



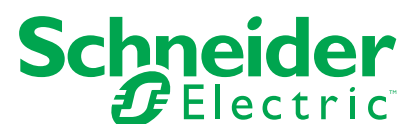
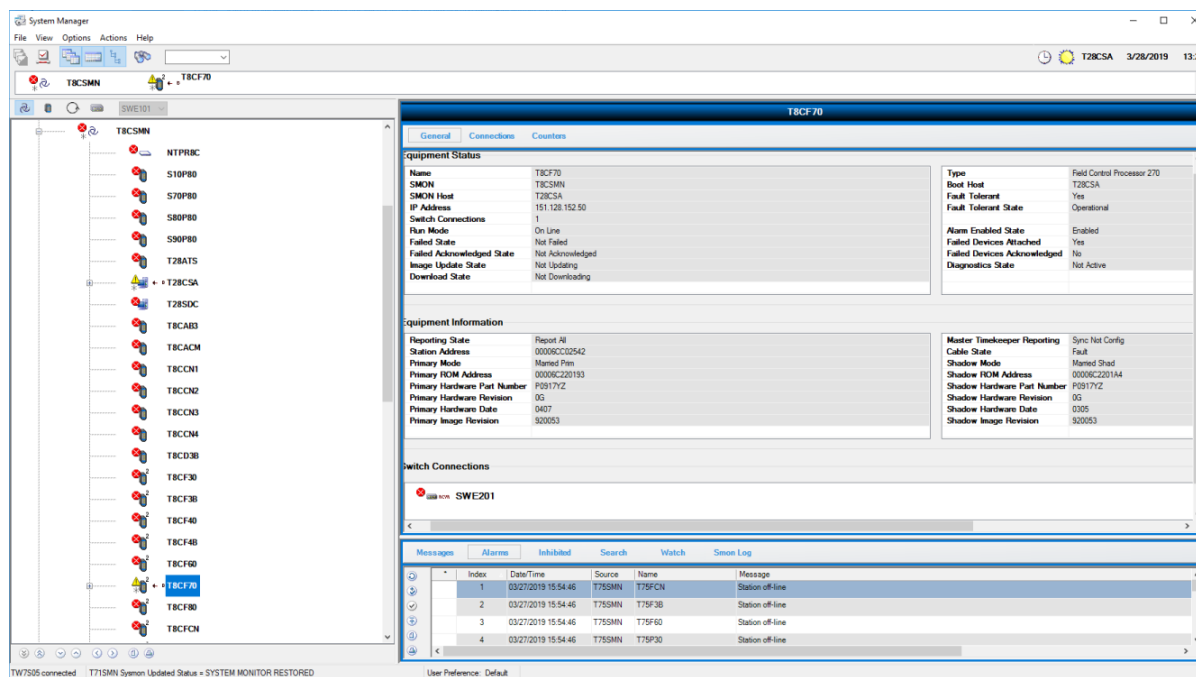
Foxboro™ DCS

System Manager

PSS 41S-10SYSMGR

Product Specification

February 2023



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Features

The EcoStruxure™ Foxboro™ DCS System Manager provides users with capabilities to monitor system health and performance. Additionally, it allows users to perform operational changes, checkpoint control stations, and execute diagnostics.

System Manager provides:

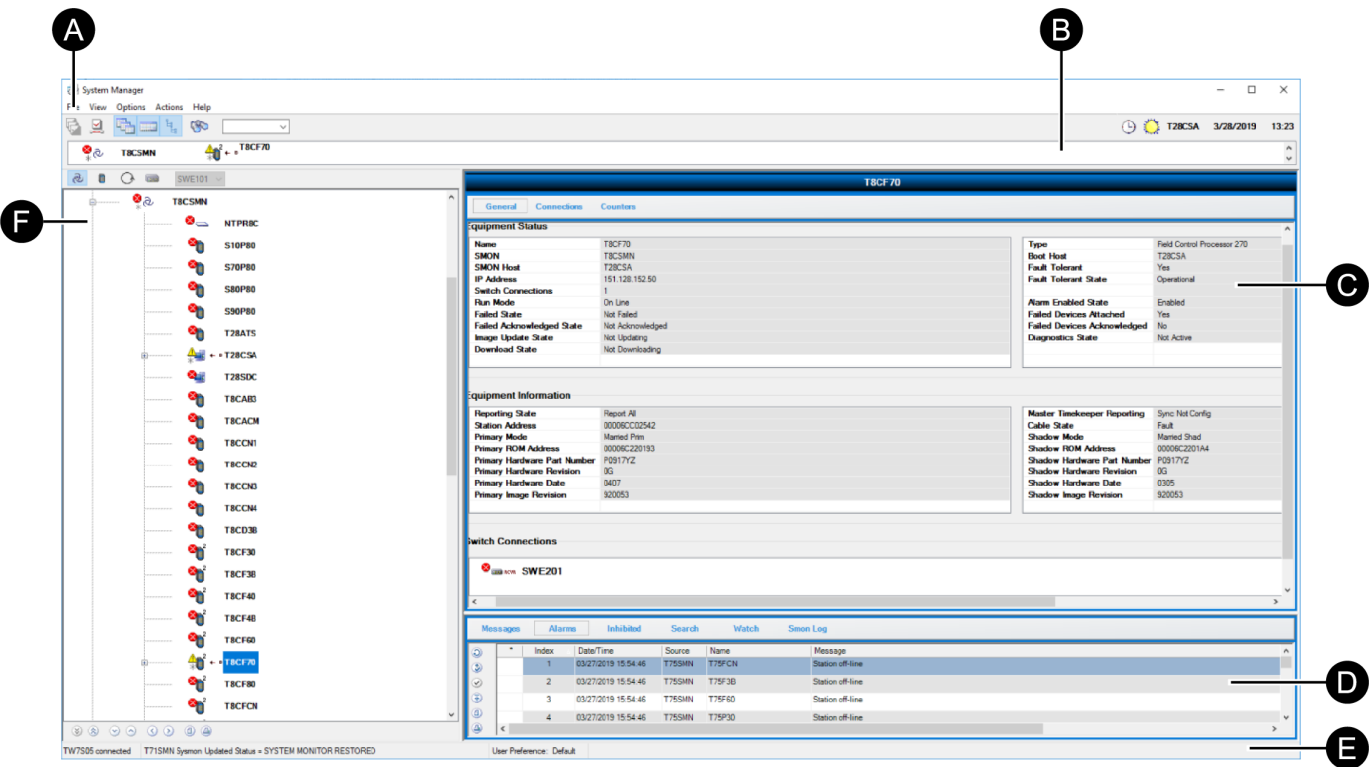
- System monitoring
- Updated equipment information
- Communication status and performance counters
- Capability to print or save displayed information
- Equipment change actions and logging
- Alarm detection in the system and event summaries
- Configurable Watch List
- Intuitive, easy to navigate display structure

Overview

System Manager provides a display for monitoring the status of system components including control processors, EcoStruxure™ Electrodynamics Controllers (SCD6000s), Control Network Interfaces, 100 Series and 200 Series Fieldbus modules, Fieldbus Communications Modules, network hardware and cables, workstations, peripherals, and field instrumentation. System Manager software is designed for ease of navigation in providing both static and dynamic system status information. It consists of three major display areas or panes to convey appropriate information quickly and efficiently. These panes are:

- Navigation Pane
- Information Pane
- Accessories Pane

System Manager Software Overview



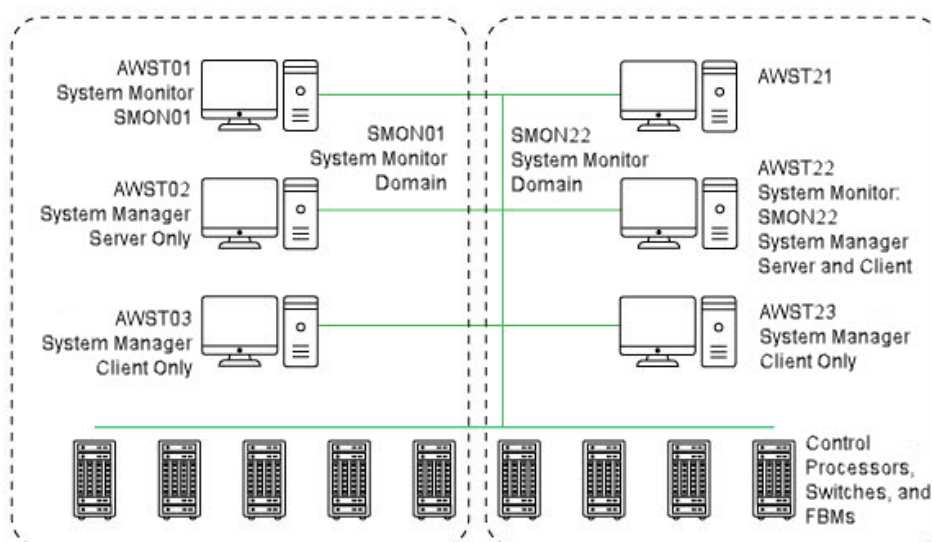
Legend	
A	Menu Bar
B	Toolbar with Hierarchy Navigation
C	Information Pane
D	Accessories Pane
E	Status Bar
F	Navigation Pane

Client/Server Architecture

System Manager application is based on a client/server architecture that enables multiple System Manager clients hosted by AW workstations to access several System Manager servers that gather information from multiple System Monitor Domains.

In this example, client software is installed on three workstations: AWST03, AWST22, and AWST23. Each of these can connect to System Manager services running on either AWST02 or AWST22 servers. The connected service interacts with the two configured system monitors: SMON01 and SMON22. The system monitors in turn provide information about the stations and connected equipment in their respective domains. System Manager clients can access a service instance on the network and that service can reside on a workstation that hosts a system monitor or on one that does not.

Client/Server Architecture



NOTE: The System Manager Server is also known as the System Manager Service because it runs as a service on Windows Platforms

Navigation Pane

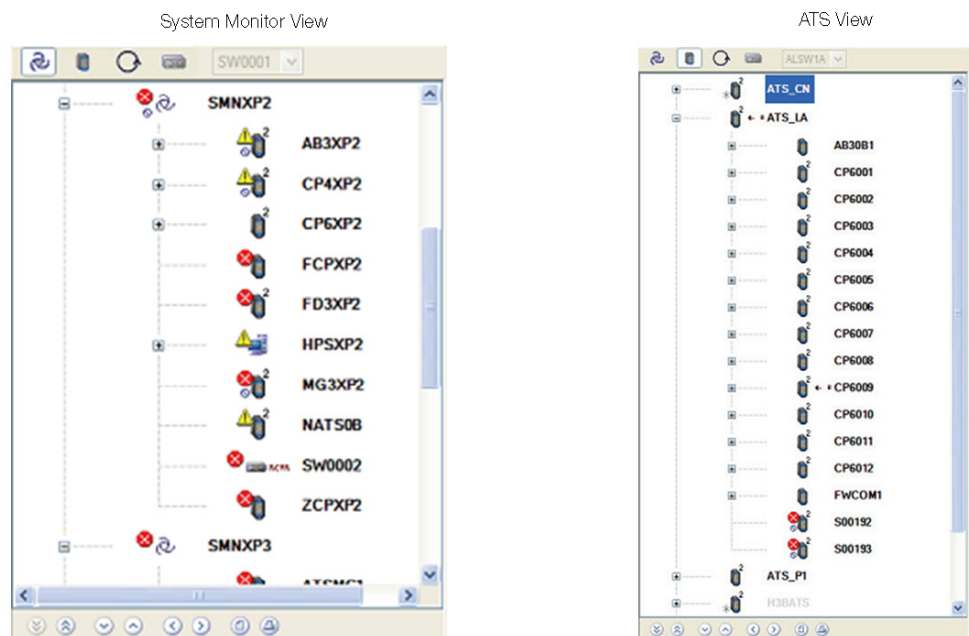
The Navigation Pane provides a hierarchy of system equipment that is presented in one of four views:

- System Monitor domains
- ATS (Address Translation Station) modules
- LAN Interface modules
- Control Network Switches

In the System Monitor view, you can expand each system monitor in the Navigation pane to display the stations and switches in its domain. The next level reveals the stations. The third level shows the equipment attached to that station.

The ATS view displays the configured ATS modules configured in 'LI' mode. The next level reveals the stations. The third level shows the equipment attached to that station.

Navigation Pane - System Monitor View and ATS View

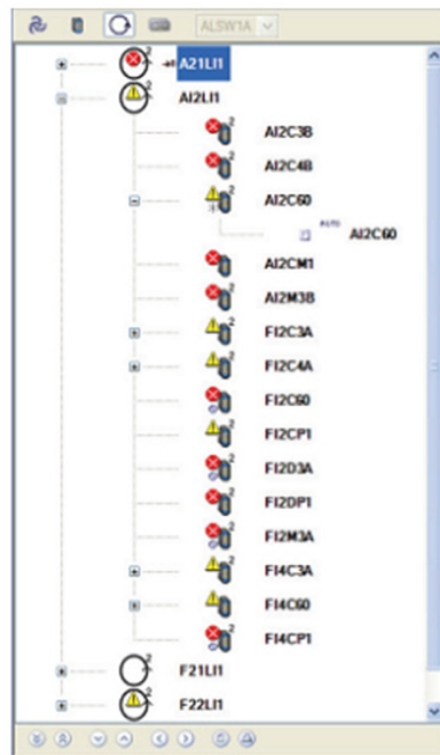


The LAN Interface (LI) View displays the configured LAN Interface modules. At the next level, LI view reveals the stations residing in a particular node. When no LIs are configured on the IA network, the LI button on the navigation tool bar and LI view are unavailable.

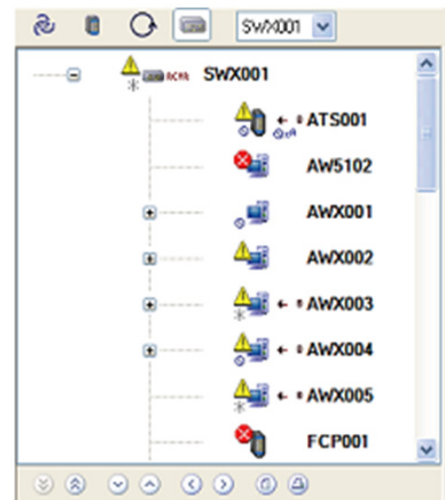
The Switch view shows the selected switch and the stations and switches connected to it. The next level shows the equipment attached to that station.

Navigation Pane - LAN Interface (LI) View and Switch View

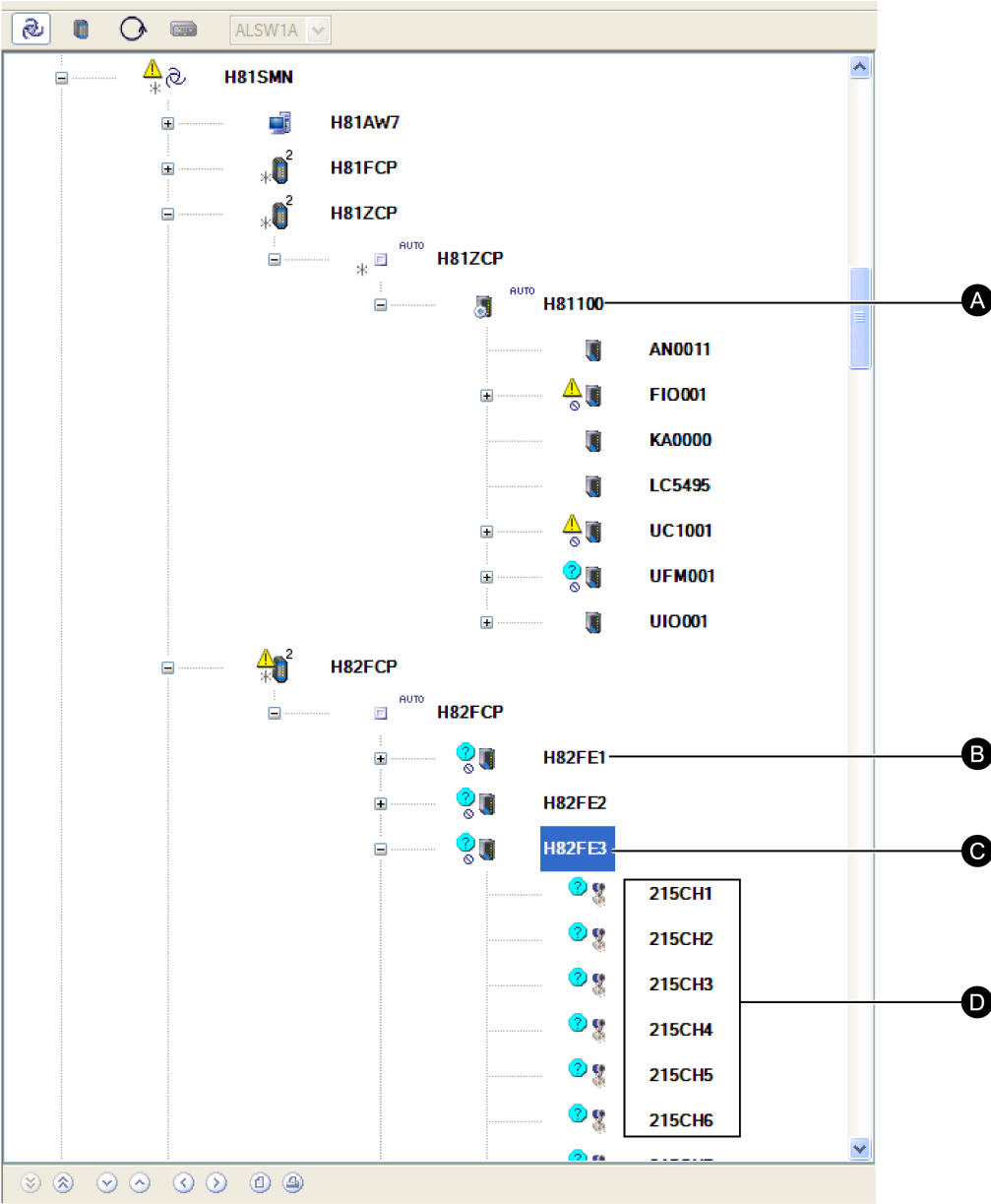
LAN Interface View



Switch View



Control Processor Hierarchy in Navigation Tree



Legend	
A	This FCM connects multiple FBMs (seven of which are shown) to a ZCP270.
B	These FBMS are connected directly to an FCP (H82FCP) over the module Fieldbus.
C	Status of the selected FBM appears in the General tab in the Information pane.
D	FBMs that interface to fieldbus devices can be expanded for access to the individual devices.

Control processors are depicted in the Navigation pane by the control processor icon () displayed on the second level of the View. When the station is a fault-tolerant control processor, redundant Address Translation Station (ATS) or fault-tolerant LAN Interface module, a “2” is attached to the upper right corner of the icon.

FBMs are shown directly under the FCP270, FCM100E/Et (for the ZCP270), and earlier control processors in the Navigation pane, as these control processors connect

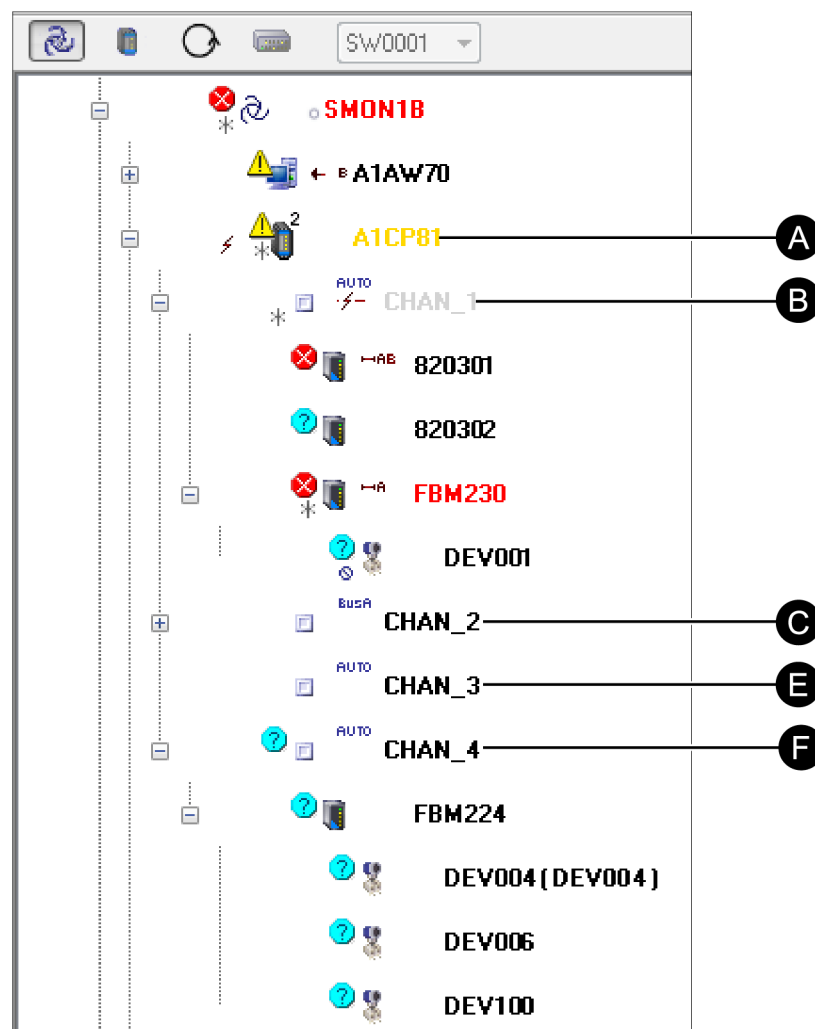
to only one (redundant) HDLC fieldbus (PIO channel). Their software “driver” for this fieldbus/channel is called the Primary Equipment Control Block (ECBP or ECB11). It resides in the control processor and manages communications with the Fieldbus Modules (FBMs).

However, the Field Control Processor 280 (FCP280) can connect directly to four HDLC fieldbuses (PIO channels) without the use of an FEM100. Its compound has a Primary ECB for each of the four PIO channels (a total of four Primary ECBs).

When you expand an FCP280 in the Navigation pane, the next level shows the FCP280's four Primary ECBs.

The Primary ECBs can be selected to view additional information about the control processor and perform equipment change actions that affect the FBMs and the Fieldbus communications on the HDLC fieldbus (PIO channel) for which each Primary ECB is responsible.

FCP280 and Primary Equipment Control Blocks (ECB) in Navigation Tree



Legend

A	Fault-tolerant FCP280 with a system message and unacknowledged alarms
B	Primary ECB for PIO channel 1 (PRIMARY_ECB1) for A1CP81 with FBMs attached
C	Primary ECB for PIO channel 2 (PRIMARY_ECB2)

D	Primary ECB for PIO channel 3 (PRIMARY_ECB3)
E	Primary ECB for PIO channel 4 (PRIMARY_ECB4)

For 200 Series FBMs, when a ZCP270/CP60 control processor is used, the Fieldbus Control Module or FCM is depicted in the Navigation pane by the  icon attached to the hosting ZCP270/CP60. The single icon is used to represent both redundant FCM pairs and a single non-redundant module. (For 100 Series FBMs under the CP60, the FBI10E or DCM10E/Efs are used.)

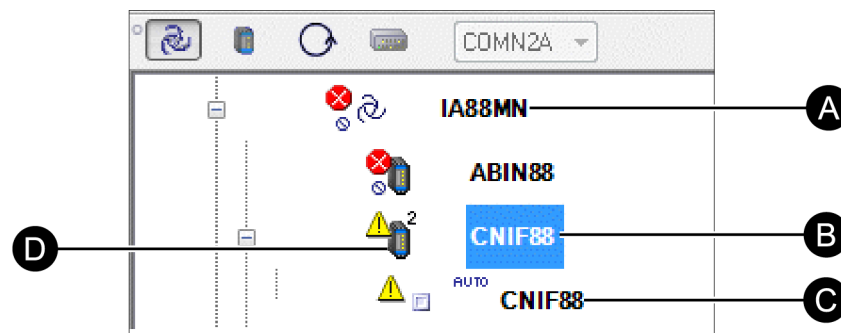
Fieldbus Modules or FBMs are depicted in the navigation pane by the  icon attached either to the Primary ECB (Primary FBM) of a control station or to an FCM. The same icon is used for both redundant and non-redundant FBMs.

Certain FBMs can be expanded in the Navigation pane to show a second level of the attached intelligent field devices, represented by the  icon.

These FBMs include modules that support various fieldbus standards such as HART™, PROFIBUS-DP™, and FOUNDATION™ fieldbus. The second-level items can be selected to view device status and equipment information, and to perform equipment change actions.

The EcoStruxure™ Foxboro™ DCS Control Network Interface (CNI) appears in the Navigation pane under the System Monitor to which it is assigned. Only CNIs in the same Foxboro DCS system as the System Manager's host are shown in the System Manager.

Control Network Interface (CNI) and its Primary ECB



Legend	
A	System Monitor
B	Indicates fault-tolerant CNI
C	Primary ECB for CNI
D	Control Network Interface (CNI) with a system condition

EcoStruxure™ Field Device System Integrator (FDSI) type FBM modules integrate Tricon™, Trident™, and Triconex® General Purpose (Tri-GP) devices using the Triconex System Access Application (TSAA) protocol.

If Triconex Enhanced Diagnostic Monitor (EnDM) software v2.9 or later is installed, System Manager is able to directly launch Triconex EnDM to the specific node as configured. Triconex EnDM is an application to monitor Tricon, Trident, and Tri-GP devices.

Otherwise, System Manager provides views of status and information for a Triconex device attached to an FDSI FBM by launching the TRICON Main Chassis Diagnostics Display in the EcoStruxure Foxboro DCS FoxView™ user interface. System Manager

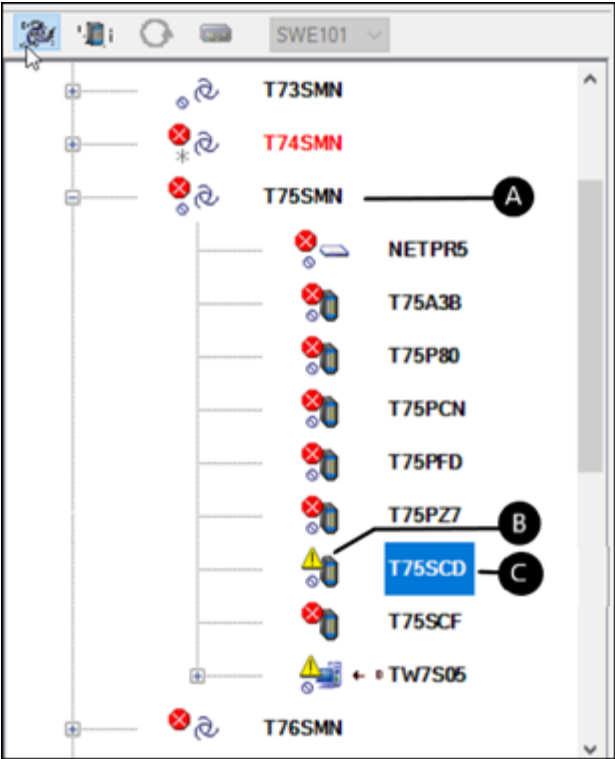
also provides status and related information on other smart devices interfaced through FBMs including FoxGuard ACM, SCADA RTUs and various third-Party PLC subsystems.

The Navigation Tree enables FOUNDATION fieldbus devices, HART devices and devices attached to the FBM247 to be labeled with up to 12 character names.

System Manager considers serial, parallel, and USB printers as peripherals. However, the network printers are considered as separate objects on the same hierarchical level as workstations.

The Electrodynamic Controller (SCD6000) appears in the navigation pane under the System Monitor to which it is assigned. The SCD600 contains no children.

Electrodynamic Controller (SCD6000) in Navigation Tree



Legend	
A	System Monitor
B	Indicates alarm inhibited SCD6000 with an alert condition
C	SCD6000

System Manager can display the aggregate health status for SCD6000s. If Remote Terminal Viewer (RTV), an application to monitor the health of SCD6000s and devices attached to SCD6000s, version SY-1101212_Q and later is installed on the same workstation as System Manager, then you can directly launch RTV from System Manager to see more details on the SCD6000 health status.

Status Indicators

System Manager indicates equipment status by placing symbols next to the related equipment icon. This is used in the Navigation pane and in the Accessories pane's Search Tab.

See this table for examples.

Table 1. Status Indicators

Symbol	Example	Condition
		The question mark on a blue background indicates the equipment is offline or not ready.
		The exclamation mark on a yellow background indicates that there is at least one unsuccessful peripheral attached to the workstation module.
		The X on a red background indicates that a workstation was unsuccessful.
		The question mark on a gray background indicates that the status of the workstation is unknown. There is no status response from the System Monitor.
		The workstation is operating normally when there are no symbols attached to the equipment icon.

Information Pane

The Information Pane provides detailed information about a single hardware component of the system. Due to the large amounts of both static and dynamic data for some components, the information is grouped in tabs that make it easier to locate key information for the selected component at hand.

The primary tabs consist of the General Tab containing configuration and equipment information, the communication Counters Tab containing communications counter data and the Connections Tab which depicts the network switch's station connections. Information displays are tailored to the selected system component.

General Tab

The General Tab view, shown in the next image, provides status, configuration details, performance and diagnostic data for the selected equipment. At one glance, users can determine key information on a station or device allowing for quick action if necessary.

Information Pane - General Tab

FCP700

General Connections Counters

Equipment Status

Name	FCP700
Boot Host	AWSM01
SMON	SYSMN1
IP Address	151.128.152.27
Fault Tolerant	Yes
Run Mode	On Line
Alarming State	Enabled
Failed Devices Attached	Yes
Image Update State	Not Updating
Diagnostics State	Not Active

Type	Field Control Processor 270
SMON Host	AWSM01
Switch Connections	2
Fault Tolerant State	Operational
Failed State	Not Failed
Failed Acknowledged State	Acknowledged
Failed Devices Acknowledged	Yes
Download State	Not Downloading

Equipment Information

Reporting State	Report All
Station Address	0006CC00076
Primary Mode	Married Prim
Primary ROM Address	0006C2202D1
Primary Hardware Part Number	P0917YZ
Primary Hardware Revision	0R
Primary Hardware Date	0429
Primary Image Revision	84_D13

Master Timekeeper Reporting	Sync Not Config
Cable State	Both Cables Okay
Shadow Mode	Married Shad
Shadow ROM Address	0006C2202FB
Shadow Hardware Part Number	P0917YZ
Shadow Hardware Revision	0J
Shadow Hardware Date	0429
Shadow Image Revision	84_D13

Switch Connections

 SW001B  SW001A

Counters Tab

The Counters View contains the network counter categories for the selected station.

Information Pane - Counters Tab - for FCP280 Control Processors

NECP81					
General Connections Counters					
Counter Categories					
☒ Diagnostic Counters ☐ Network Layer ☐ Transport Layer ☐ Application Layer ☐ Loading Parameters					
Counter	Current Value	Previous Value	Maximum	Minimum	
Bad Ethernet Packets	0		0	0	
Ethernet Mismatches	74		74	74	
Ethernet Port Switchovers	0		0	0	
Hot Remany Count	0		0	0	
Maximum NetBuffers Used	87		87	87	
PIO Mismatches	0		0	0	
PIO Timeouts	0		0	0	
Primary Corrected Memory Error	0		0	0	
Probe Packet Failures	1		1	1	
Shadow Corrected Memory Error	0		0	0	
Total Received Packets	24499		24499	24499	
Total Transmitted Packets	14077		14077	14077	

The counters are organized by communications layer and allow the user to analyze overall communications activity for a station. In addition, this display supports user actions on counters such as read, reset and add to Watch List.

Information Pane - Counters Tab - for FCP270/ZCP270 and Earlier Control Processors

FCP800					
General Connections Counters					
Counter Categories					
☒ MAC Sublayer ☐ Network Layer ☐ Transport Layer ☐ Application Layer ☐ Loading Parameters					
Counter	Current Value	Previous Value	Maximum	Minimum	
802.3 MAC Resets	1	1	1	1	
802.4 MAC Resets	0	0	0	0	
Align Errors	0	0	0	0	
Collisions	0	0	0	0	
CRC Errors	1	1	1	1	
DMA Overrun	0	0	0	0	
DMA Underruns	0	0	0	0	
Excess Collisions	284	284	284	284	
Frames Received	730459	730423	730459	730423	
Frames Transmitted	71398	71362	71398	71362	
No Receive Resources	0	0	0	0	
Transmits Deferred	0	0	0	0	

Accessories Pane

Users can access the Accessories Pane to quickly display specific system information that assists in identifying the current system status. Types of information include:

- System Equipment Messages/Events
- System Equipment Alarms
- Detect Alarms for System Equipment
- Search for specific type of equipment
- Watch List to group selected counters for monitoring and review

User actions are also available to acknowledge alarms, inhibit alarms, refresh message panes, and print or save to a file.

Accessories Pane - Alarms Page

Messages Alarms Inhibited Search Watch Smon Log						
	Index	Date/Time	Source	Name	Message	
	1	06/28/2006 16:36:49	SYSMN2	AlwSM05	Station off-line	
	2	06/29/2006 15:10:42	SYSMN1	AlwSM03	Warning condition exists	
	3	06/29/2006 15:10:42	SYSMN1	AlwSM03\PRI P	Device off-line	
	4	06/29/2006 15:10:42	SYSMN1	AlwSM03\AKP 1	Device off-line	
	5	06/29/2006 15:10:47	SYSMN1	FCP701	Cable A failure	
	6	06/29/2006 15:10:25	SYSMN1	FCP702	Station off-line	
	7	06/29/2006 15:10:47	SYSMN1	Sw001A	Warning condition exists	
	8	06/29/2006 15:10:48	SYSMN1	Sw001A\IP05	Device off-line	
	9	06/29/2006 15:10:48	SYSMN1	Sw001A\IP06	Device off-line	
	10	06/29/2006 15:10:48	SYSMN1	Sw001A\IP07	Device off-line	
	11	06/29/2006 15:10:48	SYSMN1	Sw001A\IP12	Device off-line	
	12	06/29/2006 15:10:48	SYSMN1	Sw001A\IP17	Device off-line	

Watch Tab

The Watch tab in the Accessories Pane allows users to monitor up to 25 counters for different types of equipment.

The counters are selected from the Counters tabs for the equipment to be monitored.

Accessories Pane - Watch Tab

Messages Alarms Inhibited Search Watch Smon Log						
	Counter	Current Value	Previous Value	Maximum	Minimum	Source
	Frames Received	3706165	3705659	3706165	3705211	FUSECP
	Frames Transmitted	3502371	3501884	3502371	3501441	FUSECP
	Frames Received	8161793	8161486	8161793	8161020	F27010
	Frames Transmitted	11349072	11348672	11349072	11347895	F27010
	Frames Received	11655956	11655216	11655956	11655216	Z27010
	Frames Transmitted	14830445	14829389	14830445	14829389	Z27010
	Frames Received	526000	525978	526000	526000	Z27050
	Frames Transmitted	120754	120738	120754	120754	Z27050

Online Help

An online help feature is available that offers information regarding equipment icons and status symbols used in System Manager. This is the Legend key:

Legend	
 SMON	BUS A Bus A Enabled
 AW	BUS B Bus B Enabled
 CP/ATS	AUTO Bus Auto Select
 FT CP/ATS	In A Cable A Inhibited
 LI	In B Cable B Inhibited
 FT LI	In AB Cables AB Inhibited
 WP	⚡ Communication Fault
 Switch	⚡ A Cable Fault A
 Switch Port	⚡ B Cable Fault B
 Primary ECB	→ A Cable A Failed
 FCM	→ B Cable B Failed
 FBM	→ AB Cables AB Failed
 Device	← A Receiver A Failed
 Peripheral/Network Printer	← B Receiver B Failed
 Warning	RCVR Receiver Failure
 Failed	→ A Transmitter A Failed
 Unknown	→ B Transmitter B Failed
 Off Line/Not Ready	↔ A Drop Cable A for LI
 Unacknowledged	↔ B Drop Cable B for LI
 Alarm Inhibited	⊗ x A LI/CP TxRx A Inhibited
	⊗ x B LI/CP TxRx B Inhibited
	⊗ A NB/TB Cable A Inhibited
	⊗ B NB/TB Cable B Inhibited

Specifications

System Manager runs on these platforms as part of Control Core Services v9.4 or later:

- Windows Server® 2016
- Windows 10®

 **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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