



# Sentry WebServer

## DEVELOPERS MANUAL

*The purpose of this Manual is to assist the user in constructing an SMC-Sentry WebServer Project. It describes the procedures as well as providing information on the tools/controls provided to display Sentry status and alarm information. A separate manual is provided for people who will use the web project – “Sentry WebServer Users Manual”, and should be used in conjunction with this manual. Note that the WebServer is powered by the FieldServer provided by FieldServer Technologies, a Sierra Monitor company.*

### APPLICABILITY & EFFECTIVITY

This manual provides instructions for the following Sierra Monitor products:

Model	Description
5391-01	Sentry WebServer, 1-4 Sentry Controllers
5391-02	Sentry WebServer, 5+ Sentry Controllers

The instructions are effective for the above models as of December 1, 1998

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## 1. Before Starting

See installation instructions in Appendix E.

### 1.1. Terminology

Term	Description
Tools Objects Controls	In this manual the term control is used to mean a tool or object that will interact with a FieldServer, to display or set data obtained from the FieldServer or Sentry or other remote device connected to the FieldServer. The controls are embedded in the Web Project pages alongside standard web page elements to form a screen which displays images, text and real time information obtained from the FieldServer.
Browsing PC	The PC being used to view the web pages.
WebServer	A WebServer is a program that serves the files that form Web pages to browsing PC's using the World Wide Web's Hypertext Transfer Protocol ( <a href="http://">HTTP</a> ). Every computer on the Internet that contains a Web site must have a Web server program
ToWS Processing	This term describes the set of utilities used to process a Sentry Web Project to make it suitable for downloading to a FieldServer. This process is not necessary for standard Web projects run on standard WebServers. By way of example, one of the things done by this processing is to build a list of all the Sentry's and Sensors to be monitored by the FieldServer.

### 1.2. Compatibility Issues

Some controls do not operate correctly when using Windows CE to view the Web pages. The controls may be removed from the project or the situation simply accepted as other controls are not compromised. More information is provided in Appendix C

When used in a project, many controls require that the project be

- Preprocessed in a particular way before downloading to the server. (*ToWS Processing*.)
- Served only by the Sentry WebServer. Other WebServers do not have the same functionality as the Sentry WebServer and the controls will not operate correctly.

In this manual the compatibility of each control is defined with the following type of note

Control Compatibility Statement.	
Control Name	The name of the control seen when inserting an ActiveX control into the web page.
Operating System	Win32 Only <b>OR</b> WinCE and Win32
ToWS Processing	Required <sup>1</sup> <b>OR</b> Not Required
WebServer Requirements	FieldServer WebServer <b>OR</b> Any WebServer
Additional Requirements/Notes	Other resources required for the control to operate correctly E.g.: Driver 'abc' must be installed on the FieldServer.
Installer	Indicates the 'installer' to be run to install this control on a PC.

<sup>1</sup> If the project contains a single control where ToWS Processing is required, then the whole project requires ToWS Processing.

This manual describes the specific controls used to interface to Sierra Monitor Corporation's Sentry product. Other controls which provide a more generic capability are described in the manual "Constructing a FieldServer Web Project". These controls interface with the FieldServer, but are not designed to interface with the SMC Sentry product and compatibility problems may be encountered.

### 1.3. Choosing a Web Project Design Tool

The notes in this manual are based on using Microsoft's FrontPage<sup>2</sup> application which is recommended for small, simple web projects. Other Web Project Design Applications can be used provided the following requirements are met:

- Images and objects able to be positioned at an absolute location on a page.
- ActiveX controls able to be embedded in a web page.
- Hyperlink creation supported.

### 1.4. System Limitations

The FieldServer WebServer does not support FrontPage extensions, Active Server Pages (ASP), or scripting tools like PERL. There is a limited amount of space on a FieldServer on which to store the web project elements, screens etc. **An Appendix provides additional information.**

#### 1.4.1. Cookie Length<sup>3</sup>

For many of the Sentry Controls, the HTML screens get data from the WebServer in the form of cookies. If the cookie length exceeds the maximum limit of 3500 bytes, the screens will not update correctly. The driver prints the following message in the error log if the cookie length nears this limit.

```
WEB:#60 Err. Web Pages won't update properly. Cookie Length Max/Rqd=%d/%d
```

The only corrective action is to reduce the number of controls on the screens forming the project, reprocess the whole project and download the modified files to the FieldServer.

As a guideline budget 20-25 bytes per Sentry-Sensor. The actual number used is dependent on the length of the tag name and the length of the units field.

#### 1.4.2. Total number of controls in a project

The total number of controls permitted in one project is limited to 200. The following are examples of controls: "Sentry Zone Button Controls", "Sentry:Sensor Status Controls", "Sentry:Combo Status Controls", "LED Controls", "Text Display Controls", "Analog Value Display Controls", "Alarm Reset Button Control".

### 1.5. Project file Location

To take advantage of the utilities provided for downloading the project to a FieldServer read the notes in Section 3.1 which provide information on where to place project folders.

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<sup>2</sup> FrontPage is a trademark of Microsoft Corp.

<sup>3</sup> The following statements apply irrespective of the operating system of the browsing computer.

## 2. Steps to building and executing a Sentry Web Project<sup>4</sup>

### 2.1. Step 1 – Construct Web Pages using FrontPage

- Install the ActiveX controls by executing the provided installer program.
- Design Web pages and place the ActiveX controls on the web pages as required.
- Configure each ActiveX control specifying which FieldServer Data Array Location contains the data that drives the display of the control.
- Configure display properties. The pages may contain static web elements and other HTML components.
- A template Web project is provided for reference purposes and a copy of the template is provided to form a basis for a new project.

### 2.2. Step 2 – Configure the FieldServer

- Configure the FieldServer to read data from remote devices (generators, gas detectors, HVAC equipment...) and/or configure the FieldServer to receive data from remote devices (alarm panels...).
- Configure the FieldServer to serve web pages.
- Configure the FieldServer to read data from the Sentries.

### 2.3. Step 3 – Download the Web Pages to the FieldServer

- Transfer the Web pages to the FieldServer using the utilities provided by FieldServer.
- Prior to downloading, depending on the compatibility requirements of the controls, ToWS Processing may be required. Utilities are provided to execute this processing.

### 2.4. Step 4 – Browse the web pages on the FieldServer

- Use Internet Explorer to display the pages designed. When viewing the pages the ActiveX controls will change their display based on the data in the FieldServer providing dynamic effects.

This is a very brief summary. The WSPI:Sentry is powerful and may be configured to operate in many ways – for example, the actual HTML files could be served from a company web server while the data that is used by the ActiveX controls imbedded in these pages is served from the FieldServer.

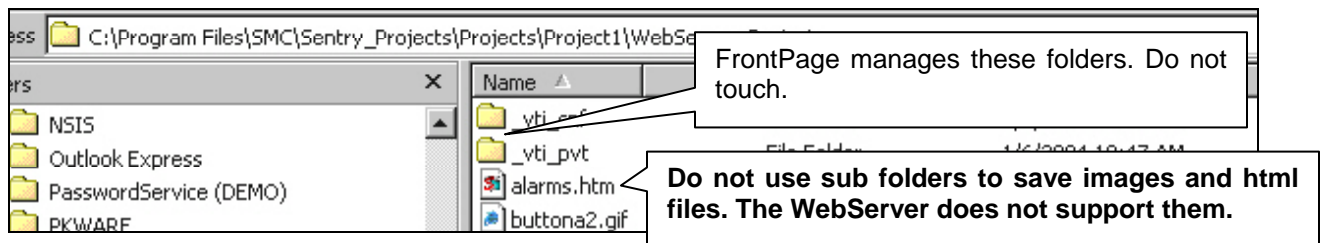
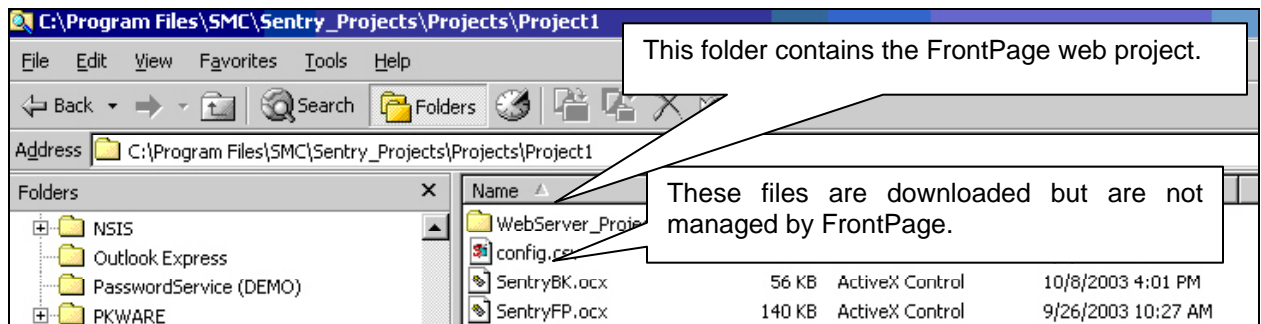
---

<sup>4</sup> It is assumed that the user has a FieldServer with firmware capable of supporting the WSPI Sentry applications. This is known as DCC.

### 3. Constructing a Web Project using FrontPage

#### 3.1. Location of the project folders/Installation of the template

Folder Path	Files
C:\Program Files\SMC\Sentry_Projects	This is the base folder. All installers and utilities expect to find the project files in this folder.
C:\Program Files\SMC\Sentry_Projects\Apps	Files used to download, utilities and other files used during project processing.
C:\Program Files\SMC\Sentry_Projects\Install	Other installers are located in this folder.
C:\Program Files\SMC\Sentry_Projects\Firmware	Applications and files which are required on the FieldServer.
C:\Program Files\SMC\Sentry_Projects\Current	The ToWS processing copies the project attempted to download to this folder for further processing.
C:\Program Files\SMC\Sentry_Projects\Current\Download	The output from ToWS processing ready for download to the FieldServer
C:\Program Files\SMC\Sentry_Projects\Projects	<b>Working and template projects are located in this folder.</b>
C:\Program Files\SMC\Sentry_Projects\Projects\Template1,2,3	A template project which should be retained in its original form for reference purposes. This is a working project that can be downloaded to test the FieldServer and the Sentry.
C:\Program Files\SMC\Sentry_Projects\Projects\Project1	A template project provided for modification as part of the first project. A sub folder called "WebServer_ Project" contains the FrontPage project. Place any additional files that need to be downloaded with the project here if wishing to keep them outside of the folder with the FrontPage web files. Typically, the only such file is config.csv.

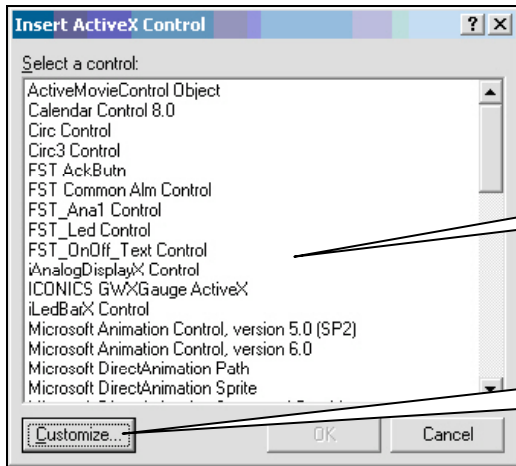


#### 3.2. Installation of the FieldServer Controls

The controls cannot be embedded in a Web page until they have been installed on the computer on which Microsoft FrontPage will be used. The provided installer must actually be run - copying the files from one computer to another is not sufficient. Refer to Appendix E for more information.

### 3.3. Insertion of ActiveX Controls into a Web Page

Within FrontPage, chose **Normal view|Insert|Advanced|Active X**

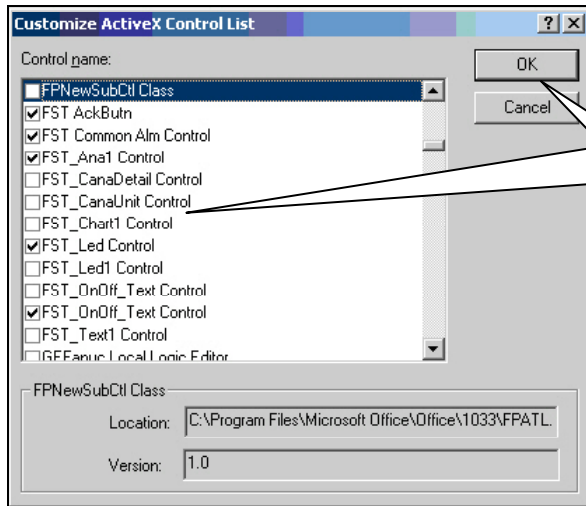


Pick the Control you wish to use from the list and press OK.

If the required control is not on the list, press customize and continue with Section 3.3.1.

#### 3.3.1. Customize Control List

The following step need only be performed once. Within FrontPage, chose **Normal view|Insert|Advanced|Active X|Customize**

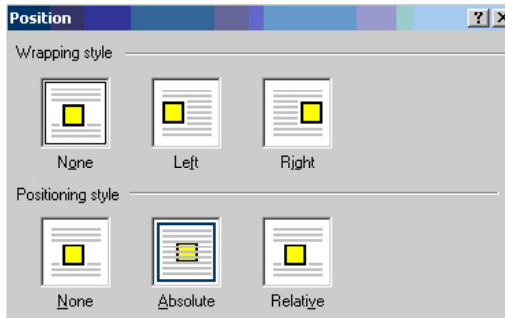


Check the controls to use.  
If they are not in the list then register the objects. Refer to Section 3.11.

Click OK when all the controls are selected and proceed as below. In future, skip the step above and proceed to pick the control directly

### 3.4. Positioning of the Controls on a Web Page

To position the ActiveX Control at absolute locations, click the object and from the pull down menu select **Menu/Format/Position/Absolute**



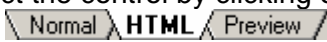
### 3.5. Configuration of the Controls

Common Properties	These properties are common to almost all the controls provided by FST. They define, amongst other attributes, the IP address of the FieldServer, the data source (table and offset) for the property and the Unit Tag.
Specific Properties	Each control has different behaviors and hence a varied set of properties to define those behaviors. For example, for an LED control the, 'on' and 'off' colors must be defined.

#### 3.5.1. Method 1: Front Page 'Normal' View

- Select the control by clicking on it.
- Right Click and select 'Active X Control Properties'
- A series of tabbed dialogs are displayed.
- Edit the properties and click OK to apply the changes.

#### 3.5.2. Method 2: Edit the HTML code directly.

- In 'Normal' view, select the control by clicking on it.
- Change to html view. 

```
<object classid="clsid:7AA7F33C-58A0-4D5B-A209-4D3B2571B921" id="FS_led11" width="72" height="23">
  <param name="_Version" value="65536">
  <param name="_ExtentX" value="1905">
  <param name="_ExtentY" value="609">
  etc
</object>
```

The html code for the object is highlighted. Edit the code directly by changing the contents of the various 'value=' fields

#### 3.5.3. Editing shortcut

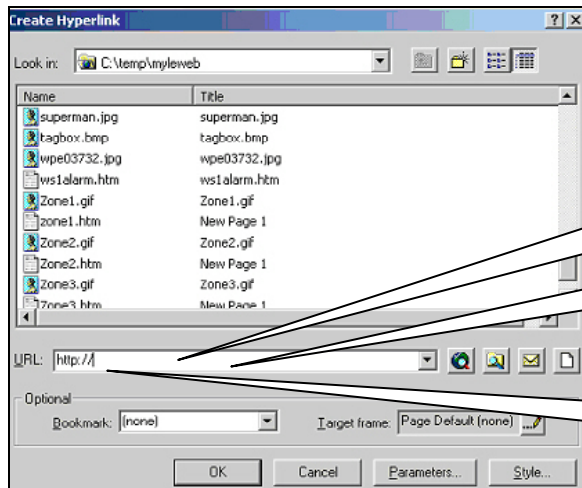
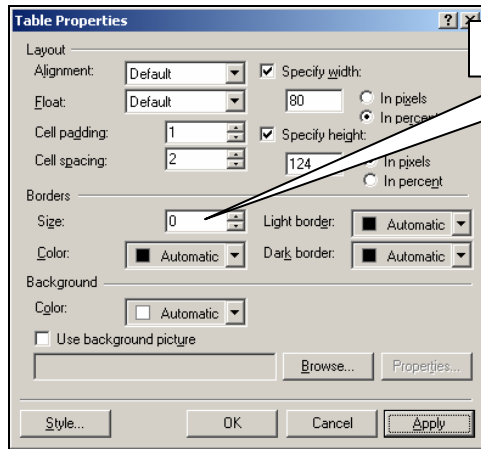
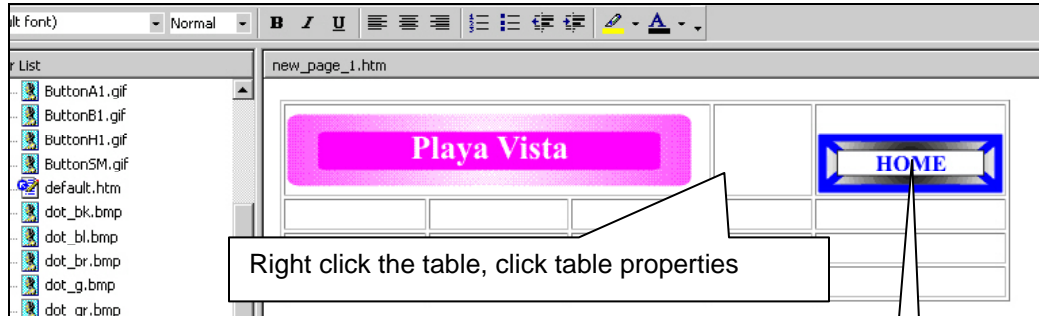
Edit the basic properties of each type of ActiveX control used in the project and then copy the object

- In FrontPage normal view: Highlight the object by clicking on it once. Use Ctrl-C (or **Edit|Copy** in the pull down menu) to copy the object. Use Ctrl-V (or **Edit|Paste** in the pull down menu) to paste the object.
- In Html: Highlight the control's html tags and use Ctrl-C and Ctrl-V to copy and paste. The tags always begin with <object> and end with </object>

### 3.6. Links to other pages.

An element link to another page can be made by associating a hyperlink with it. The hyperlinked object should not be positioned absolutely as it will not work on the WinCE panel, instead use a table. Position the table suitably and put the element to be hyperlinked in a cell in the table. Format the table so that it is invisible.

#### 3.6.1. Example: Create Table



Click the object. Click the Hyperlink tool.  
Type: *Default.htm* (Delete the *http://* you may find here.)

To configure a 'Back' button type *javascript:history.back()*

Note that text must not be prefixed by *http://* Delete this.

### 3.7. Specifying Colors

Colors are achieved by mixing RED, GREEN and BLUE. The amount of each color component is represented by a numeric value of 0-255 (decimal) or 0-FF (hexadeimcal).

Colors are specified as hexadecimal strings in the format 0xrrggbb

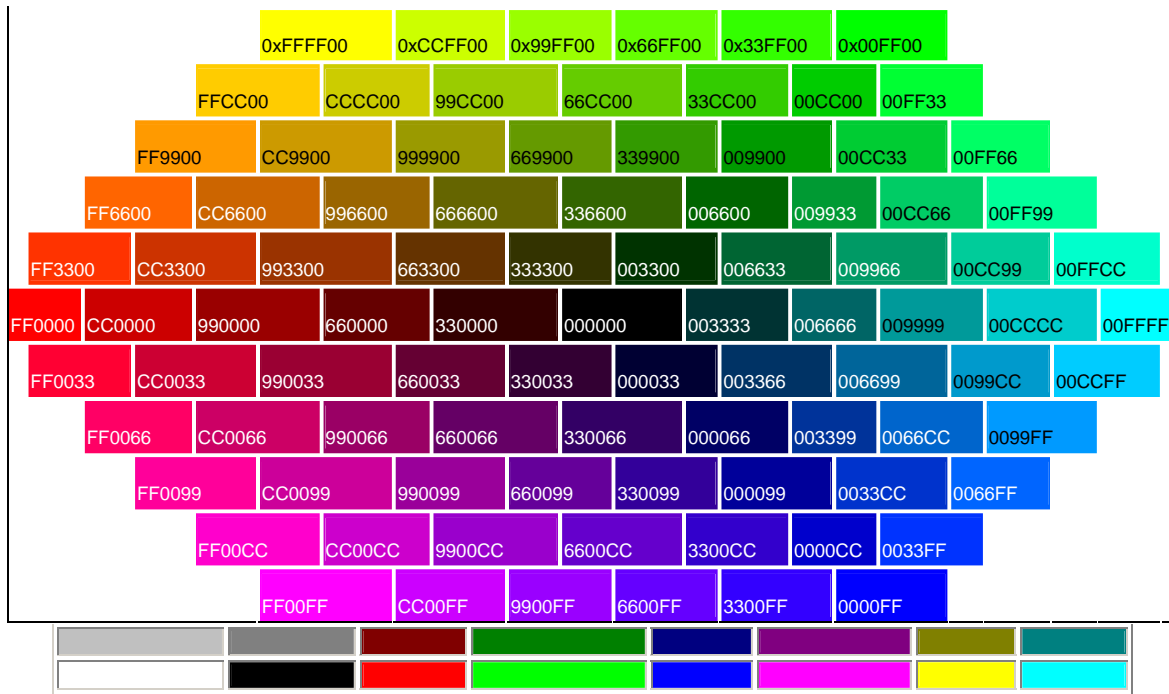
Where rr, gg, bb are hexadecimal values in the range 00 to FF

**rr** is the value of the **red** component

**gg** is the value of the **green** component

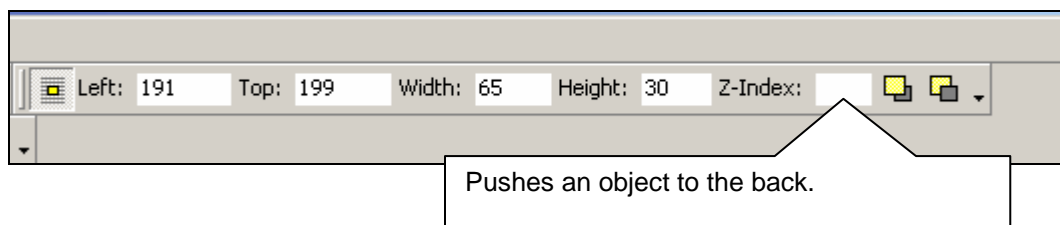
**bb** is the value of the **blue** component

Color strings are always specified beginning with '0x' as shown below.



### 3.8. Using Pictures / Images

- Using gif/jpg/bmp files is permitted. Use of GIF files is recommended as the compression is high without loss of picture quality.
- To ensure that the inserted picture does not overlay other objects or controls inserted on the page ensure that the picture is always pushed to the back. HTML uses a layering system based on a parameter known as the z-index. The more positive the z-index the closer the object is to the top. It is possible to push a picture to the back using the positioning toolbar. To view this toolbar select **View/Toolbars/Positioning**.



### 3.9. Files that Must be Included in the Sentry Web Project

Every project must contain the following files.

Livedata.htm	This may be an empty file. It can be used to control the cookie style.
Nodes.htm	This file is used to configure the WebServer, as it specifies which Sentry Nodes are connected to the WebServer ports.
Default.htm	This page is served if a user browses to the web project without specifying a specific page. Consider this page the Home Page.
Alarms.htm	Most projects require this page.

#### 3.9.1. Nodes.htm

- Every project must contain a page with the file “nodes.htm” which tells the WebServer which ports to use to communicate with the various Sentries.
- There is no need to link any other page to nodes.htm but it can be done if desired.
- The following text must appear on the page. Ensure that no HTML appears in the middle of the text by highlighting the text and using the HTML tab.
- Do not place this text in a table unless placing it all in one cell or the text will be broken by invisible HTML codes.

```

SENTRY PORT: P1=1,2,3,4
SENTRY PORT: P5=5
SENTRY PORT: R1=10

```

Only P1-P8 or R1-R2 are valid ports for Sentry.

Use the colon and equal sign. Separate sentry numbers with commas. Ensure that spelling, sentence case and notation is identical to this example.

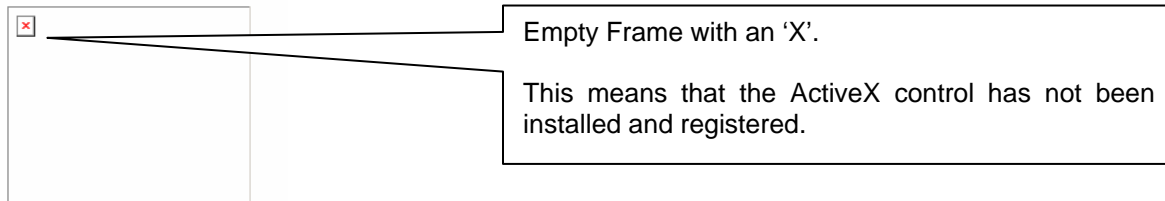
Use one line per port connected to Sentry's.

### 3.10. Hints and Tips

- Ensure all file names meet DOS6.2's 7.3 format abcdefg.xyz. File names longer than 7.3 are not supported.
- Ensure the version of the FieldServer firmware is compatible with the Sentry Web Project. – See Appendix C.1 for further information.
- All project files that are created and used must reside in the project's root folder.
- Do not use Java since some panels (e.g: Advantech) do not support them.
- Do not use any Active-X objects (except those supplied – which get stripped out by the installer before downloading.) Some panels (e.g: Advantech) cannot remotely register the objects and they would need to be pre-registered on each panel before shipping.
- Do not use any Microsoft components such as navigations bars, banners, and searches. These require Microsoft FrontPage extensions to be running on the server.
- Give each control a unique tag to make it easier to troubleshoot and maintain the project. By default each ActiveX control is given the same name.

### 3.11. Installing and Registering ActiveX Controls on the Browsing PC

The ActiveX controls must be registered on a computer before they will be displayed. Registration is a formal process that is part of the operating system. If the ActiveX controls are not installed, the browser will display an empty container as shown below.



There are three methods for installing and registering the ActiveX OCX files on a computer

- Manual Installation using the provided Installation Application. This is the simplest and most reliable with the only drawback being that it needs to be done on every computer used to browse pages containing the FieldServer ActiveX controls.
- Building a web page to install and register the OCX's: This is a simple method but less reliable because of the complexity of and variation between various operating systems. A sample web page is provided by FieldServer Technologies. The main advantage of this method is that it makes installation virtually automatic.
- Building a web page to install and register compressed OCX files. This method is complex and unreliable because of the complexity of and variation between various operating systems. FieldServer Technologies provides a sample web page and instructions.

### 3.11.1. Manual Installation using the Installation Application provided by FieldServer Technologies

Specific notes are provided in the chapters that describe each WSPI:Sentry component.

### 3.11.2. Building a Web Page to Install and Register the OCX's

*(The notes are generalized and do not specifically apply to the ActiveX controls specified in this manual. For example the object ID's and properties change from control to control)*

It is suggested that the user build installation web pages in addition to the normal web pages. The reason is that the installation web pages not only download the HTML text and images that make a web page but also download the entire OCX file which can add 80 to 150 kBytes of extra download. When a new user wants to install the objects he needs merely browse to the installation web pages.

- Create an installation HTML file that contains a single ActiveX control. Change to HTML view and add the code fragment highlighted in yellow. (Change the FS\_eg1.ocx to the name of the control placing on this page – such as FS\_ana1.ocxor FS\_txt1.ocx...)

```
object classid="clsid:0AA0A033C-58A0-4D5B-A209-4D3B2571B921"
codebase="FS_eg1.ocx#version=-1,-1,-1,-1" id="FS_eg1" width="40" height="20">
  <param name="_Version" value="65536">
  <param name="_ExtentX" value="1058">
  <param name="_ExtentY" value="529">
  <param name="_StockProps" value="0">
</object>
```

- Place the OCX file in the same location as the web pages. If the web pages are being served from a FieldServer then the OCX file must be placed on the FieldServer. If the web pages are being served from a computer on the network then the ocx files must be placed in the same folder as the web pages on that computer.
- Browse to the web page. Every time the page is browsed, the ActiveX control will be downloaded and registered. The reason for this is that the version number in the HTML file has been set as -1,-1,-1,-1 which tells Internet Explorer that it must be downloaded and registered irrespective of whether it has been previously registered.
- The following example is a very simple web page that will cause the FS\_ana1 control to be downloaded and registered. When viewed the download and registration occur. The control isn't configured to listen for data on the network so it will display as if it is offline at this time.



### 3.11.3. Building a Web Page to Install and Register Compressed OCX Files.

*The notes are generalized and do not specifically apply to the ActiveX controls specified in this manual. For example the object ID's and properties change from control to control*

Use this method if familiar with making signed cab files. Cab files are compressed (and signed, hence verified) Windows components such as ActiveX controls or DLLs.

To use this method read the notes in [section 6.2](#) and change the Codebase entry to refer to the cab file.

```
object                                classid="clsid:0AA0A033C-58A0-4D5B-A209-4D3B2571B921"
codebase="FS_eg1.cab#version=-1,-1,-1,-1"  id="FS_eg1"      width="40"      height="20">
  <param          name="_Version"          value="65536">
  <param          name="_ExtentX"         value="1058">
  <param          name="_ExtentY"         value="529">
  <param          name="_StockProps"      value="0">
</object>
```

### 3.12. Limitations and Supported Operating Systems

Specific compatibility notes are provided in the chapters that describe each control.

The controls are supported only for the following operating systems and ActiveX control containers, where appropriate (based on compatibility statements)

#### Operating Systems

- Microsoft Windows 2000 Professional
- Microsoft Windows CE 3.0

#### ActiveX Containers

- Microsoft Internet Explorer version 6.0

The controls have been tested to the following limitations

Maximum number of controls running on one PC	200
Maximum number of any single control running on one PC	200
Maximum number of Containers running on one PC	50
Maximum number of PC's running containers connected to one FieldServer	4
Supported screen Resolutions	1152x864; 800x600

#### 4. Configuration of the FieldServer

The configuration provides instruction to the FieldServer. It enables protocols, defines connections and nodes and defines (Client) tasks and (Server) capabilities. The Sentry application has been optimized so that there is very little configuration required, provided that the application only consists of the WebServer and Sentry's. If there are additional devices, tasks or capabilities then the basic configuration provided below must be extended.

A generalized configuration manual – “FieldServer Configuration Manual” may be found at [http://www.fieldserver.com/techsupport/manuals/datasheets/FieldServer\\_Bridge\\_Configuration\\_Manual.pdf](http://www.fieldserver.com/techsupport/manuals/datasheets/FieldServer_Bridge_Configuration_Manual.pdf)

##### 4.1. Prepare Config.CSV

The project requires a file called config.csv. A sample config.csv file has been provided with the template projects. Refer to the “FieldServer Configuration Manual” for more information. The minimum contents of the csv file are illustrated below. Once the WebServer finds the nodes.htm and taglist.ini file it creates the Connections, Nodes, Data Arrays and Map Descriptors required to collect data from the Sentries and serve data to the web pages.

Adapters Adapter, N1 ,	Protocol web	The name of the driver.
------------------------------	-----------------	-------------------------

Specify which of the FieldServer's network adapters should provide Web Driver capability. One such line is required for each adapter providing the service.

##### 4.2. Suppressing Sentry Support and Sentry Face Plate support

If not using Sentry Support or Sentry Face Plate support in the project, these functions can be suppressed to reduce the point count and save resources and processing power.

Adapters Adapter, N1 ,	Protocol, web ,	Application Sentry:No
------------------------------	--------------------	--------------------------

Specify the application to control how the driver provides/does not provide support for Sentry applications.

Application	Support Provided
Not Specified	Full support for Sentry Applications based on nodes.htm and taglist.ini.
Sentry:No	No support for Sentry Applications. Nodes.htm is not used to create Connections, Nodes, Data Arrays and Map Descriptors.
SentryFP:No	No support for Sentry faceplate applications. Nodes.htm is used to create Connections, Nodes, Data Arrays and Map Descriptors BUT the size of the point count, size of the data arrays and the number of map descriptors is reduced allowing support for the WPSI WinCE30 application but not allowing support for the Sentry Face Plate application.

### 4.3. Serving Web Pages

The FieldServer can be configured to provide HTTP services and hence is able to serve Web Pages, graphic files and almost all other files embedded in web pages. Typically these files have extensions \*.htm, \*.jpg, \*.gif, \*.bmp.

The FieldServer supports DOS 8.3 file name format but not the file name formats of newer operating systems such as Windows 2000 where files can have very long names which include spaces and punctuation.

To configure the FieldServer to serve Web Pages:

- Ensure that the FieldServer's firmware contains the 'Web' Driver (HTTP driver).
- The pages and files to be served must be downloaded onto the FieldServer's flash disk.
- The FieldServer's configuration file (config.csv) must be programmed to activate the Web Driver. – refer to Section 4.1

### 4.4. Serving ActiveX Control OCX files

Each ActiveX control is contained in a file with the extension OCX. OCX files can be served by the WebServer Driver in the same way as web file images and components.

To do this be aware of a few issues.

- The size of the OCX files. These can run from as little as 40k to as much as several hundred kilobytes. Downloading takes time.
- OCX files need to be registered on the browsing computer initially, but it is not necessary to have them downloaded every time a page is refreshed.

### 4.5. Serving Data to ActiveX Controls

The driver called 'SMT' (a FieldServer Ethernet driver) is used to serve data in response to polls from the ActiveX Controls.

### 4.6. IP Address Substitution

When ActiveX controls are configured, the IP address of the FieldServer that the ActiveX control must communicate with is specified. IP address substitution allows the WebServer to modify the html file served to the browser and replace the configured address with its own. This is useful if a web project has been created to connect to and obtain data from a FieldServer with a particular IP address and it becomes necessary to transfer the project to another WebServer with a different address. Substitution is ON by default. Refer to Section 4.7.3 for information on how to turn it off for a whole project.

The following limitations to address substitution apply:

- If a project has been built with ActiveX controls configured to obtain data from more than one WebServer then address substitution is not suitable and must be disabled.
- If the web project is being served from a Server other than the FieldServer WebServer then address substitution will not work.
- Substitution only operates on .html files.

It is possible to turn the substitution on/off multiple times in a project. In such case an instruction to do so must be embedded in the html code in appropriate places. The example below illustrates this.

```

<FST_IPAddress_Substitution=0>
<object classid="clsid:353F5F1E-4D07-4EE8-9B0A-A82511E32F4A" id="SentryBK1"
width="168" height="56">
  <param name="_Version" value="65536">
  <param name="IP Address" value="192.168.1.82">
  <param name="Node" value="1">
  <param name="Index" value="40701,64,
40765,68,
40833,33,
40866,49,
40915,8,
40501,8,
40511,8,
40923,16,
40939,8,
40947,26,
40973,4,
">
  <param name="_ExtentX" value="4445">
  <param name="_ExtentY" value="1482">
  <param name="_StockProps" value="0">
</object>
<FST_IPAddress_Substitution=1>
<object classid="clsid:353F5F1E-4D07-4EE8-9B0A-A82511E32F4A" id="SentryBK1"
width="168" height="56">
  <param name="_Version" value="65536">
  <param name="IP Address" value="192.168.1.81">
  <param name="Node" value="1">
  <param name="Index" value="40701,64,
40765,68,
40833,33,
40866,49,
40915,8,
40501,8,
40511,8,
40923,16,
40939,8,
40947,26,
40973,4,
">
  <param name="_ExtentX" value="4445">
  <param name="_ExtentY" value="1482">
  <param name="_StockProps" value="0">
</object>

```

Substitution is turned off.  
The instruction is case sensitive.

Assigning a value of zero turns substitution off. A value of 1 turns it on.

This instruction can be embedded many times and in more than one file.

It can only be embedded in htm files.

Substitution is turned back on.

## 4.7. Additional WebServer Configuration

Additional configuration of the WebServer is done using the file config.htm. Normally a project builder will not use this file and should only do so under the direction of FieldServer's tech Support.

The file config.htm is read once only when a FieldServer is started. Thus if the file is changed and downloaded, the FieldServer must be restarted for the changes to take effect.

Lines in the file config.htm that begin with a '#' are treated as comments and are ignored.

### 4.7.1. Livedata Refresh Rate

To override the default setting, add the following line to the file:

```
LiveData_Refresh_Rate=n
```

Where n is a whole number and represents the number of seconds between refreshes. The longer the period the less often new data is obtained by the browser from the WebServer. The smaller the number the faster the update but the load on the network and WebServer increases. Default is 7 seconds.

### 4.7.2. Cookie Expiry Time

To override the default setting, add the following line to the file:

```
Cookie_Expiry_Time=n
```

Where n is a whole number and represents the number of seconds that the cookie exists for before expiring. Limiting the life of the cookies, enables the web pages to report that the controls being displayed are offline when communications to the WebServer fail. The longer the cookie life, the longer the time delay before the display can report offline controls to a browser.

If the expiry time is less than the refresh rate the cookies will expire constantly. The default value is 25 seconds.

### 4.7.3. IP Address Substitution

To override the default and turn address substitution off, add the following line to the file:

```
<FST_IPAddress_Substitution=0>
```

Assigning the zero value turns IP substitution off. Additional notes on IP Address Substitution can be found in Section 4.6.

## 5. Downloading the Project

An application called “toWS” (to WebServer) is provided to validate, process and download a selected Sentry project to a WebServer. This application replaces the user embedded ActiveX controls in the web pages with JavaScript to achieve the desired behavior. This is necessary because a number of the Sentry controls were designed for Windows CE systems and Windows CE 3.0 does not support Java or ActiveX technologies but supports JavaScript. It is far easier to place and configure an ActiveX control on a web page during project construction than to write and edit JavaScript.

The following steps must be executed.

### 5.1. Clean-Up

Clean up the project deleting unnecessary files. There is limited space on a FieldServer and downloading unnecessary files and pictures may consume this resource.

### 5.2. Check

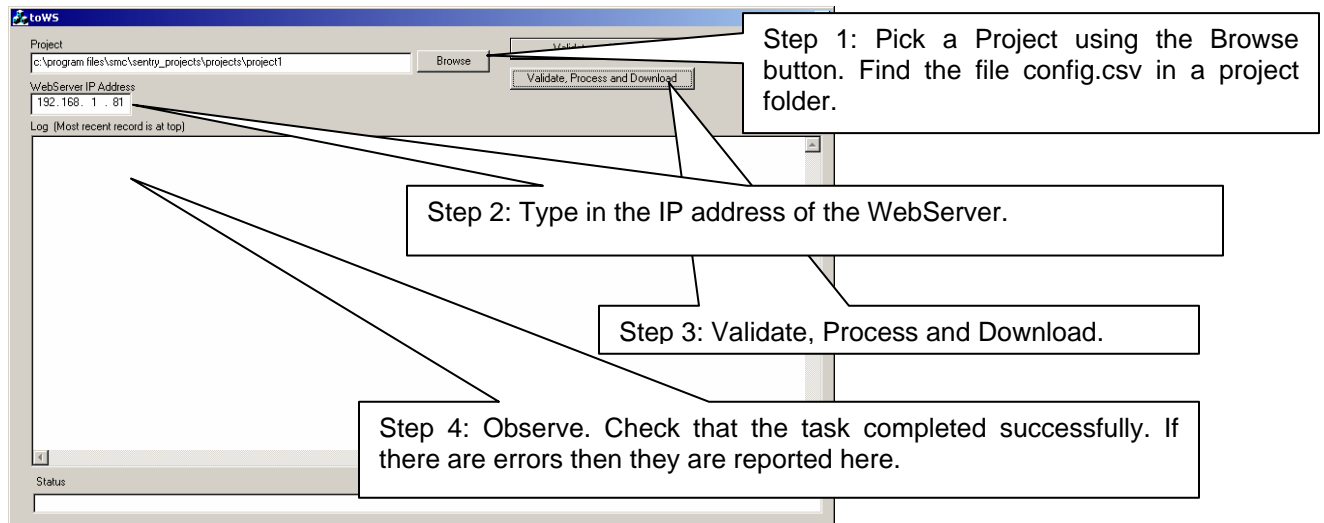
Check that the project contains the following files – refer to Section 3.9

- Alarms.htm
- Nodes.htm
- Default.htm
- Livedata.htm

### 5.3. Automated Download (toWS Processing)

Using the Windows Start Menu, find the Program Group called “SMC\_Web\_Sentry” and run the application “toWS”. The application is located in “C:\Program Files\SMC\Sentry\_Projects\Apps” and can be run from there.

The following notes outline how to use the application.



- If it is the first time the project has been downloaded to the FieldServer then the firmware should be downloaded. Once the firmware has been downloaded the check box is cleared.
- Restart FieldServer and Browse
- 

#### 5.4. Manual Download Procedures

Manual download of a project should be avoided unless the user is positive that the project is valid and that all pre-download processing is complete.


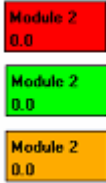



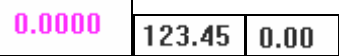


When validation and pre-processing has been completed the files for download are placed in a folder called.

`"C:\Program Files\SMC\Sentry_Projects\Current\Download"`




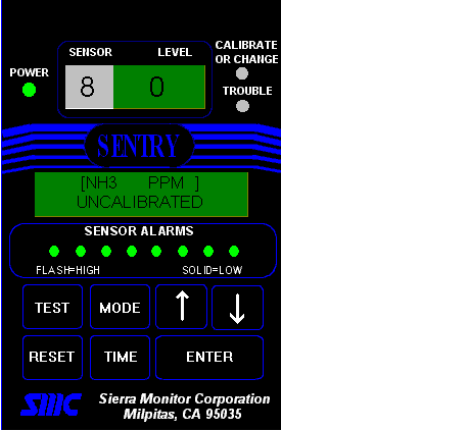

The utility RUIINET.exe (located in "C:\Program Files\SMC\Sentry\_Projects\Apps") can be used to transfer the files individually. A batch file called "update.bat" can be found in the download folder. Before using it, edit the file and check that the destination IP address for the WebServer is correct.

## 6. Sentry Controls – A Summary

The following controls, application and elements are available for constructing the Sentry Web Project.

Control	Display	Description
Sentry Zone Button Controls		The color of the button changes according to the state of the points being monitored. Can monitor all/some sensors on one or more Sentry's.
Sentry:Sensor Status Controls		The color or the sensor changes according to the state of the particular sensor on one Sentry. Sensor name, gas concentration and units are also displayed.
Sentry:Combo Status Controls		Similar to the Sentry:Sensor control but display configurable including alarm levels.
LED Controls*		Displays an image file based on the binary state of Data Array value in the FieldServer. Thus, an 'on' and 'off' file must be defined. This control is not specifically designed for interfacing to a Sentry.
Text Display Controls*		Displays text based on the binary state of Data Array value in the FieldServer. Thus an 'on' and 'off' text string (and colors) must be defined.
Analog Value Display Controls*		Displays the current value of a Data Array value in the FieldServer.
Alarm Control Page		Provides a dynamic list of current Sentry Alarms. Alarm states are highlighted in different colors.
Alarm Reset Button Control		A button that, when pushed, sends an alarm acknowledgement to all Sentry's connected to the FieldServer. Button text is configurable.

\* The control is provided as part of the Advanced Feature Pack (which must be ordered in addition to part 8706-01).

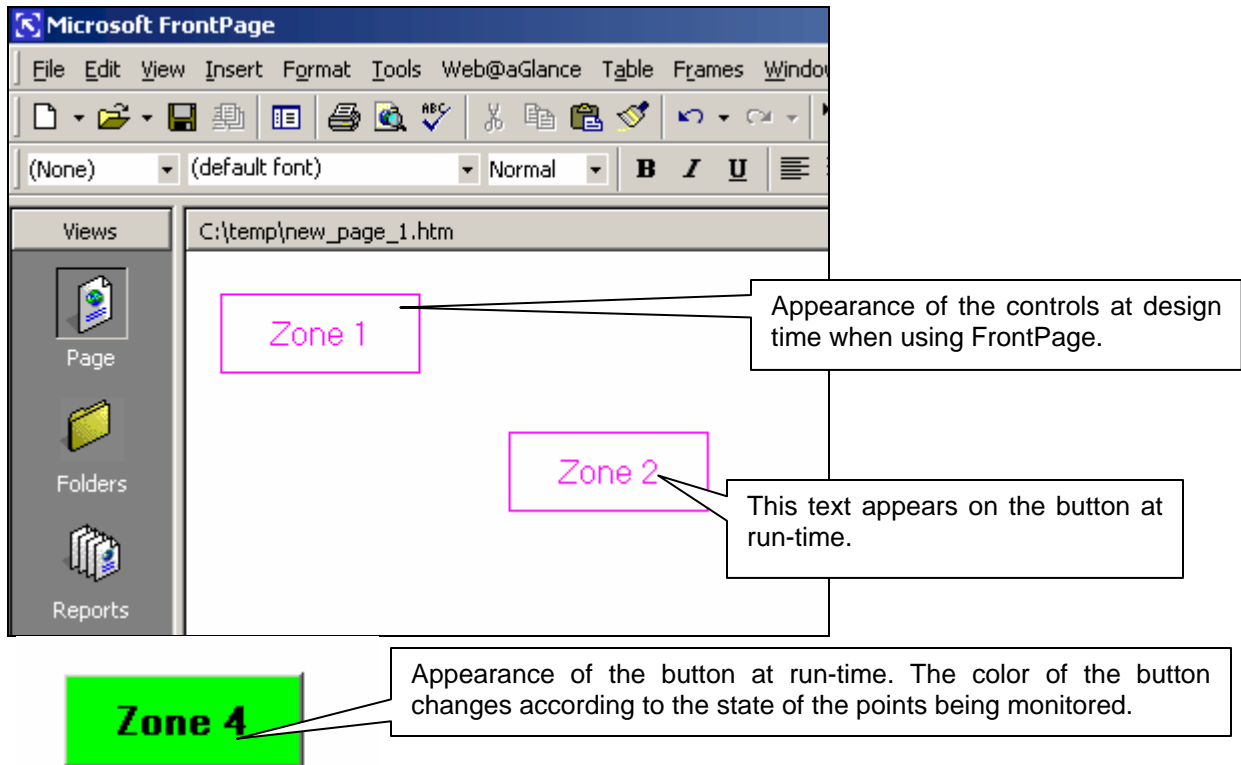
Control	Display	Description
Event Control Page	 <p>Event Log TOOLS ALARMS BACK HOME</p> <p>LEGEND            E - Key Event P - Periodic            U - Threshold W - New Warning A - New Alarm H - Returned to Normal            D - Delta w - Warning a - Alarm C - Comms Alarm</p> <p>Sentry F REPORT Thu Jan 17 08:18:16 1900            1 1C 2C 3C 4C 5C 6C 7C 8C            00 00 00 00 00 00 00 00</p> <p>Sentry K REPORT Thu Jan 17 08:18:16 1900            1 1C 2C 3C 4C 5C 6C 7C 8C            00 00 00 00 00 00 00 00</p>	<p>Provides a dynamic list of Sentry Events (Alarms, warnings etc.)</p>
Event Uploader Control	 <p>Upload</p>	<p>A button that, when pushed, uploads the events.dat file from the FieldServer and saves it and a comma separated version (suitable for MS Excel) on a PC.</p>
Event Uploader Application		<p>This application is not suitable for inclusion in a web project. It performs the same function as the Event Uploader control except that it is presented as a stand alone application. It can be used to convert an events.dat file located on a PC to a comma separated file suitable for use with Excel.</p>
Access Control	 <p>LOGIN BACK HOME</p> <p>Login to access the monitoring system.            Enter your User ID and Password</p> <p>Login</p>	<p>Provides a method of restricting access to the web pages. After a time, all pages change to this one.</p>
Screen Saver		<p>Provides a method of having the screen change to a specified page after an idle time.</p>
Sentry Faceplate	 <p>POWER SENSOR LEVEL CALIBRATE OR CHANGE TROUBLE</p> <p>8 0</p> <p>SENTRY</p> <p>[NH3 PPM ] UNCALIBRATED</p> <p>SENSOR ALARMS</p> <p>FLASH=HIGH SOLID=LOW</p> <p>TEST MODE ↑ ↓</p> <p>RESET TIME ENTER</p> <p>Sierra Monitor Corporation Milpitas, CA 95035</p>	<p>Provides a Sentry Faceplate which displays current Sentry information and allows a user to interact with the Sentry.</p>
Sentry Calibration Backup/Restore Control	 <p>Upload from FieldServer</p> <p>Download to FieldServer</p> <p>Ready</p>	<p>Provides a method of uploading (to a PC) calibration and other essential data which may be lost if a Sentry's firmware is replaced. Can also be used to restore the Sentry.</p>

## 7. Sentry Zone Buttons

### 7.1. Compatibility

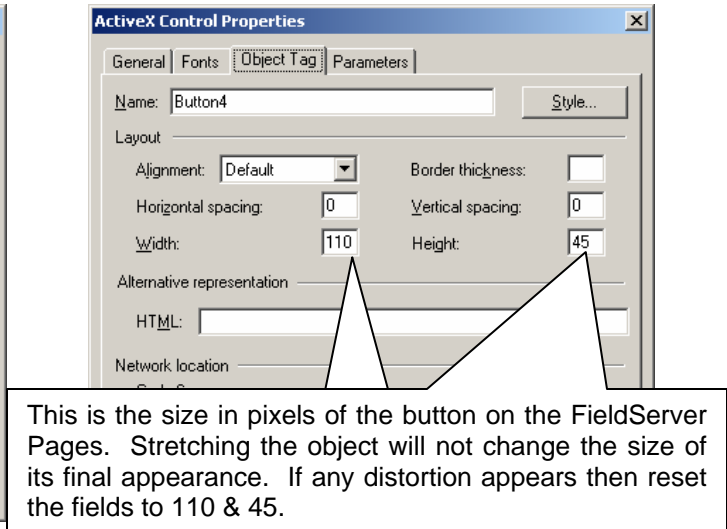
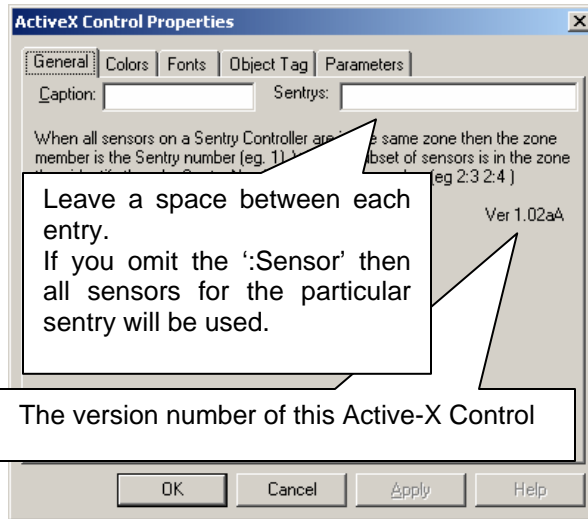
Control Compatibility Statement	
Control Name	"FST Common Alarm Control"
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements/Notes	Subject to Cookie Limitations
Installer	Install_FST_SentryProjectComponents_xxxx.exe Where xxxx is a version number.

### 7.2. Configuration and Use



Right Click the Object to set the Active-X Control properties. Specify the *Caption* and the *Sentrys*

<b>Caption:</b>	This is an identifier that is visible on the screen and helps tell one instance of the object from another.
<b>Sentrys:</b>	Specify a Sentry:Sensor or a series of Sentry:Sensor Addresses. In the case of the Reset Button no Sentry:Sensor needs to be specified. It is possible to specify multiple Sentry:Sensor combinations



When viewed, using a browser connected to a live system, the color of the object changes based on the state of the Sentry:Sensor element that it is monitoring.

Color	Sentry Sensor state
White	The object is offline, i.e. Communications cannot be established or the data age makes the data obsolete.
Red	The Sentry:Sensor element being monitored is in alarm. The alarm is based on the latched alarm state.
Amber	The Sentry:Sensor element being monitored is in a warning state and not in alarm. The warning is based on the latched warning (lo alarm) state.
Grey	The Sentry:Sensor element being monitored is in a 'invalid data' state and not in an alarm or warning state (based on latched alarm or warning states) Invalid Data means that the sentry is offline or the particular Sensor is reporting invalid data.

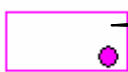
## 8. Sentry:Sensor Controls

### 8.1. Compatibility

Control Compatibility Statement	
Control Name	"FST Sentry-Channel Control"
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements/Notes	Subject to Cookie Limitations
Installer	Install_FST_SentryProjectComponents_xxxx.exe Where xxxx is a version number.

### 8.2. Configuration and Use

When placing one of these controls on the screen they appear as:



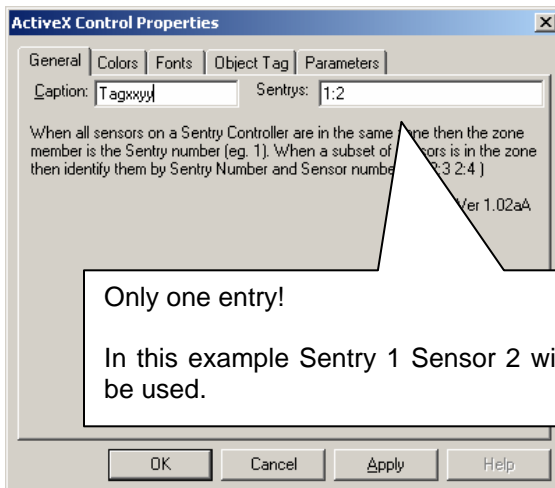
Right Click the Object to set the Active-X Control properties. Specify the *Caption* and the *Sentrys*

**Caption:** This is an identifier that is visible on the screen and helps tell one instance of the object from another. **Note!** In the case of a Sentry-Module object the caption is also used by the FieldServer in special circumstances.



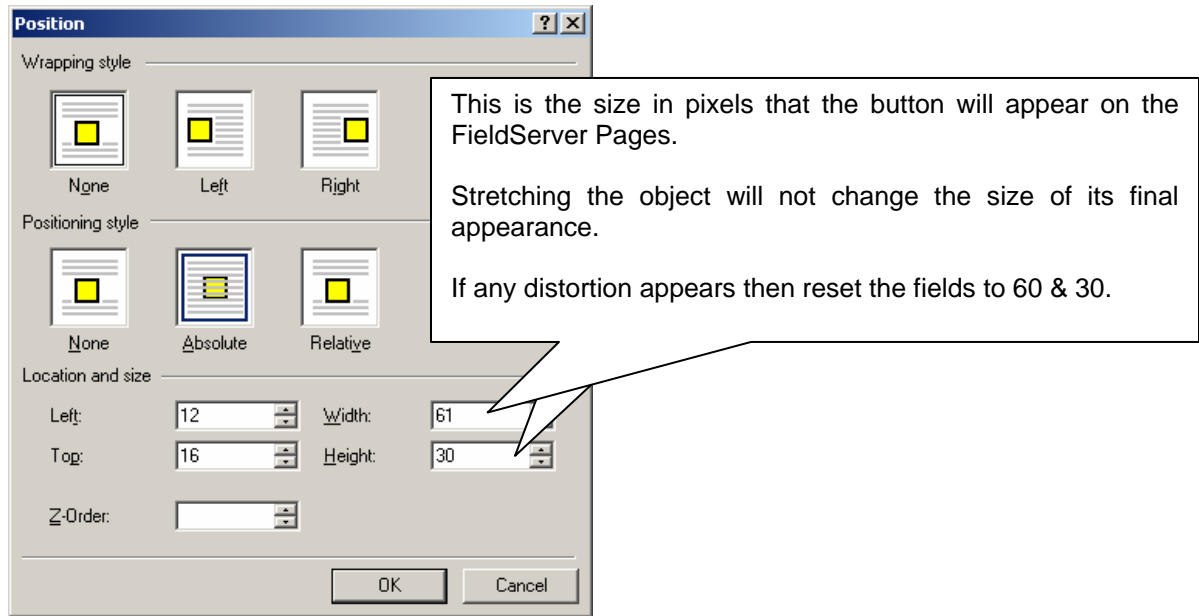
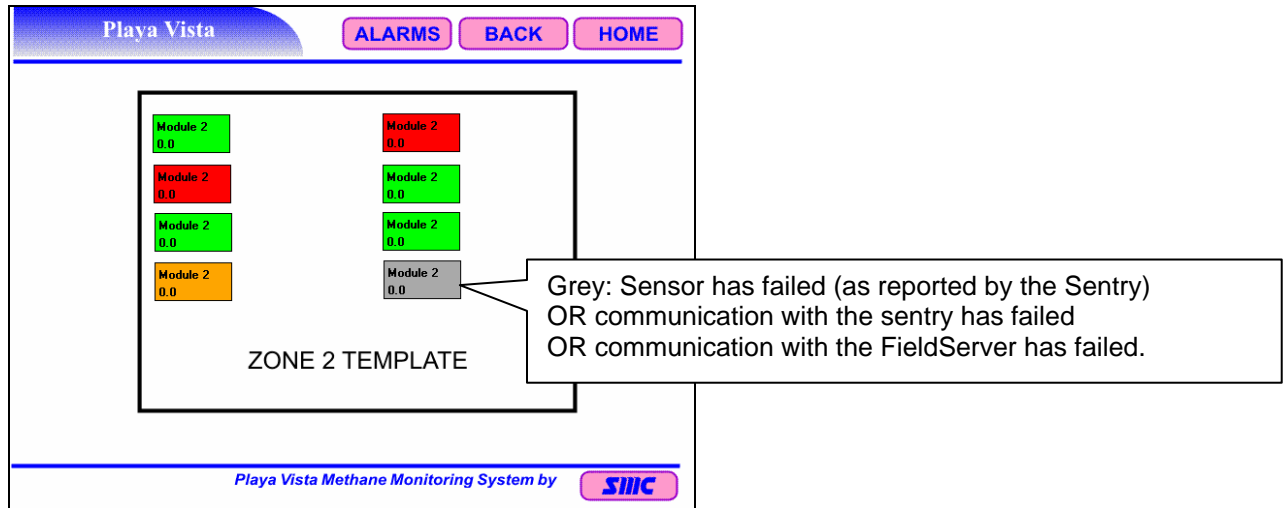
The *Caption* will be used for the display unless it is blank. In this case the tag name displayed on the web pages will be obtained from the Sentry's memory. .

**Sentrys:** Specify a Sentry:Sensor or a series of Sentry:Sensor Addresses. In the case of the Reset Button no Sentry:Sensor needs to be specified.



Position the control using absolute positioning.

The screen sample below illustrates what Sentry:Sensor Controls will appear as at run time. The background color of the control changes as the state changes.



When viewed, using a browser connected to a live system, the color of the object changes based on the state of the Sentry:Sensor element that it is monitoring.

Color	Sentry Sensor state
White	The object is offline, i.e. Communications cannot be established or the data age makes the data obsolete.
Red	The Sentry:Sensor element being monitored is in alarm. The alarm is based on the latched alarm state.
Amber	The Sentry:Sensor element being monitored is in a warning state and not in alarm. The warning is based on the latched warning (lo alarm) state.
Grey	The Sentry:Sensor element being monitored is in a 'invalid data' state and not in an alarm or warning state (based on latched alarm or warning states) Invalid Data means that the sentry is offline or the particular Sensor is reporting invalid data.

## 9. Sentry:Combo Controls

### 9.1. Compatibility

Control Compatibility Statement	
Control Name	"FST SensorAlarmSetpoints Control"
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements/Notes	Subject to Cookie Limitations
Installer	Install_FST_SentryProjectComponents_xxxx.exe Where xxxx is a version number.

### 9.2. Configuration and Use

This control is capable of displaying Sentry Sensor values as for the Sentry-Sensor control. In addition it can be configured to display the alarm setpoint for a particular channel.

Version 1.06a of the WebServer is required to allow this control to function correctly. Version 1.07a of Htmltowince.exe is required to prepare the html files correctly.

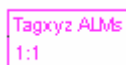
When placing one of these controls on the screen they appear as follows:



Position the control using absolute positioning

Right Click the Object to set the Active-X Control properties. Specify the *Caption* and the *Sentrys*

**Caption:** This is an identifier that is visible on the screen and helps tell one instance of the object from another. **Note!** In the case of a Sentry-Module object the caption is also used by the FieldServer in special circumstances.



**Sentrys:** Specify a Sentry in the format Sentry:sensor eg. 1:1

**ActiveX Control Properties**

General | Colors | Fonts | Object Tag | Parameters

Caption: Tagxyz Sentry: 1:1

Specify a Controller and Sensor. Example Sentry Controller 3 and Sensor 5 should be specified as 3:5

Display Sensor Value

Display Sensor Alm Setpoints

Display Tag Name

Active Colors

Buttons: OK, Cancel, Apply

Callouts:

- If left blank, the WebServer will obtain a tag name from the Sentry's memory.
- Only one entry! In this example Sentry 1 Sensor 2 will be used.
- Tick this box to have the control display the current value of the specified sensor.
- Tick this box to have the control display the current alarm setpoint values of the specified sensor.
- Tick this box to have the control display the tag name of the specified sensor.
- Tick this box to have the control change color to indicate the sensor state. If this box is not checked then the sensor will update but the colors will be static.

The screen sample below illustrates what Sentry:Sensor Controls wippear as at run time. The background color of the control changes as the state changes.

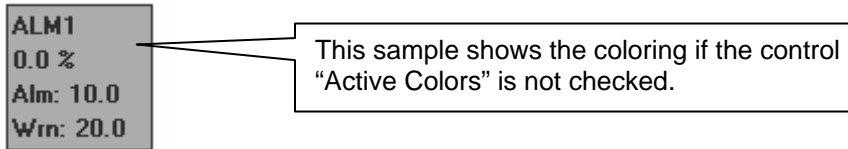
HOME

Callouts:

- "Show Tag Name" and "Active Colors" Selected
- "Show Alarm Setpoints" and "Active Colors" Selected
- "Show Value" and "Active Colors" Selected
- "Show Value", "Show Tag Name", "Show Alarm Setpoints" and "Active Colors" Selected
- "Show Value", "Show Tag Name" and "Active Colors" Selected

TABLE

Hazardous Gas Monitoring System



When viewed, using a browser connected to a live system, the color of the object changes based on the state of the Sentry:Sensor element that it is monitoring. If "Active Colors" was a checked option then the coloring is as follows.

Color	Sentry Sensor state
White	The object is offline, i.e. Communications cannot be established or the data age makes the data obsolete.
Red	The Sentry:Sensor element being monitored is in alarm. The alarm is based on the latched alarm state.
Amber	The Sentry:Sensor element being monitored is in a warning state and not in alarm. The warning is based on the latched warning (lo alarm) state.
Grey	The Sentry:Sensor element being monitored is in a 'invalid data' state and not in an alarm or warning state (based on latched alarm or warning states) Invalid Data means that the sentry is offline or the particular Sensor is reporting invalid data.

## 10. Alarm Page Control

### 10.1. Compatibility

Control Compatibility Statement	
Control Name	'FST ALARM OBJECT' This control is not an ActiveX control, it is necessary to insert the control by placing a special text string on the page.
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements/Notes	Subject to Cookie Limitations
Installer	No installation required to use this control in FrontPage.

### 10.2. Notes

The Sentry alarm page is a special web page and must be designed carefully because the length and size of the alarm table will change as the number of alarms changes. **For this reason, it is recommended that the user place any common page elements such as titles, links and home/back buttons at the top of the page.** Vertical scroll bars are automatically generated when the alarm table gets large enough.

The following screen fragment shows part of an alarm screen at run time.



State	tag	Value	Units	Sentry.Channel
Warning	Module 1	0.0	Null (Units )	1.2
Warning	Module 1	0.0	Null (Units )	1.3
ALARM	Module 2	0.0	Null (Units )	2.1
ALARM	Module 2	0.0	Null (Units )	2.3
ALARM	Module 2	0.0	Null (Units )	2.4
ALARM	Module 2	0.0	Null (Units )	2.5
ALARM	Module 3	0.0	Null (Units )	3.1
Comm Error	Module 3	0.0	Null (Units )	3.7
Comm Error	Module 3	0.0	Null (Units )	3.8

### 10.3. Configuration

- Build the web page with the common page elements such as titles, home and back buttons etc.
- Now place the text 'FST ALARM OBJECT' on the screen using absolute positioning. When the WebServer finds this text it will replace it with an alarm table - the alarm table width is 80% of the screen. Do not position the table too far from the left hand margin as

there must be enough space for the table columns. Also, remember, the table length is variable so do not position any elements below the table using absolute positioning

- If there are no alarms then the table is removed and a single line in green font reporting: "No Active Alarms", is printed.
- If the absolute positioning of the alarm table appears not to work then this could be because the WebSentry driver expects that in the htm file the line immediately preceding the 'FST ALARM OBJECT' text contains the position. The positioning line and the 'FST ALARM OBJECT' text may not be separated – even by a single blank line.

#### 10.4. What gets Alarmed?

When configuring a Common Alarm button or a Sentry:Sensor Control the driver adds the tag to a list of potential alarms and monitors the list. A common alarm tag can be configured by specifying a Sentry:Sensor list as follows

```
' 1:1 1:2 2 3 :1' meaning
      Sentry 1 Sensor 1 & 2
      Sentry 2 Sensors 1 to 8
      Sentry 3 Sensor 1
```

The system will monitor all these points and report each on individually as an alarm when one occurs.

Only one line for each Sentry:Sensor will ever appear in the alarm table according to the alarm hierarchy. When a Sentry:Sensor is no longer in alarm the alarm line for that point is cleared.

## 11. Alarm Acknowledge Button

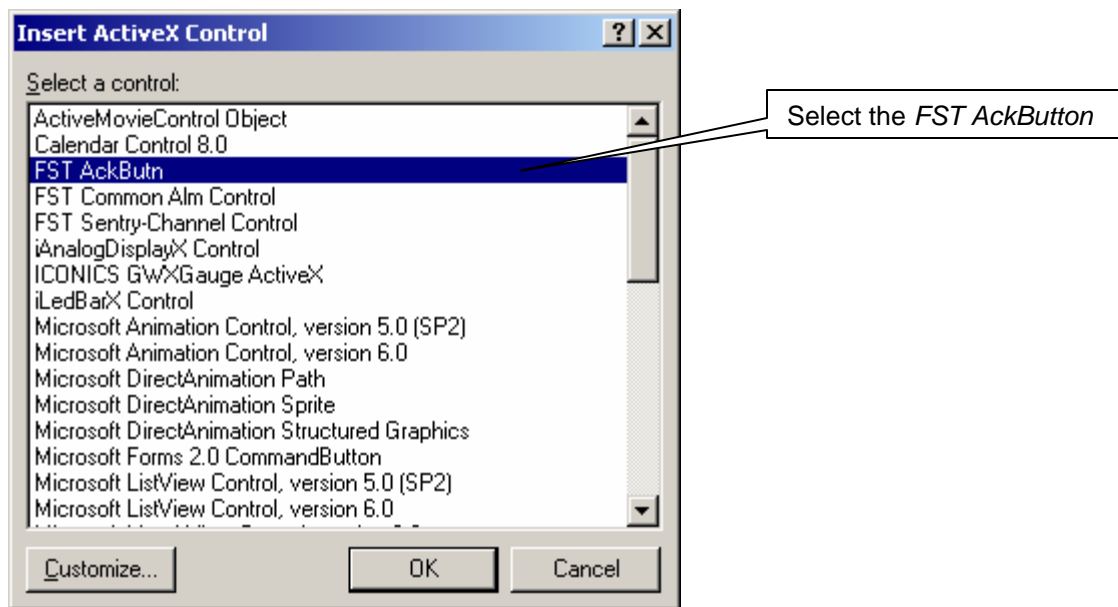
### 11.1. Compatibility

Control Compatibility Statement	
Control Name	"FST AckButn"
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements/Notes	Subject to Cookie Limitations
Installer	Install_FST_SentryProjectComponents_xxxx.exe Where xxxx is a version number.

### 11.2. Configuration and Use

A button is provided which can be used to acknowledge alarms. When pushed the button sends a message to the FieldServer which in turn sends a message to all the Sentrys that are part of the project to acknowledge the alarms.

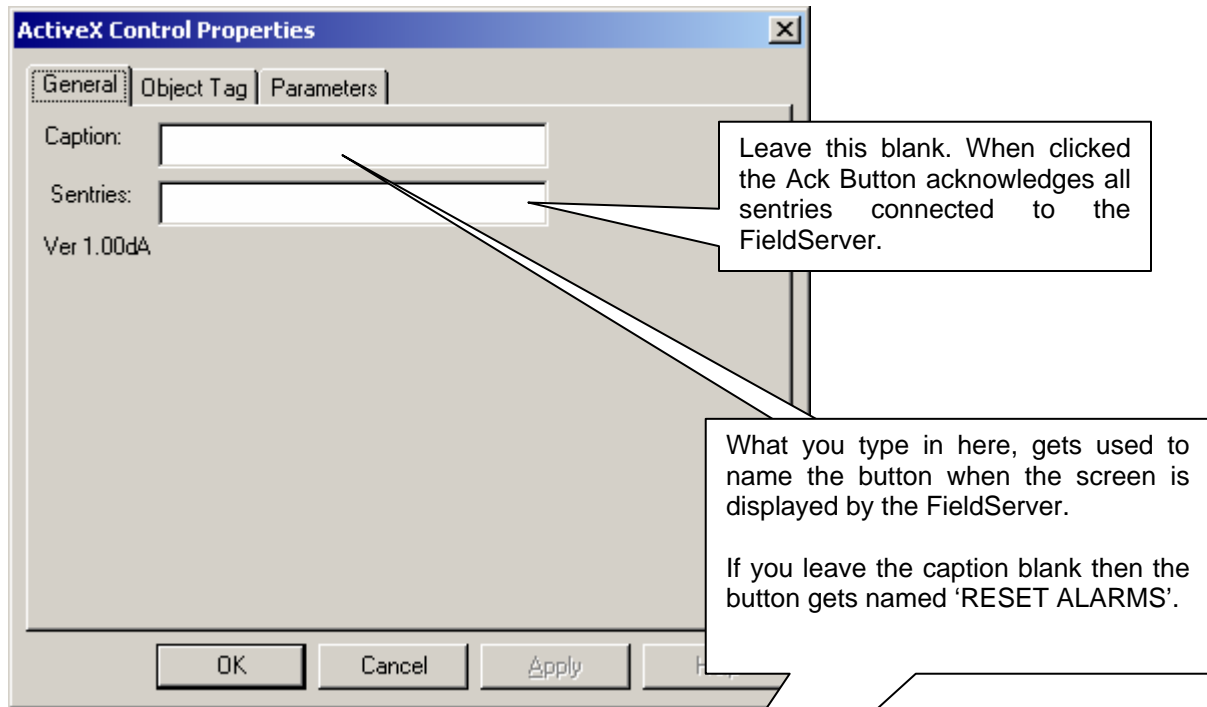
Use the *menu/insert/advanced/active-X*



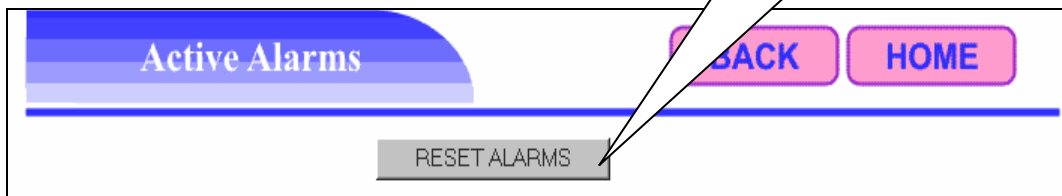
The object is inserted into the page and appears as



No other actions are required to configure this object. The system will ignore the caption and Sentrys specified on the control's properties page.



**Run Time Appearance**



## 12. Event Page Control

### 12.1. Compatibility

<b>Control Compatibility Statement</b>	
Control Name	<b>'FST EVENT TABLE MARKER'</b> This control is not an ActiveX Control, it is necessary to insert the control by placing a special text string on the page.
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements/Notes	Subject to Cookie Limitations
Installer	No installation required to use this control in FrontPage.

### 12.2. Configuration and Use

The driver maintains an event log comprising records that report significant changes to the state or value of a Sensor on a sentry. This is equivalent but not identical to the KEY\_EVENT\_LOG that was provided on the serial port of the Sentry Module.

The following two categories of event records are kept

- KEY\_EVENT\_REPORT - This is event driven – when a Sensor value exceeds some threshold, for example.
- PERIODIC\_REPORT - A record is written irrespective of the Sentry's values every fixed time period.

The event logging system is configured by downloading a file called eventcg.htm to the FieldServer. Specific test strings which configure the logging system are embedded in this file, but in all other respects this file can be a normal web page with links to other pages in the system. The contents of this file are described later.

The event log is inserted by the driver, into a file called events.htm. This is a web page constructed as part of the system. This page should be linked to the other pages in the system to allow users to browse the event log and return to browse other pages.

The FieldServer records Sentry events and time stamps them. The timestamp is recorded in Greenwich Mean Time. However, for historical reasons, the time stamp printed on the events.htm screen is recorded in Pacific Standard Time (PST). The FieldServer does not auto adjust for Daylight Savings Time and hence is permanently fixed in PST.

#### 12.2.1. Creating a Page to Display Events

Create a page called **events.htm** with all the normal HTML objects, text, links and buttons and at the desired location place the following text

***FST EVENT TABLE MARKER***

When the driver sees this text it will replace the text with the event log report.

To position the report using absolute positioning, highlight the text '*FST EVENT TABLE MARKER*' and use **format/position/absolute**. Allow space on the right for the report columns and do not position any elements below the table.

If the absolute positioning of the event report appears not to work then this could be because the WebSentry driver expects that in the htm file, the line immediately preceding the '*FST EVENT TABLE MARKER*' text contains the position. Not even a single blank line can separate the positioning line and the '*FST EVENT TABLE MARKER*' text.

### 12.2.2. Creating a Page to Configure the Events System

Create a web page called **eventcfg.htm** as part of the system using FrontPage.

Insert the special text strings in the page ensuring that no special formatting characters or html formatting instructions break the special text strings.

In the example below an HTML page is shown in HTML format (click the HTML tab in FrontPage to see this view).

```

<html>
<head>
<meta name="GENERATOR" Content="Microsoft FrontPage 4.0" />
<meta http-equiv="Content-Type" content="text/html" />
<title>Document Title</title>
</head>
<body>

EVENT_REPORT_PERIOD:=86400

EVENT_THRESHOLD: Sentry=1 Sensor=1 value=10.1 delta=0.5
EVENT_THRESHOLD: Sentry=1 Sensor=2 value= 0.7 delta=1.5
EVENT_THRESHOLD: Sentry=1 Sensor=3 value= 0.1 delta=2.5
EVENT_THRESHOLD: Sentry=2 Sensor=1 value=30.1 delta=0.1
EVENT_THRESHOLD: Sentry=3 Sensor=1 value=20.1 delta=0.5078

EVENT_SITE_NAME:="East Building"

</body>
</html>

```

Use this special string 'EVENT\_REPORT\_PERIOD' to set the number of seconds between periodic log records.

Format your line exactly as is shown in the example.

86400 seconds is the equivalent of 1 day.

Use the special string EVENT\_THRESHOLD to tell the driver the user threshold level and delta value for each Sentry/channel.

The site name enclosed in quotes (max=80 characters) is used by the event file uploader control when the uploaded file is saved to the desktop. The site name forms part of the file name. For this reason do not use any special characters in the name.

The alarm and warning set points are set directly in the Sentry Module itself and cannot be adjusted using this driver. The Threshold and Delta values that may be configured in the sentry module are ignored by this driver. (They are used for the old style log report printed using the serial port.).

If the threshold and delta values for a sentry/Sensor are not configured then the driver will use the default values of 5.0 (threshold) and 0.5 (delta).

### 12.2.3. Displaying the Event Log

Construct a page called event.htm as part of the system.

The event log page is a special web page and must be designed carefully since the length and size of the event log table will change as the number of event records changes. **It is therefore recommended that common page elements such as titles, links and home/back buttons are placed at the top of the page.** This page will often have vertical scroll bars which are automatically generated when the event log table gets large enough.

Build the web page with the common page elements such as titles, home and back buttons etc.

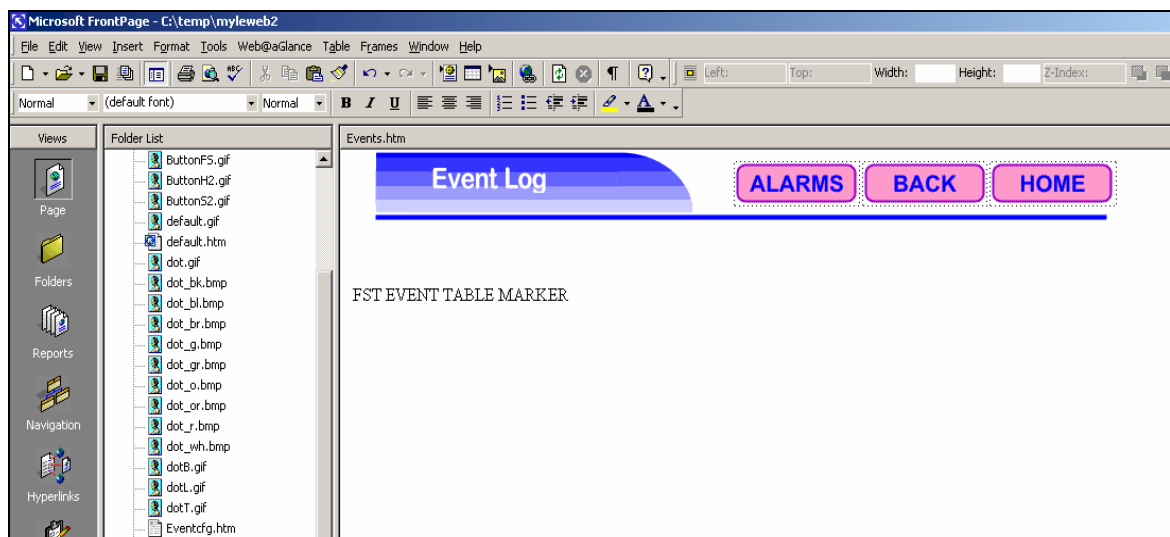
Now place the text 'FST EVENT TABLE MARKER' on the screen. When the WebServer find this text it will replace it with an event log table.

The table width is 80% of the screen.

Position the table using absolute positioning, ensure that the table is placed with sufficient space on the right for the table columns and do not position any elements below the table.

If the absolute positioning of the alarm table appears not to work then this could be because the WebSentry driver expects that in the htm file, the line immediately preceding the 'FST EVENT TABLE MARKER' text contains the position. Not even a single blank line can separate the positioning line and the 'FST EVENT TABLE MARKER' text.

The following sample shows what an event log page may look like at configuration time.



The following sample shows what an event log page may look like at run time.

Event Log								
<b>LEGEND</b>								
K = Key Event	P = Periodic		A = New Alarm			N = Returned to Normal		
U = Threshold	W = New Warning		a = Alarm			C = Comms Alarm		
D = Delta	w = Warning							
Sentry	K REPORT Tue Jan 01 00:01:16 1980							
1	1 N	2 N	3 N	4 N	5 N	6 N	7 N	8 N
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sentry	P REPORT Tue Jan 01 00:01:16 1980							
1	1 C	2 C	3 C	4 C	5 C	6 C	7 C	8 C
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sentry	K REPORT Tue Jan 01 00:01:16 1980							
1	1 C	2 C	3 C	4 C	5 C	6 C	7 C	8 C
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sentry	K REPORT Tue Jan 01 00:01:04 1980							
1	1 N	2 N	3 N	4 N	5 N	6 N	7 N	8 N
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

The Sentry Module number is reported here.

Use the legend to determine which events occurred on each channel. In this case Sensor 2 on Sentry 1 had a 'N' event which indicated that the sensor returned to normal.

Two rows of the table are used to report 1 event record. There are 8 columns per event - one column for each channel on a sentry module.

**12.2.4. Event Types**

Event Type	Description
U – Threshold	The Sensor value exceeds the user specified threshold level. The value must drop to 95% of the threshold value before it is considered normal again.
D – Delta	The value must be above the user specified threshold Setpoint and must have changed (increase/decrease) by the user specified delta Setpoint before this event is reported. If the Delta Setpoint is 0.5 then the value must change by more than 0.5 to register the event.
N – Returned to Normal	When the value returns to normal (not in a warning, alarm, comm./Sensor error or user threshold state) then this is indicated as a return to normal event.
H – Alarm Event	When the value exceeds the alarm Setpoint specified in the Sentry module. If a Sensor is in an alarm state when an event is reported for some other Sensor then the driver indicates this by using a lowercase 'h'.
L – Warning Event	When the value exceeds the warning Setpoint but is less than the alarm Setpoint. If a Sensor is in a warning state when an event is reported for some other Sensor then the driver indicates this by using a lowercase 'l'.
C – Comm	When communicating with the Sentry module or when the Sensor indicates that the value is of that Sensor is invalid then this event is reported. If a Sensor is in a comm. failed state when an event is reported for some other Sensor then the driver indicates this by using a lowercase 'c'.

### 12.2.5. Disable Event Logging

Remove the file called eventcfg.htm from the FieldServer.

The file may be manually removed from the FieldServer using ruinet (ruinet -ia.b.c.d -zeventcfg.htm where a.b.c.d is the IP address of the FieldServer)

### 12.2.6. Additional Information

The event log is non-volatile. The event records are kept in a file on the flash-disk of the FieldServer. There is resource cost to keeping this non-volatile record system – It uses up space on the disk and it uses driver time in writing the records.

The record file can be manually removed by deleting the file called 'events.dat' from the FieldServer. Do this by using ruinet (ruinet -ia.b.c.d -zevents.dat where a.b.c.d is the IP address of the FieldServer)

The following considerations apply

1. When the WebServer starts it checks to see if the file events.dat exists. If it doesn't it attempt to create one. If there is more than 100kByte free then a file with enough space for 399 records is created. If there is less than 100kBytes but more than 50kBytes on the flash disk then a file with enough space for 199 records is created. If there is less than 50kByte free a file is not created, event logging is disabled and an error message is printed to the error log.
2. The file is used as a circular buffer. Once each record is used, the WebServer drops the oldest record as it adds a new one. The old record is discarded unconditionally. No messages are printed when this happens.

### 12.2.7. Example

The notes below provide extracts from an events report. The annotation provides and explanation.

The screenshot shows an 'Event Log' report with two sections. The first section is titled 'REPORT Thu Dec 04 11:34:23 2003' and shows a row of data with values 1, 3.3, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0. The second section is titled 'K REPORT Thu Dec 04 11:33:56 2003' and shows a row of data with values 1, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0. A legend at the top explains symbols: P = Periodic, W = New Warning, w = Warning, A = Alarm, a = Alarm, N = Returned to Normal, and C = Comms Alarm. Three callout boxes provide further explanation: one points to the 'C' in the second report, another points to the 'N' in the first report, and a third points to the 'N' in the second report.

The 'C' identifies a 'Comms Alarm'. You can see that one is present on every channel on Sentry 1.

The most recent event is at the top of the report. Browse down the page to go back in time.

The 'N' identifies that the sensor is normal. You can see that all sensors are normal. The event record was generated because the sensor's changed state from 'C' to 'N'

Channel	1	2	3	4	5	6	7	8
REPORT Thu Dec 04 11:34:23 2003	1	2 N	3 N	4 N	5 N	6 N	7 N	8 N
	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K REPORT Thu Dec 04 11:33:56 2003	1 C	2 C	3 C	4 C	5 C	6 C	7 C	8 C
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Read the example below from the bottom up.

Sentry 1	K REPORT Thu Dec 04 11:45:44 2003 1 A U 17.8      0.0      0.0	2	6. As the gas level rose above the <b>Warning</b> level a new event is generated. The Level is still above the <b>User</b> threshold..
Sentry 1	K REPORT Thu Dec 04 11:45:40 2003 1 wDU 17.8      0.0	2	5. Another quick rise produces a delta event. The gas level is such that it is still above the <b>Warning</b> level and the <b>User</b> threshold level.
Sentry 1	K REPORT Thu Dec 04 11:45:15 2003 1 W U 15.7      0.0	2	4. As the gas level rose above the <b>Warning</b> level a new event is generated. The Level is still above the <b>User</b> threshold..
Sentry 1	K REPORT Thu Dec 04 11:44:40 2003 1 DU 12.1      0.0	2	3. The gas level has risen quickly. It has risen above the <b>User</b> defined threshold level and it has changed by more than the user configured <b>Delta</b> qty.
Sentry 1	K REPORT Thu Dec 04 11:44:12 2003 1 N 3.3      0.0      0.0      0.0	2	2. All sensors return to <b>Normal</b> (generating an event). The value of Sensor 1 was 3.3 when the event was generated.
Sentry 1	P REPORT Thu Dec 04 11:43:25 2003 1 C 0.0      0.0      0.0      0.0	2	1. All sensors are reporting ' <b>Comms Alarms</b> '. This could arise during startup.

## 13. Event Uploader Control

### 13.1. Compatibility

Control Compatibility Statement	
Control Name	"FST_events_ocx Control".
Operating System	Win32
ToWS Processing	Not Required
WebServer Requirements	Page can be served from any Web Server (FieldServer WebServer or other) but the control must be configured to upload from a FieldServer.
Additional Requirements/Notes	<p>The SMT protocol must be installed (It is always present on FieldServer Ethernet Adapter N1 but must be explicitly configured for use on N2)</p> <p>The control must be installed on the browsing PC to operate correctly. There are many ways of doing this. It is possible to have the control install itself when the page is viewed. Additional information is provided in section 3.11 "</p> <p>Browsing PC must have Winsock2 installed. (Only very old Win95 and Win98 systems do not have this.)</p>
Installer	WSPI_Sentry_vxxxx.exe Where xxxx is a version number.

### 13.2. Description

FST\_Event is an ActiveX Control that can be embedded in a web page to allow uploading of the "events.dat" file from a FieldServer. The file contents are read, converted to comma separated (CSV) format and appended to a file on the host PC with a name that is a combination of the FieldServer IP address and events.csv. This file is created if it didn't previously exist.

*Example:* If an uploaded events.dat from a FieldServer whose IP\_Address is 192.168.1.81 then the name of the csv file will be "events(192\_168\_1\_81).csv"

### 13.3. How the ActiveX Object Works

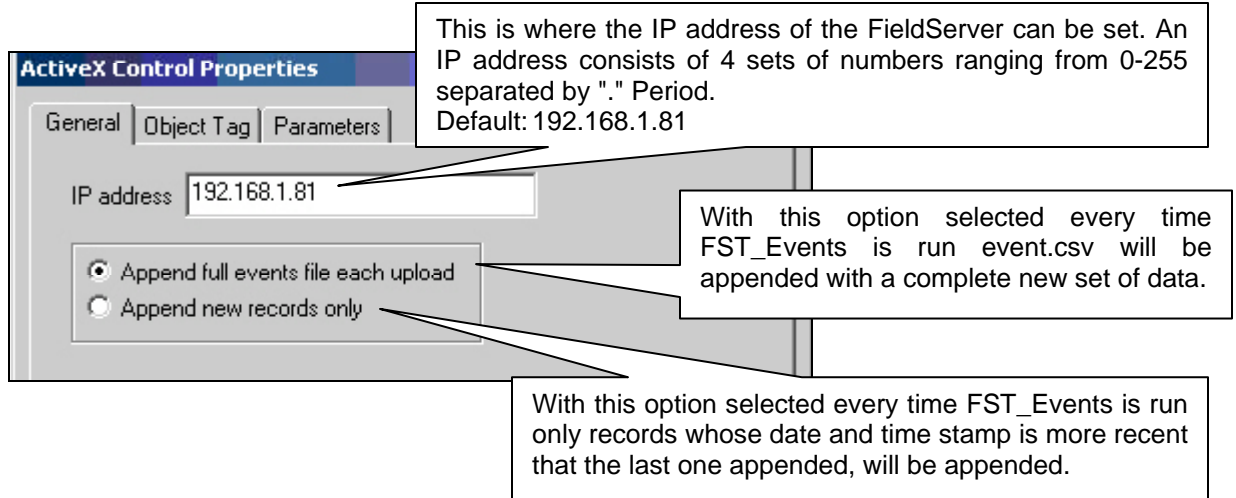
- FST\_Events uses the FieldServer's SMT protocol on UDP sing port 1024 to request the FieldServer to send the contents of the file "events.dat" from the FieldServer.
- The file data is received and stored in a file called events.dat on the local PC, overwriting previous versions of this file.
- The file is converted to CSV format and its records appended to the file events.csv (which is created if it doesn't exist.). The file events.csv is human readable and can be opened with Excel to browse it contents. The file events.dat is a binary file whose contents cannot normally be understood by other applications.
- When configuring an IP address of a FieldServer, the ActiveX control looks for that FS when it attempts to upload the file. If a FieldServer with that name cannot be found then

the control looks for all FieldServer's on the local network. If a single FieldServer is found then upload is done from that FS. If more than one is found, a message is reported and no upload is done.

- An important note on how the ActiveX control reports event times is provided in section Appendix D.2

### 13.3.1. Configuration of FST\_Events from the Properties Page

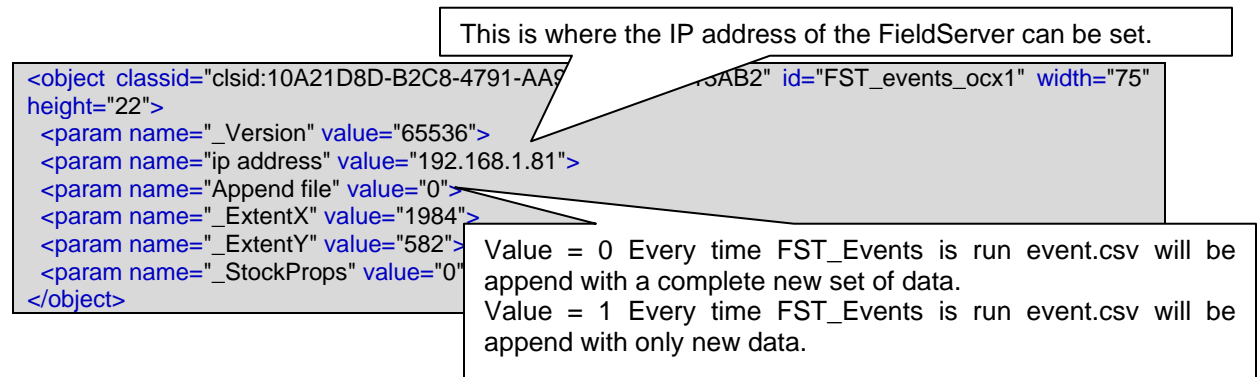
While in FrontPage, right click on the ActiveX object and click [ActiveX control properties]. A control properties window should pop up



### 13.3.2. Configuration of FST\_Events from HTML

This method is not recommended.

Within HTML of the web page find this section of code



The IP address may be substituted by the WebServer. Read additional notes in section "4.6

## 14. Event Uploader Application

While this is not a control and cannot be used in a Web Project, its functionality is so similar to the Event Uploader Control that it has been included in this manual. It is a stand alone version which can upload and convert events.dat without requiring a web project.

### 14.1. Compatibility

Control Compatibility Statement	
Application Name	FST_Events_MFC.exe  This application is not suitable for inclusion in a Sentry Web Project. It provides the same functionality as the Uploader Control but stands alone on a PC.  The SMT protocol must be installed (It is always present on FieldServer Ethernet Adapter N1 but must be explicitly configured for use on N2)
Operating System	Win32
ToWS Processing	Not Applicable
WebServer Requirements	Not Applicable
Additional Requirements/Notes	Browsing PC must have Winsock2 installed. (Only very old Win95 and Win98 systems do not have this.)
Installer	WSPI_Sentry_vxxxx.exe

### 14.2. Configuration and Use

- FST\_Events.exe is a PC based utility that may be used to upload the events.dat file from one or more FieldServer's.
- The upload can be done on demand or scheduled to occur at a regular time intervals.
- See Section 13.3 for information on how the event uploader works.
- See section Appendix D.2 for information on how time stamps are recorded.

### 14.3. Installation / Uninstall

- To install FST\_Events\_MFC double click on the installer. Ensure that the application is not currently running.
- To uninstall FST\_Events\_MFC click the uninstall button in the start menu

### 14.4. Quick Step by Step Guide to Running up FST\_Events\_MFC

**Step 1:** Start up the program - *Start/programs/FST\_Events\_MFC*

**Step 2: Find a FieldServer**

**Step 3: Press Run Now**

**Step 4: View the Results**

To view the list click the FS Address button

Add FieldServers here

Schedule this program to run on at certain times using the schedule menu.

**Schedule**

None

Daily

Hourly

Other

99 Min

OK

Cancel

No scheduled task this program will not run by its self

The program will run once a day at 00:01 24hr clock

The program will run once every hour on the hour

The program will run every X minutes. If a number greater then 60 is entered i.e. 90 the program will run every 1½ hrs

## 15. Access Control

### 15.1. Compatibility

Control Compatibility Statement	
Control Name	Security.htm This control is not an ActiveX control. Access control is activated and configured by creating this webpage in the project.
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	Any WebServer
Additional Requirements / Notes	
Installer	No installation required to use this control in FrontPage.

### 15.2. Introduction

When access control is enabled the user (browser) is required to login with a user ID and password before viewing any of the project pages. The server automatically expires the login after a user determined time and reverts to the login screen.

### 15.3. Enabling/Disabling Access Control

- To activate access control, ensure that a file called 'security.htm' is present on the FieldServer and reset the FieldServer. If the contents of this file are invalid, access control is not activated and a message is printed in the error log.
- To deactivate the access control system remove the file called 'security.htm' and reset the FieldServer. (This can be done with the Ruinet utility).

### 15.4. Configuring Access Control

There are two types of configurable variables in the access control system. Two key phrases are used to identify the parameters

Pairs of user ID's and passwords separated by a comma. User ID's must be three characters long. Passwords must be 5 characters long. The ID and password must be separated by an equal sign

Passwords: The system expects a password that is equal to the password specified here with each character shifted right 1 in the ascii alphabet.

Password here=123AB then user enters 234BC

USERS: SMC=12345,USR=23456  
LOGIN EXPIRY TIME IN SECONDS: 120

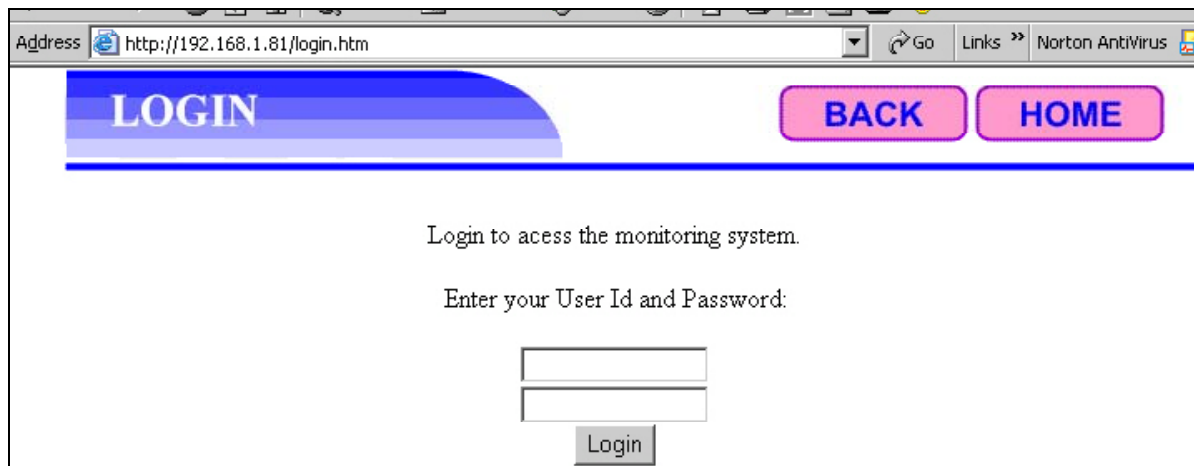
The amount of time that a login lasts until it auto-expires. (There is no logout function.)

Configure access control by building a file called security.htm. It can be part of the FrontPage project although it is best to ensure that no other page links to the security.htm

page. If the file security.htm is part of the FrontPage project then it will get processed by the file processing routines prior to a download and some extra lines of JavaScript may be added.

### 15.5. The Login Page

When users are required to log into the Sentry WebServer system they are directed to the page login.htm. A portion of a sample screen is shown below. Enter the user ID and password and click Login. If successful then a dialog box will report the session duration.



### 15.6. Building a Login Screen

Build the web page with the common page elements such as titles, home and back buttons etc.

Now place the text 'FST LOGIN OBJECT' on the screen. The WebServer will replace this text with a login form as shown above.

The form is normally placed in the middle of the screen, but may be positioned using absolute positioning. If absolute positioning appears not to work this could be because the WebSentry driver expects that in the htm file, the line immediately preceding the 'FST LOGIN OBJECT' text contains the position. The positioning line and the 'FST LOGIN OBJECT' text cannot be separated – even by a single blank line.

The user cannot build his own form as the access control system uses JavaScript inserted by the system into the htm file.

### 15.7. Login Screen and Default Screen

It is not possible to make the login screen the default screen. However, the default screen will automatically change to the login screen if access control is enabled and no user is currently logged in.

## 16. Screen Saver

### 16.1. Compatibility

Control Compatibility Statement	
Control Name	saver.htm This control is not an ActiveX control. Access control is activated and configured by creating this webpage in the project.
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	Any WebServer
Additional Requirements / Notes	
Installer	No installation required to use this control in FrontPage.

### 16.2. Introduction

The toolkit provides support for a screen saver. When enabled, all screens apart from the "alarms.htm" screen will automatically change to the saver screen after an idle time has elapsed. Idle time is defined as a time period during which the keyboard is not pressed and the mouse is not clicked.

### 16.3. Enabling / Disabling Screen Saver Support

- To enable screen saver support create a file called 'saver.htm', run the pre-processor htmlToWinCE.exe and download the project files to the FieldServer.
- To disable screen saver support, remove the file 'saver.htm' from the project, run the pre-processor and download the project files to the FieldServer.

### 16.4. How the Screen Saver works

- After an idle time the screen will automatically change to the screen named 'saver.htm'. Place a screen saver message on this page and place buttons which can be used to change the screen to one or more other project screens.
- If a new alarm is reported then the screen will change to the screen named 'alarms.htm'.
- If the current screen is 'alarms.htm' then the idle time is ignored and the screen will not change to 'saver.htm'.

### 16.5. Screen Saver Support Version Numbers

- Screen saver support was first provided in htmlToWinCE.exe version 1.03a (30Sep2002)
- Screen saver support was updated to 10 minutes before change to the saver screen in htmlToWinCE.exe version 1.04a (30Sep2002)

## 17. Sentry Faceplate Control

### 17.1. Compatibility

Control Compatibility Statement	
Control Name	"SentryFP.ocx Control".
Operating System	Win32
ToWS Processing	Not Required
WebServer Requirements	Page can be served from any Web Server (FieldServer WebServer or other) but the control must be configured to get data from a FieldServer.
Additional Requirements / Notes	<p>The SMT protocol must be installed (It is always present on FieldServer Ethernet Adapter N1 but must be explicitly configured for use on N2)</p> <p>The control must be installed on the browsing PC to operate correctly. There are many ways of doing this. It is possible to have the control install itself when the page is viewed. Additional information is provided in section 3.11 "Installing and Registering ActiveX Controls on the Browsing PC"</p> <p>Browsing PC must have Winsock2 installed. (Only very old Win95 and Win98 systems do not have this.)</p>
Installer	WSPI_Sentry_vxxx.exe Where xxx is a version number.

### 17.2. Introduction

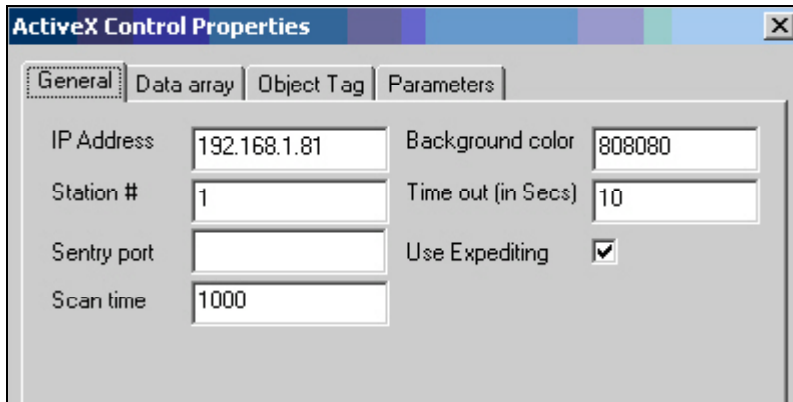
SentryFP polls the FieldServer for data from the sentry and displays it on the webpage. If a button is pressed the SentryFP sends a signal to the FieldServer and the Sentry as if someone pressed the button on the Sentry.

### 17.3. Configuration the activeX object

The ActiveX object can be configured by changing the setting in the html (not recommended) or changing the setting from the configuration menu. (Recommended)

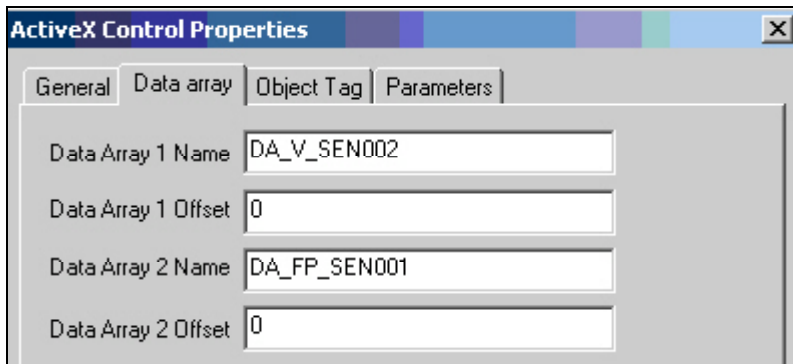
#### 17.3.1. Configuration of SentryFP from the properties page

While in FrontPage, right click on the ActiveX object and click [ActiveX control properties]. A control properties window should pop up



Property	Description	Default
IP Address <sup>5</sup>	This is where to set the IP address of the FieldServer. An IP address consists of 4 sets of numbers ranging from 0-255 separated by "." Period.	192.168.1.81
Station #	If the value specified here is greater than or equal to zero then the Data Array names used to read data from the FieldServer are derived using the sentry number. E.g. If the sentry number entered here is 32 then the Array names used will be DA_V_SEN032 and DA_FP_SEN032.	1
Sentry port	Not currently in use	
Scan time	The rate in milliseconds that SentryFP polls the FieldServer	1000
Background color	The background color for the sentry FP in hex (RGB)	808080 (gray)
Time Out (in Secs)	This is the time in seconds for the program to time out if no messages are received.	10
Use expediting	With this option checked the utility will use a special map descriptor that responds faster then normal for key press input.	Checked

To change the data array names and offsets, click the [data array] tab on the top of the control properties window.



<sup>5</sup> Notes on IP Address Substitution can be found in section 4.6

Property	Description
Data Array 1 Name	This is the data array name on the FieldServer that contains the data for set one. If the (Sentry) Station # is greater than or equal to zero then the Array name specified here is ignored.
Data Array 1 Offset	This is the data array offset on the FieldServer that contains the data for set one
Data Array 2 Name	This is the data array name on the FieldServer that contains the data for set two. If the (Sentry) Station # is greater than or equal to zero then the Array name specified here is ignored.
Data Array 2 Offset	This is the data array offset on the FieldServer that contains the data for set two.

### 17.3.2. Configuration SentryFP in html

This method is not recommended and should only be attempted by advanced users. Ensure that the IP address of the FieldServer is set in the properties page – see Section 17.3.1

To view the HTML in FrontPage click the HTML tab near the bottom left of the screen.

Within the html of the webpage find this section of code

```
<object classid="clsid:DF113BAC-456D-4B76-9A3C-8B32022F3500" id="SentryFP1" width="930" height="425">
  <param name="_Version" value="65536">
  <param name="_ExtentX" value="24606">
  <param name="_ExtentY" value="11245">
  <param name="_StockProps" value="0">
  <param name="fontSize" value="32">
  <param name="led on color" value="00FF00">
  <param name="led Off color" value="FF0000">
  <param name="fontColor" value="0000FF">
  <param name="Sentry Station No." value="1">
  <param name="FST Array 1 Name" value="DA_V_SEN002">
  <param name="FST Array 1 Offset" value="0">
  <param name="FST Array 2 Name" value="DA_FP_SEN001">
  <param name="FST Array 2 Offset" value="0">
  <param name="BackgroundColor" value="808080">
  <param name="Timeout" value="10">
  <param name="Use Expediting" value="1">
</object>
```

### 17.4. Configuration of the FieldServer

The FieldServer must be configured for Sentry use. This requires that a sentry project has been created in FrontPage and has been downloaded to the FieldServer. When this is done the FieldServer knows which Sentries are connected to the FieldServer and data from the Sentries is automatically read and collated as required by the SentryFP ActiveX control.

An alternate method is to manually construct a configuration for the FieldServer. This should only be attempted by experienced programmers.

The method requires building Data Array's and Map Descriptors which read and collate data as follows.

For each node there must be 5 Data Arrays

- DA\_V\_SENxxx
- DA\_U\_SENxxx
- DA\_T\_SENxxx
- DA\_R\_SENxxx
- DA\_FP\_SENxxx

Where xxx is the number of the sentry. Eg 001 for Sentry 1.

Map Descriptors must be created which read the following addresses into the following offsets in the Data Arrays.

DA_V_SENxxx		DA_T_SENxxx		DA_U_SENxxx	
Address	Offset	Address	Offset	Address	Offset
40001	0	42301	0	42201	0
40002	1	42302	1	42202	1
40003	2	42303	2	42203	2
...	...	...	...	...	...
40099	98	42399	98	42299	98
40100	99	42400	99	42300	99

DATA_ARRAY=DA_FP_SENxxx				
offset	Addr			
0	40634	KEYPRESS	F_0	WS_FACE1_xxx
1	40635		F_1	WS_FACE1_xxx
2	40636		F_2	WS_FACE1_xxx
...	...		...	...
25	40659		F_25	WS_FACE1_xxx
26	40660		F_26	WS_FACE1_xxx
27	40661		F_27	WS_FACE1_xxx
28	40662		F_28	No Md
29	40663		F_29	No Md
30	40119	SYSTEM_HIS	F_0	WS_FACE2_xxx
31	40120	SYSTEM_HIS	F_1	WS_FACE2_xxx
32	40121	SYSTEM_HIS	F_2	WS_FACE2_xxx
...	...	...	...	...
43	40132	SYSTEM_HIS	F_13	WS_FACE2_xxx
44	40133	SYSTEM_HIS	F_14	WS_FACE2_xxx

DATA_ARRAY=DA_FP_SENxxx				
45	40134	SYSTEM_HIS	F_15	WS_FACE2_xxx
46	40135		F_16	No Md
47	40136		F_17	No Md
48	40137		F_18	No Md
49	40138		F_19	No Md
50	40200	CHAN1_HIS	F_0	WS_FACE3_xxx
51	40201	CHAN1_HIS	F_1	WS_FACE3_xxx
52	40202	CHAN1_HIS	F_2	WS_FACE3_xxx
...	...	...	...	...
80	40230	CHAN1_HIS	F_30	WS_FACE3_xxx
81	40231	CHAN1_HIS	F_31	WS_FACE3_xxx
82	40232	CHAN1_HIS	F_32	WS_FACE3_xxx
83	40233	CHAN2_HIS	F_0	WS_FACE3_xxx
84	40234	CHAN2_HIS	F_1	WS_FACE3_xxx
85	40235	CHAN2_HIS	F_2	WS_FACE3_xxx
...	...	...	...	...
113	40263	CHAN2_HIS	F_30	WS_FACE3_xxx
114	40264	CHAN2_HIS	F_31	WS_FACE3_xxx
115	40265	CHAN2_HIS	F_32	WS_FACE3_xxx
116	40266	CHAN3_HIS	F_0	WS_FACE3_xxx
117	40267	CHAN3_HIS	F_1	WS_FACE3_xxx
118	40268	CHAN3_HIS	F_2	WS_FACE3_xxx
...	...	...	...	...
146	40296	CHAN3_HIS	F_30	WS_FACE3_xxx
147	40297	CHAN3_HIS	F_31	WS_FACE3_xxx
148	40298	CHAN3_HIS	F_32	WS_FACE3_xxx
149	40299	CHAN4_HIS	F_0	WS_FACE3_xxx
150	40300	CHAN4_HIS	F_1	WS_FACE4_xxx
151	40301	CHAN4_HIS	F_2	WS_FACE4_xxx
...	...	...	...	...
179	40329	CHAN4_HIS	F_30	WS_FACE4_xxx
180	40330	CHAN4_HIS	F_31	WS_FACE4_xxx
181	40331	CHAN4_HIS	F_32	WS_FACE4_xxx
182	40332	CHAN5_HIS	F_0	WS_FACE4_xxx
183	40333	CHAN5_HIS	F_1	WS_FACE4_xxx
184	40334	CHAN5_HIS	F_2	WS_FACE4_xxx
...	...	...	...	...
212	40362	CHAN5_HIS	F_30	WS_FACE4_xxx
213	40363	CHAN5_HIS	F_31	WS_FACE4_xxx
214	40364	CHAN5_HIS	F_32	WS_FACE4_xxx
215	40365	CHAN6_HIS	F_0	WS_FACE4_xxx
216	40366	CHAN6_HIS	F_1	WS_FACE4_xxx
217	40367	CHAN6_HIS	F_2	WS_FACE4_xxx
...	...	...	...	...
245	40395	CHAN6_HIS	F_30	WS_FACE4_xxx

DATA_ARRAY=DA_FP_SENxxx				
246	40396	CHAN6_HIS	F_31	WS_FACE4_xxx
247	40397	CHAN6_HIS	F_32	WS_FACE4_xxx
248	40398	CHAN7_HIS	F_0	WS_FACE4_xxx
249	40399	CHAN7_HIS	F_1	WS_FACE4_xxx
250	40400	CHAN7_HIS	F_2	WS_FACE5_xxx
...	...	...	...	...
278	40428	CHAN7_HIS	F_30	WS_FACE5_xxx
279	40429	CHAN7_HIS	F_31	WS_FACE5_xxx
280	40430	CHAN7_HIS	F_32	WS_FACE5_xxx
281	40431	CHAN8_HIS	F_0	WS_FACE5_xxx
282	40432	CHAN8_HIS	F_1	WS_FACE5_xxx
283	40433	CHAN8_HIS	F_2	WS_FACE5_xxx
284	40434	CHAN8_HIS	F_3	WS_FACE5_xxx
...	...	...	...	...
311	40461	CHAN8_HIS	F_30	WS_FACE5_xxx
312	40462	CHAN8_HIS	F_31	WS_FACE5_xxx
313	40463	CHAN8_HIS	F_32	WS_FACE5_xxx
...	...	...	...	...
314	40464			No Md
315	40465			No Md
316	40466			No Md
317	40467			No Md
318	40468			No Md
319	40469			No Md
320	40500	SYSTEM_SETUP	F_0	WS_FACE6_xxx
321	40501	SYSTEM_SETUP	F_1	WS_FACE6_xxx
322	40502	SYSTEM_SETUP	F_2	WS_FACE6_xxx
...	...	...	...	...
337	40517	SYSTEM_SETUP	F_17	WS_FACE6_xxx
338	40518	SYSTEM_SETUP	F_18	WS_FACE6_xxx
339	40519	SYSTEM_SETUP	F_19	WS_FACE6_xxx
340		Web Driver version number. The web driver writes its version number in here. SentryFP checks the version number.  The version number is stored in Hex.  Eg 1.05 is stored as 0x105		
341		Web Driver Version bugfix		

DATA_ARRAY=DA_FP_SENxxx				
		letter. Web driver writes this here.		
342...				
349		Spare		
350	40765	Sensor 1 Tag Name String of 17 <b>characters</b> starts here		
351				
...				
417	40832	Last byte of Sensor 8 Tagname		
418	40833	EGU 1 Tag Name String of 5 <b>characters</b>		
.....				
450	40865	Last byte for EGU 13 Tag Name String of 5 <b>characters</b>		
451	40159	Sensor 1 Type (1,2,..12)		
452	40160			
453	40161			
454	40162			
455	40163			
456	40164			
457	40165			
458	40166	Sensor 8 Type (1,2,..12)		

## 18. Sentry Calibration Backup/Restore Control

### 18.1. Compatibility

Control Compatibility Statement	
Control Name	"SentryBK.ocx Control".
Operating System	Win32
ToWS Processing	Not Required
WebServer Requirements	Page can be served from any Web Server (FieldServer WebServer or other) but the control must be configured to get data from a FieldServer.
Additional Requirements / Notes	<ul style="list-style-type: none"> <li>• The SMT protocol must be installed (It is always present on FieldServer Ethernet Adapter N1 but must be explicitly configured for use on N2)</li> <li>• The control must be installed on the browsing PC. It is possible to have the control install itself when the page is viewed. Additional information is provided in section 3.11 "</li> <li>• Browsing PC must have Winsock2 installed. (Only very old Win95 and Win98 systems do not have this.)</li> </ul>
Installer	WSPI_Sentry_vxxxx.exe Where xxxx is a version number.

### 18.2. Introduction

This ActiveX control is designed to backup and restore the calibration data from a Sentry. The utility is normally used when a firmware EEPROM in the sentry is updated. Prior to the update, the user backs up the calibration information. The user then replaces the EEPROM, does a 'Clear All' using the menu system on the Sentry front panel and then after resetting the Sentry and waiting for the warm-up to complete, the utility is used to restore the calibration information.

While the utility can be used for the above purpose it has a more generic capability – It is capable of backing up and restoring the holding register memory (40000's) of any Modbus RTU capable device connected to a FieldServer.

### 18.3. File System

When the program runs for the first time it will create a directory in the program files folder called "FST\_SentryBK" where it keeps a log file and the back up files for each node.

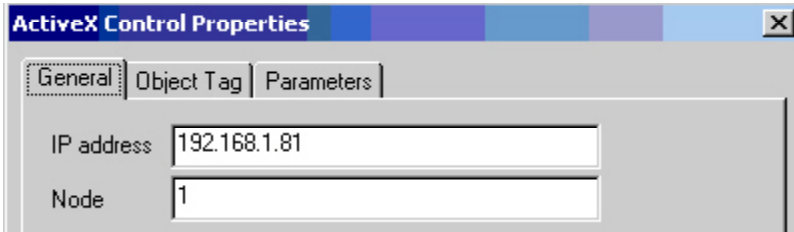
```
C:\Program Files\FST_SentryBK
C:\Program Files\FST_SentryBK\backup_(node number).csv
C:\Program Files\FST_SentryBK\log.txt
```

## 18.4. Configuration

SentryBK Control may be configured through the properties page (recommended) or through the html page (advanced users only)

### 18.4.1. Configuration of SentryBK Control through the properties page

From FrontPage, right click on the ActiveX object and click [ActiveX control properties]. A control properties window should pop up



Property	Description	Default
IP Address <sup>6</sup>	This is where to set the IP address of the FieldServer. An IP address consists of 4 sets of numbers ranging from 0-255 separated by "." Period.	192.168.1.81
Node	This is where to set the Node of the Sentry.	1

### 18.4.2. Configure SentryBK Control using HTML

This method is not recommended and should only be attempted by advanced users. To view the HTML in FrontPage click the HTML tab near the bottom left of the screen.



```
<object classid="clsid:353F5F1E-4D07-4EE8-9B0A-A82511E32F4A" id="SentryBK1" width="168"
height="56">
  <param name="_Version" value="65536">
  <param name="IP Address" value="192.168.1.81">
  <param name="Node" value="1">
  <param name="Index" value="40701,64,
40765,68,
40833,33,
40866,49,
40915,8,
40501,8,
40511,8,
40923,16,
40939,8,
40947,26,
40973,4,">
  <param name="_ExtentX" value="4445">
  <param name="_ExtentY" value="1482">
  <param name="_StockProps" value="0">
</object>
```

With in the html of the webpage find this section of code

<sup>6</sup> Notes on IP Address Substitution can be found in section 4.6

## Appendix A. Advanced Feature Pack<sup>7</sup>

### Appendix A.1. LED Control

#### Appendix A.1.1. Compatibility

Control Compatibility Statement	
Control Name	"FST_LED Control"
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements / Notes	Subject to Cookie Limitations
Installer	Install_FST_SentryProjectComponents_xxxx.exe Where xxxx is a version number.

#### Appendix A.1.2. Description

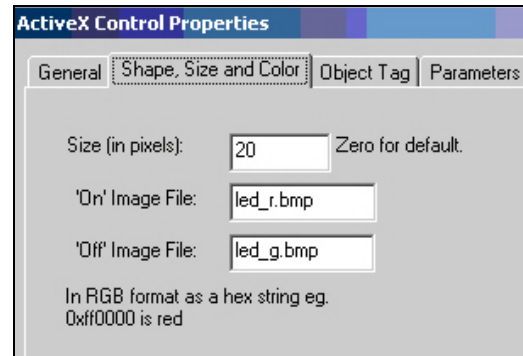
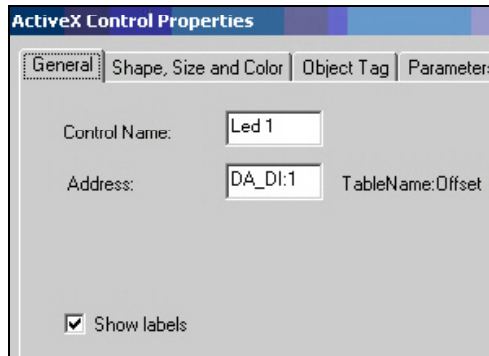
- LED objects are discrete state objects. The display changes based on whether a value in the data array is zero or non-zero. These objects are generic and do not relate specifically to Sentries.
- Two image files (jpg, gif or bmp) are associated with each object. . One file is used if the FieldServer data array value is zero and the other if the value is non-zero.
- If the object does not receive current data then after a timeout period the display will flash between the 'on' and 'off' image files.
- When placing one of these objects on the screen they appear as



<sup>7</sup> The following controls are provided as part of the Advanced Feature Pack (which must be ordered in addition to part 8706-01). There is another version of these controls suitable for Win32 systems only. Read more in the manual called "Constructing a FieldServer Web Project"

### Appendix A.1.3. Configuration and Use

From FrontPage, right click on the activeX object and click [activeX control properties]. A control properties window should pop up



Property	Description
Control Name	Allows the user to name and hence differentiate between multiple uses of the object. Thus, if there is more than one LED object on a page, give them each a different name to differentiate them.
Address	This is the name of a data array and an offset into the data array whose value will be used to determine the display state of the object. A typical entry would be 'DA_DI:0' meaning data array named 'DA_DI' and offset zero. If the data array doesn't exist then the object will flash at run time – changing between its on/off state images. The WebServer will produce a message warning when a LED object addresses an array that doesn't exist.
Show labels	Tick this if the user wants the object caption and address shown in FrontPage. They will never be shown when a web page containing this object is displayed from a FieldServer.
Size	Use to set the image width and height in pixels. If set to zero, the image will display as its native size.
"On" Image File	Specify a file name of an image to be displayed when the objects value is non-zero. Never use a grey colored image as this color is reserved to indicated no-comms.
"Off" Image File	Specify a file name of an image to be displayed when the objects value is zero. Never use a grey colored image as this color is reserved to indicated no-comms.
"No-Comms" Image File	This file name is hard-coded and cannot be configured. The file name is "dot_gr.bmp". A grey image file with this name must be included in the project if one of these controls is used. When there is no valid livedata then the control will display the "dit_gr.bmp" file.

## Appendix A.2. Text Control

### Appendix A.2.1. Compatibility

Control Compatibility Statement	
Control Name	"FST_TEXT Control"
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements / Notes	Subject to Cookie Limitations
Installer	Install_FST_SentryProjectComponents_xxxx.exe Where xxxx is a version number.

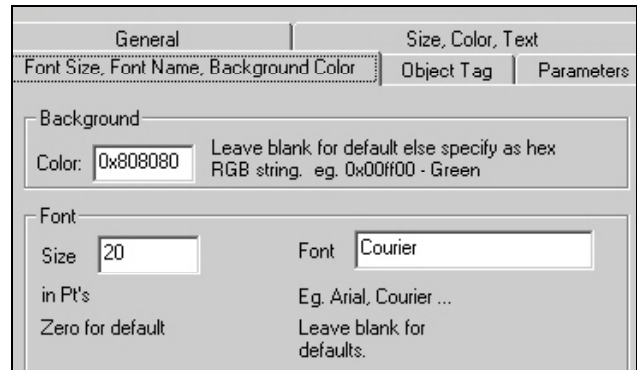
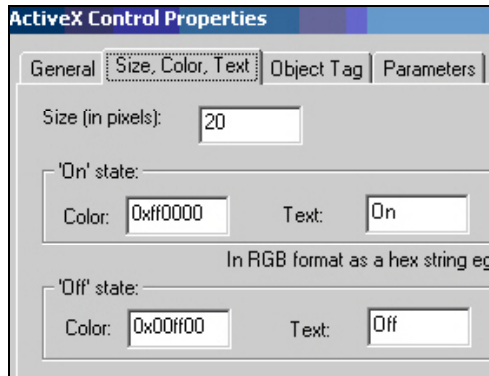
### Appendix A.2.2. Description

- TEXT objects are discrete state objects. The display changes based on whether a value in the data array is zero or non-zero. These objects are generic and do not relate specifically to Sentries.
- The object flashes by changing its display rapidly between the on and off states if no current data is available or if the address specified does not exist.
- When placing one of these objects on the screen they appear as

ON  
OFF      OR      ON  
OFF      TextOb:  
DA\_DI:

### Appendix A.2.3. Configuration and Use

See also Appendix A.1.3



Property	Description
Size	Set to zero for the driver to automatically calculate the space the object will use on the screen to display the text. Alternatively specify a size in pixels.
"On" State Color	Specify the text color when the value is non-zero – refer to Section 3.7.
"Off" State Color	Specify the text color when the value is zero.
"On" Text	Specify the string to be displayed when the value is non-zero.
"Off" Text	Specify the string to be displayed when the value is zero.
Background	Leave blank to use the default background color. Specify the color desired as a background color for the text – see Section 3.7.
Font Size	Specify a numeric value to be used as the font Pt size.

Font	Specify the font family name. e.g. Arial, Courier etc.
------	--

### Appendix A.3. Analog Control

#### Appendix A.3.1. Compatibility

Control Compatibility Statement	
Control Name	"FST_ANA1 Control"
Operating System	WinCE and Win32
ToWS Processing	Required
WebServer Requirements	FieldServer WebServer
Additional Requirements / Notes	Subject to Cookie Limitations
Installer	Install_FST_SentryProjectComponents_xxxx.exe Where xxxx is a version number.

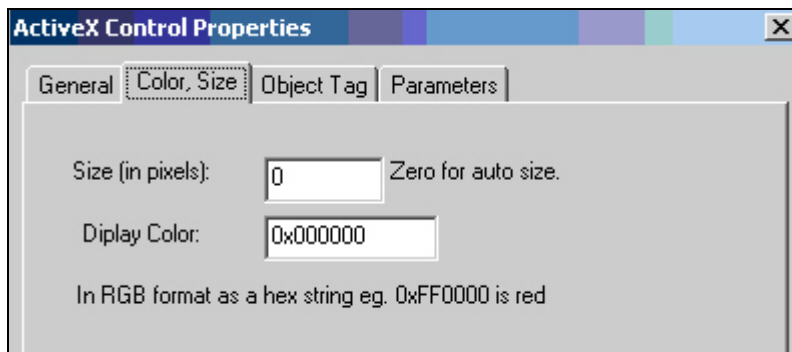
#### Appendix A.3.2. Description

- ANALOG objects display the value of an element of a FieldServer Data Array. These objects are generic and do not relate specifically to Sentries.
- The object flashes by changing its display rapidly between the on and off states if no current data is available or if the address specified does not exist.
- When placing one of these objects on the screen they appear as

ANA Analog 1  
LOG DA\_AJ:0

#### Appendix A.3.3. Configuration and Use

See also Section Appendix A.2.3



Property	Description
Size	The size is set to zero if the user wants the driver to automatically calculate the amount of space the object will use on the screen to display the text.. If the user wishes the WebServer to resize the object then specify a size in pixels.
Display Color	Specify the color the user wants to use as the display color. The color is specified as a string beginning 0x in RGB format. Example 0xFF7700 means that the Red=FF(hex)=255(decimal), Blue=77(hex)=119(dec) and Green=00(hex)=0(decimal).

## Appendix B. Template Projects

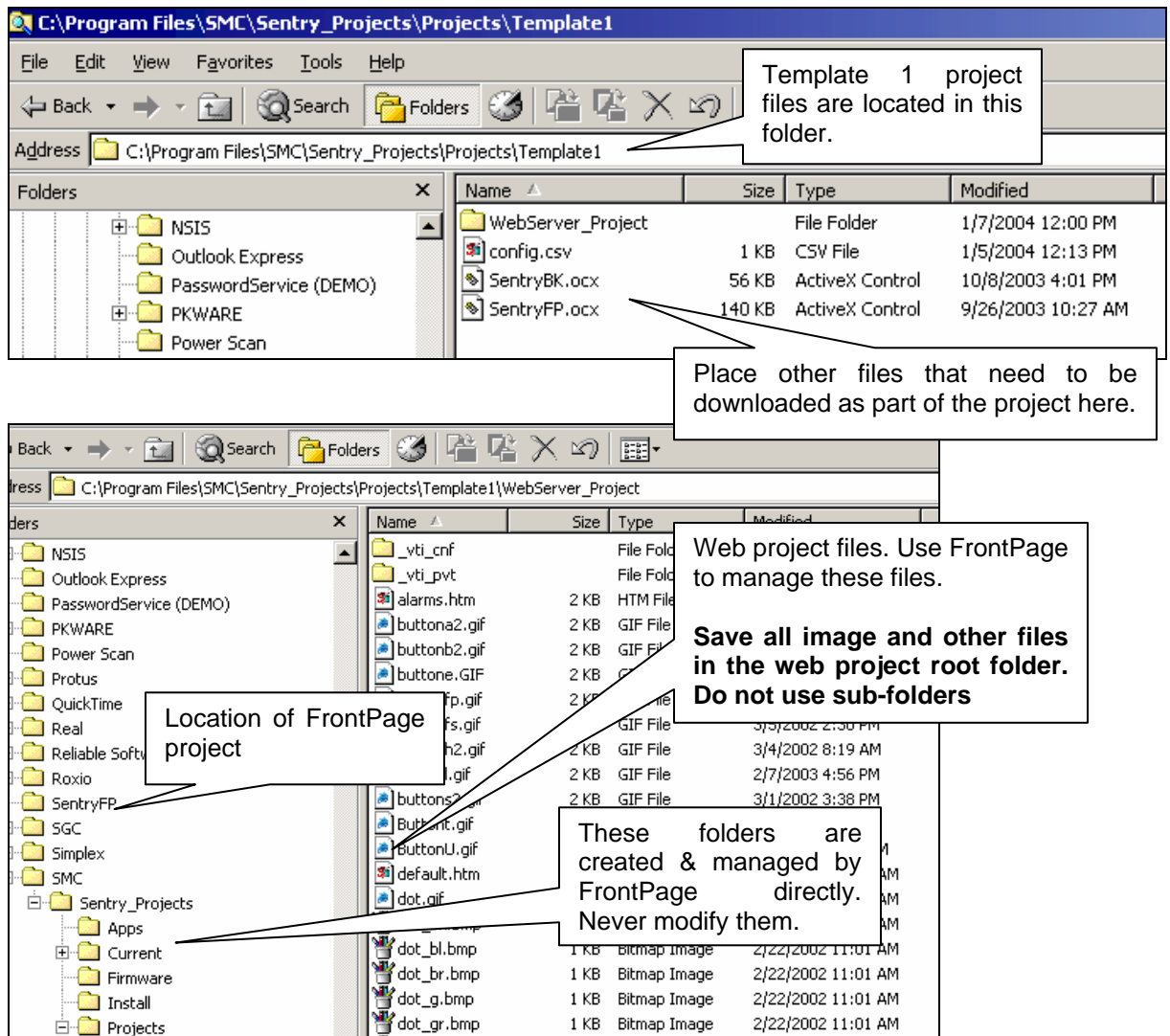
### Appendix B.1. Template 1 – Standard

This project consists of a single Sentry. GIF format has been chosen for static images because it provides the best image for the least amount of storage space.

Two of the pages contain ActiveX controls and have been configured to automatically download and install these controls when browsed for the first time. Section 3.11.2 provides detailed information.

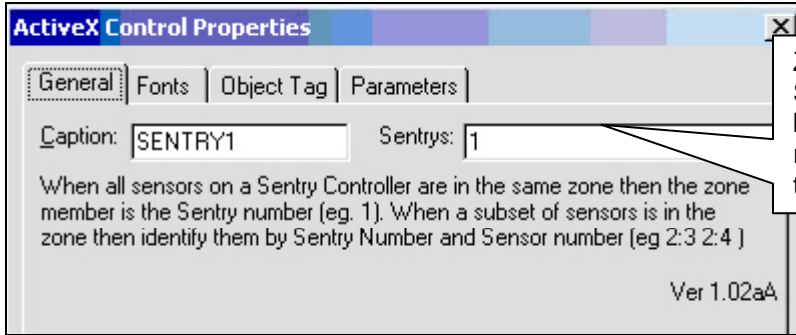
#### Appendix B.1.1. Files and Folders

Project files are located at C:\Program Files\SMC\Sentry\_Projects\Projects\Template1”



### Appendix B.1.2. Default.htm

This page is served when browsing to the WebServer without specifying a particular page. It should be regarded as the home or starting page. A single Sentry Zone button has been placed on this page which has been configured as follows:

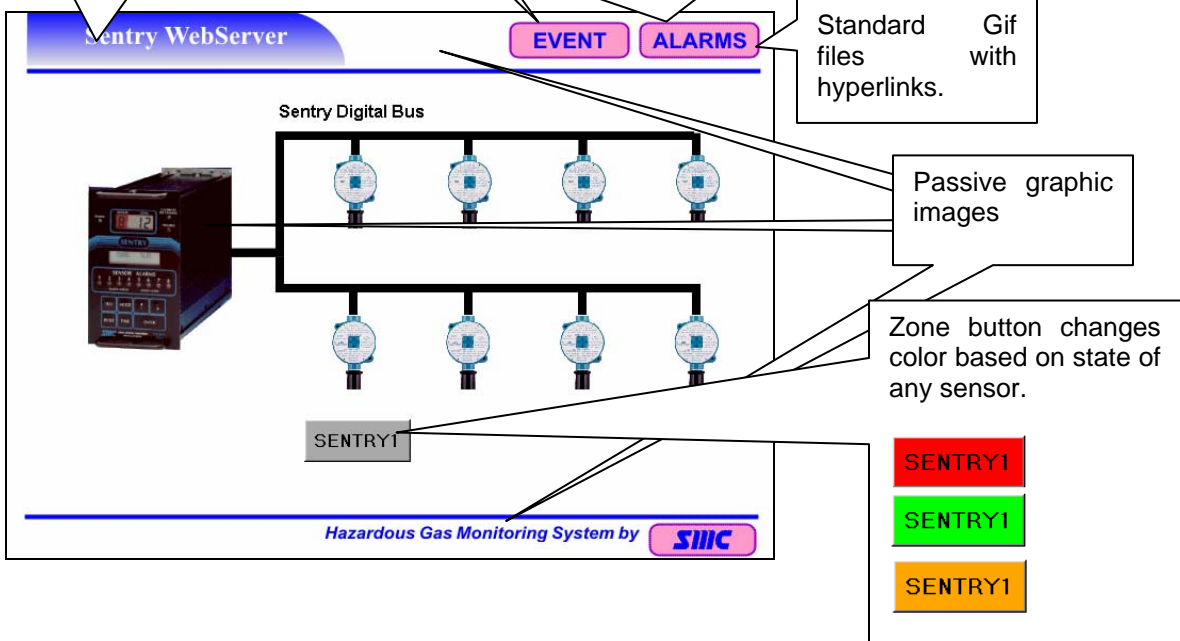


Zone represents a single Sentry. As no colons have been used, this is taken to represent all 8 sensors on the Sentry.

A hyperlink as been added to this button so that when clicked the page will change to 'zone11.htm'

A gif file with position set to 'Absolute'.

A table with position set to absolute. Inside each cell of the table a gif image file has been positioned and a hyperlink has been configured for each image. The fragment below shows the hyperlink has been set to 'alarms.htm' so that when a user clicks on the button the page will change.



### Appendix B.1.3. Zone11.htm

This page consists of 8 Sentry:Sensor Controls, one for each Sensor on the Sentry. The control displays the Sensor's current gas value, engineering units and tag name. The color changes according to the state of the individual sensor. A number of 'clickable' links have been placed on this page.

Passive graphic image.

Standard files with hyperlinks.

The hyperlink on this button is set to "javascript:history.back()"

Sentry:Sensor controls. Color changes based on state of a single sensor. Each has its position set to 'Absolute'. The screen shot below, shows how this control was configured.

ActiveX Control Properties

General	Colors	Fonts	Object Tag	Parameters
Caption: <input type="text" value="SENSOR 1"/> Sentries: <input type="text" value="1:1"/>				
When all sensors on a Sentry Controller are in the same zone then the zone member is the Sentry number (eg. 1). When a subset of sensors is in the zone then identify them by Sentry Number and Sensor number (eg 2:3 2:4 )				
Ver 1.0				

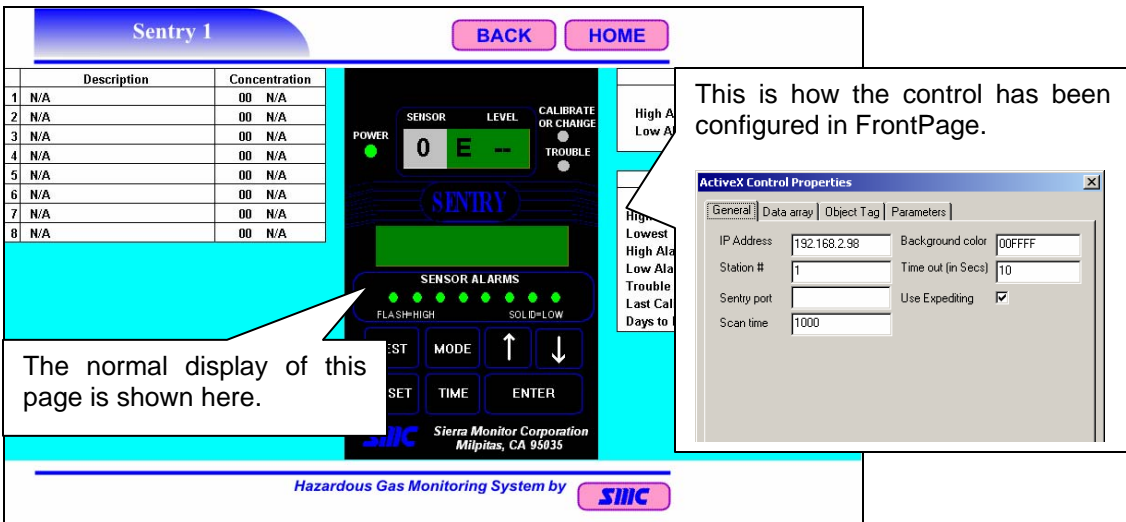
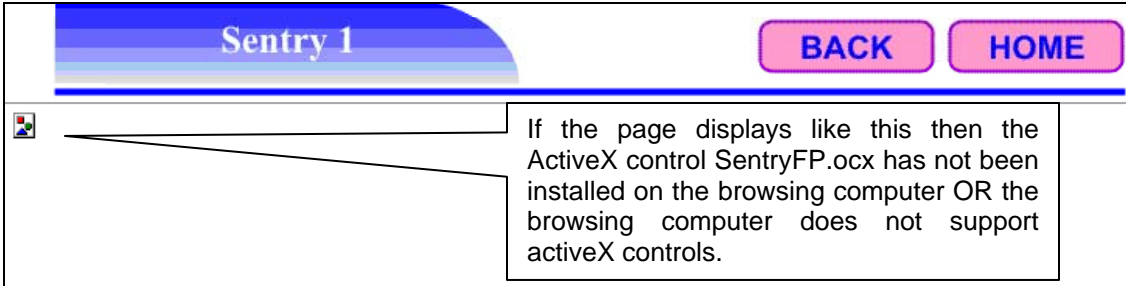
Clicking here changes the page to fp01.htm

### Appendix B.1.4. Zone1t.htm

This page is almost identical to 'zone11.htm' except that the Sensor controls are arranged differently.

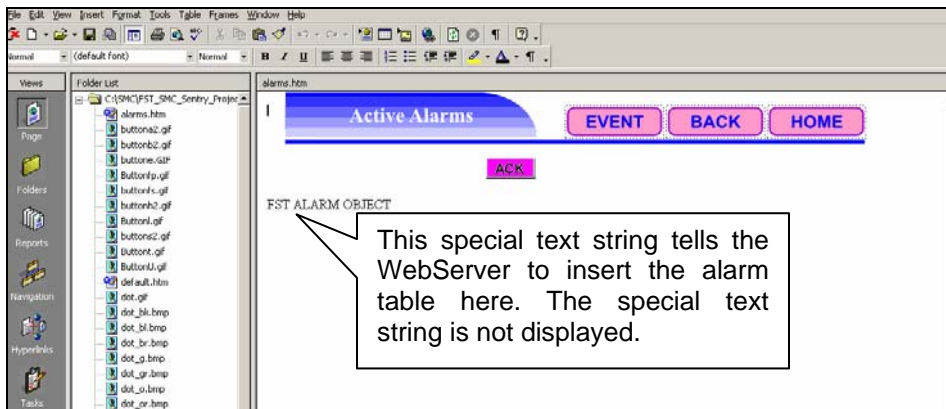
### Appendix B.1.5. Fp01.htm

This page displays status and other information about the Sentry. The intention is to provide the same data functionality as if the user was using the Sentry faceplate to review the status and change the settings. The data is updated continuously

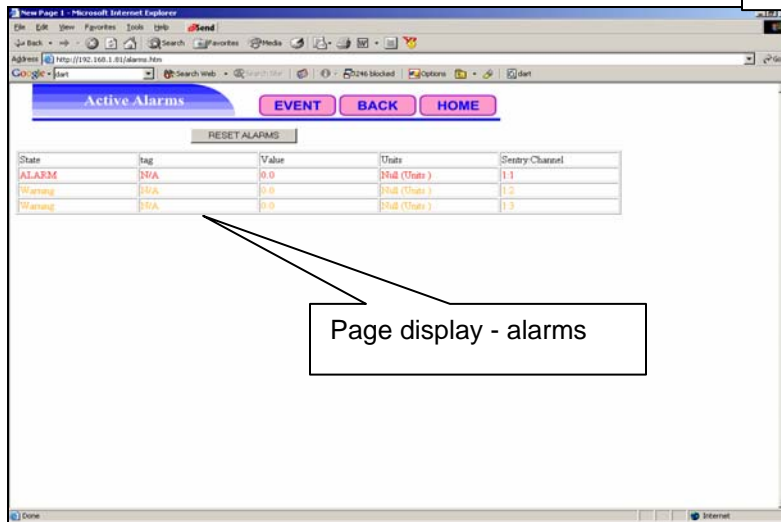
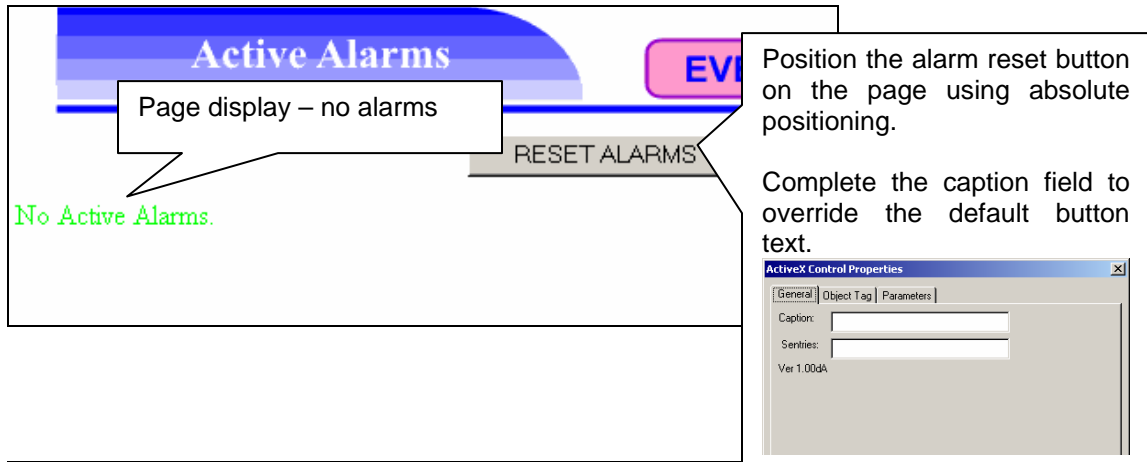


### Appendix B.1.6. Alarms.htm

This web page name is reserved for the display of a Sentry Alarm Table and may not be used for other purposes. The page consists of one control – the reset button and a special text string used to locate the alarm table. Place other elements on this page such as operator instructions and links to other pages.

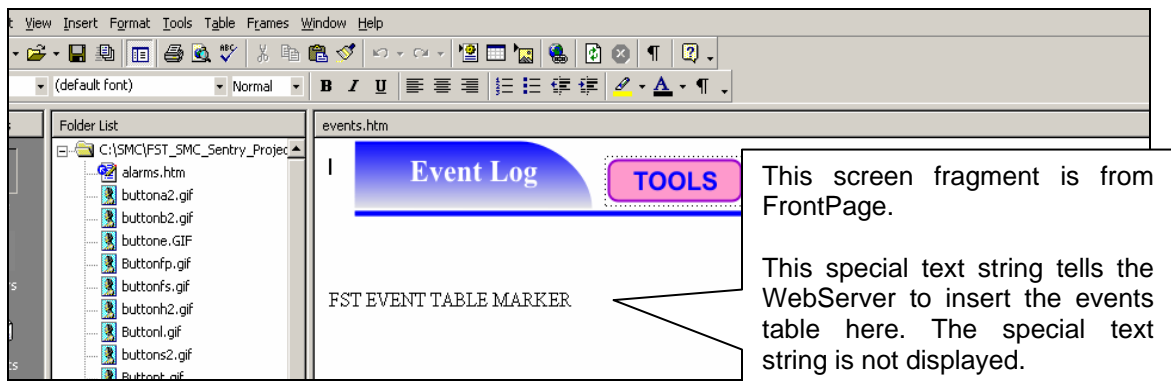


When preparing the Web Page remember that the table length is variable. A max of 8 table rows may be displayed for each Sentry configured in the project.



### Appendix B.1.7. Events.htm

This web page name is reserved for the display of a Sentry Events Table and may not be used for other purposes. The events table is variable in length so links and other elements should be placed above the table or else they may not be visible.



When the page is served the WebServer substitutes the special text string with the event table which resembles the screen fragment below.

Event Log
TOOLS
ALARMS
BACK
HOME

**LEGEND**  
 K = Key Event                      P = Periodic  
 U = Threshold                      W = New Warning                      A = New Alarm                      N = Returned  
 D = Delta                              w = Warning                              a = Alarm                              C = Comms Ala

Sentry      K REPORT Wed Jan 07 10:12:16 2004								
1	1N	2	3	4	5	6	7	8
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sentry      K REPORT Wed Jan 07 09:28:33 2004								
1	1W	2	3	4	5	6	7	8
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sentry      K REPORT Wed Jan 07 09:28:15 2004								

This button's hyperlink has been configured to take you to the page called 'EventBK.htm'


### Appendix B.1.8. EventBK.htm

This page is provided with a tool to upload the events from the WebServer. The uploaded file is saved to the browser's desktop. The 'Upload' button will only be seen if the browsing computer supports ActiveX controls.


Event Upload
ALARMS
EVENT
HOME

When you push this button : Upload

- FieldServer will upload the Event Log to your computer.
- Passive graphic images. Place the following two files on your desktop:
 



events(192\_168\_1\_81).csv



events.dat
- Passive text instructions to users.
 


events.dat is a binary file containing the raw event data.

events(###\_###\_###\_###).csv is the data file that can be opened with MS Excel or a text editor.

2.3 (###\_###\_###\_###) in the csv file name provides the IP address of the the FieldServer.
- Any Upload or Communication Error is displayed on a pop up window.

Configured in FrontPage as follows

General	Object Tag	Parameters
IP address: <input type="text" value="192.168.2.98"/>		
<input checked="" type="radio"/> Append full events file each upload <input type="radio"/> Append new records only		
<span style="border: 1px solid gray; padding: 2px 10px;">Upload</span>		

Hazardous Gas Monitoring System by


### Appendix B.1.9. Eventcfg.htm

This is a special web page used to tell the WebServer how to behave. If it is not present in the project then event logging by the WebServer will be disabled.

Folder List

- Event2.gif
- EventBK.htm
- EventBK.jpg
- EventBK2.gif
- eventcfg.htm
- events.htm
- events1.gif
- fp01.htm
- fstlogo.gif
- line.gif
- map.gif
- Ndef.gif
- nf01.gif
- nodes.htm
- nplateaa.gif
- nplateb.gif
- nplatec.gif
- nplated.gif
- nplatee.gif
- nzone1.gif
- nzone2.gif
- nzone3.gif
- nzone4.gif
- nzone5.gif
- nzone6.gif

```

eventcfg.htm
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=windows-1252">
<meta name="GENERATOR" content="Microsoft FrontPage 4.0">
<meta name="ProgId" content="FrontPage.Editor.Document">
<title>New Page 1</title>
</head>
<body>
EVENT_REPORT_PERIOD:=86400

EVENT_THRESHOLD:Sentry=1 channel=1 val
EVENT_THRESHOLD:Sentry=1 channel=2 val
EVENT_THRESHOLD:Sentry=1 channel=3 val
EVENT_THRESHOLD:Sentry=1 channel=4 val
EVENT_THRESHOLD:Sentry=1 channel=5 val
EVENT_THRESHOLD:Sentry=1 channel=6 val
EVENT_THRESHOLD:Sentry=1 channel=7 val
EVENT_THRESHOLD:Sentry=1 channel=8 val

</body>
</html>

```

This is the HTML view from FrontPage and shows the text necessary to configure the event logging.

Note that these special text strings are not cluttered with html code.

More information is provided in section "12.2.2"

### Appendix B.1.10. Nodes.htm

This is a special web page used to tell the WebServer how to behave. If it is not present in the project the WebServer will not know how to collect data from the Sentry and the other pages will not display valid Sentry Data.

```

nodes.htm
<html>
<head>
<meta http-equiv="Content-Language" content="en-us">
<meta http-equiv="Content-Type" content="text/html; charset=windows-1252">
<meta name="GENERATOR" content="Microsoft FrontPage 4.0">
<meta name="ProgId" content="FrontPage.Editor.Document">
<title>New Page 1</title>
</head>
<body>
<p>&nbsp;</p>
<p>SENTRY PORT: P1=1</p>
<p>&nbsp;</p>
<p>&nbsp;</p>
</body>
</html>

```

This is the HTML view from FrontPage and shows the text necessary to configure the WebServer to collect Sentry Data.

Note that these special text strings are not cluttered with html code.

More information is provided in section 3.9

**Appendix B.1.11. \*.gif**

These are image files used as part of the project. Gif files have a high level of non-loss compression producing more image for less storage space than almost all other image file formats. For large or complex images the saving can be very large and the use of gif files is highly recommended.

**Appendix B.1.12. \*.ocx**

These are ActiveX controls which must be installed on the WebServer for the Eventbk.htm and fp01.htm pages to work correctly. These pages have been configured to automatically download and install the controls on the browsing PC. These files reside outside the FrontPage project as they do not need to be managed directly by FrontPage.

**Appendix B.1.13. Config.csv**

This is a minimal WebServer configuration file which contains sufficient information to configure the WebServer to serve web pages. This file resides outside the FrontPage project as it does not need to be managed directly by FrontPage.

## Appendix B.2. Template 2 – Vanilla with Access Control

Template 2 contains the same pages and configuration as Template 1 with two additional files, Login.htm and security.htm to allow access control. See also Section 15.

### Appendix B.2.1. Login.htm

This page is shown when a user is not logged into the project. When logged in, the user is able to browse to the other pages but after a time period (configured in security.htm) the user is logged out and the page reverts to login.htm. The exception to this is the alarms page.

The page file name 'login.htm' should not be used for other purposes as it has a special meaning to the WebServer.

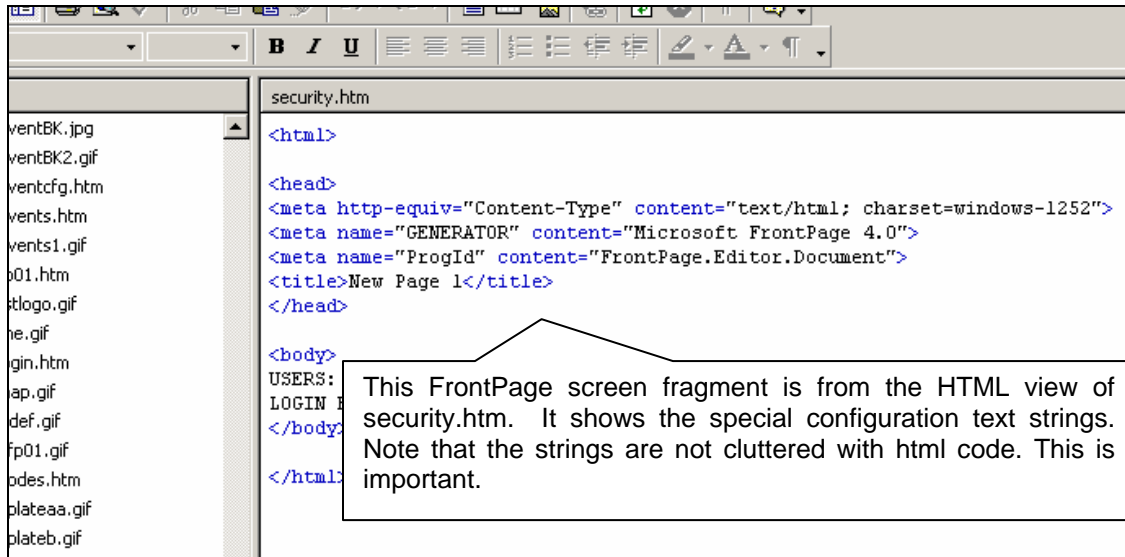
The image displays two versions of the Sentry WebServer login page. The top version is the final rendered page, featuring a blue header with 'Sentry WebServer' and 'EVENT ALARMS' buttons. Below the header, it says 'Login to access the monitoring system. Enter your User Id and Password:' followed by two input fields and a 'Login' button. The page is titled 'Access Control Page' and includes a warning: 'You need to login to access the other web pages. You are automatically logged out after and idle time.' The footer reads 'Hazardous Gas Monitoring System by SMC'.

The bottom version shows the page during the construction phase. It has the same layout but includes a label 'FST LOGIN OBJECT' pointing to the page content. A callout box explains: 'This is what the login page looks like in FrontPage during the construction phase. The special text string 'FST LOGIN OBJECT' is placed on the page using absolute positioning.'

Other callout boxes provide additional information: 'You can place other elements on the login page to keep the look and feel uniform.' and 'The WebServer adds this element to the page.' Another box states: 'The user types their login ID (3 characters) in the top field and their password (5 characters) in the bottom field.'

## Appendix B.2.2. Security.htm

The project should be constructed so that no other page has a link to this page. It is not intended for browsing. It is used to tell the WebServer how to behave.

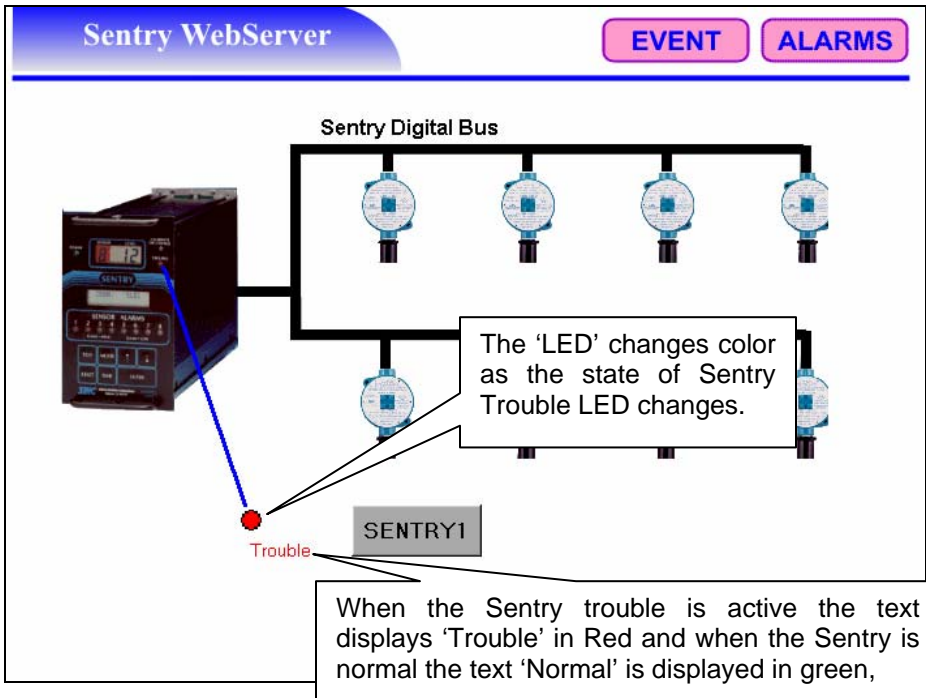


### Appendix B.3. Template 3 – Bells and Whistles

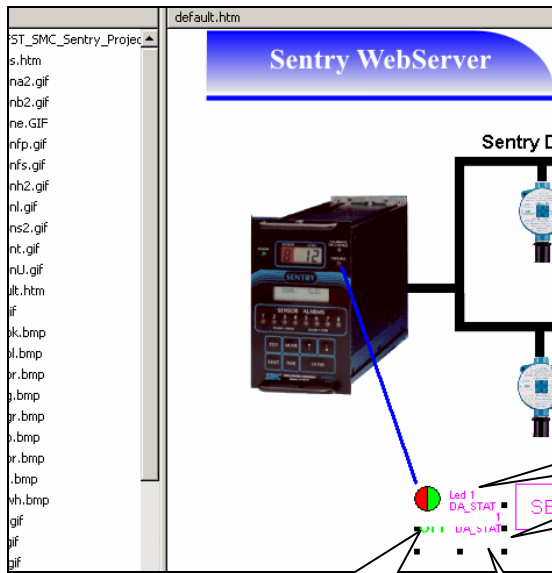
This template is based on template 1 with a text and an LED control added to 'default.htm'.

They are used (in this example) to illustrate the state of the 'Trouble' LED from the face plate of the Sentry. More information on these controls can be found in Appendix A.1 and Appendix A.2. These controls form part of the Advanced Feature Pack.

The config.csv file has been modified to support these extra controls. The Sentry Data is read automatically from the Sentry into the WebServer. The modification extracts one single bit of information from a register and copies that bit to a single bit in a bit array so that it can be accessed by the two controls.



Each of the new controls displays text/file based on the state of a single bit in the WebServer. The Data Array where the bit may be found and the bit's offset are specified when building the page.



The controls overlap in FrontPage. This was required to align the text and LED.

The LED control was configured as shown below. Make sure the two image files used for the on/off states are part of the FrontPage project.

**ActiveX Control Properties**

General | Shape, Size and Color | Object Tag | Parameters

Control Name:

Address:  TableName:Offset eg: DA\_AI:0

Show labels

Ver. 1.00b

OK Cancel Apply Help

**ActiveX Control Properties**

General | Shape, Size and Color | Object Tag | Parameters

Size (in pixels):  Zero for auto size.

'On' Image File:

'Off' Image File:

The text control was configured as shown below.

**ActiveX Control Properties**

Font Size, Font Name, Background Color | Object Tag | Parameters

General | Size, Color, Text

Control Name:

Address:

Eg. DA\_AI:1 where DA\_AI is the name of a Data Array 1 is the offset into the Data Array

Show labels

Ver. 1.01a

OK Cancel Apply Help

**ActiveX Control Properties**

Font Size, Font Name, Background Color | Object Tag | Parameters

General | Size, Color, Text

Size (in pixels):  Zero for Auto Sizing

'On' state:

Color:  Text:

In RGB format as a hex string eg. 0xff0000 is red

'Off' state:

Color:  Text:

---

## Appendix C. FAQ

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### Appendix C.1. FieldServer WebServer Firmware Versions and Cookies

From WebServer version 1.06a onwards, changes were made to cookie formatting to reduce the number of bytes used to transmit data to the Sentry-Sensor display controls as well as the Analog, text and LED display controls on the Web screen. The application htmlToWinCE.exe reads and interprets these cookies and then updates the display. The version of htmlToWinCE.exe used must therefore be compatible with the WebServer version.

- Both the driver and the htmlToWinCE.exe application produce messages to report which version of the other is required for compatibility. The application htmlToWinCE.exe prints this message clearly at the end of its run. It is the 2<sup>nd</sup> last message printed and should be quite visible to users.
- The file livedata.htm must exist on the FS. When this file is first opened by the WebServer it checks the first line for the string "CookieStyle=1". If this string is found the cookies are produced in the new compact format. If the file is empty cookies are produced formatted to the original style.  
The parsing application htmlToWinCE.exe can also be run with the command line parameter "oldStyleCookies".

Example: `HtmlToWinCE.Exe oldStyleCookies <Enter>`

Bear in mind that this application is often run from a batch file ( such as toWS.bat) and in these cases the batch file must be modified if forcing the parsing application to produce web pages suitable for the original style cookie format and thus be compatible with versions of the WebServer earlier than 1.05a.

- The CookieStyle applies to the whole FieldServer - different styles may not be assigned to different adapters or tiers. A consequence of the ability to produce cookies in a backward compatible way is that the FieldServer screens will display the 'Format Err' string when the FieldServer is reset.
- 

Ensure the version of the FieldServer firmware is compatible with the Sentry Web Project. This importance of this consideration is highlighted by the notes below.

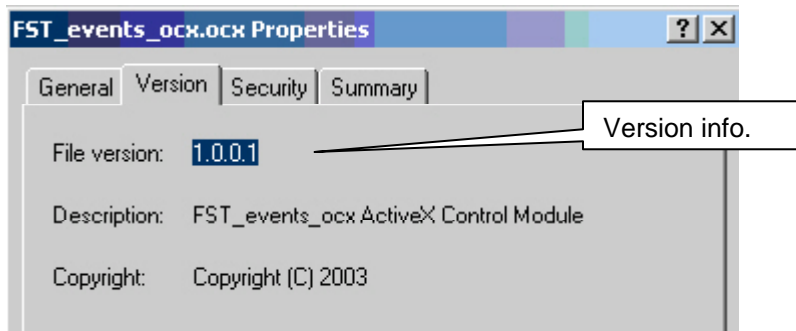
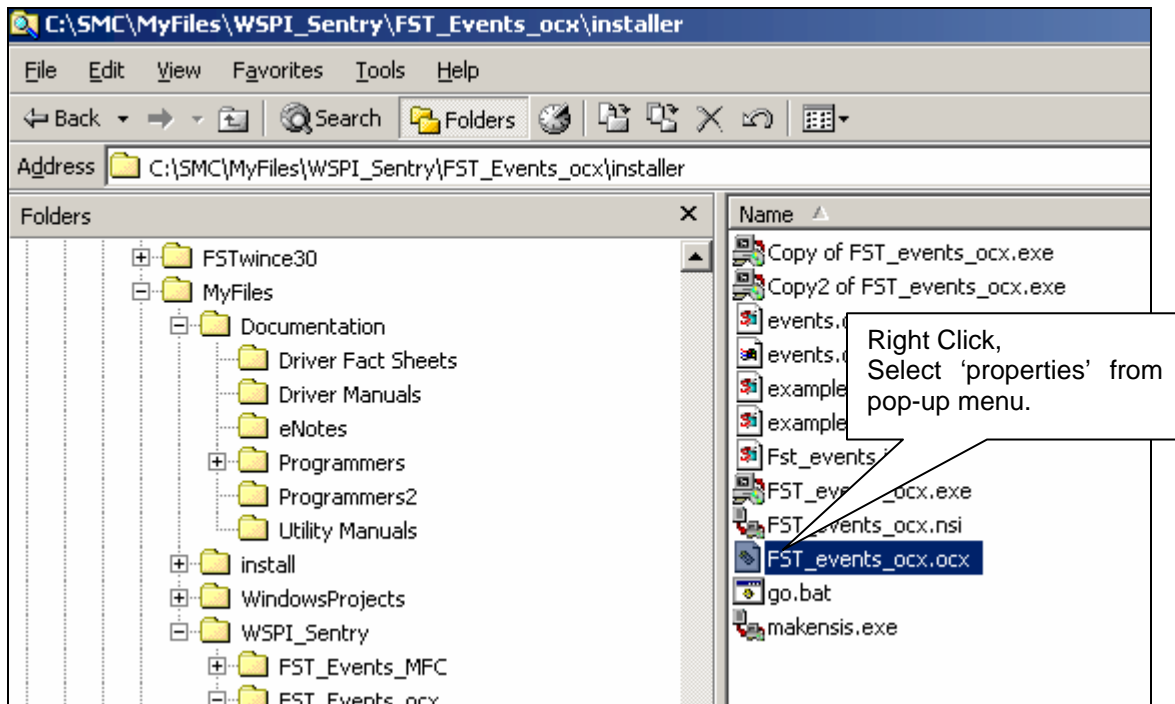
- There is a 3.5k limit to the size of cookies that a server may set.
- The WebServer attempts to count the number of bytes used to form the cookies. If the byte count nears the 3.5k limit a message is printed in the FS error log. (Error #60.) Since most non alphabetical characters are stored in ASCII encoded hexadecimal and use 3 bytes of storage, however, it is difficult to count the bytes accurately.

### Appendix C.2. How to Tell the Version Number of the OCX

An OCX has two version types. One is used by engineering to control development, releases and bug fixes. The other is used with the Codebase option in HTML. The formats of the two version numbers are not compatible.

Obtain the engineering version from the about box.

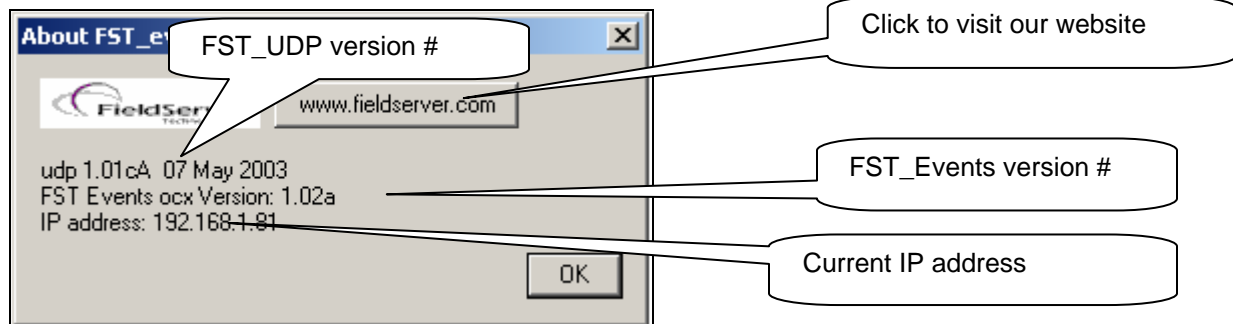
Obtain the version for use with Codebase by locating the OCX file using explorer, right clicking on the OCX, selecting 'properties' from the pop-up menu and then looking at the version tab.



## Appendix D. Troubleshooting

### Appendix D.1. Check the Version Number

Right click on the FST\_Events click the about button. The "about" box should pop up



### Appendix D.2. How Event Time Stamps are Reported

- The FieldServer records sentry events and time stamps them. The timestamp is recorded in Greenwich Mean Time. However, for historical reasons, the time stamp printed on the events.htm screen is reported in Pacific Standard Time (PST). The FieldServer does not auto adjust for Daylight Savings time and hence is permanently fixed in PST.
- When the events file is uploaded and converted to a CSV file, the timestamp information is printed in the CSV file in two columns; Local Time and GMT. The Local Time printed is PST too, so that, despite the time zone the PC is set to, the timestamp in the CSV file and the timestamp shown on the events.htm screen correspond.
- If the PC's time zone is not PST, the utility will automatically attempt to adjust the printed timestamp to PST. If this adjustment cannot be made then a dialog reporting this fact is displayed and some additional information on the PC's time zone is printed in the CSV file so that the user is aware that the CSV time will not correspond to the events.htm screen time.

### Appendix D.3. HtmlToWinCE Error Messages

The following notes provide a list of error messages produced by this utility and suggest some corrective actions.

Error	Description/Action
Err. Bad object type while writing taglist.ini	The user cannot take any corrective action. Zip the project folder and send the zip together with the version of htmlToWinCE.exe that is being used and send a report with the files to FieldServer Technical Support.
Err. Bad object type while writing objlist.ini.	

The errors below arise because the HTML file is badly formatted. It isn't possible to provide discrete steps to a solution as there are too many possible causes of these errors. The most common cause is the case sensitivity of the utility. The utility expects all HTML tags to be specified in lower case. (This is the default for Microsoft FrontPage.)

Err. Max number of objects is %d.	The Web project has too many sentry and/or other controls. The maximum number permitted is printed in the error message. Read section 1.4.2 Refine your project by removing the extra controls.
Err. Cant find object start (Sensor Control) Err. Cant find object end (Sensor Control)	The html files used as inputs to the utility contain a number of ActiveX control definitions. Every control is expected to start with the token "<object>" and to end with the token "</object>".

Err. Cant find location (Sensor Control)  
 Err. Cant find location (Ack Button)  
 Err. Cant find location (Zone Alarm Control)  
 Err. Cant find location (LED Control)  
 Err. Cant find location (Text Display Control)  
 Err. Cant find location (Analog Display Control)

A <span> html tag is expected to wrap the ActiveX control definition. The <span> token is expected on the line immediately preceding the <object> token. The <span> definition must have location information with the keywords **left** and **top**. An example of a well formatted HTML fragment is provided below.

```
<p><span style="left: 510; top: 147; position: absolute">
<object classid="clsid:9DBAFCCF-592F-101B-85CE-00608CEC297B" id="Circ315" width="65"
height="30">
<param name="_Version" value="65536">
<param name="_ExtentX" value="1720">
<param name="_ExtentY" value="794">
<param name="_StockProps" value="15">
<param name="Caption" value="S.I.2.7">
<param name="Sentries" value="52:7">
</object>
</span></p>
```

Err. Cant find caption (Sensor Control)	"Caption"
Err. Cant find Sentries (Sensor Control)	"Sentries" or "Sentrys"
Err. Cant find caption (Zone Alarm Control)	"Caption"
Err. Cant find Sentries (Zone Alarm Control)	"Sentries" or "Sentrys"
Err. Cant find caption (LED Control)	"Object Caption"
Err. Cant find Sentries (LED Control)	"Object Address"
Err. Cant find object size (LED Control)	"Object Size"
Err. Cant find object onImage (LED Control)	"Object On Image"
Err. Cant find object offImage (LED Control)	"Object Off Image"
Err. Cant find caption (Text Display Control)	"Object Caption"
Err. Cant find Sentries (Text Display Control)	"Object Address"
Err. Cant find object onColor (Text Display Control)	"Object On Color"
Err. Cant find object offColor (Text Display Control)	"Object Off Color"
Err. Cant find object onText (Text Display Control)	"Object On Text"
Err. Cant find object offText (Text Display Control)	"Object Off Text"
Err. Cant find caption (Analog Display Control)	"Object Caption"
Err. Cant find Sentries (Analog Display Control)	"Object Address"
Err. Cant find object size (Analog Display Control)	"Object Size"
Err. Cant find object Color (Analog Display Control)	"Object Color"

These errors are produced when an activeX control parameter is missing from the ActiveX control definition. In the column to the right of the error message the name of the missing parameter is provided. In the example below the parameters "Caption" and "Sentries" are defined.

```
<p><span style="left: 510; top: 147; position: absolute">
<object classid="clsid:9DBAFCCF-592F-101B-85CE-00608CEC297B" id="Circ315" width="65"
height="30">
  <param name="Caption" value="S.I.2.7">
  <param name="Sentries" value="52:7">
</object>
</span></p>
```

Err. No .htm files in current directory! There are no files to process. The user may be running the utility in the wrong folder.

Err. Failed to process file [%s] code=%d The utility could not parse the file correctly. An error message will already have been printed for the error causing the message.

The following code values indicate where the parsing failed.

- 3 = Sensor display control
- 4 = Zone Alarm Control
- 5 = Ack Button
- 6 = LED control
- 7 = Text display control
- 8 = Analog value display control
- 9 = Object replacement and iframe insertion process.

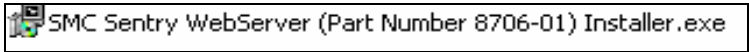
Err. Project requires a default.htm Every project must have a default.htm file.

Err. Project requires a nodes.htm Every project must have a nodes.htm file. Section 3.9 provides additional information.

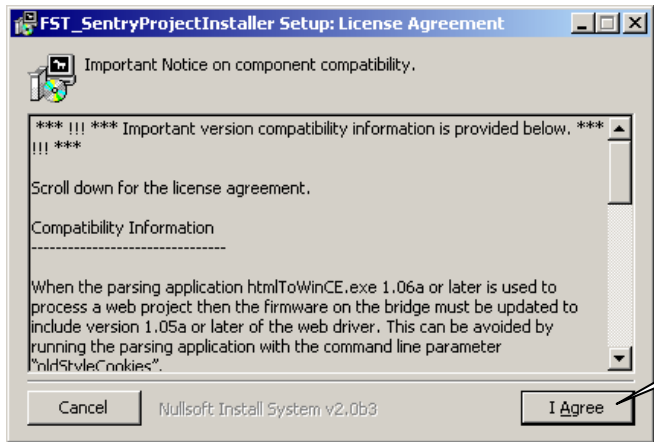
Err. FATAL ERRORS HAVE OCCURRED. DO NOT DOWNLOAD THIS PROJECT!  
The project should not be downloaded as there were fatal errors.

### Appendix E. Installing SMC Sentry WebServer (PN 8706-01)

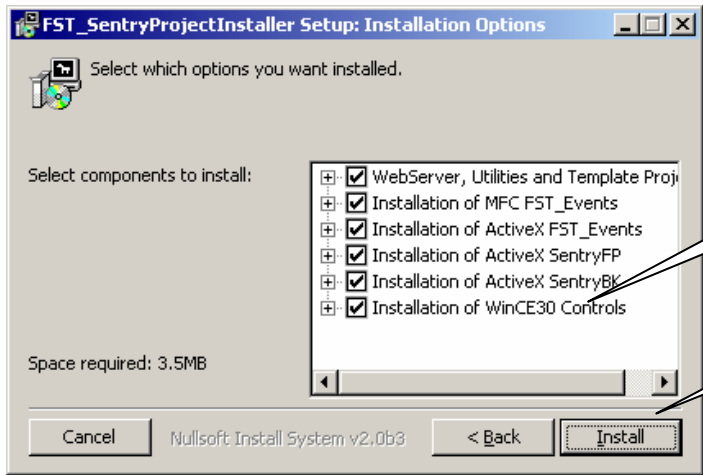
An installer is provided to customers by e-mail or on a CD-ROM. If new versions of the controls or utilities are released a new installer is provided. The installation process is the same whether installing for the 1<sup>st</sup> time or updating an existing installation. The name of the installer is



To execute the installation process, run the installer by double clicking on it.



Read the license agreement, accept its terms and push the 'I agree' button.



Ensure everything is checked unless directed by FieldServer tech Support.

Push the install button and wait.

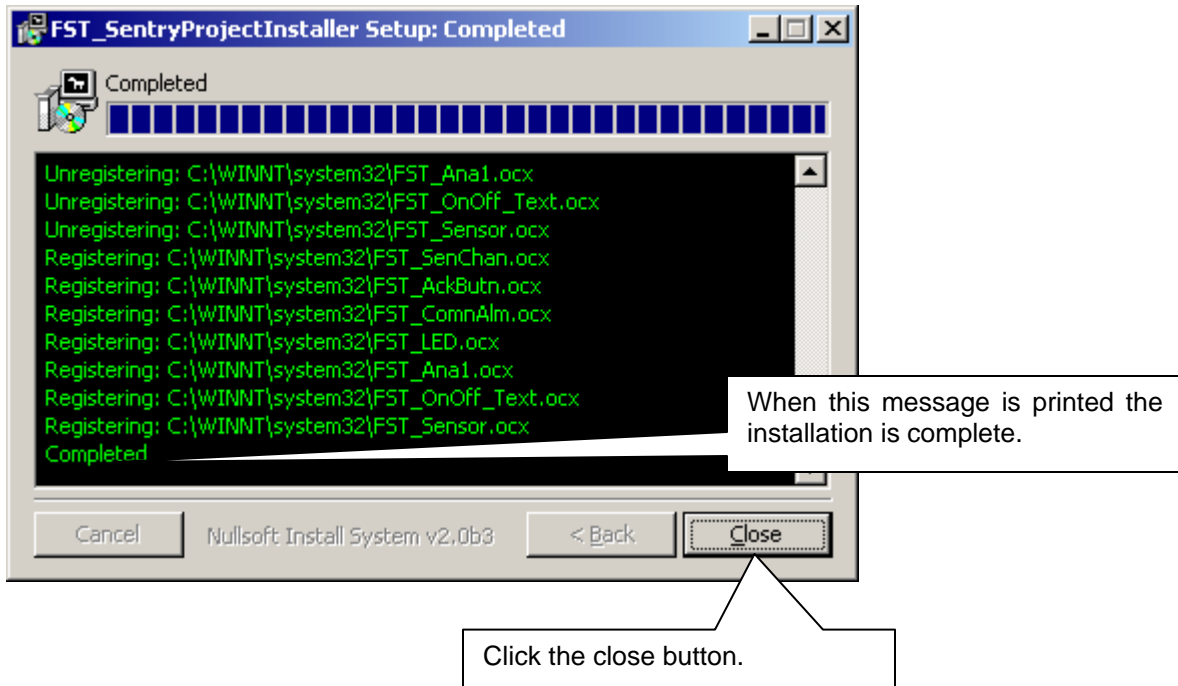
If an existing installation has been updated then the following folder will not be updated as it is assumed that the user has used the folder for a project.

“C:\Program Files\SMC\Projects\Project1”



If any message dialogs are presented, read and follow the instructions and then push OK.

Finally



---

---