

# Y-Plant Alert<sup>™</sup>

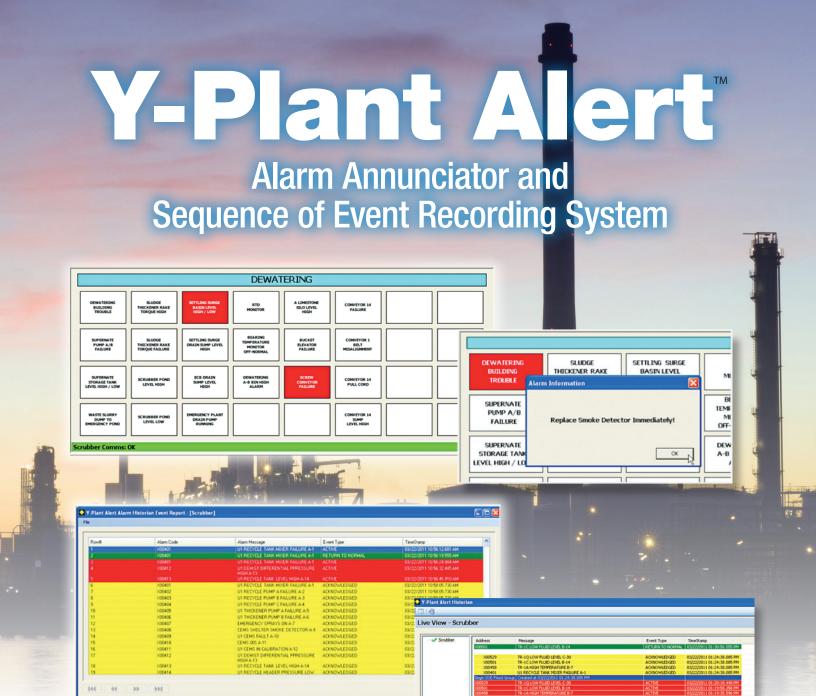
Alarm Annunciator and Sequence of Event Recording System

BU 04M01A02-01E-A

www.yokogawa.com/us







Mission critical facilities such as Power Generation, Power Distribution, Wastewater Treatment, as well as large Process Systems operating with a no downtime scenario require a highly reliable fault detection and operator annunciation system to quickly identify and correct problems. Yokogawa understands those applications and has developed the Y-Plant Alert system to provide Sequence of Event Recording and Alarm Event Annunciation. Utilizing a scalable architecture, Y-Plant Alert can service applications ranging

from a few inputs to thousands. With the Y-Plant Alert Historian offering Sequence of Event Recording resolution of 1mSec and a full set of reporting options available, any Alarm Events that effect productivity can easily be identified and tracked historically. The Y-Plant Alert Annunciator system prompts Operators immediately when an Alarm Event occurs and provides additional Alarm Event information to assist in troubleshooting. Y-Plant Alert offers simple configuration without requiring a high level of programming knowledge.

### Y-Plant Alert™ General Overview & Benefits

The Y-Plant Alert™ system offers Alarm Event Sequence of Event Recording and Annunciator functions. Alarm Events are time stamped with 1mSec resolution. The system was developed based on customer input of what is needed in a modern plant alarm/event capture and notification system. The key features are:

- Ease of configuration
- "Plug & Play" installation with minimal to no wiring changes required
- Event storage in a common, widely accepted SQL format, providing commonality and access with today's PC operating systems and programs
- Security of buffering Alarm Events in the high speed I/O system in case of PC failure

### **Ease of Configuration**

Y-Plant Alert™ is configured via a simple, intuitive, table format. No complex programming knowledge is required to set up the system or make changes.

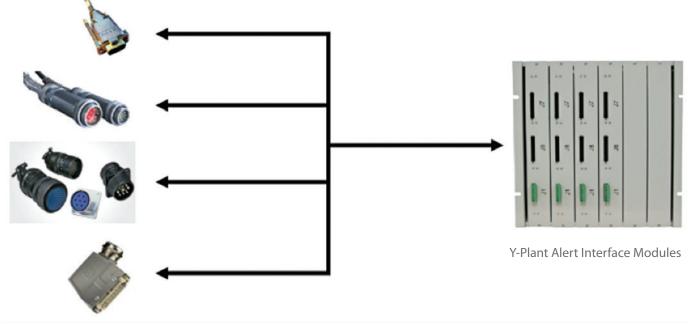
### Plug & Play Installation

Typically, new Alarm Event/Annunciator systems are installed during scheduled plant shutdowns. It is critical that during these shutdowns that the installation and commissioning of new systems is accomplished quickly and without any issues. In the past, interfacing the new system into the old system wiring was a long and tedious process requiring the disconnection of the plant wiring from the old system and reconnecting to the new. During this process, undocumented wiring, wiring connection mistakes, etc., all contributed to a lengthy and problem filled system commissioning process. A key feature of the Y-Plant Alert™ system is the fact that when ordered, the customer specifies what their existing connection types are and when the system is delivered, the existing wiring connections are simply unplugged from the old system and plugged into the Y-Plant Alert™ system.

The Y-Plant Alert<sup> $\mathbb{T}$ </sup> system can be ordered with customer specified input connectors that match the existing wiring connectors. This key feature provides a fast and easy connection to the new Y-Plant Alert<sup> $\mathbb{T}$ </sup> system by simply unplugging the input connectors from the old system and plugging them into the Y-Plant Alert<sup> $\mathbb{T}$ </sup> system.

Yokogawa can also provide complete system design engineering services as well as custom enclosure fabrication....

Regardless of the existing connection types, the Y-Plant Alert™ system will be delivered with matching connectors for a true "Plug & Play" installation...



### Common Format Event Storage

Y-Plant Alert™ utilizes the industry common SQL Database format for storing and retrieving Alarm Event information. Besides providing information for Y-Plant Alert's™ built-in reporting features, the Alarm Event data stored in the SQL Database is also available for plant wide enterprise applications.

#### **Buffering of Alarm Events**

Y-Plant Alert<sup>™</sup> is based on two components:

- 1) I/O Units
- 2) Y-Plant Alert™ Software Suite.

During typical operation, when an Alarm/Event occurs, it is logged, time stamped, and stored in the I/O station. The Y-Plant Alert™ software polls the I/O stations for new Alarm Events. When a new Alarm Event is found, the Alarm Event is logged in the Y-Plant Alert™ software database along with Date & Time stamp. Should the PC fail or the plant network go down, the I/O station continues to log Alarm Events. When the Y-Plant Alert™ Suite PC comes back on line, the Y-Plant Alert™ software will then reconnect to the I/O stations and retrieve any new Alarm Event data that was generated after the PC or network failed.



Y-Plant Alert – Keeping Plant Operators Informed...

# Y-Plant Alert™ Specifications

#### I/O Station Hardware -

#### Input Specifications

Point Capacity: 2048

Voltage Ranges: 24VDC – 125VDC

120VAC - 240VAC

Alarm States: Inputs can be configured as N/O or N/C

Isolation: 1500Vpp

Connection type: The supplied input connection type is based on the customer's existing system. Whether the existing

connector style is 37 Pin D-Shell, military style, screw clamp terminals, or a non-standard style, the

Y-Plant Alert™ system will be delivered to accept it.

#### **Output Specifications**

Type: Relay

Relay rating: 5VDC/ 24VDC, 120VAC/240VAC, 2A/point

Additional Relay Outputs are available.

Number of Outputs: 8 outputs provided as standard. Standard outputs are utilized for Horn activation and Lamp Test

(Input On/Off Function Test). Additional relay outputs available.

#### **PC** Requirements

Operating System: Windows XP, Windows 7

Memory: 2GB RAM

Hard Drive Storage: 250GB, Dual RAID Drives

Video Ports: 1 Port for Y-Plant Alert™ Alarm Historian

1 Port required for each LCD Annunciator Display (up to 8 Annunciator Displays supported)

Warranty 3 Years

Yokogawa offers Y-Plant Alert™ Systems including PC's. When the PC is purchased from Yokogawa, the Y-Plant Alert™ Software Suite comes pre-installed and ready to run.

### Y-Plant Alert™ Software Suite

The Y-Plant Alert™ Software Suite consists of four (4) components:

#### Y-Plant Alert™ Engine

Runs as a Service whenever PC is started, polls and updates Alarm Event Database in the background.

#### Y-Plant Alert™ Studio

Alarm Event and Annunciator configuration package

#### Y-Plant Alert™ Historian

Alarm Event Viewer and Report Generation

#### Y-Plant Alert™ Annunciator

Alarm Annunciator Display functions for driving multiple large LCD displays

# **Y-Plant Alert™ Engine**

The Y-Plant Alert™ Engine functions as the gateway to I/O Stations in the system as well as performing Alarm/Event logging functions to the SQL Database.

Y-Plant Alert™ Engine performs several tasks:

- a) Polls the I/O stations for new Alarm Events
- b) Updates the Alarm Event SQL database
- c) Provides access to the Alarm/Event information for Y-Plant Alert™ Alarm Historian and Y-Plant Alert™ Annunciator

The Y-Plant Alert™ Engine runs as a Windows Service. Alarm Event data is collected and stored in the SQL database even regardless of whether or not the Y-Plant Alert™ Historian or Annunciator display packages are running.



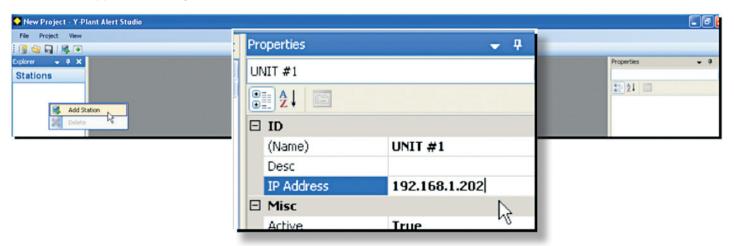
A key feature of the Y-Plant Alert™ Engine is in the event someone shuts down the Y-Plant Alert™ Historian or the Y-Plant Alert™ Annunciator software packages, Y-Plant Alert™ Engine continues to poll and update the Alarm/Event database...

### Y-Plant Alert™ Studio

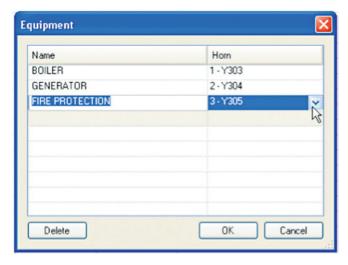
Y-Plant Alert™ Studio provides a simple and intuitive configuration environment for rapid development of Y-Plant Alert™ applications with no complex programming required. Using a "table" format, Alarm/Events are quickly configured.

The application development process is as follows:

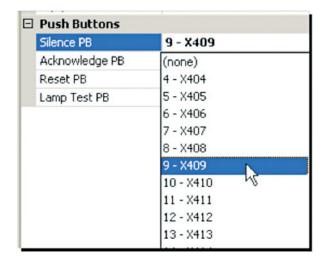
1. Create new application configuration and add I/O Station...



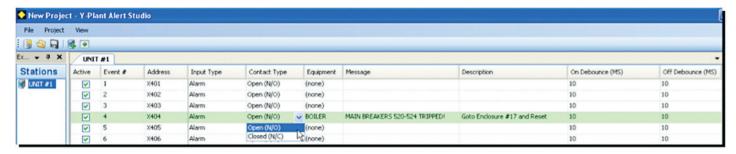
2. Add Equipment Names and assign Horn Outputs for Equipment...



3. Assign Silence, ACK, Reset, and Lamp Test Push button Addresses...



4. Enter Alarm Event Information...

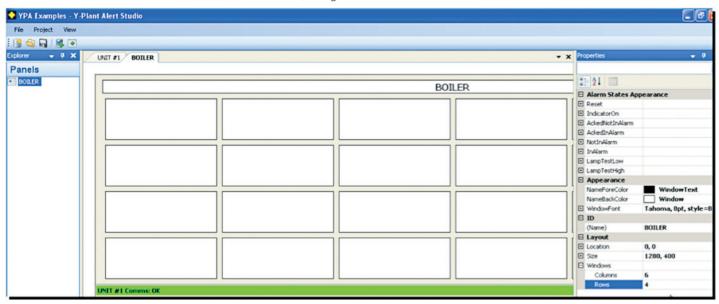


### Y-Plant Alert<sup>™</sup> Studio (continued)

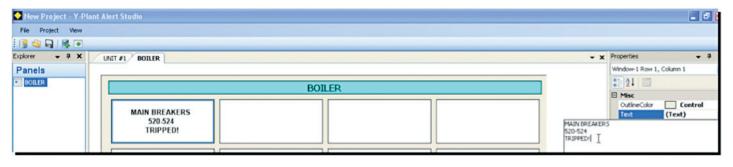
5. Create Annunciator Panels & Windows...



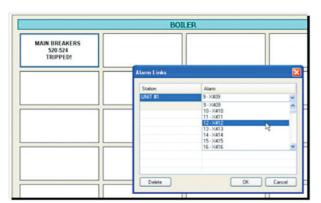
6. Name Panel, Enter # of Window Rows and Columns, Assign Panel coordinates...



7. Enter Window Information...



8. Assign Alarm/Event Addresses to Windows and Configuration is complete!...



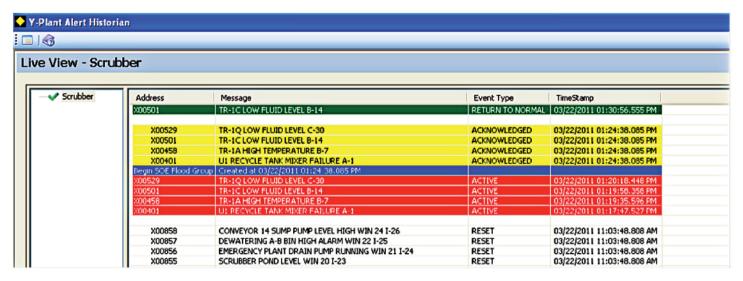
### Y-Plant Alert™ Historian

Y-Plant Alert™ Historian provides an intuitive Alarm Event viewing and Reporting environment. Each Alarm Event state (i.e. In Alarm, Acknowledge, Return to Normal, Reset) is listed in order of occurrence with appropriate time and date stamps. Alarm Flood Groups (i.e. Consecutive alarms that occur in within a pre-defined time window) are displayed to assist in identifying a domino effect caused by a single Alarm Event)

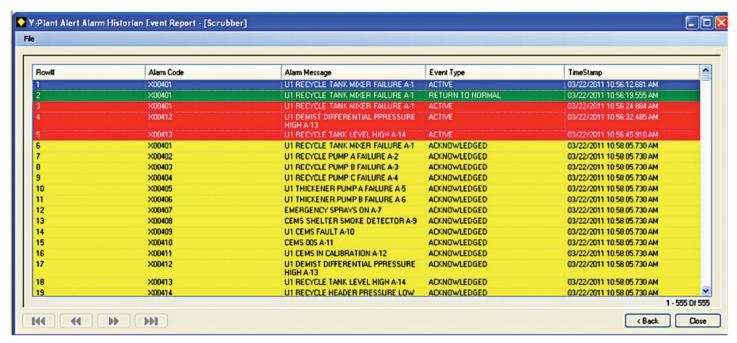
Alarm Event and Alarm Flood Group Reports can be generated based on a specific interval or by entering a time and date range. Reports can then be viewed as well as printed.

Lamp Test Reports can also be generated. Lamp Tests are a function of the Y-Plant Alert™ System that check the integrity of the I/O Station physical inputs. When a Lamp Test is initiated, the I/O Station inputs are disconnected from the field wiring. All points have power applied to generate an On state and then power is removed to generate an Off state. Y-Plant Alert™ then checks to see that each input point transitioned to On and then to Off. Any Input points that failed the test are then listed in the Lamp Test Report.

Historical Alarm Event Live View...

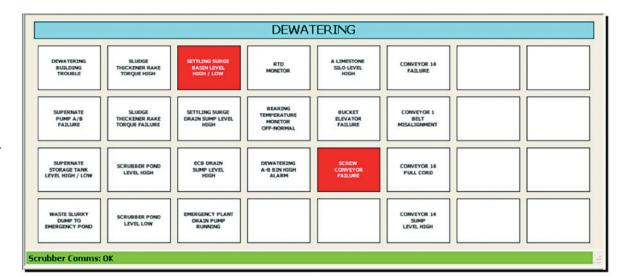


Historical Alarm Event Report View...



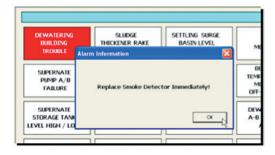
### Y-Plant Alert™ Annunciator

The Y-Plant Alert™ Annunciator display package provides for the display of Alarm Event Windows. "Equipment" specific annunciator screens can be displayed on single or multiple monitors. Multiple Equipment displays can be viewed on a single monitor as well. Y-Plant Alert™ Annunciator supports up to nine (9) monitors (PC's primary display plus 8 additional displays) with the base system. For applications requiring more than nine (9) displays, an additional video board may be added to the PC.



Annunciator View...

Additional Alarm Event Information is available by Clicking on Active Alarm Event Windows...

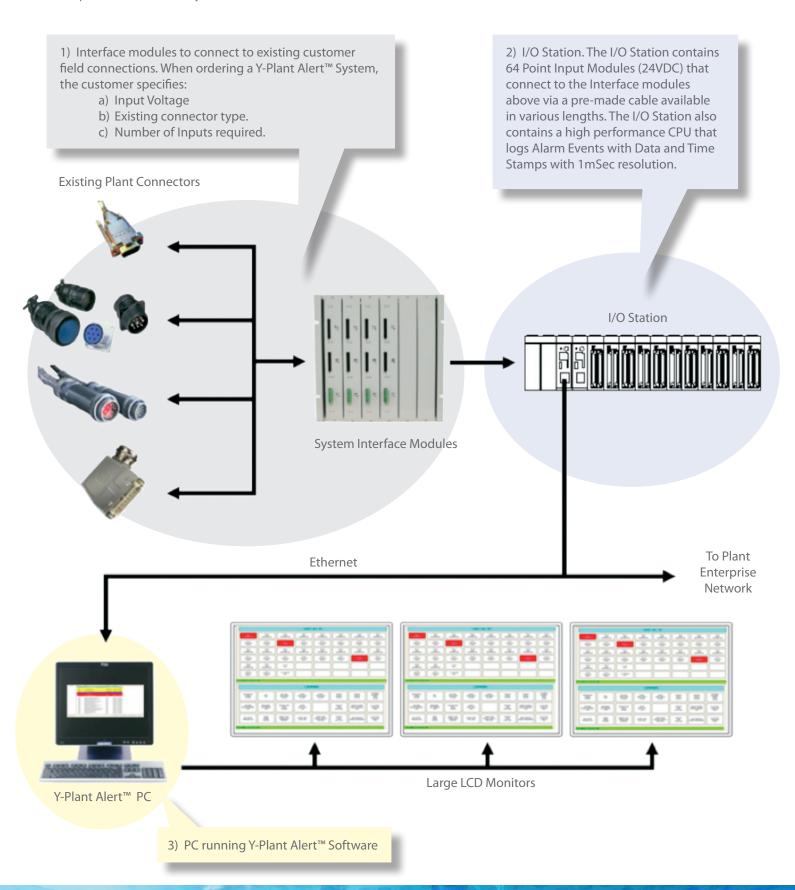


Multiple Equipment Displays can be viewed on a single screen...



# **Y-Plant Alert™ System Components Overview**

A complete Y-Plant Alert™ system is shown below:



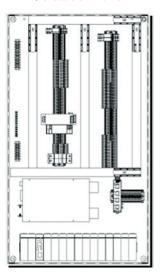
### Y-Plant Alert™ Field Interface Modules and I/O Station Panels

The Field Interface Module Rack and I/O Station Panel mount in a standard 19" Rack. The I/O Station Panel contains both the I/O Station and Power Supplies for Field Excitation and component power. The Y-Plant Alert™ I/O system is ordered via a single part number reflecting the required number of inputs for the application. With the connection of power and field inputs, the system is ready to run.

Field Interface Module Rack



I/O Station Panel



In situations where additional enclosure space is required, Yokogawa can provide engineered enclosure solutions to house the Y-Plant Alert™ system...





A complete Y-Plant Alert™ system consists of:

- 1. Input System From the Input System area below, select a part number based on Input Voltage and Input Count (Round the Input Count up to the next level). (Customer specifies Field Wiring Connector type on order)
- 2. Software Y-Plant Alert™ Alarm Event Historian provides historical Alarm Event capture/recording and Reporting. Y-Plant Alert™ Annunciator provides for the display of Equipment Windows on external monitors. Up to eight (8) external monitors may be used. Each package provides the Y-Plant Alert™ Engine and Microsoft SQL Express.
- 3. Y-Plant Alert™ PC The PC is delivered pre-loaded with the Y-Plant Alert™ software.
- 4. Engineering Services Configuration of Alarm Events and Alarm Window Displays

# **Y-Plant Alert™ Part Numbers**

	Model Suffix Code					Description
	YPLANT					Y-Plant Alert™ System
		24VDC	125VDC	120VAC	240VAC	
۲۸	Field Input Voltage &	-A01	-B01	-C01	-D01	128 Points
		-A02	-B02	-C02	-D02	256 Points
		-A03	-B03	-C03	-D03	384 Points
		-A04	-B04	-C04	-D04	512 Points
		-A05	-B05	-C05	-D05	640 Points
CHOOSE ONE SUFFIX ONLY		-A06	-B06	-C06	-D06	768 Points
H X		<u>A0</u> 7_	-B07	-C07	-D07	896 Points
Su		-A08	-B08	-C08	-D08	1024 Points
NO NO	Points	-A09	-B09	-C09	-D09	1152 Points
OSE		-A10	-B10	-C10	-D10	1280 Points
9		-A11	-B <u>1</u> 1	-C11	-D11	1408 Points
		-A12	-B12	-C12	-D12	1536 Points
		-A13	-B13	-C13	-D13	1664 Points
		-A14_	-B14	-C14	-D14	1792 Points
		-A15	-B15	-C15	-D15	1920 Points
		-A16	-B16	-C16	-D16	2048 Points
					-AAA	Annunciator and Alarm Historian Software
CHOOSE ONE		Software				
ONE					- <u>ALA</u> -ANN	Alarm Historian Software Annunciator Software
	Display				-ANN	No Display
						One 46" Display w/ cable and mounting
					-D1	bracket
					-D2	Two 46" Displays w/ cable and mounting
						bracket Three 46" Displays w/ cable and
					-D3	mounting bracket
CHOOSE					D4	Four 46" Displays w/ cable and mounting
ONE					-D4	bracket Five 46" Displays w/ cable and mounting
					-D5	bracket
						Six 46" Displays w/ cable and mounting
					-D6	bracket Seven 46" Displays w/ cable and
					-D7	mounting bracket
						Eight 46" Displays w/ cable and mounting
					-D8	bracket
	Enclosure				-C0	No Cabinet
CHOOSE					-C1	NEMA 4, Small Cabinet
ONE					-C2	NEMA 4. Large Cabinet
					-C3	NEMA 12 Small Cabinet
					-C4	NEMA 12 Large Cabinet

### Y-Plant Alert<sup>™</sup> Part Numbers (continued)

	Option Codes							
	/P1	Local Laser Printer						
	/P2	Networked Laser Printer						
	/PC1	PC with selected software above installed, Dual RAID Drives, 9 HDMI Outputs, 20" LCD Monitor, Keyboard						
	/E0128	Engineering for System Configuration, 128 Points						
	/E0256	Engineering for System Configuration, 256 Points						
	/E0384	Engineering for System Configuration, 384 Points						
	/E0512	Engineering for System Configuration, 512 Points						
S	/E0640	Engineering for System Configuration, 640 Points						
SNOITAC	/E0768	Engineering for System Configuration, 768 Points						
PTI	/E0896	Engineering for System Configuration, 896 Points						
	/E1024	Engineering for System Configuration, 1024 Points						
	/E1152	Engineering for System Configuration, 1152 Points						
	/E1280	Engineering for System Configuration, 1280 Points						
	/E1408	Engineering for System Configuration, 1408 Points						
	/E1536	Engineering for System Configuration, 1536 Points						
	/E1664	Engineering for System Configuration, 1664 Points						
	/E1792	Engineering for System Configuration, 1792 Points						
	/E1920	Engineering for System Configuration, 1920 Points						
	/E2048	Engineering for System Configuration, 2048 Points						

### Engineering Services for Y-Plant Alert™ Configuration:

Engineering services include complete configuration of the Y-Plant Alert™ hardware and software. The prices are based on the customer providing a complete input list that contains Alarm Event Message Descriptions, Window Text, Window Input Assignments, and Window Display Layouts. On-Site System Start-Up and Verification is not included in the below prices.

Individual Software Packages				
M1285JT	Y-Plant Alert Alarm Historian			
M1285JU	Y-Plant Alert Annunciator			

The above software packages are for adding to an existing system. For example, if only the annunciator package was previously purchased, the Alarm Historian can be added in the future.

#### **Restrictions:**

Option C1 and C2 can only be chosen in conjunction with A01 - A04, B01 - B04, C01 - C04, D01-D04. Option C3 & C4 can only be chosen in conjunction with options A01-A08, B01-B08, C01-C08, D01-D08. If Suffix Code –C1, -C2, -C3, or –C4 is ordered and > 1024 points are required, multiple cabinets will need to be ordered via Tokuchu

### Part Number Example

To order a system requiring 384-125VDC inputs with no enclosure, Annunciator and Sequence of Event functions, PC, Local Printer, and three 46" displays, the part # would be: **YPLANT-B03-AAA-D3-C0/PC1/P1** 



SEE CLEARLY





VigilantPlant is Yokogawa's automation concept for safe, reliable, and profitable plant operations. VigilantPlant aims to enable an ongoing state of Operational Excellence where plant personnel are watchful and attentive, well-informed, and ready to take actions that optimize plant and business performance.

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