FieldServer Protocol Driver Sheet
WebServer/LanServer

1 DESCRIPTION

This Driver is capable of:
- Serving files to a HTTP client such as Internet Explorer.
- Responding to HTTP Get/Post commands

2 FORMAL DRIVER TYPE

Ethernet

Server Only

3 COMPATIBILITY MATRIX

FieldServer Model	Compatible with this driver
FS-x30	No
SlotServer	No
ProtoNode	No
QuickServer FS-QS-10xx	No
QuickServer FS-QS-12xx	Yes
ProtoCessor FPC-ED2	No
ProtoCessor FPC-ED4	No

4 CONNECTION INFORMATION

Connection type: Ethernet
Ethernet Speeds Supported: 10Base-T, 100Base-T[1]

5 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 where files can have very long names which include spaces and punctuation.

To configure the FieldServer to serve Web Pages:

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[1] Not all FieldServer models support 100BaseT. Consult the appropriate instruction manual for details of the Ethernet speed supported by specific hardware.

- 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.

6 SERVING ACTIVEX CONTROL OCS FILES

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

- OCX file sizes can range from 40k up to several hundred kilobytes. Downloading takes time.
- OCX files need to be registered on the browsing computer initially, but need not be downloaded every time a page is refreshed.

6.1 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.

6.2 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 LANServer 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 LANServer with a different address. Substitution is ON by default.

The following limitations to address substitution apply:

- If a project has been built with ActiveX controls configured to obtain data from more than one LANServer then address

substitution is not suitable and must be disabled.

- If the web project is being served from a Server other than the FieldServer LANServer then address substitution will not work.

- Substitution only operates on .html files.

7   SYSTEM LIMITATIONS

The FieldServer LANServer does not support FrontPage extensions, Active Server Pages (ASP), or scripting tools e.g. PERL. There is a limited amount of space on a FieldServer on which to store the web project elements, screens etc.

7.1   Cookie Length[2]

If the cookie length exceeds the maximum limit of 3500 bytes, the screens will not update correctly

7.2   Total number of controls in a project

The total number of controls permitted in one project is limited to 200.

8   BROWSER SECURITY SETTINGS

8.1   ActiveX Controls and Security

The security profile for the browser will be low.
The browser and user must accept unsigned objects.

8.2   Limitations and Supported Operating Systems

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

8.2.1 Supported Operating Systems

- Microsoft Windows 2000 Professional, Windows XP, Windows Vista

- Microsoft Windows CE 3.0
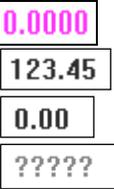
8.2.2 Supported ActiveX Containers

- Microsoft Internet Explorer version 6.0+

8.2.3 Controls - limitations

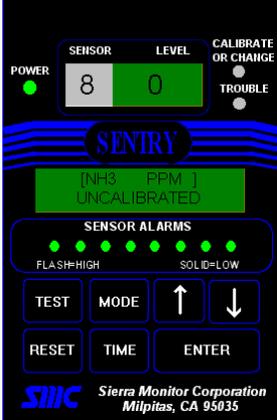|	
Maximum number of controls running on one PC	200
Maximum number of any single control running on one PC	200
Maximum number of Containers running on one PC	50
Maximum number of PC's running containers connected to one FieldServer	4
Supported screen Resolutions	1152x864; 800x600

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[2] The following statements apply irrespective of the operating system of the browsing computer

9   WEB CONTROLS

Control	Display	Description
Available Web Controls		
Analog Value Display Controls	0.0000 123.45 0.00 ?????	The Analog ActiveX displays the value of a data array element in a FieldServer. With appropriate permission a user may interact with the control to have the control change the value of the data array element in the FieldServer The 'foreground' and 'background' colors are configurable The control listens passively for messages sent by a FieldServer. The control reports its 'comm.' status by changing to grey and displaying '????' if no recent data has been received. Subject to Cookie Limitations
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. With appropriate permission a user may interact with the control to have the control change the value of the data array element in the FieldServer The 'on' and 'off' color are configurable The 'background' color is configurable The control listens passively for messages sent by a FieldServer. The control reports its 'comm.' status by changing to grey if no recent data has been received. Subject to Cookie Limitations
Text Display Controls•	On Off Normal	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. Subject to Cookie Limitations
Screen Saver		Provides a method of having the screen change to a specified page after an idle time.
Access Control	LOGIN BACK HOME Login to access the monitoring system. Enter your User Id and Password: Login	Provides a method of restricting access to the web pages. After a time, all pages change to this one.

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

Control	Display	Description
Sentry Oriented Active X Controls		
Sentry Zone Button Controls	Zone 4	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. Subject to Cookie Limitations
Sentry:Sensor Status Controls	Module 2 0.0 (red) Module 2 0.0 (green) Module 2 0.0 (orange)	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. Subject to Cookie Limitations
Sentry:Combo Status Controls	Alm: 10.0 Wrn: 20.0 0.0 %LEL ALM1 0.0 % Alm: 10.0 Wrn: 20.0	Similar to the Sentry:Sensor control but display configurable including alarm levels. Subject to Cookie Limitations
Alarm Page Control		Provides a dynamic list of current Sentry Alarms. Alarm states are highlighted in different colors. Subject to Cookie Limitations
Alarm Reset Button Control	ACK	A button that, when pushed, sends an alarm acknowledgement to all Sentry's connected to the FieldServer. Button text is configurable. Subject to Cookie Limitations
Event Page Control		Provides a dynamic list of Sentry Events (Alarms, warnings etc.) Subject to Cookie Limitations

Control	Display	Description
Sentry Oriented Active X Control OCX Controls		
Event Uploader Control	Upload	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.
Event Uploader Application		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.
Sentry Faceplate		Provides a Sentry Faceplate which displays current Sentry information and allows a user to interact with the Sentry.
Sentry Calibration Backup/Resto re Control	Upload from FieldServer Download to FieldServer Ready	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.

10 WEB DRIVER DESIGN ISSUES AND LIMITATIONS:

10.1 Read Request Issues

10.1.1 <FST_DISPLAY> tags

Custom Web page templates use <FST_DISPLAY> tags. These tags provide placeholders for data values referenced by other parameters eg Data Array Name and Offset. The Web Driver dynamically selects the template to respond to the Web Client. It reads one line from the selected template, searches for the display tag, inserts the data and sends the data to the Client. Each page is served line by line to the current Client before attention is given to the next Client.

In situations where there are a large number of tags on a page or multiple pending requests, the FieldServer's performance would be adversely affected either because of memory limitations or availabliity of latest data.

10.1.2 <iframe> tags

Standard <iframe> tags are used to refresh part of a page at regular intervals, e.g. the data value part of the page can be updated while the data description remains unchanged. Each <iframe> section sends a request to the FieldServer for the latest value. Where there is a large number of <iframe> tags increases per page, or the number of clients currently accessing this page is high, the FieldServer's performance is affected. Performance could be increased by sorting all refreshable data under one <iframe> but that would force all the data to get refreshed at same interval and would restrict the web page developer to display all data at one place on a page.

10.2 Write Request issues:

Each point requires a different section on a page to send a write request for a single point, otherwise all other points on a page will be over written at the FieldServer. Data integrity would be in danger.

It is possible that a page could be refreshed while in the process of being edited. If the refresh occurs before a write request is sent, the information typed by the user will be lost. This drives a Web Page developer to develop two templates; one refreshable page where set points can be viewed and another static page where points are set.

11 WEB DRIVER STATISTICS:

Web Driver statisitics can be revealed by configuring a HTTP-Stats Data Array. Refer to the User Manual for more information.