

DeltaV™ Continuous Historian



Continuous process data is collected by the DeltaV Continuous Historian on any DeltaV workstation.

- Fully integrated history configuration and data collection
- Status collection with every value
- Fully functioning historian on every DeltaV workstation
- Scalable plant historian available on any DeltaV workstation, such as Application Station, Operator Station and Professional PLUS Station
- Integrated tools for viewing historical data
- Excel-based reporting and analysis tool
- Open connectivity using OPC and XML
- Historical data available in operator displays
- Ability to write history for non-DeltaV data

Introduction

Are you looking for a distributed control system with a state-of-the-art historian? Are you tired of having to separately configure your historian and your automation system?

The DeltaV Continuous Historian provides a database designed for historical storage, retrieval, integration into the DeltaV system, and open access. As a product of Emerson, the DeltaV Continuous Historian was designed to support the Plantweb digital ecosystem and provide a data repository for the information available in intelligent field devices.

The DeltaV Continuous Historian is a vital component of the DeltaV system, fully integrated into configuration, installation, and operation.

Benefits

Fully integrated history configuration and collection:

Historical configuration is fully integrated into the DeltaV configuration. This simplifies both your initial history configuration and the long-term configuration management of the historian. History collection is configured as part of DeltaV module configuration using either Control Studio or DeltaV Explorer. The DeltaV Continuous Historian is automatically configured with the correct tags when the module is downloaded in the DeltaV system. Once downloaded, the DeltaV Continuous Historian automatically begins history collection for the configured parameters.

Status collection with every value: The DeltaV Continuous Historian automatically collects status with every data value. There is no historian licensing impact as the status is an integral part of the history collection. In the past, status had to be collected as a separate parameter, meaning separate configuration and licensing. Now there is no need to worry about status collection as the DeltaV Continuous Historian takes care of this for you.

Fully functioning historian on every DeltaV workstation:

All DeltaV workstations include a fully functional historian. Capabilities such as data compression and seamless communication over the DeltaV control network to controllers and workstations are built in. You can view historical data collected locally or on other DeltaV workstations, allowing you to centralize or decentralize your historical collection.

Integrated tools for viewing historical data: Tight integration with the rest of the DeltaV system allows data collected by any DeltaV Continuous Historian to be displayed along with associated alarms and events in a single, easy-to-use interface. Alarms and events are automatically superimposed on the appropriate trend, providing a complete picture of process history.

Excel-based reporting and analysis tool: The DeltaV Continuous Historian comes complete with DeltaV Reporter - an Excel-based reporting and data analysis tool available on any workstation. Use DeltaV Reporter to populate a spreadsheet with historical data. Once in the spreadsheet, use the power of Excel to view, analysis, and create reports on the data.

Open connectivity using OPC and XML: The DeltaV system is based on open standards, and the DeltaV Continuous Historian is no exception. External access to the DeltaV Continuous Historian is provided in OPC format using the DeltaV OPC History Server or in XML format using the DeltaV History Web Service. The DeltaV OPC History Server is based on the OPC Historical Data Access (HDA) standard which is maintained by the OPC Foundation. The DeltaV History Web Service is based on Microsoft .Net technology which has become the de facto standard for data exchange over the Internet. The OPC History Server and DeltaV History Web Service provide access to all historical data in the DeltaV Continuous Historian database.

Historical data available in operator display: Data collected by any DeltaV Continuous Historian is available for viewing and analysis as embedded trend displays in DeltaV Live and DeltaV Operate to provide the operator with more information to make intelligent process decisions.

Ability to write history for non-DeltaV data: Designed for process engineers who need to visualize their non-DeltaV history data concurrently with their DeltaV history data. The Historical Data Write Interface allows the user to programmatically write historical data from external sources in a secure and reliable manner.

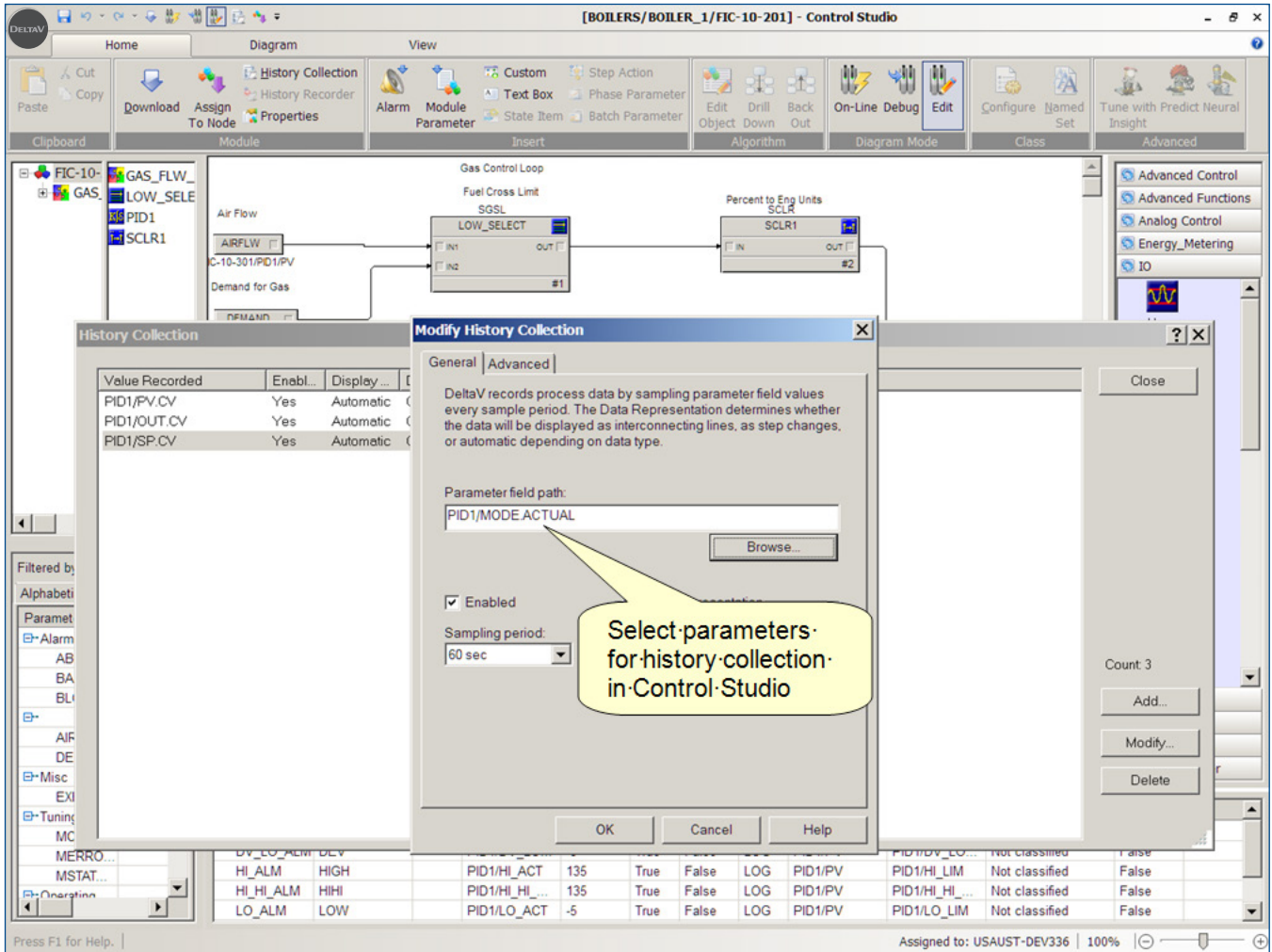
Product Description

The DeltaV Continuous Historian was developed by Emerson to store and retrieve large numbers of process measurements and their associated status quickly and efficiently. The DeltaV Continuous Historian was built for the DeltaV system to be an integral part of the Plantweb architecture for collecting information from intelligent field devices.

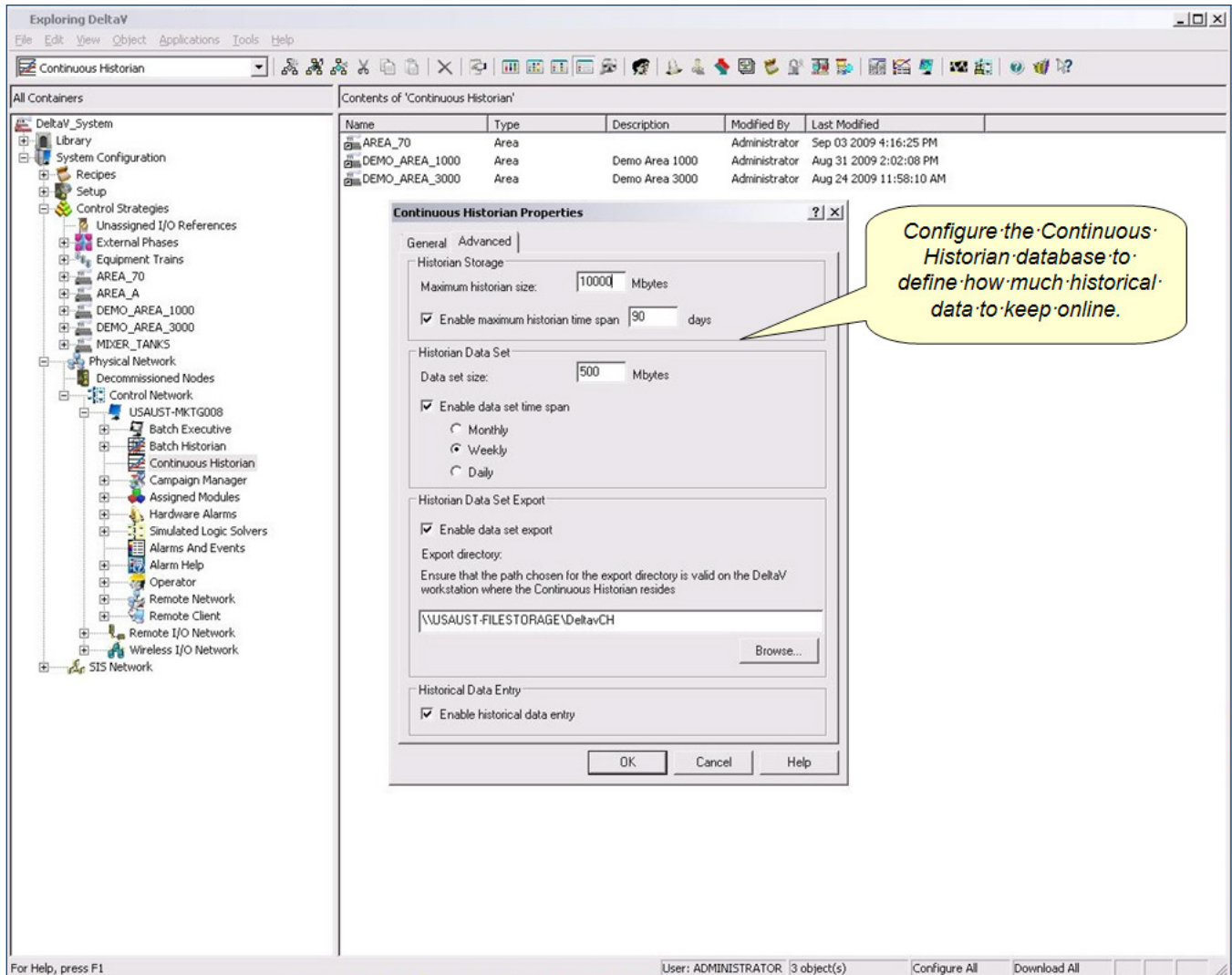
The DeltaV Continuous Historian was built from the ground up using the latest historian technologies. Since it was built for the DeltaV system, it brings a higher level of integration to automation history. Configuring the parameters that need to be collected by the historian is an integral component of a DeltaV control module. Advanced configuration options include choosing data compression limits and marking the parameter for automatic collection by an enterprise historian, such as the Enterprise PI Server from OSIsoft.

Each control module, the fundamental building block of your control strategy, contains the historical configuration information for all module parameters that are being historized. The status of the parameter is automatically collected with the value, so no additional configuration is required for status.

When a new module is created, either from the module library or an existing module, it includes history configuration, as well as alarms, display information, etc. Conversely, if a module is deleted, the DeltaV Continuous Historian is notified, and parameter collection from that module is suspended.



Historical configuration is defined as part of the module in DeltaV Control Studio.



Configure the DeltaV Continuous Historian database in the DeltaV Explorer.

Every DeltaV workstation, including the Application Station, has a 250-parameter DeltaV Continuous Historian as part of the standard software suite. The DeltaV Continuous Historian on the Application Station is available in optional sizes—up to 30,000 additional parameters per Application Station. The DeltaV Continuous Historian on the other DeltaV workstations, e.g. Operator Station and ProfessionalPLUS Station, can be scaled-up to 3,250 parameters per workstation.

In the DeltaV Explorer, simply drag and drop plant areas onto any historian to choose where data collection for those areas will occur. Once the workstation is downloaded, communications and history collection will begin automatically.

Multiple DeltaV Continuous Historians are supported in a single DeltaV system. History for a specific parameter can be collected on multiple workstations, providing historical backup capability.

Configuration of the DeltaV Continuous Historian includes enabling the historian for use on the DeltaV workstation and configuring the size of the database, the size of the historical data sets, and automatic data set export behavior. The DeltaV

The screenshot shows the 'Continuous Historian Administration' window. It features a menu bar with 'Tools', 'View', and 'Help'. Below the menu is a toolbar with various icons. The main area contains a table with the following columns: 'Data Set Name', 'Type', 'Backup Status', 'Size', 'Start Time', and 'End Time'. The table lists several data sets, including 'Active', 'Current', and 'Extended' types, with their respective sizes and timestamps. At the bottom of the window, there is a status bar showing '12 Objects (Storage Area Free Space 12.74 MB)', 'Active/Current 587.26 MB', 'Extended 565.34 MB', and 'Primary (C:\DeltaV\History)'.

Data Set Name	Type	Backup Status	Size	Start Time	End Time
DeltaV_SPACEGHST__200908300000	Active		103,608 KB	8/30/2009 12:00:00 AM	*****
DeltaV_SPACEGHST__200908230000	Current	Backed Up	103,592 KB	8/23/2009 12:00:00 AM	8/30/2009 12:00:00 AM
DeltaV_SPACEGHST__200908160000	Current	Backed Up	103,344 KB	8/16/2009 12:00:00 AM	8/23/2009 12:00:00 AM
DeltaV_SPACEGHST__200908090000	Current	Backed Up	103,592 KB	8/9/2009 12:00:00 AM	8/16/2009 12:00:00 AM
DeltaV_SPACEGHST__200908020000	Current	Backed Up	103,344 KB	8/2/2009 12:00:00 AM	8/9/2009 12:00:00 AM
DeltaV_SPACEGHST__200907260000	Current	Backed Up	83,872 KB	7/26/2009 12:00:00 AM	8/2/2009 12:00:00 AM
DeltaV_SPACEGHST__200909210000	Extended	Backed Up	80,320 KB	9/21/2008 12:00:00 AM	9/28/2008 12:00:00 AM
DeltaV_SPACEGHST__200809140000	Extended	Backed Up	80,216 KB	9/14/2008 12:00:00 AM	9/21/2008 12:00:00 AM
DeltaV_SPACEGHST__200808310000_FROM_DeltaV_GREENLANTERN	Extended	Backed Up	205,080 KB	8/31/2008 12:00:00 AM	9/6/2008 1:20:25 AM
DeltaV_SPACEGHST__200808240000	Extended	Backed Up	69,976 KB	8/24/2008 12:00:00 AM	8/31/2008 12:00:00 AM
DeltaV_SPACEGHST__200808170000	Extended	Backed Up	64,944 KB	8/17/2008 12:00:00 AM	8/24/2008 12:00:00 AM
DeltaV_SPACEGHST__200808100000_FROM_DeltaV_GREENLANTERN	Extended	Backed Up	78,368 KB	8/10/2008 12:00:00 AM	8/17/2008 12:00:00 AM

Management of the DeltaV Continuous Historian database is easy through the Administration utility.

Continuous Historian database configuration determines the amount of on-line data available and may be time-or-sized based. When the database reaches its maximum size, the automatic export feature grabs the oldest data set and sends it to a user-defined storage location.

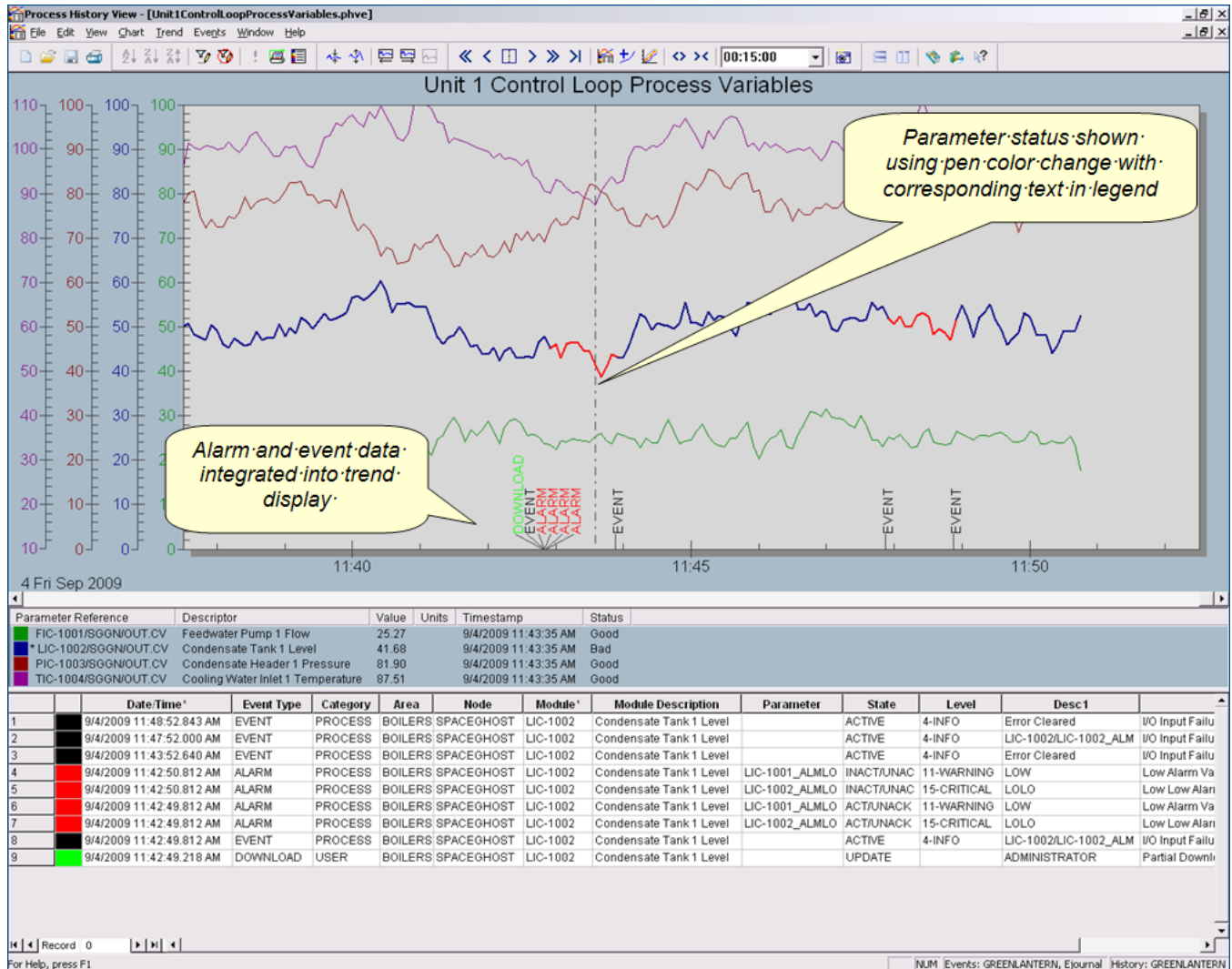
The DeltaV Continuous Historian Administration utility provides makes it easy to manage the historian database. An Administration utility is provided on every DeltaV workstation. The Administration utility enables you to backup, restore, and export the datasets, create new Active and Extended data sets, and view the properties of each data set, including their backup status.

The DeltaV Continuous Historian includes three types of historical data sets: Active, Current, and Extended. The Active and Current data sets represent the on-line data that is resident in the database. There is only one Active data set, as it is the data set that is currently receiving new historical data, but there can be multiple Current data sets. Current data sets are created automatically when the Active data set reaches its configured

size or time limit. New Current data sets may also be created manually through the Administration utility or automatically using the automated backup utility. When the DeltaV Continuous Historian database reaches its configured size or time limit, the oldest Current data set is either exported or overwritten, depending on the configured export behavior.

An Extended data set is a data set that has been exported from the database and then brought back on-line. The data in the Extended data set can be viewed by any of the DeltaV Continuous Historian client applications, but the Extended data set does not count against the maximum database size or time limit. There can be any number of Extended data sets in the DeltaV Continuous Historian, limited only by the physical space available on the DeltaV workstation's hard disk drive.

Programmatic administration of the DeltaV Continuous Historian is available using the automated backup utility. The automated backup utility enables you to back up the Active, Current and Extended data sets, create a new Active data set, and delete off-line data sets that are no longer required. The automated backup utility also provides options to backup up data sets based on time or based on whether they have been modified since the last backup.



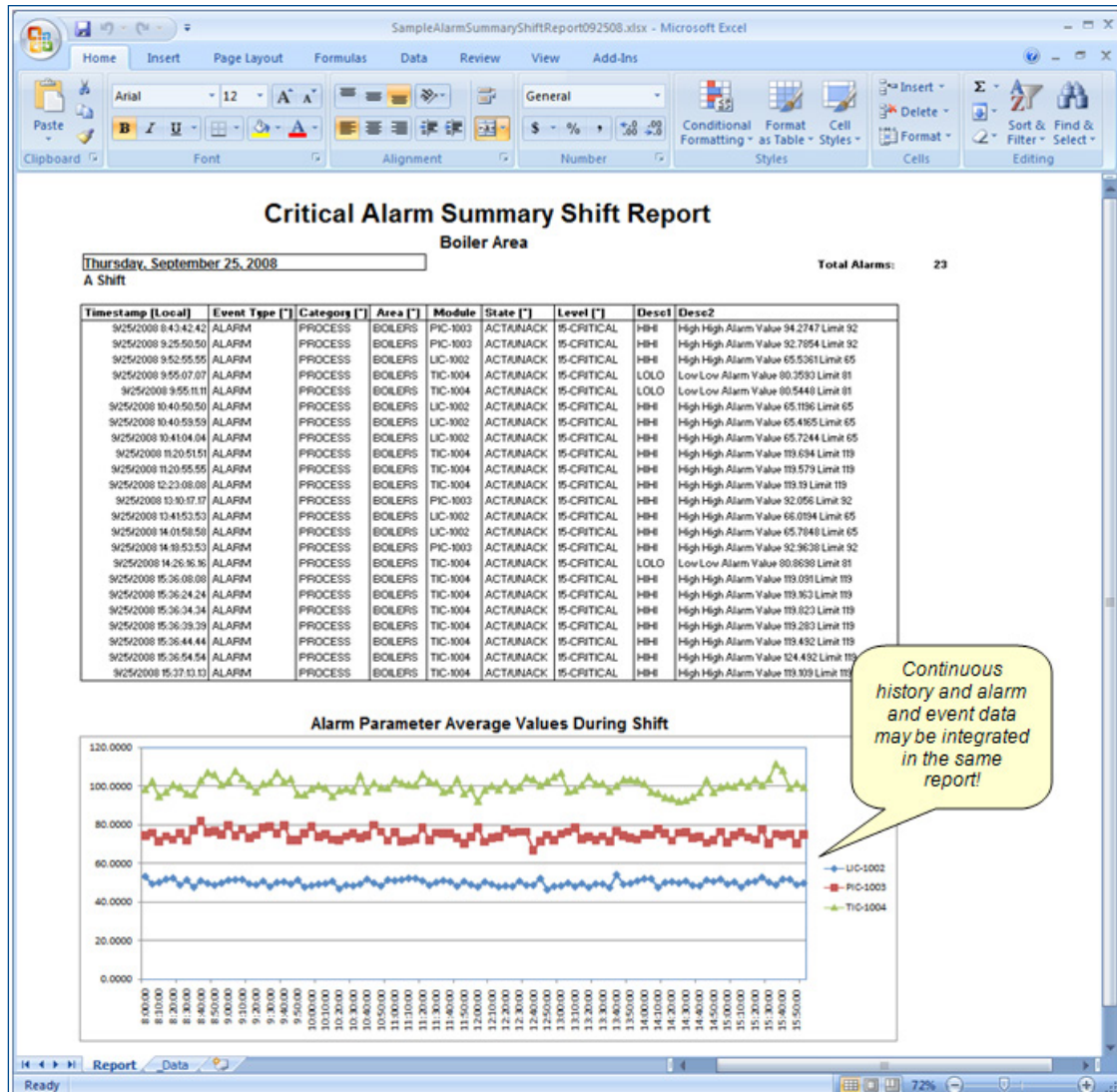
View DeltaV Continuous Historian data along with corresponding alarms and events in Process History View.

Process History View is used to display data values and status collected by any DeltaV Continuous Historian. Users have the option to build custom trend charts by selecting individual parameters to display, or they can launch historical trends automatically from a module’s faceplate in DeltaV Live or DeltaV Operate.

Either way, status information and alarm and event data collected by the DeltaV system is embedded in the trend to provide a more accurate and thorough historical picture and enable better decision making.

The DeltaV Version Control and Audit Trail (VCAT) captures all changes made to the DeltaV Continuous Historian. There are no other mechanisms available to add, modify, or delete historical data configuration or the historical data itself.

The capabilities of VCAT to capture historical collection configuration changes, combined with common industry SOPs (Standard Operating Procedures), allow you to comply with the 21 CFR Part 11 regulations.

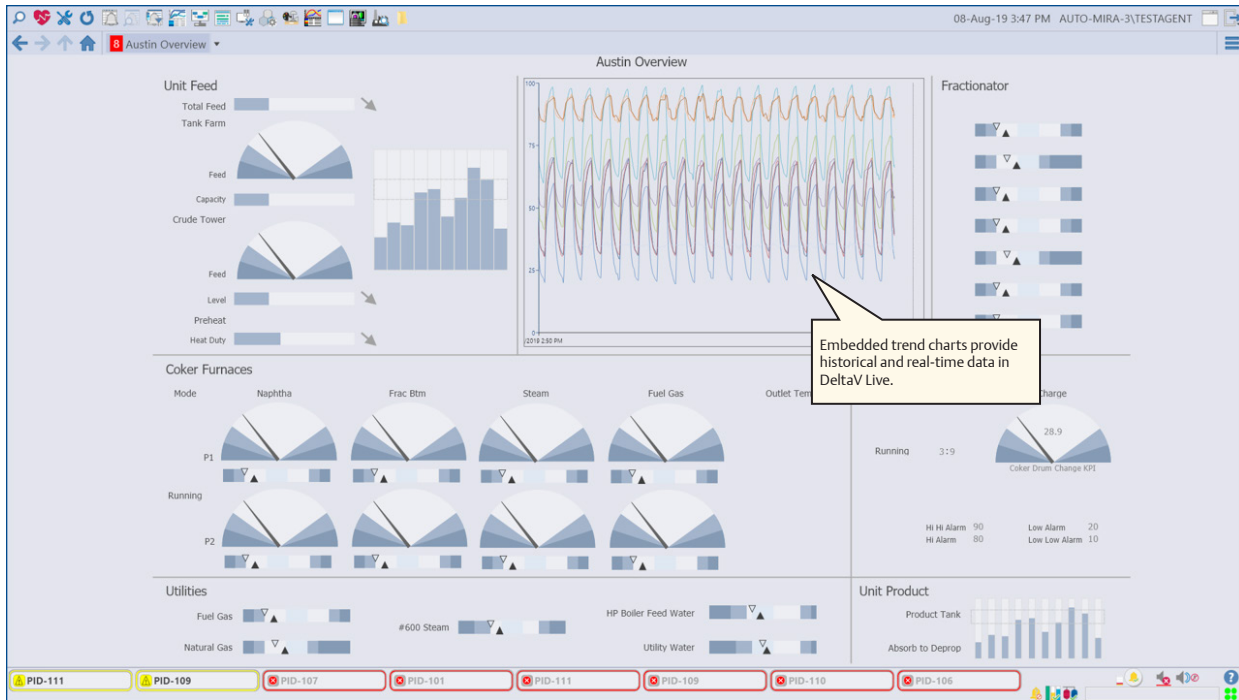


DeltaV Reporter integrates historical process and alarm and event data.

DeltaV Reporter, the MS-Excel based reporting and analysis tool, provides an easy way to get historical data into an Excel spreadsheet. DeltaV Reporter is available for use on a DeltaV workstation or any non-DeltaV workstation that has network connectivity to a DeltaV Continuous Historian. The historical data provided to the spreadsheet includes the time/date stamp, value, and status. DeltaV Reporter includes dialogs to assist in the building of queries for retrieving data from the DeltaV Continuous Historian. A DeltaV Continuous Historian specific browser with wildcard filtering capability is available to help locate the historical data required. The data available from the DeltaV Continuous Historian for display in the spreadsheet includes raw data, interpolated data, or calculated (aggregate) data.

The DeltaV OPC History Server provides an OPC Foundation HDA interface to the DeltaV DeltaV Continuous Historian based on Microsoft's OLE/COM technology. The OPC HDA interface specification defines Microsoft COM interfaces (custom and automation) to access the historical process data in the DeltaV DeltaV Continuous Historian.

The DeltaV History Web Service provides a set of web methods that client applications can use to interact with the DeltaV Continuous Historian. Historical process data may be returned to the client application in XML or ADO Dataset format.



Trend Charts in DeltaV Live provide real-time and historical data.

DeltaV Live and DeltaV Operate, the DeltaV operator interface applications, provide the ability to embed trend charts into the operator graphic displays. The embedded trend charts display historical and real-time data in the same trend chart. Historical data may come from any DeltaV Continuous Historian in the system.

Embedded trends are configured using Graphics Studio for DeltaV Live and DeltaV Operate Configure Mode for DeltaV Operate. In DeltaV Live, the embedded chart uses a new trend object, based on Process History View, but with more features available to users. Each embedded trend can contain up to 10 pens and resolves automatically the available historian in the system, or can be pointed to a specific DeltaV Continuous Historian. In DeltaV Operate, the embedded trend chart uses the same trend object as Process History View optimized for use in DeltaV Operate, so the configuration environment is well known. Each embedded trend, in DeltaV Operate, can contain up to 8 pens and can connect to a different DeltaV Continuous Historian.

Any number of embedded trend charts can be configured in the operator graphics, subject to the size of the embedded trend chart, the space available on the display and a maximum of 160 pens per display in total.

Operators can interact with the trends by scrolling forward and backwards, zooming in and out, increase and decrease the time span, and launch Process History View. In addition, they can restore the chart to configured values, view a snapshot of the data, view the data collection status, and turn the embedded chart legend on and off.

DeltaV Live and DeltaV Operate also include an easy trend building function called Chart Builder. Chart Builder facilitates creating up to 6 Process History View trend charts by simply selecting an object on the DeltaV Live or DeltaV Operate display. Once the object is selected, the trend chart is opened and populated with real-time data for the object and if the object is configured for history collection, historical data for the object is also displayed. For example, if you have a selectable datalink on a DeltaV Live or DeltaV Operate display, select the Chart Builder function from its contextual menu, then select the datalink to open a Process History View trend chart with the real-time and historical data for the datalink.

Related DeltaV Products

- **History View Software Suite:** Monitors the DeltaV Continuous Historian, Batch Historian and real-time data.
- **DeltaV OPC History Server:** Exposes all DeltaV historical data using the industry standard OPC Historical Data Access interface.
- **OPC .NET Server (aka OPC Xi):** Delivers secure and reliable real-time and historical data communications between your automation systems and your enterprise.
- **DeltaV History Web Service:** Exposes all DeltaV historical data in XML format using Internet-based Web services technology.
- **Backup and Recovery:** Provides data backup and disaster recovery for DeltaV system and associated process control data.

Related Third Party Products

- **Microsoft Excel:** Provides the basis for the Excel based reporting and analysis tool.
- **OSIsoft PI Server:** Receive, archive, and distribute aggregated process data from multiple DeltaV and third party systems.
- **OSIsoft PI OPC Historical Data Access Interface:** Transfer historical data from the DeltaV OPC History Server to an Enterprise PI Server quickly and easily.

Prerequisites

- Use of the DeltaV Reporter requires a copy of Microsoft Excel (provided by others).

Ordering Information

DeltaV Continuous Historian on Application Station¹

Description	Model Number
DeltaV Continuous Historian scale-up, 250 parameters	VE22UPS090
DeltaV Continuous Historian scale-up, 1,000 parameters	VE22UPS042
DeltaV Continuous Historian scale-up, 5,000 parameters	VE22UPS043
DeltaV Continuous Historian scale-up, 10,000 parameters	VE22UPS044 ²
Legacy Continuous Historian scale-up, 1,000 parameters ³	VE22UPS005
Legacy Continuous Historian scale-up, 5,000 parameters ³	VE22UPS006

A 250-parameter DeltaV Continuous Historian comes standard on every DeltaV workstation, including the Application Station. The DeltaV Continuous Historian on the Application Station may be scaled-up to support larger historian sizes, up to a maximum of 30,250 parameters on a single Application Station.

¹All licenses in this list work on the DeltaV Application Station only, not on other types of workstations.

²For a 30,000-parameter scale-up, purchase three 10,000-parameter DeltaV Continuous Historian scale-up licenses. A 30,000 parameter DeltaV Continuous Historian requires a DeltaV v9.3 or later release.

³The Legacy Continuous Historian scale-up licenses are limited to 20,000 additional parameters and are available only for DeltaV systems that have upgraded from a DeltaV v7.3 or earlier release. The Legacy Continuous Historian is supported up to and including DeltaV v11.3.2.

DeltaV Continuous Historian on Non-Application Stations⁴

Description	Model Number
DeltaV Continuous Historian on Non-Application Station, Enable 1,250 parameters	VE22UPS042OP1
DeltaV Continuous Historian on Non-Application Station, Scale-up from 1,250 to 2,250 parameters	VE22UPS042OP2
DeltaV Continuous Historian on Non-Application Station, Scale-up from 2,250 to 3,250 parameters	VE22UPS042OP3 ⁵

The DeltaV Continuous Historian on Non-Application Stations may be scaled-up to a maximum of 3,250 parameters per workstation.

⁴All licenses in this list are compatible with DeltaV v12.3.1 or later, and work on any DeltaV workstation except for the DeltaV Application Station.

⁵For a 3,250-parameter scale-up, purchase all the three licenses, i.e. "Enable 1,250", "Scale-up from 1,250 to 2,250", and "Scale-up from 2,250 to 3,250".

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