Digitized Automation for a Changing World

Delta **DIA**View SCADA System

△△ELTA

Delta DIAView SCADA System

With the continuous development of Industry 4.0 and IIoT technologies, manufacturers require comprehensive, efficient and smart management solutions to enhance their 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 processes. The system employs automated management functions including real-time system monitoring, data acquisition and analysis to assist users in managing the whole plant. The user-friendly interface editing functions help to construct a customized management interface for production 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" !

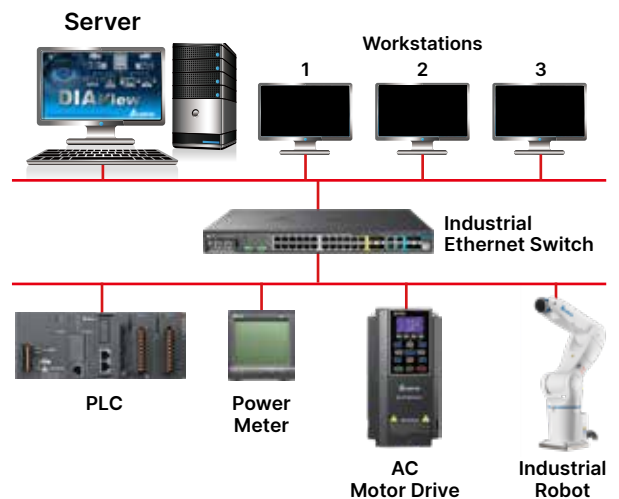# Table of Contents

ΔNELTA

DIAView SCADA System Overview

Stand-alone

▶ Integrated with a host controller for data acquisition from each machine and real-time monitoring

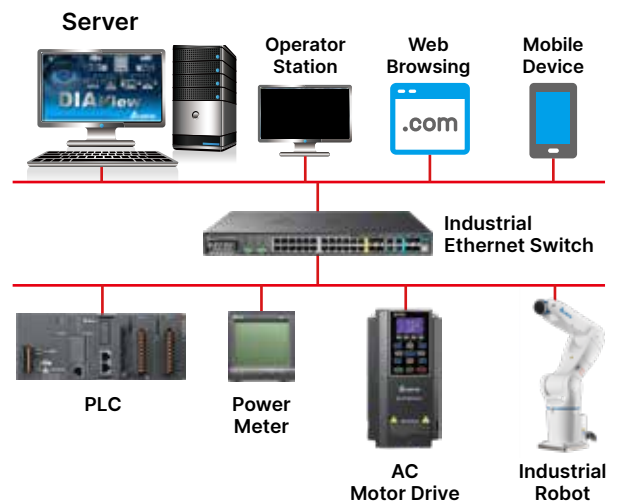▶ Manages advanced equipment if integrated with an industrial touch Panel PC

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 images compatible with mainstream browsers such as IE, Chrome, Safari, Firefox and more; no need for plugins

▶ Supports hybrid access networks for multi-platform monitoring and 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)

▶ Batch adds device addresses and imports / exports Excel files for editing

▶ Operations based on linear, square root, and Boolean computing

▶ Automatic recovery from connection failure for fast and accurate data acquisition

▶ Simple, flexible and highly efficient parameter configuration for network connection; online verification of equipment connection status

▶ New release OPC UA server & Web API option module

Brand	Driver Supported Controllers / Devices
Delta	CODESYS Controllers AX Series
	Compact Modular Mid-range PLCs AS Series
	Hot Swappable Mid-range PLCs AH Series
	Standard PLCs DVP-E Series
	Equipment IoT Platform DIALink
	Power Meters DPM Series
Siemens	S7-1500 TCP
	S7-1200 TCP
	S7-200 TCP / PPI / Smart TCP
	S7-300 TCP / MPI
Rockwell	ControlLogix Ethernet
Omron	FINS TCP
	FINS ASCII
	HostLink ASCII
Mitsubishi	FX Series
	Q Series
	iQ-R Ethernet
Yaskawa	MP3000 TCP/UDP
Keyence	SR2000 TCP/COM Barcode reader

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

DELTA

Features

Smart Report Wizard

Intuitive operation interface, multiple data sources, graphs and charts preview and more functions are provided for easy operation. 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: Instant, average, maximum, minimum, and original values

▶ Statistics: Row statistics and column statistics

▶ Charts: bar charts, curve charts, pie charts and more

Alarm Management Tools

Displays alarm records, related variables, trigger / response / recovery time, record formats, alarm types and levels and more, as well as to filter, inquire (by groups), display, archive, print alarm data, and export 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 formats, and variable groups; supports script to inquiry the specified alarm content (by columns)

▶ User-defined background colors for real-time alarm texts, regular alarms, responses and recovered items

▶ Added a new alarm message window. When an alarm occurs, a window automatically pops up for notification
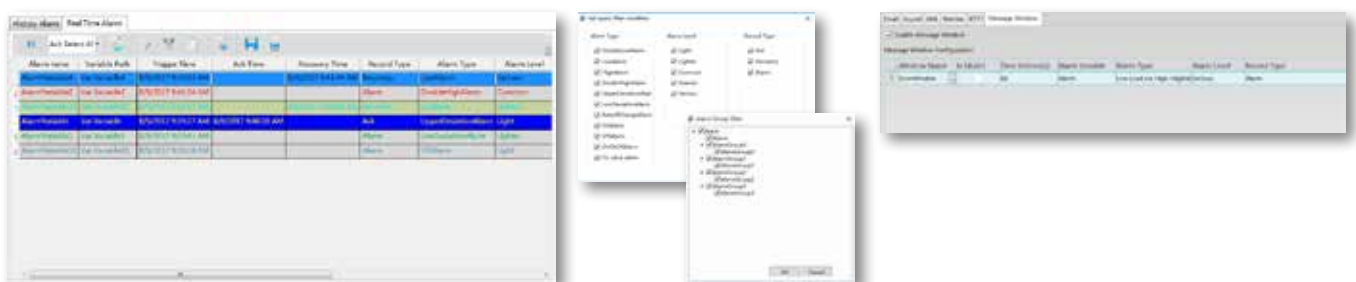
Data Display

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 and more

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

▶ Multiple types of curves: polylines, dotted curves, smooth curves, stair-step curves, and more

▶ Numerical statistics of historical data: average values, max./min. values, sums, number of values, current values and more
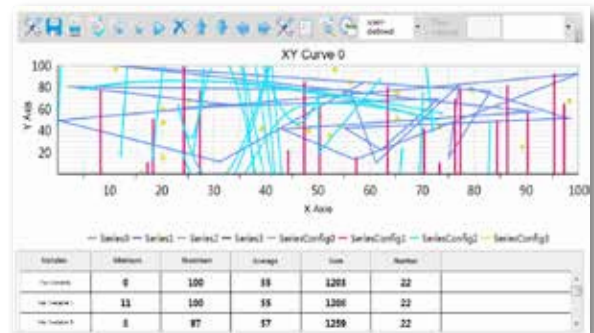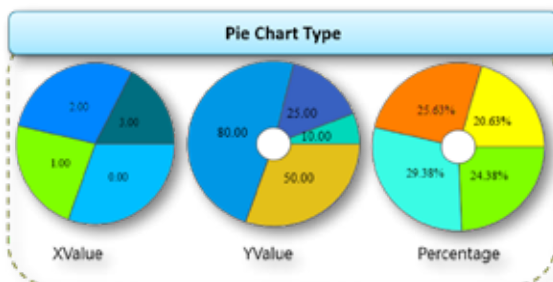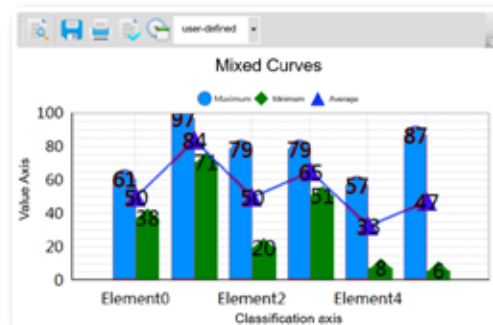
Real-time Chart
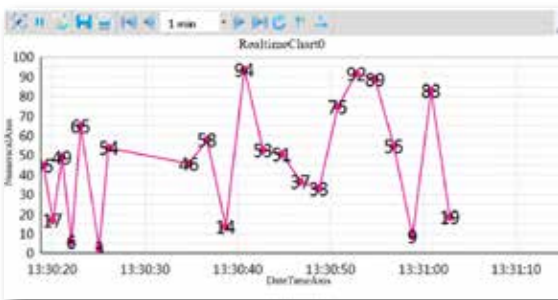
User-defined Chart
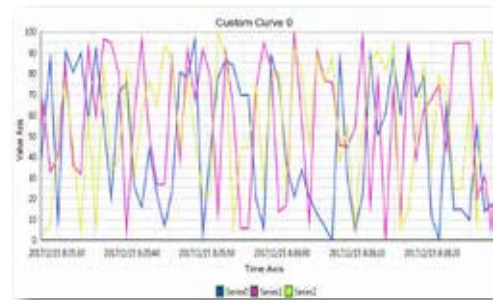
History

XY Curves


Pie Chart

Bar Chart

Features

History Logs and Database

History logs include variables and log groups, and the database facilitates data browsing, inquiry making and editing, and allows users to select different sources of data for cross check.

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

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

▶ Interconnection of the database and the production data in third-parties' software
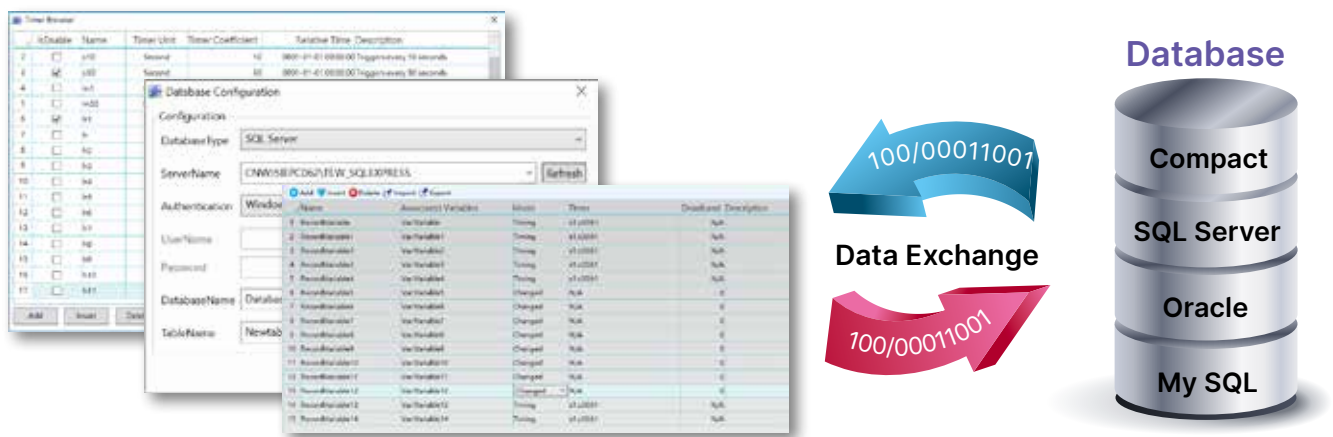
Recipe Management

Recipes are sets of parameter settings indicating the proportion of different materials for production. 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

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

▶ Supports VBScript

VBScript

Supports VBScript, a power script editor with abundant coding objects and commands, to customize functions as follows:

▶ 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 delay UI

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

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

▶ Window-function for users to call
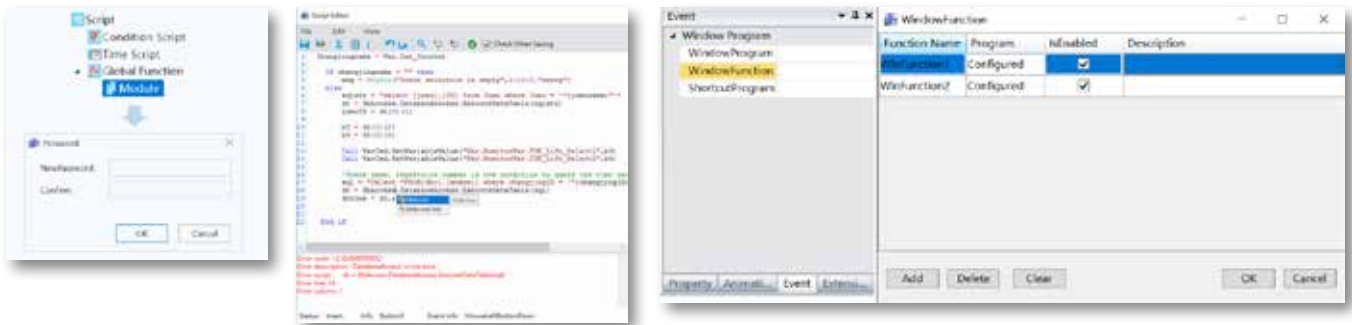
User Authority Management

The standard authority 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 manager, manager, and operator

▶ FDA approval

▶ New face recognition function

▶ Automatic logout after a defined period of inactivity

▶ Sets a limit for consecutive incorrect password attempts

Features

Multiple Languages

Multi-language interface for users in different countries and regions around the world and avoids repetitive program development.

▶ Allows language switch during project execution

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

▶ Import, export, delete, inquire and filter functions

▶ Localizes developed projects with multiple languages

▶ Same functions for different languages

Data Dictionary

The data dictionary is a collection of variables of a project, and variables are grouped for easy management. The interchange of all sorts of data and variables presents the production status of a project and enables efficient control and management.

▶ Allows to add / batch add, delete, copy, paste, rename, import, export and edit variable groups

▶ Smart data interchange, reference browsing, usage statistics, default error value presetting, and error detection

▶ Variables grouping, sorting, ordering and handling

▶ Variables management with tree structure

▶ Variables expansion for grouping
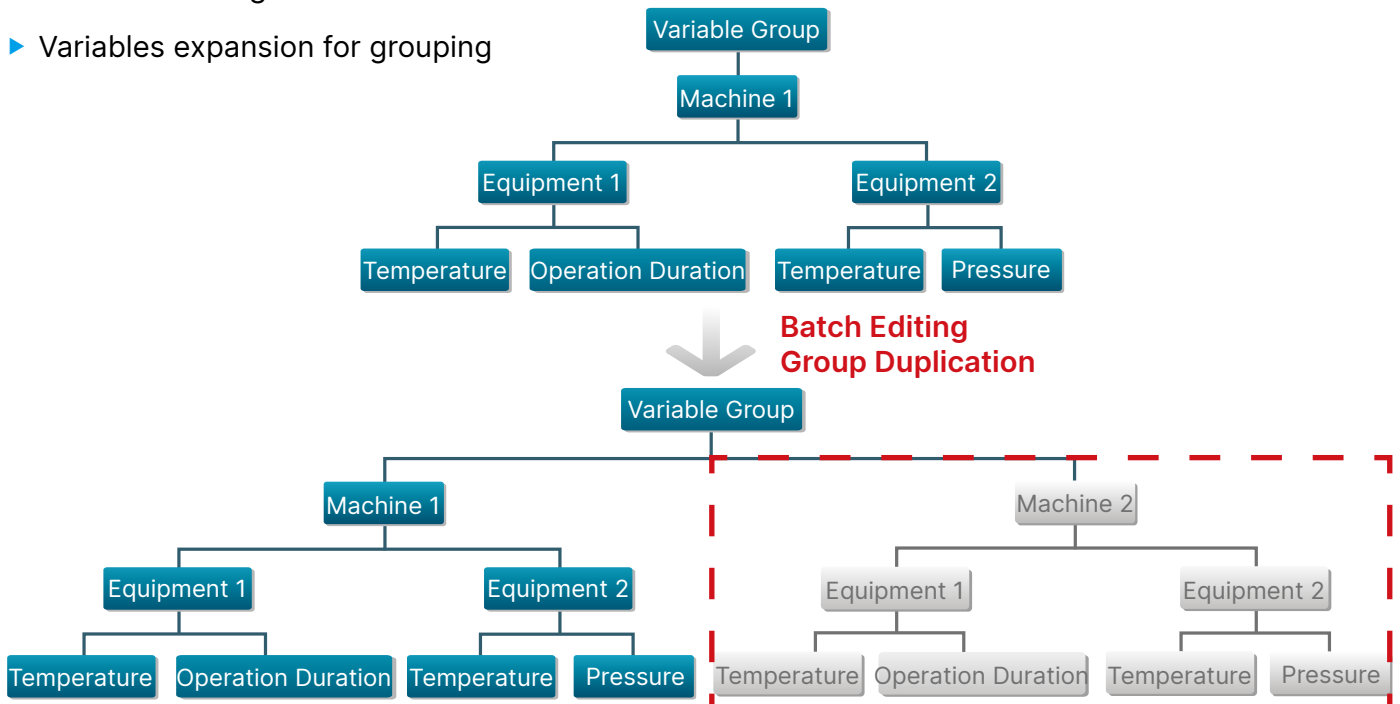
Added an Electronic Signature Function

▶ Meet the requirement of FDA 21 CFR Part 11. Available for the following module functions: variable operation, recipe operation, alarm ack, window operation, system exit, and user management

Alarm Notification

▶ SMS text message, Email, text-to-voice phone call, Line / WhatsApp / WeChat, etc. to view and confirm alerts in real time to ensure system operation

Standard Graphics Library

▶ Up to 1,000 common industrial graphics

▶ Arbitrary scaling of graphics

▶ Custom graphics only need to define and combine graphics properties, animations and events to generate dynamic graphics with various functions

Video Monitoring

▶ Support RTSP open communication protocol, Without install 3rd party software

▶ Video preview, recording, screenshot, and playback for multiple users

▶ User authority management, remote equipment configuration, and camera setting adjustment

▶ Video playing modes include fast / slow playback, frame by frame playback, pause, resume, and stop

Success Stories

Wood Edge Sealing Machine Monitoring

Customer Needs

The customer requested integrating both new and old equipment for network connection, and collecting production data and equipment status in real time for recording, analysis and visualization.

Solution

▶ Optimizes efficiency with equipment automation and automatic recipe/process data import via barcode scanning

▶ Multi-language (Chinese and English) function enables quick duplication and highly efficient secondary development

▶ Approaches to the task: Data input/output/monitoring, reference tables for function configuration, diverse processing (dispersant, pre-milling, pre-heating, head and tail cutting, finishing, and more)

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

Benefits

▶ Automated wood edge grinding saves labor cost

▶ Real-time monitoring of equipment operation and processes provide high accuracy

▶ Smart and highly automated, it suits industry-specific equipment

DIAView

PLC

CANopen

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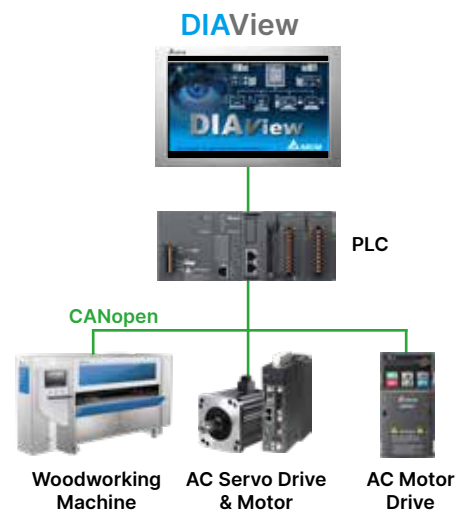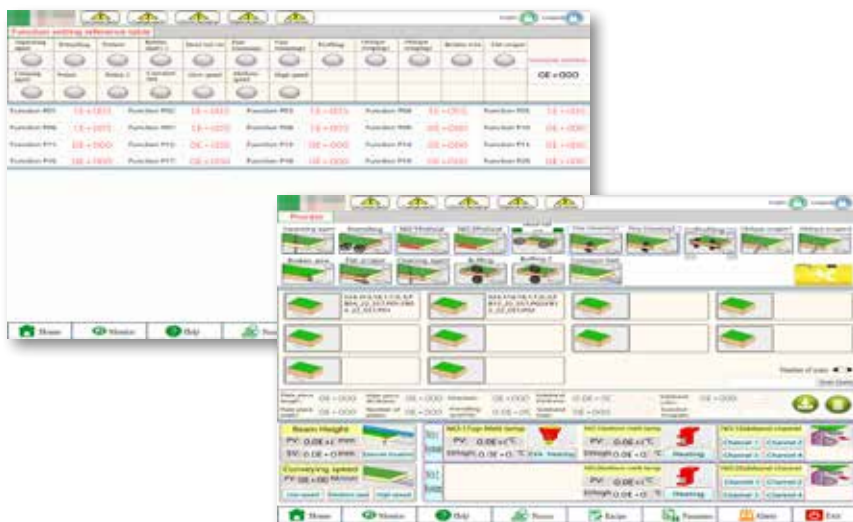
Automobile Factory Energy Management

Customer Needs

The customer required a smart, real-time energy management system that provides energy consumption analysis for efficient, systematic energy savings.

Solution

▶ Real-time monitoring of energy usage, power consumption trends, alarm notifications and data inquiry

▶ A monitoring and control center with a variety of data display

▶ Data visualization with diverse patterns (curves, bar / pie charts) for records of daily / monthly / annual energy consumption

Benefits

▶ Builds a monitoring and control center for digitalized management to improve energy efficiency for the factory

▶ Solves the issues of poor efficiency due to difficult data collection in large-scale and spacious factories and manual data entry, and avoids human errors

▶ Facilitates energy analytics with the energy management system for efficient energy utilization

Success Stories

IIoT Solution for Smart Equipment

Customer Needs

The customer requested integrating new and old equipment for network connection, production data and equipment status collection in real time for recording, analysis and visualization.

Solution

▶ Applies Delta's PLCs to integrate new and old equipment and collects production data via the Equipment IoT Platform DIALink

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

▶ The DIAView SCADA System displays production data, equipment utilization rate, and other operation and execution status

▶ Provides efficient equipment and personnel management in real time with reliable data and information

Benefits

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

▶ Enhanced yield rate and productivity

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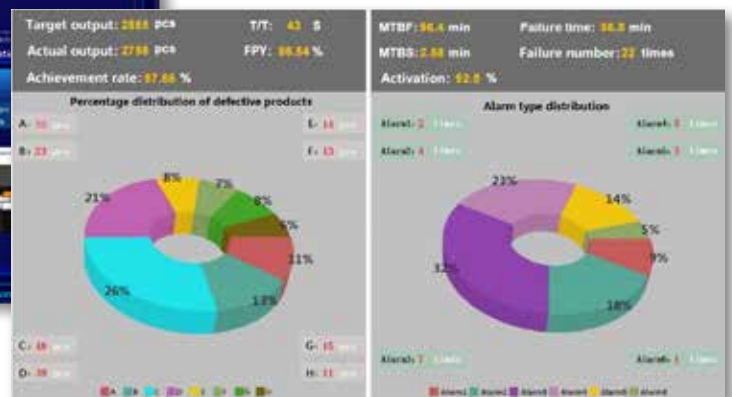
Energy Management for Chemical Tanks

Customer Needs

The chemical tanks in the customer's factory are divided into two areas for water inflow, material feeding, semi-finished product processing, alkali dosing, heating / cooling and more. The customer required real-time monitoring of chemical tank operation for highly efficient management.

Solution

▶ The DIAView monitors the temperature, material feeding amount, alarms and more during processing

▶ Records of operation variables and processing data allows easy tracking

▶ Recipe management function facilitates processing and reduces human errors

Benefits

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

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

▶ Alarm notifications raise on-site troubleshooting efficiency and equipment utilization rate
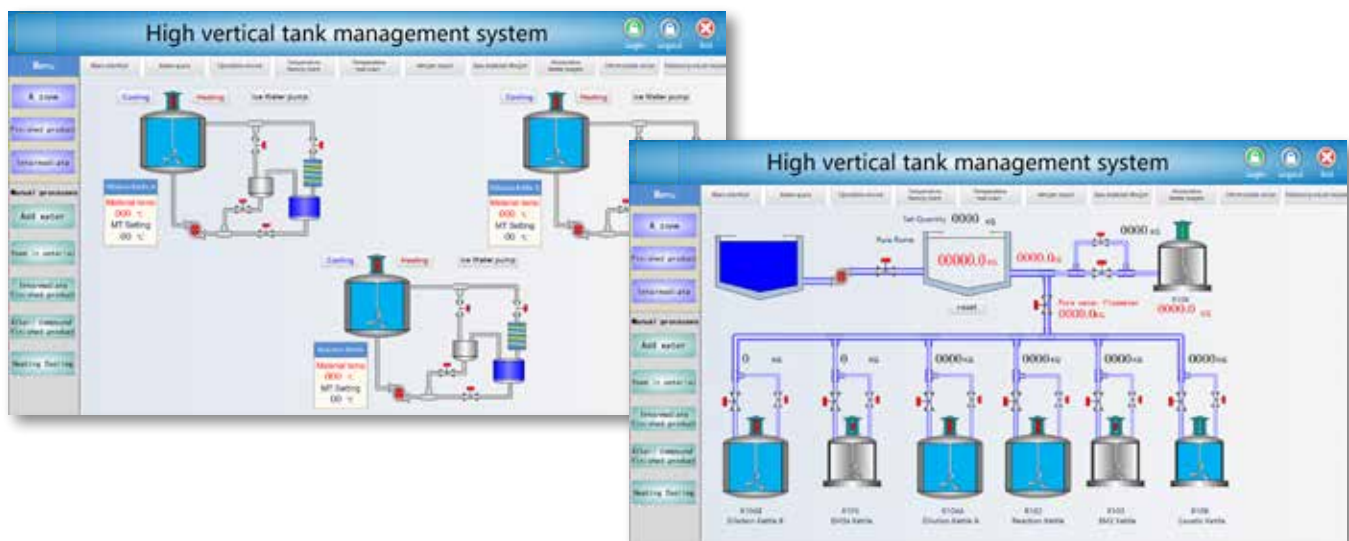
Success Stories

Environmental Monitoring and Security System

Customer Needs

The client requested a monitoring and control center to integrate the fire suppression system, elevator system, boiler system, wastewater / exhaust system and dust collectors to display all related data and perform centralized and digitalized management.

Solution

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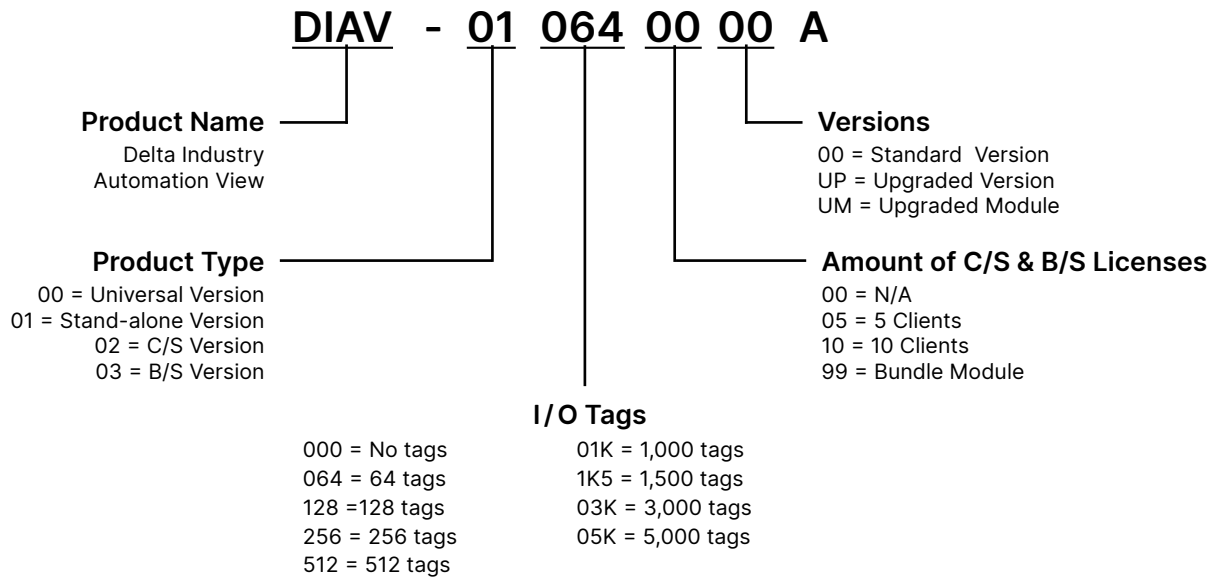
Benefits

▶ Paperless, automatic statistics and analysis, saving manpower

▶ Equipment inspection checklists / plans for maintenance and records

▶ Data visualization in real-time with high accuracy for timely troubleshooting

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 = Standard Version
UP = Upgraded Version
UM = Upgraded Module

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

I/O Tags

000 = No tags	01K = 1,000 tags
064 = 64 tags	1K5 = 1,500 tags
128 = 128 tags	03K = 3,000 tags
256 = 256 tags	05K = 5,000 tags
512 = 512 tags	

Software Licensing

Licensing Fees and Charges on I/O Tags

▶ Use of the DIAView and the license fees are subject to the licensed I/O tags. No additional charge is required for the software or system development

▶ When licensing is authorized, users can carry out all authorizations with a supplied USB dongle key. If unauthorized, a trial session lasts for 2 hours only

▶ 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)

I/O Tags

▶ Stand-alone version
- I/O tags: 64 / 128 / 256 / 512 / 1,000 / 1,500 / 3,000 / 5,000

▶ C/S and B/S versions
- I/O tags: 64 / 128 / 256 / 512 / 1,000 / 1,500 / 3,000 / 5,000
- Licenses: 5 / 10 clients

DELTA

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-0105K0000A	5,000 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-0005K00UPA	3,000 upgraded to 5,000 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-0205K0500A	5 clients, 5,000 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-0205K1000A	10 clients, 5,000 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-0305K0500A	5 clients, 5,000 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-0305K1000A	10 clients, 5,000 tags, USB dongle key
	Upgraded Version	DIAV-0300005UPA	Upgraded to 5 clients, USB dongle key
		DIAV-0300010UPA	Upgraded to 10 clients, USB dongle key
Communication Module		DIAV-0000099UMA	OPC UA & Web API module, support Standalone, C/S, B/S version, USB dongle key

Smarter. Greener. Together.

Industrial Automation Headquarters

Taiwan: Delta Electronics, Inc.
Taoyuan Technology Center
No.18, Xinglong Rd., Taoyuan District,
Taoyuan City 33068, Taiwan
TEL: +886-3-362-6301 / FAX: +886-3-371-6301

Asia

China: Delta Electronics (Shanghai) Co., Ltd.
No.182 Minyu Rd., Pudong Shanghai, P.R.C.
Post code : 201209
TEL: +86-21-6872-3988 / FAX: +86-21-6872-3996
Customer Service: 400-820-9595

Japan: Delta Electronics (Japan), Inc.
Industrial Automation Sales Department
2-1-14 Shibadaimon, Minato-ku
Tokyo, Japan 105-0012
TEL: +81-3-5733-1155 / FAX: +81-3-5733-1255

Korea: Delta Electronics (Korea), Inc.
1511, 219, Gasan Digital 1-Ro., Geumcheon-gu,
Seoul, 08501 South Korea
TEL: +82-2-515-5305 / FAX: +82-2-515-5302

Singapore: Delta Energy Systems (Singapore) Pte Ltd.
4 Kaki Bukit Avenue 1, #05-04, Singapore 417939
TEL: +65-6747-5155 / FAX: +65-6744-9228

India: Delta Electronics (India) Pvt. Ltd.
Plot No.43, Sector 35, HSIIDC Gurgaon,
PIN 122001, Haryana, India
TEL: +91-124-4874900 / FAX: +91-124-4874945

Thailand: Delta Electronics (Thailand) PCL.
909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z),
Pattana 1 Rd., T.Phraksa, A.Muang,
Samutprakarn 10280, Thailand
TEL: +66-2709-2800 / FAX: +66-2709-2827

Australia: Delta Electronics (Australia) Pty Ltd.
Unit 2, Building A, 18-24 Ricketts Road,
Mount Waverley, Victoria 3149 Australia
Mail: IA.au@deltaww.com
TEL: +61-1300-335-823 / +61-3-9543-3720

Americas

USA: Delta Electronics (Americas) Ltd.
5101 Davis Drive, Research Triangle Park, NC 27709, U.S.A.
TEL: +1-919-767-3813 / FAX: +1-919-767-3969

Brazil: Delta Electronics Brazil Ltd.
Estrada Velha Rio-São Paulo, 5300 Eugênio de
Melo - São José dos Campos CEP: 12247-004 - SP - Brazil
TEL: +55-12-3932-2300 / FAX: +55-12-3932-237

Mexico: Delta Electronics International Mexico S.A. de C.V.
Gustavo Baz No. 309 Edificio E PB 103
Colonia La Loma, CP 54060
Tlalnepantla, Estado de México
TEL: +52-55-3603-9200

EMEA

EMEA Headquarters: Delta Electronics (Netherlands) B.V.
Sales: Sales.IA.EMEA@deltaww.com
Marketing: Marketing.IA.EMEA@deltaww.com
Technical Support: iatechnicalsupport@deltaww.com
Customer Support: Customer-Support@deltaww.com
Service: Service.IA.emea@deltaww.com
TEL: +31(0)40 800 3900

BENELUX: Delta Electronics (Netherlands) B.V.
Automotive Campus 260, 5708 JZ Helmond, The Netherlands
Mail: Sales.IA.Benelux@deltaww.com
TEL: +31(0)40 800 3900

DACH: Delta Electronics (Netherlands) B.V.
Coesterweg 45,D-59494 Soest,Germany
Mail: Sales.IA.DACH@deltaww.com
TEL: +49 2921 987 238

France: Delta Electronics (France) S.A.
ZI du bois Challand 2,15 rue des Pyrénées,
Lisses, 91090 Evry Cedex, France
Mail: Sales.IA.FR@deltaww.com
TEL: +33(0)1 69 77 82 60

Iberia: Delta Electronics Solutions (Spain) S.L.U
Ctra. De Villaverde a Vallecas, 265 1º Dcha Ed.
Hormigueras – P.I. de Vallecas 28031 Madrid
TEL: +34(0)91 223 74 20

Carrer Llacuna 166, 08018 Barcelona, Spain
Mail: Sales.IA.Iberia@deltaww.com

Italy: Delta Electronics (Italy) S.r.l.
Via Meda 2–22060 Novedrate(CO)
Piazza Grazioli 18 00186 Roma Italy
Mail: Sales.IA.Italy@deltaww.com
TEL: +39 039 8900365

Russia: Delta Energy System LLC
Vereyskaya Plaza II, office 112 Vereyskaya str.
17 121357 Moscow Russia
Mail: Sales.IA.RU@deltaww.com
TEL: +7 495 644 3240

Turkey: Delta Greentech Elektronik San. Ltd. Sti. (Turkey)
Şerifali Mah. Hendem Cad. Kule Sok. No:16-A
34775 Ümraniye – İstanbul
Mail: Sales.IA.Turkey@deltaww.com
TEL: + 90 216 499 9910

MEA: Eltek Dubai (Eltek MEA DMCC)
OFFICE 2504, 25th Floor, Saba Tower 1,
Jumeirah Lakes Towers, Dubai, UAE
Mail: Sales.IA.MEA@deltaww.com
TEL: +971(0)4 2690148

*We reserve the right to change the information in this catalogue without prior notice.

DELTA_ IA-OMS_DIAView_C_EN_20230512