TrendWorX64 Viewer
Setting Individual Pen Ranges

APPLICATION NOTE

August 2014

Description: Guide to setting individual pen ranges
General Requirement: Familiarity with the TrendWorX64 Viewer

Introduction

Runtime users can manipulate pens during runtime if the chart has a Legend that includes certain options. For example, if the legend includes the Visibility field, runtime users can show and hide individual pens in the chart. Runtime users can also isolate a pen to its own chart during runtime. For more about the legend, refer to Legend Options for Trend Charts. For more about what runtime users can do, refer to Runtime Operations in TrendWorX.

To customize a pen's range, open the TrendWorX64 Viewer in Configure mode. Select the pen you wish to customize in the tree navigation pane on the left. In the pen's configurator select the Ranges tab, as shown below.

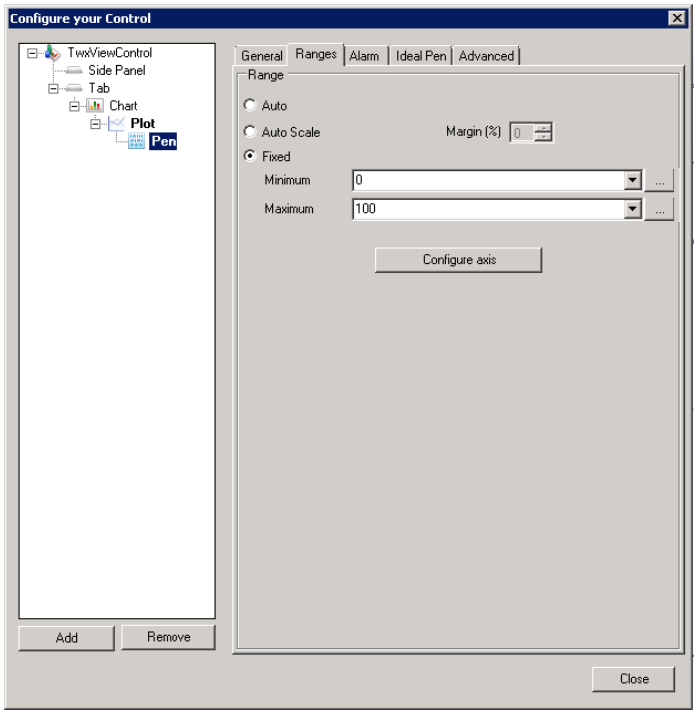

Figure 1 - The Pen's Ranges Tab

NOTE: The **Advanced** tab contains a pen's minimum configuration properties including Ranges; however, you can select multiple pens that are writing to different plots and change each of their basic properties simultaneously using the Advanced tab.

WARNING: Not all TrendWorX64 features are supported in Microsoft **Silverlight**. If you are saving Silverlight files, refer to the Help files or the application note "GENESIS64 – Silverlight Support" for more information.

Setting the Range of the Y-axis

- **Auto:** Enable to automatically obtain the pen's value range from the server. This is the default setting.
- **Auto Scale:** Enable to automatically adjust the pen's value range based on the minimum and maximum values plotted in the visible trend period of the chart.
  - **Margin (%)** specifies a percentage of extra space automatically added to the range when in Auto Scale mode.
- **Manual:** Select to specify a user-defined **minimum** and **maximum** value range for the pen using the text boxes (settable range is -1.797e+307 to 1.797e+307).
  - **Minimum:** a user-defined minimum value for the pen range. Selecting the **ellipsis** button will allow you to set the minimum value using the Data Browser. You can select an OPC UA tag, Global Alias, Language Alias, or Language Conversion.
  - **Maximum:** a user-defined maximum value for the pen range. Selecting the **ellipsis** button works the same as for Minimum.

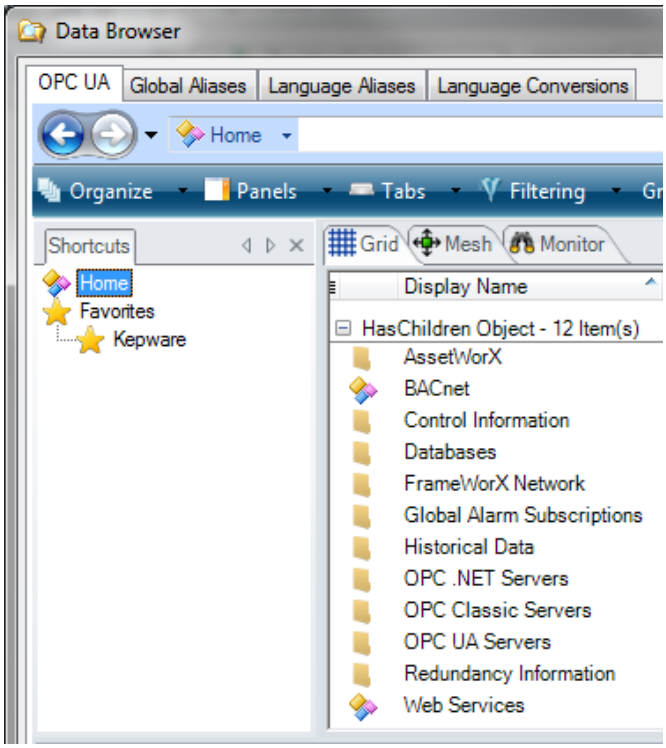

Figure 2 - Data Browser from Ellipsis

- **Advanced button:** Clicking this button opens the Configuration Axis dialog box, shown and described below.

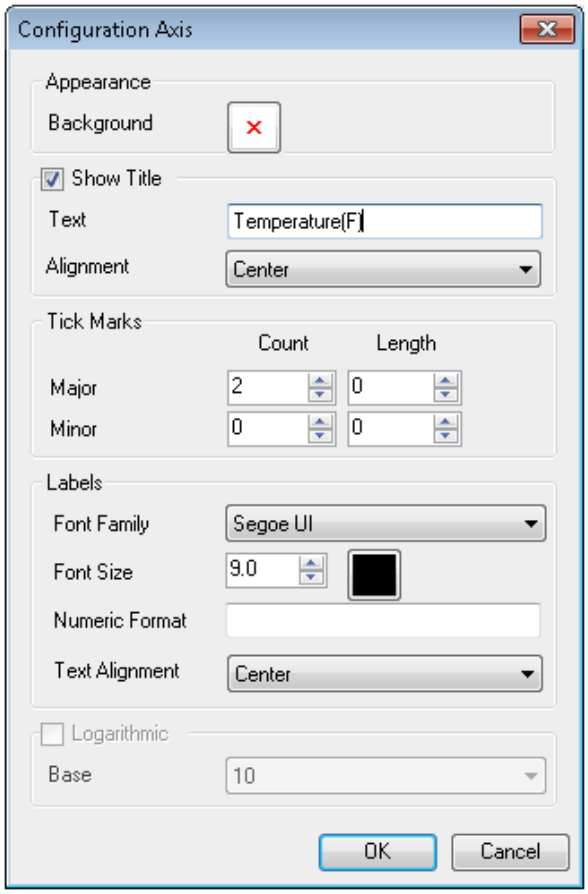

Figure 3 – Pen Configuration Axis Dialog Box

- **Appearance**: Click on the box to the right of Background to pick a background color, gradient, or image pattern to use for the y-axis.
- **Show Title**: Select this option to show a title for the trend along the y-axis. If you enable this option, enter the title in the **Text** field, and use the **Alignment** drop-down list to specify whether you want the title **Centered**, or aligned at one end of the y-axis or the other (**Maximum** or **Minimum**). The size of the title is determined by the **Font Size** selection in the **Labels** section of this dialog box.
- **Tick Marks:** Specifies the number and size of tick marks (i.e. intervals) between any two grid lines along the y-axis. The **Length** range for both Major and Minor ticks are 0-20. A higher length makes the ticks longer.
    - **Major:** Specifies the tick marks (i.e. intervals) between any two grid lines along the y-axis. The **Count** range is 0-20.
    - **Minor:** Specifies the tick marks (i.e. intervals) between any Major ticks along the y-axis. The **Count** range is 0-10
- **Labels:** Set the **Font Family**, **Font Size**, and **Font Color** to be used for the y-axis labels.
- **Numeric Format:** Allows you to set custom formatting for numerical values in axis labels.
    - Examples: "**C**" shows the number in form of currency; "**P**" shows the number in percentage; **0.0** shows the number with 1 decimal place; **0.000** shows the number with 3 decimal places.

NOTE: For more information on numeric formats, visit http://msdn.microsoft.com/en-us/library/dwhawy9k.aspx

- **Text Alignment** sets the alignment of text within the y-axis labels (**Left**, **Center**, or **Right**).
- **Logarithmic**: Leaving this check box empty (default) enables a *linear* scale for the y-axis in which the steps are constant (for example: 11, 12, 13, 14, 15, 16; or 5, 10, 15, 20, 25). The linear scale is the scale that is traditionally used for an axis.
- Enabling **Logarithmic** creates a *logarithmic* scale for the y-axis. For example, logarithmic values with **base** value of 10 are 100, 1000, 10000, 100000. You might use the logarithmic scale if the pen is recording values that increase exponentially or values in an astronomical range.
- Click **OK** when you are done configuring the Axis and **Close** to return to the display.