

SurfX ActiveX Control

for Microsoft Windows
and InTouch Applications

User Manual
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SurfX ActiveX Control

Overview

The **SurfX** ActiveX control is designed to display and modify the Wonderware InTouch tag values in up to 5 curves and up to 999 values in each curve. The SurfX control can be used in any ActiveX supporting Windows application. The SurfX ActiveX control is designed for using together with Wonderware InTouch starting from version 7.0.

To use the SurfX ActiveX control, the special InTouch tag naming system is required to obtain the values for displaying the curve(s). The names of InTouch tags should have the following format:

Tagname_nnn

where:

Tagname is a common part for all InTouch tags used in same curve, e.g. **SurfVal**;

_ is an underscore character;

nnn is the sequence number of separate tag for same curve, e.g. **001** or **010** or **999**.

For example, the following tagnames can be used: **SurfVal_001**, **THICKN_014**, **val_325**.

Installing the SurfX ActiveX Control

Note: Before installing the SurfX ActiveX control you must completely uninstall previous version of this control.

1. Install the SurfX ActiveX control.

The SurfX ActiveX control installation package is supplied as a self-extracting archive PR00075xxx.EXE, where xxx is the current (latest) version of SurfX ActiveX control.

To **install** the SurfX ActiveX control, run the PR00075xxx.EXE and proceed as directed by the SurfX ActiveX control Setup program.

When installation is finished:

- the following files will be copied to InTouch directory and registered in Windows system::

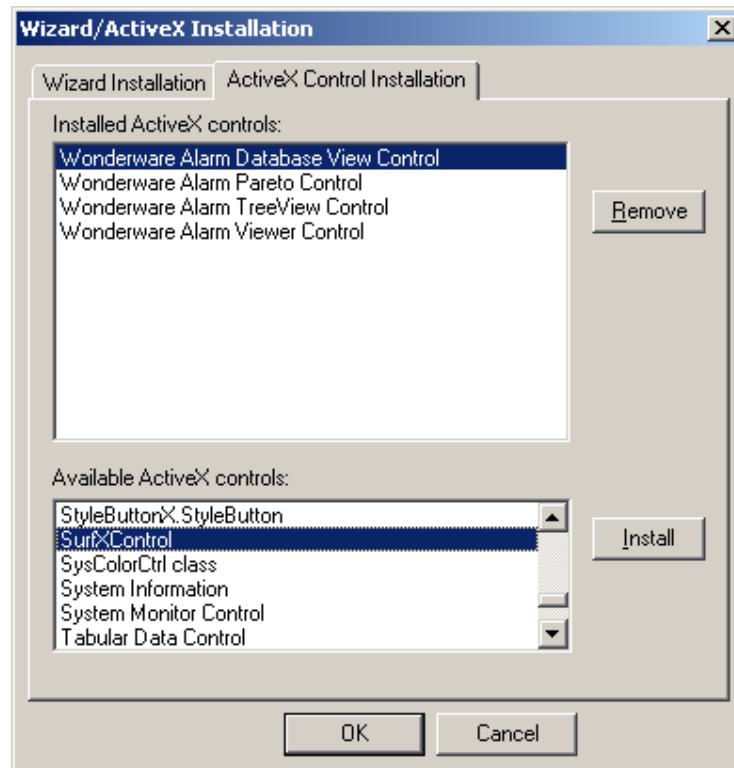
SURFX.OCX
INTCHRD.DLL

- the subdirectory specified as a folder where to install the SurfX ActiveX control files will contain the following files:

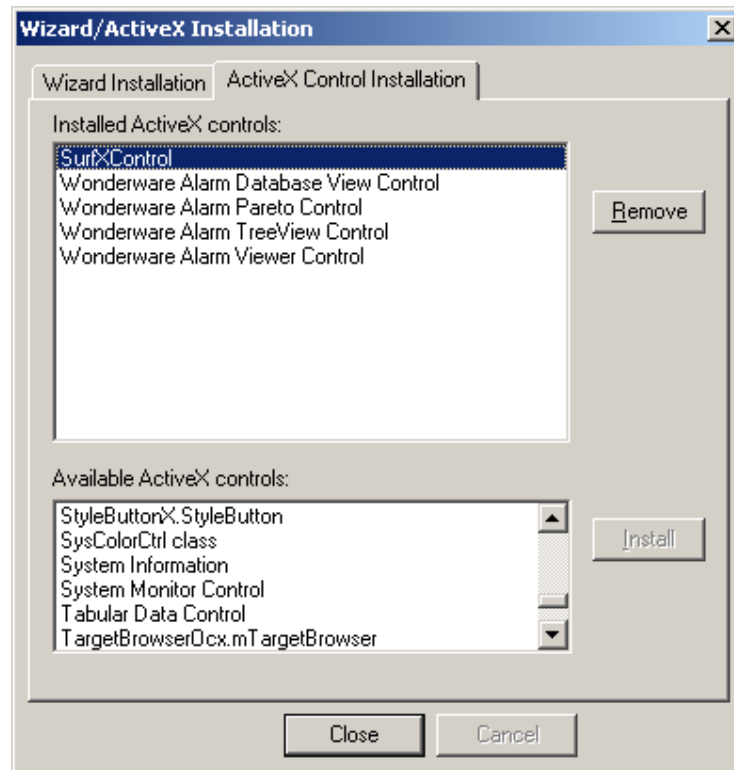
SURFXM1xx.PDF (this manual, the xx is the number of last revision)
LICENSE.TXT (Klinkmann Automation software license file)

2. Start Wonderware InTouch and open some InTouch application in WindowMaker.
3. Install the SurfX ActiveX in InTouch, by invoking "**Special/Configure/Wizard/ActiveX Installation...**" menu command and changing Dialog box tab to "**ActiveX Control Installation**" page:

Note: You should have licensed InTouch to use this feature.



Find **SurfXControl** in **Available ActiveX controls** list and press **Install** button. The SurfXControl should appear in **Installed ActiveX controls** list:



Press **Close** button.

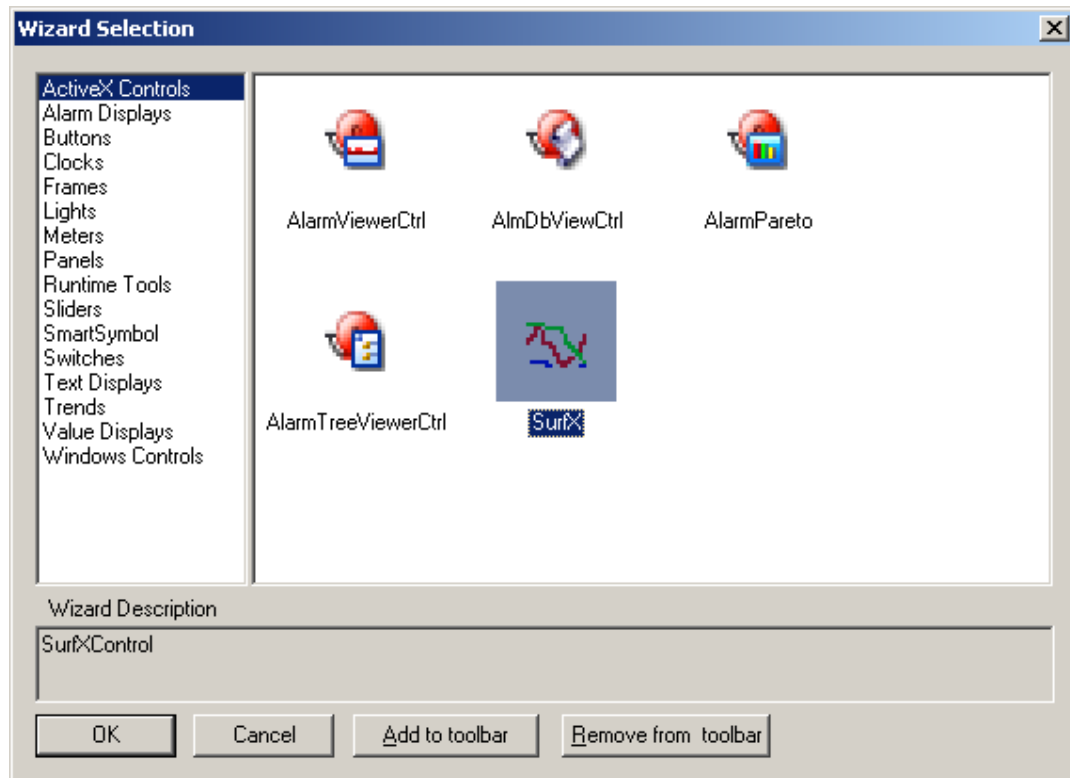
Uninstalling SurfX ActiveX control

To **uninstall** the SurfX ActiveX control:

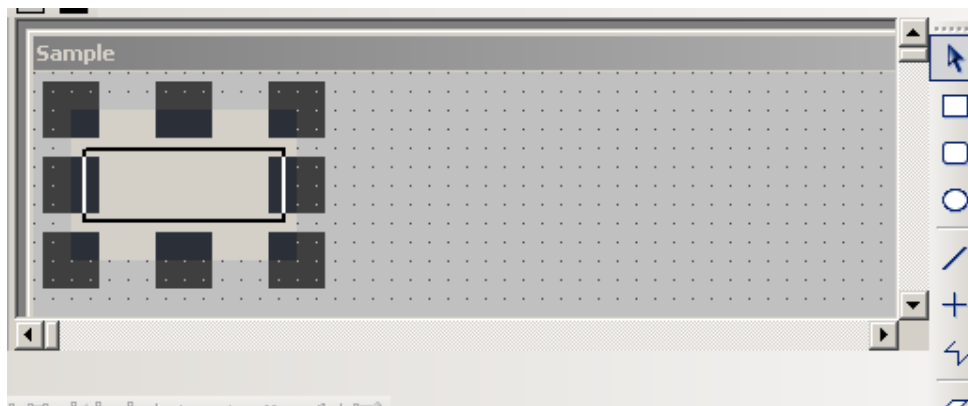
1. At first you should remove control from InTouch. To do this invoke InTouch "**Special/Configure/Wizard/ActiveX Installation...**" menu command, select **ActiveX Control Installation** page, select **SurfXControl** from **Installed ActiveX Controls** list and press **Remove** button.
2. Close InTouch Window Maker (and Window Viewer if running) and all other applications using the SurfX ActiveX control.
3. Uninstall control by using **Add/Remove Programs** wizard from **Control Panel**.

Selecting SurfX ActiveX Control in InTouch

1. Open **Wizard Selection** dialog box by pressing **Wizards...** icon on WindowMaker toolbar.



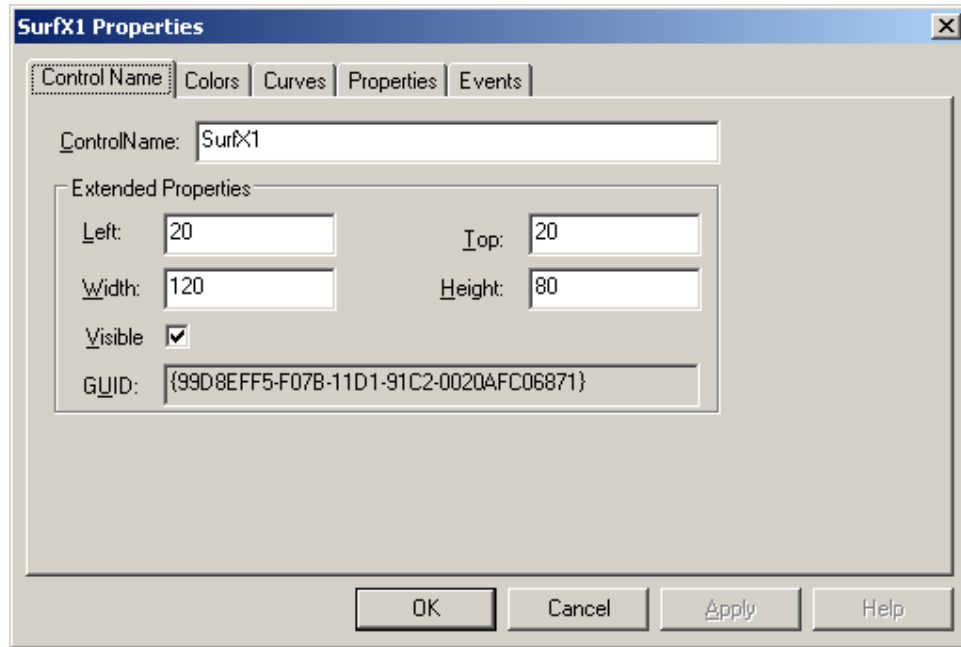
2. Select SurfX and press OK.
3. Place SurfX control on InTouch WindowMaker window:



The SurfX ActiveX control now is ready to be configured for use in InTouch application.

Configuring the SurfX ActiveX Control

Configuration of SurfX ActiveX control can be invoked by doubleclicking on the control - the **SurfX1 Properties** dialog box will appear ("Surfx1" is the default name):



There are five configuration pages available: “Control Name”, “Colors”, “Curves”, “Properties” and “Events”.

Control Name

The “Control Name” page is used to configure SurfX ActiveX control general settings:

Control Name

The current name of this SurfX ActiveX control instance.

Extended Properties

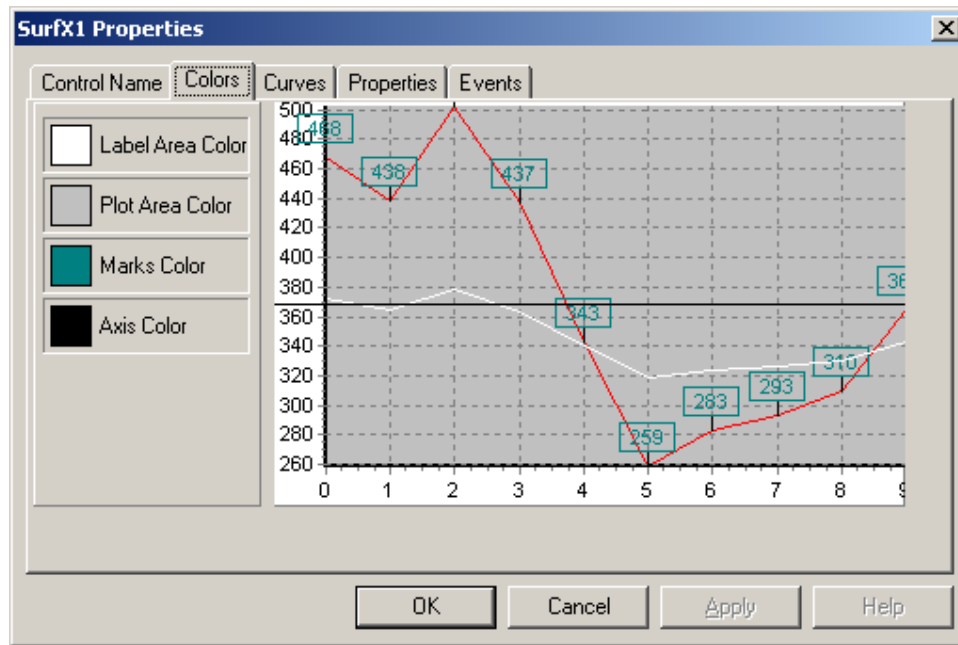
The current position (“Left” and “Top”) and size (“Width” and “Height”) in pixels of this SurfX ActiveX control instance.

Visible

The current visibility state of this SurfX ActiveX control instance. It will be used at WindowViewer start-up and can be changed at run-time by SurfX **Visible** Property (see *Properties* section below).

Colors

The “Colors” page can be used to adjust the colors of SurfX ActiveX control:



The color can be selected by clicking on corresponding color selection box and selecting the Basic or Custom color:

Label Area Color

The color for SurfX labels area. SurfX labels are located at the left and bottom of SurfX window. The corresponding SurfX Property is **LabelColor**.

Plot Area Color

The background color of SurfX plot area. The corresponding SurfX Property is **PlotColor**.

Marks Color

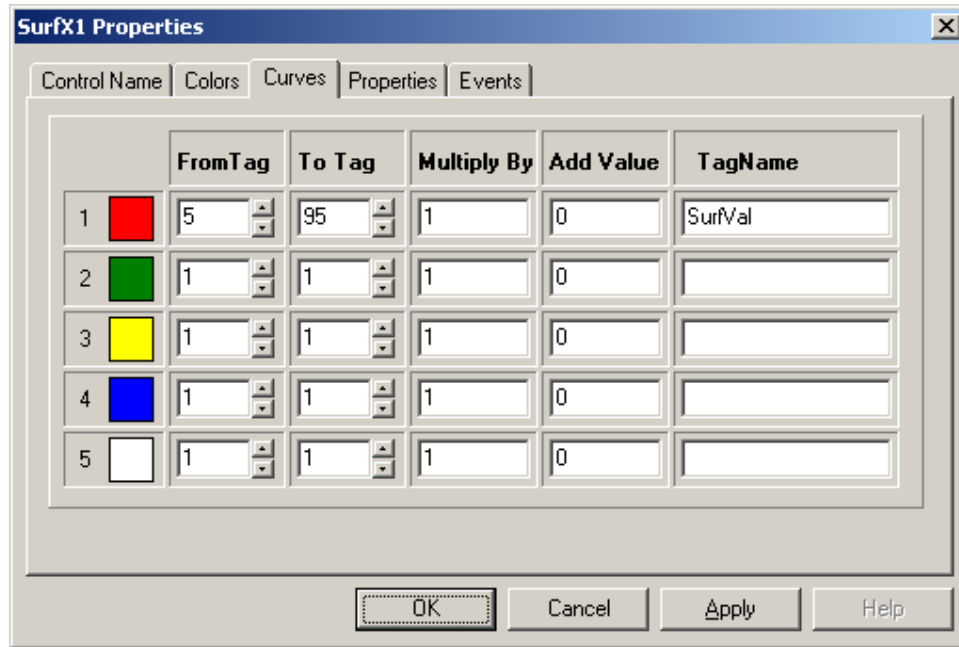
The color used to display the values (also surrounding rectangle) in SurfX plot area. The corresponding SurfX Property is **MarkColor**.

Axis Color

The color used to display the zero Y value axis in SurfX plot area. The corresponding SurfX Property is **AxisColor**.

Curves

The "Curves" page is used to assign the color, displaying, position and tagname for each curve displayed on SurfX plot area:



The system used to assign InTouch tags with curve(s) is following – InTouch tagnames for same curve must start with same common part, then goes the delimiter “_” (underscore) and then 3 digits for sequence number of separate tag inside the curve. For example, if curve consists of 100 values (measurements) then such a curve can be displayed by using 100 tagnames like Measur_001, Measur_002, ... Measur_100.

The following can be configured for each curve:

FromTag

The sequence number of first tagname used to draw the curve, so allowing if necessary do not display some first values. The corresponding SurfX Properties are **StartTag1** ... **StartTag5**.

To Tag

The sequence number of last tagname used to draw the curve, so allowing if necessary do not display some last values. The corresponding SurfX Properties are **EndTag1** ... **EndTag5**.

Multiply By and Add Value

These two settings allow if necessary to change in Y-axis direction the locations of all this curve points. The calculation of each point location is done the following way:

Current location = real value * Multiply By + Add Value

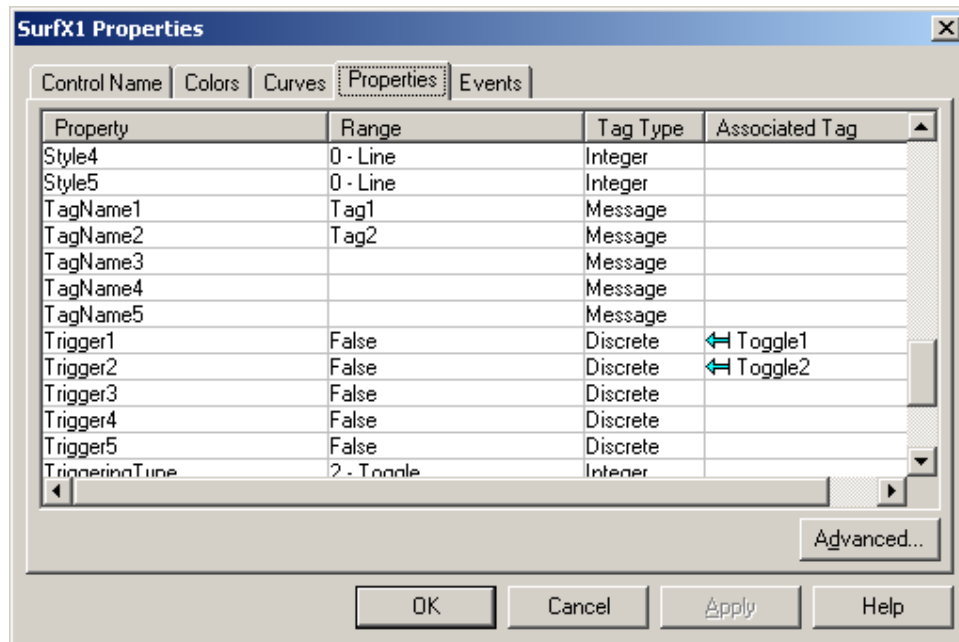
Such a location recalculation would be useful to avoid overlapping of curves in case some curves have very similar their point values. The corresponding SurfX Properties are **MultiplyBy1** ... **MultiplyBy5** and **AddValue1** ... **AddValue5**.

TagName

The first and common part (till “_”) of all InTouch tagnames linked with this curve. The corresponding SurfX Properties are **TagName1** ... **TagName5**.

Properties

The “Properties” page is used to link (associate) InTouch tags with SurfX Properties:



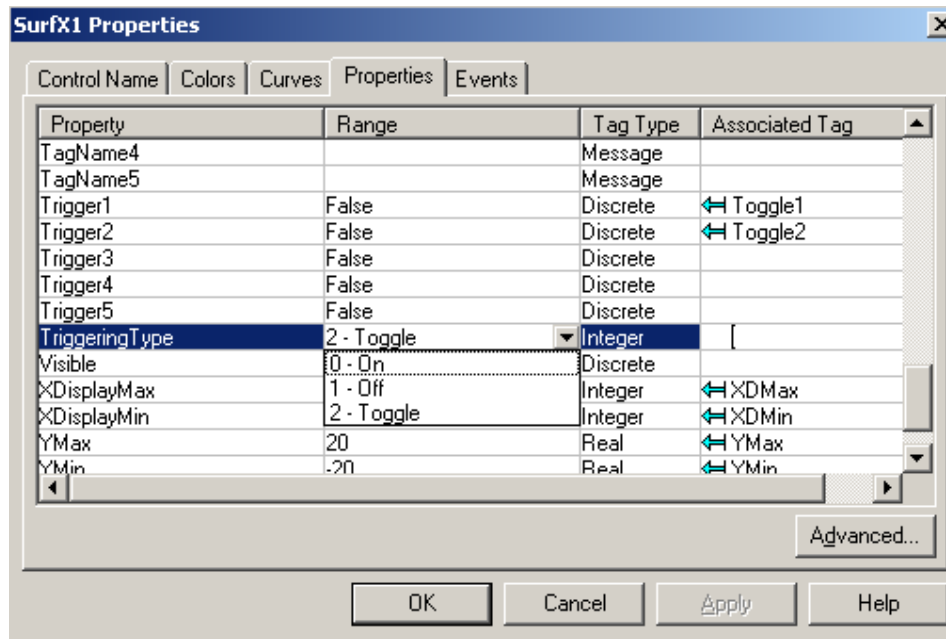
On “Properties” page there are following 4 columns:

Property

The name of SurfX Property.

Range

Displays the current setting of SurfX Property. For some Properties also the range of possible settings can be displayed by selecting the Property and then clicking mouse left button on combo box, like following for the **TriggeringType** Property – available settings are “0 – On”, “1 – Off” and “2 – Toggle”:

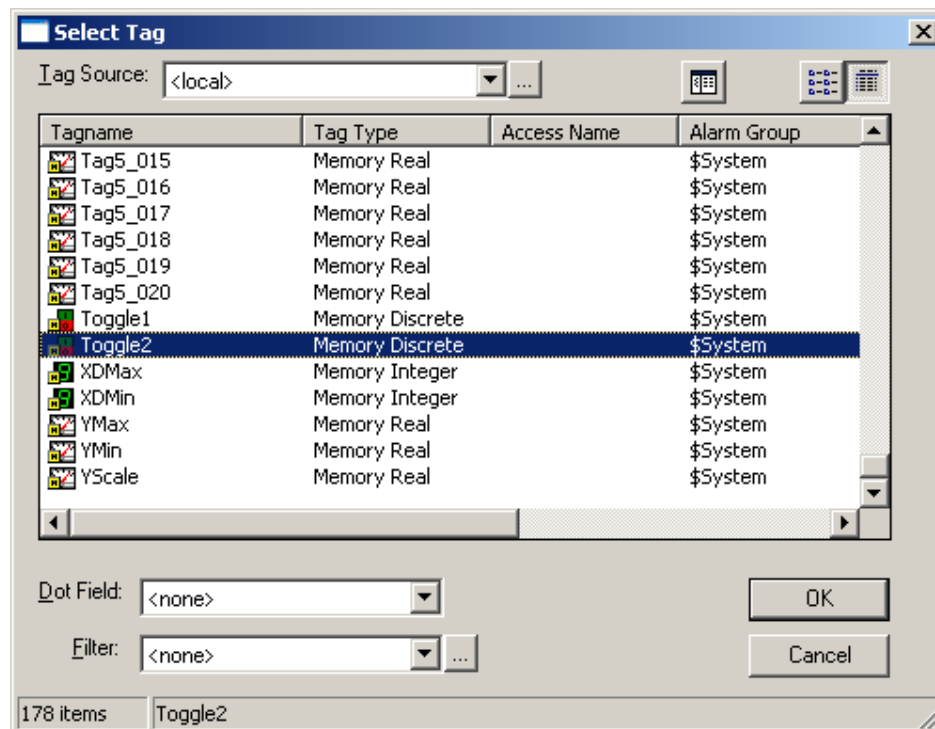


TagType

Displays the type for **Associated Tag**.

Associated Tag

Here the InTouch tag can be linked with SurfX Property by selecting the Property, double-clicking mouse left button on “Associated Tag” field and then selecting the appropriate tag from InTouch “Select Tag” dialog box. For example, selecting tagname **Toggle2** to be linked with SurfX **Trigger2** Property:



Available SurfX Properties

There are following SurfX ActiveX control Properties available (**n** is curve number in range from 1 to 5):

AddValuen	Used in recalculation of location for curve all points in Y-axis direction (see <i>Curves</i> section above).
AxisColor	The color used to display the zero Y value axis in SurfX plot area.
Colorn	The color used to draw the curve.
Cursor	The cursor type. Only default cursor (0 – arrow) supported.
Enabled	Disables (“0 – False”) or enables (“1 – True”, default) the SurfX user interface. If disabled then SurfX will not react on mouse clicks in Window Viewer.
EndTagn	The sequence number of last tagname used to draw the curve.
GridColor	The color used to display the grid in SurfX plot area.
LabelColor	The color for SurfX labels area.
MarkColor	The color used to display the values (also surrounding rectangle) in SurfX plot area.
MultiplyByn	Used in recalculation of location for curve all points in Y-axis direction (see <i>Curves</i> section above).
PlotColor	The background color of SurfX plot area.
StartTagn	The sequence number of first tagname used to draw the curve.
Stylen	The style for drawing the curve: “0 – Line” (default) or “1 – BarLine”.
TagNamen	The first and common part (till “_”) of all InTouch tagnames linked with curve n .
Triggern	By changing this value (“0 – False” or “1 – True”) the reading (updating) of new values for curve n will be performed.
TriggeringType	The type of current triggering for tags associated with Triggern Property: “0 – On”, “1 – Off” and “2 – Toggle” (default).
Visible	The current visibility state of this SurfX ActiveX control instance: “0 – False” or “1 – True” (default).

XDisplayMax

The sequence number of last tagnames used to draw ALL this SurfX instance curves, so allowing if necessary to do not display some last values for ALL curves. The same effect can be achieved by setting all SurfX EndTag \mathbf{n} Properties to be same as XDisplayMax. The valid values are from 0 to 999, if invalid value is specified then value is ignored.

XDisplayMin

The sequence number of first tagnames used to draw ALL this SurfX instance curves, so allowing if necessary to do not display some first values for ALL curves. The same effect can be achieved by setting all SurfX StartTag \mathbf{n} Properties to be same as XDisplayMin. The valid values are from 0 to 999, if invalid value is specified then value is ignored.

Note:

If XDisplayMin = XDisplayMax = 0 (default) then SurfX will automatically find and use the lowest and highest point (sequence) numbers for all curves.

YMax

The SurfX plot area current maximum value in Y-axis direction.

YMin

The SurfX plot area current minimum value in Y-axis direction.

YScaling

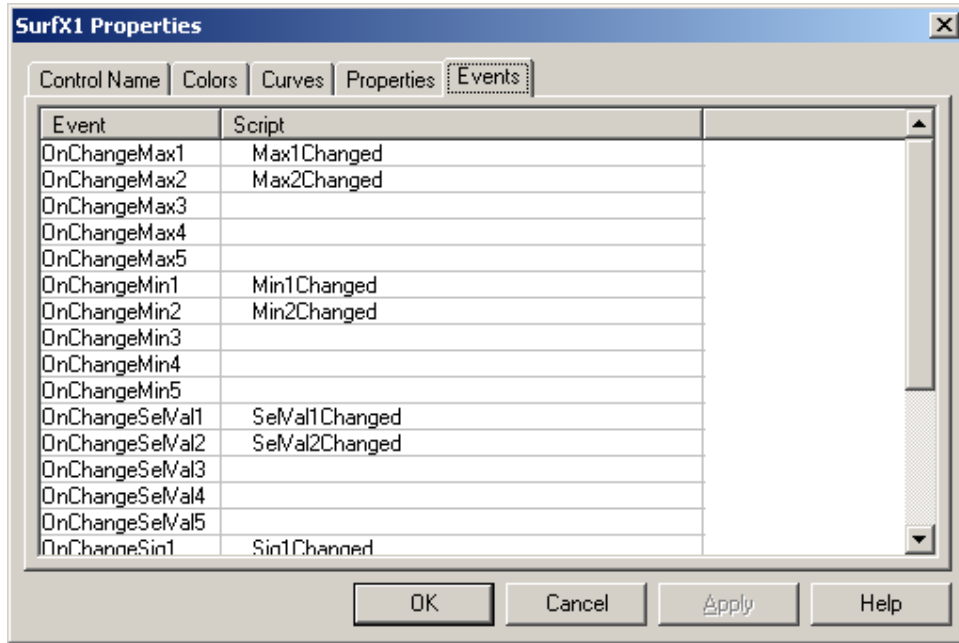
Determines the range of values to be displayed in SurfX plot area in Y-axis direction. If set to 0 then automatic scaling is used; for YScaling non-zero value the range is +-YScaling, for example, if YScaling is 20, then visible maximum Y value will be 20 and visible minimum Y value will be -20 (same like YMax = 20 and YMin = -20).

Notes:

- 1) If YMin = YMax = YScaling = 0 (default) then SurfX will automatically find and use the lowest and highest values in Y-axis direction for for all curves.
- 2) In case non-zero YMax and YMin and non-zero YScaling settings are used then higher priority is for YMax and YMin.

Events

The “Events” page is used to link (associate) SurfX Events with InTouch ActiveX Event Scripts:



Available SurfX Events

There are following SurfX ActiveX control Events available (**n** is curve number in range from 1 to 5):

OnChangeMaxn New value detected for curve **n**, which is greater as currently greatest value in Y-axis direction. Example of script:

```
Max1 = #SurfX1.MaxVal1;
```

OnChangeMinn New value detected for curve **n**, which is smaller as currently smallest value in Y-axis direction. Example of script:

```
Min1 = #SurfX1.MinVal1;
```

OnChangeSelValn Mouse left click detected on curve **n**. The closest point value will be put into separate InTouch tag. Example of script:

```
SelVal1 = #SurfX1.SelVal1;
```

OnChangeSign Sigma2 change detected for curve **n**. Example of script:

```
Sig1 = #SurfX1.Sigma2_1;
```

OnError SurfX error detected. Example of script:

```
StrError = #SurfX1.ErrorString;  
IF StringLen( StrError ) > 0 THEN  
  IsError = 1;  
ELSE  
  IsError = 0;  
ENDIF;
```

ShutDown SurfX shutdown.

StartUp SurfX start-up.

Using the SurfX ActiveX Control in InTouch

1. To **connect InTouch tags** to SurfX ActiveX control, the **#SurfX1.Start()** method should be executed at InTouch WindowViewer start-up. It can be done in InTouch script. If this method is not executed then SurfX ActiveX control cannot access to InTouch tags and will work in simulation mode (values are generated randomly).

2. To **stop the connection to InTouch tags**, the **#SurfX1.Stop()** method should be executed.

3. **Zooming by mouse** is working in SurfX plot area the following way:

- zooming-in: locate mouse on left upper position in zoom area, click and hold the mouse left button, move mouse to right lower position in zoom area and release the mouse;

- return to initial view (to “no zooming”): locate mouse somewhere on SurfX plot area, click and hold the mouse left button, move mouse to other more left and upper position in on SurfX plot area and release the mouse.

4. **Showing / hiding all values** for some curve on SurfX plot area:

- to show all values for some curve on SurfX plot area: locate mouse on the curve as possible close to some point on it and click the mouse right button;

- to hide all values for some curve on SurfX plot area: locate mouse outside curve and click again the mouse right button.

5. **Showing only one value** from some curve - currently it is possible only by using the OnChangeSelValn Event (see *Events* section above) and by displaying the obtained value on WindowViewer window outside the SurfX window. To get the value: locate mouse on the curve as possible close to some point on it, wait until mouse cursor changes to cross (“precision select”) and click the mouse left button.

KLINKMANN AUTOMATION
SurfX ActiveX Control
Revision History

Jun 1998	Rev 1.0	First release
Mar 2009	Rev 1.1	Whole user manual completely renewed accordingly to SurfX new version 1.16.