

"How To" For Scaling Input Data with the Model AD128 (C Version) and C&A Version 4.0

About Scaling and Sensor Profiles

Voltage levels from sensors or other circuits that are to be recorded by the Model AD128 logging unit may be scaled to any linear unit of measure. This is best done by defining the *Configuration* (before recording) so that the data is always seen in its intelligible form, whether in the spreadsheet view or the graph view. However, the raw data is not affected and may be re-scaled or "un-scaled", at any time, from the spreadsheet or graph views.

To scale data to a meaningful unit of measure (e.g. degrees Fahrenheit, PSI) a mathematical formula is applied to the raw data. For linear conversion (scaling), two known values are required to apply the appropriate formula to the raw data. Alternately, these two points may be described in the form of an equation, such as the popular zero-span method or slope/intercept. The scaled data is then presented in terms of a unit of measure, as specified.

The Configuration & Analysis Software V4.0 program manages a database of "sensor profiles" that consist of the aforementioned scaling parameters. This greatly simplifies the configuration setup process by enabling the software user to simply select sensor profiles to apply scale conversions to input data, once a particular profile has been created. These profiles can be selected directly from the Channel Details window, as described below.

Additional Notes About the Channel Details Window

Channel labels can be modified in the Channel Details window. When the window is closed, changes will be reflected in the Configuration Window.

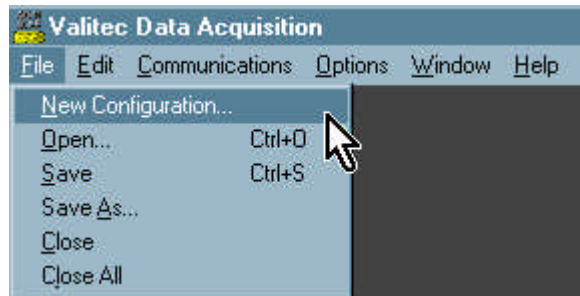
The Input Type section is not normally used. The "0 to 5 volts" option should be used, normally. This field affects the scaling of input data and, if set to "0 to 10 volts", the scale conversion will be in error by a factor of two.

Trigger setup is also initiated from the Channel Details window. To enable and specify event-triggered recording, select the Triggering... button in the Triggering section.

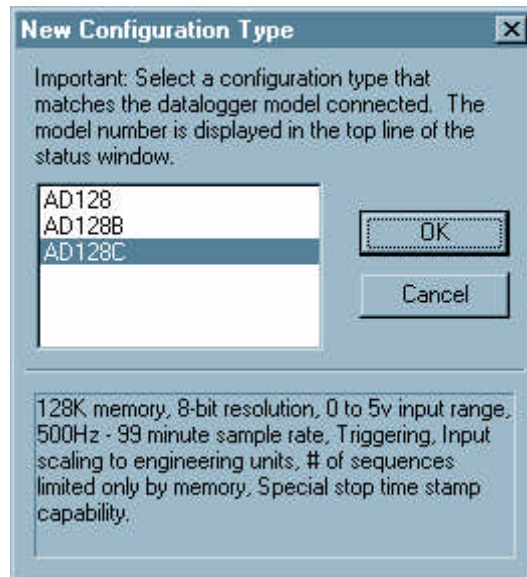
Scaling Setup Procedure

First, Create A Configuration

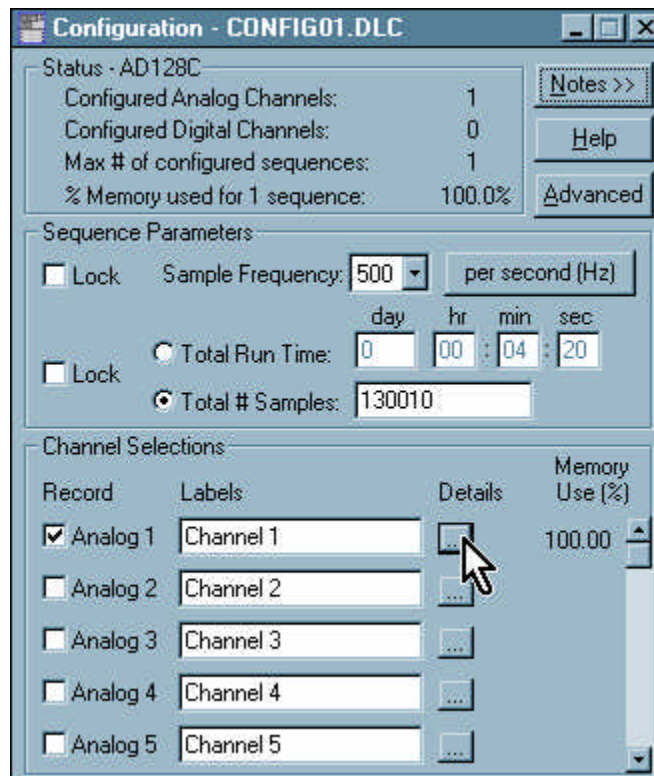
1. Select File | New Configuration... from the main menu of the Configuration & Analysis Software Version 4.0 program window.



2. Select "AD128C" as the New Configuration Type.



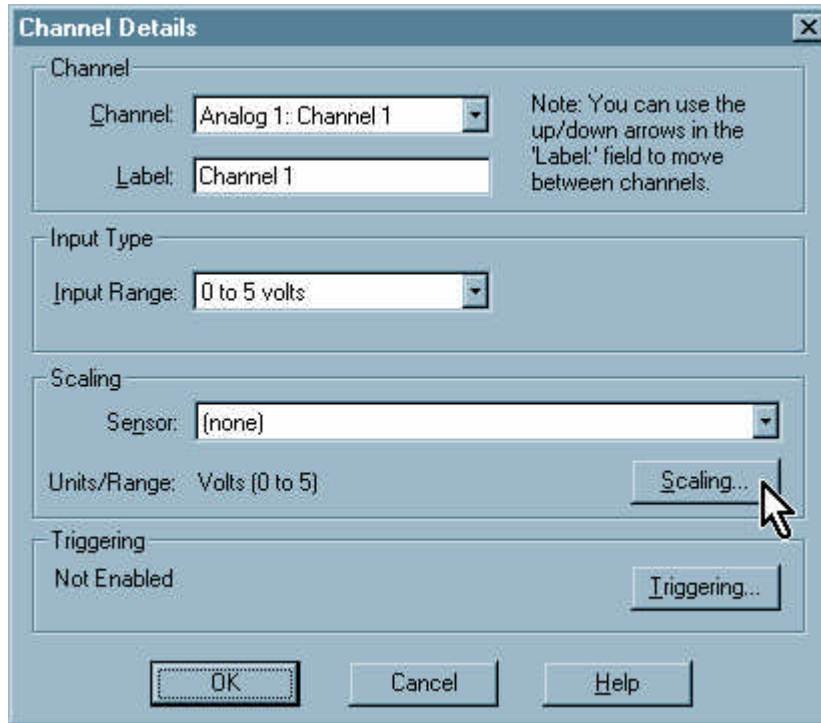
3. Select the desired input channels to record by clicking the appropriate checkboxes in the Channel Selections section at the bottom of the Configuration form.



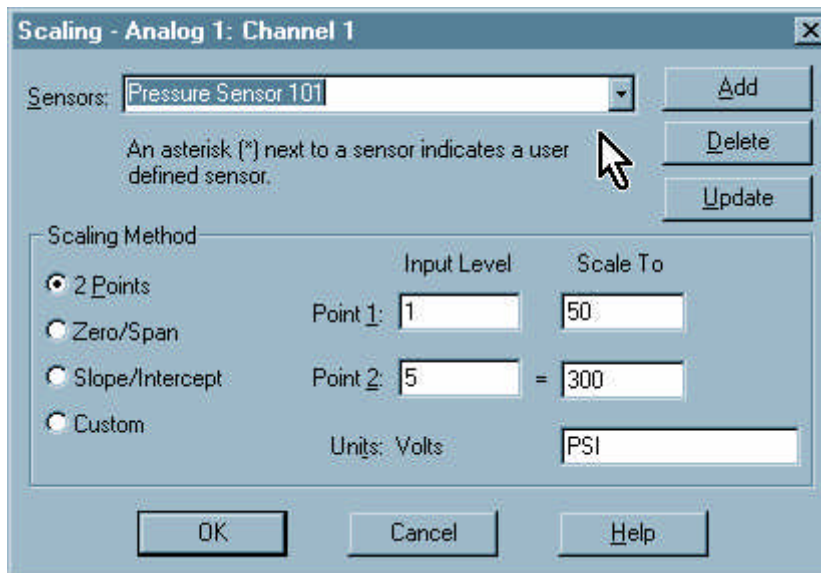
How to Scale

Click on any one of the "Details" buttons (ellipsis) at the right side of the channel labels to specify scaling criteria.

Note: Selecting a particular "Details" button causes the details of the associated channel to be displayed when the Channel Details window appears. However, scaling criteria may be specified for any channel by simply selecting the desired channel in the top section of the Channel Details window. The Scaling section in the Channel Details window is automatically updated to display the scale status for the selected channel. Scaling setup for each input channel can be quickly reviewed by placing the cursor in the Label edit field (in the Channel section at the top of the window) and then using the up/down arrow keys to scan through the input channels while noting the scaling status.



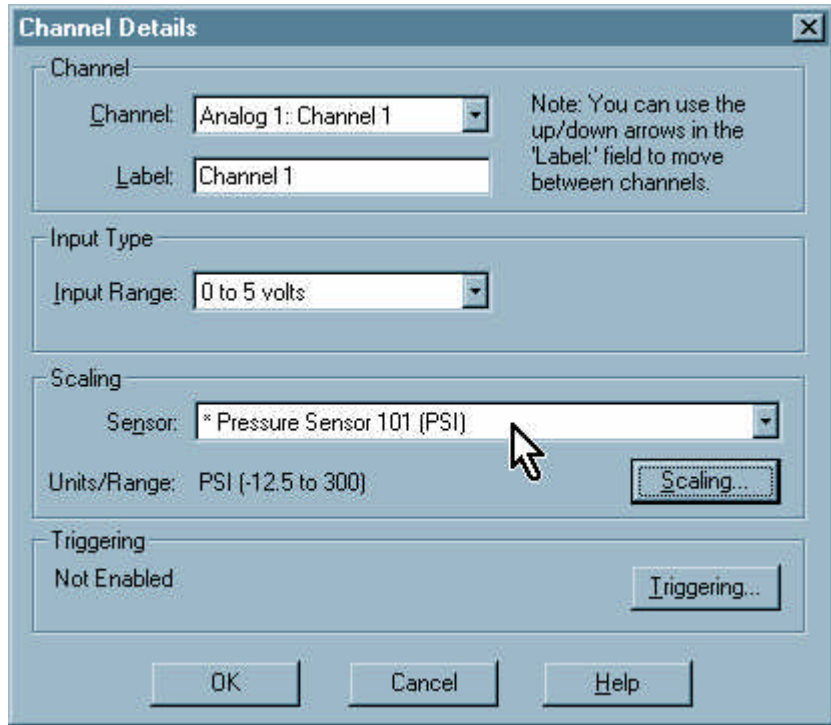
From the Channel Details window, select the Scaling... button in the Scaling section, making sure the desired input channel (to scale) is displayed in the channel section at the top of the window.



Place the cursor in the Sensor: edit field and enter a unique and meaningful name for the sensor profile.

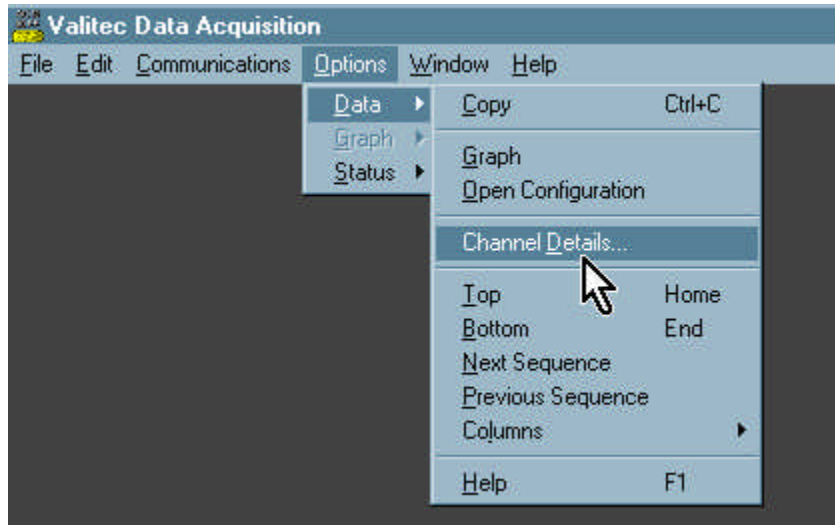
After selecting the desired Scaling Method (2 points, zero/span or slope/intercept), enter the scaling parameters and unit of measure.

Now, select the Add button, and the new sensor profile will be stored in the sensor database. Select OK, and the Scaling window will close and the newly-created sensor profile will appear in the Scaling section of the Channel Details window as being applied to the selected input channel.

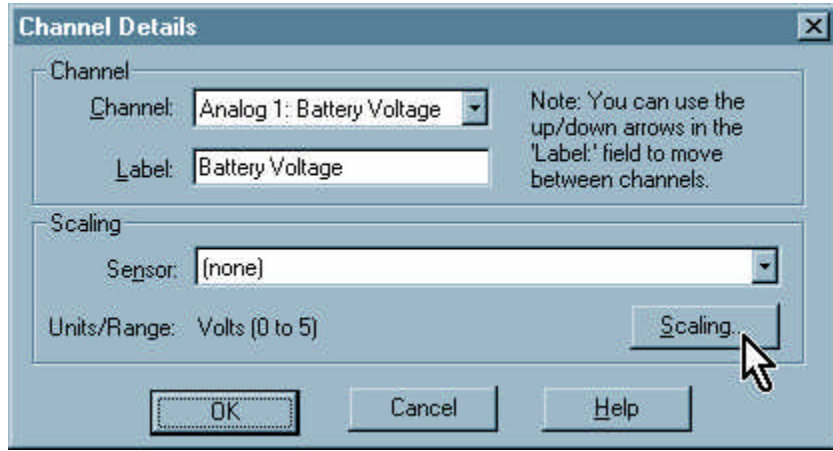


Scaling Data from the Spreadsheet and Graph Views

To change the scaling of data from the spreadsheet or graph views, select the Channel Details option from the Options | Data/Graph submenu. Alternately, you may click the right mouse button while the cursor is over the spreadsheet or graph window and select Channel Details from the pop up menu.



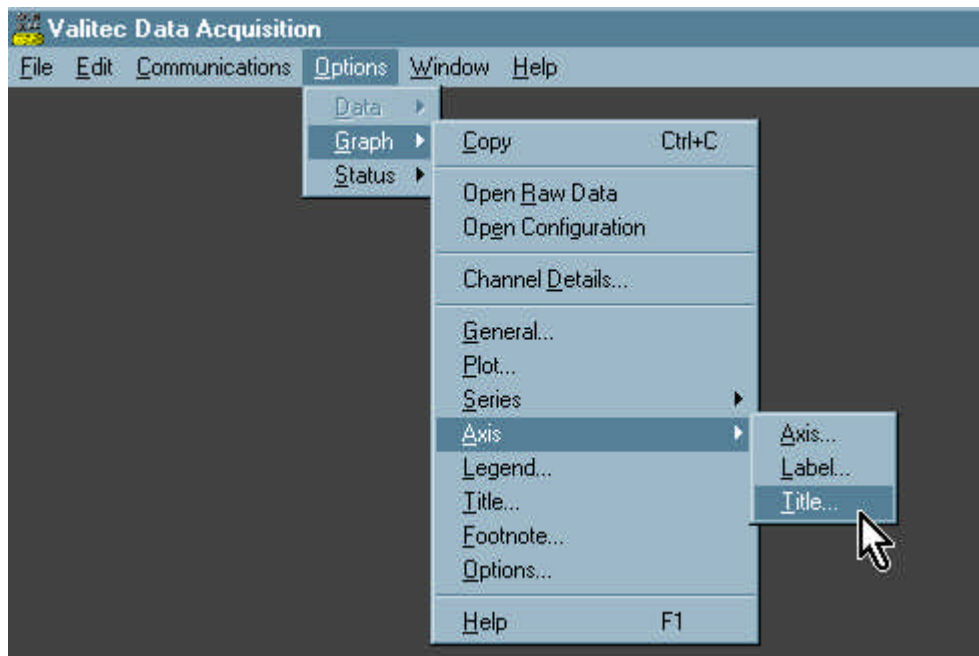
Select the Scaling... button in the Scaling section or select a sensor profile from the Sensor: field drop-down menu.



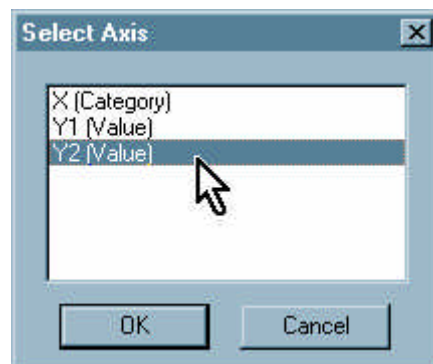
When the Channel Details window is closed, the spreadsheet or graph will be updated with the new scaling profile(s) for the modified input channel(s).

Adding X/Y-axis Unit-of-Measure Labels to Graphs

Select Axis | Label... from the Graph submenu.



Select the desired axis for which you want to display a label.



Select the Visible checkbox to enable the label to appear on the graph, and then type the desired label text into the Text: edit window. Select OK when finished, and the label will appear on the graph.

