

DeltaV™ Distributed Control System

Version 13 Update



Improve Operation Performance with DeltaV Alarm

Mosaic and Advanced Alarm Management

Advanced alarm management assists operators during alarm floods, with a smarter alarm display designed to reduce stress. New alarm suppression options provide operators improved ability to manage temporary nuisance alarms.



Integrate Faster and More Easily

The new Ethernet I/O Card (EIOC) reduces footprint up to 85% compared to the VIM2 card. The EIOC supports three protocols: Modbus TCP/IP, Ethernet IP, and IEC 61850 Manufacturing Message Specifications (MMS), which allows connectivity with PLCs, smart devices, smart motor control centers, and smart substations.



Increase Security Across the System

DeltaV version 13 has new and enhanced security features that help with security audits, enable the Microsoft® Windows® firewall, and integrate the Emerson Smart Firewall into DeltaV.

Improve Operation Performance with DeltaV Alarm Mosaic and Advanced Alarm Management

At the heart of all alarm-system enhancements are these Emerson beliefs:



Ver. 13



Further building on DeltaV™ control system's ease of use, version 13 (v13) delivers new capabilities designed to help users improve their plant's efficiency and performance. Built by the experts, v13 minimizes the need for specialized expertise so that users can engineer and operate in an environment that is easy to use and understand.

The control system should contribute to a correct operator action every time, especially during alarm floods. Risks are reduced when there is clear visibility and accountability for changes made to operational alarms. And the control system plays a central role in achieving effective alarm management.

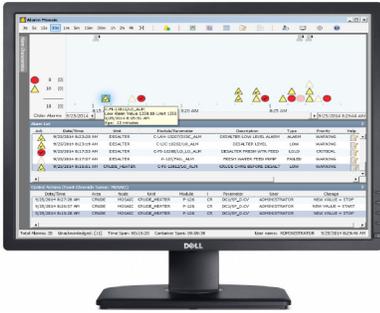
DeltaV Alarm Mosaic for Alarm Floods

Improve response to alarm floods

DeltaV Alarm Mosaic provides a dynamic visualization of active alarms to help

reduce the risk of operators being overwhelmed by a flood of alarms. This configuration-free view presents alarms holistically as recognizable patterns and automatically identifies alarms with common characteristics. In addition, it identifies control actions that may have precipitated the flood.

Alarm Mosaic's alarm activation-history view uses events captured in the DeltaV Event Chronicle to visualize prior alarm floods, providing valuable information for shift-transition reviews, operator training, and incident investigations.



DeltaV Alarm Mosaic

Suppressed-Alarm Ownership Management

Improve operator responsiveness to alarms

Because accountability for suppressed alarms and for unapproved alarm settings is critical to safe operation, the v13 system allows separation of temporary operator alarm shelving from removal-from-service of an alarm for maintenance. Reasons for shelving and removal-from-service are captured in the system and recorded in the event history. Separate shelved and out-of-service alarm lists can be provided to operators and maintenance personnel. Shelved alarm lists show remaining time to reactivation and provide an unshelve all feature to support shift transitions.

Built-in alarm audit reports - Allow automatic comparison of the properties of operational alarms to settings in either the system’s configuration database or to an external master alarm database.

Per-Alarm Priority Adjustment from Detailed Display - Based on user input from Emerson’s User Driven Enhancement Program (UDEP), the v13 system allows each alarm’s priority to be individually adjusted by logic and, if enabled by a master workstation setting, by authorized operators from detail displays. This allows users to execute advanced alarming strategies.

Need-Specific Alarm Lists and Categorization - Create custom alarm lists for special interest users or highly focused applications, such as an active fire-and-gas alarm list or a suppressed LOPA-listed alarm list. Alarms can be filtered according to user-definable functional classifications such as safety, environmental, asset protection, and product quality; or by categories such as rotating equipment, electrical equipment, instrumentation, control system, process hardware and process control. Functional classification and category can be presented in alarm lists and are recorded in the event history.

Batch Analytics Integration

Integration improves alarm quality predictions on DeltaV displays

Batch Analytics offers improved integration with DeltaV to provide operations personnel better information to monitor and correct in-process batch issues.

DeltaV Continuous Historian Write Interface

Model processes more accurately

Users now can use a programmatic collection of non-DeltaV data in the DeltaV Continuous Historian. This update enables more accurate process modeling for DeltaV Batch Analytics users.

DeltaV Operate Enhancements

Improve operation performance

DeltaV Operate provides robust plant operations with a powerful operator interface, constant visibility, and integrated historical trending. V13 updates include:

- Improve operator situational awareness with historical trends embedded into operator displays.

- Additional support for 1080P resolution makes it easy to deploy displays on a variety of monitor sizes, including large screens for overview displays.
- Standard support for dimly lit control rooms with the new Dark Grey Theme.
- Operators can dynamically change the text size on their displays to adjust for different viewing distances.

Integrate Faster and More Easily

Smart Device Connection Simplified by S-Series Ethernet I/O Card

Improve integration efficiency

Supported Industrial Ethernet Protocols

The Ethernet I/O Card provides direct connection to Ethernet I/O networks and brings data directly into the DeltaV DCS using any of three protocols:

- Modbus TCP/IP Interface
- Ethernet/IP Communications
- IEC 61850 MMS



S-series Ethernet I/O Card

Native Data-Import Method

and Native Control - The Ethernet I/O Card (EIOC) connects natively to the DeltaV system. There are no third party applications needed for configuration of the EIOC. Interface drivers are selected via a drop down menu in DeltaV Explorer, and the values brought in to the EIOC are available to control modules that run in the EIOC and to modules running inside other controllers. DeltaV Operate graphics display the information available in the modules residing in the EIOC, and the DeltaV Historian collects the module history.

Redundancy and the Dual

Universal Carrier - An Ethernet I/O Card can be made redundant simply by adding a second Ethernet I/O Card on the dual universal carrier. The configuration changes automatically and you receive confirmation of the change. In case of a redundancy switchover, the operator is given notification at the operator display. Manual switchover can be controlled in DeltaV Diagnostics.

Network Segregation and

Data Capacity - Up to 60 Ethernet I/O Cards can be added to the DeltaV I/O Network, allowing a great degree of freedom when segregating networks. In addition, each Ethernet I/O Card can have up to 32,000 data values spread over a maximum of 256 physical devices, each one with up to 256 logical devices.

Virtual Ethernet I/O Card

Configuration and Simulation - During control system development and checkout, Virtual Ethernet I/O Cards enable customers to simulate process I/O while working from a host computer. This simulated data appears the same as real data in a DeltaV system and requires no changes to graphics or control configurations. This same configuration can be moved to the Ethernet I/O Cards located in the on-line DeltaV system.

Wireless I/O Card (WIOC) Improvements

Increase flexibility with wireless interlocks

To the WIOC, Emerson has added support for Smart HART IP and DI and DO function blocks in Control Studio.

Reduced Footprint with High-Density Redundant Cards

Reduce footprint and costs for redundant traditional I/O

New High-Density Redundant Cards are available as 16-channel Analog I/O Cards and 32-channel Discrete I/O Cards. These cards enable customers to significantly reduce the system footprint. The Discrete I/O Cards also offer a termination fault detection feature, sensing faults in attached FTA boards.

CHARM I/O Configuration and Label Printing

Streamline commissioning

v13 enhancements streamline commissioning of CHARacterization Modules (CHARMs) by providing an efficient user interface in which to view and edit configuration as well print CHARM labels.

New Function Blocks

Increase engineering efficiency and controller performance

Two new function blocks, Analog Tracking (AC) and Discrete Control Conditions (DCC), enables a common interlocking strategy. The Enhanced Device Control (EDC) is an enhanced version of the device control block, which has added functionality to work directly with the new DCC block.



High-Density Redundant Cards

New 120 VAC DI Isolated Plus CHARM

Enable direct connection

The new CHARM allows direct connection to two-wire 120 VAC-based proximity sensors or to long, non-shielded AC voltage carrying multi-core field cable signals.

Increase Security Across the System

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Security Administration Center

Stronger security protects your investments

The DeltaV Security Administration Center helps users manage security, and it provides information to make workstation security audits easier.

- **Manage the DeltaV built-in accounts:** enable/disable the accounts and manage their passwords.
- **Manage Windows and DeltaV services:** list and audit the services status on the workstation.
- **Audit the DeltaV Essential Files:** list and audit the files in the DeltaV directories.

Enable and manage the Microsoft® Windows® Firewall: enhance the security of workstations communicating with applications external to the DeltaV system. The network created between the third NIC on the DeltaV workstations and the perimeter firewall is also part of a DeltaV system. This network is designated as the DeltaV 2.5 network as it resides between the level 2 and level 3 networks. This network provides the connection between the DeltaV workstations and external networks and can contain devices such as printers and the backup and restore server. In v13.3 the DeltaV Smart Switch and the Emerson Smart Firewall can be installed in this network and managed from a DeltaV workstation.

- **Network Management Center:** The DeltaV Network Management Center manages the DeltaV Smart Switch and the Emerson Smart Firewall located in the DeltaV 2.5 network.
- **Help secure the 2.5 network:** use the DeltaV Smart Switch to lock down the network between the DeltaV workstations and the Emerson Smart Firewall or other perimeter firewall.

- **Integrate Smart Firewall alarm conditions:** act on and manage alarms from the Emerson Smart Firewall on the DeltaV Operator Workstations.

Additional DeltaV v13 Products

DeltaV InSight – EnTech Toolkit Option

This option improves process control performance using advanced control loop analysis and tuning technology.

User Defined Usability Enhancements

Customer defined improvements

Some DeltaV enhancements are suggested, defined, and prioritized by our customers through the UDEP program. The v13 projects that were generated by UDEP greatly improve the DeltaV usability:

- Easy module deletion
 - FHX import messages for phase composites
 - Enhancement for DeltaV batch “Edit Formulas” window
 - Capability to change module alarm priorities in the online mode
 - Security-key functionality for Build Recipes
 - Printing enhancements for engineering tools
- Easy function block expression editing
 - DeltaV diagnostics enhancement
 - All action statements on the same tab in the SFC editor dialog box
 - DeltaV user manager export

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