

DASyLab Techniques

Using Cursors in the Display Modules

Updated to include DASyLab 2020 features

The DASyLab graphical display modules render the data into a graphical chart display in the following DASyLab modules:

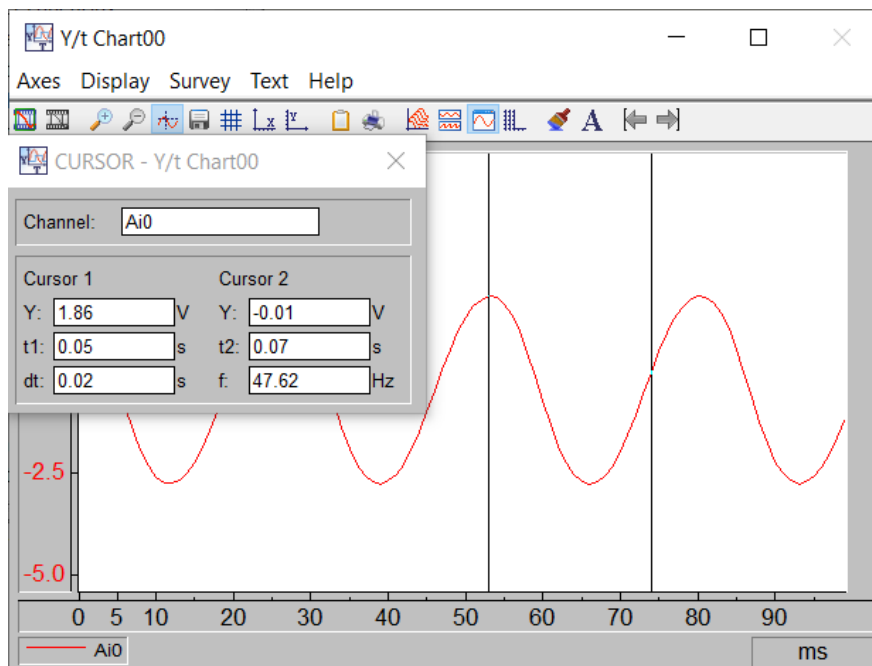
- Chart Recorder**
- Y/t Chart**
- X/Y Chart**
- Diagram**

You can use the Survey features of these modules to review and analyze the data displayed. The cursor feature in the Diagram module works differently from the Chart modules. See below for more information.

Usage- Chart Recorder, Y/t Chart, X/Y Chart

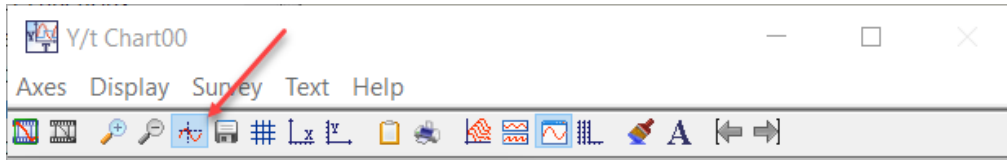
You can use cursors while the measurement is running or stopped. The cursor position is relative to the chart display window; as data updates, the cursors are stationary while the values change. The cursors are not fixed to the data.

To move the cursor, use your mouse to select the vertical line that represents the right or left cursor. Left click and hold to drag the cursor. If you drag the cursor to the other side of the second cursor, the values will swap in the cursor display window. The leftmost cursor is always Cursor 1, and the rightmost cursor is always Cursor 2.



Standard Cursors

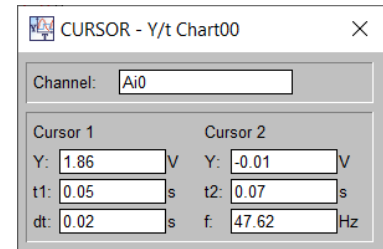
To activate the cursors, open the Survey menu, and select Survey. You can also activate by clicking on the Survey button on the function bar.



This will activate a new window which will display six values:

- value of Y_1 and Y_2 ,
- time, t_1 and t_2 , of Y_1 and Y_2 ,
- the computed time, dt , between Y_1 and Y_2 ($dt = t_2 - t_1$)
- the computed frequency, f , between Y_1 and Y_2 ($f = 1/ dt$)

Appropriate units are displayed. The number of decimals can be changed in the Survey menu → Cursor data format/Variables.

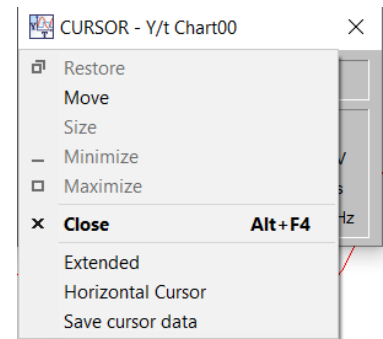


Extended Cursors

The Extended Cursor mode displays more information about the data.

To turn on the Extended Cursor:

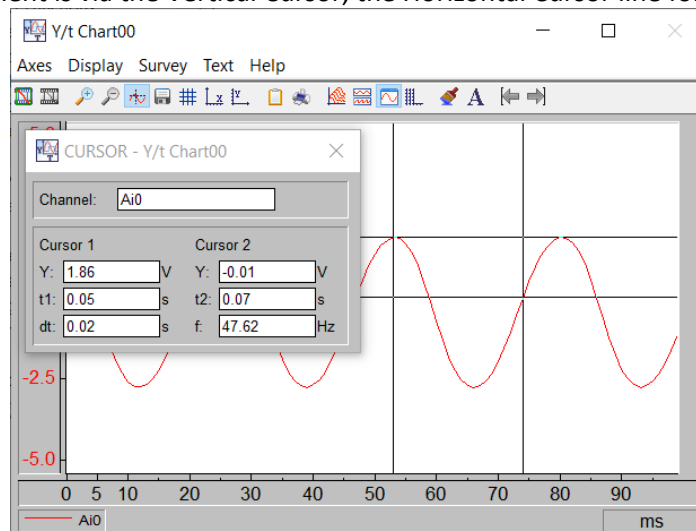
- Choose the Survey Menu → Extended
- Or – click on the upper left corner of the cursor window to select Extended



Horizontal Cursors

To make it easier to determine which value on the curve is selected by the cursor, you can add a horizontal line to the cursor. While you cannot move the horizontal line directly, it follows the vertical cursor and helps you to find an amplitude value.

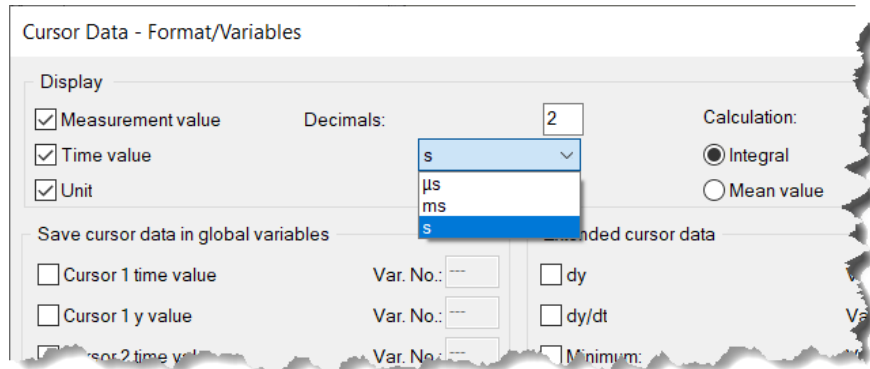
- Add a horizontal line to the cursor
 - Choose the Survey Menu → Horizontal Cursor
 - Or – click on the upper left corner of the cursor window to select Horizontal Cursor
 - All movement is via the Vertical Cursor, the Horizontal Cursor line follows the Vertical line.



Configuring Cursors

You can change the information displayed in the cursor window in the following ways:

- Open the Survey→Cursor Data Format/Variables using the menu in the Display Window.
- If menus are not displayed, use the mouse to Right-click, and then choose Survey→Cursor Data Format/Variables.



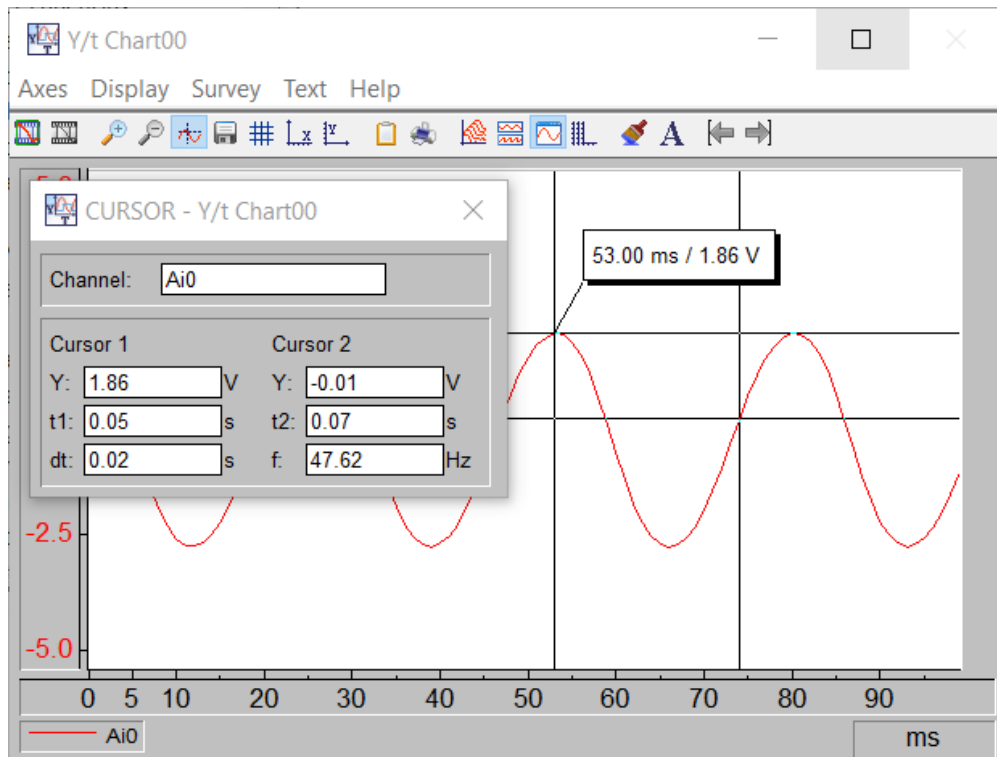
This dialog box allows you to decide what data to display and how to store the data into global variables, which will be discussed at the end of this paper.

The top section of the dialog box, labeled “Display”, allows you to configure what information is displayed in the cursor window.

You can specify the time display units, from microseconds to seconds, and, in the Chart Recorder, up to the full date and current time. You can determine the number of decimal places to display; the default is 2.

You can also determine whether to display an integral (the area) between cursor 1 and cursor 2, or the Mean Value (Average) of the data between the two cursors.

Displaying Cursor Values in the Chart Display Window



DASYLab Techniques: Using Cursors in the Chart Display Windows

To display the value and time of the current cursor (the one moved most recently), click the space bar. A box will appear on the display with the value and time shown. You can move the text box on the display for clarity. A line will connect the text box to the data value on the graph.

To remove the Text box, select the Survey menu, and click on Delete Cursor Text. Double-click on an individual text box to remove it.

- Chart Recorder: the text box displaying the cursor value stays with the data point.
- Y/t Chart: the text box stays at the x-axis (Time or frequency) location in the display window and the Y-value (amplitude) updates as the data changes.

Additional things to know

If you “lose” one or both of the cursors, click on the edge of the display to pick it up, or, close the cursor window and reopen it.

Generally, the cursors follow the data as it is plotted. The Y/t Chart and the X/Y Chart have an option to use a “free cursor” that is not locked to the data.

Chart Recorder

You can zoom between cursors using the Function Bar button or the Survey menu option.



When zoomed, the cursors will stay with the current data if you scroll the window, and will move off the display.

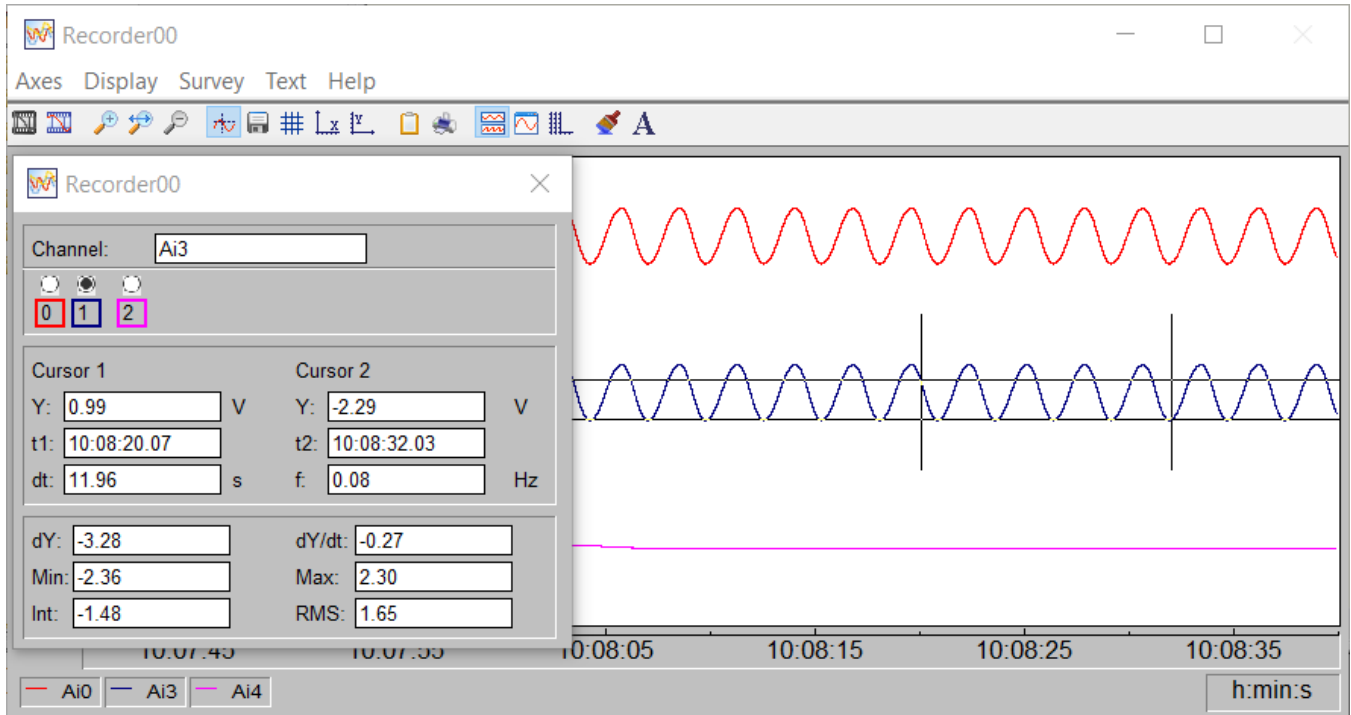
Y/t Chart

You can configure the cursor to be a small crosshair style cursor in the Y/t Chart.

X/Y Chart

The X/Y Chart cursors are different than the Chart Recorder and the Y/t Chart because the X-axis is not necessarily a time axis. The only cursor is the small cross-hair style cursor. The cursor follows the data as plotted. Movement is determined by the data, and follows the curve.

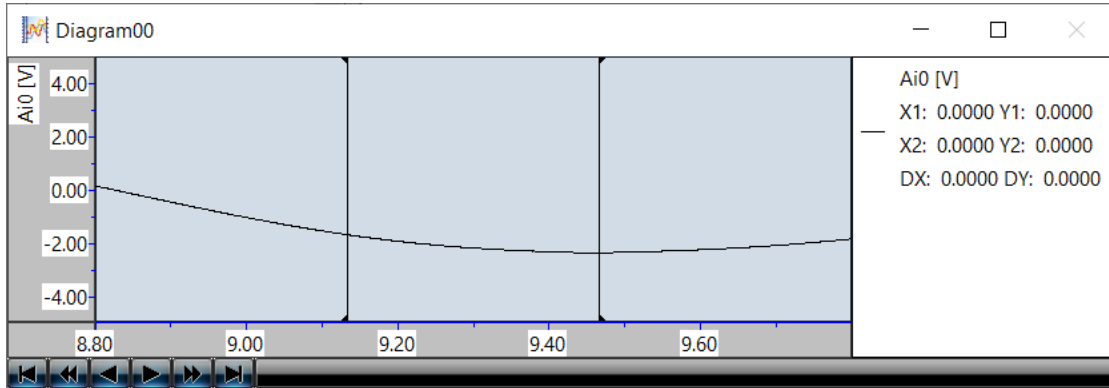
Multiple channels



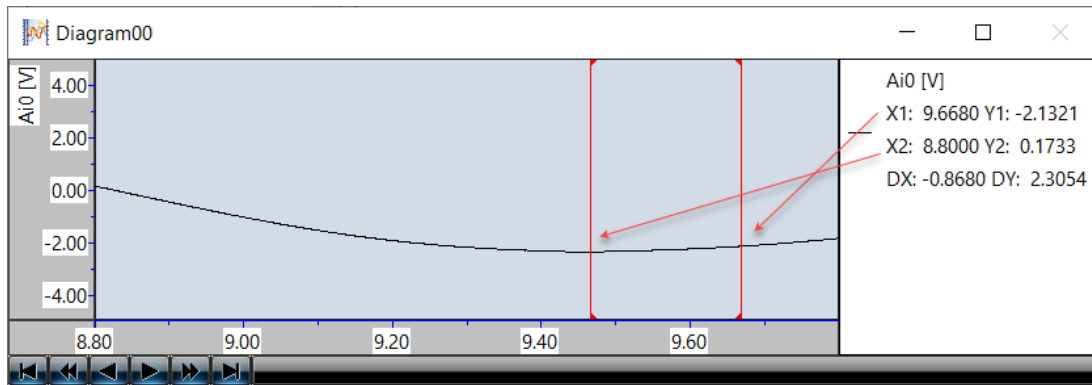
When the display has multiple channels configured, you can move from channel to channel using the selector in the cursor display window.

Diagram Module

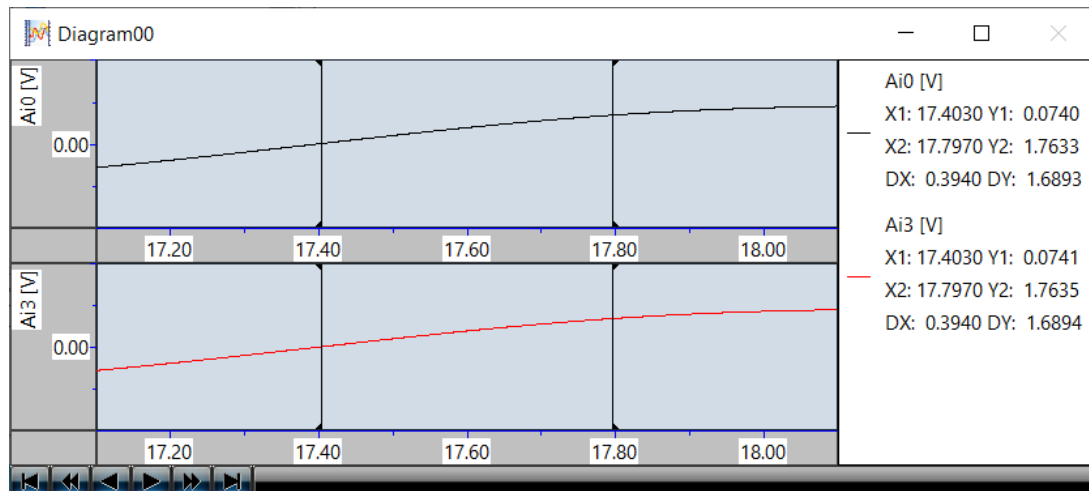
The Diagram module cursors are not the same as the chart modules. It shows two cursor lines on all axes and will display the curve values of the two cursors in the legend. You do not have to open a separate display window. You can review cursors in offline mode or when you right-click to freeze the display. You can use the mouse to move the cursor.



Move the cursor over the plotted curve before the measurements starts or when you freeze the curves to survey the curve. X1 and Y1 display the values of the cursors on the left when the measurement starts and X2 and Y2 display the values of the right cursor. If you move the left cursor over and beyond the right cursor, DASYLab displays the cursor in red and X1/Y1 now displays the x and y-values of now seemingly right cursor. The red line indicates that the cursors have swapped sides, with X2/Y2 on the left and X1/Y1 on the right.

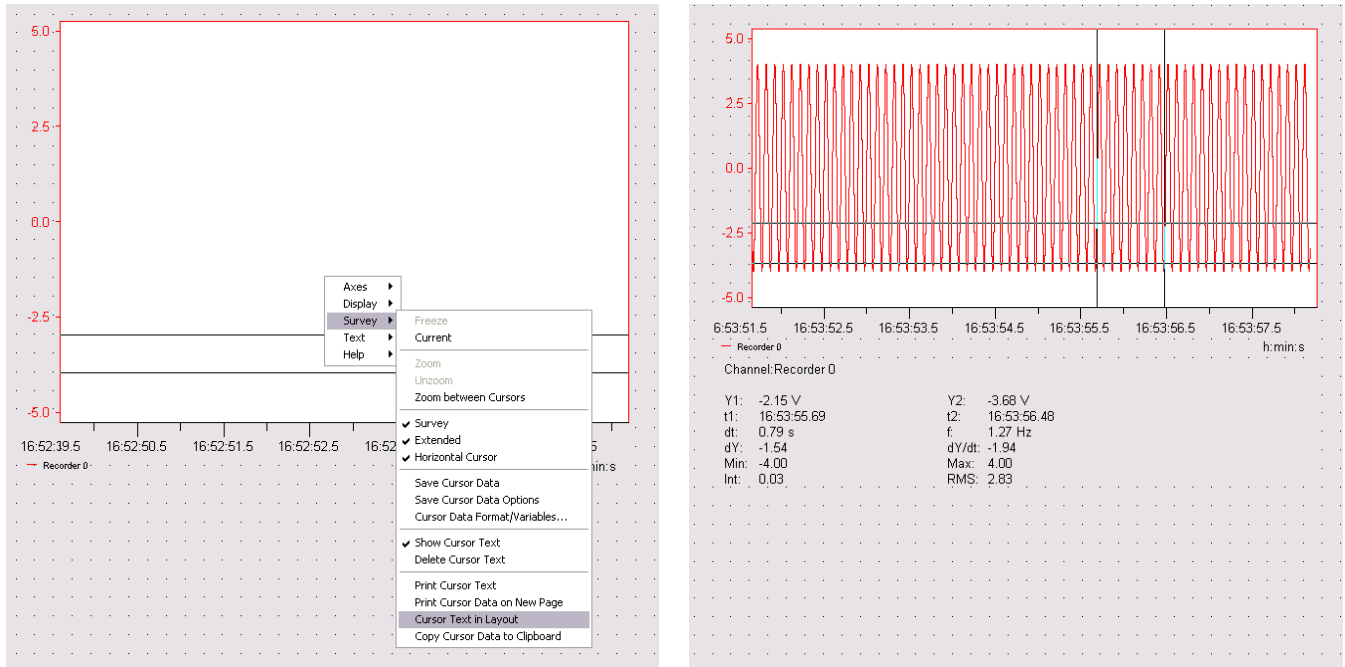


This image shows a multi-axis Diagram Both channels display cursor data at the same x-axis position.



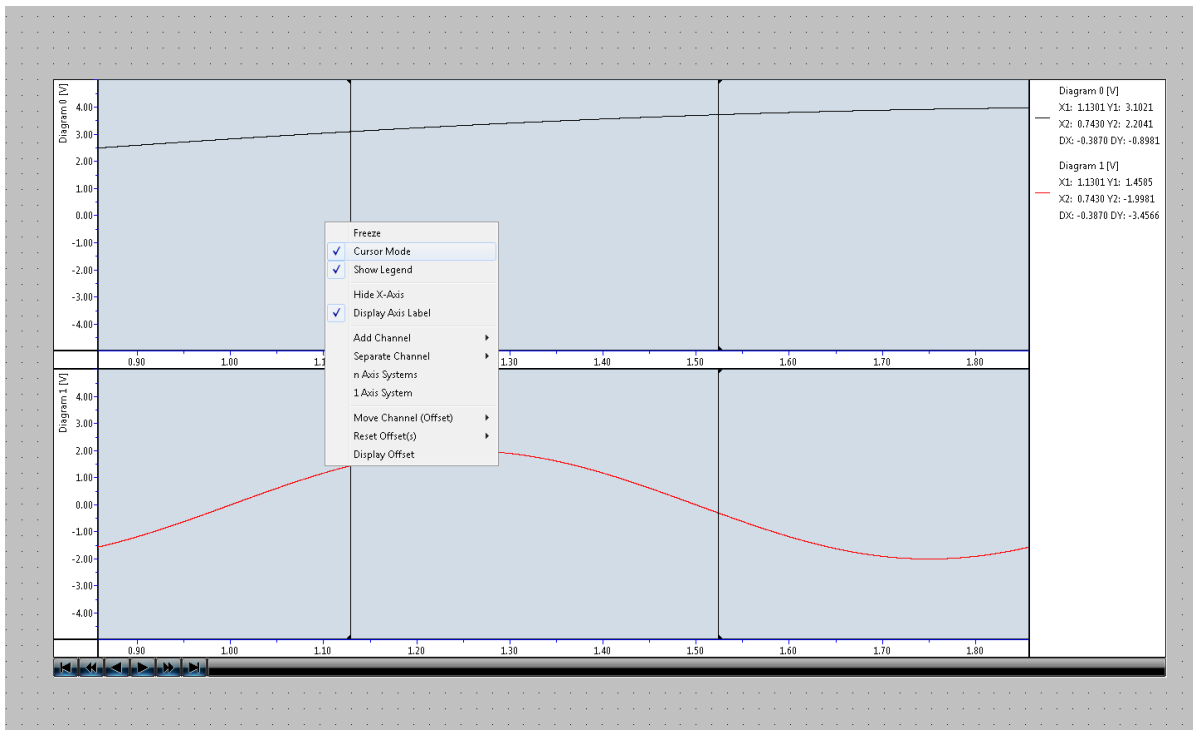
Using Cursors in a Layout

For the chart modules, use the right-click menu to activate and use cursors in a Layout view; select Survey to activate. To display the cursor window, activate the “Cursor Text in Layout” option.



The chart area is decreased, to make space for the cursor data, as shown above. Allow extra room when you create the graph object on the layout.

For the Diagram module, the Layout view must be in Full screen mode. Either stop the measurement or freeze the Diagram before activating the cursor mode. The cursor displays in the legend area, as in the Worksheet display window.



Saving cursor data

Store cursor data to a file

Use the Survey menu → Save Cursor Data Options to specify which information you want stored, and the file name and file type where it will be stored.

The Diagram module does not have a Save Cursor option.

Choose the data to store from Cursor 1, Cursor 2, Cursor 1 and 2, all cursor data, or, all data between the two cursors.

Choose the data format from DDF (DASYLab binary format) or ASC (readable ASCII text). You can specify the name, and protect the file by using append or multi file options.

Use the Survey menu or the cursor display window menu to store the cursor data to a file. You can also use an Action module to store the data based on user input or data events.

Save Cursor Data-Options

Save

All data between cursor 1+2

All channels

Block options

Fill up to channel block size

Data format

DDF format (standard) Precision of floating point values

ASCII single (REAL32) double (REAL64)

File options

Overwrite file Write protection

Append to existing file

Write multifile

File

C:\Users\Public\Documents\DASYLab\15.0.0\eng\data\DEFCUR.DDF

Read file from global string

Global string: ---

OK

Cancel

Help

ASCII...

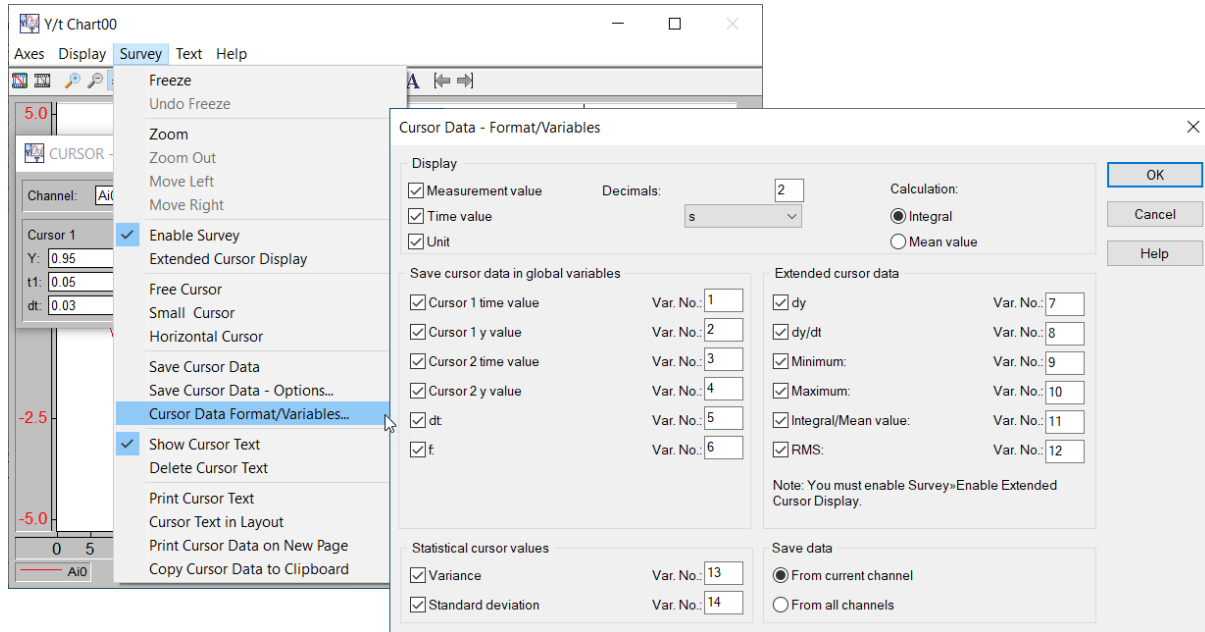
Multifile...

File...

Store cursor data to Global Variables

You can configure the Survey feature to store cursor data into Global Variables. DASyLab will store up to 14 different values for each channel. The cursor data is copied to the variables as the data changes and when the cursors are moved.

From the Survey menu of the Y/t Chart, X/Y Chart, and Chart Recorder, select Cursor Data Format/Variables to configure the data and variables.



You can configure the chart to save data for the current channel or for all channels. When you select all channels, the variable listed is the START variable. Channel 0 Cursor 1 time value, for example, will be stored in Variable 1, channel 1 in variable 2, channel 3 in variable 4, and so on.

Ensure that you don't overlap the variables, as would happen in the figure above. The example below is configured to store 10 channels of cursor information. The Cursor 1 time value will be stored in variables 1-10, the y-value in 11-20, and so on.

