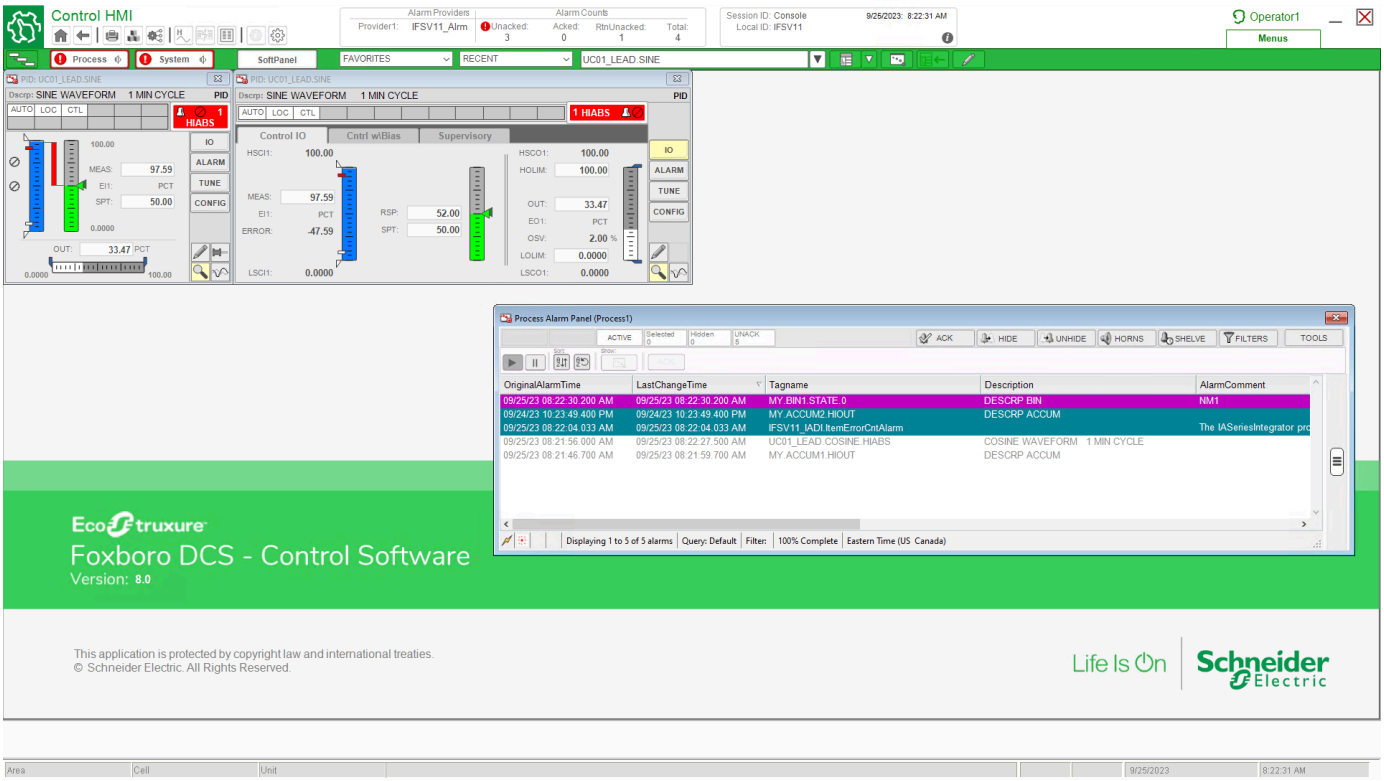
Foxboro™ DCS

Control HMI Application

PSS 41S-10HMI

Product Specification

September 2024



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Features

Human operators, engineers, and maintainers interact with the control system through graphic display of real time and historical information. The graphics can be designed to match specific tasks, providing instantaneous and trend information required to exercise control capabilities.

This comprehensive visualization software subsystem provides:

- Intuitive, easy to navigate display hierarchy.
- EcoStruxure™ Foxboro DCS Control Core Services block faceplate overlays.
- Alarm notification, annunciation, and management.
- Real-time and historical trending.
- Role-based security options.
- Powerful scripting language.

Navigation Hierarchy

The EcoStruxure™ Foxboro DCS Control HMI offers a hierarchical navigation feature to organize graphical displays into logical plant-oriented groupings. With the Framer application, users define up to a four-level display hierarchy in a hierarchical organization that reflects the desired process plant structure.

Navigation SoftPanel

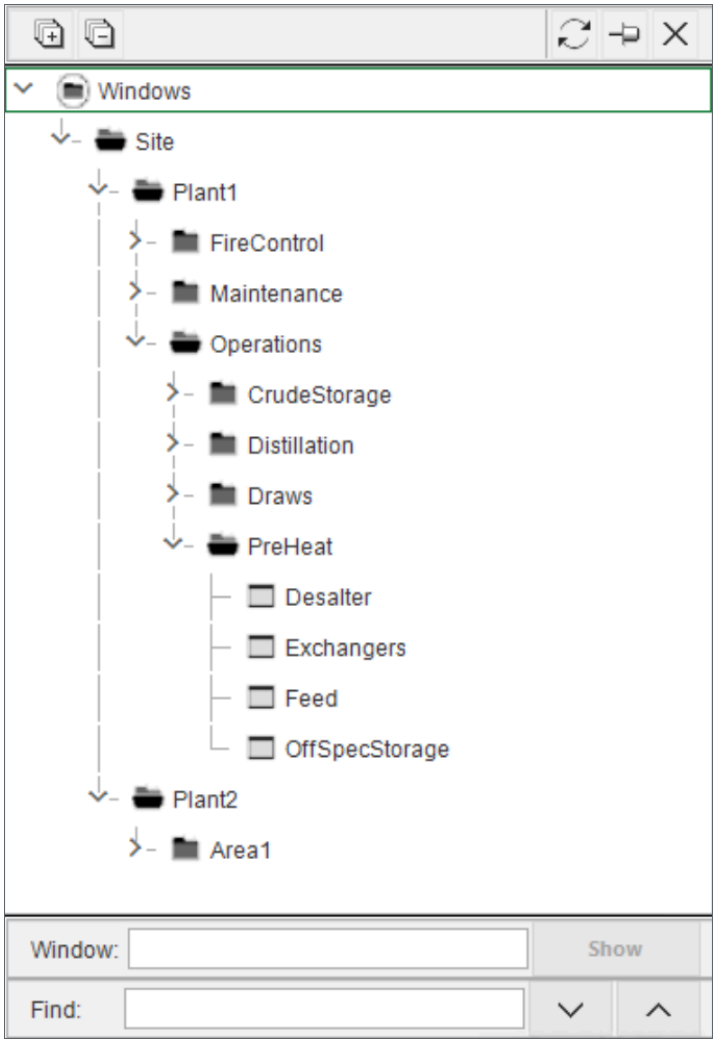
- Horizontal or vertical navigation windows can be used to view the window hierarchy to quickly select a display at any level.
- The hierarchy supports up to twelve entries per level which allow the user to traverse it using the standard keyboard function keys.
- Process alarm indications are shown at each level rapidly guiding the operator to any point in alarm.
- The Control HMI supports alerting operators of alarms within the HMI, and through external devices such as annunciator panels.

Figure 1 - Navigation Display Hierarchy

Navigation Browser

With WindowMaker and Framer, you can organize graphical displays into a hierarchical tree view that better represents the Site, Plant, and Equipment model of the process.

Navigation treeview windows and folders can be assigned operator and station-based access permissions to limit operator and station access to assigned windows or areas of the process.



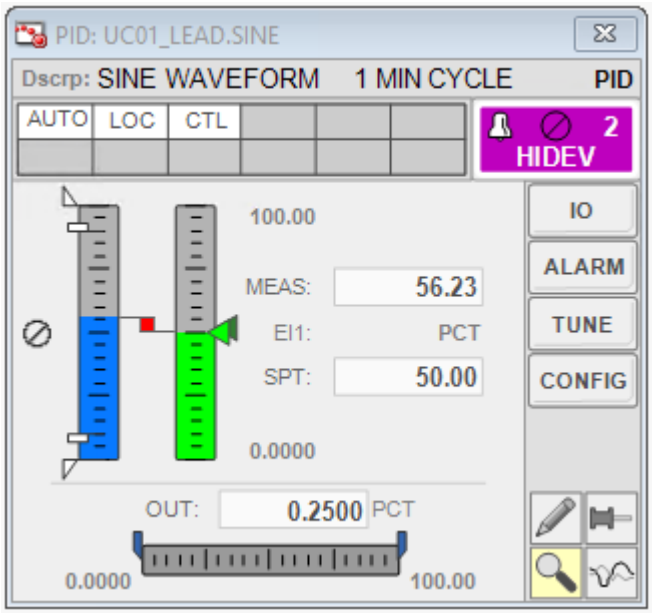
Detail Display Faceplates and Detail View Overlays

Control blocks are represented as block specific detailed symbols that can be inserted into process graphics or opened separately as individual windows. These symbols provide real-time text and graphical information on all I/O and control blocks. There are two levels of block Detail Display symbols.

Detail Display Faceplate

The block detail display provides a high-level overview of the block and access to key block operation values.

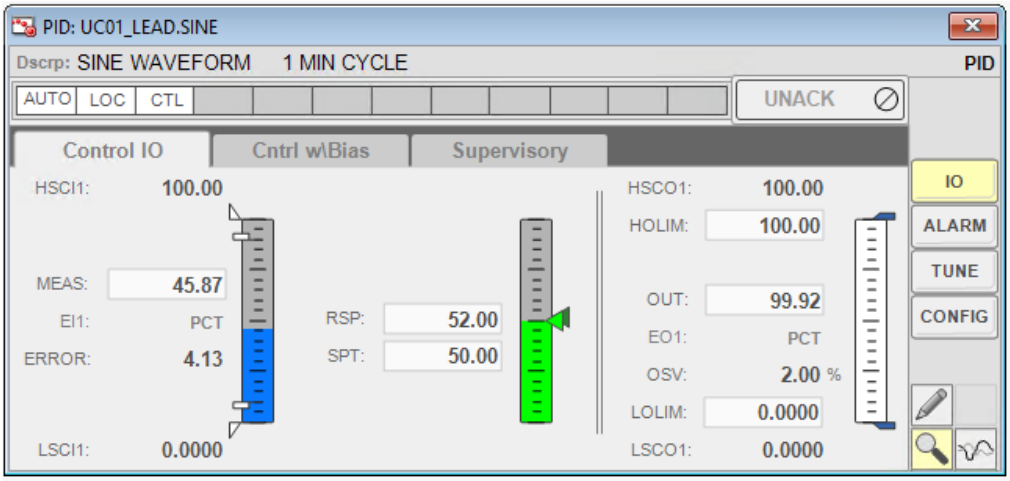
Figure 2 - Block Detail Display



Detail View

The block detail view provides more in-depth details about all block parameters. These parameters are organized into separate views and tabs, enhancing navigation and readability for users.

Figure 3 - Block Detail View

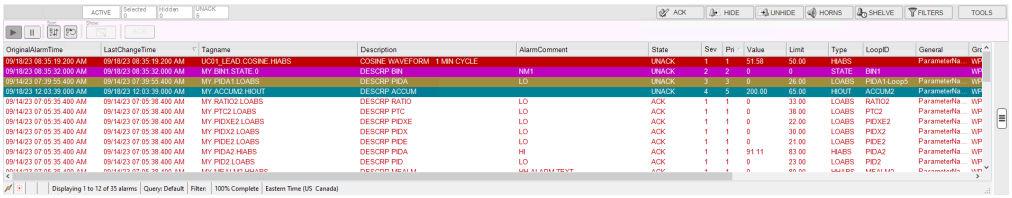


Alarm Window

The Control HMI includes several runtime, event, and historical alarm windows for viewing and managing alarms.

The Alarm Windows display alarm messages and system events in a resizable, scrollable window. Users can apply custom queries, filters, and sorting to the records within the alarm windows.

Figure 4 - Alarm Window



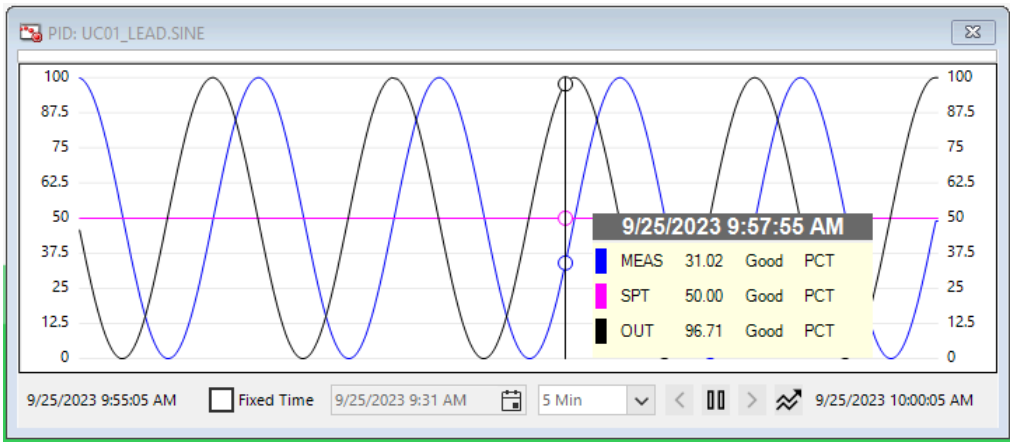
Real Time and Historical Trending

A powerful data trending capability is available that delivers trends including analog or discrete event data to notify plant personnel of process changes. Users may enter specific or relative time periods to view data to compare data from different time periods. Other useful features include:

- Scaling by tag or entire trend.
- Annotations with user and time entries.
- Statistics such as average, min/max.
- Zoom In/Out to analyze trend details.

Trending Options	Description
Historian Client	A powerful trending tool used for viewing historized IO values.
Trend Client	The 16-pen lighter version of the Historian Client that can be used for viewing historized data or real-time data.
Multi Pens Trend	The 8-pen lightweight industrial graphic trend control that can display both real-time and historical data of IO values.
Single Pen Trend	The single-pen version of the multi-pen trend.

Figure 5 - Detail Display Multi-Pen Trend



Block Select Browser

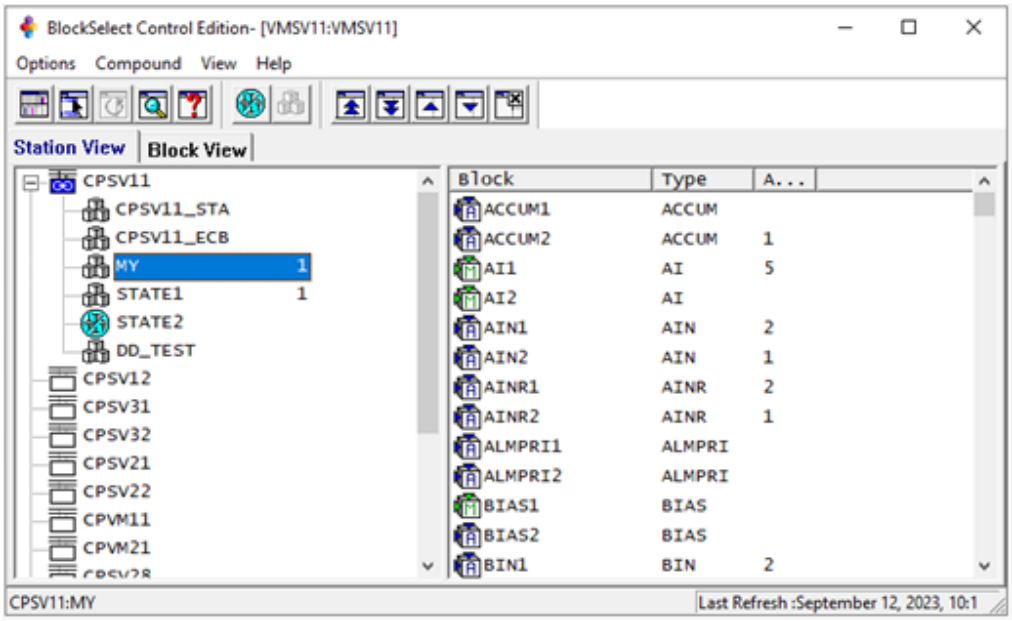
The Block Select Browser is a graphical interface that presents a view of the control schema in the monitored controllers. This interface allows users to access hierarchical views from controllers to compounds and control blocks, as well as access to faceplate overlays in order to perform control actions, such as ramping a variable and auto/manual switching.

This browser also supports report configurations which can generate a screen or printed report listing compounds or control blocks that are in an exception condition such as:

- Compounds or blocks off scan.
- Compounds or blocks in alarm.
- Compounds or blocks with alarms inhibited.
- Blocks not on control.
- Blocks in manual mode.
- Blocks with Bad I/O.

Reports may be filtered in a variety of combinations through an easy-to-use graphical configurator.

Figure 6 - Block Select Browser



Role-Based Security

The Control HMI utilizes a role-based model that provides write access security down to a parameter level. This three level model consists of the following:

- Users are associated with specific roles.
- Roles are associated with specific security groups.
- Security groups are associated with write access at the control block level.

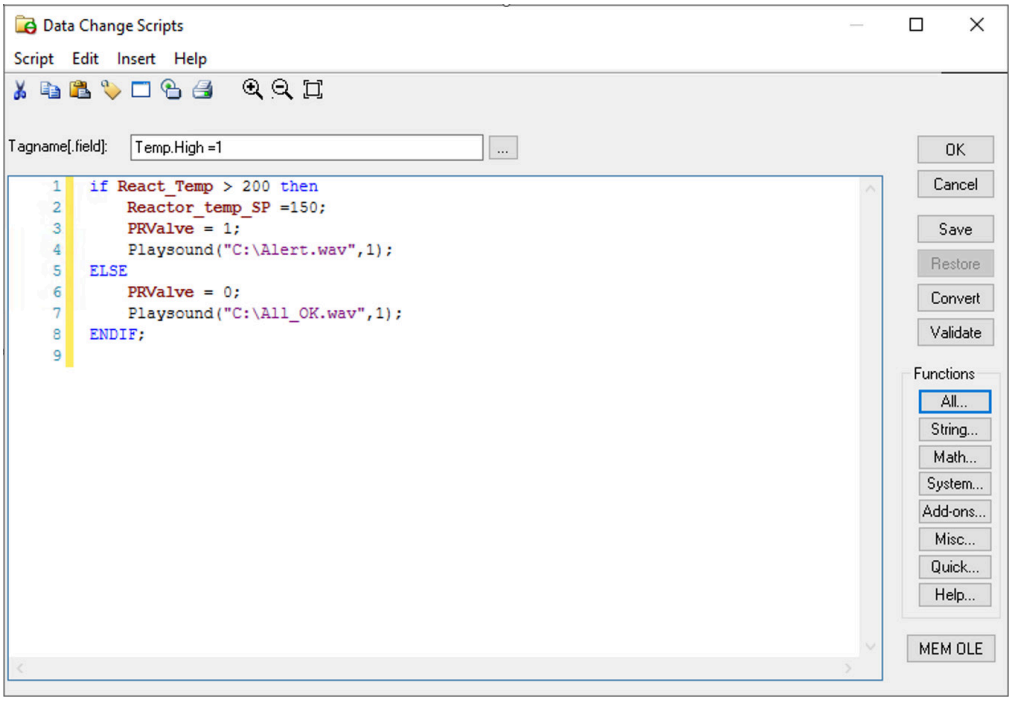
Created at control configuration time using the EcoStruxure™ Foxboro DCS Control Editors, role-based security allows the administrator to create flexible configurations that allow a user's runtime permissions to vary from object-to-object, action-to-action and process-to-process.

QuickScript Editor

A QuickScript Editor is available to allow users to customize display applications to meet specific needs. Scripts can be configured to execute based on a range of parameters, such as process conditions, application events, and keyboard stokes.

The QuickScript environment supports QuickFunctions, which allow a user to develop a library of scripts that can be re-used, thus shortening the time required to develop the application engineering tasks. Also provided are selections of common expressions and structures, such as greater than, less than, if-then-else, along with advanced functions that include math, string conversion and others. A built-in validation engine allows the user to validate scripts before deploying them, helping to prevent detected runtime errors and decreasing application development time.

Figure 7 - QuickScript Editor



Remote Desktop Services

Using Microsoft Remote Desktop Services, Control HMI provides these benefits:

- Reduced tasks via centralized Software Administration and Management.
- Use of a range of devices such as thin client terminals.
- Wireless platforms for mobile operations.

Control HMI Hardware and Software Requirements

The system and software requirements for Control HMI:

- Workstations should have either Windows 10 IoT Enterprise 2021 LTSC with 8+ GB RAM or Windows Server 2022 Standard operating systems with 16+ GB RAM.
- Control Core Services software v9.8 or later.
- AVEVA™ System Platform 2023.
- Control Software v8.0.1
- Monitors with 16:9 aspect ratio and 1920x1080 resolution.

⚠ **WARNING**: This product can expose you to chemicals including lead and lead compounds, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.p65warnings.ca.gov/.

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