoint data stored in the PLC. These may be high temperature alarm thresholds in degrees or process water target flows in gallons per minute. A large system may have hundreds of setpoint values. Conventional interfaces may have these setpoints scattered around on various operator screens near the equipment that they are working with.   CorsairHMI can do this but it

offers an additional option. All the setpoints can be collected together at one place on a sheet. This sheet can be printed for a record of what the setpoints are at some point in time. If the values are accidently changed the operator can go to one place in the Corsair program to type in all of them.

The PLC programmer usually is responsible to make sure that the operator does not enter setpoint values that are out of allowable ranges. A high temperature alarm should not be set so high that it is disabled. The PLC programmer may write logic that bounds setpoints to values that he is comfortable with. That way the operator cannot compromise the system. A Setpoints sheet typically has a Value, a Minimum and a Maximum column. The PLC programmer locks values into the Minimums and Maximums. The operator enters the Value column. An entry that is out of the limits is corrected by the PLC logic. The operator can see the allowable range.

Register	Setpoint	Value	Minimum	Maximum
400201	TAL-812 Desorber Exhaust Low Temp Alarm Setpoint, C	0.00	0.00	1000.00
400203	TAH-813 Desorber Exhause High Temp Alarm Setpoint, C	600.00	0.00	1000.00
400205	TAL-822 Desorber Discharge Low Temp Alarm Setpoint, C	0.00	0.00	1000.00
400207	TAH-823 Desorber Discharge High Temp Alarm Setpoint, C	600.00	0.00	1000.00
400209	TAL-832 Oxidizer Chamber Low Temp Alarm Setpoint, C	600.00	600.00	750.00
400211	TAH-833 Oxidizer Chamber High Temp Alarm Setpoint, C	600.00	0.00	875.00
400213	TAL-842 Oxidizer Exhaust Low Temp Alarm Setpoint, C	0.00	0.00	1000.00
400215	TAH-843 Oxidizer Exhaust High Temp Alarm Setpoint, C	600.00	0.00	875.00
400217	TAL-853 Plate Heat Exchanger Inlet Low Temp Alarm Setpoint, C	0.00	0.00	1000.00
400219	TAH-854 Plate Heat Exchanger Inlet High Temp Alarm Setpoint, C	480.00	0.00	480.00
400221	TAL-864 Baghouse Inlet Low Temp Alarm Setpoint, C	0.00	0.00	1000.00
400223	TAH-865 Baghouse Inlet High Temp Alarm Setpoint, C	180.00	0.00	180.00
400225		0.00	0.00	0.00
400227	TAL-822 Startup Delay, Minutes	0.50	0.50	20.00
400229		0.00	0.00	0.00
400231		0.00	0.00	0.00

The left-side 'Register' field is a PLC address. It is there to assist the programmer.

A Reasons Sheet

It is common for a piece of equipment to have several interlocking conditions that must be made before it can start. There may be downstream equipment or safety considerations or temperature alarms. It may not be obvious to an operator what the 'reason' is that a motor will not start. The person that did the PLC programming can look at the programming software on a computer screen and find the reason. This takes time. Frequently the reason is something as simple as a disconnect that was left off or a tripped pull cord safety.

One option with Corsair is to develop a 'Reasons' sheet for each motor. It shows a list of reasons on the left side of the sheet. The right side of each row of the sheet says 'Ready' or is blank. If it is not ready that reason needs to be investigated.

Frequently the way that things are wired means that one condition can change more than one reason. If the power is shut off on a conveyor safety devices on that conveyor may not be ready. Proper design practice is to have the most significant reasons closer to the top of the sheet. The most efficient method is for the operator to investigate the reasons in top to bottom order.

The goal of reasons sheets is to enable the operator to rectify some situations without calling maintenance and to have some information available if he has to call maintenance. The extra time that is needed to implement reasons sheets is more than saved over the lifetime of a control system.

Alarms

Stuff about alarming

## I/O Modules

Stuff about I/O modules

Listed Drawings

Stuff about listed drawings

Clock Set

PLCs may have built-in time-of-day clocks. These clocks are used to summarize production data based upon time of day or to schedule changes in lighting. CorsairHMI contains a section that can be used to set these clocks. Typically this has to be done twice a year when daylight savings time changes. It may have to be done more often if the PLC clocks do not keep accurate time.
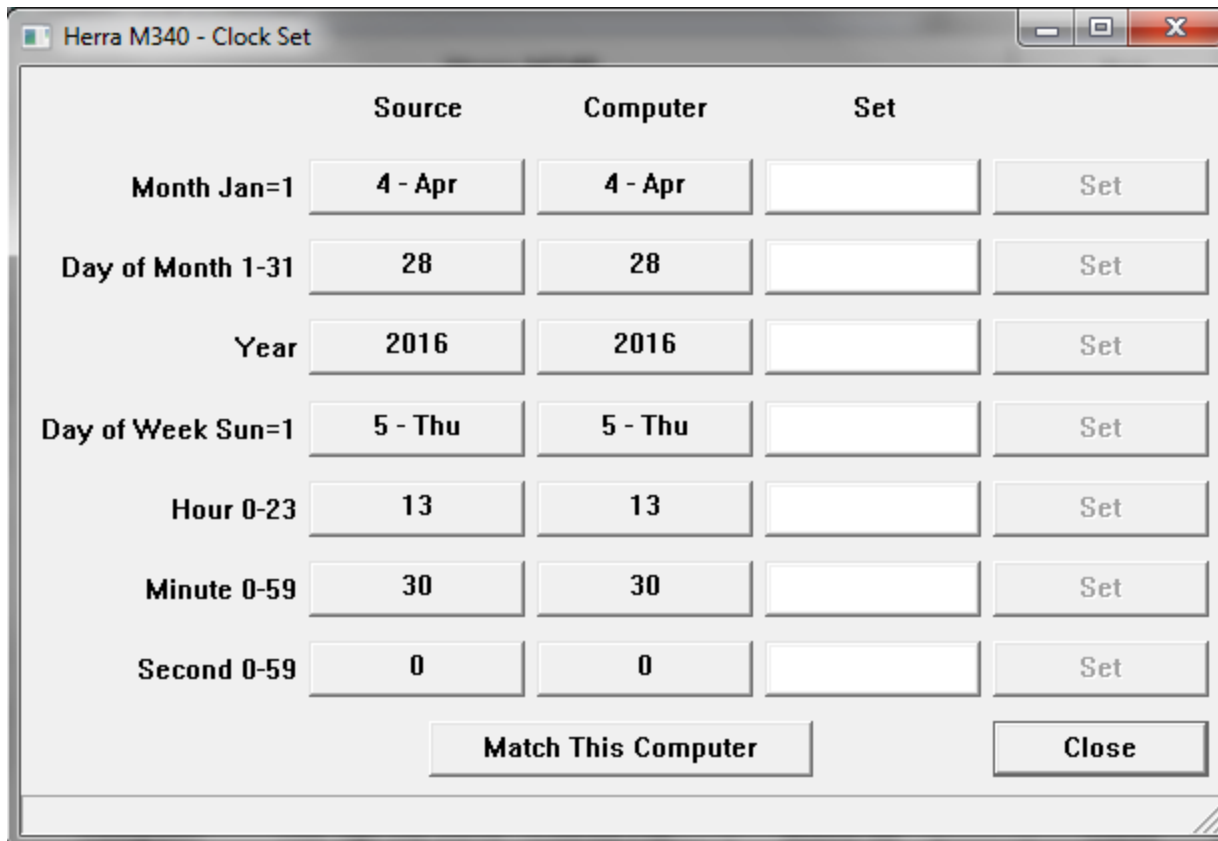
The 'Tools' 'Data Source' 'Clock Set' menu option opens the clock set window.
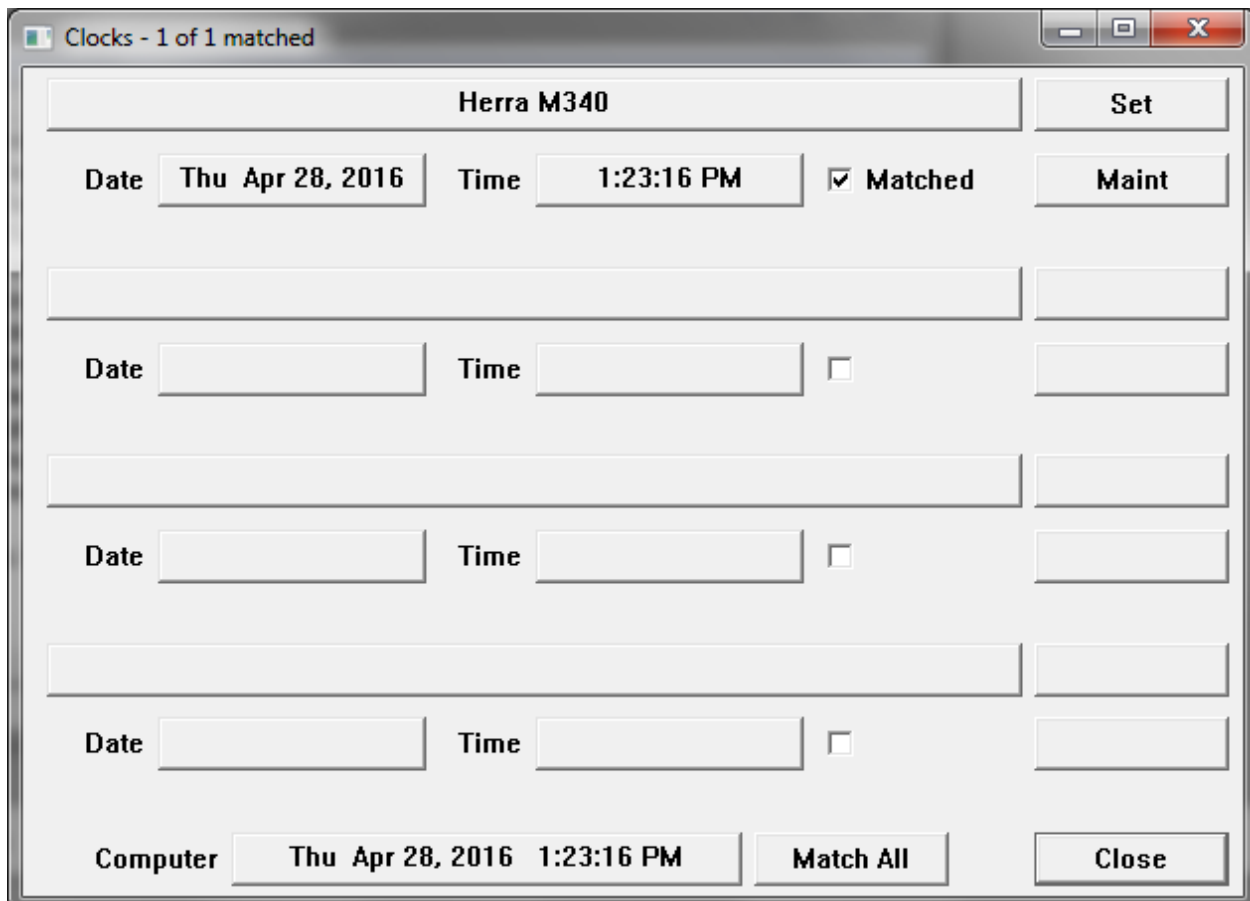
This window shows all the PLCs that have clocks that are recognized by Corsair. The operator can arrow up and down through the list. The title bar shows how many clocks there are and how many are 'matched'. A matched clock has a time value within 5 seconds of the clock on the Corsair interface computer.

Most computer clocks will automatically adjust when daylight savings begins and ends. The current value of the computer clock is shown on the lower left side of the window. There is a 'Match All' button on the bottom of the window. When it is activated Corsair sets the clocks on all the PLCs to match the computer clock. Typically this is all that needs to be done twice a year.

The 'Set' button next to each clock opens the individual PLC clock set window.

	Source	Computer	Set	
Month Jan=1	4 - Apr	4 - Apr		Set
Day of Month 1-31	28	28		Set
Year	2016	2016		Set
Day of Week Sun=1	5 - Thu	5 - Thu		Set
Hour 0-23	13	13		Set
Minute 0-59	30	30		Set
Second 0-59	0	0		Set

Match This Computer   Close

The Source column shows the current clock values coming from the PLC. The Computer column shows the values coming from the Corsair computer. This enables the operator to set individual clock items or to match just that PLC without matching the others. He enters a number into the 'Set' column and then clicks on the corresponding 'Set' button.

Battery Low

Quick Trends

Quick trends are one way for the operator to view a plot of a data value versus time. An operator can view a quick trend plot of any number on a graphic screen by placing the cursor next to it and pressing Control-Q on the keyboard.
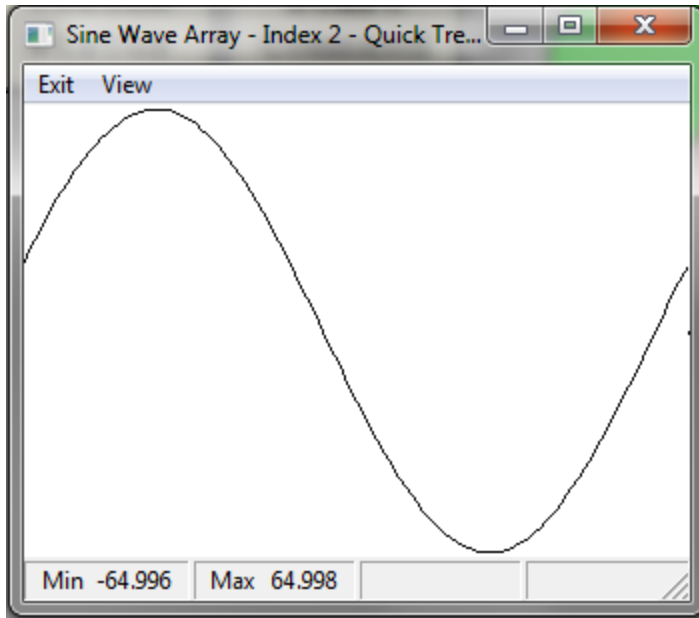
The quick trend plot starts out empty. Corsair starts building up the data and the plot works its way across the window as soon as it is opened. The data is lost when the window is closed. The scale that is used for the plot is determined automatically from the data.

The first two sections of the status bar show the minimum and maximum values since the window was opened. The third section of the bar shows the value of the tag at the time of the cursor position. The fourth section of the bar shows the time of the cursor position.

The 'View' menu item presents selection options for the time width of the quick trend window. The 'View' 'Details' menu item displays some information about the plotted data.

Trends

Trends are plots of the data values of one or more tags over time. Trend data starts to build up when the Corsair program starts running. It is lost when the program quits running or the computer loses power.
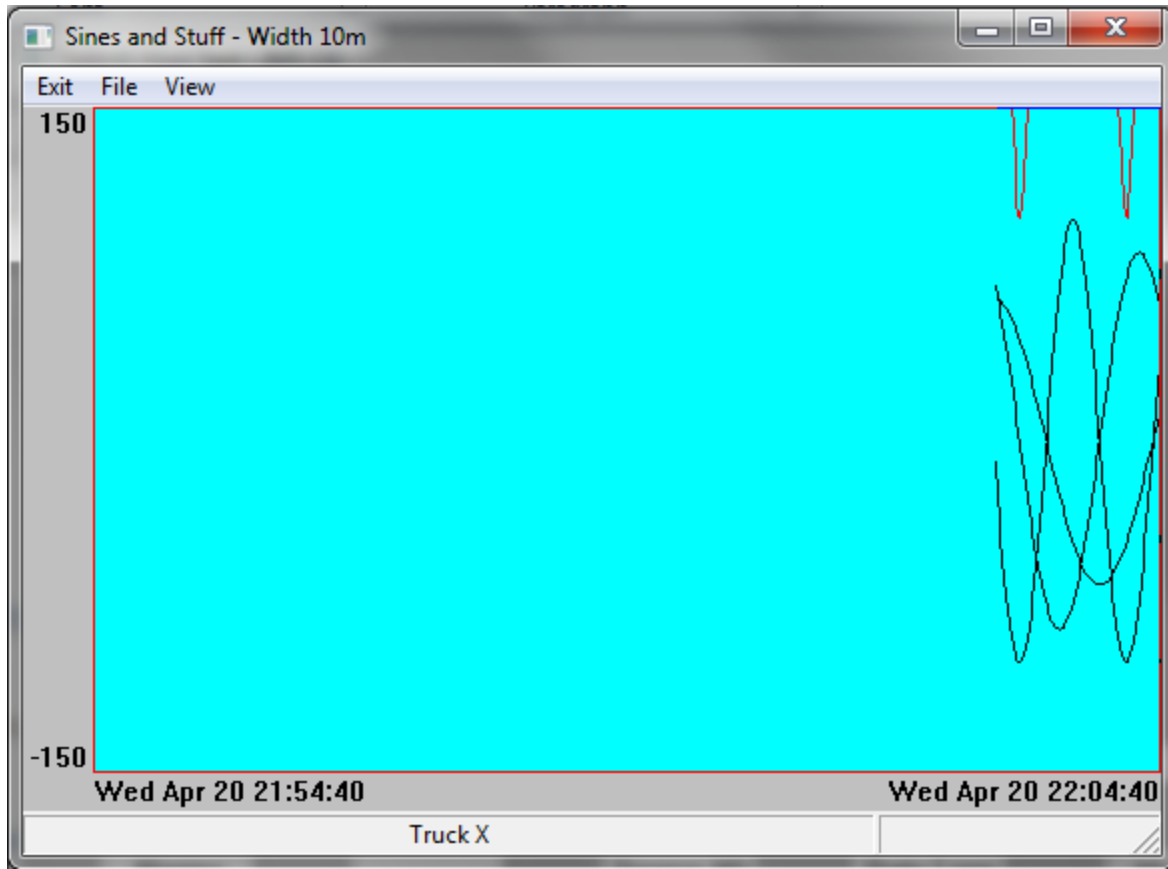
A trend can have plotted traces from multiple tags. All of the traces use the same minimum and maximum scaling.

The name of one tag is shown on the left side of the bottom status bar. If the mouse cursor is moved over that plot trace the value at that time appears on the right side of the status bar. The page up and down keys can change which tag is shown at the bottom.

The time corresponding to the cursor position appears in the center of the window under the plot region.
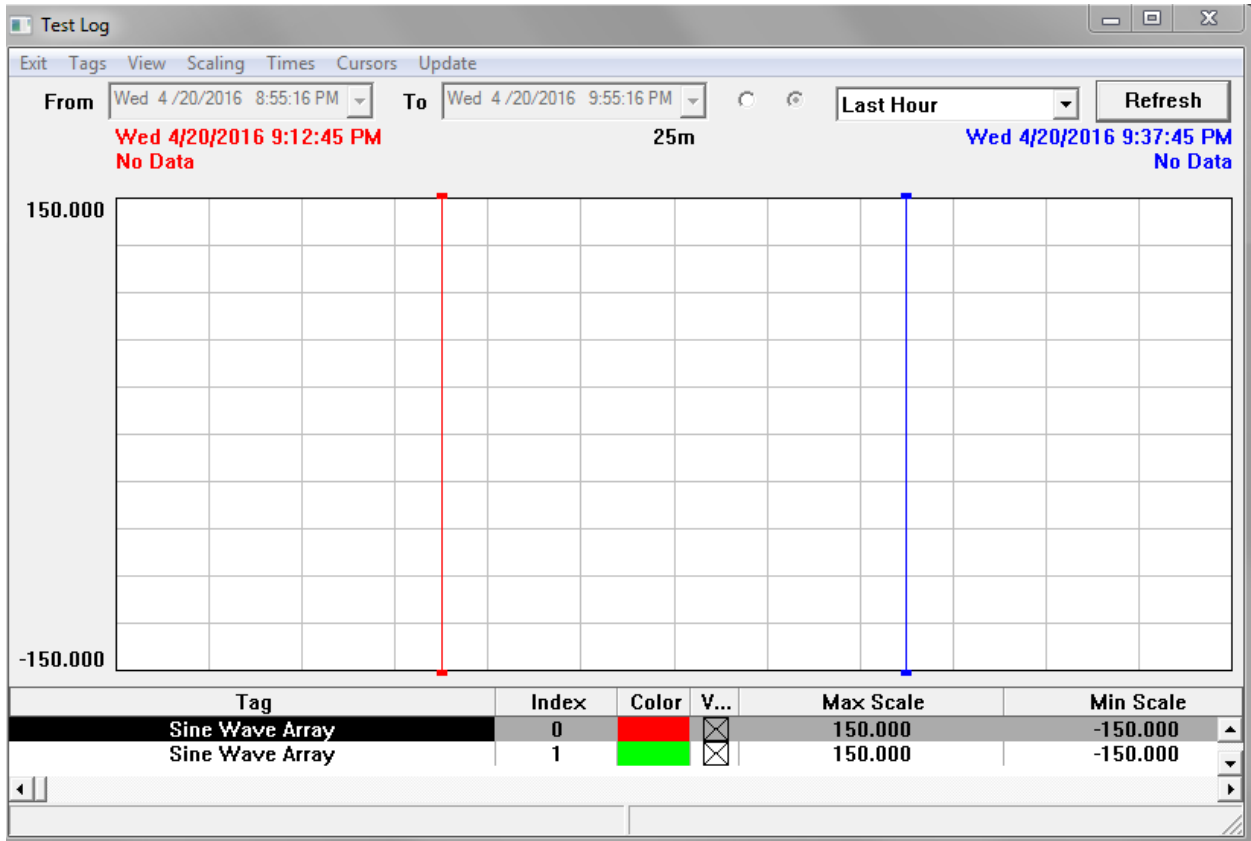
Control-P can be used to start a print of the trend.

Log Plotted Data

Data that is stored in a log file can be plotted versus time on the computer screen. The first step may be to click on the 'Data Logs' button on the Corsair desktop window.

A window is opened for the plot display. Log data is saved in a disk file so it is not lost when the computer power is off.

The tags whose values are saved in the data log are listed on the bottom of the window. Each tag has a maximum and minimum scale value. The tag with highlighted data is the 'current tag'. Its scale is the one shown on the left side of the graph area. The current tag can be changed by arrowing up or down. Plotted log data is different than a trend plot because each tag is plotted to its own scale.

The first step is for the operator to specify a time interval. There is a selector on the top of the window that can select a time interval. It can range from 'Last Hour' to 'Last Month'. The two radio buttons to the left of this selector are used to pick if it is used or if custom 'From' and 'To' times are entered.

Once the desired time interval is set up the operator can click on the 'Refresh' button to see any available plot data for the time interval.

The system defaults to two X time cursor lines, one red and one blue. They can be moved by putting the mouse cursor arrow over the cursor line, pressing the left mouse button down, and moving the cursor. Releasing the button drops the cursor line at the new position. At the top of the graph the time corresponding to each cursor line position is shown. The red cursor's time is shown in red text. In the center of the window the time difference between the two cursors is shown.

The values of the current tag at each cursor line time are also shown. The difference between the values at the cursor lines is shown in the center.

If the operator sees a disturbance at some section of a trace he can place the X cursor lines on either side of it and pick the 'Times' 'Set to X Cursors' menu option. It changes the plots 'From' and 'To' times to magnify the disturbance.

If a tag has been set up to integrate over time Corsair can integrate the value between the two cursor times. This data is in the table on the bottom of the window. If the tag is a flow in gallons per minute the integrated total is in gallons.

Y value cursor lines can be enabled. They can be adjusted up and down to see two values and their difference.

Corsair has options for the operator that does not want to see all of the plotted lines on the log. One option is to click on the visibility X marks on the bottom tag list. Another option is pressing 'S' to go to single trace mode. With single mode only the current tag's trace is shown. Arrowing up and down will change between traces.

History

The History View window is very similar to the log plotted data window except that it is not associated with a particular data log. It is opened from clicking on the 'History' button on the Corsair desktop.

The log plotted data window opens with a list of the tags that are on that log. The history window opens with no tags.
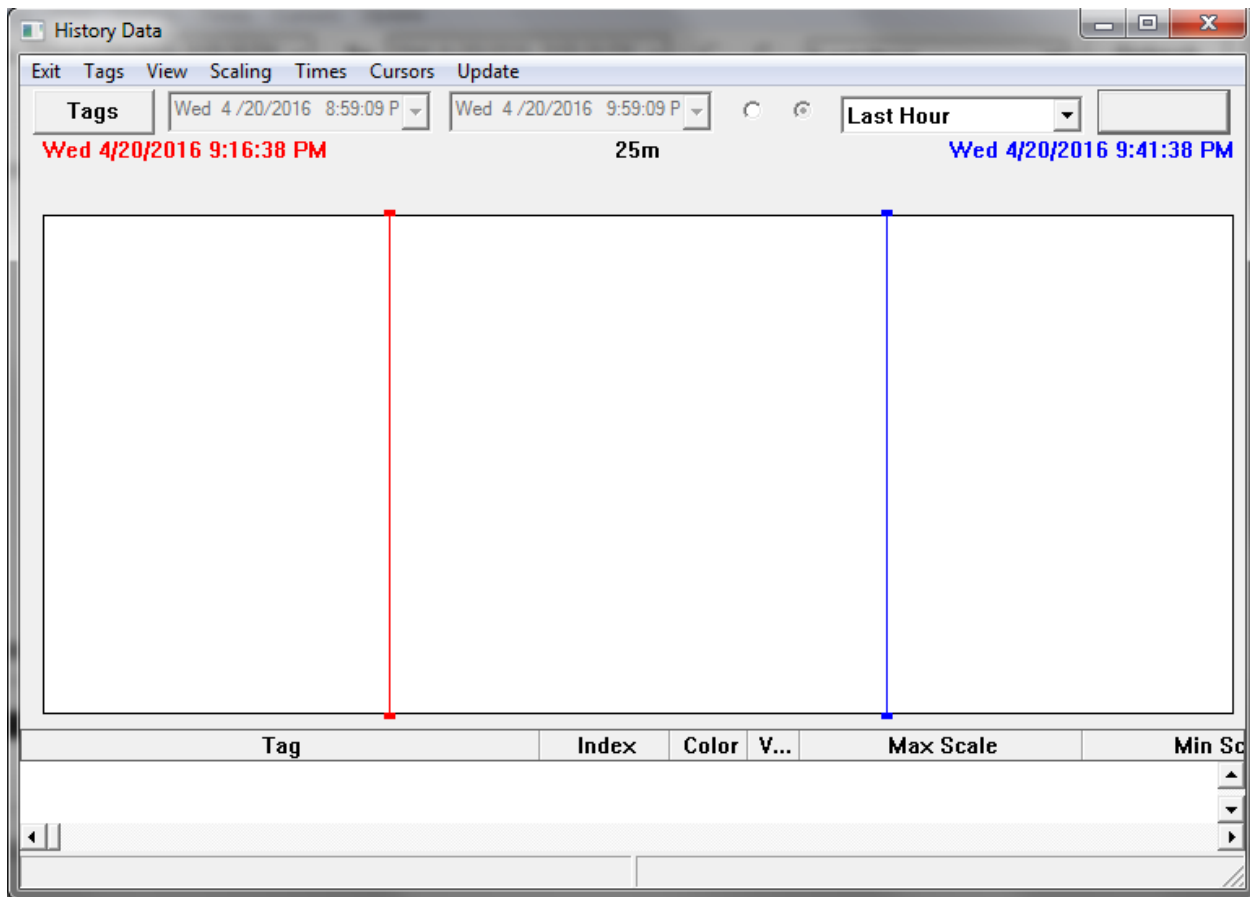
The operator has to select what tags he wants to see on the history window. He does this by clicking on the 'Tags' button on the upper left side and selecting the Tag that he wants. He may select up to 400 tags for the window. When the refresh button is clicked the computer tries to fill in the history data any way that it can find it – from data logs or trend samples. Operation of the window is like the plotted data window with the same control options.

Turn-Back-Time

The Turn-Back-Time feature is an alternative to plotted views of historical data. Plotted data requires the operator to be familiar with tag names of the data items. Many times the operator may not be interested in how a value changes over time. He may just need to know its value at a single point in time, like last night at midnight. Turn-Back-Time is an easy to use solution to these problems. The computer uses the information that is available to it to construct as completely as possible what a graphic screen looked like at a point in time.

Turn-Back-Time is accessed from any screen by pressing the 'Control' and 'T' keys. A window appears that has a time and date picker control on the upper left corner.
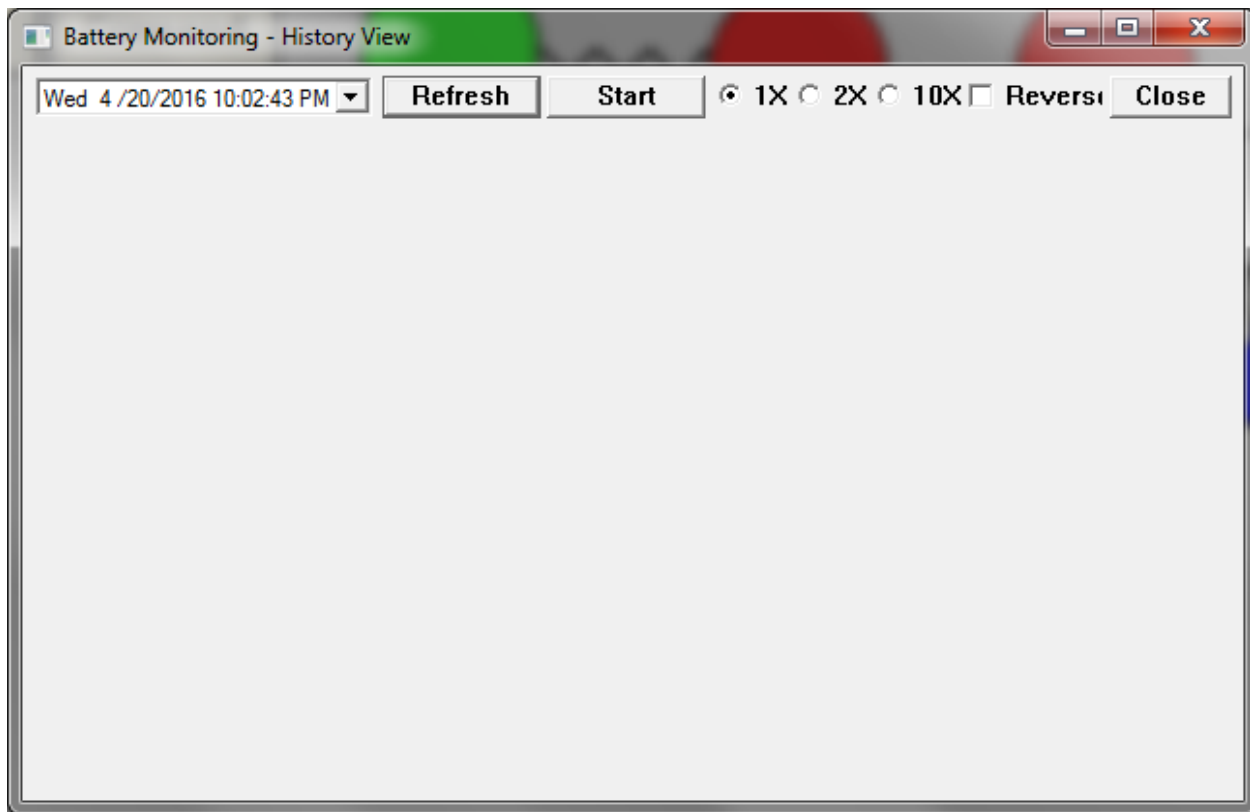
The operator enters the desired date and time into this control. When the time is correct he clicks on the 'Refresh' button and the computer shows him the turned-back version of the screen. It looks through trend samples and data log files to find out as much as it can.

[the auto-refresh mode is not operational at this time]

A window can be turned back to a time like yesterday at noon. Clicking on 'Start' activates the auto-refresh mode. Every 5 seconds the computer advances the time window by 5 seconds and then updates the screen. It 'plays back' what happened at that point in time. This playback rate can be sped up by a factor of 2 or 10 times. The playback can also go in reverse.

Event Logging

Xxx

Report Forms

Report forms are used to generate printed and disk reports from data that has been logged using the Event Logging system.

Web View

Xxx

Multiple Models

Xxx

Touchscreen Cleaning

Touchscreens get dirty in industrial applications. They need to be cleaned in accordance with the manufacturer's recommendations. Cleaning an operating interface screen can be a problem if it results in accidental activation of touchscreen targets. Corsair includes a standard feature that enables touchscreen cleaning without any potential problems. It is a special window that does not respond to touches or mouse clicks. It also ignores all keys except for the Esc key. This allows it to also be used for cleaning the keyboard.

One way to get to the cleaning screen is to use the Help/About menu option. There is a button labeled 'Clean' that opens the cleaning window. It remains open for 60 seconds or until the Esc key is pressed.