Automation for a Changing World

Delta DIAView SCADA System

ΔELTΔ

Smarter. Greener. Together.

Delta DIAView SCADA System

With the continuous development of the Industry 4.0 and IIoT technologies, manufacturers require comprehensive, efficient and smart management solutions to enhance equipment utilization rate and productivity in factories.

Delta's DIAView SCADA System is an industrial data visualization software designed for smart management of factory equipment and production precesses. The system employs automated management functions including real-time system monitoring, data acquisition and analysis to assist users to collect data of whole plant. The user-friendly interface editing functions help to construct a customized management interface for production line visualization, remote monitoring, system management, and factory digitalization, increasing overall factory production efficiency.

The DIAView features Stand-alone, Client/Server (C/S) and Web Browser/Server (B/S) versions for different management applications. It is compatible with Delta's PLC, sensors, meters and other industrial automation products, and provides abundant graphics, alarm management, user-defined reports and charts for an intuitive and easy-to-navigate user interface. It helps customers in a variety of industries to establish a complete factory visualization and management solution with reliable reference for optimal production.

Delta's DIAView SCADA System realizes digitalization, visualization, and real-time monitoring for meeting your industry demands and "Digitized Automation for a Changing World" !
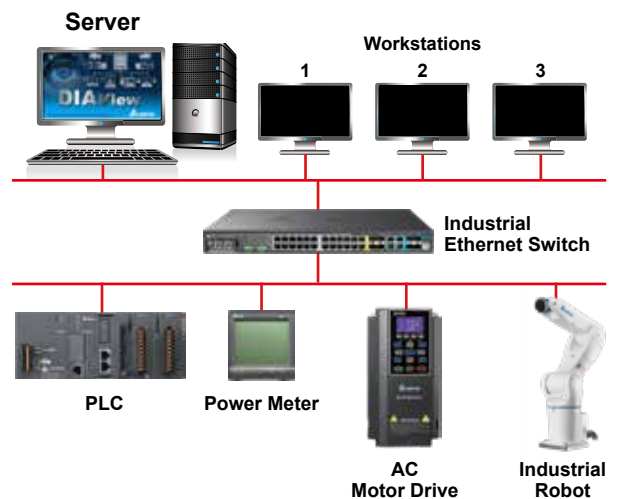
Contents

DELTA

DIAView SCADA System Overview

Stand-alone

▶ Connected with control and monitoring platform to directly acquire data from one single equipment for real-time monitoring

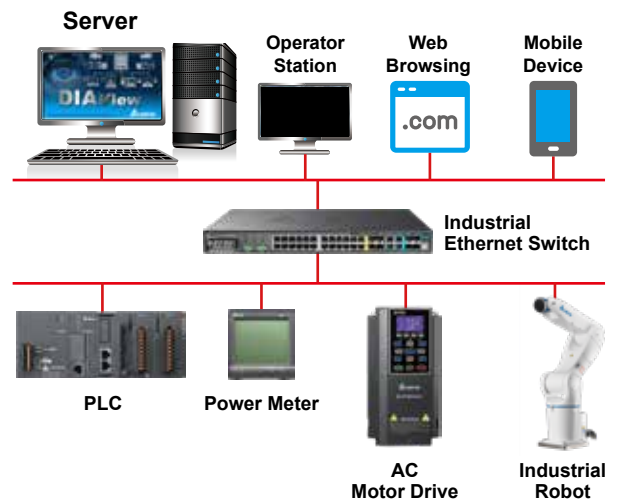▶ Applicable to high-end equipment control when matched with industrial panel PCs

Host Controller

PPC

Woodworking Machine

Client / Server (C/S)

▶ Collects data from various equipment for analysis

▶ Provides real-time monitoring to users via TCP / IP protocol

Server

Workstations
1 **2** **3**

Industrial Ethernet Switch

PLC **Power Meter** **AC Motor Drive** **Industrial Robot**

Web Browser / Server (B/S)

▶ Collects and processes data from various equipment for analysis and direct display with built-in web server (no need to install IIS)

▶ SVG graphics compatible with IE, Chrome, Safari, Firefox and other mainstream browsers, no need for any plugins

▶ Supports hybrid networking and enables multi-platform monitoring for data visualization

Server

Operator Station **Web Browsing** **Mobile Device**

.com

Industrial Ethernet Switch

PLC **Power Meter** **AC Motor Drive** **Industrial Robot**

Communication Protocols

▶ More than 20 drivers support mainstream controllers (PLCs)

▶ Allows device addresses adding in batches, and import / export address variables to Excel for editing

▶ Operations on collection (linear, square root, and Boolean)

▶ Complete recovery functions detect connection failures in time and automatically reconnect equipment to accurately acquire data in high speed

▶ Simple, flexible and highly efficient parameter configuration for networking; allows network connection test online during configuration

Brand	Driver Supported Controllers / Devices
Delta	AS Series PLC
	AH Series PLC
	DVP Series PLC
	Equipment IoT DIALink
	DPM Series Power Meter
Siemens	S7-200 TCP / PPI / Smart TCP
	S7-300 TCP / MPI
	S7-1200 TCP
Rockwell	ControlLogix Ethernet
Omron	FINS TCP
	FINS ASCII
	HostLink ASCII
Mitsubishi	FX Series
	Q Series

Communication	Protocols
Modbus	Modbus TCP
	Modbus serial RTU
	Modbus serial ASCII
OPC	OPC DA
	OPC UA
Simulator	Simulator

Features

Smart Report Wizard

Provides intuitive operation interface, multiple data sources for selection, rendering preview and other functions. It only takes four steps for users to complete the configuration, effectively saving time for report generation.

▶ Reports: Shift, daily, weekly, monthly, quarterly, and annual reports

▶ Values: Instantaneous, average, maximum, minimum, and original values

▶ Statistics: Row statistics and column statistics

▶ Charts: bar charts, curve charts, pie charts ...etc.

Alarm Management Tools

The alarm window displays alarm records, associated variables, trigger time, response time, recovery time, record type, alarm type, alarm level... etc. The alarm management tools can filter, inquiry (by groups), display and archive alarm data, and print out or export data as Excel files.

▶ History alarm inquiry and real-time alarm download; data can be displayed in different pages

▶ Filtering by alarm types, alarm levels, record types, and variable groups; supports script to inquiry the specified alarm contents (by columns)

▶ User-defined background colors of real-time alarm texts, regular alarms, responses, recovery items ...etc.
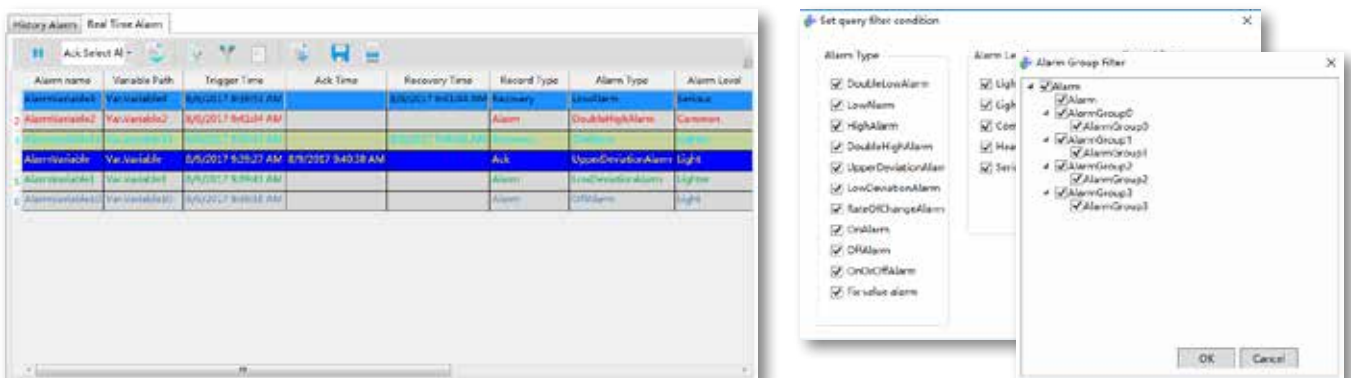
Data Display

Various data archives and display for real-time management, including:

▶ Real-time / historical data statistics, analysis, and display: XY curves, pie charts (2D / 3D), bar charts ...etc.

▶ Curve charts: smooth zoom in / out, fixed horizontal and vertical axes, multi-axis display, segment display, settings, printing, saving, import and export functions

▶ Numerical statistics of historical data: average value, maximum / minimum value, sum, number of value, current value... etc.

▶ Multiple types of curves: polyline, bar, dot, smooth curve, step, switch polyline ...etc.
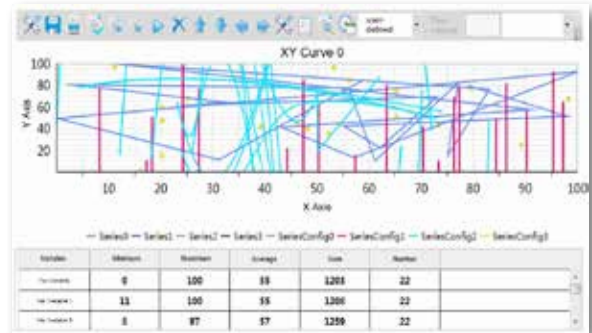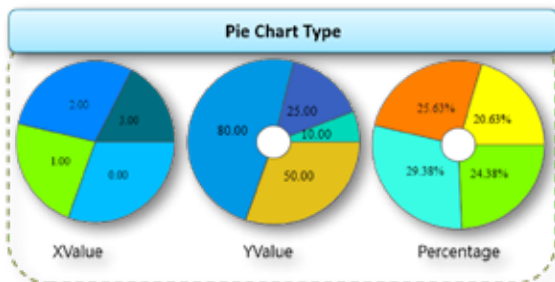
Real-time Chart
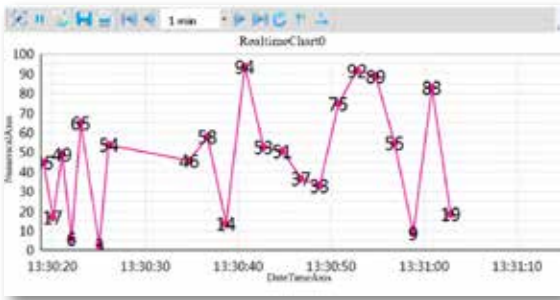
User-defined Chart
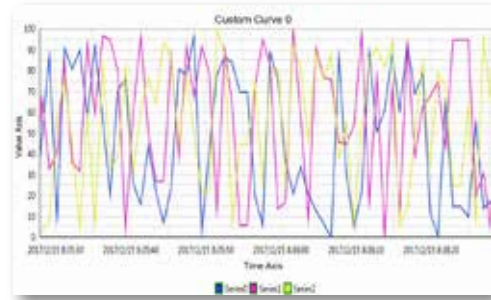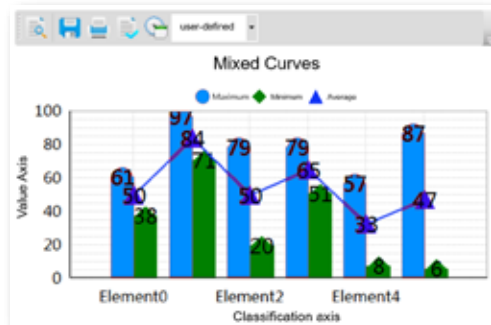

History

XY Curves


Pie Chart

Bar Chart

Features

History Logs and Database

History logs include variables and log groups, and database provides browsing, inquiry and editing functions. Users are able to select data from different sources for cross check.

▶ Basic operations on the database: to insert / modify / inquiry data, and to create / delete tables

▶ Supports SQL Server Compact, SQL Server, Oracle, MySQL database

▶ Connection between the database and third-party software production data
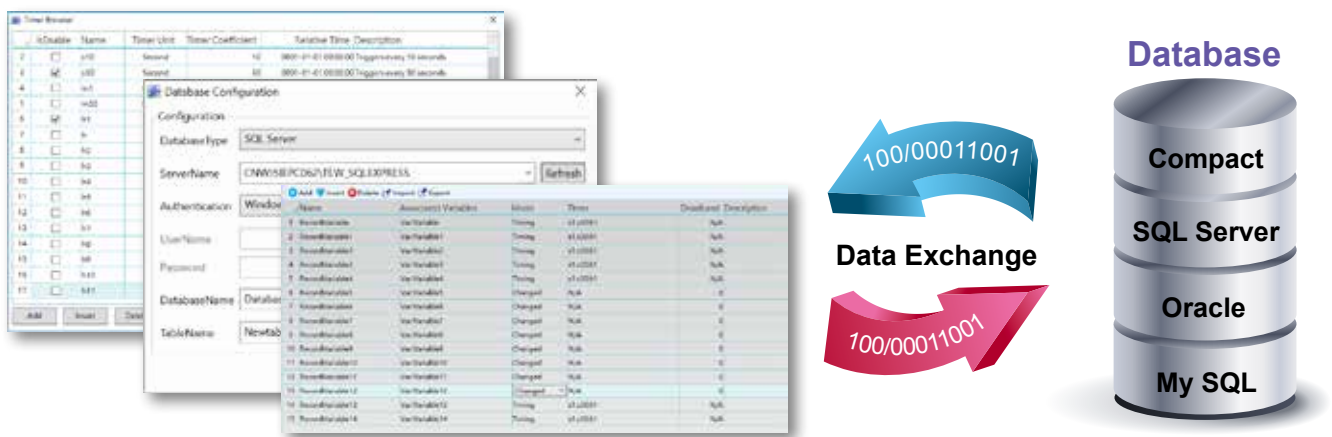
Recipe Management

A recipe is a set of parameter settings corresponding to some variables for certain production processes. Users are able to define and manage recipes for different products and production processes.

▶ Quick configuration and maintenance of recipe items in the variable browser

▶ Easy to add, insert, and delete recipe items, and import / export recipe parameters

▶ Allows recipe item / parameter modification, sequence adjustment, import / export, saving, and printing during equipment operation

▶ Display of recipe names, number of items, ingredients and units

▶ Supports VBScript

VBScript

Supports VBScript, a power script editor with abundant coding objects and commands, to facilitate customized functions, including:

▶ Encryption for user-defined global functions and scripts

▶ Condition program, time program and screen program are isolated from the main execution of user interface and will not cause UI delay

▶ Condition program and time program are executed as two default groups in parallel

▶ Powerful script editing: VBScript, Chinese code, read/write protection, intelligent prompts, syntax highlighting, error location and other functions
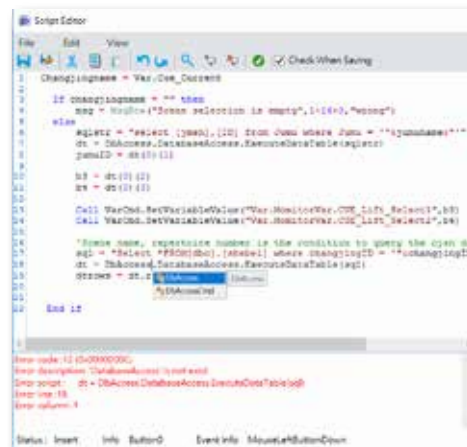
User Authority Management

The standard authority level management provides access security settings and section management. It effectively enhances system security by data categorization and isolation, operation, and responsibility levels while reducing human errors.

▶ Standard authority levels: system manger, manager, and operator

▶ Complied with FDA authority

▶ Automatic logout after a defined period of inactivity

▶ Limit of incorrect password to enhance user authority and system security

Features

Multiple Languages

Multi-language display for every project to fulfill user needs of different countries and regions around the world and avoid repetitive program development.

▶ Allows language switch during project execution

▶ Language switch for texts, pictures, GIF files, and sounds

▶ Import, export, delete inquiry and filter functions

▶ Development in one language and display in multiple languages

▶ Language switch does not effect project functions
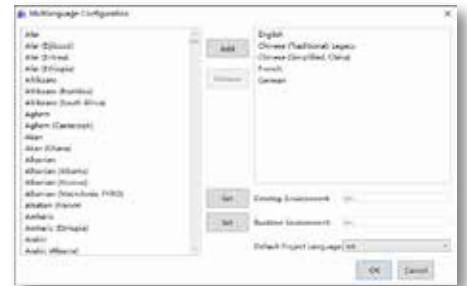
Data Variables Dictionary

The variables dictionary is a collection of variables in a project, and the variable group is a unit for grouping and managing variables. A project requires data interchange between different types of variable groups and data to present and manage the production site conditions.

▶ To add/batch add, delete, copy/past, rename, import/export, and edit variables dictionary and variable groups

▶ Intelligent replacement, reference browsing, usage statistics, preset default values for faults, and error check functions

▶ Variables grouping, sorting, ordering and handling

▶ Tree variables management

▶ Variable expansion functions to realize variables grouping
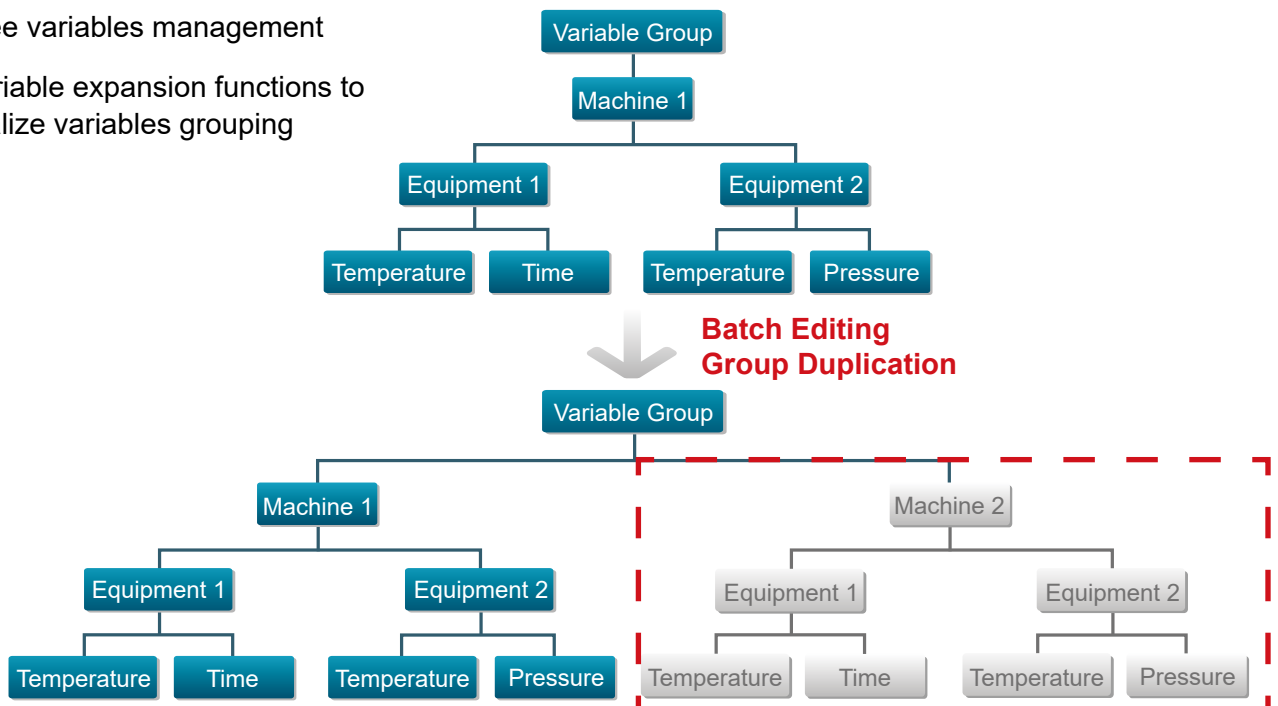
Video Monitoring

▶ Multi-client video preview, recording, screenshot, and playback

▶ User authority management, and remote equipment configuring & camera adjustment

▶ Fast / slow playback, single frame playback, pause / resume and end video play

Project Package and Encryption

▶ Project package: Packages the user-developed project and convert it into an installation file (including all the data required for the execution and the contents of the project), which can be directly installed and executed on other computers that don't have the DIAView SCADA System installed

▶ Project encryption: Protects the tactics of manufacturers' secondary development and end-users' special process flows
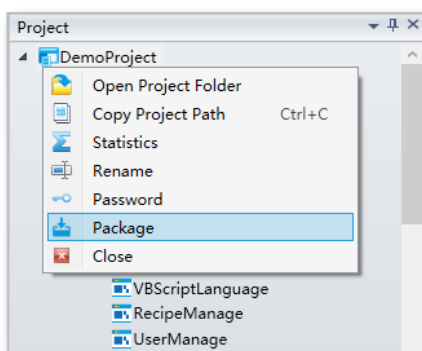
Success Stories

Wood Edge Sealing Machine Monitoring

Customer Needs

The customer requires the integration of new and old equipment in the factory for networking, and real-time collection of production information and equipment status for recording, analysis, and visual display.

Solution

▶ Presents recipe and process data via barcode scanning to optimize equipment automation and efficiency

▶ Allows multi-language (Chinese and English) development and configuration for easy duplication and highly efficient secondary development

▶ Main control: Data input / output / monitoring, reference table for function settings, processing interface (dispersant, pre-milling, pre-heating, head and tail cutting, finishing, etc.)

▶ Main functions: Recipe setting (imports / exports Excel and CSV, and imports recipe items via barcode scanning) and alarm interface and alarms

Benefits

▶ Saves labor cost and realizes automatic operation of edge grinding

▶ Real-time monitoring of equipment operation and process execution status to improve accuracy

▶ Smart and highly automated, suitable for industry-specific equipment applications

DIAView

PLC

CANopen

Woodworking Machine   **AC Servo Drive & Motor**   **AC Motor Drive**
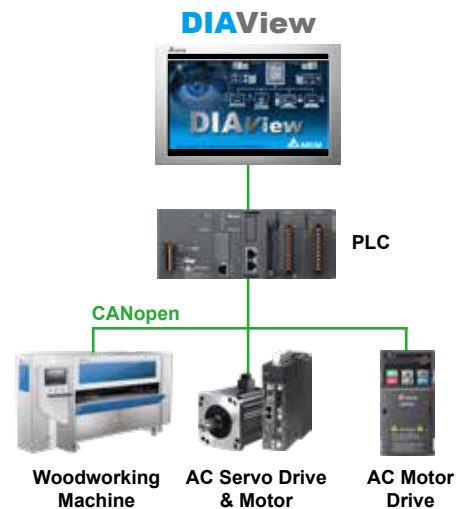
Automobile Factory Energy Management

Customer Needs

The customer requires a systematic approach to provide a reliable basis for energy consumption analysis, and builds a smart, real-time industrial energy management system for energy savings.

Solution

▶ Real-time monitoring of energy usage, power consumption trend, alarms and alarm data inquiry

▶ Builds a control and monitoring center with a variety of display schemes

▶ A variety of data displays (curve, bar, pie charts) for real-time monitoring of daily / monthly / annual energy consumption and other related parameters

Benefits

▶ Realizes digital management and improves factory energy management efficiency

▶ Solves the issues of low management efficiency due to difficult data collection in large-scale and spacious factories, and avoids human errors from manual recordings

▶ Enhances energy efficiency, management efficiency, and corporate image by building a digitalized control and monitoring center

Success Stories

## IIoT Solution for Smart Equipment

Customer Needs

The customer requires the integration of new and old equipment in the factory for networking, and real-time collection of production information and equipment status for recording, analysis, and visual display.

Solution

▶ Applies Delta's PLCs and Equipment IoT DIALink to integrate both new and old equipment in the factory for effective equipment status and production line data collection

▶ Adopts Delta's industrial Ethernet switches to construct a high-speed, reliable and stable network system for data transmission

▶ The DIAView manages production data, equipment utilization rate and other operation execution status

▶ Effective management through reliable data and real-time equipment status

Benefits

▶ The integration of the DIAView and production lines provides real-time monitoring of production quality and equipment statue

▶ Enhanced yield rate and productivity

▶ Flexible equipment arrangement for improved utilization rate
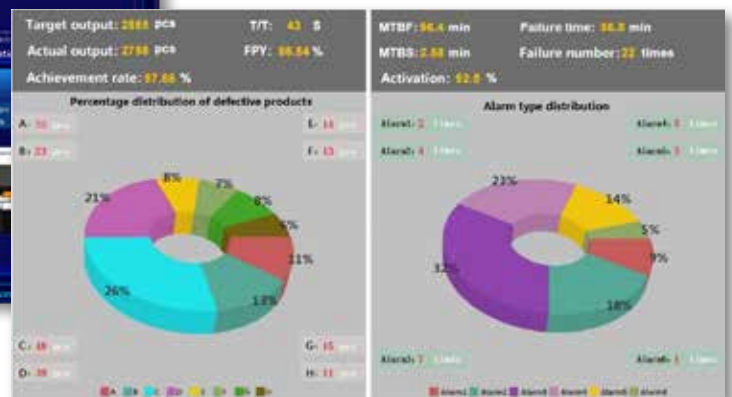
Energy Management for Chemical Tanks

Customer Needs

The chemical tanks in the customer's factory are divided into two areas for water inflow, material feeding, semi-finished product processing, alkaline dosing, heating/cooling... etc. The customer requires real-time monitoring and highly efficient management for the equipment operation data of these chemical tanks.

Solution

▶ The DIAView monitors the temperature, feeding amount, alarms... etc. of the chemical tanks during processing

▶ The operation variables recording function records processing data for easy tracking

▶ The recipe management function reduces human errors occurred during manual recording and data input

Benefits

▶ Real-time monitoring of operation and processing to save on-site manpower

▶ Accurately controls the heating and feeding processes according to recipes and improves product quality and fineness

▶ The alarm function improves the efficiency of on-site troubleshooting and equipment utilization rate

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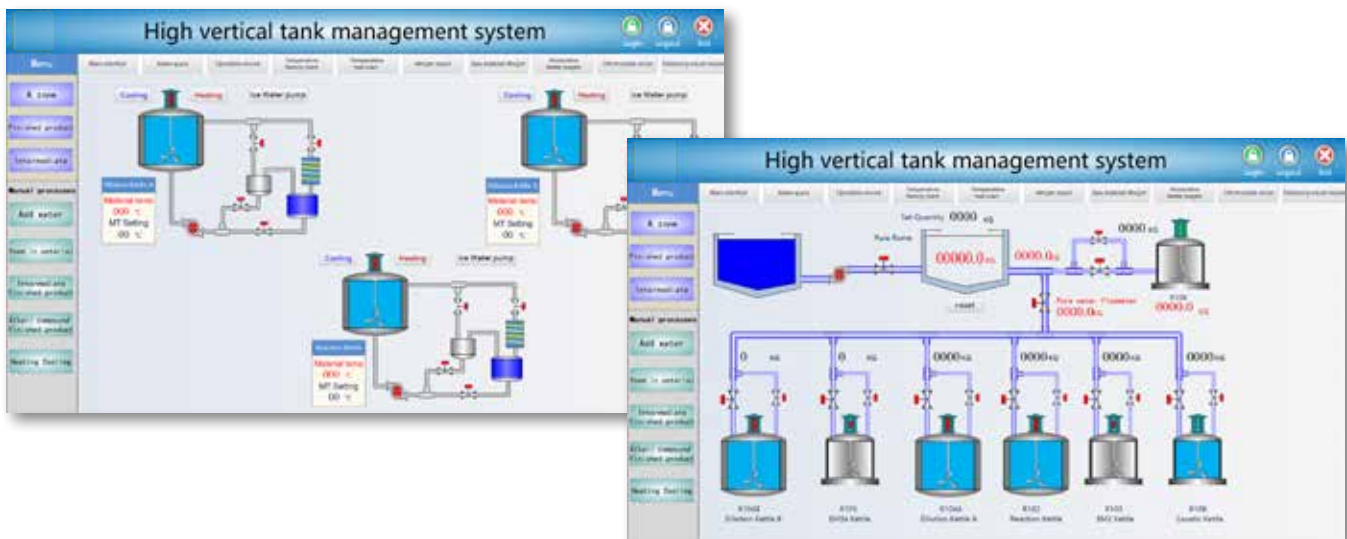
Success Stories

Environmental Monitoring and Security System

Customer Needs

The client needs to build a control and monitoring center which integrates and displays the data of fire suppression system, elevator system, boiler system, wastewater / exhaust system, and dust workshop to realize centralized, digital management.

Solution

▶ The DIAView realizes real-time monitoring of factory environment and security with powerful alarm functions that report on-site anomalies and sends messages to managers via sound effects, e-mails, and SMS

Benefits

▶ Paperless and automatic statistics and analysis, saving manpower

▶ Provides equipment check records and check plan maintenance

▶ Data visualization in real-time with high accuracy to find out and handle anomalies in time

Model Information

DIAV - 01 064 00 00 A

Product Name
Delta Industry
Automation View

Product Type
00 = Universal Version
01 = Stand-alone Version
02 = C/S Version
03 = B/S Version

Versions
00 = 00 Version
01 = 01 Version
UP = Upgraded Version

Amount of C/S & B/S Licenses
00 = N/A
05 = 5 Clients
10 = 10 Clients

I/O Tags

064 = 64 licensed tags	01K = 1,000 licensed tags
128 = 128 licensed tags	1K5 = 1,500 licensed tags
256 = 256 licensed tags	03K = 3,000 licensed tags
512 = 512 licensed tags	99K = unlimited licensed tags

Software Licensing

Licensing

▶ The DIAView licensing is charged based on the I/O tags in customer's connected devices; no additional charge for the software or system development

▶ When licensing is authorized, users can use a USB dongle key to carry out all authorizations; if unauthorized, trial session can be operated for 2 hrs only

I/O Tags

▶ Stand-alone version
- I/O tags: 64 / 128 / 256 / 512 / 1,000 / 1,500 / 3,000 and unlimited

▶ C/S and B/S versions
- I/O tags: 64 / 128 / 512 / 1,000 / 1,500 / 3,000 and unlimited
- Licences: 5 / 10 clients

Charge based on I/O Tags

▶ The DIAView licensing is charged based on the number of I/O tags, and no limit for the use of internal variables
E.g.: If you purchase 512 licensed tags, you can use ≤ 512 I/O tags with actual interlocked variables
(No additional charge required if no variables interlocked)

Ordering Information

Product type		Model Name	Descriptions
Stand-alone	Standard Version	DIAV-010640000A	64 tags, USB dongle key
		DIAV-011280000A	128 tags, USB dongle key
		DIAV-012560000A	256 tags, USB dongle key
		DIAV-015120000A	512 tags, USB dongle key
		DIAV-0101K0000A	1,000 tags, USB dongle key
		DIAV-011K50000A	1,500 tags, USB dongle key
		DIAV-0103K0000A	3,000 tags, USB dongle key
		DIAV-0199K0000A	Unlimited tags, USB dongle key
	Upgraded Version	DIAV-0012800UPA	64 upgraded to 128 tags, USB dongle key
		DIAV-0025600UPA	128 upgraded to 256 tags, USB dongle key
		DIAV-0051200UPA	256 upgraded to 512 tags, USB dongle key
		DIAV-0001K00UPA	512 upgraded to 1,000 tags, USB dongle key
		DIAV-001K500UPA	1,000 upgraded to 1,500 tags, USB dongle key
		DIAV-0003K00UPA	1,500 upgraded to 3,000 tags, USB dongle key
		DIAV-0099K00UPA	3,000 upgraded to unlimited tags, USB dongle key
C/S	Standard Version	DIAV-020640500A	5 clients, 64 tags, USB dongle key
		DIAV-021280500A	5 clients, 128 tags, USB dongle key
		DIAV-022560500A	5 clients, 256 tags, USB dongle key
		DIAV-025120500A	5 clients, 512 tags, USB dongle key
		DIAV-0201K0500A	5 clients, 1,000 tags, USB dongle key
		DIAV-021K50500A	5 clients, 1,500 tags, USB dongle key
		DIAV-0203K0500A	5 clients, 3,000 tags, USB dongle key
		DIAV-0299K0500A	5 clients, unlimited tags, USB dongle key
		DIAV-020641000A	10 clients, 64 tags, USB dongle key
		DIAV-021281000A	10 clients, 128 tags, USB dongle key
		DIAV-022561000A	10 clients, 256 tags, USB dongle key
		DIAV-025121000A	10 clients, 512 tags, USB dongle key
		DIAV-0201K1000A	10 clients, 1,000 tags, USB dongle key
		DIAV-021K51000A	10 clients, 1,500 tags, USB dongle key
		DIAV-0203K1000A	10 clients, 3,000 tags, USB dongle key
		DIAV-0299K1000A	10 clients, unlimited tags, USB dongle key
	Upgraded Version	DIAV-0000005UPA	Upgraded to 5 clients, USB dongle key
		DIAV-0000010UPA	Upgraded to 10 clients, USB dongle key

Product type		Model Name	Descriptions
B/S	Standard Version	DIAV-030640500A	5 clients, 64 tags, USB dongle key
		DIAV-031280500A	5 clients, 128 tags, USB dongle key
		DIAV-032560500A	5 clients, 256 tags, USB dongle key
		DIAV-035120500A	5 clients, 512 tags, USB dongle key
		DIAV-0301K0500A	5 clients, 1,000 tags, USB dongle key
		DIAV-031K50500A	5 clients, 1,500 tags, USB dongle key
		DIAV-0303K0500A	5 clients, 3,000 tags, USB dongle key
		DIAV-0399K0500A	5 clients, unlimited tags, USB dongle key
		DIAV-030641000A	10 clients, 64 tags, USB dongle key
		DIAV-031281000A	10 clients, 128 tags, USB dongle key
		DIAV-032561000A	10 clients, 256 tags, USB dongle key
		DIAV-035121000A	10 clients, 512 tags, USB dongle key
		DIAV-0301K1000A	10 clients, 1,000 tags, USB dongle key
		DIAV-031K51000A	10 clients, 1,500 tags, USB dongle key
		DIAV-0303K1000A	10 clients, 3,000 tags, USB dongle key
		DIAV-0399K1000A	10 clients, unlimited tags, USB dongle key
	Upgraded Version	DIAV-0300005UPA	Upgraded to 5 clients, USB dongle key
		DIAV-0300010UPA	Upgraded to 10 clients, USB dongle key

Smarter. Greener. Together.

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