User's Manual

WX1
GateDX-P

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YOKOGAWA
Yokogawa Electric Corporation

IM WX1-02E
3rd Edition

Foreword

This manual describes the functions and operating procedures of GateDX-P. To ensure correct use, please read this manual thoroughly before beginning operation. After reading the manual, keep it in a convenient location for quick reference in the event a question arises.
Gate-DXP is a software program that acquires data from the DX100P/DX200 and transfers it to DAQLOGGER or Remote Monitor.

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Overview of This Manual

Structure of This Manual

This user's manual consists of the following chapters.

Chapter	Title	Description
1	**Overview**	Gives an overview of the GateDX-P software.
		Lists the PC requirements for running Gate-DXP and gives information about system configuration.
2	**Operating Procedure**	Gives procedures for entering environment and data logging interval settings, and how to monitor the operational status of the software.
3	**Detailed Description of Functions**	Provides a detailed description of the functions of GateDX-P. Lists error messages, their causes, and their corrective actions.
Index		An alphabetical index of the manual's contents.

Scope of This Manual

This manual provides instructions on how perform basic operations with the software when running under Windows XP, Windows 2000, and Windows Vista. For information regarding the basic operations of Windows, see the Windows user's manual.

Conventions Used in This Manual

- **Units**
  K Denotes 1024. Example: 10 KB
  M Denotes 1024K. Example: 10 MB

- **Boldface Type**
  Hardware and software controls that the user manipulates such as dialog boxes, buttons, and menu commands are often set in boldface type.

- **Subheadings**
  On pages in chapters 1 through 3 that describe operating procedures, the following subheadings are used to distinguish the procedure from their explanations.

Procedure This subsection contains the operating procedure used to carry out the function described in the current section. All procedures are written with inexperienced users in mind; experienced users may not need to carry out all the steps.

Note Calls attention to information that is important for proper operation of the instrument.

Contents

1.1 Overview of GateDX-P Functions

Gate-DXP is a software program that acquires data from the DX100P/DX200 and transfers it to DAQLOGGER or Remote Monitor. Using GateDX-P allows you to monitor data on DAQLOGGER or Remote Monitor that is measured on the DX100P or DX200P.
Yokogawa's DAQLOGGER is a software program that allows users to open a connection from their PC to various kinds of Yokogawa recorders (the mR, VR, DARWIN, DX, MV, and CX) and perform data logging and monitoring.
Yokogawa's Remote Monitor is application software that enables monitoring of data logged by recorders or data logging software.

Features

- Runs as a Windows application.
- Up to 16 DX100P/DX200Ps can be linked.
- Measurement can be performed at intervals of up to 0.5 seconds*.
  * However, DAQLOGGER's shortest interval is 1 second. Also, the maximum speed of 0.5 seconds may not be attainable depending on the amount of data being read, the response time of the device, and the communication speed.

1.2 System Overview

System

This software can connect with and download data from DX100P/DX200Ps having the following characteristics.

- DX100P: Style 4 or later. The /C2 option is required for RS-232 communications. The /C3 option is required for RS-422-A/485 communications.
- DX200P: Style 4 or later. The /C2 option is required for RS-232 communications. The /C3 option is required for RS-422-A/485 communications.

Required Operating Systems

Run DAQWORX under any of the following operating systems.

- Windows 2000 Professional SP4
- Windows XP Home Edition SP2
- Windows XP Professional SP2 (excluding Windows XP Professional x64 Edition)
- Windows Vista Home Premium (excluding the 64-bit edition)
- Windows Vista Business (excluding the 64-bit edition)

The language displayed by the software under different language versions of the OS are as follows.

OS Language	Software Language
Japanese	Japanese
Other	English

Hardware Requirements

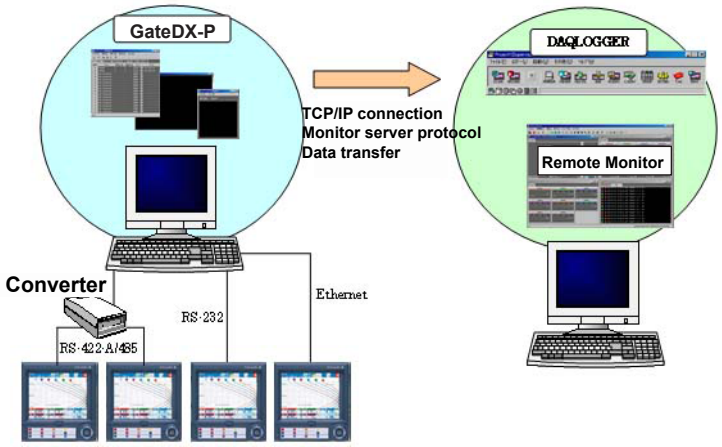
The following hardware is required to use GateDX-P.

- PC: A PC that runs one of the OS above, and that meets the following CPU and memory requirements.
  When Using Windows 2000 or Windows XP
  Pentium 4, 1.6 GHz or faster
  512 MB or more of memory
  When Using Windows Vista
  Pentium 4, 3 GHz or faster
  2GB or more of memory
- Free disk space: 200 MB or more
- Communication device: An Ethernet (when connecting to DAQLOGGER or Remote Monitor), RS-232, or GPIB port that is recognized by the operating system.
- CD-ROM drive: Used to install the software
- Peripheral devices: A mouse supported by the operating system
- GP-IB port: Required for GPIB communications between the software and a WT series instrument
- Monitor: **When Using Windows 2000 or Windows XP**
  A monitor supported by the OS of 1024 × 768 dpi or higher and 65,536 colors or more.
  When Using Windows Vista
  A video card recommended for use with Vista and monitor supported by the OS of 1024 × 768 dpi or higher and 65,536 colors or more.

Note

An RS-232 to RS-422-A/485 converter is required to perform communications between the software and another DX100P/DX200P via RS-422-A/485 (Yokogawa ML2 RS232C/RS485 recommended).

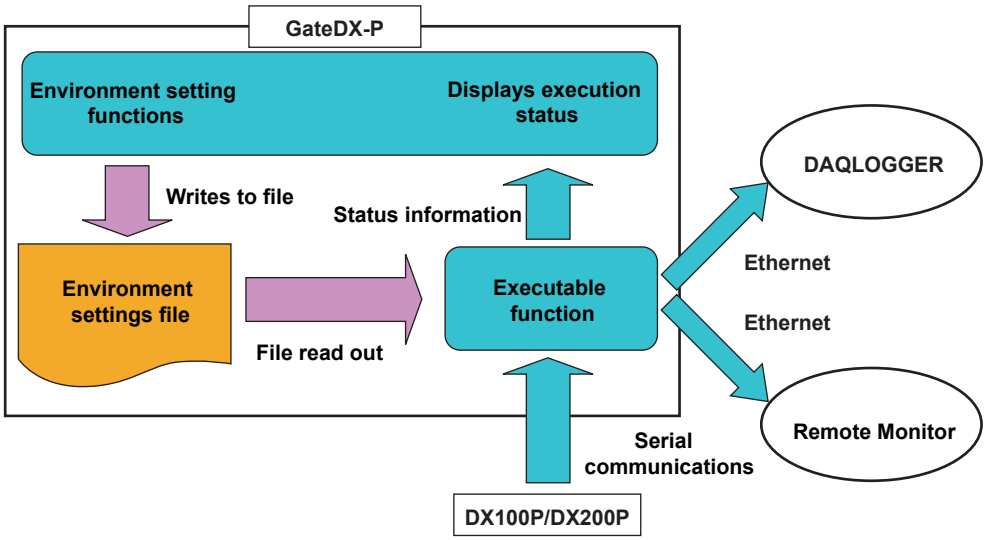
System Configuration



Up to 16 DX100P/DX200Ps

It is recommended that you run GateDX-P and DAQLOGGER on separate PCs.

Software Configuration



GateDX-P Configurator consists of two separate software functions. The role of each function within the configurator is as follows:

- **Environment Setting Functions**
  Acts as the user interface for GateDX-P.
  These functions allow the user to enter various settings required by the executable function for communications with the DX100P/DX200P, as well as those required for data transfers to and from DAQLOGGER and Remote Monitor. The user can also use the environment setting functions to start/stop the executable function, or view the execution status.
- **Executable Function**
  The software reads data from the DX100P/DX200P at fixed intervals. It also acts as a monitor server, transferring data to DAQLOGGER and Remote Monitor.

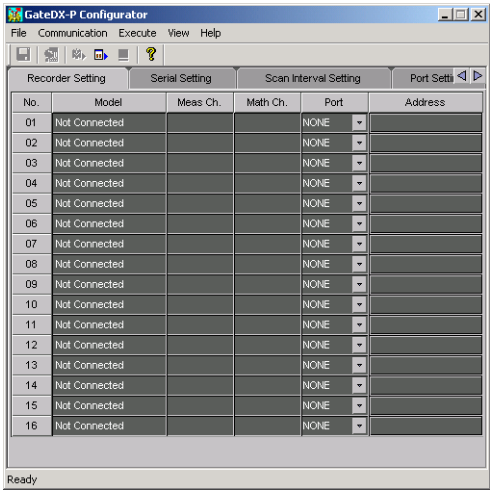
2.1 Running and Exiting GateDX-P

Running the Software

Procedure

1. From the Windows Start menu, choose **Programs > YOKOGAWA DAQWORX > GateDXP > GateDX-P**.

   The Gate-DX-P Configurator opens, displaying the user interface.

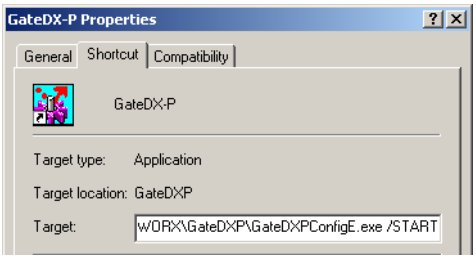


Note

- When you start GateDX-P it is restored to the same status that was active during the previous session.
- If the program is closed while a process or service is running, the license will be considered to be “in use.” If the message, “Invalid license number. Please reinstall.” appears when restarting the program, it may indicate that the user is attempting to run a Gate program in excess of the number of available licenses.

Starting GateDX-P in Acquisition Start Mode

1. From the Windows Start menu, choose **Programs > YOKOGAWA DAQWORX > GateDXP > GateDX-P**, then right-click GateDX-P and select Create Shortcut.
2. Right-click the shortcut icon and select Properties.
3. Choose the Shortcut tab, then add /START to the right of the path in the Target box and click OK.



4. Choose the shortcut from the Windows Start menu. The connection status of the previous session is restored, and acquisition begins.

Exiting the Software

Procedure

1. Choose **File > Exit** from the menu bar, or click the X button at the right end of the title bar.

   GateDX-P closes.

2.2 Entering Environment Settings

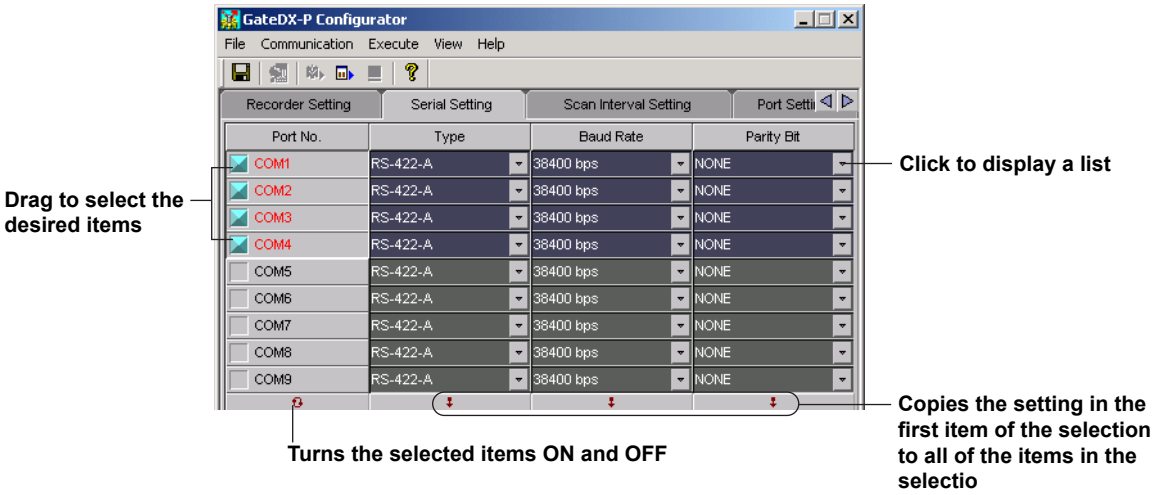
The following settings can be entered using the configurator.

- DX100P/DX200P assignments, communications settings, and login settings
- Acquisition interval settings for each DX100P/DX200P
- Port number settings (for the monitor server) as needed
- The settings can be saved

Serial Port Settings

Procedure

1. Click the Serial Setting tab or choose View > Serial Setting from the menu bar.
The Serial Setting tab is displayed.



2. Enter settings for each item.

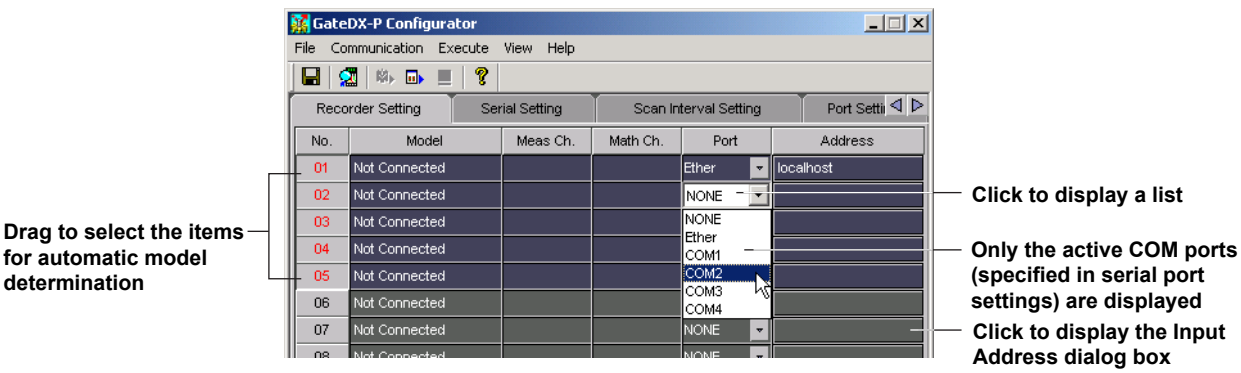
Port number:	ON (blue)/OFF (gray)
Type:	RS-232-C, RS-422-A/485
Baud rate:	9600,19200,38400
Parity:	NONE, ODD, EVEN

Recorder Settings

Procedure

1. Click the Recorder Setting tab or choose **View > Recorder Setting** from the menu bar.

The Recorder Setting tab is displayed.



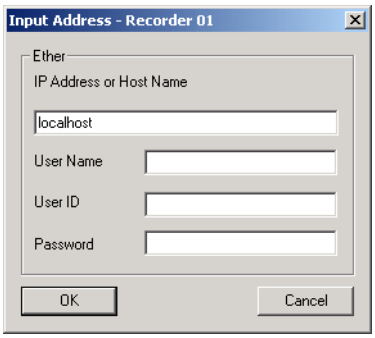
Port Settings

2. Enter the port and address.

Port: Select the port to be used for the connection. Only the numbered COM ports turned ON in the license setting tab are displayed.

For Ports Set to Ethernet

Click a cell in the address column to open the dialog box in the figure below.



Enter the following settings.

IP address or host name: enter the IP address or host name of the DX100P/DX200P to which you wish to connect.

User name: enter the user name specified on the DX100P/DX200P to which you wish to connect.

User ID: enter the user ID specified on the DX100P/DX200P to which you wish to connect.

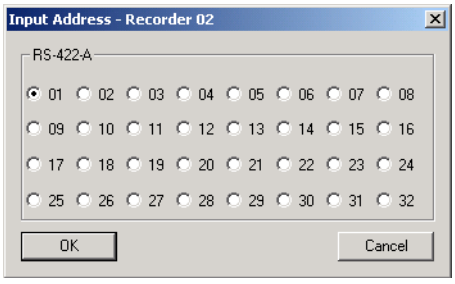
Password: enter the password specified on the DX100P/DX200P to which you wish to connect.

Note

When logging on to the DX100P/DX200P from GateDX-P, the default password for the DX100P/DX200P cannot be used. If it is used, login will fail.

For Ports Set to COM

Click a cell in the address column to open the dialog box in the figure below.



Select an RS-422-A address.

Address: only valid for COM ports using Ethernet or RS-422-A/485.

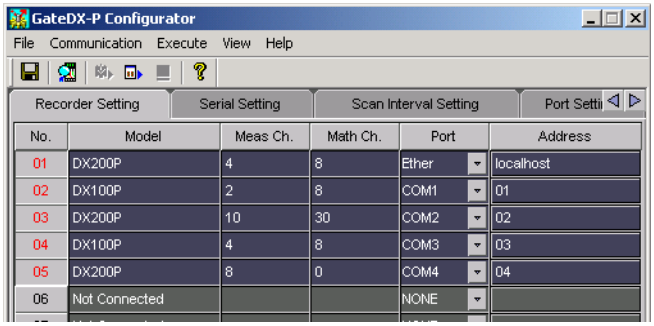
Automatic Model Determination

3. You can drag to select the items for automatic model determination.
4. Click Auto determination on the toolbar or choose **Communication > Recorder Model Determination** from the menu bar.

Auto determination button

The following items are displayed.

Model:	The specific DX100P/DX200P models to be connected.
Measurement channels:	The number of measurement channels on the connected DX100P/DX200P.
Math channels:	The number of math channels on the connected DX100P/DX200P.

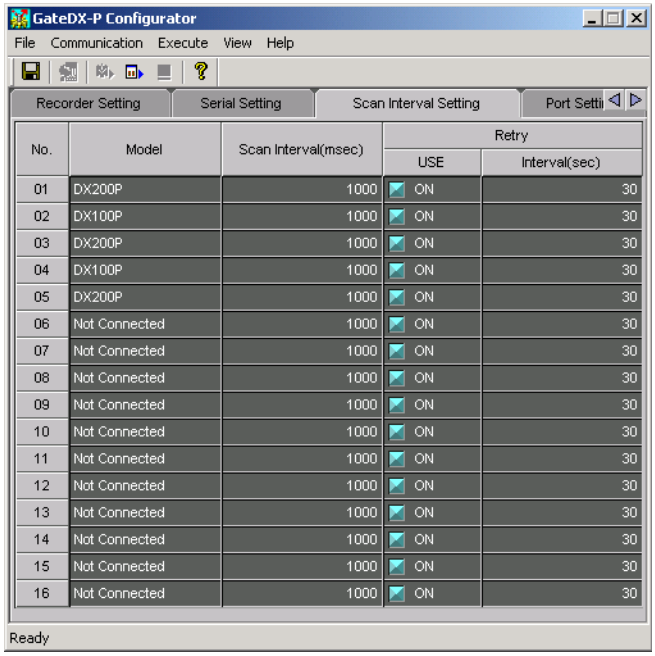


Scan Interval and Retry Settings

Procedure

1. Click the Scan Interval Setting tab or choose **View > Scan Interval Setting** from the menu bar.

   The Scan Interval Setting tab is displayed.



Setting the Scan Interval

2. Specify a scan interval from 0.5 to 3600 seconds.

Setting the Number of Retries

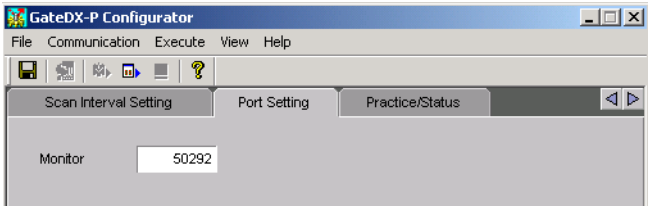
3. Turn the communication retry setting ON or OFF.

4. Enter the time interval between retries.
Setting range: 30–3600 seconds

Port Settings

Procedure

1. Click the Port Setting tab or choose **View > Port setting** from the menu bar.
The Port Setting tab is displayed.



2. You can change the port number used by the monitor server.

Saving Environment Settings

Procedure

1 Click the Save button on the tool bar or choose **File > Save** from the menu bar.

2.3 Connecting from DAQLOGGER or Remote Monitor

While the executable function is running, DAQLOGGER or Remote Monitor works via Ethernet to log and monitor the data that the DX100P/DX200P is acquiring. Gate-DXP's executable function acts as the client of a DAQLOGGER or Remote Monitor that is running as the monitor server.

In this case, system numbers are assigned as follows:
DX100P/DX200P assigned to Recorder1: 0
DX100P/DX200P assigned to Recorder2: 1

Connecting from DAQLOGGER

Procedure

See section 2.6 of the WX101 DAQLOGGER WX81 DAQLOGGER Client Package User's Manual (IM WX101-01E).

Connecting from Remote Monitor

Procedure

See section 8.1 of the WX101 DAQLOGGER WX81 DAQLOGGER Client Package User's Manual (IM WX101-01E), or section 9.2 of the WX102 DAQ32Plus WX82 DAQ32Plus Client Package User's Manual (IM WX102-01E).

2.4 Process Run/Stop and Service Run/Stop

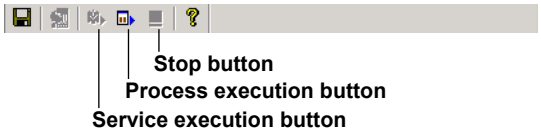
Running/Stopping from the Menu Bar

Procedure

Running as a Process or Service

1. Click the Service execution or Process execution button on the tool bar. Or, choose **Execute > Service** or **Execute > Process** from the menu bar.

   The executable function starts as a process or service. "Service" or "Process" is displayed under Practice Status on the Practice Status tab.



Note

- Service execution can only be specified by users with Administrator privileges.
- Services cannot be executed when using Windows Vista.

Stopping the Process or Service

1. Click the Stop button on the tool bar or choose **Execute > Stop** from the menu bar.

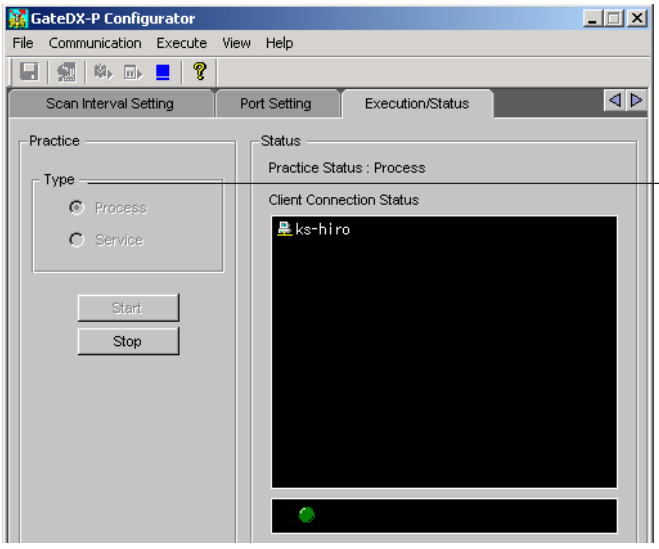
   The Practice Status item shown on the Practice/Status tab displays "Stop."

Running/Stopping the Executable Function from the Execution/Status Tab

Procedure

1. Click the Execution/Status tab or choose **View > Execution/Status** from the menu bar.

   The Execution/Status tab is displayed.



Running as a Process or Service

2. Select to execute the function as a process or service.
3. Click Practice.

   The executable function starts, and "Service" or "Process" is displayed under Practice Status.

Stopping the Process or Service

2. Click the Stop button.

   "Stop" is displayed for the practice status.

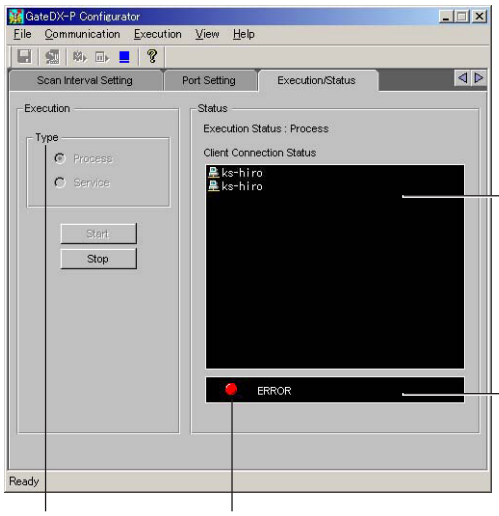
2.5 Viewing the Status of the Executable Function

Procedure

Displaying the Connection Status

1. Click the Execution/Status tab, or choose **View > Execution/Status** from the menu bar.

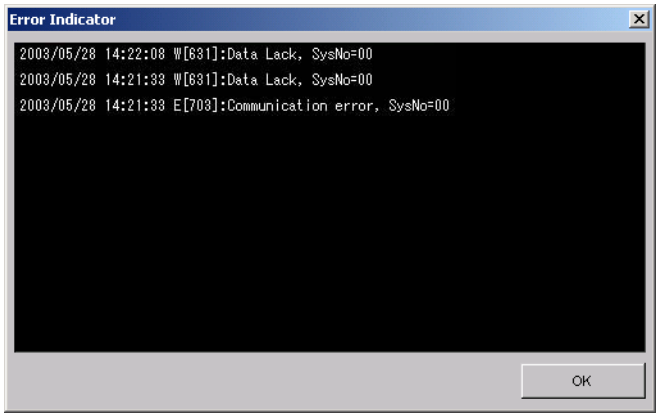
The Execution/Status tab is displayed, allowing you to see the method under which the executable function may be running (as a process or as a service), whether or not it is running, and with which PCs communications are open.



Viewing Error Detail

2. Double-click the box displaying the client communication status on the Execution/Status tab (shown above).

The Error Indicator dialog box opens.



See section 3.3 for error messages.

Note

- If a warning message is displayed (code Wxxxx), the lamp that displays the connection status by color does not blink red.
- When an error occurs and the lamp blinks red, the Error Indicator dialog box appears. If you close the dialog box, the lamp turns green.

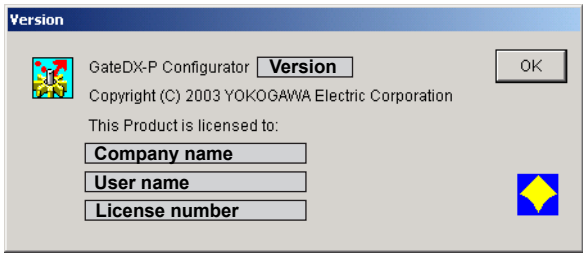
2.6 Viewing Version Information

Procedure

1. Click the About button on the tool bar or choose **Help > About** from the menu bar.

About button

The Version dialog box opens.



3.1 Overview

Gate-DXP performs Ethernet communications with the DX100P/DX200P and acquires data at regular intervals. Through the monitor server function, the acquired data is transferred to DAQLOGGER or Remote Monitor via Ethernet.
The following is a list of the features of each software function.

Environment Setting Functions

Environment setting functions are used to enter all environment settings required to run the executable function.

- **Serial Port Settings (as Needed)**
  Port
  Type (RS-422A/485 or RS-232-C)
  Baud rate
  Parity
- **Recorder Settings**
  Port
  Address
  User name
  User ID
  Password
  Automatic model determination
- **Scan Interval Settings**
  Scan interval setting for each recorder (0.5 to 3600 sec.)
  Communication retry ON and OFF
  Retry interval
- **Port Settings**
  Port number for monitor server
  Port number for getting status
- **Executable Function Start/Stop**
  Runs as a service
  Runs as a process
- **Executable Function Status Display**
  Practice status display (stopped, running as a service, running as a process)
  Display of the connection status from the client

Executable Function

Features of the executable function are as follows:

- Running as a process and as a service is possible.
- Instantaneous data values are acquired from up to 16 DX100p/DX200Ps at regular intervals.
- Runs as a monitor server via Ethernet if DAQLOGGER or Remote Monitor is the client.

3.2 Detailed Description of Functions

Serial Port Settings

GateDX-P can use the COM1–COM9 serial ports.
The user must enter the following port settings.

- Use/Do not use (ON/OFF)
- Type (RS-422-A/485 or RS-232-C)
- Baud rate: 4800, 9600, 19200, 38400 bps
- Parity bit: NONE, ODD, EVEN

Recorder Settings

GateDX-P allows simultaneous connection with any combination of 16 DX100p/DX200Ps.
The user must enter the following recorder settings.

- Port (COMx or Ethernet)
- Address number (if a COM port using RS-422-A/485 is selected)
- IP address or host name (if Ethernet is selected for the port)
- User name (if Ethernet is selected for the port)
- User ID (if Ethernet is selected for the port)
- Password (if Ethernet is selected for the port)
- Automatic Model Determination

If communication settings are entered correctly, the models, number of measurement channels, and number of computation channels are identified by the software.

Scan Interval

A scan interval from 0.5 to 3600 seconds is selected for each of the 16 DX100P/DX200Ps.

Note

When connecting to DAQLOGGER and acquiring data from the DX100P/DX200P, if GateDX-P's scan interval is longer than that of DAQLOGGER, DAQLOGGER logs the same data repeatedly until the next Gate-DXP scan interval. Therefore, it is recommended that GateDX-P's scan interval be set to a value smaller than DAQLOGGER's scan interval.

Communication Retry

Using the Configurator, you can turn communication retry ON and OFF, and set the retry interval.

- **When Communication Retry Is OFF**
  After detecting that communications were cut, no attempts are made to reconnect.
- **When Communication Retry Is ON**
  After detecting that communications were cut, the software attempts to reconnect after the retry interval has elapsed. Even if the reconnection resulted in an error, the software waits again for the retry interval to elapse, then attempts another reconnection. This process repeats until a valid connection is opened.
  A communication retry interval of 30 to 3600 seconds can be entered.

Note

GateDX-P considers communications to have been cut in the following circumstances.

- If the executable function requests data from a DX100P/DX200P but no response is received within 10 seconds.
- f the software detects that the TCP/IP connection was dropped when the executable function is connected to the DX100P/DX200P via Ethernet.

Port Settings

GateDX-P uses the following ports.

- **Monitor Server Port**
  The TCP/IP port number used for communication with DAQLOGGER or Remote Monitor.

Running/Stopping the Executable Function

The user interface allows you to start and stop the executable function.
The executable function runs under one of the following two methods or "types."

- Process Run/Stop
  The executable function is run/stopped as a process.
- Service Run/Stop
  The executable function is registered as an automatically executing service, then run. After an executable function running as a service is stopped, its registration as a service is deleted. As indicated by the service execution status, the executable function continues processing even when the user has logged off of Windows. Also, the software is automatically run as a service when the computer is turned ON. Service execution can only be specified by users with Administrator privileges. Services cannot be executed when using Windows Vista.

Monitor Server Function of the Executable Function

When the executable function is running, you can connect from DAQLOGGER or Remote Monitor via Ethernet using the remote monitor protocol, and acquire data. In this case, system numbers are assigned as follows:

DX100P/DX200P assigned to Recorder1: system number 0
DX100P/DX200P assigned to Recorder2: system number 1

Executable Function Status Display

The user interface allows you to display status items for the executable function.
The information that can be displayed is as follows:

- Practice status (stopped, running as a service, running as a process)
- Connection status from the client
  Displays a list of PCs running DAQLOGGERS and Remote Monitors with which the executable software has opened a connection.

Group and Channel Assignments

When connected to GateDX-P using Remote Monitor, the initial status of group and channel assignments are as follows:

	Group Name	Waveform Number	Channel Assignment
Group 1	Measure Ch	W01	CH01
		•••	•••
		W30	CH30
Group 2	Math Ch	W01	CH31
		•••	•••
		W30	CH60

Note

When connecting DAQLOGGER to Gate-DXP, group and waveform assignments are ignored.

Channel Names, Tag IDs, and Tag Names

When connected to GateDX-P using Remote Monitor, the channel names, tag IDs, and tag name assignments are as follows:

DX100P/DX200P Channel	Channel Name	Tag ID	Tag Name
CH01	CH01	CH01	DX100P/DX200P tagname
•••	•••	•••	•••
CH60	CH60	CH60	DX100P/DX200P tag name

Note

When connecting DAQLOGGER to Gate-DXP, channel names and tag IDs are ignored. You can download tag names using tag setting software.

Channel Colors

The default channel colors on GateDX-P are those specified on the connected DX100P/DX200P.

3.3 Error Messages and Corrective Actions

Error

No.	Message	Corrective Actions
E211	Cannot write to file.	Check if the disk capacity is sufficient or if the file systems is normal.
E212	Cannot read file.	Check if the file exists and is supported by the software or if the file system is normal.
E213	Cannot open file.	Check if the file exists and is supported by the software or if the file system is normal
E401	Communication error.	Check if the recorder connected for communication is powered on and if the cable is properly connected. Also check the following items according the the communication type. • For Ethernet Check if address settings are correct; the TCP/IP protocol is installed in Windows; the Ethernet card is properly installed. • For RS-232 and RS-422-A Check if the baud rate settings match; the port (COM1 to COM9) settings match, the address settings are correct (RS-422-A); the serial port of the PC is active and the appropriate cable is being used.
E402	Communication timeout.	-
E403	Cannot open a communication port.	Same as E401.
E501	Invalid license number.	
	Please reinstall the software.	
E1001	Login error.	Check the user name, user ID, and password on the DX-P.
E1002	Invalid password.	-
E1003	Password is not valid.	-
E1004	Password expired.	-
	Please set up a password again on the DX-P.	
E1010	Execution of aprocess failed.	Check whether an executable function exists, or whether its files are damaged. If this error appears frequently, reinstall the software.
E1011	Execuition of a service failed.	Check whether an executable function exists, or whether its files are damaged. If this error appears frequently, reinstall the software.
E1012	Login prohibited because another user is logged in.	-

Message

No.	Message
M1201	Model determination was successful.
M1210	Setting changes saved before execution.

Executable Function Messages

No.	Message	Corrective Actions
W[631]	Data Lack	Reduce the number of acquired data points or connected instruments, or lengthen the scan interval.
E[673]	Cannot open communication	Same as E401.
E[674]	Communication error	Same as E401.
E[675]	Communication time out	Same as E401.
E[700]	Cannot login	Same as E1013.
E[701]	Cannot Get DXP inoformation	Check whether the communication status and connected instruments matches those specified in the software. If they do not, perform model determination again.
I[606]	Recovery Communication	Connection recovered.

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