

Network-based Control System STARDOM



Bulletin 34P02A00-11E

**Simple,
Secure Operation**

- ◆ Site status can be checked from anywhere
- ◆ Commercial Off-The-Shelf (COTS)

**Networking
Versatility**

- ◆ Connectable to diverse devices
- ◆ OPC server/client connections supported

**VDS Web-based HMI and SCADA
software will revolutionize your
process operations.**

Versatile Data Server Software (VDS), which is Web-based HMI/SCADA software, adds cutting-edge network technologies to the conventional SCADA functionality such as data acquisition from various I/O devices, data saving, and process operation via a high-definition graphical user interface. The software thus makes operation and maintenance work that much simpler.

**Superb Operability
with First-rate
Safety**

- ◆ A wealth of functions to simplify operations

**Concise
Application
Development
Environment**

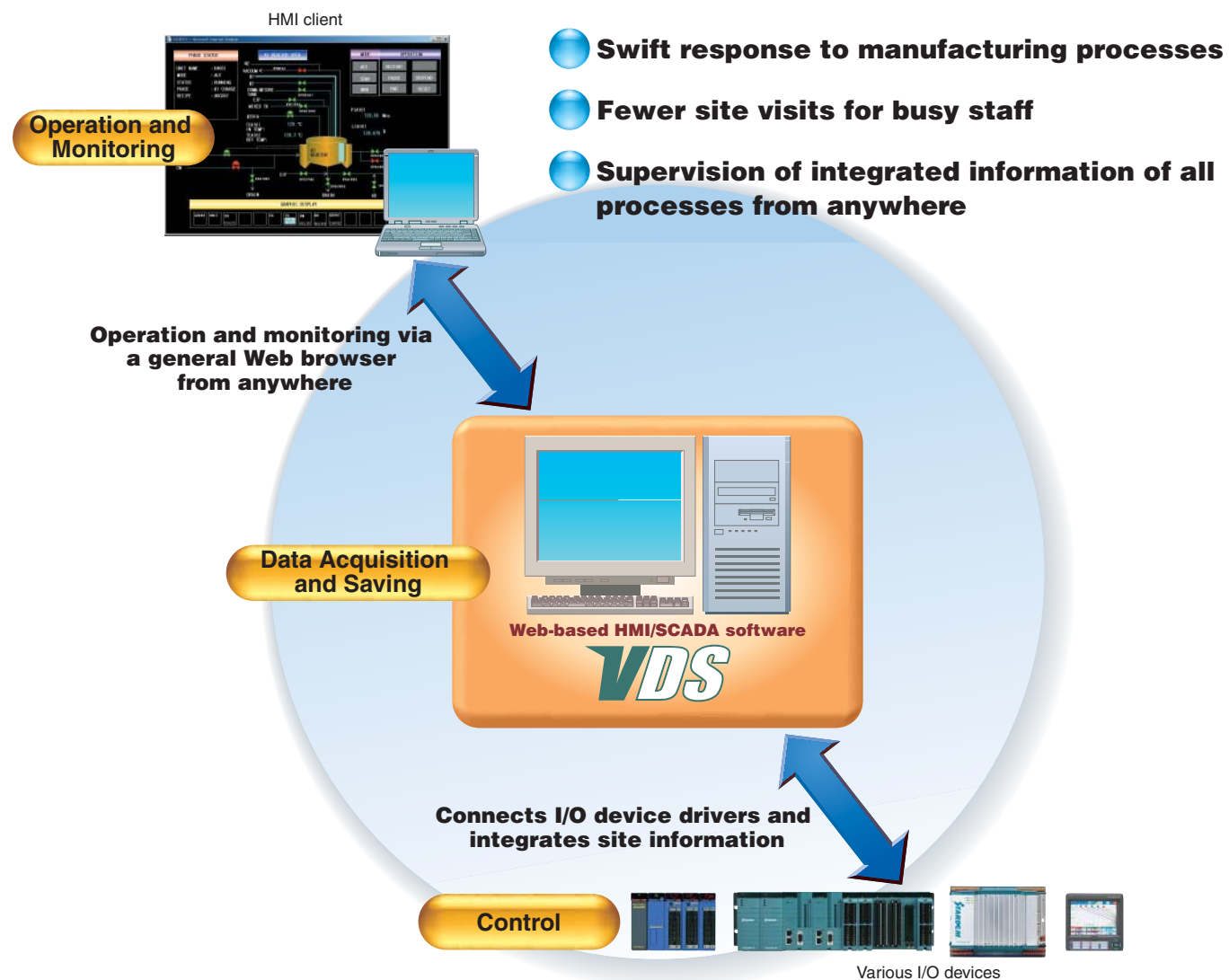
- ◆ Simple software structure
- ◆ Object-oriented, efficient engineering

VDS

Simple, Secure Operation

Check the Site Statuses from Anywhere

VDS's graphic windows run on a general Web browser, so special dedicated software for an HMI client is not needed. Just a personal computer with Internet access can be used as an HMI client to access the site and perform operations and monitoring anytime, anywhere.



Commercial Off-The-Shelf (COTS)

A COTS personal computer can be used to run VDS and as an HMI client, and a general-purpose TCP/IP-based network for controllers and devices. An HMI client is a thin client requiring no special dedicated software. Total cost of ownership (TCO) for HMIs is thus greatly reduced.

- No special hardware and software for process operation required
- Quicker maintenance and upgrade at lower cost

VDS

Networking Versatility

Connectable to Diverse Devices

VDS can easily link a variety of equipment including FCN (Field Control Node) and FCJ (Field Control Junction) autonomous controllers, various suppliers' programmable logic controllers, temperature controllers, and power monitors, on an integrated network. Whether for factory or process automation equipment, VDS can handle various applications for production lines and manufacturing processes.



Autonomous Controllers

By linking FCN and FCJ autonomous controllers featuring loop control and sequence control, a high-performance process control system can be built at low cost.

Other Suppliers' PLCs

Not only Yokogawa FA-M3 but also Mitsubishi Electric MELSEC Series and OMRON SYSMAC Series programmable logic controllers can be connected. (Connectivity for other popular PLCs such as Allen-Bradley and Siemens controllers will be supported in due course.)

Power Monitors

By connecting Yokogawa power monitors, various power-related data can be acquired and power demands can be supervised.

Data Acquisition Equipment and Recorders

By connecting Yokogawa DARWIN data acquisition equipment and DAQSTATION networking paper-free recorders, measured data can be saved and reported in print.

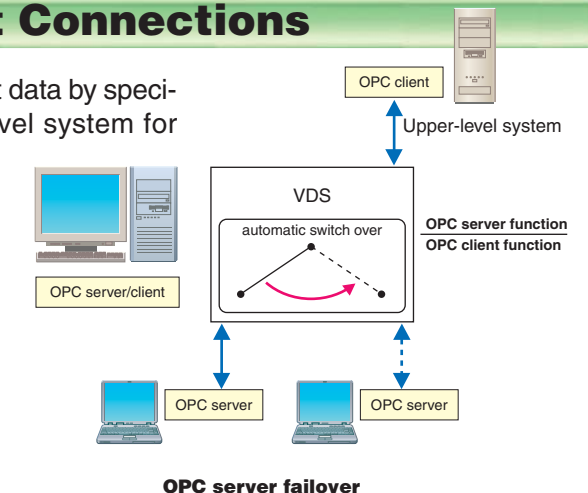
Temperature Controllers

By connecting Green Series temperature controllers from Yokogawa, the PID temperature control loops can be operated and monitored locally and remotely.

Supports OPC Server/Client Connections

A third-party OPC server can be connected to collect data by specifying tags and to exchange data with an upper-level system for production management and quality control.

OPC client function supports failover function by monitoring the network and OPC server status.



VDS Superb Operability with First-rate Safety

A Wealth of Functions to Simplify Operations

In addition to the graphic window presentation on a Web browser, VDS also offers a host of functions to make operations easier.

Graphic Windows for Easy Visualization

VDS offers extensive graphic functions for building graphic windows that show parameters and data for efficient operation.



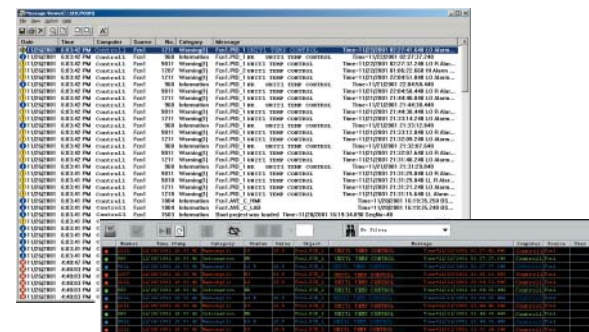
Security for Operation

VDS's security functions can restrict access to writing data, running a program etc, to protect the system against unauthorized users. VDS also records a log of the actions taken at the system as a detailed audit trail. Even when accessing an on-site system via a Web browser, users must enter their user name and password for authentication.



Extensive Message Management Functions

Process alarms and user-defined messages can be viewed on the alarm summary display and announced using sound output in different ways depending on their importance, making them easy for operators to identify. These messages can be analyzed later on the historical message file and on a printout.



Report Package for User Report Management

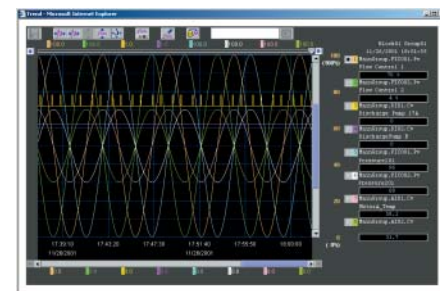
Report Package allows users to create reports (monthly, daily, lot, and simple batch reports) using Microsoft Excel and print them. The report data can also be saved to a relational database (such as SQL Server/Oracle).

Fresh Water Treatment Daily Report						
Time	Sea Water	Fresh Water	DP	Chemical	Elec. Power	Temperature
	M3PM	M3PM	PSI	CMFRM	KWHM	PH
1:00 AM	97.95	88.51	27.25	4.57	35.98	7.5
2:00 AM	94.22	85.25	27.25	4.56	35.98	7.5
3:00 AM	89.46	81.41	27.13	4.43	35.71	7.5
4:00 AM	85.98	78.24	27.17	4.56	34.98	7.5
5:00 AM	89.58	81.89	27.23	4.51	34.78	7.5
6:00 AM	102.56	93.33	27.88	4.98	38.12	7.5
7:00 AM	120.24	108.51	28.11	5.28	39.89	7.5
8:00 AM	125.45	114.16	28.01	5.31	40.34	7.4
9:00 AM	97.29	88.51	27.88	5.21	47.34	7.4
10:00 AM	91.29	88.51	27.25	4.51	35.98	7.4
11:00 AM	97.29	88.51	27.25	4.57	35.98	7.5
12:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
1:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
2:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
3:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
4:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
5:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
6:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
7:00 PM	97.29	88.51	27.25	4.57	35.98	7.5
8:00 PM	97.29	88.51	27.25	4.57	35.98	7.5

Daily report

Trend Package for Effective Use of Acquired Data

A trend graph of acquired and saved data can be pasted to a desired position on a graphic window so that the progression of data over time can be viewed. Trend data saved in VDS can also be exported to a CSV format file for preparing reports and in-depth analyses.



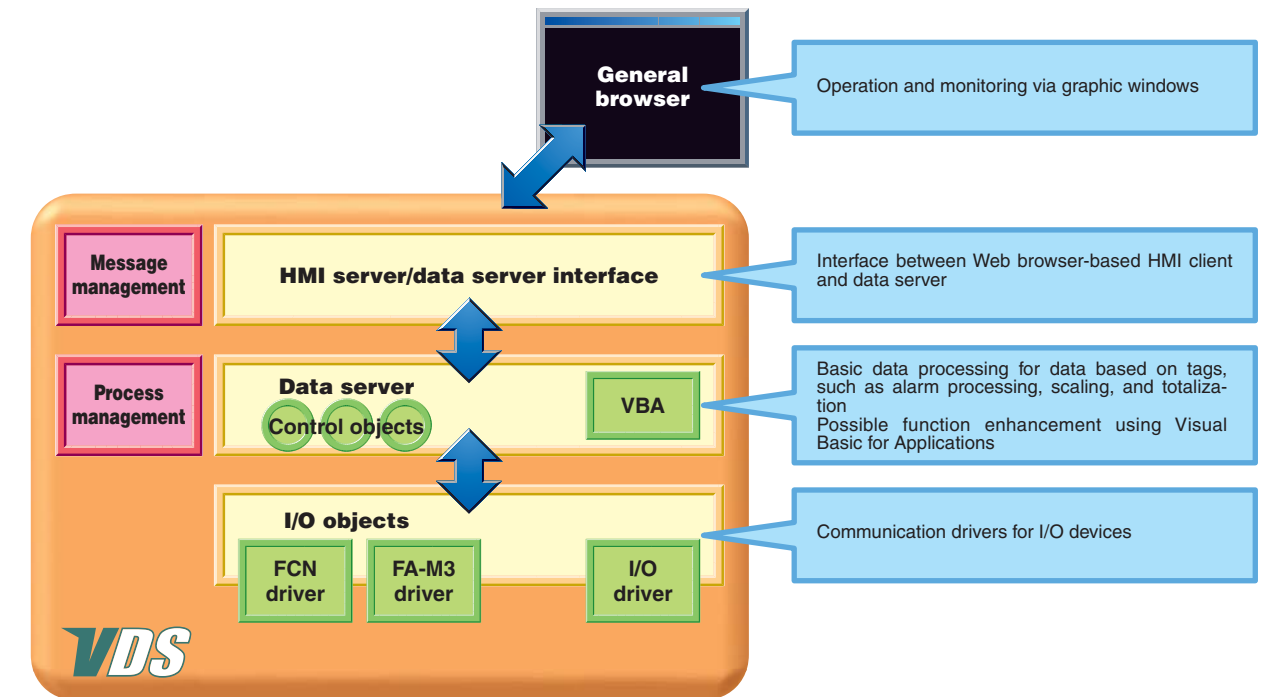
VDS Concise Application Development Environment

Simple Software Structure

To provide a concise environment for developing applications, maximize throughput and facilitate maintenance, VDS has a simple software structure and standard functions for managing users' own programs.

Hierarchical Software with Clear Functional Partitioning

From the functions for communicating with I/O devices to those for converting data into a Web-compatible format and transferring it for presentation on a Web browser, VDS consists of a simple, hierarchical structure of functions.

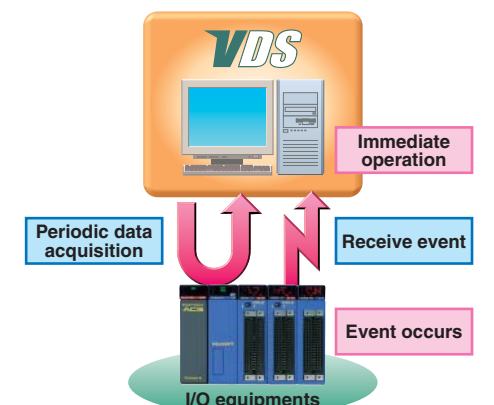


Message and Process Management Included as Standard

Functions for managing alarms and messages, which are crucial in equipment and process operation, and process management functions to run and quit various programs, can be developed effortlessly using standard tools. There is no need to develop management programs using Visual Basic or other programming languages.

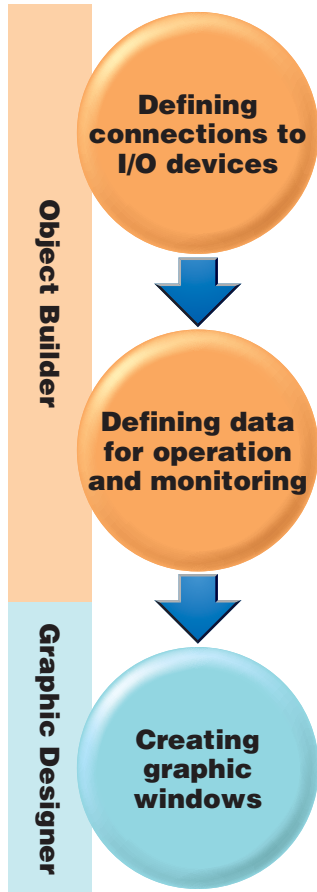
Event Driven System quickly responds to the event notification

In addition to the periodic monitoring which other SCADAs adopt, event driven type enables operation by receiving the event notification. A high process performance is realized since the process is triggered by the event notification instead of processing constantly.



Object-oriented, Effortless Engineering

Object-oriented engineering tools for all engineering tasks from defining I/O device connections and data acquisition specifications up to creation of graphic windows make application development more efficient.

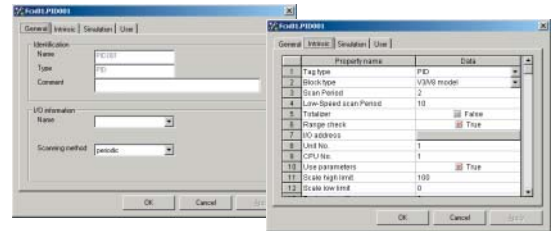


Simply select a proper driver for each I/O device to be connected and make basic communication settings such as an IP address. There's no need to write a troublesome communication program.



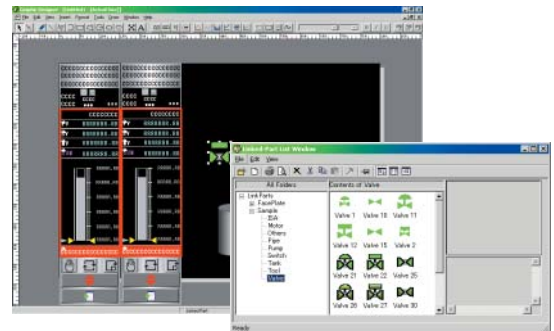
Defining an I/O driver connection using Object Builder

Simply define tags called control objects, set the method of acquiring their data (periodically, one-shot, or else), and make auxiliary settings such as the scaling specifications. Control objects you defined can be grouped for reuse.



Defining a tag using Object Builder

Graphic windows running on a Web browser can be created by simply pasting supplied graphic components and specifying their actions.



Creating a graphic window using Graphic Designer

Test Package, a Powerful Helper for Debugging

Optional Test Package features useful functions for efficient debugging during system configuration, including:

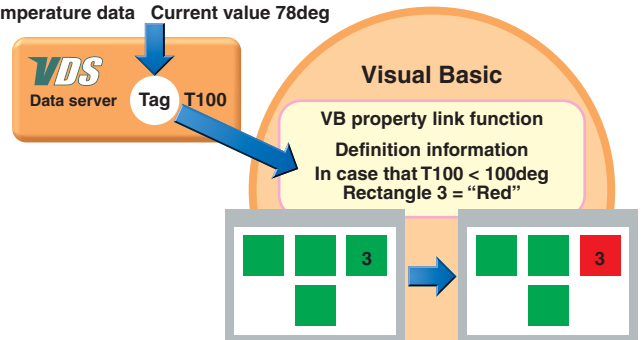
- ◆ **Simulation**
Enables function tests with the predefined simulated inputs without a target machine.
- ◆ **Device Monitor**
Enables the users to view and change the CPU statuses and internal device data of connected PLCs.
- ◆ **Trace Management**
Changes in data can be recorded with timed traces.

Easy linkage with VB applications

“VB property link” realizing the data linkage with separately developed VB application is supported as a standard function.

“OPC data link package for .NET” supports the latest Visual Studio .net.

Temperature data Current value 78deg



Flexible Package Types for Applications of All Sizes and Purposes

VDS Software Medium

Name	Model	Description
Software medium	NT201AJ	CD-ROM containing VDS basic and optional software* and electronic documents

* To run VDS basic and optional software, you need to purchase the licenses of the respective software packages.

VDS Basic Software License

Name	Model	Description	
Basic software license	Full-time version**	NT610FJ	Available in 8 types depending on the number of definable tags from 50 to 5000.
	Runtime version**	NT610RJ	Includes a license for the first HMI client (Web browser) to access VDS.
Upgrade kit	Full-time version	NT620FJ	Upgrades the basic software license to increase the number of definable tags.
	Runtime version	NT620RJ	
Additional HMI client license	NT625AJ	License for increasing the number of HMI clients (Web browsers) that can access VDS concurrently.	

** The full-time version has both development and runtime environments; the runtime version offers only the runtime environment.

Optional Software Licenses

Options for Routine Tasks

Name	Model	Description	
Report Package	Full-time version	NT301AJ	Helps create monthly, daily, lot, and simple batch reports. (Needs Microsoft Excel to run.)
	Runtime version	NT301RJ	
Trend Package	Full-time version	NT302AJ	Displays trend graphs of data acquired by VDS.
	Runtime version	NT302RJ	
Test Package	Full-time version	NT303AJ	Helps debugging by providing I/O simulation functions for debugging without target machine, device monitor functions to monitor the connected PLCs' statuses, and more.
	Runtime version	NT303RJ	
Multi-task Package	Full-time version	NT304AJ	Enables intercommunication of signals with Visual Basic programs and exchange of array data in a PLC with Visual Basic programs.
	Runtime version	NT304RJ	
Extended Security Package	NT320AJ	Package to strong then the security functions of VDS; such as protecting files created during operation.	
OPC Data Link Package for .NET	NT336AJ	Links various control properties in Microsoft Visual Studio .NET " Visual Basic" or "C# " to control object properties without developing any program.	

Options for Device Connections

Name	Model	Description
MELSEC Driver	NT351AJ	Driver for connecting MELSEC Series controllers from Mitsubishi Electric Corporation. Implements EZSocket.
SYSMAC Driver	NT356AJ	Driver for connecting SYSMAC Series controllers from OMRON Corporation. Implements FinsGateway.
OPC Server Driver	NT358AJ	Driver for connecting a third-party OPC server.
DARWIN Driver	NT365AJ	Driver for connecting Yokogawa DARWIN Series units and DAQSTATION recorders.

Note: For the models supported by the individual drivers, see the respective General Specification sheets.

Note: No optional software is required for VDS to connect to the following devices: FCN/FCJ autonomous controllers, FA-M3 universal-range controllers, Green Series controllers, and UPM100/101 power monitors. More models will be added to the range of supported models.

Note 1: Each software license, except for the software medium (Model NT201AJ), is required for each computer running VDS to run the corresponding software.

Note 2: The software that is not offered in full-time and runtime versions can run in both the development and runtime environments.

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Represented by:



Printed in Japan, 208(KP) [Ed : 09/b]

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