
**User's
Manual**

**WX1
Gate μ R**

vigilantplant.[®]

This manual describes the functions and operating procedures of Gate μ R. 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 μ R is a software program that acquires data from the μ R10000/ μ R20000/SR10000 (Referred to hereinafter as the recorder in this manual.) and transfers it to DAQLOGGER or Remote Monitor.

Notes

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Revisions

- 1st Edition February 2005
- 2nd Edition March 2006
- 3rd Edition June 2007
- 4th Edition January 2009
- 5th Edition January 2011
- 6th Edition October 2011

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End of document

How to Use This Manual

Structure of the Manual

This user's manual consists of the following chapters.

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

Scope of the Manual

This manual does not explain the basic operations of your PC's operating system (OS). For information regarding the basic operations of Windows, see the Windows user's manual.

Safety Markings

- **Units**

K Denotes 1024. Example: 10 KB

M Denotes 1024K. Example: 10 MB

G Denotes 1024M. Example: 2 GB

- **Boldface Characters**

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 a procedure from its explanation.

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.

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1.1 Overview of Gate μ R Functions

Gate μ R (hereinafter referred to as "this software" is a software driver that acquires data from the Yokogawa μ R10000/ μ R20000/SR10000 (Referred to hereinafter as the recorder in this manual.) Recorder and transfers it to DAQLOGGER or Remote Monitor. Using the software allows you to monitor pressure, temperature, and other kinds of data on DAQLOGGER or Remote Monitor that was measured on the μ R10000. Yokogawa's DAQLOGGER is a software program that allows users to open a connection from their PC to various kinds of Yokogawa recorders (the μ R10000/ μ R1800, VR, DARWIN, DX, MV, and CX) and perform data logging and monitoring. Yokogawa's Remote Monitor is a software program that enables monitoring of data logged by recorders or data logging software.

Features

- Runs as a Windows application.
- Of the instruments in the μ R series, only the μ R10000/ μ R20000/SR10000 can be connected.
- Up to sixteen recorder's can be connected for communication.
- 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 download data from recorder series instruments having the following characteristics.

- Option /C3 (RS-422A/485 communication interface), or /C7 (Ethernet interface) required.

Supported Operating Systems

Run DAQWORX under any of the following operating systems.

- Windows 2000 Professional SP4
- Windows XP Home Edition SP3
- Windows XP Professional SP3 (excluding Windows XP Professional x64 Editions)
- Windows Vista Home Premium SP2 (excluding the 64-bit editions)
- Windows Vista Business SP2 (excluding the 64-bit editions)
- Windows 7 Home Premium, SP1 (32-bit and 64-bit editions)
- Windows 7 Professional, SP1 (32-bit and 64-bit editions)

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

OS Language	Software Language
Japanese	Japanese
Other	English

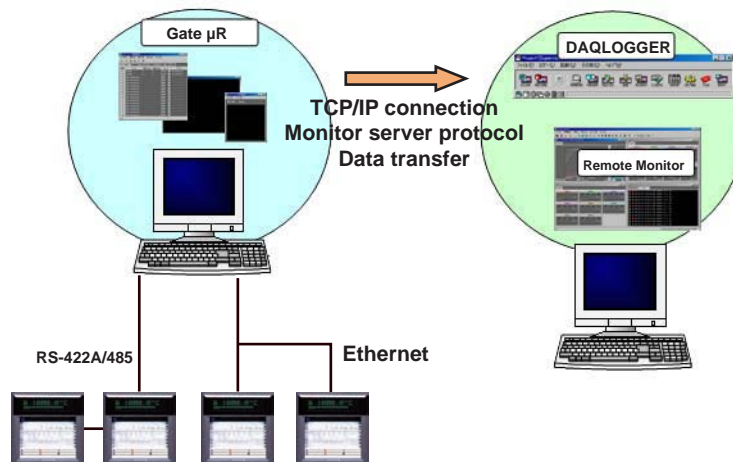
Hardware Requirements

The following hardware and software are required to use this software.

- 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 Intel x64 or x86 processor;
512 MB or more of memory
When Using Windows Vista
Pentium 4, 3 GHz or faster Intel x64 or x86 processor; 2 GB or more of memory
When Using Windows 7
32-bit edition: Intel Pentium 4, 3 GHz or faster x64 or x86 processor; 2 GB or more of memory
64-bit edition: Intel x64 processor that is equivalent to Intel Pentium 4, 3 GHz or faster; 2 GB or more of memory
- Free disk space: 200 MB or more
- Communication interface: An Ethernet port (when connecting to DAQLOGGER, Remote Monitor, or a recorder with Ethernet function) or RS-232 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
- Monitor: A video card that is recommended for the OS and a display that is supported by the OS, has a resolution of 1024x768 or higher, and that can show 65,536 colors (16-bit, high color) or more.

Note

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

System Configuration

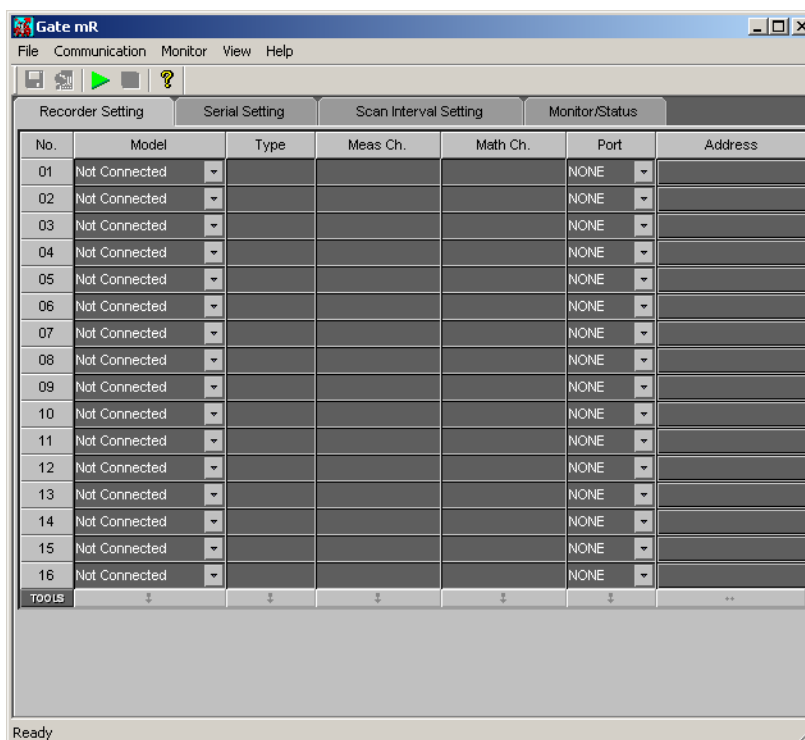
It is recommended that you run this software and DAQLOGGER on separate PCs.

2.1 Running and Exiting

Running the Software Procedure

1. From the Windows Start menu, choose **Programs > YOKOGAWA DAQWORX > Gate mR > Gate mR**.

The program starts.



Note

- When you start the software 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.

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.

The program closes.

2.2 Entering Environment Settings

The following settings can be entered using the software.

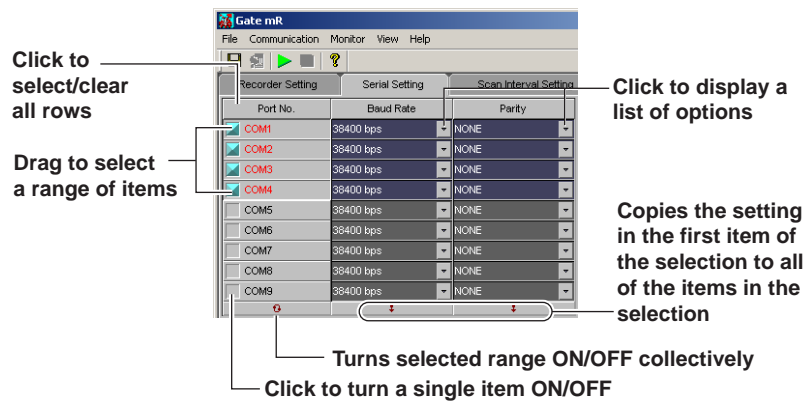
- Recorder assignments, communication settings, and login settings (**serial port and recorder settings**)
- Acquisition settings for each recorder (**acquisition interval and retry settings**)
- Port number settings (for the monitor server) as needed (**port settings**)
- Saving settings (**saves environment settings**)

Serial Port Settings

You must enter serial port settings to connect to a recorder using the serial port.

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)

Baud rate: 4800, 9600, 19200, 38400 bps

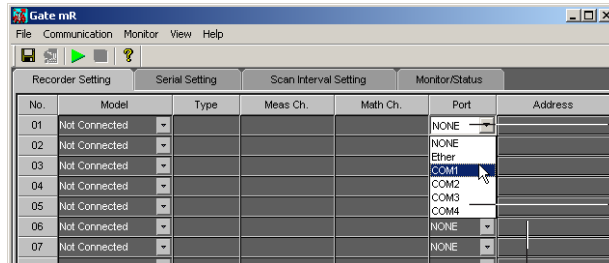
Parity: NONE, ODD, EVEN

Recorder Settings

Procedure

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

The Recorder Setting tab is displayed.



Click to display a list box for selecting a communication port
Only enabled COM ports (specified in serial port settings) are displayed

Click to display the Input Address dialog box

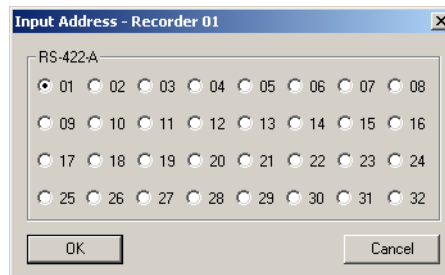
2. Enter the port and address.

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

For Serial Ports Set to COM1-COM9

Click an address to display the following dialog box.

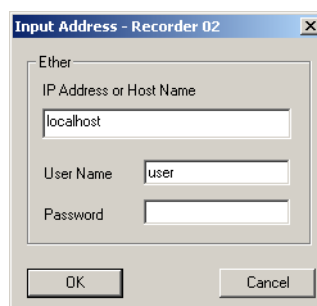
Enter the address set on the device to which you wish to connect.



For Ports Set to Ether

Click an address to display the following dialog box.

Enter the IP address or host name, user name, and password of the device to which you wish to connect.



2.2 Entering Environment Settings

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 > Automatic detection** from the menu bar.



Automatic detection button

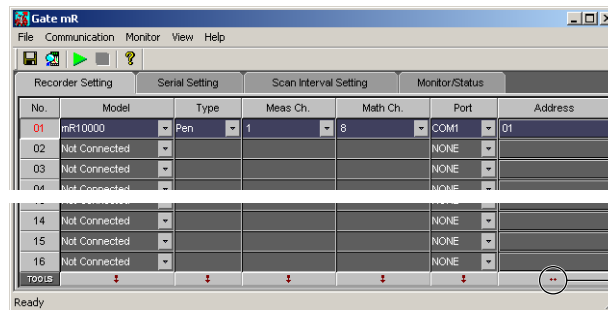
The following items are displayed.

Model: Recorder model connected

Type: Type of recorder model connected

Measurement channels: Number of measurement channels of the recorder connected

Computation channels: Number of computation channels of the recorder connected



Click to assign available addresses in the selected range starting from the smallest.

Tag Settings

5. Double-click the number cell on the **Recorder Setting** tab of the tag that you wish to set.

The **Tag Setting** dialog box opens.

Cannot be changed

Choose the decimal place for the value

Enter the upper and lower limit values of span (-1E16–1E16)

Enter the units (using up to six alphanumeric characters)

Enter the tag name (using up to sixteen alphanumeric characters)

Click to display the Color setting dialog box

Test results displayed here

Drag to select a range of items

Turns selected range ON/OFF collectively

Turn the tag ON (blue) or OFF (gray)

Restores the default color to all tags

Copies the setting in the first item of the selection to all of the items in the selection

Tag No.	Channel No.	Dec Pos	Span		Unit	Tag Name	Color	Value
			Lower	Upper				
TAG01	01	3	-10.000	10.000		Tag 001	Red	
TAG02	0A	3	-10.000	10.000		Tag 002	Orange	
TAG03	0B	3	-10.000	10.000		Tag 003	Yellow	
TAG04	0C	3	-10.000	10.000		Tag 004	Green	
TAG05	0D	3	-10.000	10.000		Tag 005	Blue	

Note

If you execute automatic model determination, the decimal point, span, units, and tag name settings are set from the connected device.

Test Execution

- Click the **Test Start** button in the Tag Setting dialog box.

The test result is displayed in the Value column, and the current values can be monitored.

Stopping the Test Execution

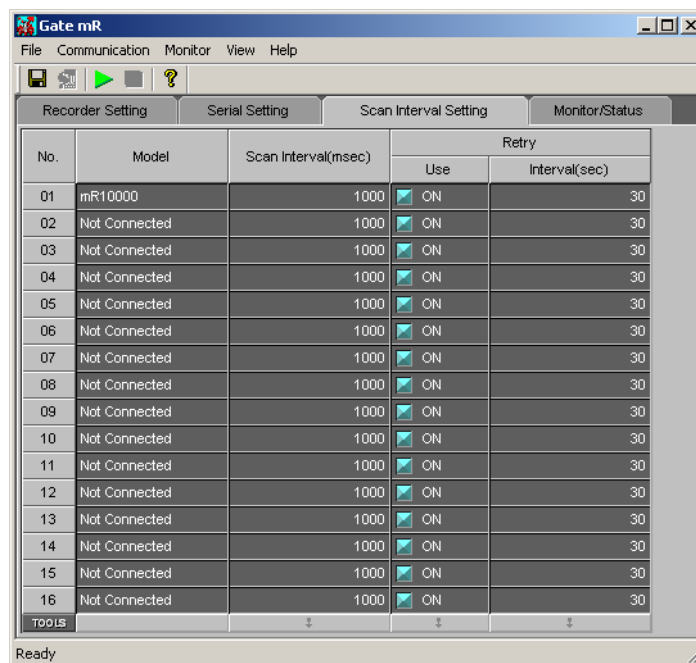
- Click the **Test Stop** button.

Acquisition Interval and Retry Settings

Procedure

- 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 Acquisition Interval

- Enter a setting within the following range into the Acquisition Interval box.
Setting range: 0.5 to 3600 seconds, initial value: 1 second

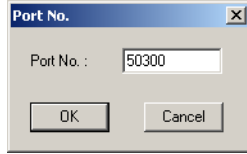
Retry Settings

- Turn the communication retry setting ON (blue) or OFF (gray).
- Enter a retry interval from the following range to be used when retrying communication.
Setting range: 30 to 3600 seconds, initial value: 30 second

Port Settings

Procedure

1. Choose **File > Port No.** from the menu bar.
The **Port No.** dialog box opens.



2. Enter the port number used to transfer data loaded from a connected device to DAQLOGGER or Remote Monitor.

Note

The port number need not be changed unless a problem occurs.

Saving Environment Settings

Procedure

1. Click the **Save** button on the tool bar or choose **File > Save** from the menu bar.
The current settings are saved.



Save button

Note

Be sure to save the environment settings before starting acquisition.

2.3 Connecting from DAQLOGGER or Remote Monitor

While the software is running, DAQLOGGER or Remote Monitor works via Ethernet to log and monitor the recorder data that the software is acquiring. This software acts as the monitor server of a DAQLOGGER or Remote Monitor that is running as the client.

In this case, system numbers are assigned as follows:

μ R10000/ μ R20000/SR10000 assigned to No. 01: 0

μ R10000/ μ R20000/SR10000 assigned to No. 02: 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).

See section 9.2 of the WX102 DAQ32Plus WX82 DAQ32Plus Client Package User's Manual (IM WX102-01E).

2.4 Starting and Stopping Acquisition, and Starting Acquisition upon Startup of the Software

Starting/Stopping Acquisition from the Menu Bar

Procedure

Starting Acquisition

1. Click the **Start** button on the toolbar. Or, choose **Monitor > Start** from the menu bar.
Acquisition on the software is started. The communication status of each device is displayed under Connected Device Communication Status in the Monitor/Status tab.



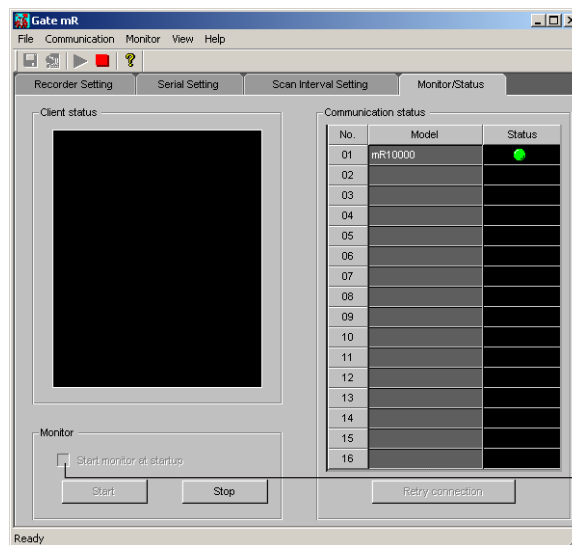
Stopping Acquisition

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

Starting/Stopping Acquisition from the Monitor/Status Tab

Procedure

1. Click the **Monitor/Status** tab or choose **View > Monitor/Status** from the menu bar.
The Monitor/Status tab is displayed.



Select to start acquisition simultaneously upon startup of the software

Starting Acquisition

2. Click the **Start** button.
Communication with the device set up in the Recorder Setting tab starts.

Stopping Acquisition

2. Click the **Stop** button.
Communication with the device stops.

Starting the Software and Data Acquisition at the Same Time

Procedure

1. When you turn ON “Start monitor at startup” in the **Monitor/Status** tab, data acquisition starts according to the saved environment settings the next time (and simultaneously with) the software is started.

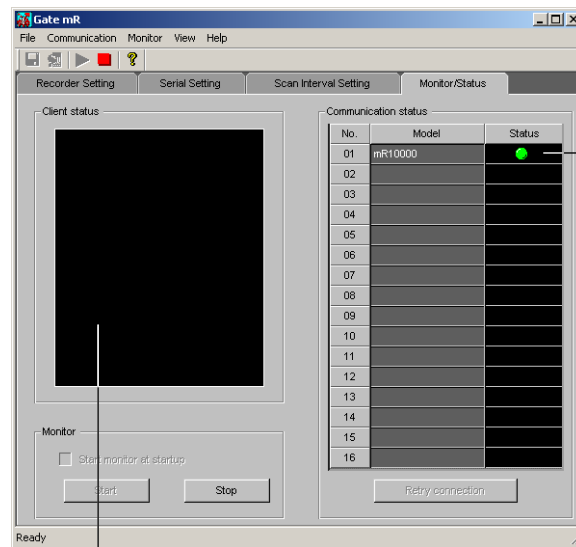
2.5 Displaying the Execution Status and Reconnecting

Procedure

Displaying the Connection Status

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

The Monitor/Status tab is displayed, showing which recorder is connected and with which PC.



Indicator for the communication status with the connected device
Green: Normal (comm. open)
Red: Communication error
Yellow: Data lost, other (communication paused)
No display: Communication error (comm. paused)
 Double-click to display the Error Indicator dialog box

Displays the names of connected clients

Viewing Error Detail

2. Double-click Status under Communication Status on the **Monitor/Status** tab.

The **Error Message** dialog box opens.



See section 3.3 for error messages.

Note

Click the Start button to download data from the connected devices. The interval at which data is acquired is determined by the acquisition interval on the Acquisition Setting tab. If Retry is turned OFF and a connected device experiences an error while running, data acquisition stops on the next interval. To restart acquisition, reconnect using the procedure below.

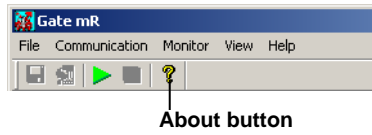
Reconnecting

1. Drag to select the devices with which you wish to reconnect in the Communication Status area.
2. Click the **Retry connection** button.
Communication with the selected devices is reopened.

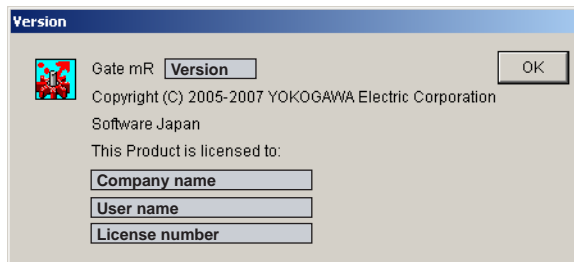
2.6 Viewing Version Information

Procedure

1. Click the **About** button in the toolbar or choose **Help > About** from the menu bar.



The **Version** dialog box opens.



3.1 Functional Overview

This software opens communications with μ R10000/ μ R20000/SR10000 (Referred to hereinafter as the recorder in this manual.) units 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.

Functions of the Software

- Entry of parameters used for communications with up to sixteen recorders.
When connecting via Ethernet: Address, user, password
For serial communications: Port, baud rate, parity, and address
- Displays information (model and number of channels) from the connected recorder
Opens communication with a recorder and automatically determines the model.
- Enter the following settings on each recorder.
 - Upper/lower limit of span*
 - Decimal place*
 - Units*
 - Tag*
 - Color

* With automatic model determination, these device settings are automatically obtained.
- Entry of the data acquisition interval and port number
- Performing of the Test Execution
- The above communication parameters, device information from the recorder, acquisition interval, and port numbers can be saved to a file
- Displays the status of the software.
Displays the client connection status and connected device communication status
- Displays software errors
- Runs as a monitor server
Compatible with the DAQLOGGER monitor server specifications.

3.2 Details of Functions

Serial Port

The communications ports available to the software are the COM1–COM9 serial ports. To connect to a recorder via serial communication, the user must enter the following settings for the port to be used.

- Use/Do not use (ON/OFF)
- Baud rate: Select 4800, 9600, 19200, or 38400 bps
- Parity: Choose NONE, ODD, or EVEN

RS-422A/485 Communications

The software can use RS-422A/485 addresses 1–30.

Recorder Settings

The software can open connections with sixteen recorders simultaneously. The user must enter the following settings on the software for the recorders to be accessed.

- Choose a communication method (COMx or Ethernet)
When COMx is selected, set up the recorder as follows.
 Protocol: NORMAL
 Date length: 8 bit
- Address number (for ports set to COM)
- IP address or host name (if Ethernet is selected for the port)
- User name (if Ethernet is selected for the port)
- Password (if Ethernet is selected for the port)
- Automatic model determination
- For instructions on entering settings on the recorder itself, see the μ R10000/ μ R20000/SR10000 User's Manual.

Automatic Model Determination

If you select a recorder (μ R10000/ μ R20000) on the software and perform automatic model determination, the recorder model, type, number of measurement channels, and number of computation channels are applied to the **Recorder Setting** tab.

Model and Number of Channels

Model	Type	No of meas ch	No of calc ch
μ R10000/ μ R20000/SR10000	Pen	1	8 ¹
μ R10000/ μ R20000/SR10000	Pen	2	8 ¹
μ R10000/ μ R20000/SR10000	Pen	3	8 ¹
μ R10000/ μ R20000/SR10000	Pen	4	8 ¹
μ R10000/ μ R20000/SR10000	Dot	6	12 ¹
μ R20000	Dot	12	24
μ R20000	Dot	18	24
μ R20000	Dot	24	24

¹ The SR10000 does not have MATH channels.

Scan Interval

A scan interval from 0.5 to 3600 seconds can be selected for each of the sixteen recorders.

Note

When connecting to DAQLOGGER and acquiring data from the recorder, if Gate μ R's scan interval is longer than that of DAQLOGGER, DAQLOGGER logs the same data as is within the Gate μ R scan interval. Therefore, it is recommended that Gate μ R's scan interval be set to a value smaller than DAQLOGGER's scan interval.

Communication Retry Operation

You can turn communication retry ON and OFF, and set the retry interval.

- When Turning Communication Retry OFF
After detecting that communications were broken, it is not reconnected.
- When Turning Communication Retry ON
After detecting that communications were broken, 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. Retries are also performed on instruments with which a communication error occurred during the first communication. At the point that communication is restored, the decimal place, alarm values, and other necessary information are retrieved from the μ R, and data is acquired.

Note

This software considers communications to have been cut in the following circumstances.

- If the software requests data from the recorder but no response is received within ten seconds.
- If a TCP/IP connection is detected or if login fails when attempting to connect to the recorder via Ethernet.

Port Settings

The following port settings can be entered using the software.

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

Monitor Server Function

When the software 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:

- μR10000/μR20000/SR10000 assigned to No. 01: 0
- μR10000/μR20000/SR10000 assigned to No. 02: 1

Software Status Display

You can display the status of the software.

The information from the software that can be displayed is as follows:

- Connection status from the client
Displays a list of PCs running DAQLOGGERS and Remote Monitors with which the software has opened a connection.
- Communication status with connected recorders
- Error Messages
Shows the presence or absence of errors occurring in communication with the recorder.

Test Acquisition

You can perform a test acquisition on each tag using the software. During the test acquisition, data is read from recorder channels and is displayed as digital values. This allows you to determine whether the settings for each tag are correct.

The test acquisition gets values from assigned tags approximately at one-second intervals.

Channel Numbers Assigned to Tag Numbers

Tag numbers are set as follows according to the μR10000/μR20000 type.

- Pen model TAG01-TAG12 (μR10000), TAG01-TAG12 (μR20000), TAG01-TAG04 (SR10000)
- Dot model TAG01-TAG18 (μR10000), TAG01-TAG48 (μR20000), TAG01-TAG06 (SR10000)

Also, channels are assigned as follows:

Channel Numbers Assigned to Tag Numbers (for a Pen Model with One Measurement Channel and Eight Computations Channels)

Tag No.	Channel number
TAG01	01
TAG02	0A
TAG03	0B
TAG04	0C
TAG05	0D
TAG06	0E
TAG07	0F
TAG08	0G
TAG09	0J

Channel Colors

The default channel colors on the software are the following sixteen colors.

- Red, Green, Blue, Magenta, Orange, Cyan, Brown, LightGray, Purple, Pink, Yellow, White, CaditBlue, LightPink, LightGreen, Salmon

These can be changed.

3.3 Error Messages and Corrective Actions

A message (such as an error message) may appear during operation. The following describes the meanings of the messages and their corrective actions.

Error

Code	Message	Corrective Actions
E211	Cannot write to the file.	Confirm that the disc capacity and file system are correct.
E212	Cannot read file.	Confirm that a file exists, that the software supports it, and whether the file system is correct.
E213	Cannot open the file.	Confirm that a file exists, that the software supports it, and whether the file system is correct.
E401	Communication error.	Check whether the power to the connected measuring instruments with which you wish to open communications is ON, and whether the cables are connected correctly. Also check the following. <ul style="list-style-type: none">• For Ethernet Is the address correct, is the TCP/IP protocol installed in Windows, and is the Ethernet card installed correctly? Is the address correct, is the TCP/IP protocol installed in Windows, and is the Ethernet card installed correctly?• For RS-232 and RS-422A Are the baud rate, port numbers (COM1–COM9), and addresses (RS422) correct? Is the PC serial port valid? Is the cable type correct?
E402	Communication timeout.	–
E403	Communication open error.	Check whether the power to the connected measuring instruments with which you wish to open communications is ON, and whether the cables are connected correctly. Also check the following. <ul style="list-style-type: none">• For Ethernet Is the address correct, is the TCP/IP protocol installed in Windows, and is the Ethernet card installed correctly?• For RS-232 and RS-422A Are the baud rate, port numbers (COM1–COM9), and addresses (RS422) correct? Is the PC serial port valid? Is the cable type correct?
E501	Invalid license number.	With the Gate series, the number of licenses purchased is the limit for the number of programs run at the same time.
E1001	Login failed.	Check the user name and password on the μ R10000.
E1002	Invalid password.	Check the user name and password on the μ R10000.
E1003	Invalid password.	Check the user name and password on the μ R10000.
E1010	A user with the same name is already logged in.	Check the user name and password on the μ R10000.

Message

Code	Message
M1201	Model determination completed successfully.
M1210	Save the setting changes and try again.

3.3 Error Messages and Corrective Actions

Error Messages during Acquisition

Code	Description	Cause/Corrective Actions
W[631]	Data Lack	Data was unexpectedly lost. Reduce the number of acquired data points or connected instruments, or lengthen the scan interval.
E[673]	Cannot open communication	Communication failed to open Check whether the power to the connected measuring instruments with which you wish to open communications is ON, and whether the cables are connected correctly. Also check the following. <ul style="list-style-type: none">• For Ethernet Is the address correct, is the TCP/IP protocol installed in Windows, and is the Ethernet card installed correctly?• For RS-232 and RS-422A Are the baud rate, port numbers (COM1–COM9), and addresses (RS422) correct? Is the PC serial port valid? Is the cable type correct?
E[674]	Communication error	Communication Errors Same as E[673].
E[675]	Communication time out	Communication timeout Same as E[673].
W[880]	Do not specify communication port	Specify the communication parameters.
W[881]	Current connecting recorder configuration is mismatch! The recorder is:	Change the parameters for the main unit.
W[882]	Cannot login recorder	Recorder login error
W[882]	Cannot Get recorder information	Failed to get settings from the recorder. Check whether the communication status and connected instruments matches those specified in the software. If they do not match, perform automatic model determination again.

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