



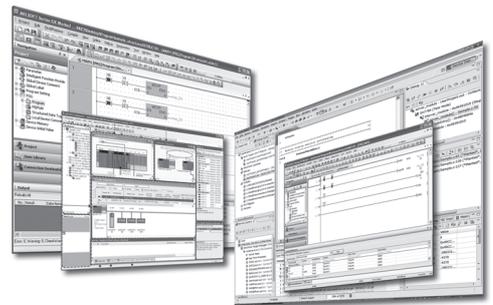
MELSOFT

Engineering Software

# MX Sheet Version 2 Operating Manual

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-SW2DNC-SHEET-E





# SAFETY PRECAUTIONS

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(Read these precautions before using this product.)

Before using this product, please read this manual and the relevant manuals carefully and pay full attention to safety to handle the product correctly.

In this manual, the safety precautions are classified into two levels: "⚠️ WARNING" and "⚠️ CAUTION".

 <b>WARNING</b>	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
 <b>CAUTION</b>	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Under some circumstances, failure to observe the precautions given under "⚠️ CAUTION" may lead to serious consequences.

Observe the precautions of both levels because they are important for personal and system safety.

Make sure that the end users read this manual and then keep the manual in a safe place for future reference.

## [Design Precautions]

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### **WARNING**

- When data change, program change, or status control is performed from a personal computer to a running programmable controller, create an interlock circuit outside the programmable controller to ensure that the whole system always operates safely.  
Furthermore, for the online operations performed from a personal computer to a programmable controller CPU, the corrective actions against a communication error due to such as a cable connection fault should be predetermined as a system.

## [Design Precautions]

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### **CAUTION**

- The online operations performed from a personal computer to a running programmable controller CPU (forced output and operating status changes) must be executed after the manual has been carefully read and the safety has been ensured.  
The operation failure may cause the injury or machine damage.

## [Security Precautions]

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### **WARNING**

- To maintain the security (confidentiality, integrity, and availability) of the programmable controller and the system against unauthorized access, denial-of-service (DoS) attacks, computer viruses, and other cyberattacks from external devices via the network, take appropriate measures such as firewalls, virtual private networks (VPNs), and antivirus solutions.

# CONDITIONS OF USE FOR THE PRODUCT

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- (1) MELSEC programmable controller ("the PRODUCT") shall be used in conditions;
- i) where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident; and
  - ii) where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.
- (2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries. MITSUBISHI ELECTRIC SHALL HAVE NO RESPONSIBILITY OR LIABILITY (INCLUDING, BUT NOT LIMITED TO ANY AND ALL RESPONSIBILITY OR LIABILITY BASED ON CONTRACT, WARRANTY, TORT, PRODUCT LIABILITY) FOR ANY INJURY OR DEATH TO PERSONS OR LOSS OR DAMAGE TO PROPERTY CAUSED BY the PRODUCT THAT ARE OPERATED OR USED IN APPLICATION NOT INTENDED OR EXCLUDED BY INSTRUCTIONS, PRECAUTIONS, OR WARNING CONTAINED IN MITSUBISHI ELECTRIC USER'S, INSTRUCTION AND/OR SAFETY MANUALS, TECHNICAL BULLETINS AND GUIDELINES FOR the PRODUCT.
- ("Prohibited Application")
- Prohibited Applications include, but not limited to, the use of the PRODUCT in;
- Nuclear Power Plants and any other power plants operated by Power companies, and/or any other cases in which the public could be affected if any problem or fault occurs in the PRODUCT.
  - Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
  - Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.
- Notwithstanding the above restrictions, Mitsubishi Electric may in its sole discretion, authorize use of the PRODUCT in one or more of the Prohibited Applications, provided that the usage of the PRODUCT is limited only for the specific applications agreed to by Mitsubishi Electric and provided further that no special quality assurance or fail-safe, redundant or other safety features which exceed the general specifications of the PRODUCTS are required. For details, please contact the Mitsubishi Electric representative in your region.
- (3) Mitsubishi Electric shall have no responsibility or liability for any problems involving programmable controller trouble and system trouble caused by DoS attacks, unauthorized access, computer viruses, and other cyberattacks.

# OPERATING CONSIDERATIONS

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This section explains the considerations in the following order.

1. Considerations of operating system and personal computer to be used
2. Considerations for setting MX Sheet
3. Considerations for setting cells and Excel<sup>®</sup> spreadsheets
4. Considerations for performing communication
5. Considerations for using VBA
6. Considerations for using other MELSOFT products
7. Considerations for error occurrence

## Considerations of operating system and personal computer to be used

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### ■When using Microsoft<sup>®</sup> Windows XP<sup>®</sup> or later

A user with the administrator authority must log on to set or change Communication Settings.

### ■Coexistence of different Excel versions

When different versions of Excel exist in a single personal computer, MX Sheet does not operate normally.

For example, Microsoft Excel 2007 and Microsoft Excel 2010 cannot coexist.

### ■Resume function, etc. of personal computer

If any of the following is set to the personal computer where MX Sheet is installed, a communication error occurs during communication with the programmable controller CPU.

Do not set the following functions on the personal computer.

- Resume function
- Suspend function
- Power saving function
- Standby mode

## Considerations for setting MX Sheet

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### ■Word designation for bit and bit designation for word

In the following tabs and screens, word designation for bit (e.g. K4M0) and bit designation for word (e.g. D0.0) cannot be set.

- [Access Data] tab (Digit-specified bit device (e.g. D0.0) can be set.)
- [Device Trigger] tab
- [Handshake] tab
- "Automatic Save" screen
- "Automatic Print" screen

### ■Reading character strings

When character strings are read from the programmable controller CPU, the device data which prefix is either of the following characters are not displayed properly on an Excel spreadsheet.

When reading character strings from the programmable controller CPU, set proper setting so that either of the following characters are not prefixed.

- = (equal)
- ' (single quotation)

### ■Saving Excel sheets

MX Sheet saves Excel book at the timing of closing the "Cell Settings" screen. Before editing data, backup the Excel book is recommended.

If the file name specified in the "Automatic Save" screen or "Operating when cell is full" of the [Use] tab already exists, the old data is discarded and overwritten.

Therefore, make sure that the specified file name is different from other Excel book names.

### ■Operation when opening multiple Excel books

Do not operate other Excel book during the operation of a settings screen of MX Sheet.

### ■Color designation

When using Microsoft Excel 2003 and specifying any of the following colors for "Set the Color of Grid line" or "Set the Color for Filling" on the [Use] tab, the actual display color may differs from the specified color.



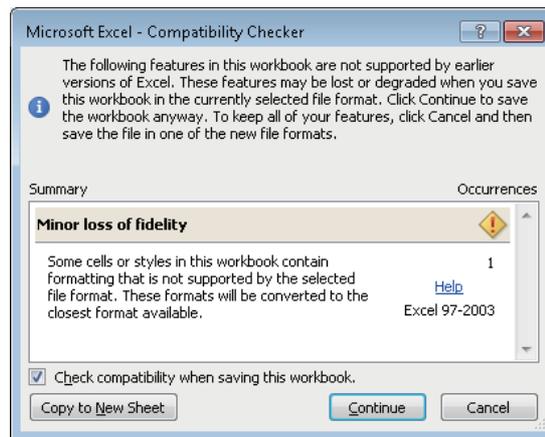
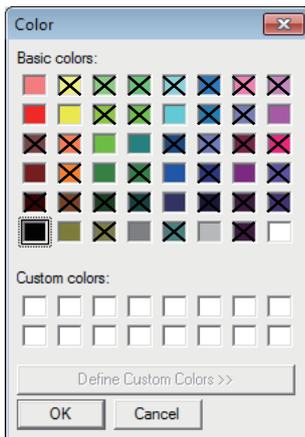
### ■Color designation from Excel

If the border color and cell fill color are specified in "Format Cells" in Excel, colors specified in "Set the Color of Grid line" and "Set the Color for Filling" in the [Use] tab become invalid.

### ■Compatibility check

In Microsoft Excel 2007 or later, when setting colors to a Book in Excel from 97 to 2003 version with Cell Settings of MX Sheet, if specifying the color of × on the following screen, the "Compatibility Checker" screen is displayed on the Excel when saving the Book.

<Compatibility Checker screen>



## ■Excel spreadsheet where buttons are placed

When the Start Communication, End Communication or 1 Shot Communication button placed on the Excel spreadsheet is focused, do not log off or exit from Windows without closing the Excel book.

If attempted, the following message is displayed and disable exit from Excel.



## ■Size of saved Excel file according to Format Cells

On Excel, Format Cells increases the saved file size.

Also on MX Sheet, the size of the saved Excel file may become several M bytes or more since Format Cells is changed according to the setting.

<Example>

- When "Set the Color of Grid line" or "Set the Color for Filling" is selected on the [Use] tab
- When Logging is selected and "Add date and time details" is selected on the [Use] tab
- When "Alarm summary" is selected on the [Use] tab
- When "Character string" is specified as the Data Type on the [Access Data] tab
- When "HEX" is specified as the Value on the [Access Data] tab

## ■When "Compile error in hidden module" occurs

When selecting [Cell Setting] on the menu of MX Sheet, "Compile error in hidden module:" may be displayed.

In this case, use 32-bit version of Excel.

When using 64-bit version of Excel, this symptom occurs.

## ■When "Operation of Excel sheet failed." is displayed

When selecting [Cell Setting] on the menu of MX Sheet, the following symptom may occur.

In this case, take the following corrective action to recover from the error.

### ●Symptom

"Operation of Excel sheet failed." is displayed

### ●Corrective action

When MX Component has not been installed, install it.

When the sheet name is changed by the operation of Excel, restore the sheet name.

Change the sheet name from the menu of MX Sheet.

When the symptom cannot be solved by the above actions, take the following actions.

- Enable the ActiveX setting and the macro setting in the security setting of Excel. For Excel operation procedure, refer to the following manual.

📖MX Sheet Version 2 Operating Manual (Introduction)

- Start Excel from the [Run as administrator] menu.

## Considerations for setting cells and Excel spreadsheets

### ■Save function

If either of the following settings is set to the Excel book where the ActiveX controls and forms are applied, it will cause insufficient memory when operating the personal computer continuously.

If insufficient memory occurs, shut down the personal computer periodically.

- Save function of MX Sheet (automatic save function or save is performed when cell is full)
- Save function is called in a VBA program.

Microsoft Excel 2007 or later may require more time to save a Book than Microsoft Excel 2003.

☞ Page 153 File size at save and required time

### ■Changing Excel spreadsheet name

When changing the sheet name of the Excel spreadsheet where MX Sheet is set, change it from the [Add-Ins] tab ⇨ [MX Sheet] ⇨ [Change Sheet Name].

(It can also be changed from the toolbar (icons) or a right-click of the mouse.)

If the sheet name is changed directly from Excel or from a VBA program, MX Sheet is not operate normally.

If this happens due to sheet name change, set the previous sheet name again.

### ■Setting sheet protection (workbook protection) of ErrorLog sheet

Do not set "Protect Sheet" and "Protect Workbook" to the ErrorLog sheet.

Otherwise, the ErrorLog sheet does not operate properly.

### ■ErrorLog sheet name

In the Excel book where MX Sheet is set, do not use the name "ErrorLog" to newly created worksheet, chart or dialog sheet.

Otherwise, the ErrorLog sheet created by MX Sheet does not operate properly.

### ■Cell setting

When the message "The selected cell range has already been set." is displayed at the time of cell setting, set the cell by the following procedure.

1. Select a cell of an Excel worksheet on which the cell is not set.
2. Select [Cell Setting] on the menu of MX Sheet.
3. Select a cell range to be edited from the cell range list on the "Cell Settings" screen.

## Considerations for performing communication

### ■Continuous operation of Excel

Excel is not an application that is designed for continuous operation.

For operating MX Sheet continuously, exit and reactivate Excel periodically.

The time for allowable continuous operation differs according to the operating environment.

### ■Communication between personal computer and programmable controller CPU

When programmable controller CPU device data are collected/written using MX Sheet, the communication restrictions that apply to MX Component also occur between the personal computer and programmable controller CPU.

For the restrictions on communications between the personal computer and programmable controller CPU, refer to the following manual.

 MX Component Version 4 Operating Manual

### ■Preview setting of Excel

When starting the communication of MX Sheet, do not activate the preview setting (print preview, etc.) of Excel.

If the communication of MX Sheet is started with the preview setting of Excel active, a memory leak is occur.

### ■Simultaneous communication from multiple Excel books

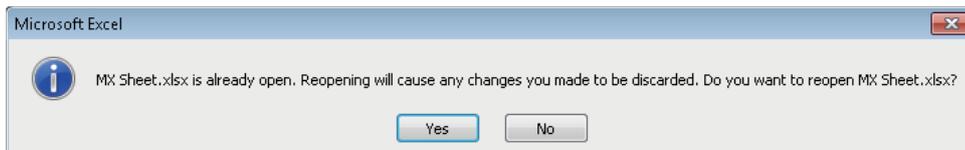
Multiple Excel books where MX Sheet setting is set cannot be started on a single personal computer to perform communication simultaneously.

### ■When communicating Excel book is double-started

Do not perform a double start (restart) of the Excel book that is communicating using MX Sheet.

If such operation is performed, the following message is displayed.

Click the [No] button and interrupt the double start (restart).



### ■"Run-time error '9' "

The following symptom occurs when upgrading the version of Excel or MX Sheet due to the temporary file created by Excel. In this case, take the following corrective action to recover from the error.

#### ●Symptom

- After Automatic communication startup is executed in MX Sheet, the available/unavailable buttons for the function will be inappropriate.
- "Run-time error '9' : Subscript out of range" is displayed when Excel is started up.

#### ●Corrective action

Delete the temporary file according to the following procedure.

1. Enter '%temp%\Excel8.0' in Windows Explorer, and delete the files under '%temp%\Excel8.0'.
2. Enter '%AppData%\Microsoft\Excel' in Windows Explorer, and delete the '.xlb' file under '%AppData%\Microsoft\Excel'.

#### ●Considerations

- A folder differs for each logon user.

Take an action for each logon user to be used.

- Display all files and folders to take an action.

The following shows the setting method.

1. Click the [Tools] tab in Explorer, and select [Folder Options].
2. Click the [View] tab, and select "Show hidden files, folders, and drives" in the [Advanced settings] box.
  - A file and folder may not exist.

## ■Operation of other Excel book

Do not operate other Excel book during communication.

## ■When logoff/shutdown is executed during communication

Do not log off or shut down the personal computer during usual communication or 1 shot communication.

Log off or shut down the personal computer after terminating the communication with the programmable controller CPU and exiting from Excel.

When logging off or shutting down the personal computer during communication, the following symptom may occur.

In this case, take corrective actions to restore the system.

### ●Symptom

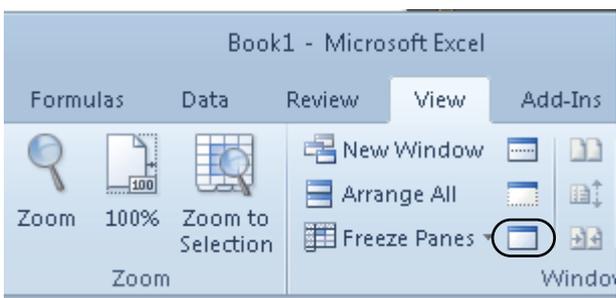
When MX Sheet setting is set, only the frame of Excel is displayed.

### ●Corrective action

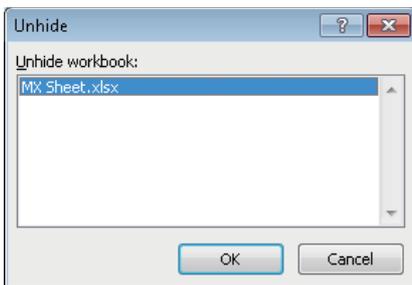
In the following procedure, remove the hide attributes of the Excel book and overwrite the Excel book to restore the system.

### 1. Select the [View] tab and select [Unhide].

When using Microsoft Excel 2003, select [Window] ⇒ [Unhide] in the Excel menu.



### 2. Select the Excel book to be displayed and click the [OK] button.



### 3. As the Excel book is displayed, save the Excel book.

## ■USB communication

A communication error may occur and it may not be recovered if connecting and disconnecting a USB cable, resetting the CPU module, or turning the power ON or OFF is performed frequently during communication with a CPU module.

If the operation is not recovered from an error, remove the USB cable. Then, connect it again after five or more seconds. (Even after this operation, an error may occur at initial communication. However, communication will be successful after that.)

## ■Operation of Excel during communication

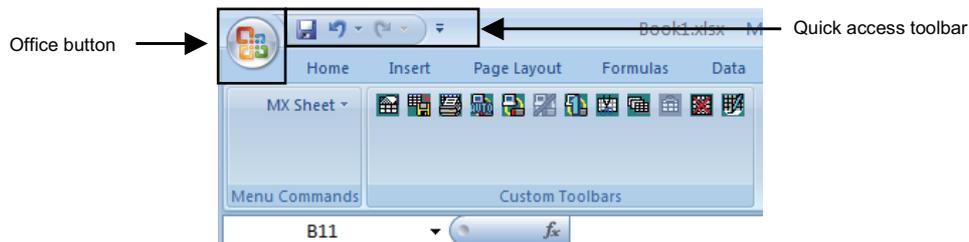
If Excel is in either of the following status, MX Sheet cannot execute operations on Excel (e.g. displaying data into cells, saving or printing an Excel book).

- A cell is in input status (e.g. a cell is double-clicked, or the cursor is at the formula bar).
- A message or a dialog box is displayed on Excel.

The operation of Excel during communication is restricted as follows.

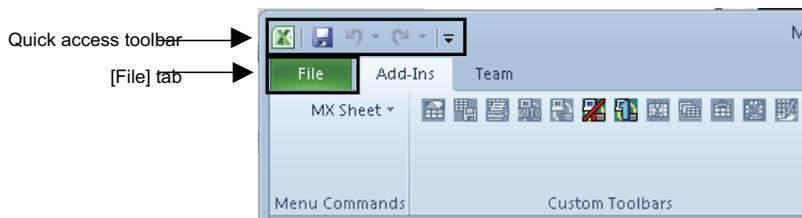
- Microsoft Excel 2003 hides the menu bar and toolbar.
- Microsoft Excel 2007 hides tabs on the ribbon.

Do not operate the office button and quick access toolbar during communication, though they are displayed.



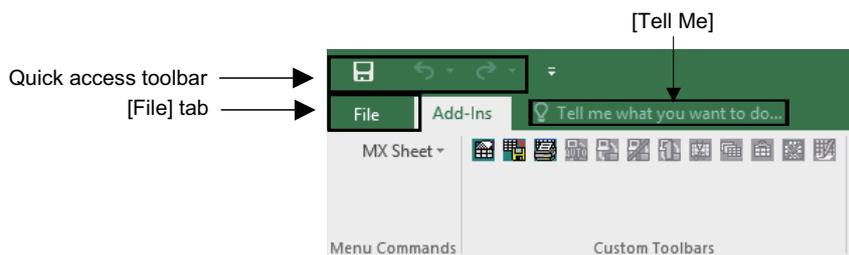
- Microsoft Excel 2010 and 2013 hide tabs on the ribbon.

Although the [File] tab and the quick access toolbar are displayed, do not operate them during communication.



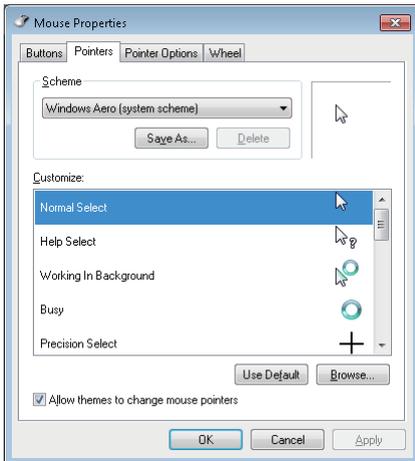
- Microsoft Excel 2016 and 2019 hide tabs on the ribbon.

Although the [File] tab, [Tell Me], and the quick access toolbar are displayed, do not operate them during communication.



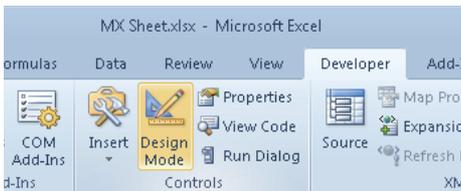
### ■Mouse cursor during communication

While MX Sheet is communicating, the mouse cursor setting of an Excel sheet is fixed to "Normal Select" in "Mouse Properties".



### ■Change to Design Mode of Excel during communication

For Excel during communication, do not change to Design Mode. Otherwise, MX Sheet may not operate properly.



### ■When the timeout error (0x0180840B) occurs during communication

The timeout error (0x0180840B) may occur during communication.

When the timeout error (0x0180840B) occurs, recover from the error by the following corrective actions.

- Review the system such as the programmable controller CPU, module setting, and cable status.
- Check if communication can be established with the Ping command.
- Review the timeout time of the communication setup utility.
- Review the timeout time of the property of the control.

## ■When the socket object generation error (0x01808007) occurs during communication

When using GT SoftGOT, right-click and select "Run as administrator" at the startup of the application.

Set a port number different from one used for another application to the personal computer side.

Check the following items, and contact your local Mitsubishi Electric sales office or representative.

- System configuration (model name of the target programmable controller, model name of the module, and used network)
- Name of personal computer (manufacturer), CPU, memory size
- OS, Edition, 32-bit/64-bit
- MX Component version
- A function and argument of MX Component in which the symptom occurs
- Settings within "Communication Setup Utility"
- Occurrence frequency and procedure for a symptom

## ■When the start communication button cannot be moved

The operation procedure for Excel when moving the start communication button is as follows:

1. Select the [Design Mode] in the [Developer] tab to enter the design mode.
2. Select and drag the start communication button to move it.

## Considerations for using VBA

### ■Incorporation of VBA program

When incorporating a user-created VBA program into the Excel spreadsheet where MX Sheet is set, check the operation of the VBA program before creating programming in the Excel spreadsheet.

### ■VBA program creation

MX Sheet utilizes OLE Automation for communication.

Do not perform the following on VBA programs.

- Do not execute the DoEvents method in a For-Next loop.
- FileFilter is ignored in the GetSaveAsFileName method.
- Do not execute the Reset method in the Excel menu.

## Considerations for using other MELSOFT products

### ■Version of MX Component

When using MX Sheet Version 2.0, MX Component Version 4.0 or later is required.

### ■Logical station number

Before deleting the logical station number from the communication setup utility of MX Component, check that the logical station number to be deleted is not used in MX Sheet.

If the logical station number used in MX Sheet is deleted, MX Sheet does not operate normally.

### ■Modem communication

When communication via modem is performed by MX Sheet, MX Sheet, GX Developer and other applications (e.g. user applications utilizing MX Component) cannot perform communication simultaneously.

If simultaneous communication is attempted using MX Sheet, GX Developer and other applications, a fault such as a communication error, telephone line disconnection is occur.

When performing communication via modem using MX Sheet, check that GX Developer and other applications do not use modems.

## Considerations for error occurrence

### ■When an error occurs on MX Sheet

●An error occurred on MX Sheet is output to the ErrorLog sheet.

For details of the Error log sheet, refer to the following chapter.

 Page 146 ERRORLOG SHEET

●A message corresponding to the number in the ErrorNo column of the ErrorLog sheet is displayed in the Contents column.

The following output example explains the codes included in the Contents column of the ErrorLog sheet.

**Ex.**

A communication error has occurred in communication of access data.

```
<00200104[Hex], 0180840b[Hex]>  
.....  
Code 1           Code 2
```

Code 1 is an internal number indicating the operation of MX Sheet.

Code 2 is a code of an error which occurs during communication.

For details of error codes, refer to the following manual.

 MX Component Version 4 Programming Manual

# INTRODUCTION

---

Thank you for your patronage. We appreciate your purchase of the engineering software, MELSOFT.

This manual is designed for users to understand operations of MX Sheet.

Before using the product, thoroughly read this manual and related manuals to develop full familiarity with the functions and performance of MX Sheet and supported modules to ensure correct use.

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# RELEVANT MANUALS

Manual name [manual number]	Description	Available form
MX Sheet Version 2 Operating Manual [SH-081080ENG] (this manual)	Explains the operation procedures, setting and operation methods of MX Sheet.	Print book PDF
MX Sheet Version 2 Operating Manual (Introduction) [SH-081081ENG]	Explains the installation method, function outlines and operation methods of MX Sheet Version 2.	Print book PDF
MX Component Version 4 Operating Manual [SH-081084ENG]	Explains the setting and operation methods of each utility on MX Component.	Print book PDF
MX Component Version 4 Programming Manual [SH-081085ENG]	Explains the programming procedures, details and error codes for ACT control.	Print book PDF

## TERMS

Unless otherwise specified, this manual uses the following terms.

Term	Description
CSP+ file for machine	A file that expresses CSP+ for machine in XML format.
CSP+ for machine	A Control & Communication system profile for a machine. The following information on a machine is stored. <ul style="list-style-type: none"> <li>Information on the specifications of a machine</li> <li>Information on a machine released for application software</li> <li>Data acquired from a machine and its acquisition method</li> <li>Information on linking machine information and machine data</li> </ul>
Ethernet Built-in CPU	Generic term for RCP, FX5CPU, built-in Ethernet port QCPU, and LCP.
Ethernet communication	Abbreviation for communication by connecting the personal computer to Ethernet module or the built-in Ethernet port CPU.
Excel	Generic term for Microsoft Excel 2003, Microsoft Excel 2007, Microsoft Excel 2010 (32-bit version), Microsoft Excel 2013 (32-bit version), Microsoft Excel 2016 (32-bit version), and Microsoft Excel 2019 (32-bit version).
FX extended port	Generic term for FX0N-485ADP, FX2NC-485ADP, FX1N-485-BD, FX2N-485-BD, FX3G-485-BD, FX3U-485-BD, and FX3U-485ADP.
FX5CPU	Generic term for FX5U, FX5UC, and FX5UJ.
FXCPU	Generic term for FX0, FX0S, FX0N, FX1, FXU, FX2C, FX1S, FX1N, FX1NC, FX2N, FX2NC, FX3S, FX3G, FX3GC, FX3U, and FX3UC.
GOT	Abbreviation for Graphic Operation Terminal.
Inverter	Generic term for FREQROL-A800 series.
L series-compatible C24	Generic term for LJ71C24 and LJ71C24-R2.
Label	Generic term for label names assigned to each device. It can be used instead of devices in programs.
LHCPU	Generic term for L04H, L08H, and L16H.
MELSOFT Navigator	A product name for the integrated development environment included in SWnDND-IQWK (MELSOFT iQ Works). ('n' indicates its version.)
Modem communication	Abbreviation for communication with programmable controller CPU via modems using Q series-compatible C24, L series-compatible C24 or FXCPU.
MX Component	Generic product name for SWnDNC-ACT-E and SWnDNC-ACT-EA. ('n' indicates its version.) -EA indicates a volume-license product.
MX Sheet	Generic product name for SWnDNC-SHEET-E and SWnDNC-SHEET-EA. ('n' indicates its version.) -EA indicates a volume-license product.
Part	A component of a section of CSP+ for machine.
PC CPU module	Abbreviation for MELSEC-Q series compatible PC CPU module (CONTEC CO., LTD.product).
Personal computer	Generic term for personal computers on which Windows® operates.
Q series-compatible C24	Generic term for QJ71C24, QJ71C24-R2, QJ71C24N, QJ71C24N-R2, and QJ71C24N-R4.
R Motion CPU	Generic term for R16MTCPU, R32MTCPU.
R series-compatible C24	Generic term for RJ71C24, RJ71C24-R2, and RJ71C24-R4.
RCP	Generic term for R00, R01, R02, R04, R04EN, R08, R08EN, R08P, R08PSF, R08SF, R16, R16EN, R16P, R16PSF, R16SF, R32, R32EN, R32P, R32PSF, R32SF, R120, R120EN, R120P, R120PSF, and R120SF.
RnENCPU	Generic term for R04EN, R08EN, R16EN, R32EN, and R120EN.
RnPCPU	Generic term for R08P, R16P, R32P, and R120P.

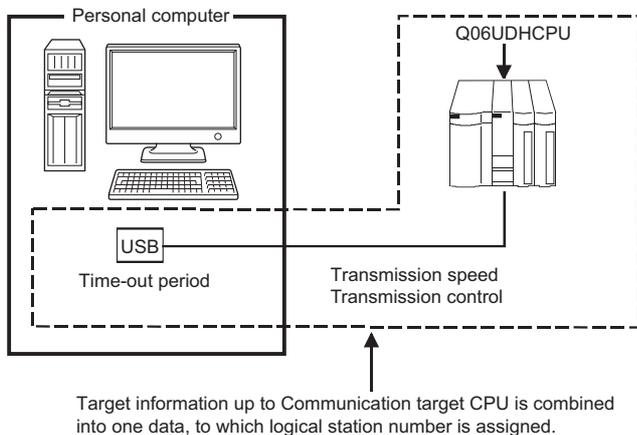
Term	Description
RnSF CPU	Generic term for R08SF, R16SF, R32SF, and R120SF.
Robot controller	Abbreviation for CR750-D/CRnD-700 series.
Section	A component of CSP+ for machine.
System label	A label that can be used commonly among iQ Works-supported products. It is managed by MELSOFT Navigator. There are two kinds of system labels; system label Ver.1 and system label Ver.2. The system label Ver.2 is supported by MX Component Version 4.07H or later and MX Sheet Version 2.04E or later.
Windows 7 or later	Generic term for Windows 7, Windows 8, Windows 8.1, and Windows 10.
Windows Vista or later	Generic term for Windows Vista, Windows 7, Windows 8, Windows 8.1, and Windows 10.
Windows XP or later	Generic term for Windows XP, Windows Vista, Windows 7, Windows 8, Windows 8.1, and Windows 10.

## MEANINGS AND DEFINITIONS OF TERMS

The following describes terms used in this manual.

### Logical station number

A number assigned to the group of data that integrates the connection target information, which is required for communication, into one unit of data by using the communication setup utility of MX Component.



# PACKING LIST

MX Sheet consists of the following products.

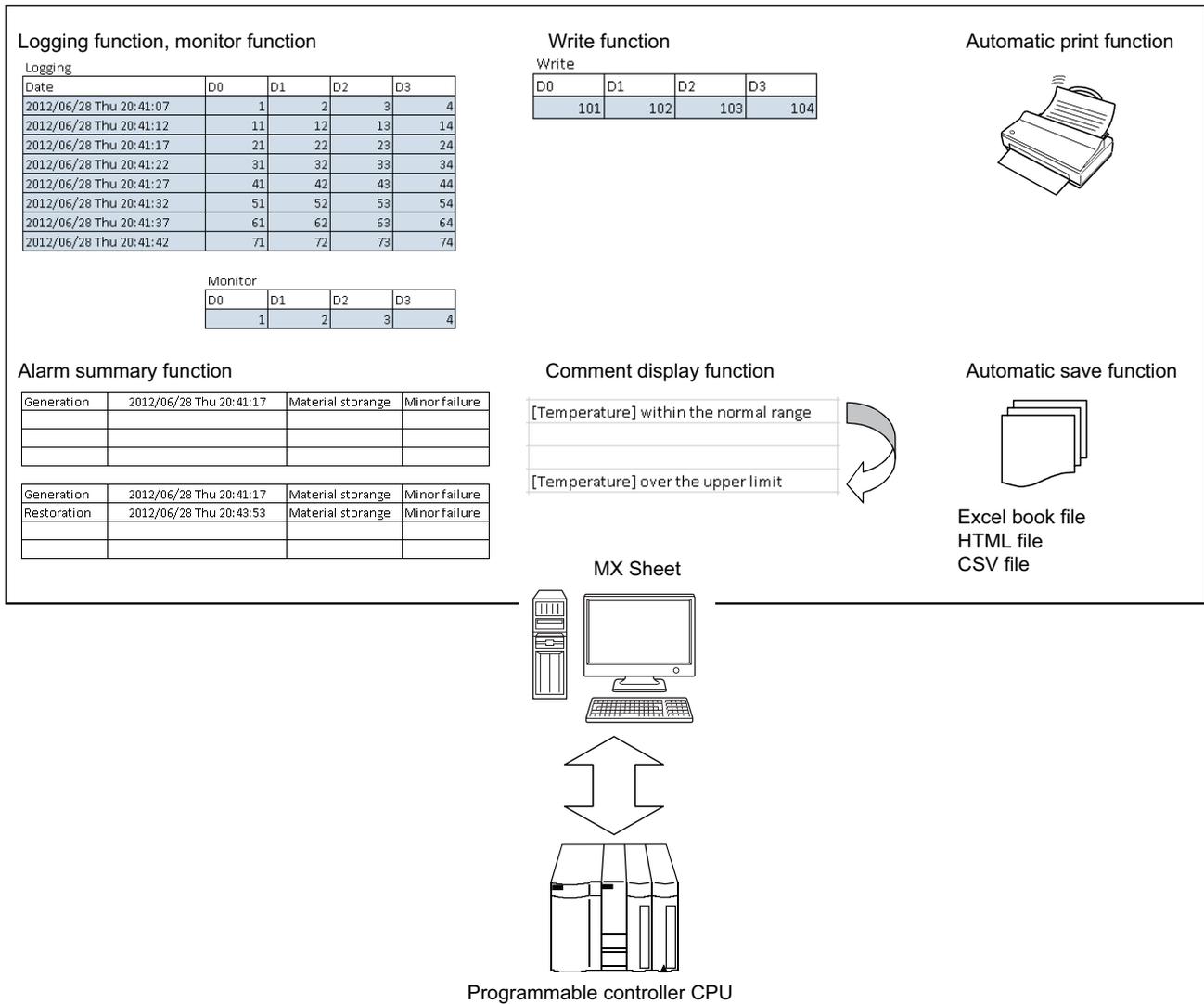
Model name	Product name	Quantity
SW2DNC-SHEET-E (English version package) (Standard license product)	MX Sheet CD-ROM	1
	End-user software license agreement	1
	Software registration notice	1
	License certificate	1
SW2DNC-SHEET-EA (English version package) (Volume license product)	MX Sheet CD-ROM	1
	End-user software license agreement	1
	Software registration notice	1
	License certificate	n <sup>*1</sup>

\*1 The number of included license certificates is equivalent to the number of licenses.

# 1 OVERVIEW

## 1.1 Overview of MX Sheet

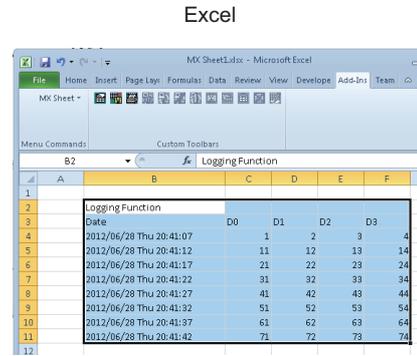
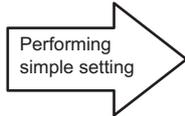
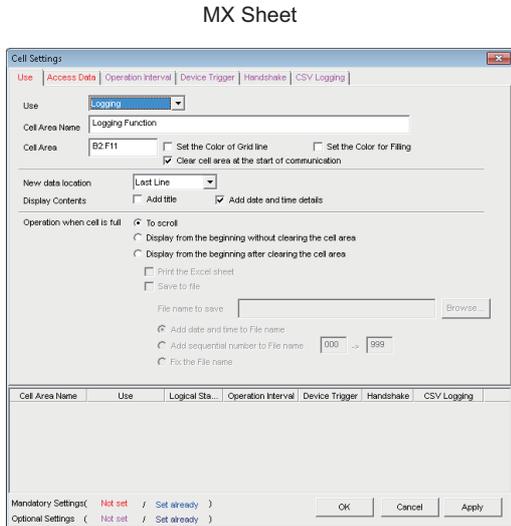
MX Sheet is a communication support software package that allows device data collection, etc. by simple, programless setting using Excel.



# 1.2 Features

## Program-less and easy setting

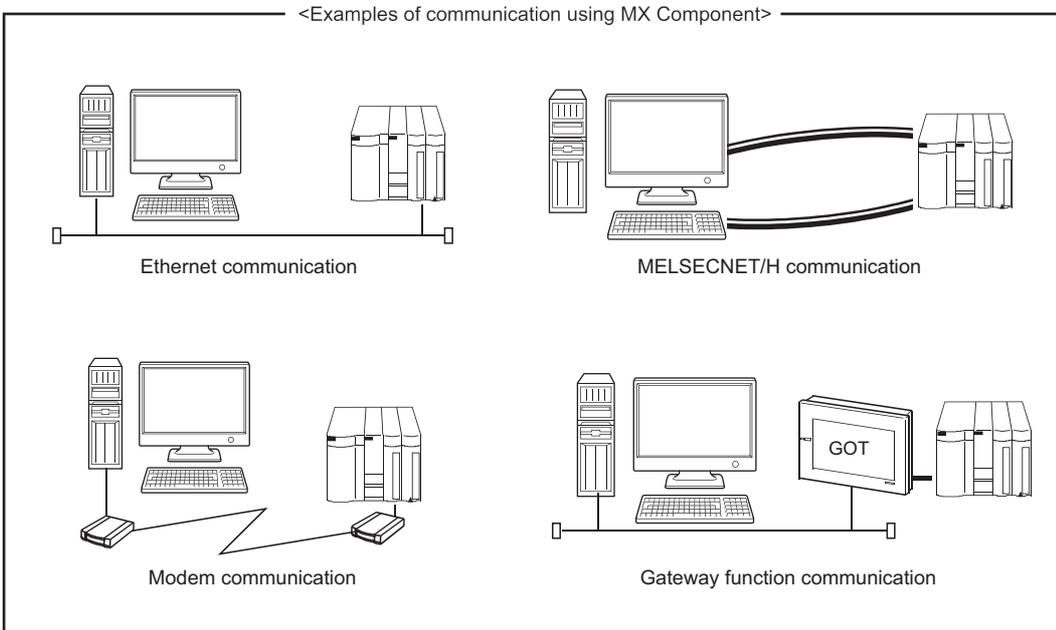
Device data of programmable controller CPU can be collected/written by simple setting without programming.



Programmable controller CPU device data are displayed on Excel spreadsheet.

## Collecting/writing device data using a wide range of communication routes

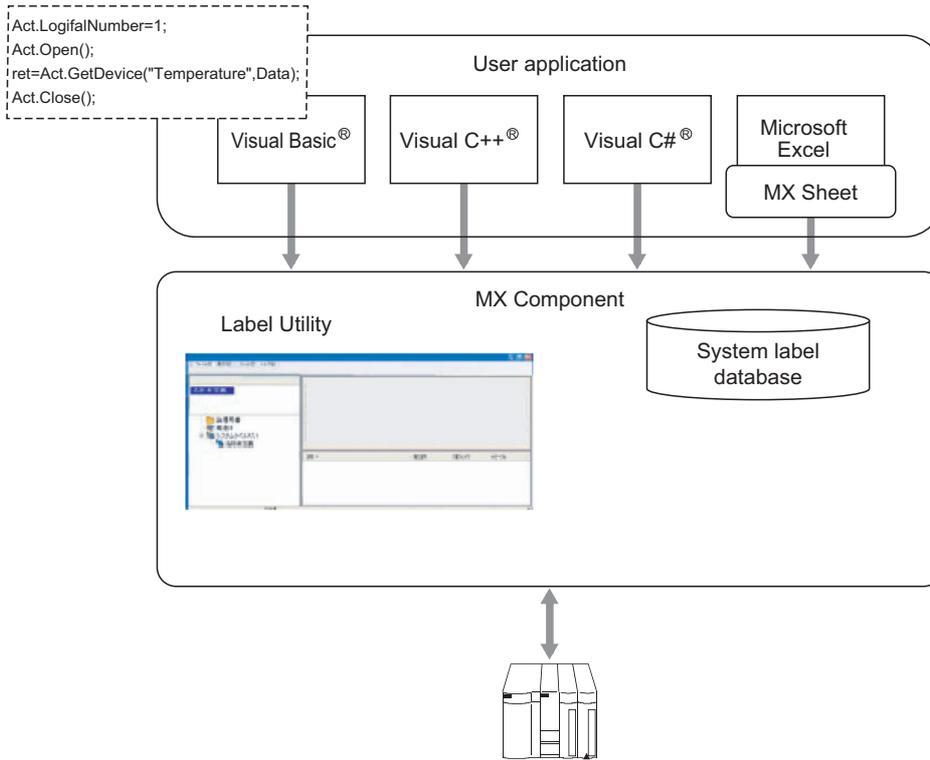
MX Sheet uses MX Component for communication between the programmable controller CPU and personal computer. Using a variety of communication routes supported by MX Component, system configuration that meets user's requirement can be achieved.



## Displaying and setting data with labels

Not only devices, but also the data with labels can be displayed/set.

Register the labels using Label Utility of MX Component.

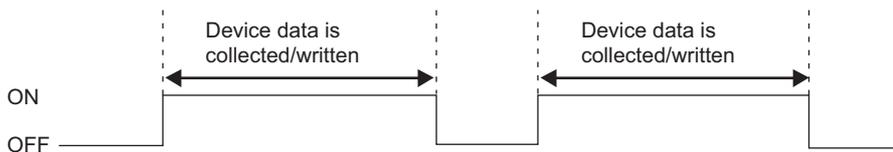


## Controlling each function by device condition

Conditions for collecting and writing device data can be set to programmable controller CPU devices.

The execution of each MX Sheet function can be controlled from the programmable controller CPU side.

<When device data is collected/written while bit device is on>



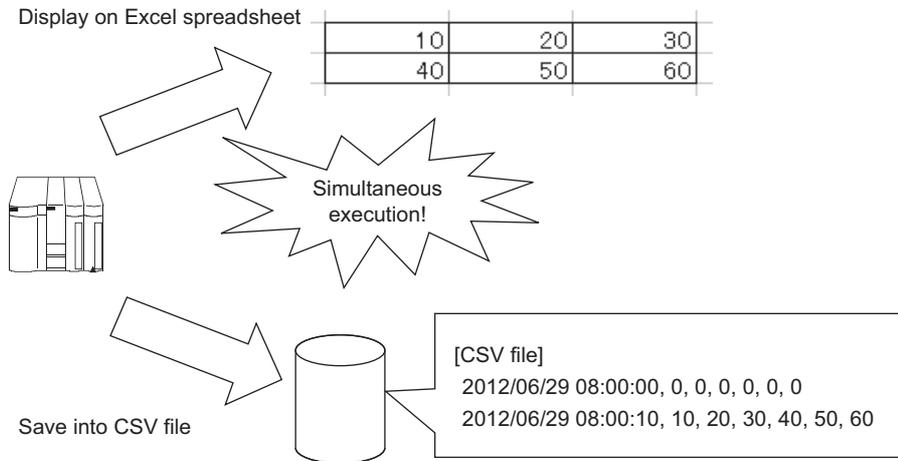
Corresponding functions

- Logging
- Write
- Comment display
- Automatic print
- Monitor
- Alarm summary
- Automatic save

## Data logging using CSV file

Using the logging or monitor function, device data can be displayed on Excel spreadsheet, and collected data can be saved into a CSV file simultaneously.

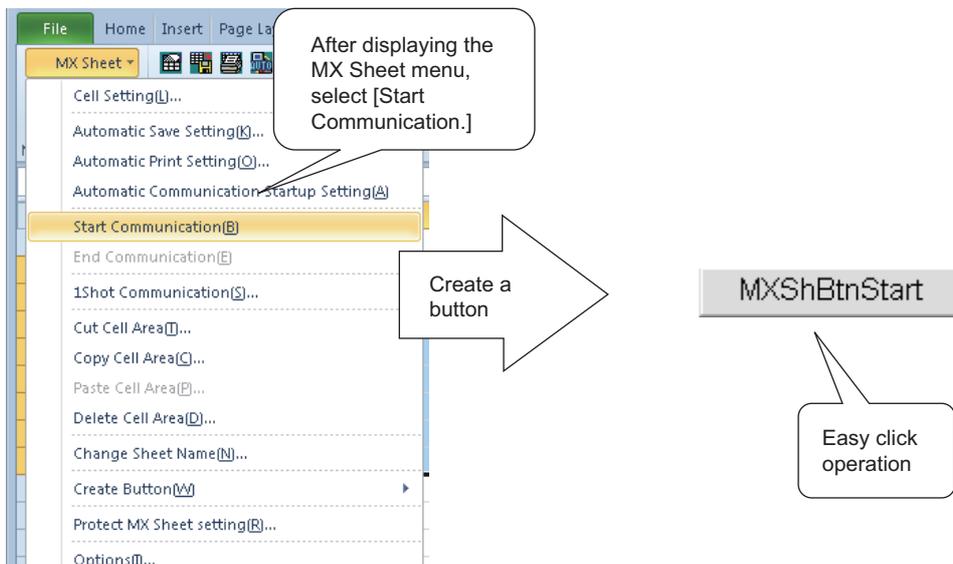
Long-term data collection is available with a single CSV file.



## Improving operability by buttons

By creating buttons, the Start Communication, End Communication, and 1 Shot Communication functions can be executed by merely clicking the corresponding buttons.

Operability is improved as compared to the execution of the functions from the menu.



# 2 SYSTEM CONFIGURATION

The system configuration for MX Sheet is the same as that for MX Component Version 4.

For details, refer to the following manual.

 MX Component Version 4 Operating Manual

## 2.1 Operating Environment

The following table summarizes the operating environment for MX Sheet.

Item	Description	
Personal computer	—	A personal computer on which Microsoft Windows operates
	CPU	Intel® Core™ 2 Duo Processor 2GHz or more recommended
	Required memory	Recommended 1GB or more*1
PC CPU module	MELSEC-Q series-compatible PC CPU module (CONTEC CO., LTD.product) *2	
Available hard disk capacity	For installation: 300MB or more*3*4 For operation: 512MB or more free virtual memory capacity	
Monitor	Resolution 1024 × 768 pixels or higher	
Operating system *5*6*7*8 (32-bit/64-bit)	Microsoft Windows XP Professional Operating System (English version) Service Pack 3 or later Microsoft Windows XP Home Edition Operating System (English version) Service Pack 3 or later Microsoft Windows Vista Home Basic Operating System (English version) Service Pack 2 or later Microsoft Windows Vista Home Premium Operating System (English version) Service Pack 2 or later Microsoft Windows Vista Business Operating System (English version) Service Pack 2 or later Microsoft Windows Vista Ultimate Operating System (English version) Service Pack 2 or later Microsoft Windows Vista Enterprise Operating System (English version) Service Pack 2 or later Microsoft Windows 7 Starter Operating System (English version) Service Pack 1 or later Microsoft Windows 7 Home Premium Operating System (English version) Service Pack 1 or later Microsoft Windows 7 Professional Operating System (English version) Service Pack 1 or later Microsoft Windows 7 Ultimate Operating System (English version) Service Pack 1 or later Microsoft Windows 7 Enterprise Operating System (English version) Service Pack 1 or later Microsoft Windows 8 Operating System (English version) Microsoft Windows 8 Pro Operating System (English version) Microsoft Windows 8 Enterprise Operating System (English version) Microsoft Windows 8.1 Operating System (English version) Microsoft Windows 8.1 Pro Operating System (English version) Microsoft Windows 8.1 Enterprise Operating System (English version) Microsoft Windows 10 Home Operating System (English version) Microsoft Windows 10 Pro Operating System (English version) Microsoft Windows 10 Enterprise Operating System (English version) Microsoft Windows 10 Education Operating System (English version)	
Required software	Excel*9	Microsoft Excel 2003 (English version) Microsoft Excel 2007 (English version)*10 Microsoft Excel 2010 (32-bit version) (English version)*11 Microsoft Excel 2013 (32-bit version) (English version)*12 Microsoft Excel 2016 (32-bit version) (English version)*13 Microsoft Excel 2019 (32-bit version) (English version)*14
	MX Component	MX Component Version 4 or later

\*1 For 64-bit Windows 7 or later, 2GB or more memory is required.

\*2 Production of the PC CPU module was discontinued in March, 2011.

\*3 When installing .NET Framework, at least 1GB of free space is required.

\*4 This includes the required free space for installation of MX Component.

\*5 Windows XP Professional (64-bit version) and Windows Vista (64-bit version) cannot be used.

\*6 .NET Framework 2.0 installation is required.

\*7 When the following functions are used, this product may not run properly.

- Application start-up in Windows compatibility mode
- Fast user switching
- Remote desktop
- Windows XP Mode
- Windows Touch or Touch
- Modern UI
- Client Hyper-V
- Virtual Desktops
- Tablet mode

Windows Hibernate and Standby  
Unified Write Filter

- \*8 In the following case, the screen of this product may not work properly.  
The size of the text and other items in the screen is other than 100% (96 DPI, 9 pt etc.).
- \*9 Excel spreadsheets created in the English environment are applicable to the English environment only. They cannot be used in the other environment.
- \*10 When using Microsoft Excel 2007, Windows XP Professional Service Pack 2 or later is required.
- \*11 When using Microsoft Excel 2010 (32-bit version), Microsoft Windows XP Service Pack 3 or later, Microsoft Windows Vista Service Pack 1 or later, or Microsoft Windows 7 or later is required.  
Microsoft Excel 2010 (64-bit version) is not supported.
- \*12 When using Microsoft Excel 2013 (32-bit version), Windows 7 or later is required.  
Microsoft Excel 2013 (64-bit version) is not supported.
- \*13 When using Microsoft Excel 2016 (32-bit version), Windows 7 or later is required.  
Microsoft Excel 2016 (64-bit version) is not supported.
- \*14 When using Microsoft Excel 2019 (32-bit version), Windows 10 or later is required.  
Microsoft Excel 2019 (64-bit version) is not supported.

Surrogate pair characters and environment dependent characters are not available in MX Sheet.

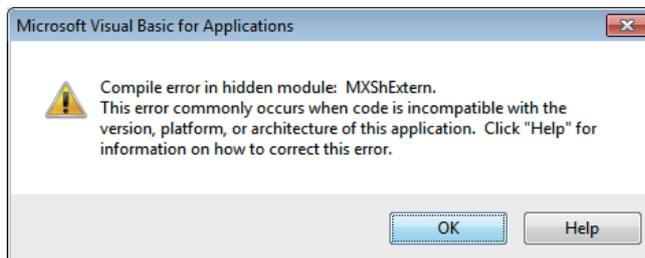
**Point**

Considerations when using Microsoft Excel 2010 or later  
Install 32-bit version to use MX Sheet.

When installing MX Sheet on the personal computer where 64-bit version is installed, the following error message is displayed.



After installing MX Sheet, when installing and activating 64-bit Microsoft Excel 2010 or later and registering an add-in, the following error message is displayed.



# 3 FUNCTION LIST OF MX Sheet

This chapter explains the functions of MX Sheet, accessible CPUs and accessible devices.

## 3.1 Function List of MX Sheet

Function Name	Description	Available device points	Available cells	Reference
Logging	Accumulates device data collected from programmable controller CPU in cell range selected on Excel as history.	256 points <sup>*1*2</sup>	256 columns × 65536 rows	Page 33 When "Logging" is Selected
Monitor	Displays device data collected from programmable controller CPU in cell range selected on Excel.	2000 points <sup>*1*3</sup>	2000	Page 71 When "Monitor" is Selected
Write	Writes values entered on Excel to programmable controller CPU devices.	2000 points <sup>*1*3</sup>	2000	Page 80 When "Write" is Selected
Alarm summary	Converts ON/OFF data of bit devices into alarm comment character strings that are set separately and accumulates them on Excel spreadsheet as alarm history.	2000 points <sup>*2*4</sup>	6 columns × 65536 rows	Page 88 When "Alarm Summary" is Selected
Comment display	Converts bit or word device values into comment character strings that are set separately and displays them on Excel spreadsheet.	1 point <sup>*5</sup>	1	Page 98 When "Comment" is Selected
Device trigger	Collects/Writes device data when set device conditions set for collection/write are met.	—		Page 54 Setting of the [Device Trigger] tab
Handshake	Sets handshake with programmable controller CPU for secure device data collection/write.	—		Page 57 Setting of the [Handshake] tab
CSV logging	Displays device data on Excel spreadsheet with logging or monitor function, and simultaneously saves collected data as a CSV file.	—		Page 68 Setting of the [CSV Logging] tab
Automatic save	Automatically saves Excel book.	—		Page 107 AUTOMATIC SAVE SETTING
Automatic print	Automatically prints Excel book.	—		Page 114 AUTOMATIC PRINT SETTING
Automatic communication startup	Automatically starts communication with programmable controller CPU when Excel book is started.	—		Page 26 FUNCTION LIST OF MX Sheet
Start communication	Starts communication with the programmable controller CPU.	—		Page 119 Start Communication
End communication	Ends communication with the programmable controller CPU.	—		Page 121 End Communication
1 shot communication	Executes functions set in the selected cell range at any desired timing.	—		Page 122 1 SHOT COMMUNICATION
Create button	Creates buttons to facilitate Start Communication, End Communication, and 1 Shot Communication operations.	—		Page 131 CREATING BUTTONS
Protect/Unprotect MX Sheet setting	Sets/Cancel the password for protecting the MX Sheet setting.	—		Page 137 PROTECTING/ UNPROTECTING MX Sheet SETTING
Options	Sets the output format of the error log sheet.	—		Page 140 OPTIONS
Setting data export	Outputs MX Sheet settings in CSV file format.	—		Page 142 SETTING DATA EXPORT

\*1 This number of device points refers to the case where word device data are collected/written in 16-bit integer.

The number of device points that can be set changes depending on the device data type, etc.

\*2 Up to 100 cell areas can be set in one Excel file (one Excel book).

\*3 Up to 1000 cell areas can be set in one Excel file (one Excel book).

\*4 Only bit devices can be set.

\*5 Up to 500 cell areas can be set in one Excel file (one Excel book).

## 3.2 Accessible CPUs and Accessible Device Ranges

### Accessible CPUs

The accessible CPUs in MX Sheet are the same as those in MX Component Version 4.

For details, refer to the following manual.

 MX Component Version 4 Operating Manual

### Accessible device ranges

The accessible device ranges in MX Sheet are the same as those in MX Component Version 4, except for the following item.

For details, refer to the following manual.

 MX Component Version 4 Operating Manual

#### ■ Device extension representation

MX Sheet does not allow access to any device by word designation for bit device (e.g. K4X0, K8M0) and bit designation for word device (e.g. D0.0, W0.1).

### Specifying GOT timer contact devices and counter contact devices

In the cell settings of MX Sheet ( Page 32 CELL SETTING), timer contact devices (TT) and counter contact devices (CT) which are the device representation of GOT can be entered.

The entered "TT" and "CT" are automatically changed to "TS" and "CS" respectively.

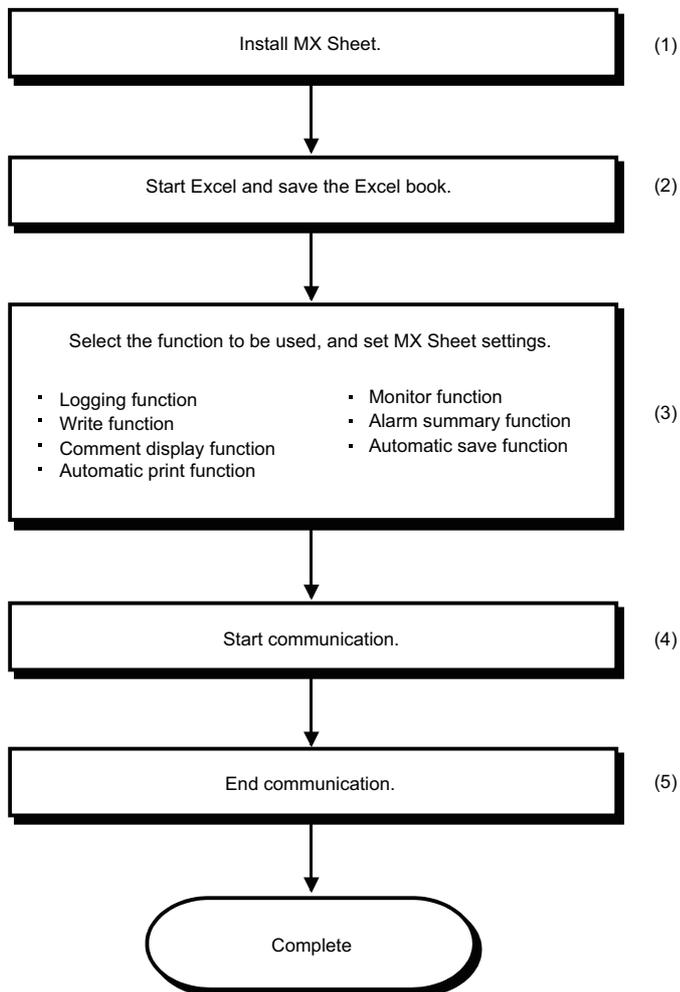
### Specifying devices on Q motion CPU

The device write function cannot be executed.

Device indexing (bit specification, digit specification, indexed addressing) cannot be used.

# 4 MX Sheet OPERATION PROCEDURE

The following explains the MX Sheet operation procedure.



(1) MX Sheet Version 2 Operating Manual (Introduction)

(2) Before starting MX Sheet settings, save the Excel book.

If not, MX Sheet cannot be set.

(3) Page 32 CELL SETTING, Page 107 AUTOMATIC SAVE SETTING, Page 114 AUTOMATIC PRINT SETTING

(4) Page 119 Start Communication

(5) Page 121 End Communication

## Point

- Communication efficiency changes depending on the MX Sheet setting. ( Page 151 Processing Speed of MX Sheet, Page 161 Creating the Excel Spreadsheet for MX Sheet)
- Refer to the Excel manual for how to operate Excel.

## Administrator authority when setting/changing communication setup

Administrator authority is required for setting/changing communication setup.

### ■Administrator authority in case of Windows Vista and Windows 7

- When user account control (UAC) is enabled

All users including administrator are fixed at and operate as "standard user".

To execute programs in administrator authority, specify "Run as administrator".

When executing Excel with administrator authority, programs are executed with administrator authority even if selecting [No] for "Do you execute programs as an administrator?".

- When user account control (UAC) is invalid

Programs can be executed with login user authority.

### ■When setting/changing the communication setup on Windows Vista and Windows 7

The following three methods are available to set/change the communication setup.

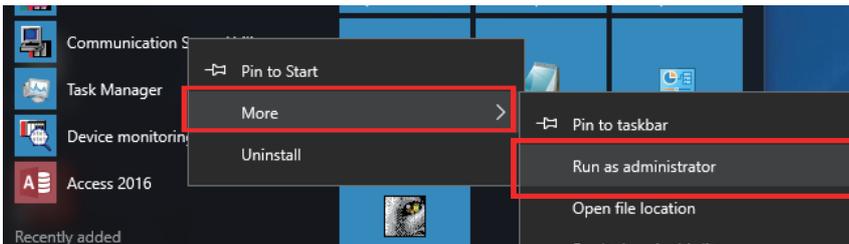
- Execute the communication setup utility of MX Component with Administrator authority and set/change the setting.
- Execute the communication setup utility with administrator authority from Excel for setting/changing.
- Execute Excel with Administrator authority and set/change the setting.

When executing Excel with administrator authority, the operations such as opening the file by dragging and dropping cannot be executed.

### ■Administrator authority in case of Windows 8 or later

#### Operating procedure

Select the communication setup utility, and then right-click and select [Run as administrator].



# 5 MX Sheet MENU SELECTION METHOD

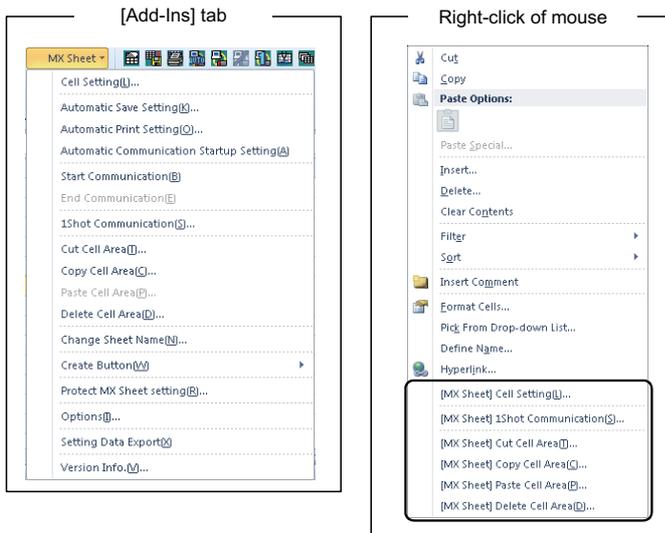
This chapter explains the displaying method and details of the MX Sheet menu options.

## Operating procedure

- Select the [Add-Ins] tab ⇒ [MX Sheet]
- Specify the cell area and right-click the mouse.

When using Microsoft Excel 2003, select [MX Sheet] on the menu bar.

Display the toolbar by selecting [View] ⇒ [Toolbars] on the menu bar, and select "MX Sheet".



### Point

If the Excel spreadsheet type is other than the worksheet, the MX Sheet menu is not displayed.  
When using MX Sheet, set the setting on the worksheet.

## MX Sheet menu details

The following table details the items of the MX Sheet menu.

Item			Description	Reference
Menu bar	Icon	Right-click		
Cell Setting		[MX Sheet] Cell Setting	Set the cell setting.	Page 33 When "Logging" is Selected
Automatic Save Setting		—	Set the automatic save setting.	Page 107 AUTOMATIC SAVE SETTING
Automatic Print Setting		—	Set the automatic print setting.	Page 114 AUTOMATIC PRINT SETTING
Automatic Communication Startup Setting		—	Set the automatic communication startup setting.	Page 117 AUTOMATIC COMMUNICATION STARTUP/CANCEL SETTING
Start Communication		—	Start the communication.	Page 119 Start Communication
End Communication		—	End the communication.*1	Page 121 End Communication
1 Shot Communication		[MX Sheet] 1 Shot Communication	Perform 1 shot communication.	Page 122 1 SHOT COMMUNICATION
Cut Cell Area		[MX Sheet] Cut Cell Area	Cut a cell area.	Page 124 Cutting Cell Area
Copy Cell Area		[MX Sheet] Copy Cell Area	Copy a cell area.	Page 125 Copying Cell Area
Paste Cell Area		[MX Sheet] Paste Cell Area	Paste a cell area.*2	Page 126 Pasting Cell Area
Delete Cell Area		[MX Sheet] Delete Cell Area	Delete a cell area.	Page 128 Deleting Cell Area
Change Sheet Name		—	Change the Excel spreadsheet name.	Page 129 CHANGING SHEET NAME
Create Button	Start Communication Button	—	—	Create the Start Communication Button. Page 131 Start Communication Button
	End Communication Button	—	—	Create the End Communication Button. Page 135 End Communication Button
	1 Shot Communication Button	—	—	Create the 1 Shot Communication Button. Page 136 1 Shot Communication Button
Protect MX Sheet setting	—	—	Protect the MX Sheet setting.	Page 137 Protecting MX Sheet Setting
Unprotect MX Sheet setting	—	—	Unprotect the MX Sheet setting.	Page 139 Unprotecting MX Sheet Setting
Options	—	—	Set the error log options.	Page 140 Setting Error Logs
Setting Data Export	—	—	Execute setting data export.	Page 142 SETTING DATA EXPORT
Version Info.	—	—	Display the MX Sheet version.	Page 150 Confirming method of MX Sheet version

\*1 Can be selected after start of communication.

\*2 Can be selected after the cell area is cut or copied.

# 6 CELL SETTING

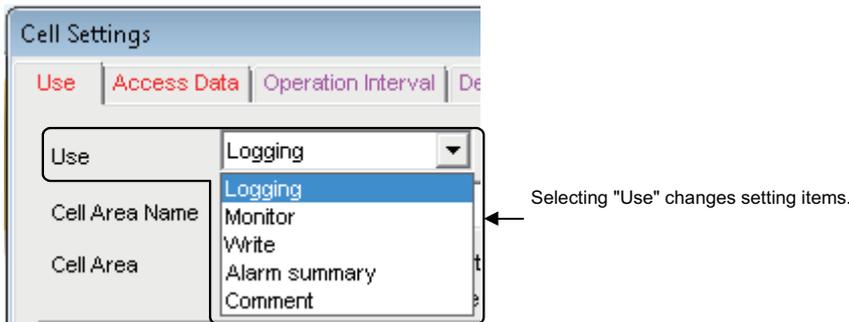
This chapter explains cell setting required to operate MX Sheet.

## 6.1 Operation of "Cell Settings" Screen

This section explains the procedure for displaying the "Cell Settings" screen and changing the setting items. In the "Cell Settings" screen, its setting items change automatically depending on the selected function.

### Window

[MX Sheet] ⇒ [Cell Setting]()



The setting of the "Cell Settings" screen can be changed by selecting "Use" of the [Use] tab. The following table shows the function outlines and relevant sections for options of "Use".

Item	Function	Reference
Logging	Set when using the logging function.	Page 33 When "Logging" is Selected
Monitor	Set when using the monitor function.	Page 71 When "Monitor" is Selected
Write	Set when using the write function.	Page 80 When "Write" is Selected
Alarm summary	Set when using the alarm summary function.	Page 88 When "Alarm Summary" is Selected
Comment	Set when using the comment display function.	Page 98 When "Comment" is Selected

### Point

- Inverter communication/Robot controller communication is not supported other than "Logging".
- A system label<sup>\*1</sup> can also be set on the "Cell Settings" screen where a label can be set.
- When using labels, do not install MX Component using the ACT Version.

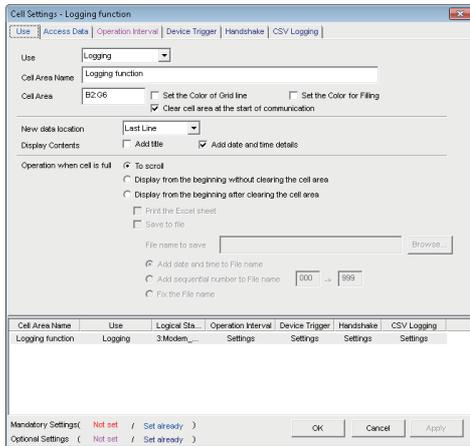
For the installation using the ACT Version, refer to the following manual.

 MX Component Version 4 Operating Manual

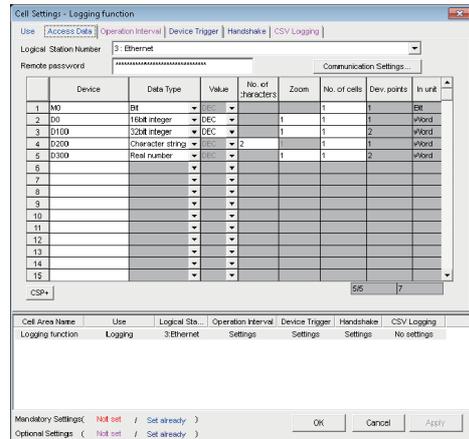
\*1 There are two kinds of system labels; system label Ver.1 and system label Ver.2. For the differences between system label Ver.1 and system label Ver.2, refer to the HELP of MELSOFT Navigator. For their respective creation methods, refer to the following manual.  
 MX Component Version 4 Operating Manual

# 6.2 When "Logging" is Selected

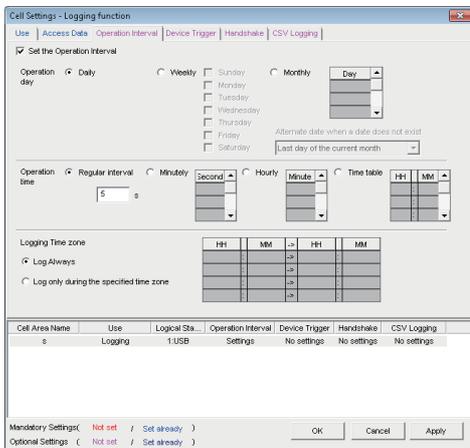
This section explains the "Cell Settings" screen when "Logging" is selected from "Use" of the [Use] tab.



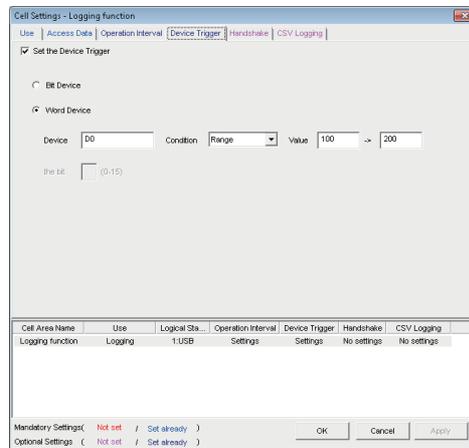
(1)



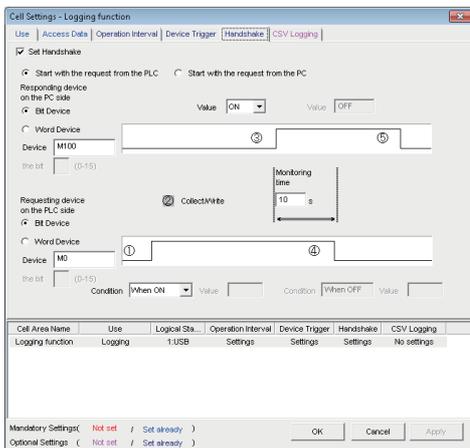
(2)



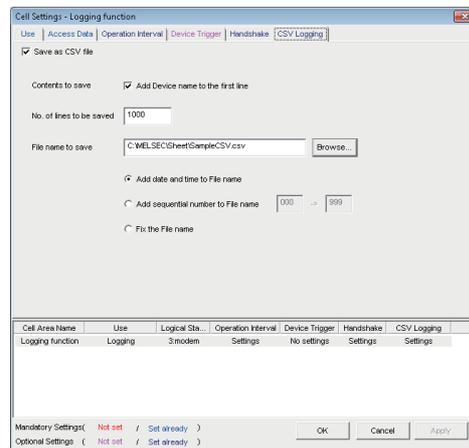
(3)



(4)



(5)



(6)

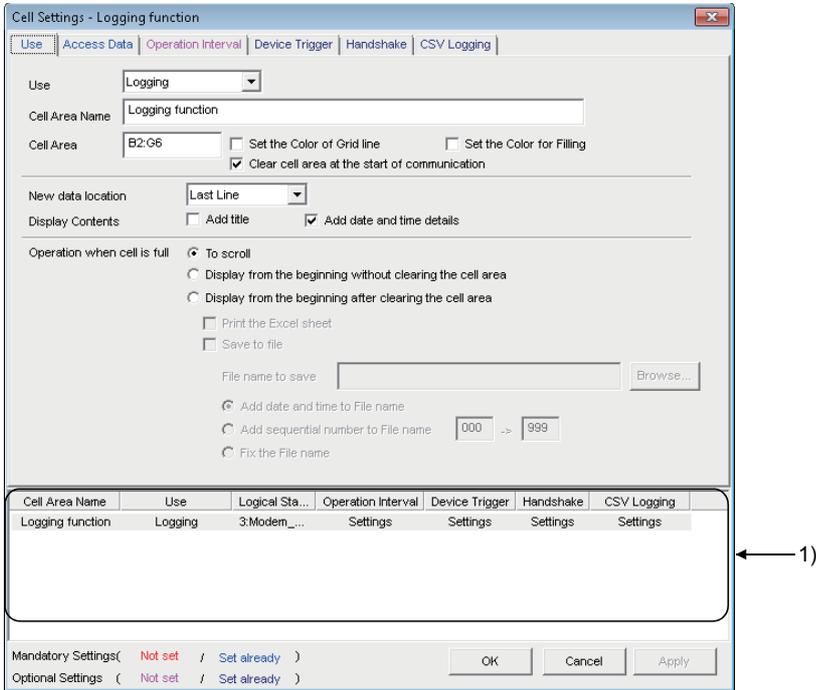
(1) [Use] tab	Required setting  Page 34 Setting of the [Use] tab
(2) [Access Data] tab	Required setting  Page 41 Setting of the [Access Data] tab
(3) [Operation Interval] tab	Required setting  Page 47 Setting of the [Operation Interval] tab
(4) [Device Trigger] tab	Set as necessary  Page 54 Setting of the [Device Trigger] tab
(5) [Handshake] tab	Set as necessary  Page 57 Setting of the [Handshake] tab
(6) [CSV Logging] tab	Set as necessary  Page 68 Setting of the [CSV Logging] tab

# Setting of the [Use] tab

This section explains the setting of the [Use] tab for use of the logging function.

On the [Use] tab, set the cell area, logging data display position, displayed content, and operation when the cell is full.

## Window



## Displayed items

Item	Description	Reference
Use	Set the function to be used for the specified cell area. Select "Logging" when using the logging function.	—
Cell Area Name	Set the name of the specified cell area. (Maximum number of cell area names: 100)	
Cell Area	Enter the value to specify the cell area.	Page 35 "Cell Area"
Set the Color of Grid line	Select this checkbox to add grid lines (including color designation) to the specified cell area.	Page 35 "Set the Color of Grid line" and "Set the Color for Filling"
Set the Color for Filling	Select this checkbox to color the specified cell area.	
Clear cell area at the start of communication	Select this checkbox to clear the data of specified cell area at the start of communication. (Default: selected)	Page 36 "Clear cell area at the start of communication"
New data location	Set the latest data display position of the logging data. <ul style="list-style-type: none"> <li>Last Line The latest data is displayed at the last of the specified cell area.</li> <li>First Line The latest data is displayed at the first of the specified cell area.</li> </ul>	Page 37 "New data location"
Display Contents	Select a checkbox to add a title or date and time to the displayed logging data.	Page 38 "Display Contents"
Operation when cell is full	Set the operation to be performed when the specified cell area is full. <ul style="list-style-type: none"> <li>To scroll The displayed contents are scrolled and displayed.</li> <li>Display from the beginning without clearing the cell area The data currently displayed in the cell area are overwritten and logging is resumed. Before logging is resumed, the Excel spreadsheet can be printed and saved.</li> <li>Display from the beginning after clearing the cell area The data displayed in the cell area are erased and logging is resumed. Before logging is resumed, the Excel spreadsheet can be printed and saved.</li> </ul>	Page 39 "Operation when cell is full"
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 40 Preset cell areas

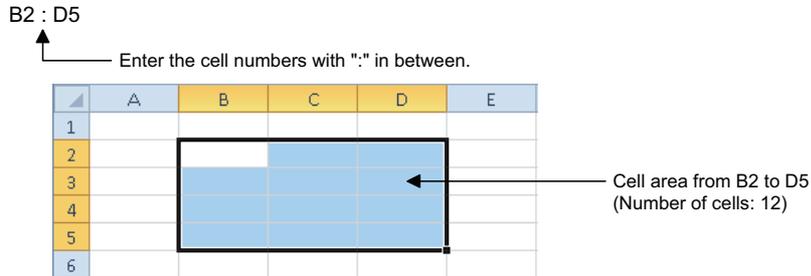
## "Cell Area"

Set the cell area to be used by the logging function.

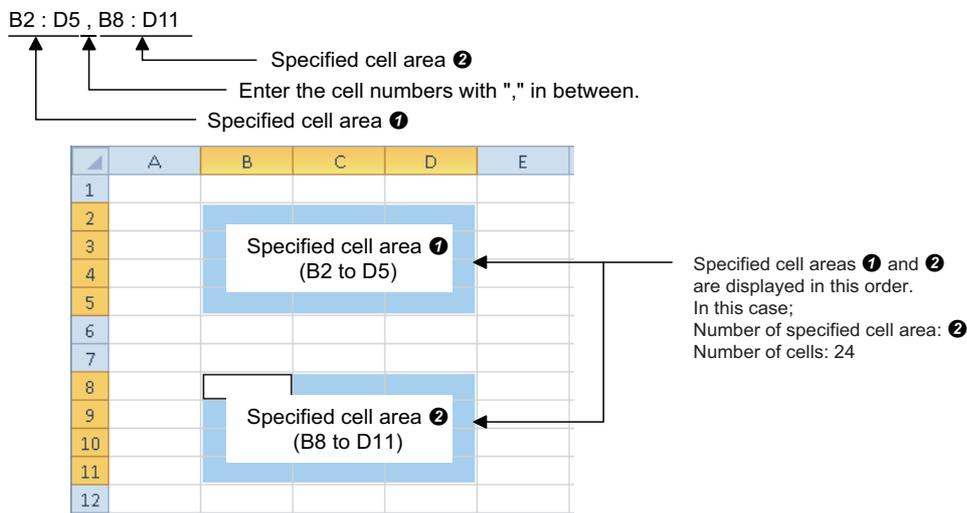
### ■Settings

Ex.

When a single cell range is specified (B2 to D5)



When multiple cell areas are specified (B2 to D5 (Specified cell area ①) and B8 to D11 (Specified cell area ②))



### ■Setting ranges

The following shows the available setting ranges for the cell area and number of specified cell areas.

Item	Setting range
Cell area	When date and time are added: 255 columns × 65536 rows When date and time are not added: 256 columns × 65536 rows
Number of specified cell areas	Up to 16

## "Set the Color of Grid line" and "Set the Color for Filling"

Set the colors of cell area grid lines and cell filling.

Depending on the specified colors, all colors may turn to gray.

For details, refer to the following consideration.

📄 Page 3 Considerations for setting MX Sheet

## "Clear cell area at the start of communication"

Set whether or not to clear the data of cell area at the start of communication.

### ■ Display example in the case where the checkbox of "Clear cell area at the start of communication" is selected

<Before the start of communication>

2012/05/24 Thu 13:00:00	15	37
2012/05/24 Thu 13:00:05	16	39
2012/05/24 Thu 13:00:10	17	42



<At the start of communication>




<At the completion of the first collection>

2012/05/24 Thu 15:00:00	31	102

### ■ Display example in the case where the checkbox of "Clear cell area at the start of communication" is not selected

<Before the start of communication>

2012/05/24 Thu 13:00:00	15	37
2012/05/24 Thu 13:00:05	16	39
2012/05/24 Thu 13:00:10	17	42



<At the start of communication>

2012/05/24 Thu 13:00:00	15	37
2012/05/24 Thu 13:00:05	16	39
2012/05/24 Thu 13:00:10	17	42



<At the completion of the first collection>

2012/05/24 Thu 13:00:00	15	37
2012/05/24 Thu 13:00:05	16	39
2012/05/24 Thu 13:00:10	17	42
2012/05/24 Thu 15:00:00	31	102

## "New data location"

Set the location of the latest data when using the logging function.

### ■Display example in the case where "Last Line" is selected

2012/05/23 Wed 18:28:17	21	37	↑ Old data New data ↓
2012/05/23 Wed 18:28:22	26	39	
2012/05/23 Wed 18:28:27	30	42	
2012/05/23 Wed 18:28:32	35	44	
2012/05/23 Wed 18:28:37	39	46	

### ■Display example in the case where "First Line" is selected

2012/05/23 Wed 18:31:06	21	16	New data ↑ Old data ↓
2012/05/23 Wed 18:31:01	17	13	
2012/05/23 Wed 18:30:56	12	11	
2012/05/23 Wed 18:30:51	8	9	
2012/05/23 Wed 18:30:46	3	6	

## "Display Contents"

### ■"Add title" checkbox

Set whether or not the date and time and the title for device name is displayed at the first line of the "Cell Area".  
Select this check box to display the title.

**Ex.**

When the checkbox of "Add date and time details" is selected and the devices D100 to D103 are set

Title →	Date Time	D100	D101	D102	D103	
	Collection data {	2012/05/21 Mon 13:24:14	30	100	0	37
		2012/05/21 Mon 13:24:17	40	80	0	55

The device name set on the [Access Data] tab is displayed.

### Point

- The title line is not the target of cell area clear at the start of communication or clear when cell is full.
- When the Cell Area is set at multiple locations, the title is displayed for only the Cell Area specified first.

<Example>

When "B2:E4,B6:E8" is set for the Cell Area on the [Use] tab

	A	B	C	D	E
1					
2		Date Time	D100	D101	D102
3		2012/06/28 Thu 20:41:26	37	0	100
4		2012/06/28 Thu 20:41:31	41	0	95
5					91
6		2012/06/28 Thu 20:41:36	45	0	88
7		2012/06/28 Thu 20:41:41	48	0	82
8		2012/06/28 Thu 20:41:46	52	0	0

### ■"Add date and time details" checkbox

Set whether or not to add the logging date and time to the cell area set in the "Cell Area".  
Select this checkbox to add the date and time.

In this case, the leftmost column of the logging data area is used for the date and time. (One item of logging data decreases.)  
The date and time column displays the date and time of the personal computer where MX Sheet is installed.

2012/05/23 Wed 18:31:06

↑ Indicates the time as "hours: minutes: seconds".

↑ Indicates the day of the week as "Sun (Sunday), Mon (Monday), Tue (Tuesday), Wed (Wednesday), Thu (Thursday), Fri (Friday), Sat (Saturday)".

↑ Indicates the date as "year/month/day".

### Point

The above date and time can be edited on Excel.

If the cell setting is edited again after editing on Excel, the setting on Excel are invalid.

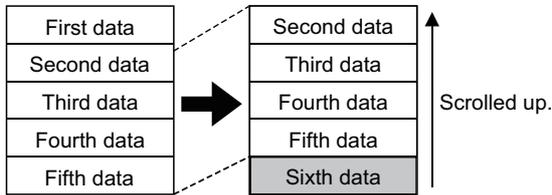
## "Operation when cell is full"

Set the operation to be performed when the cell area is full of logging data.

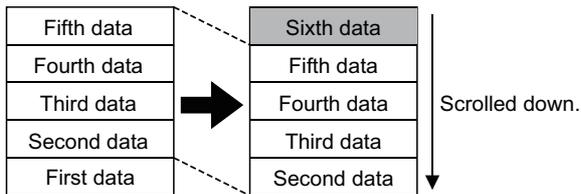
When "New data location" is set to "First Line", "Display from the beginning without clearing the cell area" cannot be selected.

### ■When "To scroll" is selected

<When "New data location" is set for "Last Line">

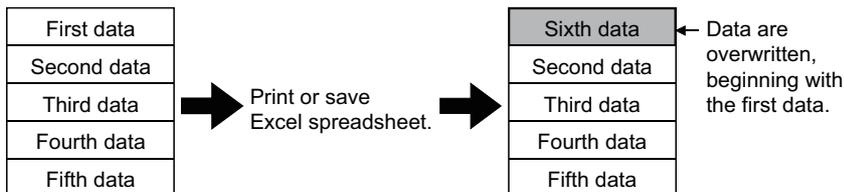


<When "New data location" is set for "First Line">



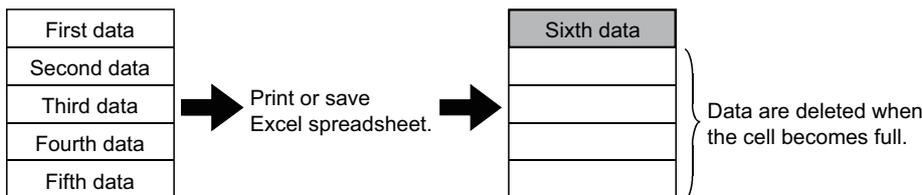
### ■When "Display from the beginning without clearing the cell area" is selected

When the cell is full, Excel spreadsheet print or Excel book save can also be performed.



### ■When "Display from the beginning after clearing the cell area" is selected

When the cell is full, Excel spreadsheet print or Excel book save can also be performed.



### ■When "Print the Excel sheet" is selected

The Excel spreadsheet is printed when the cell is full.

After completion of print, all data are erased and logging is resumed.

This item can be selected when "Display from the beginning without clearing the cell area" or "Display from the beginning after clearing the cell area" is selected for "Operation when cell is full".

## ■When "Save to file" is selected

The Excel book is saved when the cell is full.

After completion of save, all data are erased and logging is resumed.

This item can be selected when "Display from the beginning without clearing the cell area" or "Display from the beginning after clearing the cell area" is selected for "Operation when cell is full".

When selecting "Save to file", set the following settings for the file where data is saved.

Item	Description
File name to save	The storage location and file name are set for the Excel book to be saved when the cell is full.*1 The Excel file (.xls, .xlsx*2, .xlsm*2, .xlsb*2)*3, HTML file (.htm)*4, or CSV file (.csv) can be set as the file type.*5
Add date and time to File name	The file set in "File name to save" saves data with the date and time added to its file name. The following shows a file name format when data is saved.  <div style="text-align: center;"> <p>*****20120523183536.extension</p> <p>Extension set to "File name to save" Seconds Minutes Hours Day Month Year File name set in "File name to save"</p> </div>
Add sequential number to File name	The file set in "File name to save" saves data with a number added to its file name. A serial number can be set within the range of 000 to 999. When the number reaches to the last, the file of the first number is overwritten by the newly saving file. The following shows the file name format when data is saved.  <div style="text-align: center;"> <p>*****000.extension</p> <p>Extension set in "File name to save" File number File name set in "File name to save"</p> </div>
Fix the File name	The file set in "File name to save" is overwritten by data.

\*1 A UNC path name (\\server name\path name) cannot be specified as a file name. After assigning the network drive, specify the path name.

\*2 .xlsx, .xlsm, and .xlsb are Workbook-format extensions added to Microsoft Excel 2007 or later.

\*3 An Excel file can be set only with the same extension as the file in which MX Sheet is set.

\*4 For the continuous operation when saving data automatically in HTML format, refer to the following appendix.

☞ Page 165 HTML Files

\*5 In the case of an Excel file or HTML file, the whole Excel book is saved. However, in the case of a CSV file, only the data of the target sheet is saved.

## Preset cell areas

The cell areas already set to the Excel book are displayed.

The following operations are available by selecting the cell area name in the "preset cell areas".

### ■Reading the settings

Select and double-click the cell area name to read the settings of the selected cell area name to the "Cell Settings" screen.

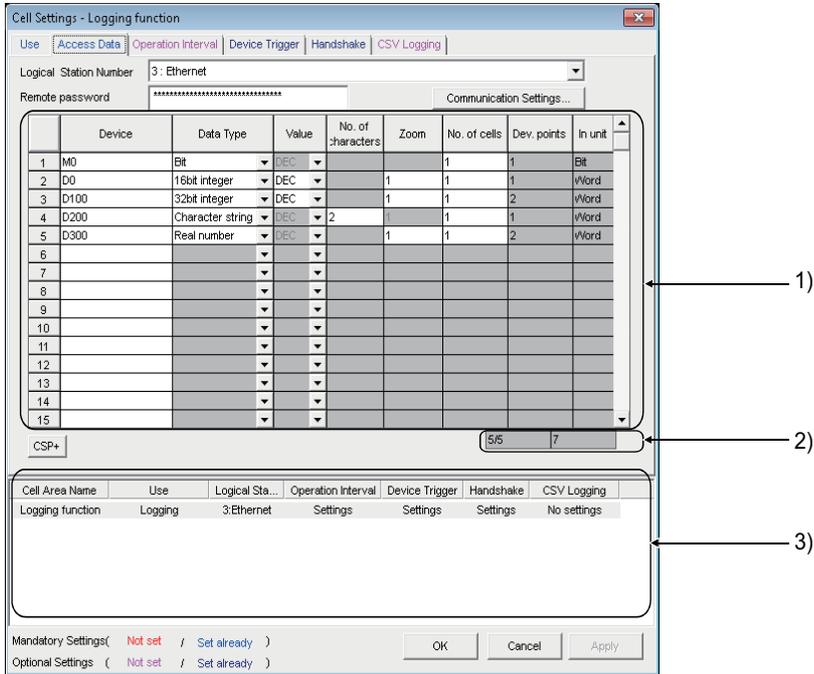
### ■Deleting the settings

Select the cell area name and press the Delete key to erase all the settings of the selected cell area name.

# Setting of the [Access Data] tab

On the [Access Data] tab, set the logical station number required for communication with the programmable controller CPU and the device data to be collected in the cell area.

## Window



## Displayed items

Item	Description	Reference
Logical Station Number	Select the logical station number required for communication.	Page 41 "Logical Station Number"
[Communication Settings] button	Click this to start the communication setup utility for setting a new logical station number and changing settings.	Page 42 [Communication Settings] button
Remote password*1	Enter the password when the password is set to the connection target programmable controller CPU.	Page 42 "Remote password"
[CSP+] button	Click this to display the "Getting CSP+ for machine" screen.	Page 46 Importing CSP+ for machine
1) (Access data)	Set the devices or labels to be logged.	Page 42 Access data
2) (Number of set devices)	The number of devices currently set is displayed.	Page 46 The number of set devices
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Remote password" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for the password function compatible module.

## "Logical Station Number"

Select the logical station number required for communication.

If the logical station number is already set, the number is displayed in the list box and can be selected.

If the logical station number is not set, click the [Communication Settings] button and set a new logical station number.

## [Communication Settings] button

This button is used to start the communication setup utility to set a new logical station number and change the settings. Select "Run as administrator" when the screen is displayed asking whether or not to execute programs with administrator authority.

After starting the communication setup utility, click the [Wizard] button, set a new logical station number, and change the settings with the Communication Setting Wizard.

For the detailed explanation of the communication setup utility and Communication Setting Wizard, refer to the following manual.

📖 MX Component Version 4 Operating Manual

## "Remote password"

The "Remote password" screen is displayed when the setting of the logical station number selected in "Logical Station Number" includes information on the connection to the module with the password function.

When the password is set to the connection target programmable controller CPU, enter the password.

It need not be entered when the password is not set.

## Access data

### ■Order of display

Data are displayed in the cell area in the order of the numbers shown on the left of the [Access Data] tab.

<Device data display example>

Setting example of the [Access Data] tab

	Device	Data Type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit
1	D0	16bit integer	DEC		1	3	3	vWord
2	W0	16bit integer	DEC		1	3	3	vWord
3	B0	Bit	DEC		3	3	3	Bit

↑  
Data numbers

The device data are displayed on Excel as shown below.

Displayed in order of data numbers. →

Data No. 1			Data No. 2			Data No. 3		
D0	D1	D2	W0	W1	W2	B0	B1	B2
18	14	0	0	0	0	0	0	0

### ■"Device"

Enter a device or label to be accessed.

- When entering a device, enter in the order of a device name and device number.
- When entering a label, enter the label name.
- The applicable data types are Bit and Word.
- When entering a label, enter other than structured data type label and array type label.

For the accessible devices, refer to the following section.

📖 Page 27 Accessible CPUs and Accessible Device Ranges

## ■ "Data Type"

Set the data type to be displayed in the cell.

Item	Available Device	Description
Bit	Bit device	Bit devices set in "Device" are displayed in a single cell in units of one bit.
	Word device (Bit specification)	Designated bits for word device set in "Device" are displayed in a single cell in units of one bit (e.g. D0.0).
16 bit integer (-32768 to 32767)	Bit device <sup>*1</sup>	Displayed in a single cell in units of 1 word (16 bits), starting with the 16 bit integer device number set in "Device". <sup>*2</sup>
	Word device	Displayed in a single cell in units of 1 word, starting with the device number set in "Device". <sup>*2</sup>
32 bit integer (-2147483648 to 2147483647)	Bit device <sup>*1</sup>	Displayed in a single cell in units of 2 words (32 bits), starting with the device number set in "Device". <sup>*2</sup>
	Word device	Displayed in a single cell in units of 2 words, starting with the device number set in "Device". <sup>*2</sup>
	Double word device	Data of device number set to "Device" are displayed in a single cell in units of 1 device (32-bit). <sup>*2</sup>
	Monitor type	Monitor types set in "Device" are displayed in a single cell in units of 2 words. <sup>*2</sup>
Character string	Bit device <sup>*1</sup>	Data of the device number set in "Device" are displayed in the cell as character strings. <sup>*3</sup>
	Word device	Data of the device number set in "Device" are displayed in the cell as character strings. <sup>*3</sup>
Real number ( $\pm 2^{-126} \leq \text{value} < \pm 2^{128}, 0$ )	Bit device <sup>*1</sup>	Displayed in a single cell in units of 2 words (32 bits), starting with the device number set in "Device". <sup>*2</sup>
	Word device	Displayed in a single cell in units of 2 words, starting with the device number set in "Device". <sup>*2</sup>

\*1 Displayed in a single cell in units of one bit for R motion CPU and Q motion CPU.

\*2 The displayed value changes depending on the "Zoom" setting. (  Page 45 "Zoom" )

\*3 The unit and the number of displayed characters of the read data change depending on the "No. of characters" setting. (  Page 45 "No. of cells" )

## ■ "Value"

Select the display format of the value to be displayed in the cell from DEC and HEX.

Depending on the "Data Type", the "Value" and "Zoom" can be selected/set as shown below.

Item			Cell data display
Data type	Value	Zoom	
Bit	Not applicable	Not applicable	0 or 1
16 bit integer	DEC	Applicable	Displayed in decimal
	HEX	Not applicable	Displayed in 4-digit hexadecimal (Example: 03EB)
32 bit integer	DEC	Applicable	Displayed in decimal
	HEX	Not applicable	Displayed in 8-digit hexadecimal (Example: 03EB03EA)
Character string	Not applicable	Not applicable	Character string is displayed (Example: ABCD)
Real number	Not applicable	Applicable	Real number is displayed (Example: 1.36E-36)

## ■ "No. of characters"

Set the number of characters to be displayed in a single cell.

Setting range: 40

Depending on the value set in "No. of characters" and device data, the character strings may not be displayed in the cell. The following are the examples of setting 1 to 4 in "No. of characters".

**Ex.**

When displaying the character strings stored in D0 to D3

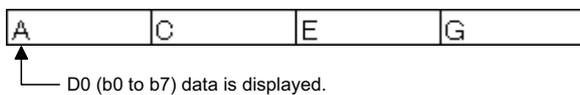
	b15 to b8	b7 to b0
D0	B	A
D1	D	C
D2	F	E
D3	H	G

When "No. of characters" is set to "1"

The data is displayed in a single cell in units of 1 word (16 bits).

Only the character stored in b0 to b7 of D0 is displayed.

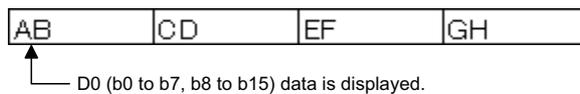
The character stored in b8 to b15 of D0 is not displayed.



When "No. of characters" is set to "2"

The data is displayed in a single cell in units of 1 word (16 bits).

The character strings stored in b0 to b7 and b8 to b15 are displayed in this order.

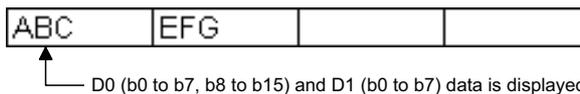


When "No. of characters" is set to "3"

The data is displayed in a single cell in units of 2 words (32 bits).

The character strings stored in D0 (b0 to b7, b8 to b15) and D1 (b0 to b7) are displayed.

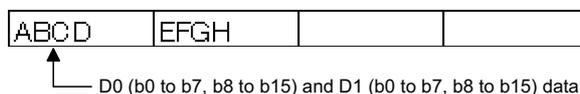
The character string stored in b8 to b15 of D1 is not displayed.



When "No. of characters" is set to "4"

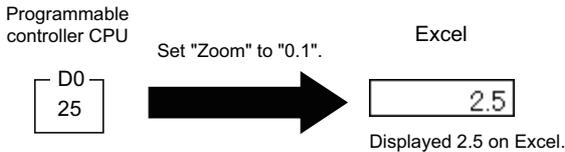
The data is displayed in a single cell in units of 2 words (32 bits).

The character strings stored in D0 (b0 to b7, b8 to b15) and D1 (b0 to b7, b8 to b15) are displayed in this order.



## ■"Zoom"

The device value read from the programmable controller CPU is multiplied by the zoom ratio and displayed in the cell. When "Data Type" is set to "Bit" or "Character string" or when "Value" is set to "HEX", "Zoom" cannot be set. Setting range: 0.001 to 1000



## ■"No. of cells"

Set the number of cells to be used for the device set in "Device" within the area specified in "Cell Area". When the system labels are specified to devices, or inverter communication setting/robot controller communication setting is set to the logical station number, '1' is displayed.

<Device data display example>

Setting example of the [Access Data] tab

	Device	Data Type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit
1	D0	16bit integer	DEC		1	3	3	Word
2								
3	Device: D0							
4	Data type: 16 bit integer							

Number of cells: 3

The device data are displayed on Excel as shown below.

3 points are displayed in order, starting with D0.

D0	D1	D2			
18	14	0			

These are set as the cell area but not used.

## ■"Dev. Points"

The points of the devices to be consecutively read starting with the device number set in "Device" are displayed. When inverter communication setting/robot controller communication setting is set to the logical station number, '2' is displayed.

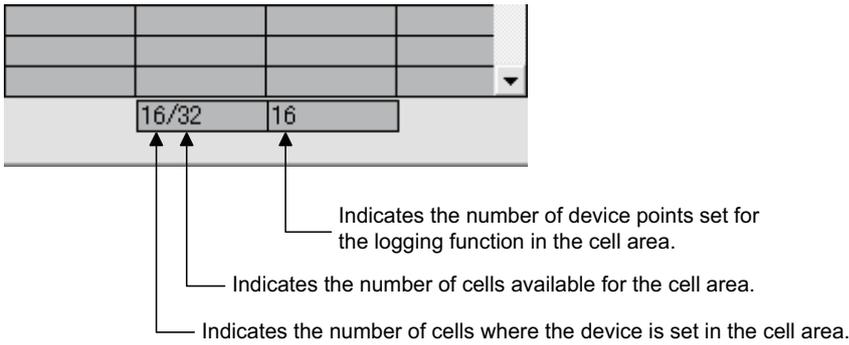
## ■"In unit"

The unit of the device to be shown in the cell is displayed.

When inverter communication setting/robot controller communication setting is set to the logical station number, "Word" is displayed.

## The number of set devices

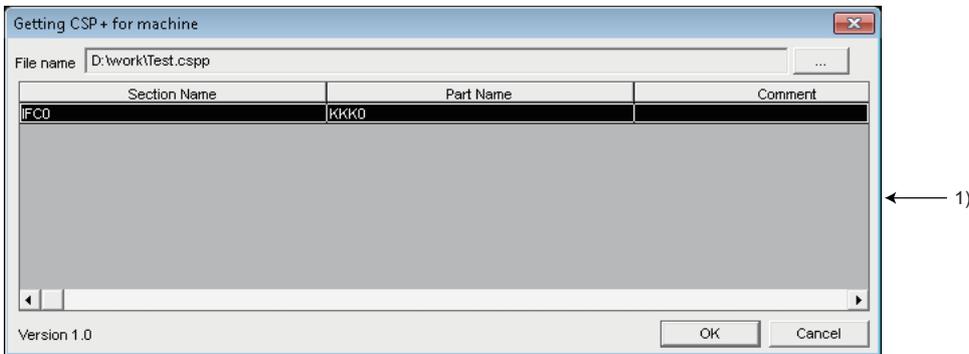
The number of device points and others set to the cell area are displayed.



## Importing CSP+ for machine

Set device data in a batch by importing CSP+ for machine.

### Window



### Displayed items

Item	Description	
File name	The name of CSP+ for machine is displayed.	
[...] button	Click this to display the screen for selecting CSP+ for machine. Select CSP+ for machine to import, and click the [OK] button.	
1) (Section part list)	SectionName	The section name of CSP+ for machine is displayed.
	Part Name	The part name of CSP+ for machine is displayed. For devices without this item are not displayed in this list.
	Comment	The comment of CSP+ for machine is displayed.
Version	The file version of CSP+ for machine is displayed.	

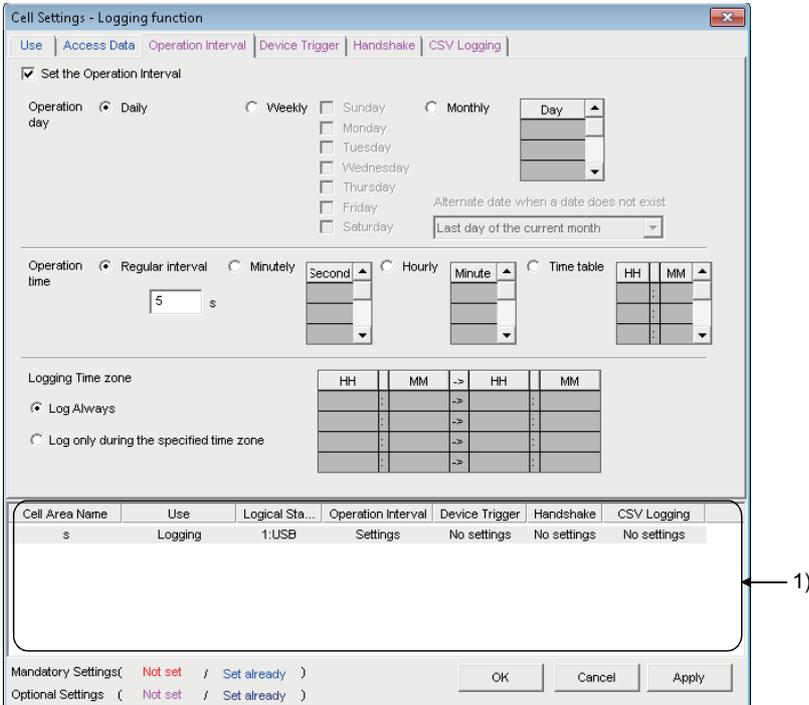
### Operating procedure

1. Click the [...] button, and select target CSP+ for machine.
2. Select a combination of a section and a part to set device data in Section part list, and click the [OK] button. Device data of the selected section and part is set for the access data in the [Access Data] tab in a batch.

# Setting of the [Operation Interval] tab

This section explains the setting of the [Operation Interval] tab for use of the logging function.  
 On the [Operation Interval] tab, set the day, time and time zone of the activation of the function for the cell area.

## Window



## Displayed items

Item	Description	Reference
Set the Operation Interval	Set the operation of the cell area valid or invalid.	Page 48 "Set the Operation Interval"
Operation day	Set the operation day of the logging activation.	Page 48 "Operation day"
Operation time	Set the operation time of the logging activation.	Page 49 "Operation time"
Logging Time zone*1	Set the time zone of the logging activation.	Page 50 "Logging Time zone"
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 If the logical station number selected in "Logical Station Number" of the [Access Data] tab is the one for modem communication, "Logging Time zone" is switched to "Telephone line connectivity time zone".

Telephone line connectivity time zone

- Be in connected state always from the start of the communication
- Connect during the specified time zones only
- Connect each time depending on the operation interval

HH	MM	->	HH	MM
:	:	->	:	:
:	:	->	:	:
:	:	->	:	:
:	:	->	:	:

Item	Description	Reference
Telephone line connectivity time zone	Set the timing of connection and disconnection of the telephone line.	Page 50 "Telephone line connectivity time zone"

## "Set the Operation Interval"

To set the settings of cell area invalid or to use the function of cell area for 1 shot communication only, clear the check box.  
(Do not clear the check mark for the case of ordinary operation.)

## "Operation day"

Set the operation day of device data collection.

### ■When "Daily" is selected

Operation is performed every day.

### ■When "Weekly" is selected

Operation is performed on the specified day of the week only.

Multiple days of the week can be set.

### ■When "Monthly" is selected

Operation is performed on the specified days only.

If the specified day does not exist in some months, an alternate day can be specified.

Number of days that can be set: 31

**Ex.**

When "15th" is set

Operation is performed on the 15th of every month, e.g. January 15, February 15, March 15.

When "31st" is set

Excepting February, April, June, September and November, operation is performed on the 31st every month.

For February, April, June, September and November, set the alternate day and processing in "Alternate date when a date does not exist".

The following table shows the setting items of "Alternate date when a date does not exist".

Item	Description
Last day of the current month	Operation is performed on the last day of February, April, June, September or November.
First day of the next month	Operation is performed on the first day of the next month.
No operation	Operation is not performed in February, April, June, September and November.

## "Operation time"

Set the operation time of device data collection.

### ■When "Regular interval" is selected

Device data is collected at the set second intervals.

When modem communication is used and "Telephone line connectivity time zone" is set to "Connect each time depending on the operation interval", set "Regular interval" to 30 seconds or more.

When setting lesser "seconds" than the actual communication time, the fixed interval communication cannot be established.

Hence, set for longer than the actual communication time.

For Communication time, refer to the following performance value.

☞ Page 151 Processing Speed of MX Sheet

Setting range: 0.001 to 0.999 (in units of 0.001 seconds), 1 to 3600 (in units of 1 second)

When the date and time are added, the date and time displayed on the Excel spreadsheet is in the "yyyy/mm/ dd ddd hh:mm:ss" format if the setting is 0.001 to 0.999 seconds.

**Ex.**

When 0.2 seconds interval is set

Date	D0	D1	D2
2012/06/28 Thu 20:41:07	1	2	3
2012/06/28 Thu 20:41:08	11	12	13
2012/06/28 Thu 20:41:08	21	22	23
2012/06/28 Thu 20:41:08	31	32	33
2012/06/28 Thu 20:41:08	41	42	43
2012/06/28 Thu 20:41:08	51	52	53
2012/06/28 Thu 20:41:09	61	62	63

### ■When "Minutely" is selected

Device data is collected at the specified second every minute.

Number of times that can be set: 60

### ■When "Hourly" is selected

Device data is collected at the specified minute every hour.

Number of times that can be set: 60

### ■When "Time table" is selected

Device data is collected at the specified time.

Number of times that can be set: 50

## "Logging Time zone"

Set the time zone for logging.

### ■When "Log Always" is selected

Logging is always performed at the specified operation time of the operation day.

### ■When "Log only during the specified time zone" is selected

Logging is performed in the specified time zone only.

Number of settings: 4

When "Operation day" is set to "Weekly" or "Monthly", do not set the time zone that spans over a day as shown in below:

HH	MM	->	HH	MM
22	0	->	8	0
:	:	->	:	:
:	:	->	:	:
:	:	->	:	:

## "Telephone line connectivity time zone"

Set the time zone for connection with the telephone line.

### ■When "Be in connected state always from the start of the communication" is selected

The telephone line is connected upon start of MX Sheet communication, and is kept connected until termination of MX Sheet communication.

### ■When "Connect during the specified time zones only" is selected

The telephone line is connected only in the specified time zone.

Number of settings: 4

When "Operation day" is set to "Weekly" or "Monthly", do not set the time zone that spans over a day as shown in below:

HH	MM	->	HH	MM
22	0	->	8	0
:	:	->	:	:
:	:	->	:	:
:	:	->	:	:

### ■When "Connect each time depending on the operation interval" is selected

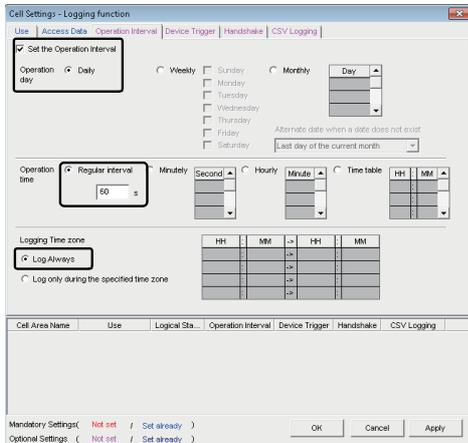
The telephone line is connected and disconnected according to the settings of "Operation day" and "Operation time".

## Setting examples

### ■ When using communication other than modem communication (Log Always)

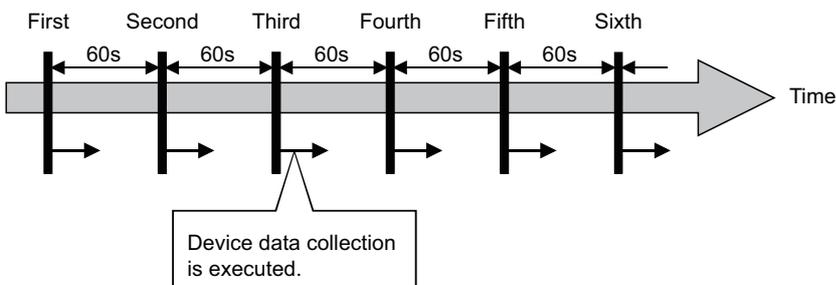
Ex.

Settings



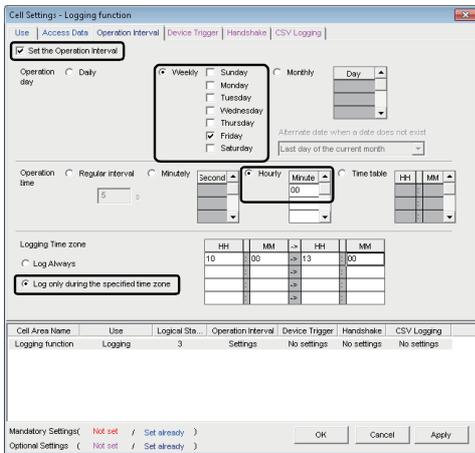
Set the Operation Interval : Selected  
 Operation day  
     Daily : Selected  
 Operation time  
     Regularinterval : 60 seconds  
 Logging Time zone  
     Log Always : Selected

### Operation timing



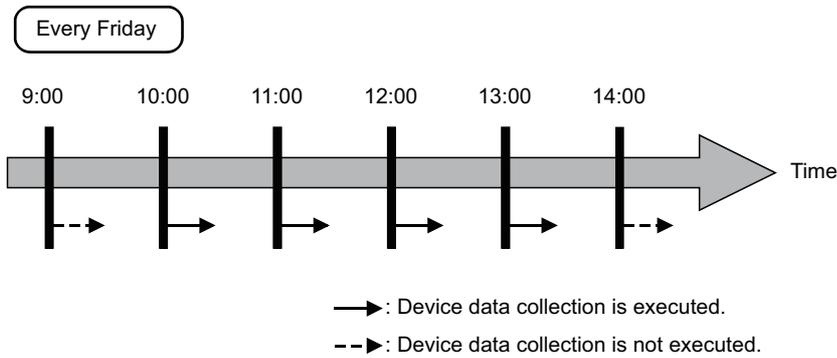
■ When using communication other than modem communication (Log only during the specified time zone)

Ex.  
Settings



Set the Operation Interval : Selected  
 Operation day : Selected  
     Weekly : Selected  
     Friday : Selected  
 Operation time : Selected  
     Hourly : 0 (minutes)  
 Logging Time zone : Selected  
     Log only during the specified time zone: Selected  
     Time zone : 10:00 to 13:00

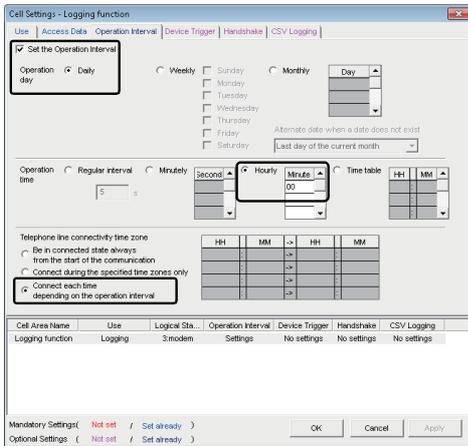
Operation timing



## ■ When using modem communication

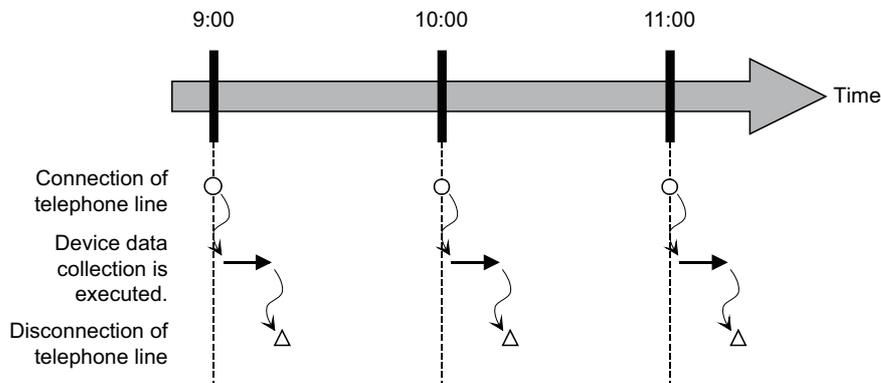
Ex.

### Settings



Set the Operation Interval : Selected  
 Operation day : Selected  
 Daily : Selected  
 Operation time : Selected  
 Hourly: 0 (minutes) : 0 (minutes)  
 Telephone line connectivity time zone : Selected  
 Connect each time depending on the operation interval : Selected

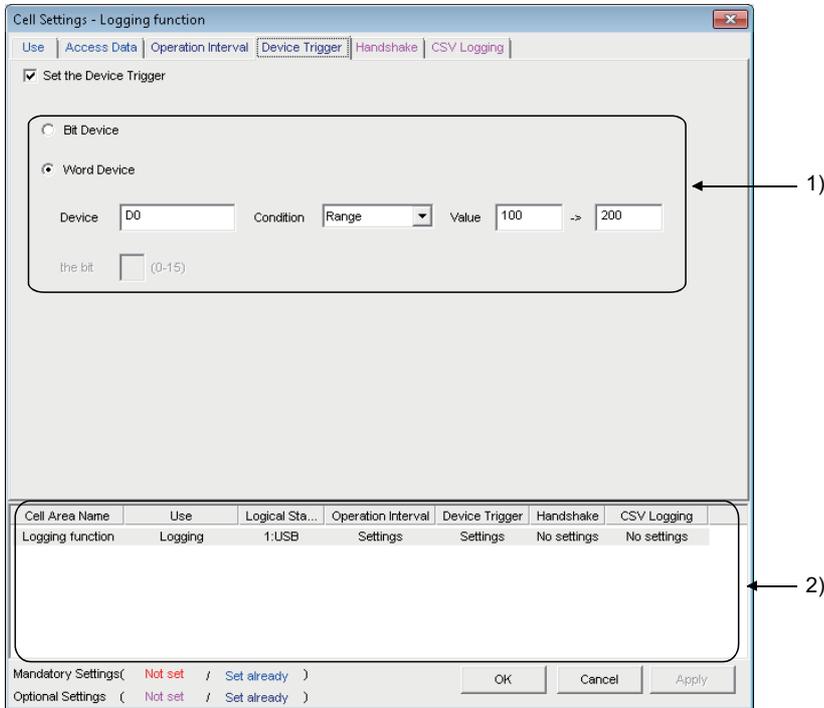
### Operation timing



# Setting of the [Device Trigger] tab

This section explains the setting of the [Device Trigger] tab for use of the logging function. On the [Device Trigger] tab, set the device conditions for the device trigger.

## Window



## Displayed items

Item	Description	Reference
Set the Device Trigger	Set when the device trigger is used.	Page 54 "Set the Device Trigger"
1) (Device conditions)	Set the device or label conditions.	Page 54 Device conditions
2) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## "Set the Device Trigger"

Be sure to select the checkbox of "Set the Device Trigger" to use the device trigger.

## Device conditions

Set the device conditions for the device trigger.

### ■Device type

Set the type of the device used for the device trigger.

Item	Description
Bit Device	Set when using a bit device for the device trigger.
Word Device	Set when using a word device or double word device for the device trigger, or the inverter communication setting/robot controller communication setting is set to the logical station number.

## ■"Device"

Enter the device or label used for the device trigger.

- When entering a device, enter a device name and device number in this order.
- When entering a label, enter the label name.
- The applicable data types are Bit and Word.
- When entering a label, enter other than structured data type label and array type label.

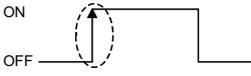
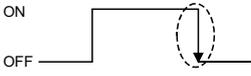
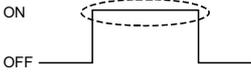
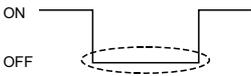
## ■"the bit"

Set the corresponding bit of the word device.

Setting range: 0 to 15

## ■"Condition"

Set the device trigger condition.

Item	Available Device	Description
When ON 	Bit device	Set when operation is to be performed only once when the bit device turns ON.
	Word device	Set when operation is to be performed only once when the corresponding bit of the word device turns ON (value: 1).
When OFF 	Bit device	Set when operation is to be performed only once when the bit device turns OFF.
	Word device	Set when operation is to be performed only once when the corresponding bit of the word device turns OFF (value: 0).
ON 	Bit device	Set when operation is to be performed while the bit device is ON.
	Word device	Set when operation is to be performed while the corresponding bit of the word device is ON (value: 1).
OFF 	Bit device	Set when operation is to be performed while the bit device is OFF.
	Word device	Set when operation is to be performed while the corresponding bit of the word device is OFF (value: 0).
=	Word device, Double word device	Set when operation is to be performed when the device value is equal to the "Value" setting.
<>	Word device, Double word device	Set when operation is to be performed when the device value is not equal to the "Value" setting.
<=	Word device, Double word device	Set when operation is to be performed when the device value is equal to or less than the "Value" setting.
<	Word device, Double word device	Set when operation is to be performed when the device value is less than the "Value" setting.
>=	Word device, Double word device	Set when operation is to be performed when the device value is equal to or greater than the "Value" setting.
>	Word device, Double word device	Set when operation is to be performed when the device value is greater than the "Value" setting.
Range	Word device, Double word device	Set when operation is to be performed when the device value is within the specified "Value" setting range.

## ■"Value"

Enter the values used for "Condition".

Setting range:

- Word device (-32768 to 32767)
- Double word device (-2147483648 to 2147483647)
- When inverter communication setting/robot controller communication setting (-2147483648 to 2147483647)

**Ex.**

When "Range" is to "Condition"

Enter the values in "Value" as shown below.

Word Device

Device:  Condition:  Value:

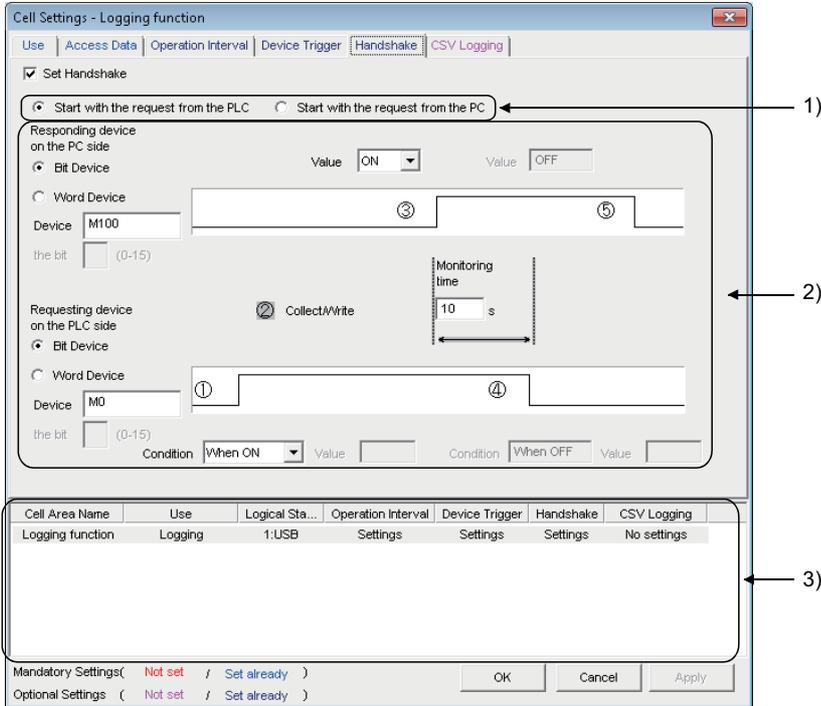
Enter the upper limit value of the range.

Enter the lower limit value of the range.

# Setting of the [Handshake] tab

This section explains the setting of the [Handshake] tab for use of the logging function. On the [Handshake] tab, set the handshake requesting source and handshake processing.

## Window



## Displayed items

Item	Description	Reference
Set Handshake	Set when using a handshake.	Page 62 "Set Handshake"
1) (Requesting source setting)	Set the requesting source of the handshake.	Page 62 Requesting source setting
2) (Handshake processing)	Set the handshake processing.	Page 62 Handshake processing
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

### Point

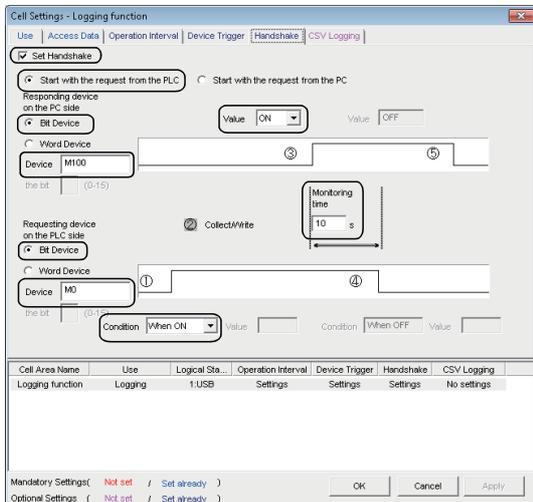
When inverter communication setting or Robot controller communication setting is set to the logical station number, handshake is not supported.

## Setting examples and operation timing

The following shows the handshake settings and operation timing.

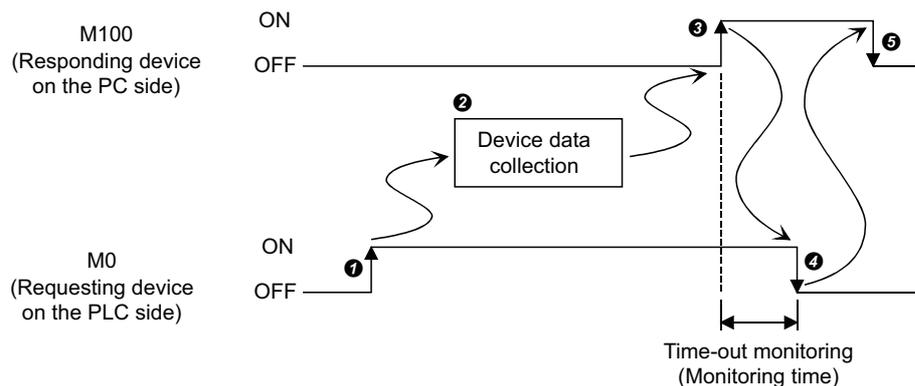
### ■When "Start with the request from the PLC" is selected (Device: Bit device)

**Ex.**  
Settings



Set Handshake : Selected  
 Start with the request from the PLC : Selected  
 Responding device on the PC side  
   Bit device : Selected  
   Device : M100  
   Value : ON  
 Requesting device on the PLC side  
   Bit device : Selected  
   Device : M0  
   Condition : When ON  
 Monitoring time : 10 seconds

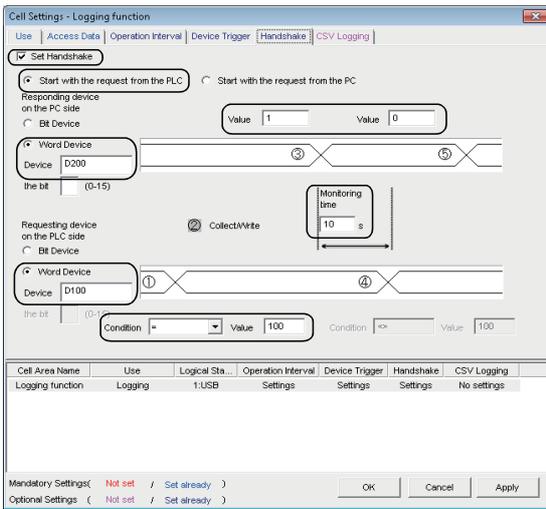
### Operation timing



- ① When M0 turns on, processing in ② is started.
- ② Device data is collected.
- ③ After device data is collected, M100 is turned on.
- ④ M0 is turned off.
- ⑤ M100 is turned off.

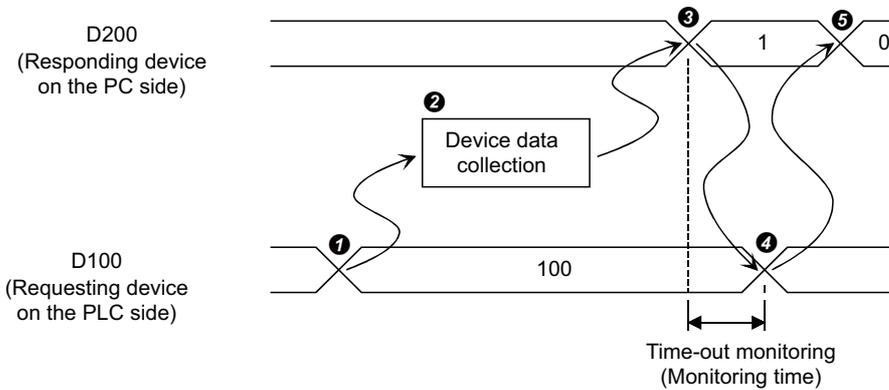
■When "Start with the request from the PLC" is selected (Device: Word device)

Ex.  
Settings



Set Handshake : Selected  
 Start with the request from the PLC : Selected  
 Responding device on the PC side  
 Word device : Selected  
 Device : D200  
 Value : 1 (left), 0 (right)  
 Requesting device on the PLC side  
 Word device : Selected  
 Device : D100  
 Condition : =  
 Value : 100  
 Monitoring time : 10 seconds

Operation timing

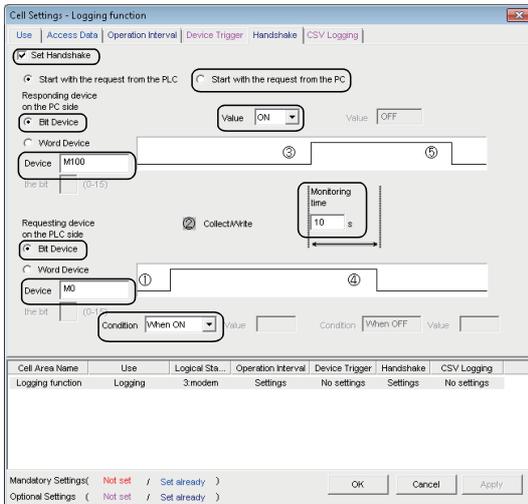


- ① When the D100 value reaches 100, processing in ② is started.
- ② Device data is collected.
- ③ After device data is collected, the D200 value is changed to 1.
- ④ The D100 value is changed to other than 100.
- ⑤ The D200 value is changed to 0.

## ■When "Start with the request from the PC" is selected (Device: Bit device)

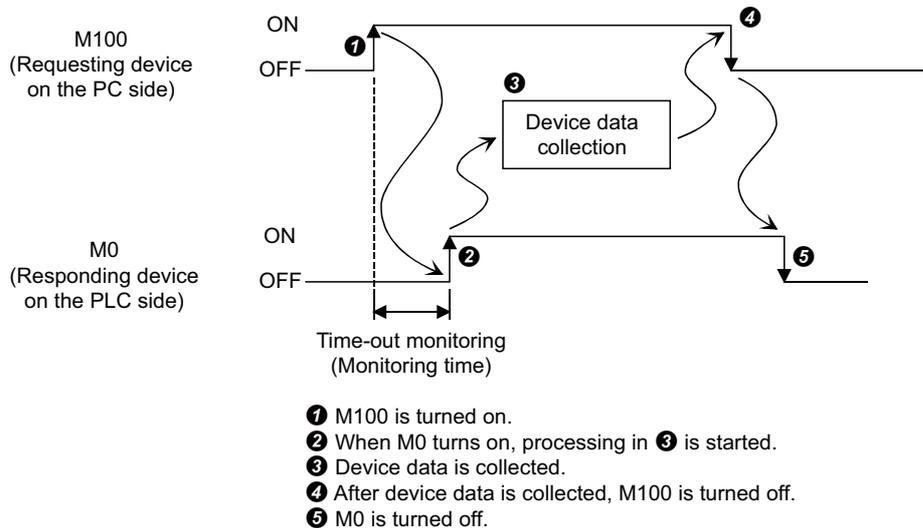
Ex.

### Settings



Set Handshake : Selected  
 Start with the request from the PC : Selected  
 Requesting device on the PC side  
   Bit device : Selected  
   Device : M100  
   Value : ON  
 Responding device on the PLC side  
   Bit device : Selected  
   Device : M0  
   Condition : When ON  
 Monitoring time : 10 seconds

### Operation timing



### Point

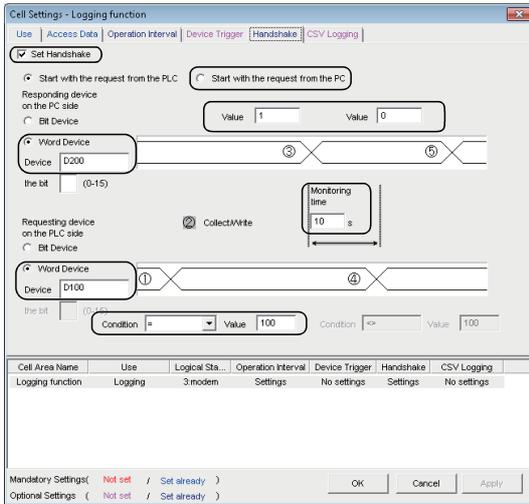
Time-out monitoring is not executed between **4** and **5** above.

If the operation in **5** is not performed in the programmable controller CPU, device data collection is not executed when the handshake conditions are satisfied at the next time.

## ■When "Start with the request from the PC" is selected (Device: Word device)

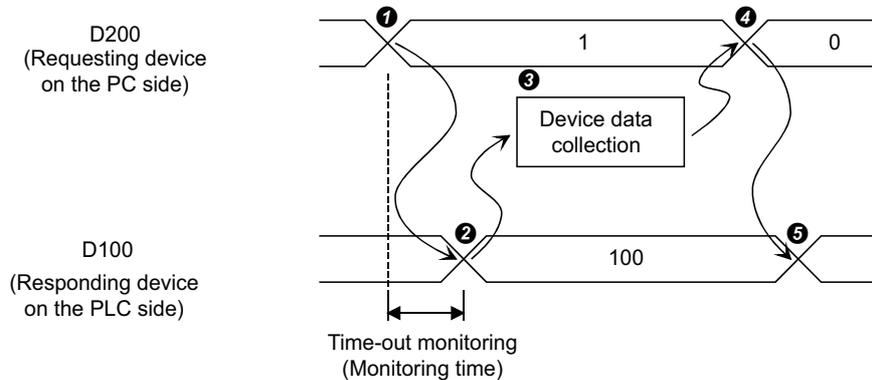
Ex.

### Settings



Set Handshake : Selected  
 Start with the request from the PC : Selected  
 Requesting device on the PC side  
   Word device : Selected  
   Device : D200  
   Value : 1 (left), 0 (right)  
 Requesting device on the PLC side  
   Word device : Selected  
   Device : D100  
   Condition : =  
   Value : 100  
 Monitoring time : 10 seconds

### Operation timing



- ① The D200 value is changed to 1.
- ② When the D100 value reaches 100, processing in ③ is started.
- ③ Device data is collected.
- ④ After device data is collected, the D200 value is changed to 0.
- ⑤ The D100 value is changed to other than 100.

### Point

Time-out monitoring is not executed between ④ and ⑤ above.

If the operation in ⑤ is not performed in the programmable controller CPU, device data collection is not executed when the handshake conditions are satisfied at the next time.

## "Set Handshake"

Be sure to select the checkbox of "Set Handshake" to use a handshake.

## Requesting source setting

Set the requesting source for a device data collection start.

Item	Description
Start with the request from the PLC	Set when starting device data collection at the request of the programmable controller CPU.
Start with the request from the PC	Set when starting device data collection at the request of the personal computer.

## Handshake processing

Set the handshake processing on the personal computer side and programmable controller CPU side.

### ■PC side processing

- Device type

Set the device type used for PC side processing.

Item	Description
Bit device	Set when a bit device is used for PC side processing.
Word device	Set when a word device or double word device is used for PC side processing.

- "Device"

Enter the device or label used for PC side processing.

·When entering a device, enter a device name and device number in this order.

·When specifying a bit of the word device, enter the bit number in "the bit".

·Bit cannot be specified for a double word device.

·When entering a label, enter the label name.

·The applicable data type is Bit.

·When entering a label, enter other than structured data type label and array type label.

- "Value"

Set the value of the device used for PC side processing.

Item	Available Device	Description
ON	Bit device	Set when the value of the device used for PC side processing is set for ON.
	Word device (Bit specification)	
OFF	Bit device	Set when the value of the device used for PC side processing is set for OFF.
	Word device (Bit specification)	
Empty (Value input)	Word device	Set the value of the word device used for PC side processing.
	Double word device	Set the value of the double word device used for PC side processing.

Setting range:

- Word device (-32768 to 32767)
- Double word device (-2147483648 to 2147483647)

## ■Programmable controller CPU side processing

- Device type

Set the device type used for programmable controller CPU side processing.

Item	Description
Bit device	Set when a bit device is used for programmable controller CPU side processing.
Word device	Set when a word device or double word device is used for programmable controller CPU side processing.

- "Device"

Enter the device or label used for programmable controller CPU side processing.

- When entering a device, enter a device name and device number in this order.
- When specifying a bit of the word device, enter the bit number in "the bit".
- Bit cannot be specified for a double word device.
- When entering a label, enter the label name.
- The applicable data type is Bit.
- When entering a label, enter other than structured data type label and array type label.

- "Condition"

Set the conditions of the device used for programmable controller CPU side processing.

Item	Available Device	Description
ON	Bit device	Set when the value of the device used for programmable controller CPU side processing is set for ON.
	Word device (Bit specification)	
OFF	Bit device	Set when the value of the device used for programmable controller CPU side processing is set for OFF.
	Word device (Bit specification)	
=	Word device, Double word device	Set when the programmable controller CPU side device value is equal to the "Value" setting.

- "Value"

Set the value of the device used for programmable controller CPU side processing.

This can be set only when "=" is selected in "Condition".

Setting range:

- Word device (-32768 to 32767)
- Double word device (-2147483648 to 2147483647)

## ■Monitoring time

Set the time during which the PC side device monitors the programmable controller CPU side device.

Setting range: 1 to 3600

The monitoring time changes depending on the requesting source setting.

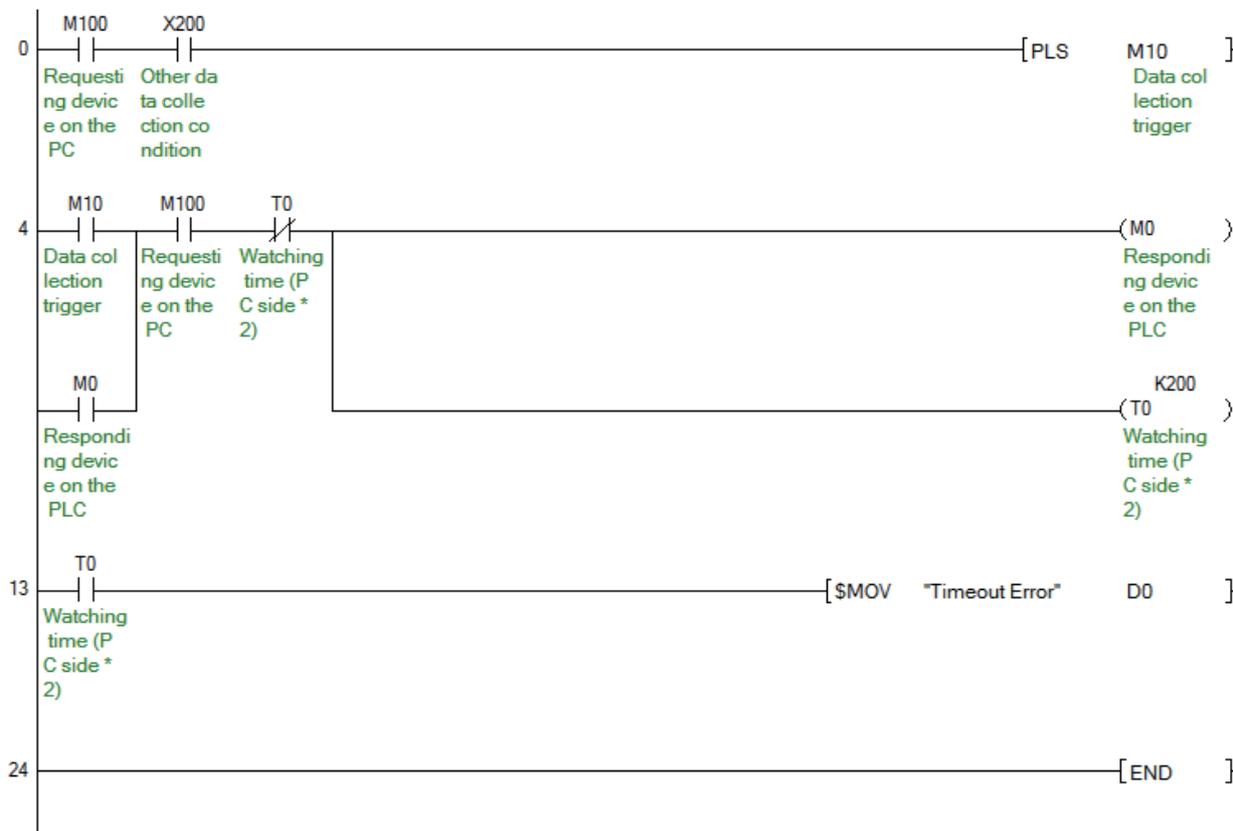
The following table shows the monitoring time.

Requesting Source Setting	Monitoring item
Start with the request from the PLC	Monitoring is executed from the time when the PC side responding device is set to the time when the programmable controller CPU side requesting device is reset. If the programmable controller CPU side responding device is not reset after the elapse of the monitoring time, the collected device data is discarded and the error log is displayed on the ErrorLog sheet.
Start with the request from the PC	Monitoring is executed from the time when the PC side requesting device is set to the time when the programmable controller CPU side responding device is set. If the programmable controller CPU side requesting device is not set after the elapse of the monitoring time, the error log is displayed on the ErrorLog sheet.





■When "Start with the request from the PC" is selected (Device: Bit device)

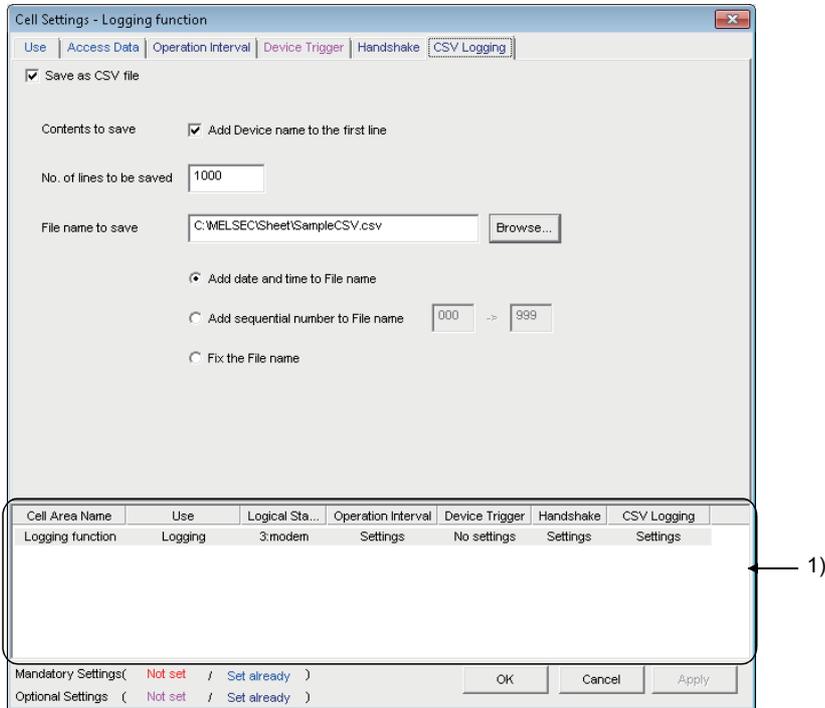




# Setting of the [CSV Logging] tab

This section explains the setting of the [CSV Logging] tab for use of the logging function.  
 On the [CSV Logging] tab, the file name and the saving content with which logging data is saved to CSV file.

## Window



## Displayed items

Item	Description	Reference
Save as CSV file	Set when using the CSV logging.	Page 69 "Save as CSV file"
Contents to save	Set when adding the device name to the first line.	Page 69 "Contents to save"
No. of lines to be saved	Set the number of lines to be saved.	Page 69 "No. of lines to be saved"
File name to save	Set the file name to save.	Page 70 "File name to save"
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## "Save as CSV file"

Be sure to select the checkbox of "Save as CSV file" to use the CSV logging.

## "Contents to save"

Activate this setting when adding the device name to the first line of the data to be saved into a CSV file.

Device name is added to first line.

```
DateTime,D0,D1,D2,D3,D4  
2012/6/28 15:57:09,25,16672,0,0,0  
2012/6/28 15:57:14,25,16672,0,0,0
```

If 0.001 to 0.999 seconds are set to the "Regular interval" on the [Operation Interval] tab, the date and time to be written to the CSV file is in the "yyyy/mm/dd hh:mm:ss" format.

**Ex.**

When 0.2 seconds interval is set

```
DateTime,D0,D1,D2  
2012/6/28 10:00:19,37,0,100  
2012/6/28 10:00:20,45,0,94  
2012/6/28 10:00:20,56,0,83  
2012/6/28 10:00:20,67,0,78  
2012/6/28 10:00:20,78,0,62  
2012/6/28 10:00:20,89,0,55  
2012/6/28 10:00:21,101,0,43
```

## "No. of lines to be saved"

Set the number of lines to be saved into a single CSV file.

Setting range: 1 to 9999999<sup>\*1</sup>

<sup>\*1</sup> Set any of 1 to 65535 when using the CSV file on Excel.

## "File name to save"

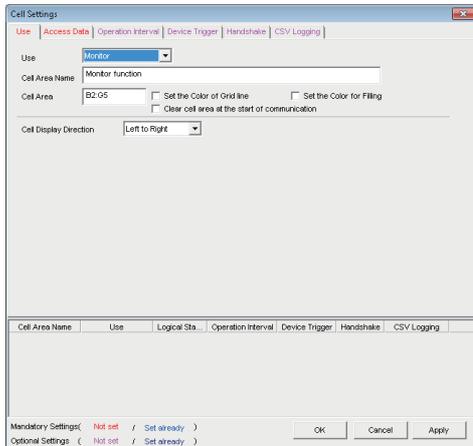
Set the CSV file name to save.

Item	Description
File name to save	Set the saving location and file name of the CSV file.*1
Add date and time to File name	<p>Adds the date and time data to the file name set in "File name to save" and saves it.</p> <p>In CSV logging, data is added until the data in the CSV file reach the number of lines set in "No. of lines to be saved". When they reach the set number of lines, a new CSV file is created.</p> <p>The following shows the file name when data are saved.</p> <p>*****20120523183536.csv</p>
Add sequential number to File name	<p>Adds the file number to the file name set in "File name to save" and saves it.</p> <p>The serial number can be set in a range from 000 to 999.</p> <p>When the number reaches the last, the data of the next file are overwritten to the file of the first number.</p> <p>In CSV logging, data is added until the data in the CSV file reach the number of lines set in "No. of lines to be saved". When they reach the set number of lines, a new CSV file is created.</p> <p>The following shows the file name when data are saved.</p> <p>*****000.csv</p>
Fix the File name	<p>Overwrites data to the CSV file set in "File name to save".</p> <p>In CSV logging, data is added until the data in the CSV file reach the number of lines set in "No. of lines to be saved".</p>

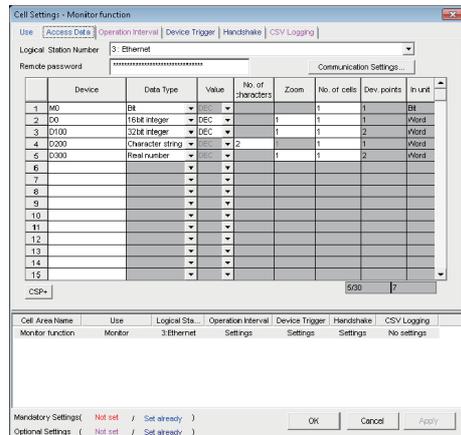
\*1 A UNC path name (\\server name\path name) cannot be specified as a file name. After assigning the network drive, specify the path name.

# 6.3 When "Monitor" is Selected

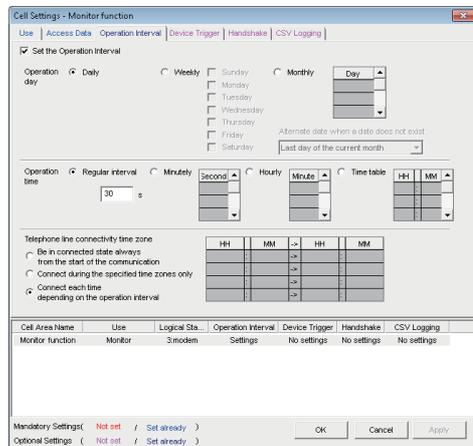
This section explains the "Cell Settings" screen when "Monitor" is selected from "Use" on the [Use] tab.



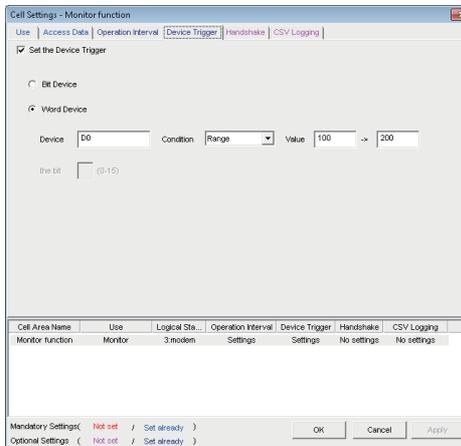
(1)



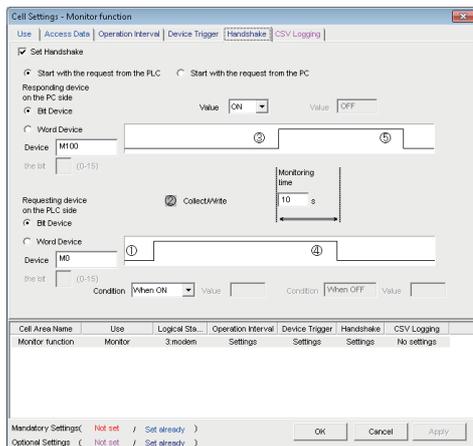
(2)



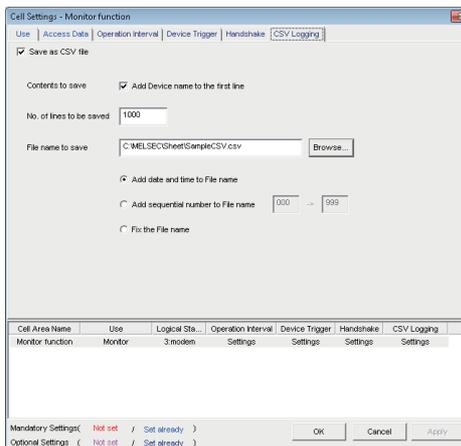
(3)



(4)



(5)



(6)

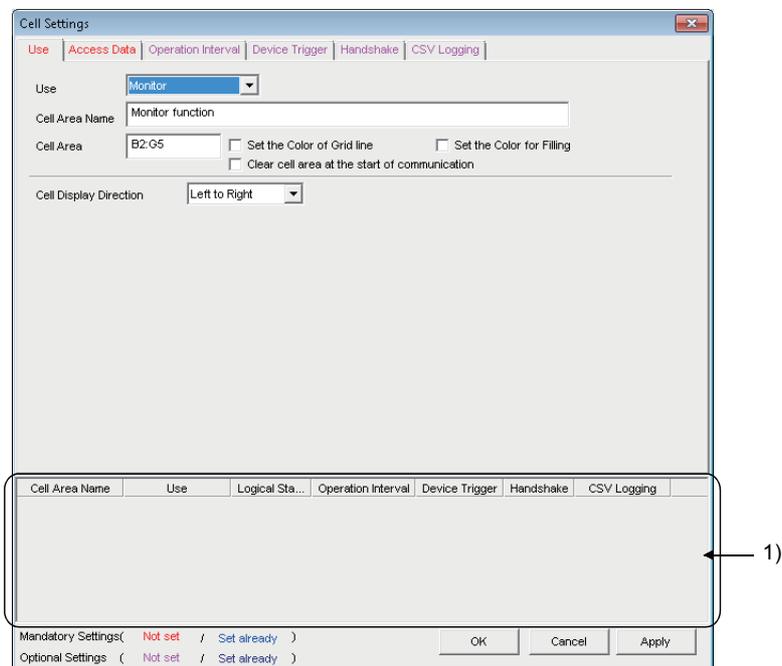
(1) [Use] tab	Required setting  Page 72 Setting of the [Use] tab
(2) [Access Data] tab	Required setting  Page 75 Setting of the [Access Data] tab
(3) [Operation Interval] tab	Required setting  Page 76 Setting of the [Operation Interval] tab
(4) [Device Trigger] tab	Set as necessary  Page 77 Setting of the [Device Trigger] tab
(5) [Handshake] tab	Set as necessary  Page 79 Setting of the [CSV Logging] tab
(6) [CSV Logging] tab	Set as necessary  Page 78 Setting of the [Handshake] tab

## Setting of the [Use] tab

This section explains the setting of the [Use] tab for use of the monitor function.

On the [Use] tab, set the cell area and monitor data display direction.

### Window



### Displayed items

Item	Description	Reference
Use	Set the function to be used for the specified cell area. Select "Monitor" when using the monitor function.	—
Cell Area Name	Set the name of the specified cell area. (Maximum number of cell area names: 1000)	
Cell Area	Enter the value to specify the cell area.	Page 73 "Cell Area"
Set the Color of Grid line	Select this checkbox to add grid lines (including color designation) to the specified cell area.	Page 34 Setting of the [Use] tab
Set the Color for Filling	Select this checkbox to color the specified cell area.	
Clear cell area at the start of communication	Select this checkbox to clear the data of specified cell area at the start of communication. (Default: cleared)	Page 73 "Clear cell area at the start of communication"
Cell Display Direction	Set the monitor data display sequence. <ul style="list-style-type: none"> <li>• Left to Right Monitor data are displayed from left to right in the specified cell area in order.</li> <li>• Top to Bottom Monitor data are displayed from top to bottom in the specified cell area in order.</li> </ul>	Page 74 "Cell Display Direction"
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## "Cell Area"

Set the cell area to be used by the monitor function.

### ■Setting examples

For the "Cell Area" setting examples, refer to the following section.

☞ Page 34 Setting of the [Use] tab

### ■Setting ranges

The following shows the available setting ranges for the cell area and number of specified cell areas.

Number of cells : 2000

Number of specified cell areas : 16

## "Clear cell area at the start of communication"

Set whether or not to clear the data of cell area at the start of communication.

### ■Display example in the case where the checkbox of "Clear cell area at the start of communication" is selected

<Before the start of communication>

1005	35	102	10
1002	30	200	15
990	36	151	25



<At the start of communication>




<At the completion of the first collection>

910	33	111	15
880	34	180	22
925	31	135	18

### ■Display example in the case where the checkbox of "Clear cell area at the start of communication" is not selected

<Before the start of communication>

1005	35	102	10
1002	30	200	15
990	36	151	25



<At the start of communication>

1005	35	102	10
1002	30	200	15
990	36	151	25



<At the completion of the first collection>

910	33	111	15
880	34	180	22
925	31	135	18

## "Cell Display Direction"

Set the monitor data display sequence.

### ■When "Left to Right" is selected

<When cell area (B2:D5) is set to "Left to Right">

	A	B	C	D	E
1					
2		1	2	3	
3		4	5	6	
4		7	8	9	
5		10	11	12	
6					

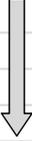


Monitor data are displayed in order of 1 to 12.

### ■When "Top to Bottom" is selected

<When cell area (B2:D5) is set to "Top to Bottom ">

	A	B	C	D	E
1					
2		1	5	9	
3		2	6	10	
4		3	7	11	
5		4	8	12	
6					



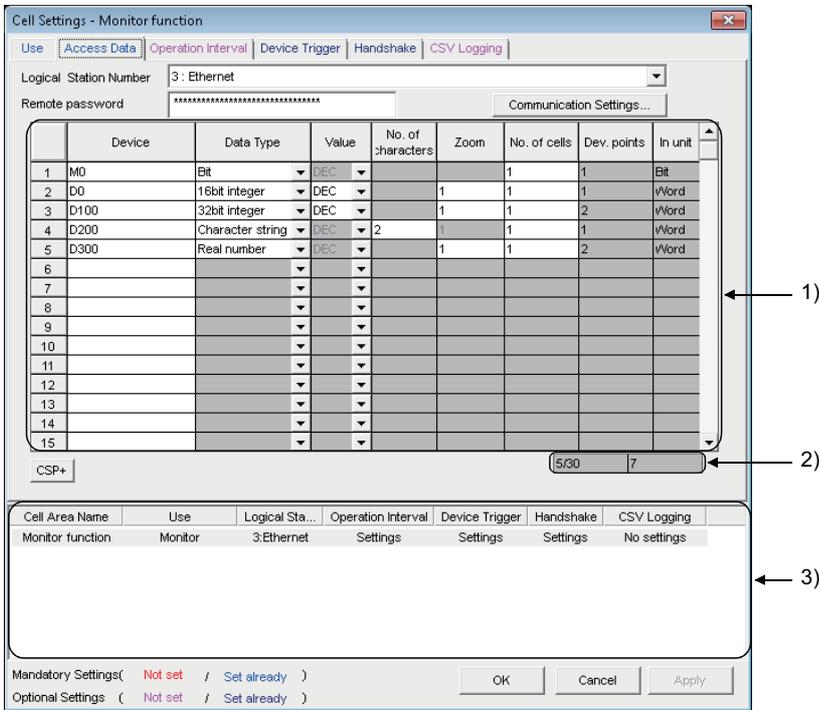
Monitor data are displayed in order of 1 to 12.

# Setting of the [Access Data] tab

This section explains the setting of the [Access Data] tab for use of the monitor function.

On the [Access Data] tab, set the logical station number required for communication with the programmable controller CPU and the device data to be collected in the cell area.

## Window



## Displayed items

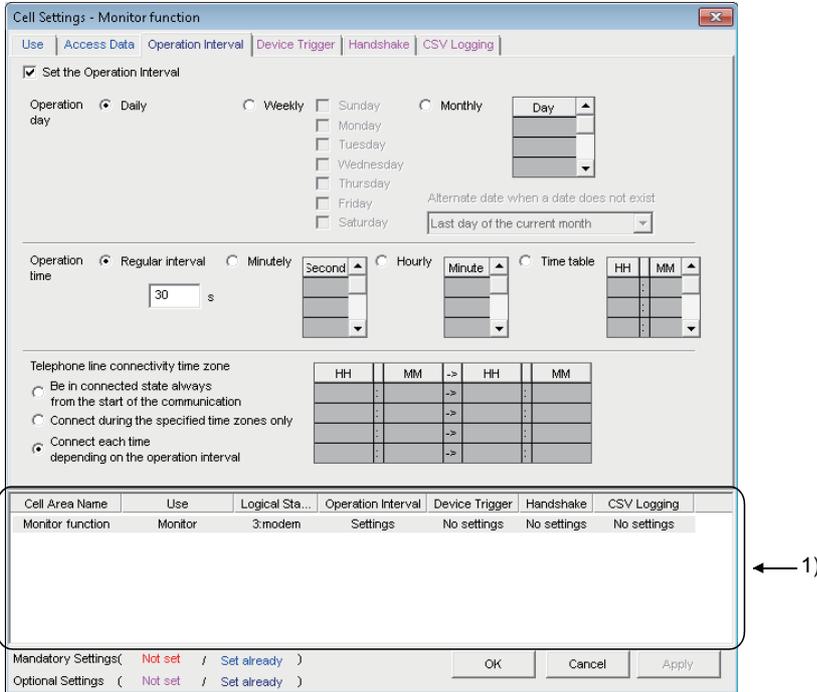
Item	Description	Reference
Logical Station Number	Select the logical station number required for communication.	Page 41 Setting of the [Access Data] tab
[Communication Settings] button	Click this to start the communication setup utility for setting a new logical station number and changing settings.	
Remote password*1	Enter the password when the password is set to the connection target programmable controller CPU.	
[CSP+] button	Click this to display the "Getting CSP+ for machine" screen.	
1) (Access data)	Set the devices or labels to be monitored.	
2) (Number of set devices)	The number of devices currently set is displayed.	
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Remote password" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for the password function compatible module.

# Setting of the [Operation Interval] tab

This section explains the setting of the [Operation Interval] tab for use of the monitor function.  
 On the [Operation Interval] tab, set the day, time and time zone of the activation of the function for the cell area.

## Window



## Displayed items

Item	Description	Reference
Set the Operation Interval	Set the operation of the cell area valid or invalid.	Page 47 Setting of the [Operation Interval] tab
Operation day	Set the operation day of the monitor function activation.	
Operation time	Set the operation time of the monitor function activation.	Page 76 "Operation time"
Telephone line connectivity time zone*1	Set the telephone line connection timing and disconnection timing.	Page 47 Setting of the [Operation Interval] tab
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Telephone line connectivity time zone" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for modem communication.

## "Operation time"

The setting except for "Regular interval" is the same as that of the logging function.

For the setting except for "Regular interval", refer to the following section.

☞ Page 47 Setting of the [Operation Interval] tab

### ■When "Regular interval" is selected

Device data is collected at the set second intervals.

When modem communication is used and "Telephone line connectivity time zone" is set to "Connect each time depending on the operation interval", set "Regular interval" to 30 seconds or more.

When setting lesser "seconds" than the actual communication time, the fixed interval communication cannot be established.

Hence, set for longer than the actual communication time.

For Communication time, refer to the following performance value.

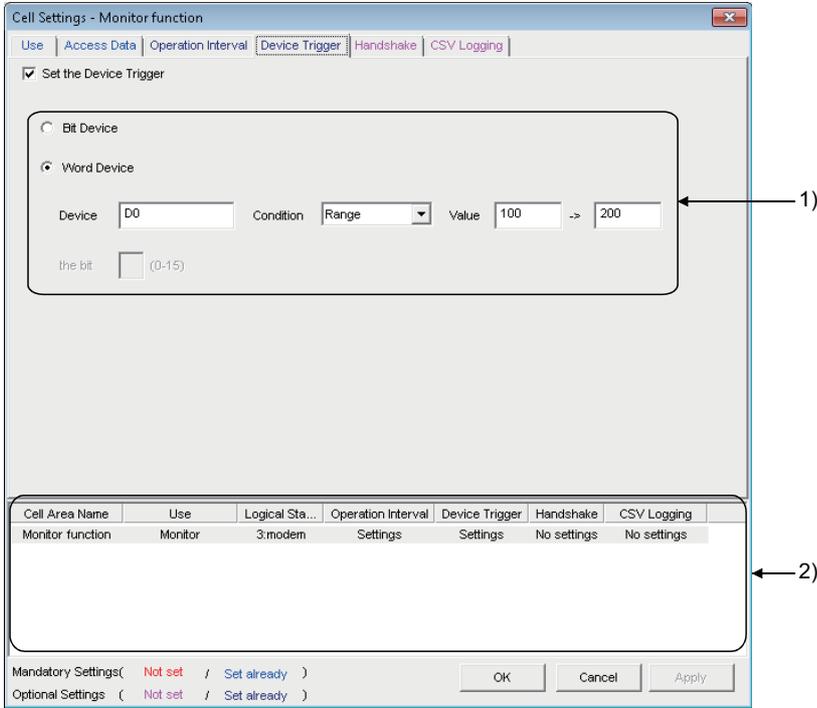
☞ Page 151 Processing Speed of MX Sheet

Setting range: 0.001 to 0.999 (in units of 0.001 seconds), 1 to 3600 (in units of 1 second)

# Setting of the [Device Trigger] tab

This section explains the setting of the [Device Trigger] tab for use of the monitor function. On the [Device Trigger] tab, set the device conditions for the device trigger.

## Window



6

## Displayed items

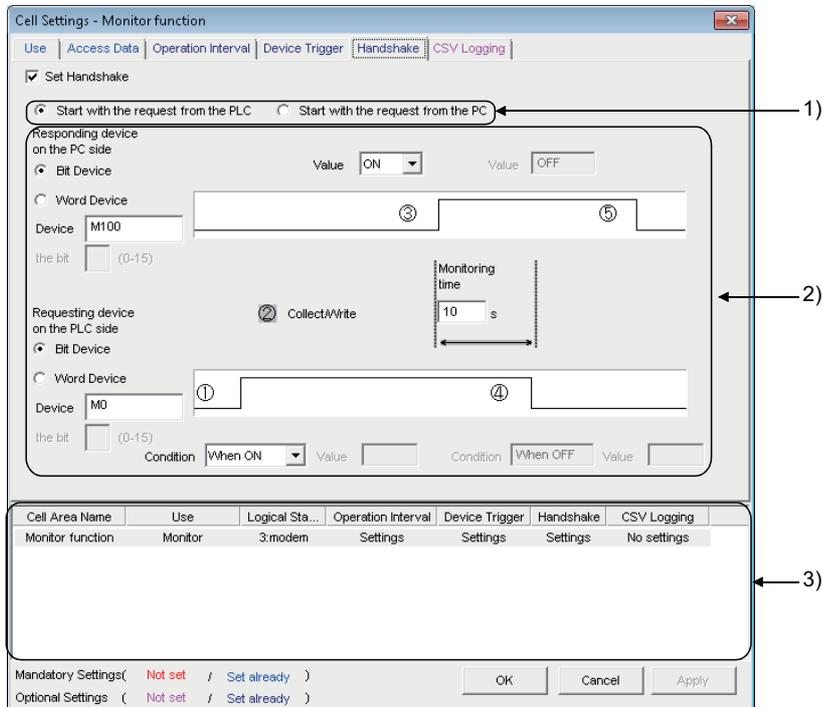
Item	Description	Reference
Set the Device Trigger	Set when the device trigger is used.	Page 54 Setting of the [Device Trigger] tab
1) (Device conditions)	Set the device or label conditions.	
2) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## Setting of the [Handshake] tab

This section explains the setting of the [Handshake] tab for use of the monitor function.

On the [Handshake] tab, set the handshake requesting source and handshake processing.

### Window



### Displayed items

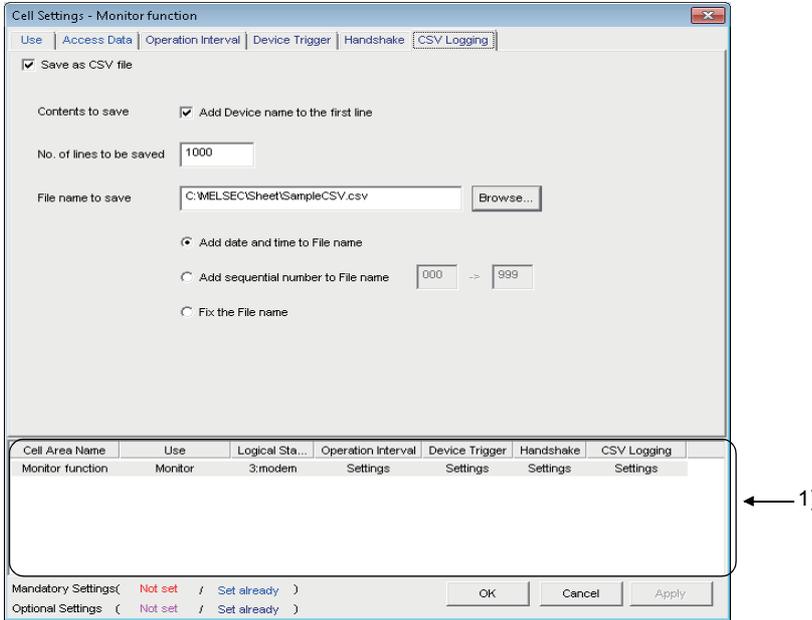
Item	Description	Reference
Set Handshake	Set when using a handshake.	Page 57 Setting of the [Handshake] tab
1) (Requesting source setting)	Set the requesting source of the handshake.	
2) (Handshake processing)	Set the handshake processing.	
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

# Setting of the [CSV Logging] tab

This section explains the setting of the [CSV Logging] tab for use of the monitor function.

On the [CSV Logging] tab, set the file name and the saving content with which the monitor data is saved into the CSV file.

## Window

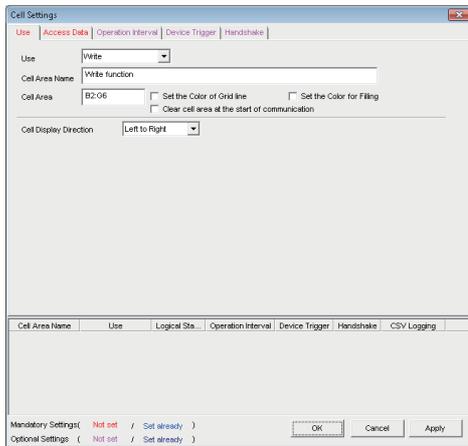


## Displayed items

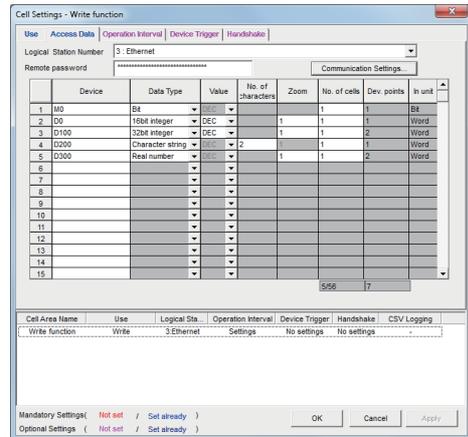
Item	Description	Reference
Save as CSV file	Set when using the CSV logging.	Page 68 Setting of the [CSV Logging] tab
Contents to save	Set when adding the device name to the first line.	
No. of lines to be saved	Set the number of lines to be saved.	
File name to save	Set the file name to save.	
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

# 6.4 When "Write" is Selected

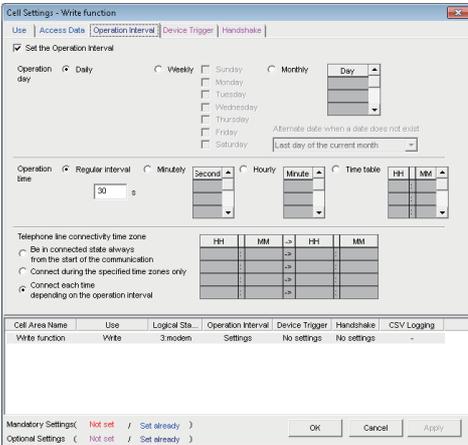
This section explains the "Cell Settings" screen when "Write" is selected from "Use" on the [Use] tab.



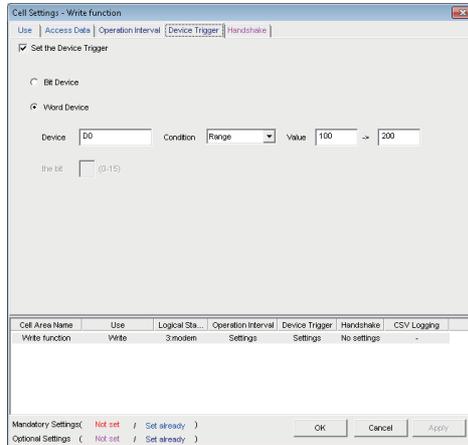
(1)



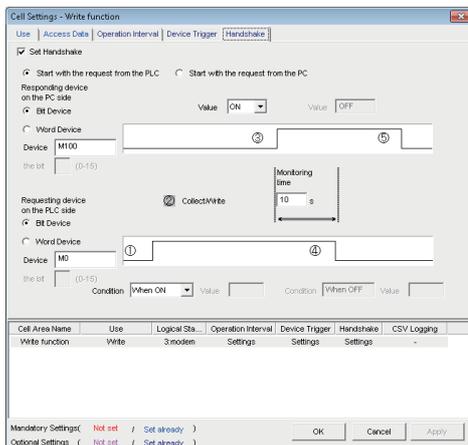
(2)



(3)



(4)



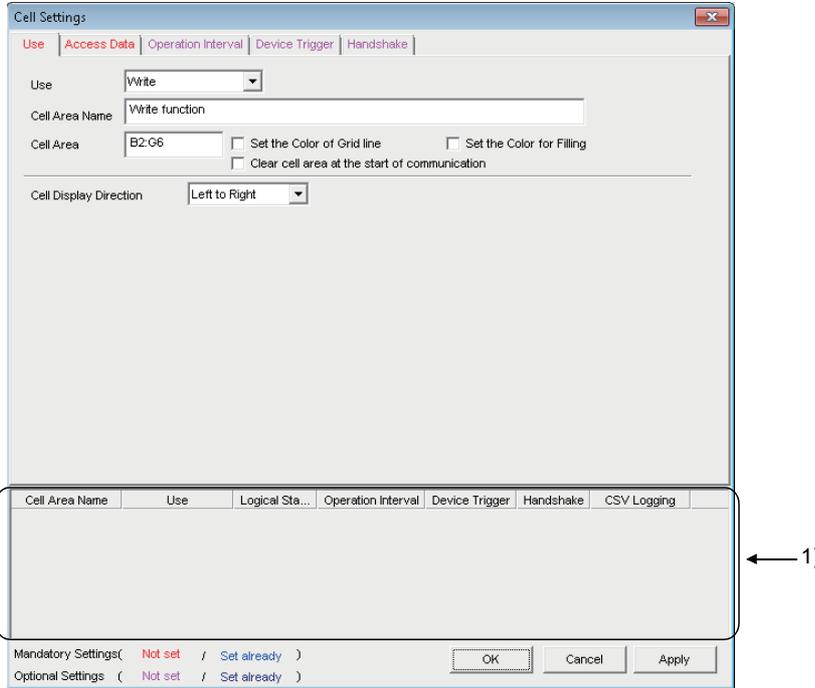
(5)

(1) [Use] tab	Required setting  Page 81 Setting of the [Use] tab
(2) [Access Data] tab	Required setting  Page 83 Setting of the [Access Data] tab
(3) [Operation Interval] tab	Required setting  Page 85 Setting of the [Operation Interval] tab
(4) [Device Trigger] tab	Set as necessary  Page 86 Setting of the [Device Trigger] tab
(5) [Handshake] tab	Set as necessary  Page 87 Setting of the [Handshake] tab

# Setting of the [Use] tab

This section explains the setting of the [Use] tab for use of the write function. On the [Use] tab, set the cell area and display direction of written data.

## Window



## Displayed items

Item	Description	Reference
Use	Set the function to be used for the specified cell area. Select "Write" when using the write function.	—
Cell Area Name	Set the name of the specified cell area. (Maximum number of cell area names: 1000)	
Cell Area	Enter the value to specify the cell area.	Page 82 "Cell Area"
Set the Color of Grid line	Select this checkbox to add grid lines (including color designation) to the specified cell area.	Page 34 Setting of the [Use] tab
Set the Color for Filling	Select this checkbox to color the specified cell area.	
Clear cell area at the start of communication	Select this checkbox to clear the data of specified cell area at the start of communication. (Default: cleared)	Page 72 Setting of the [Use] tab
Cell Display Direction	Set the input cells for the write data. <ul style="list-style-type: none"> <li>• Left to Right Write data are set from left to right in the specified cell area in order.</li> <li>• Top to Bottom Write data are set from top to bottom in the specified cell area in order.</li> </ul>	Page 82 "Cell Display Direction"
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 72 Setting of the [Use] tab

## "Cell Area"

Set the cell area to be used by the write function.

### ■Setting examples

For the "Cell Area" setting examples, refer to the following section.

☞ Page 34 Setting of the [Use] tab

### ■Setting ranges

The following shows the available setting ranges for the cell area and number of specified cell areas.

Number of cells : 2000

Number of specified cell areas : 16

## "Cell Display Direction"

Set the display sequence of written data

### ■When "Left to Right" is selected

<When cell area (B2:D5) is set to "Left to Right">

	A	B	C	D	E
1					
2		1	2	3	
3		4	5	6	
4		7	8	9	
5		10	11	12	
6					

Monitor data are displayed in order of 1 to 12.

### ■When "Top to Bottom" is selected

<When cell area (B2:D5) is set to "Top to Bottom ">

	A	B	C	D	E
1					
2		1	5	9	
3		2	6	10	
4		3	7	11	
5		4	8	12	
6					

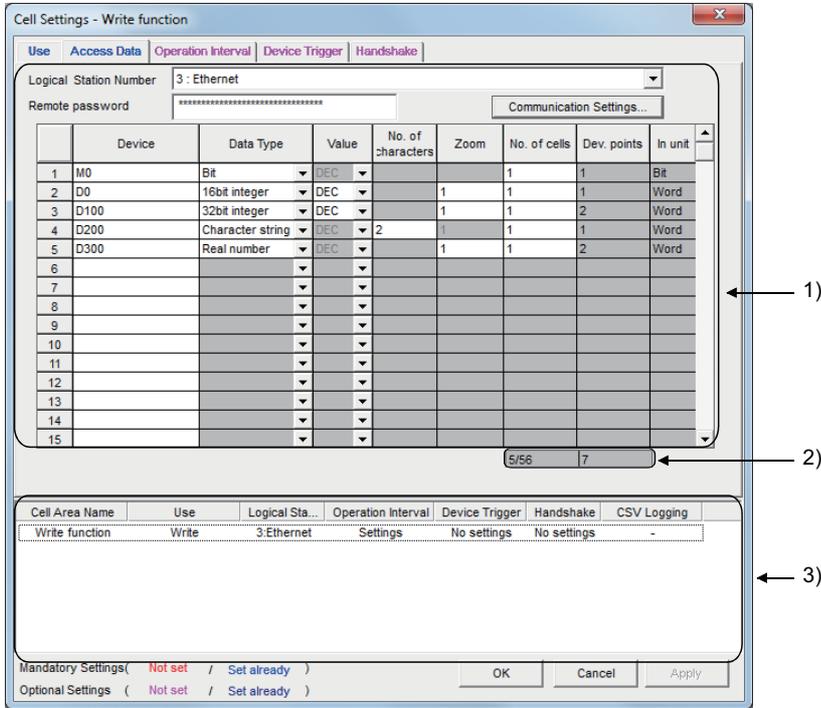
Monitor data are displayed in order of 1 to 12.

# Setting of the [Access Data] tab

This section explains the setting of the [Access Data] tab for use of the write function.

On the [Access Data] tab, set the logical station number required for communication with the programmable controller CPU and the device data to be written from the cell area.

## Window



## Displayed items

Item	Description	Reference
Logical Station Number	Select the logical station number required for communication.	Page 41 Setting of the [Access Data] tab
[Communication Settings] button	Click this to start the communication setup utility for setting a new logical station number and changing settings.	
Remote password*1	Enter the password when the password is set to the connection target programmable controller CPU.	
1) (Access data)	Set the devices or labels to be written.	Page 84 Access data
2) (Number of set devices)	The number of devices currently set is displayed.	Page 41 Setting of the [Access Data] tab
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Remote password" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for the password function compatible module.

## Access data

The setting except for "Zoom" is the same as that of the logging function.

For the setting except for "Zoom", refer to the following section.

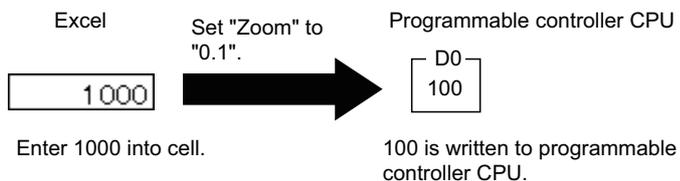
 Page 41 Setting of the [Access Data] tab

### ■"Zoom"

The value entered into the cell is multiplied by the zoom ratio and written to the programmable controller CPU device.

When "Data Type" is set to "Bit" or "Character string" or when "Value" is set to "HEX", "Zoom" cannot be set.

Setting range: 0.001 to 1000



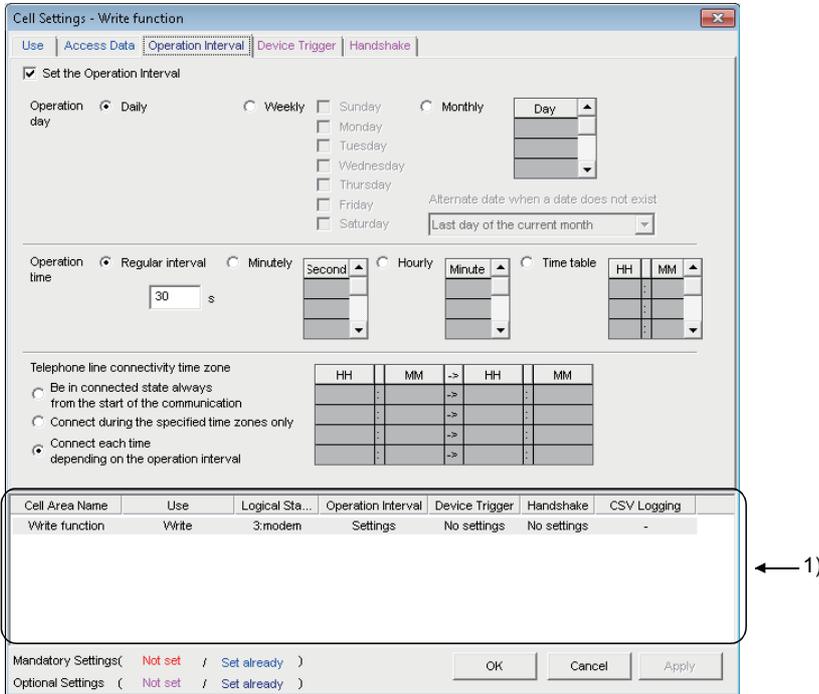
### Point

When "Zoom" is set for the write data and fractional decimals occurs in the data to be actually written to the programmable controller CPU, set "Real number" in "Data type".

# Setting of the [Operation Interval] tab

This section explains the setting of the [Operation Interval] tab for use of the write function.  
 On the [Operation Interval] tab, set the day, time and time zone of the activation of the function for the cell area.

## Window



## Displayed items

Item	Description	Reference
Set the Operation Interval	Set the operation of the cell area valid or invalid.	Page 47 Setting of the [Operation Interval] tab
Operation day	Set the operation day of the write function activation.	
Operation time	Set the operation time of the write function activation.	Page 85 "Operation time"
Telephone line connectivity time zone*1	Set the telephone line connection timing and disconnection timing.	Page 47 Setting of the [Operation Interval] tab
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Telephone line connectivity time zone" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for modem communication.

## "Operation time"

The setting except for "Regular interval" is the same as that of the logging function.  
 For the setting except for "Regular interval", refer to the following section.

☞ Page 47 Setting of the [Operation Interval] tab

### ■When "Regular interval" is selected

Device data is written at the set second intervals.  
 When modem communication is used and "Telephone line connectivity time zone" is set to "Connect each time depending on the operation interval", set "Regular interval" to 30 seconds or more.  
 When setting lesser "seconds" than the actual communication time, the fixed interval communication cannot be established. Hence, set for longer than the actual communication time.  
 For Communication time, refer to the following performance value.

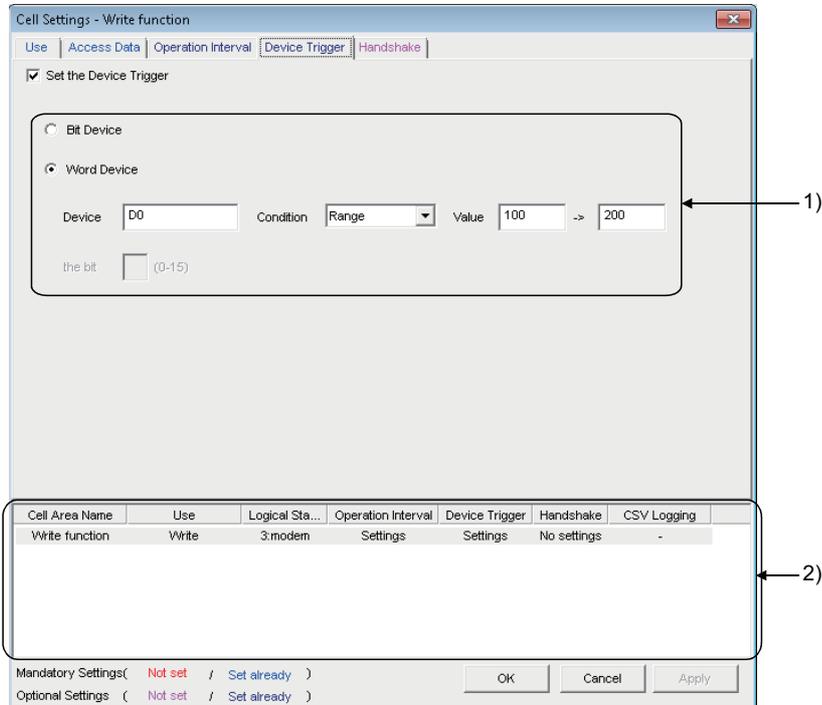
☞ Page 151 Processing Speed of MX Sheet

Setting range: 0.001 to 0.999 (in units of 0.001 seconds), 1 to 3600 (in units of 1 second)

## Setting of the [Device Trigger] tab

This section explains the setting of the [Device Trigger] tab for use of the write function.  
On the [Device Trigger] tab, set the device conditions for the device trigger.

### Window



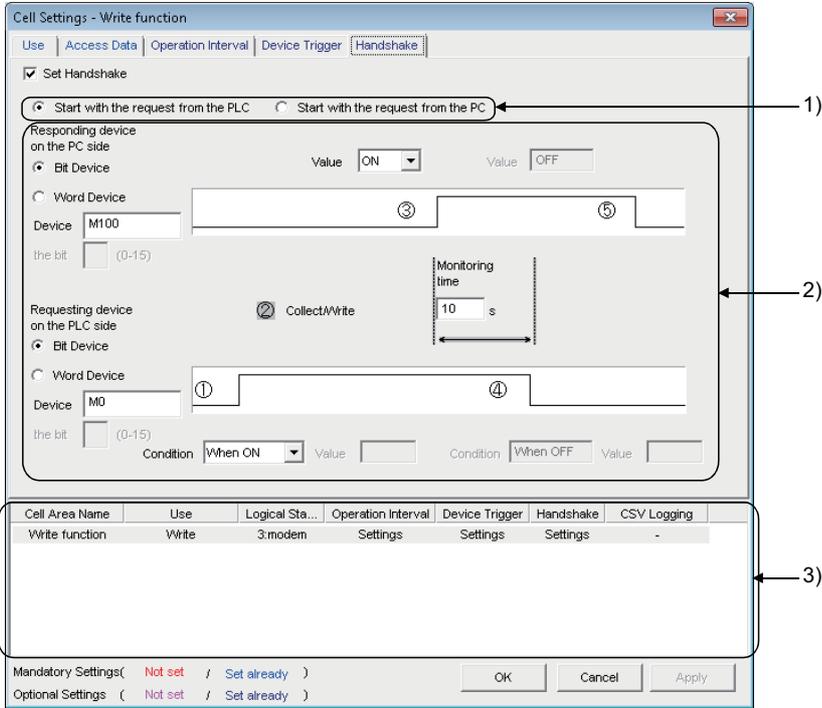
### Displayed items

Item	Description	Reference
Set the Device Trigger	Set when the device trigger is used.	Page 54 Setting of the [Device Trigger] tab
1) (Device conditions)	Set the device or label conditions.	
2) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

# Setting of the [Handshake] tab

This section explains the setting of the [Handshake] tab for use of the write function. On the [Handshake] tab, set the handshake requesting source and handshake processing.

## Window



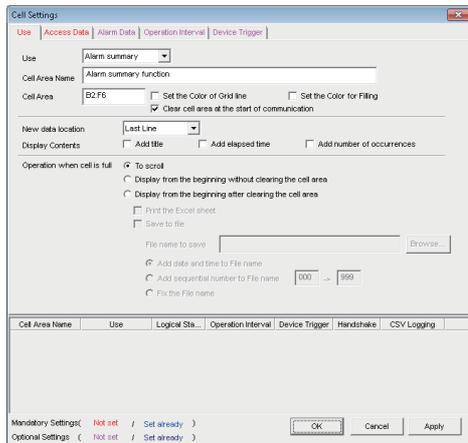
6

## Displayed items

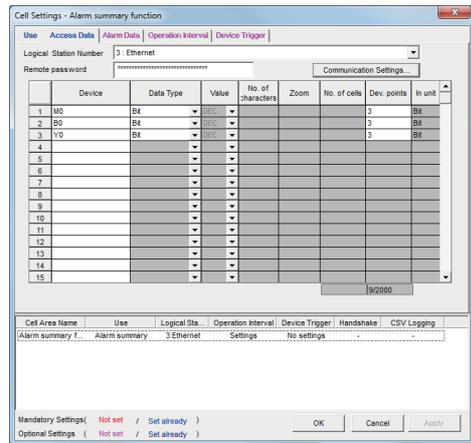
Item	Description	Reference
Set Handshake	Set when using a handshake.	Page 57 Setting of the [Handshake] tab
1) (Requesting source setting)	Set the requesting source of the handshake.	
2) (Handshake processing)	Set the handshake processing.	
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

# 6.5 When "Alarm Summary" is Selected

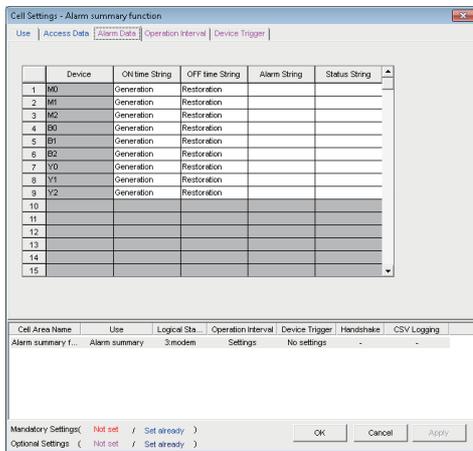
This section explains the "Cell Settings" screen when "Alarm summary" is selected from "Use" on the [Use] tab.



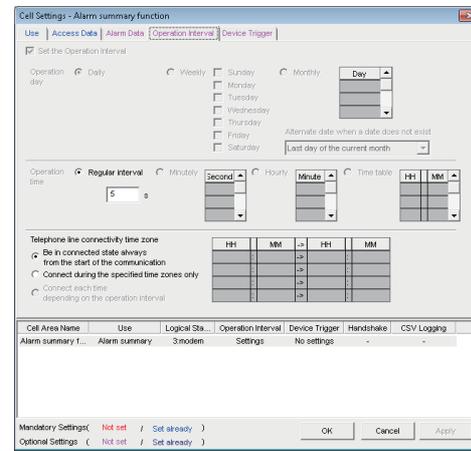
(1)



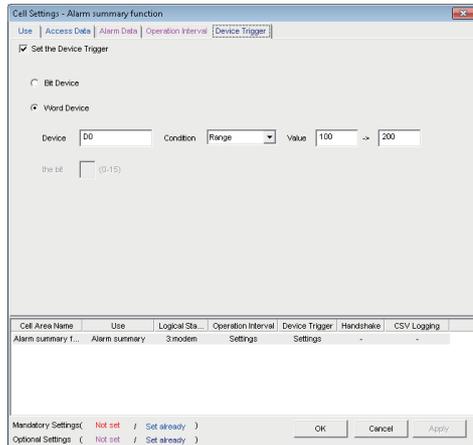
(2)



(3)



(4)



(5)

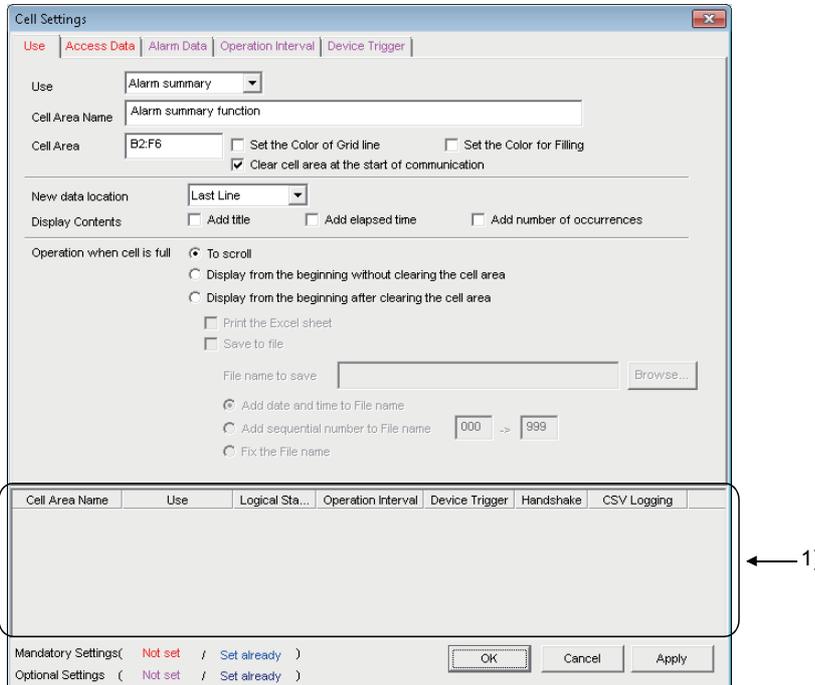
(1) [Use] tab	Required setting  Page 89 Setting of the [Use] tab
(2) [Access Data] tab	Required setting  Page 92 Setting of the [Access Data] tab
(3) [Alarm Data] tab	Set as necessary  Page 94 Setting of the [Alarm Data] tab
(4) [Operation Interval] tab	Set as necessary  Page 96 Setting of the [Operation Interval] tab
(5) [Device Trigger] tab	Set as necessary  Page 97 Setting of the [Device Trigger] tab

# Setting of the [Use] tab

This section explains the setting of the [Use] tab for use of the alarm summary function.

On the [Use] tab, set the cell area, display position of alarm data and operation in the case where cell is full.

## Window



## Displayed items

Item	Description	Reference
Use	Set the function to be used for the specified cell area. Select "Alarm summary" when using the alarm summary function.	—
Cell Area Name	Set the name of the specified cell area. (Maximum number of cell area names: 100)	
Cell Area	Enter the value to specify the cell area.	Page 90 "Cell Area"
Set the Color of Grid line	Select this checkbox to add grid lines (including color designation) to the specified cell area.	Page 34 Setting of the [Use] tab
Set the Color for Filling	Select this checkbox to color the specified cell area.	
Clear cell area at the start of communication	Select this checkbox to clear the data of specified cell area at the start of communication. (Default: selected)	
New data location	Set the latest data display position of the alarm summary. <ul style="list-style-type: none"> <li>Last Line The latest data is displayed at the last of the specified cell area.</li> <li>First Line The latest data is displayed at the first of the specified cell area.</li> </ul>	
Display Contents	Set whether the title, elapsed time, and number of occurrences is added to the Alarm Summary or not.	Page 90 "Display Contents"
Operation when cell is full	Set the operation to be performed when the specified cell area is full. <ul style="list-style-type: none"> <li>To scroll The displayed content is scrolled and displayed.</li> <li>Display from the beginning without clearing the cell area The data currently displayed in the cell area are overwritten and the alarm summary is resumed. Before the alarm summary is resumed, the Excel spreadsheet can be printed and saved.</li> <li>Display from the beginning after clearing the cell area The data displayed in the cell area are erased and the alarm summary is resumed. Before the alarm summary is resumed, the Excel spreadsheet can be printed and saved.</li> </ul>	Page 34 Setting of the [Use] tab
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	

## "Cell Area"

Set the cell area to be used by the alarm summary function.

### ■Setting examples

For the "Cell Area" setting examples, refer to the following section.

 Page 34 Setting of the [Use] tab

### ■Setting ranges

The following shows the available setting ranges for the cell area and number of specified cell areas.

Number of cells : 4 columns (indispensable) × 65536 rows <sup>\*1</sup>

Number of specified cell areas : 16

\*1 When displaying the elapsed time and number of occurrences in the Alarm Summary, increase the number of columns by 1 respectively. 6 columns are required to display both.

## "Display Contents"

### ■"Add title" checkbox

Set whether the title for the column item shown in the following table is displayed or not on the first line of the set "Cell Area". Select this check box to display the title.

Column item	Title
ON time String/OFF time String(  Page 94 Setting of the [Alarm Data] tab) "ON time String" is displayed when the device turns from OFF to ON. "OFF time String" is displayed when the device turns from ON to OFF.	ON/OFF
Date and time when the device turns from OFF to ON or from ON to OFF	Date time
Alarm String set to the device(  Page 94 Setting of the [Alarm Data] tab)	Alarm
Status String set to the device(  Page 94 Setting of the [Alarm Data] tab)	Status
Elapsed time from when the device turns ON until it turns OFF(  Page 90 "Add elapsed time" checkbox)	Elapsed time
Number of times when the device turned from OFF to ON after the start of communication.(  Page 91 "Add number of occurrences" checkbox)	Number of occurrences

### Point

- The title display line is not the target of cell area clear at the start of communication or clear when cell is full.
- When the Cell Area is set at multiple locations, the title is displayed for only the Cell Area specified first.

### ■"Add elapsed time" checkbox

Set whether the elapsed time from when the device set on the [Access Data] tab turns ON until it turns OFF is displayed on the Alarm Summary or not.

Select this checkbox to display the elapsed time.

The display format is "hour:minute:second".

**Ex.**

Display when the elapsed time is 1 minute 25 seconds

0:01:25

### Point

When the device is ON at the start of communication, the time from when communication starts until the device turns OFF is displayed as the elapsed time.

### ■ "Add number of occurrences" checkbox

Set whether the number of times when the device set on the [Access Data] tab turns from OFF to ON after the start of communication is displayed on the Alarm Summary or not.

Select this check box to display the number of occurrences.

In this case, the "Clear cell area at the start of communication" checkbox must be selected.



- When the device is ON at the start of communication, it is counted as the first alarm.
- When the number of occurrences exceeds 65535, it returns to 0.

**Ex.**

Display content on the Excel spreadsheet when the checkboxes of "Add title", "Add elapsed time", and "Add number of occurrences" are all selected

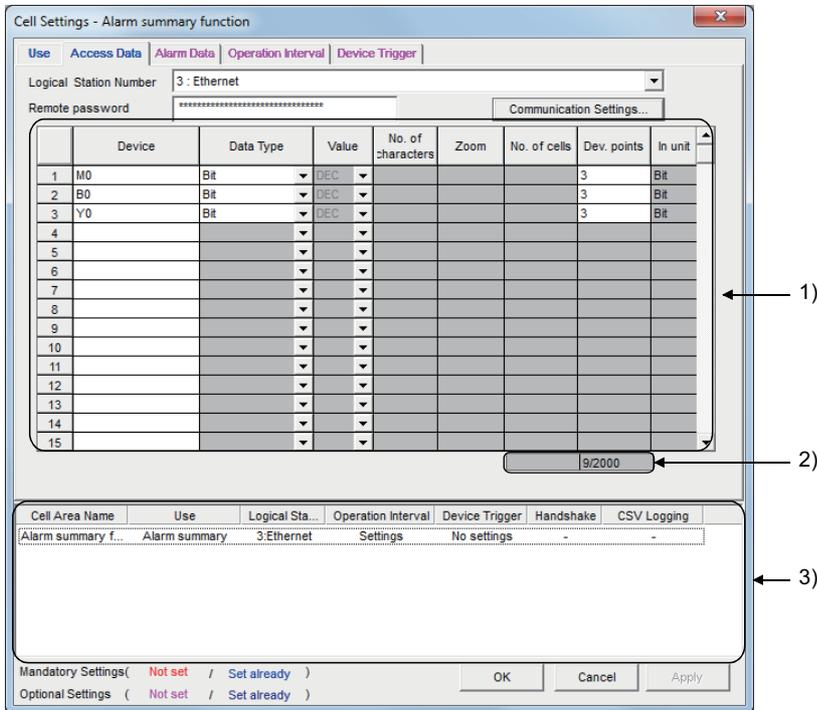
ON/OFF	Date time	Alarm	Status	Elapsed time	Number of occurrences
Generation	2012/05/24 Thu 15:05:20	Parts1 Abnormal fault	Major failure	(Blank)	1
Generation	2012/05/24 Thu 15:05:31	Parts 2 Quantity error	Minor failure	(Blank)	1
Restoration	2012/05/24 Thu 15:06:48	Parts1 Abnormal fault	Major failure	0:01:28	1
Restoration	2012/05/24 Thu 15:07:52	Parts 2 Quantity error	Minor failure	0:02:21	1

# Setting of the [Access Data] tab

This section explains the setting of the [Access Data] tab for use of the alarm summary function.

On the [Access Data] tab, set the logical station number required for communication with the programmable controller CPU and the device data to be used for the alarm summary function.

## Window



## Displayed items

Item	Description	Reference
Logical Station Number	Select the logical station number required for communication.	Page 41 Setting of the [Access Data] tab
[Communication Settings] button	Click this to start the communication setup utility for setting a new logical station number and changing settings.	
Remote password*1	Enter the password when the password is set to the connection target programmable controller CPU.	
1) (Access data)	Set the devices or labels use for the alarm summary function.	Page 93 Access data
2) (Number of set devices)	The number of devices currently set is displayed.	Page 93 The number of set devices
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Remote password" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for the password function compatible module.

## Access data

### Registration order

Data are displayed on the [Alarm Data] tab in the order of the numbers shown on the left of the [Access Data] tab.

Setting example of [Access Data] tab

	Device	Data Type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit
1	M0	Bit	DEC				3	Bit
2	B0	Bit	DEC				3	Bit
3	Y0	Bit	DEC				3	Bit

↑ Data numbers

The device data are displayed on the [Alarm Data] tab as shown below.

Displayed in order of data numbers.

	Device	ON time String
Data No. 1	1 M0	Generation
	2 M1	Generation
	3 M2	Generation
Data No. 2	4 B0	Generation
	5 B1	Generation
	6 B2	Generation
Data No. 3	7 Y0	Generation
	8 Y1	Generation
	9 Y2	Generation

### "Device"

Only the bit device can be specified for the alarm summary.

Enter the device name and device number in this order.

### "Dev. Points"

The points of the devices to be consecutively registered starting with the device number set in "Device" are displayed.

## The number of set devices

The number of device points registered to the cell area and the number of device points that can be registered are displayed.

		9/2000	

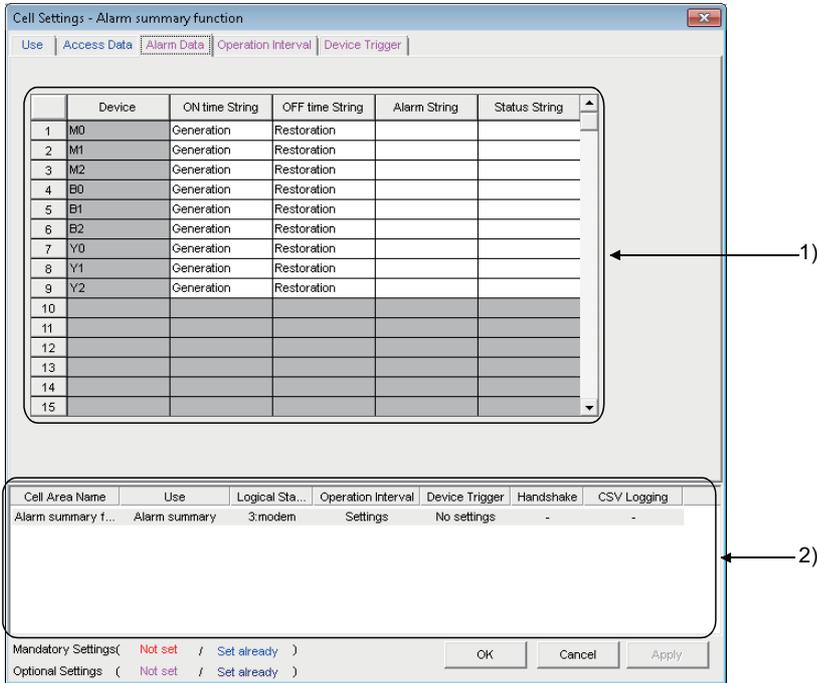
↑ Indicates the number of device points that can be registered to the cell area.

↑ Indicates the number of device points that is registered to the cell area.

# Setting of the [Alarm Data] tab

This section explains the setting of the [Alarm Data] tab for use of the alarm summary function. On the [Alarm Data] tab, set the character strings to be displayed in the cell area.

## Window



## Displayed items

Item	Description	Reference
1) (Alarm data)	Set the alarm data to be used for the alarm summary function.	Page 94 "Device" to Page 95 "Status String"
2) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## "Device"

The device or label registered on the [Access Data] tab is displayed.

## "ON time String"

Enter the character string to be displayed in the cell when the registered device turns ON.

Number of characters: Up to 16

## "OFF time String"

Enter the character string to be displayed in the cell when the registered device turns OFF.

Number of characters: Up to 16

## "Alarm String"

Enter an alarm character string.

Number of characters: Up to 40

## "Status String"

Enter a status character string.

Number of characters: Up to 16

## Setting example

The following shows the [Alarm Data] tab setting example and the data displayed on the Excel spreadsheet.

The [Alarm Data] tab setting example

	Device	ON time String	OFF time String	Alarm String	Status String
1	M0	Generation	Restoration	Material strage	Minor failure
2	Device : M0				
3	ON time String : Generation				
	OFF time String : Restoration				
	Alarm String : Material storage				
	Status String : Minor failure				

<Operation of M0>



<Data displayed on Excel spreadsheet>

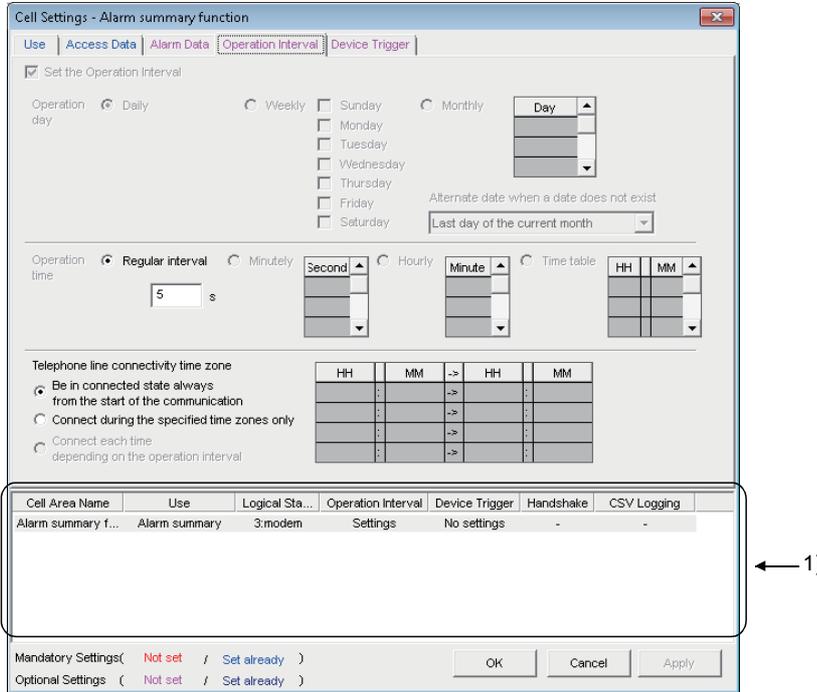
Displayed in order of "date and time of occurrence", "alarm character string" and "status character string".

Generation	2012/06/28 Thu 20:41:12	Material strage	Minor failure
Restoration	2012/06/28 Thu 20:41:17	Material strage	Minor failure
Displayed in the cell when M0 is ON (1).			
Displayed in the cell when M0 is OFF (2).			

# Setting of the [Operation Interval] tab

This section explains the setting of the [Operation Interval] tab for use of the alarm summary function. On the [Operation Interval] tab, set the operation interval for the function of the cell area.

## Window



## Displayed items

Item	Description	Reference
Regular interval	Set the operation interval of the alarm summary function.	Page 96 "Regular interval"
Telephone line connectivity time zone*1	Set the telephone line connection timing and disconnection timing.	Page 47 Setting of the [Operation Interval] tab
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Telephone line connectivity time zone" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for modem communication.

## "Regular interval"

Device data is collected at the set second intervals.

Setting range: 0.001 to 0.999 (in units of 0.001 seconds), 1 to 3600 (in units of 1 second)

If 0.001 to 0.999 seconds are set to the "Regular interval" on the [Operation Interval] tab, the ON/OFF time displayed on the Excel spreadsheet is in the "yyyy/mm/dd ddd hh:mm:ss" format.

**Ex.**

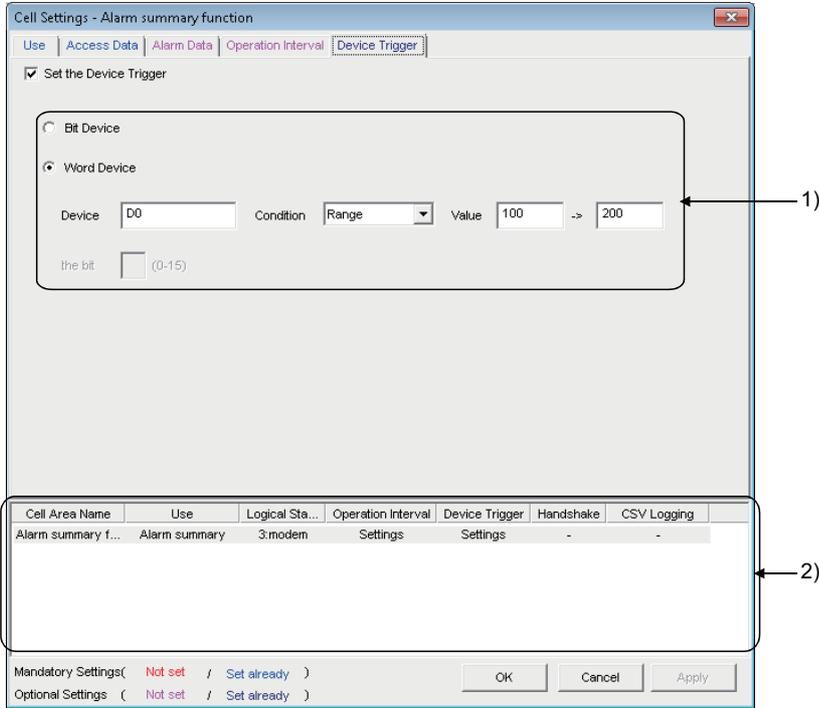
When 0.2 seconds interval is set and the ON time is 20 hours 41 minutes 12 seconds 80

Generation	2012/06/28 Thu 20:41:12	Material strage	Minor failure
------------	-------------------------	-----------------	---------------

# Setting of the [Device Trigger] tab

This section explains the setting of the [Device Trigger] tab for use of the alarm summary function. On the [Device Trigger] tab, set the device conditions for the device trigger.

## Window

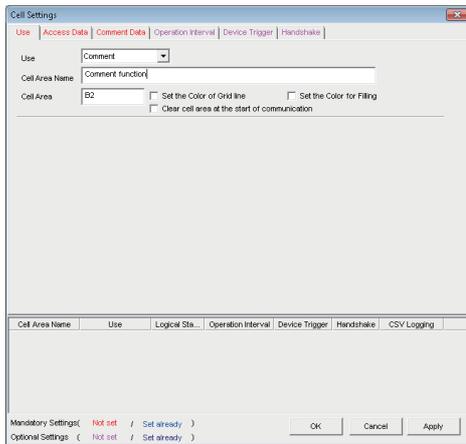


## Displayed items

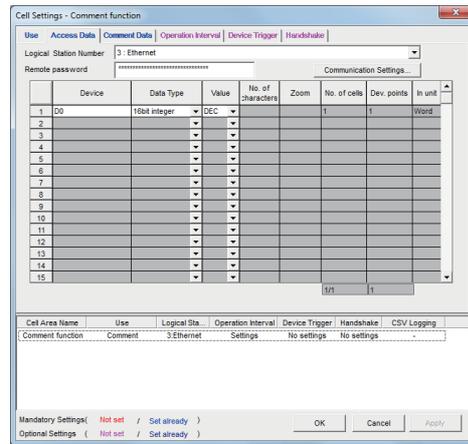
Item	Description	Reference
Set the Device Trigger	Set when the device trigger is used.	Page 54 Setting of the [Device Trigger] tab
1) (Device conditions)	Set the device or label conditions.	
2) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

# 6.6 When "Comment" is Selected

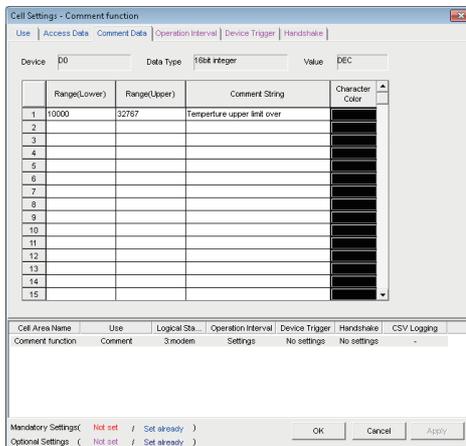
This section explains the "Cell Settings" screen when "Comment" is selected from "Use" on the [Use] tab.



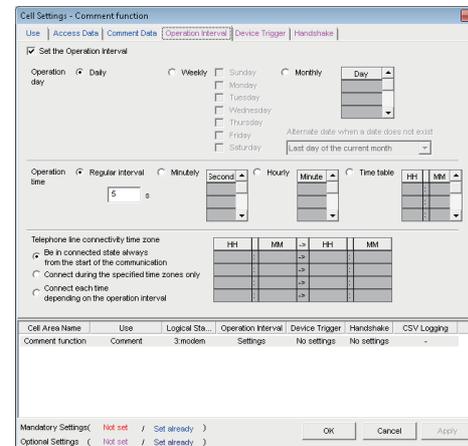
(1)



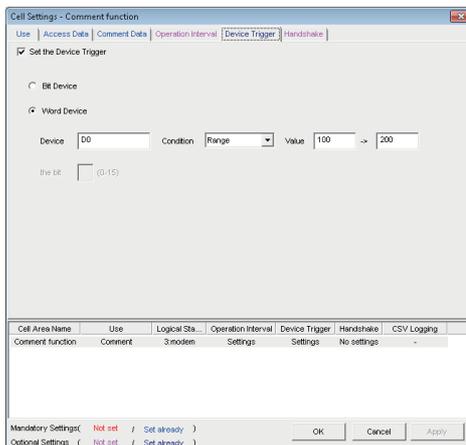
(2)



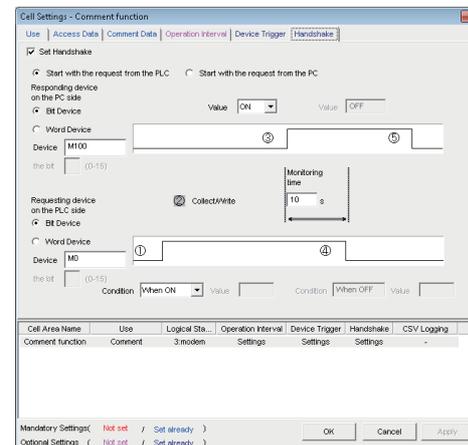
(3)



(4)



(5)



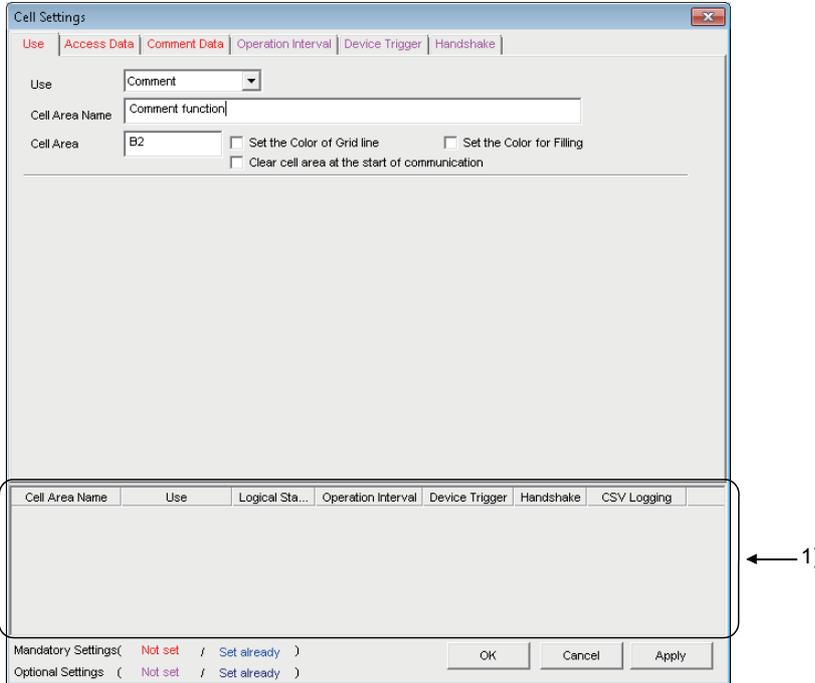
(6)

(1) [Use] tab	Required setting  Page 99 Setting of the [Use] tab
(2) [Access Data] tab	Required setting  Page 100 Setting of the [Access Data] tab
(3) [Comment Data] tab	Required setting  Page 102 Setting of the [Comment Data] tab
(4) [Operation Interval] tab	Set as necessary  Page 104 Setting of the [Operation Interval] tab
(5) [Device Trigger] tab	Set as necessary  Page 105 Setting of the [Device Trigger] tab
(6) [Handshake] tab	Set as necessary  Page 106 Setting of the [Handshake] tab

# Setting of the [Use] tab

This section explains the setting of the [Use] tab for use of the comment display function.  
On the [Use] tab, set the cell area.

## Window



## Displayed items

Item	Description	Reference
Use	Set the function to be used for the specified cell area. Select "Comment" when using the comment display function.	—
Cell Area Name	Set the name of the specified cell area. (Maximum number of cell area names: 500)	
Cell Area	Enter the value to specify the cell area.	Page 99 "Cell Area"
Set the Color of Grid line	Select this checkbox to add grid lines (including color designation) to the specified cell area.	Page 34 Setting of the [Use] tab
Set the Color for Filling	Select this checkbox to color the specified cell area.	
Clear cell area at the start of communication	Select this checkbox to clear the data of specified cell area at the start of communication. (Default: cleared)	Page 72 Setting of the [Use] tab
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## "Cell Area"

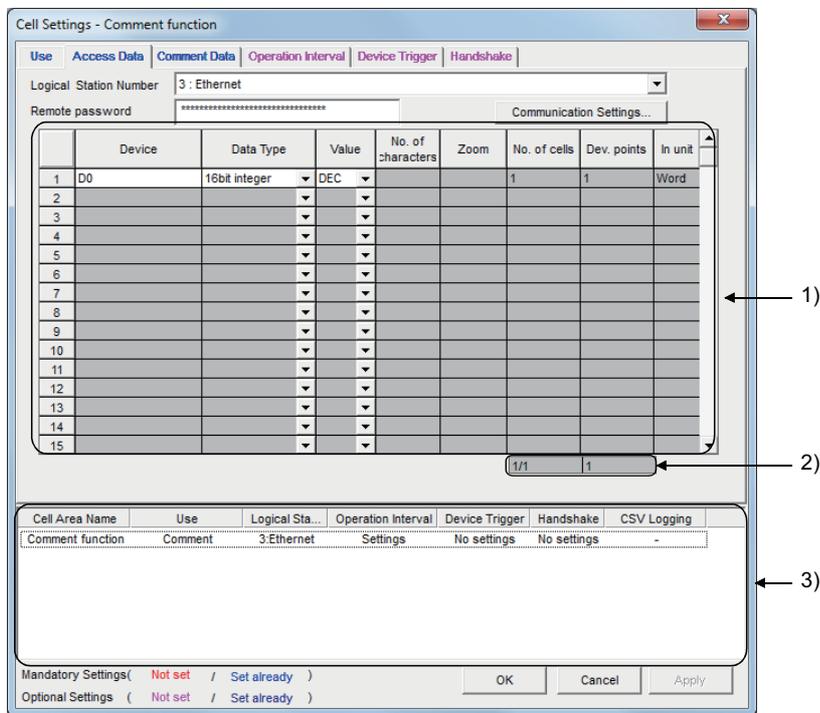
Set the cell area to be used by the comment display function.  
Setting range: 1

## Setting of the [Access Data] tab

This section explains the setting of the [Access Data] tab for use of the comment display function.

On the [Access Data] tab, set the logical station number required for communication with the programmable controller CPU and the device data to be used for the comment display function.

### Window



### Displayed items

Item	Description	Reference
Logical Station Number	Select the logical station number required for communication.	Page 41 Setting of the [Access Data] tab
[Communication Settings] button	Click this to start the communication setup utility for setting a new logical station number and changing settings.	
Remote password*1	Enter the password when the password is set to the connection target programmable controller CPU.	
1) (Access data)	Set the devices or labels use for the comment display function.	Page 101 Access data
2) (Number of set devices)	The number of devices currently set is displayed.	Page 41 Setting of the [Access Data] tab
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Remote password" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for the password function compatible module.

## Access data

### ■ "Device"

Set the device or label used for the comment display function.

- When entering a device, enter a device name and device number in this order.
- When entering a label, enter the label name.
- The applicable data types are Bit and Word.
- When entering a label, enter other than structured data type label and array type label.

For the accessible devices, refer to the following section.

 Page 27 Accessible CPUs and Accessible Device Ranges

### ■ "Data Type"

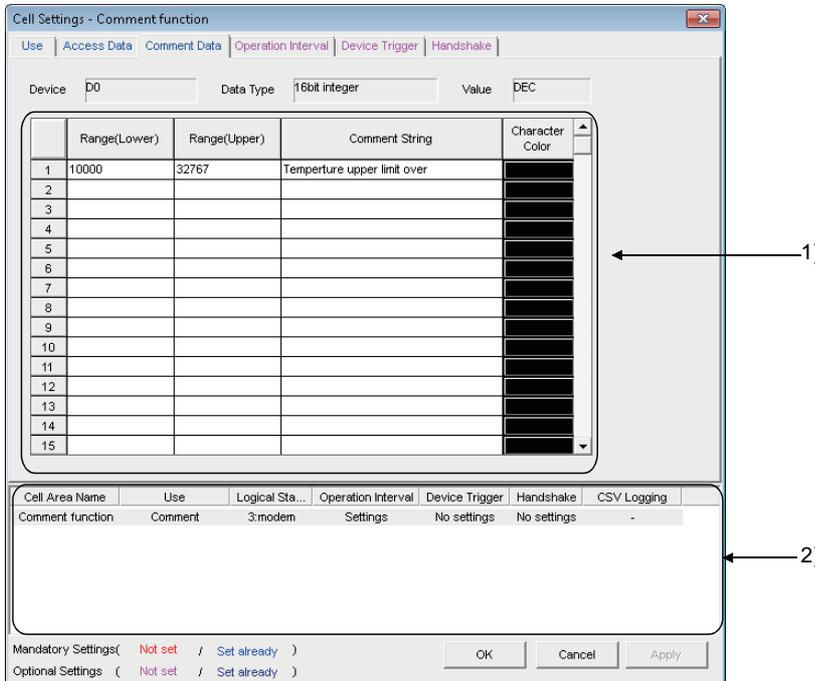
Set the data type of the device used for the comment display function.

Item	Device That Can be Specified	Description
Bit	Bit device	Set when bit devices set in "Device" are used for the comment display function.
	Word device (Bit specification)	Set when designated bits for word devices set in "Device" are used for the comment display function (e.g. D0.0).
16 bit integer (-32768 to 32767)	Bit device	Set when 1 word (16 bits), starting from the device number set in 16 bit integer "Device", is used for the comment display function.
	Word device	Set when the word device set in "Device" is used for the comment display function.
32 bit integer (-2147483648 to 2147483647)	Bit device	Set when 2 words (32 bits), starting from the device number set in "Device", are used for the comment display function.
	Word device	Set when 2 words, starting from the device number set in "Device", are used for the comment display function.
	Double word device	Set when double word devices set in "Device" are used for the comment display function.

# Setting of the [Comment Data] tab

This section explains the setting of the [Comment Data] tab for use of the comment display function. On the [Comment Data] tab, set the comment data to be displayed in the cell area.

## Window



## Displayed items

Item	Description	Reference
Device	The device set in "Device" on the [Access Data] tab is displayed.	—
Data type	The data type set in "Data Type" on the [Access Data] tab is displayed.	
Value	The content set to the "Value" on the [Access Data] tab is displayed.	
1) (Comment data)	Set the comment data to be used for the comment display function.	Page 102 Comment data
2) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## Comment data

### ■"Range (Lower)" and "Range (Upper)"

Set the lower and upper limit values of the device.

The setting range changes depending on the data type.

The following table shows the setting range of each data type.

Data type	Setting range
Bit	1 (ON), 0 (OFF)
16 bit integer	-32768 to 32767
32 bit integer	-2147483648 to 2147483647

### ■"Comment String"

Enter the comment character string to be displayed in the cell.

Number of characters: up to 40

### ■"Character Color"

Set the color of the comment character string displayed in the cell.

Depending on the specified colors, all colors may turn to gray.

For details, refer to the following consideration.

📖 Page 3 Considerations for setting MX Sheet

**Point**

If multiple comment data are set and their setting ranges are overlapped, the comment character string with the lowest data number is displayed.

Be sure to prevent double setting of the setting ranges.

## Setting example

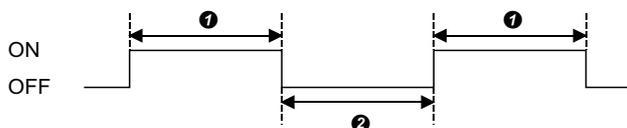
The following shows the setting examples in the cases where the data type is set to "Bit" and "16 bit integer".

### ■When data type is set to "Bit"

[Comment data] tab setting example

Device	M0	Data Type	16bit integer	Value	DEC
	Range(Lower)	Range(Upper)	Comment String	Character Color	
1	0	0	Normal operation		
2	1	1	Error occurrence		
3					

Operation of M0



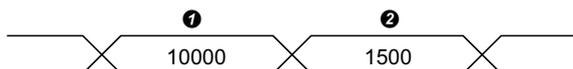
- ① While M0 is on, "Error occurrence" is displayed in the cell.
- ② While M0 is off, "Normal operation" is displayed in the cell.

### ■When data type is set to "16 bit integer"

[Comment data] tab setting example

Device	D0	Data Type	16bit integer	Value	DEC
	Range(Lower)	Range(Upper)	Comment String	Character Color	
1	10000	32767	Temperature upper limit over		
2					
3					

Operation of D0

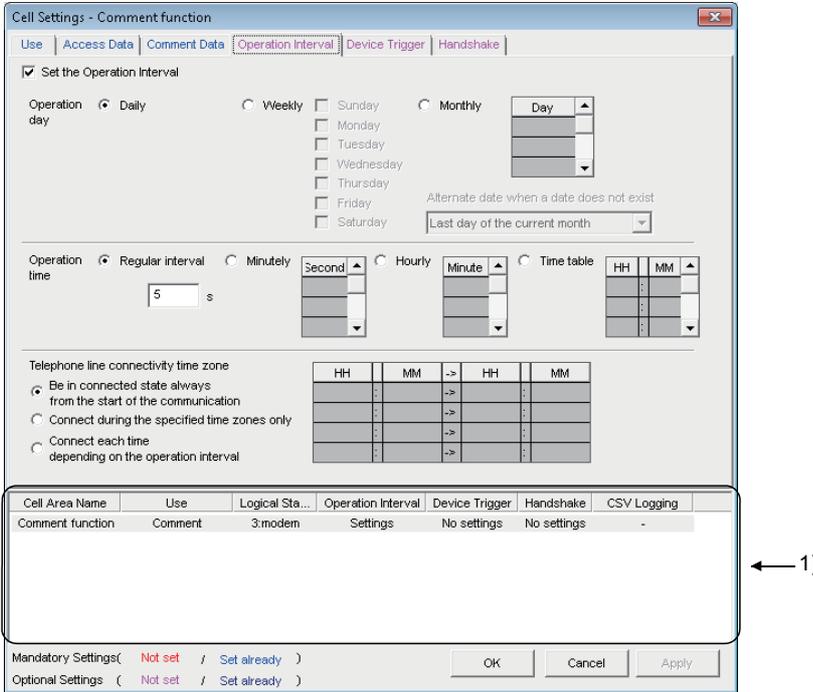


- ① If the D0 value is 10000 or more, "Temperature upper limit over" is displayed in the cell.
- ② If the D0 value is less than 10000, no comment character string is displayed.

# Setting of the [Operation Interval] tab

This section explains the setting of the [Operation Interval] tab for use of the comment display function. On the [Operation Interval] tab, set the day, time and time zone of the activation of the function for the cell area.

## Window



## Displayed items

Item	Description	Reference
Set the Operation Interval	Set the operation of the cell area valid or invalid.	Page 47 Setting of the [Operation Interval] tab
Operation day	Set the operation day of the comment display function activation.	
Operation time	Set the operation time of the comment display function activation.	Page 104 "Operation time"
Telephone line connectivity time zone*1	Set the telephone line connection timing and disconnection timing.	Page 47 Setting of the [Operation Interval] tab
1) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

\*1 "Telephone line connectivity time zone" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for modem communication.

## "Operation time"

The setting except for "Regular interval" is the same as that of the logging function.

For the setting except for "Regular interval", refer to the following section.

☞ Page 47 Setting of the [Operation Interval] tab

### ■When "Regular interval" is selected

Device data is collected at the set second intervals.

When modem communication is used and "Telephone line connectivity time zone" is set to "Connect each time depending on the operation interval", set "Regular interval" to 30 seconds or more.

When setting lesser "seconds" than the actual communication time, the fixed interval communication cannot be established.

Hence, set for longer than the actual communication time.

For Communication time, refer to the following performance value.

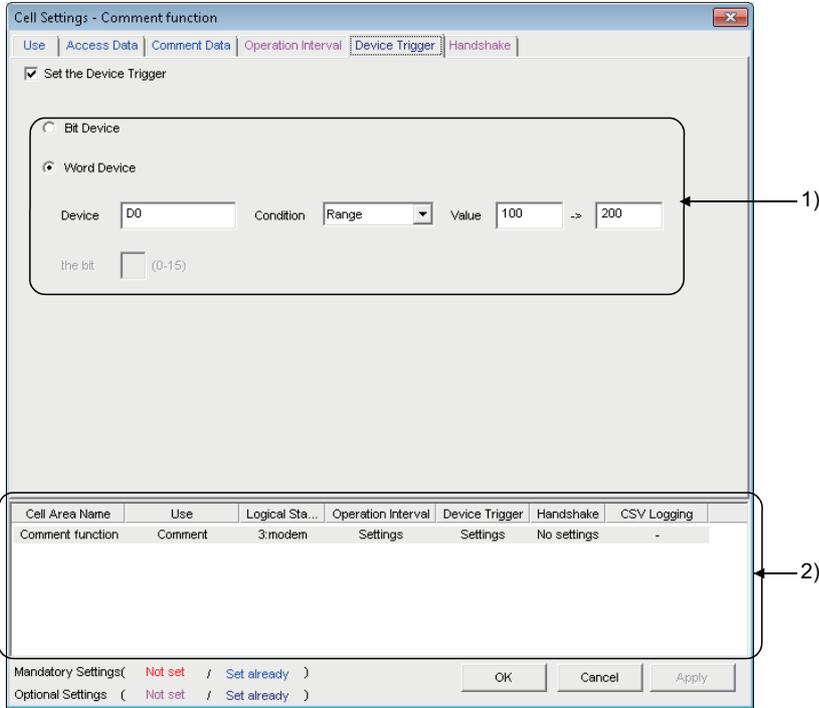
☞ Page 151 Processing Speed of MX Sheet

Setting range: 0.001 to 0.999 (in units of 0.001 seconds), 1 to 3600 (in units of 1 second)

# Setting of the [Device Trigger] tab

This section explains the setting of the [Device Trigger] tab for use of the comment display function. On the [Device Trigger] tab, set the device conditions for the device trigger.

## Window



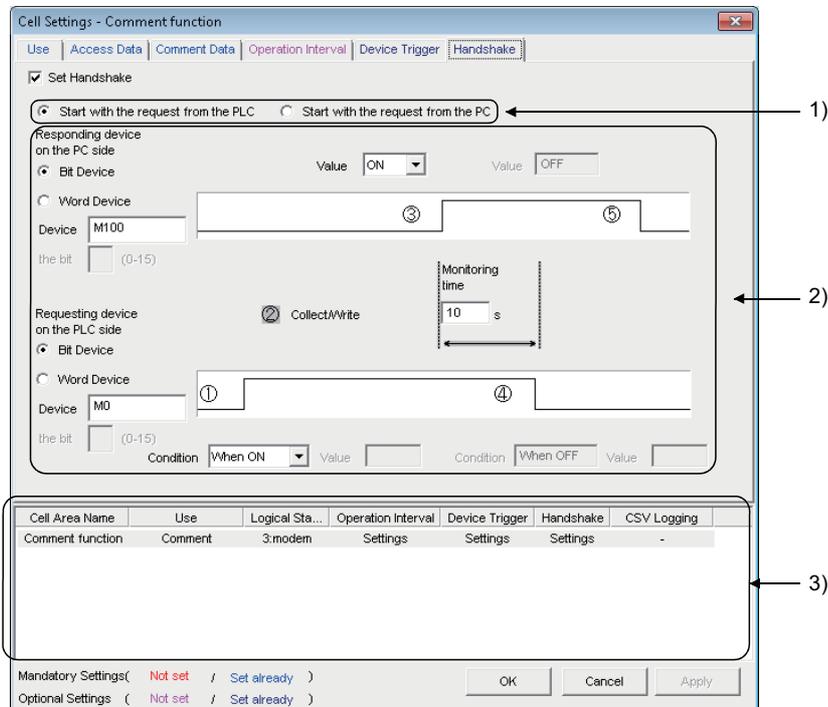
## Displayed items

Item	Description	Reference
Set the Device Trigger	Set when the device trigger is used.	Page 54 Setting of the [Device Trigger] tab
1) (Device conditions)	Set the device or label conditions.	
2) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

## Setting of the [Handshake] tab

This section explains the setting of the [Handshake] tab for use of the comment display function. On the [Handshake] tab, set the handshake requesting source and handshake processing.

### Window



### Displayed items

Item	Description	Reference
Set Handshake	Set when using a handshake.	Page 57 Setting of the [Handshake] tab
1) (Requesting source setting)	Set the requesting source of the handshake.	
2) (Handshake processing)	Set the handshake processing.	
3) (Preset cell areas)	The settings of the cell areas preset to the Excel book are displayed.	Page 34 Setting of the [Use] tab

# 7 AUTOMATIC SAVE SETTING

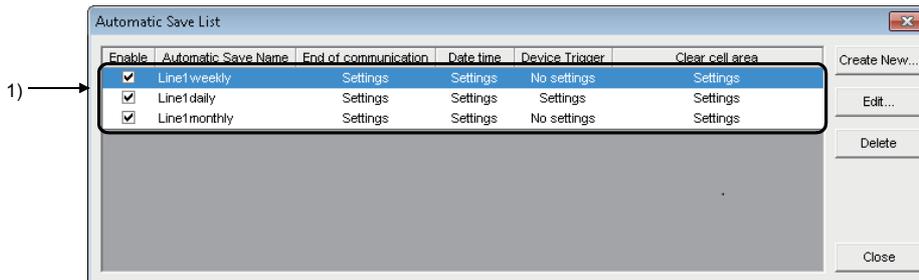
The following explains the setting content for saving the Excel book or Excel spreadsheet (CSV format) during MX Sheet operation (hereafter abbreviated to the Automatic save setting data).

## 7.1 Operation of "Automatic Save List" Screen

Manage the automatic save conditions in the form of a list In the "Automatic Save List" screen.

### Window

[MX Sheet] ⇒ [Automatic Save List] (  )



### Displayed items

Item	Description	Reference	
1) Automatic save name list	<p>—</p> <p>Enable</p> <p>Automatic save name</p> <p>End of communication</p> <p>Date time</p> <p>Device trigger</p> <p>Clear cell area</p>	<p>Display a list of automatic save names created in the "Automatic Save" screen (  Page 108 Setting of "Automatic Save" Screen).</p> <p>Select the one to be automatically saved. Selected when new data is created.</p> <p>Display the automatic save names created in the "Automatic Save" screen.</p> <p>Display whether the "Save at the end of communication" check box in the "Automatic Save" screen is selected or not in the form of Settings or No settings.</p> <p>Display whether the "Set the date and time" check box in the "Automatic Save" screen is selected or not in the form of Settings or No settings.</p> <p>Display whether the "Set the Device trigger" check box in the "Automatic Save" screen is selected or not in the form of Settings or No settings.</p> <p>Display whether the "Clear cell area after automatic save" check box in the "Automatic Save" screen is selected or not in the form of Settings or No settings.</p>	—
[Create New] button	Display the "Automatic Save" screen and create new automatic save setting data.	Page 108 Setting of "Automatic Save" Screen	
[Edit] button	Display the "Automatic Save" screen and change the content of the existing automatic save setting data.	—	
[Delete] button	Delete the selected automatic save name from the automatic save name list.	—	

### Point

- When the automatic save name list is double-clicked or the  key is pressed with the clicked line highlighted, that operation has the same function as the [Edit] button.
- When the  key is pressed with the clicked line highlighted, that operation has the same function as the [Delete] button.

## 7.2 Setting of "Automatic Save" Screen

Set the save timing and file name on the "Automatic Save" screen.

### Point

#### Save timing

The following three save timings are available for the automatic save setting. (All of them can be set at a time.)

- Automatic save is performed at the end of communication.
- Automatic save is performed at a specified time.
- Automatic save is performed using the device trigger.

### Window

Click the [Create New] button or the [Edit] button on the "Automatic Save List" screen.

### Displayed items

Item	Description	Reference
Automatic save name	Attach specific names to the automatic save setting data. Up to 50 automatic save names can be registered.	—
Save at the end of communication	Set when performing automatic save at the end of communication.	
Set the date and time	Set when performing automatic save at the specified date and time.	
Operation day	Set the operation day when automatic save is performed at the specified date and time.	Page 109 "Operation day"
Operation time	Set the operation time when automatic save is performed at the specified date and time.	Page 109 "Operation time"
Set the device trigger	Set when performing automatic save using the device trigger.	Page 110 "Set the Device trigger"
1) (Device conditions)	Set the device conditions for the device trigger.	Page 110 Device conditions
Clear cell area after automatic save	Set when clearing the cell area data after automatic save.	Page 111 "Clear cell area after automatic save"
Specify the cell area name	From the list, select the cell area name that is the target of "Clear cell area after automatic save".	Page 111 "Specify the cell area name"
2) (Save file setting)	Set the file name to automatically save data.*1	Page 111 Save file setting
Add device data to File name	Set when adding device data to the file name automatically saved.*2	Page 112 "Add device data to File name"

Item	Description	Reference
3) (Device setting)	Set device data to be added to the file name automatically saved.	Page 112 Device setting
[OK] button	Register the newly created or edited "Automatic Save Name" to the "Automatic Save List" screen.	Page 113 [OK] button

\*1 A UNC path name (\\server name\path name) cannot be specified as a file name. After assigning the network drive, specify the path name.

\*2 Can be selected only when "Fix the File name" is set for 2) (Save file setting).

### Point

When "Clear cell area at the start of communication" is checked on the [Use] tab of the "Cell Settings" screen, MX Sheet clears the target cell area data at the start of communication and starts data collection. In order to save the data at the end of communication, select the checkbox of "Save at the end of communication".

## "Operation day"

Set the operation day of the automatic save function.

### ■When "Daily" is selected

Save is performed every day.

### ■When "Weekly" is selected

Save is performed on the specified day of the week only.

Multiple days of the week can be set.

### ■When "Monthly" is selected

Save is performed on the specified days only.

If the specified day does not exist in some months, an alternate day can be specified.

Number of days that can be set: 31

<When "15th" is set>

Operation is performed on the 15th every month, e.g. January 15, February 15, March 15.

<When "31st" is set>

Excepting February, April, June, September and November, operation is performed on the 31st every month.

For February, April, June, September and November, set the alternate day and processing in "Alternate day when a date does not exist".

The following table shows the setting items of "Alternate day when a date does not exist".

Item	Description
Last day of the current month	Operation is performed on the last day of February, April, June, September or November.
First day of the next month	Operation is performed on the first day of the next month.
No operation	Operation is not performed in February, April, June, September and November.

## "Operation time"

Set the operation time of automatic save.

### ■When "Regular interval" is selected

The Excel book is saved at the set minute intervals.

Setting range: 1 to 1440

<When "Regular interval" is set to "5">

The Excel book is saved at intervals of 5 minutes, e.g. 8:05, 8:10, 8:15.

### ■When "Hourly" is selected

Automatic save is performed at the specified minute every hour.

Number of times that can be set: 60

### ■When "Time table" is selected

Automatic save is performed at the specified time.

Number of times that can be set: 50

## "Set the Device trigger"

Set this when performing automatic save using the device trigger.

Whether the device trigger conditions are satisfied or not is checked at intervals of 1 second.

### Device conditions

#### ■"Logical Station Number"

Select the logical station number used for the device trigger.

If the logical station number is already set, the number is displayed in the list box and can be selected.

If the logical station number is not set, click the [Communication Settings] button and set a new logical station number.

#### Point

The "Remote password" screen is displayed when the setting of the logical station number selected in "Logical Station Number" includes information on the connection to the module with the password function. When the password is set to the connection target programmable controller CPU, enter the password. It need not be entered when the password is not set.

#### ■[Communication Settings] button

This button is used to start the communication setup utility to set a new logical station number and change the settings.

Select "Run as administrator" when the screen is displayed asking if execute programs with administrator authority or not.

After starting the communication setup utility, click the [Wizard] button and set a new logical station number and change the settings with the Communication Setting Wizard.

For the detailed explanation of the communication setup utility and Communication Setting Wizard, refer to the following manual.

 MX Component Version 4 Operating Manual

#### ■Device type

Set the type of the device used for the device trigger.

Item	Description
Bit Device	Set when using a bit device for the device trigger.
Word Device	Set when using a word device for the device trigger.

#### ■"Device"

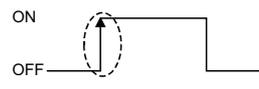
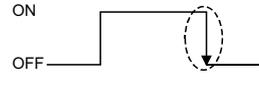
Enter a device or label used for the device trigger.

Item	Description
When using a device*1	Enter a device name and device number in this order.
When using a label	Enter a label name. The applicable data types is Bit. When entering a label, enter other than structured data type label and array type label.

\*1 Z device and TN/CN/STN devices cannot be used.

#### ■"Condition"

Set the device trigger conditions

Item	Available Device	Description
When ON 	Bit device	Set when automatic save is to be performed when the bit device turns on.
	Word device	Set when automatic save is to be performed when the corresponding bit of the word device turns on (value: 1).
When OFF 	Bit device	Set when automatic save is to be performed when the bit device turns off.
	Word device	Set when automatic save is to be performed when the corresponding bit of the word device turns off (value: 0).

#### ■"the bit"

Set the corresponding bit of the word device.

Setting range: 0 to 15

## "Clear cell area after automatic save"

Set whether the data of the cell area selected in the "Specify the cell area name" is cleared or not after automatic save is performed.

To clear the cell area data after automatic save, select the check box.

## "Specify the cell area name"

From the list box, select the "Cell Area Name" of the cell area whose data is cleared after automatic save. (Multiple names can be selected.)

The list box displays all "Cell Area Names" set in the "Cell Settings" screen.

## Save file setting

### ■"File name to save"

Set the storage location and file name of the Excel book to be saved automatically.

The Excel file (.xls, .xlsx<sup>\*1</sup>, .xlsm<sup>\*1</sup>, .xlsb<sup>\*1</sup>)<sup>\*2</sup>, HTML file (.htm)<sup>\*3</sup> or CSV file (.csv) is available as the file type.

\*1 .xlsx, .xlsm, and .xlsb are Workbook-format extensions added to Microsoft Excel 2007 or later.

\*2 An Excel file can be set only with the same extension as the file in which MX Sheet is set.

\*3 For the continuous operation when saving data automatically in HTML format, refer to the following appendix.

☞ Page 165 HTML Files

### ■"Specify the sheet name"

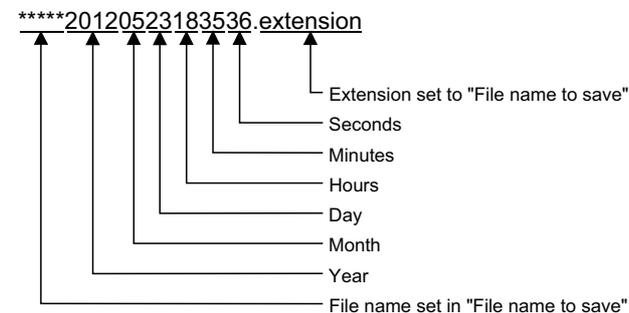
Select the sheet name to be saved from the combo box.

It can be specified only when the "File name to save" is a CSV file.

### ■"Add date and time to File name"

The data and time data are added to the file name set in "File name to save".

The following shows the file name format when data is saved.

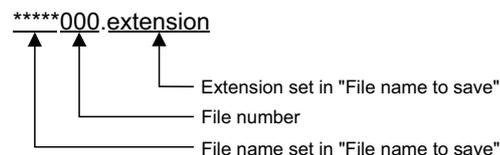


### ■"Add sequential number to File name"

The file number is added to the file name set in "File name to save".

A serial number can be set within the range from 000 to 999.

When the number reaches the last, the data of the next file are overwritten to the file of the first number.

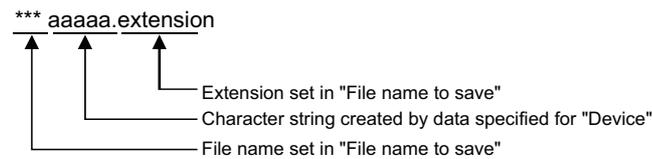


### ■"Fix the File name"

Data is overwritten to the file set in "File name to save".

## "Add device data to File name"

Set when adding device data to the file name automatically saved.



## Device setting

### ■"Logical Station Number"

Select the logical station number of the device used for the file name.

If the logical station number is already set, the number is displayed in the list box and can be selected.

If the logical station number is not set, click the [Communication Settings] button and set a new logical station number.

#### Point

The "Remote password" screen is displayed when the setting of the logical station number selected in "Logical Station Number" includes information on the connection to the module with the password function. When the password is set to the connection target programmable controller CPU, enter the password. It need not be entered when the password is not set.

### ■[Communication Settings] button

This button is used to start the communication setup utility to set a new logical station number and change the settings.

Select "Run as administrator" when the screen is displayed asking if execute programs with administrator authority or not.

After starting the communication setup utility, click the [Wizard] button and set a new logical station number and change the settings with the Communication Setting Wizard.

For the detailed explanation of the communication setup utility and Communication Setting Wizard, refer to the following manual.

📖 MX Component Version 4 Operating Manual

### ■"Device"

Specify the device name or label name to be used for the file name.

Bit devices cannot be specified.

### ■"Data type"

Select the type of data to be read from the device in the following:

- 16 bit integer
- 32 bit integer
- Character string

When "Character string" is selected for "Data type", the read data is processed as Shift JIS code.

### ■"Value"

Select the display format of the value to be displayed from DEC and HEX.

When "Character string" is selected for "Data type", it cannot be specified.

### ■"No. of characters"

Specify the number of characters to be read to one unit of data from the specified device.

It can be specified only when selecting "Character string" for "Data type".

Setting range: 1 to 40

## [OK] button

Register the newly created or edited automatic save setting data.

When the registration is completed, the automatic save name and settings are displayed as shown below in the "Automatic Save List" screen.

Operation		Display in "Automatic save list"
Create New		The automatic save name and settings are additionally displayed at the bottom of the list, and "Enable" is selected.
Edit	When automatic save name is changed	The automatic save name and settings are additionally displayed at the bottom of the list, and "Enable" is selected.
	When automatic save name is the same	The automatic save name and settings are displayed in the same position of the list. When the settings are changed, the new settings are displayed.

### Point

When registering the existing automatic save setting data under a different automatic save name, change the automatic save name in the "Automatic Save" screen.

# 8 AUTOMATIC PRINT SETTING

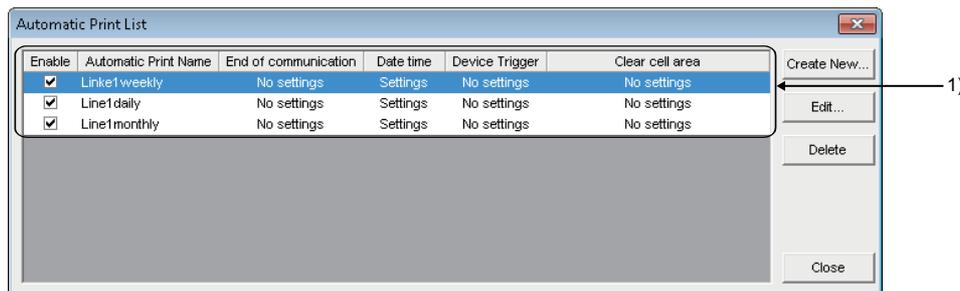
The following explains the setting content for printing the Excel book or Excel spreadsheet (CSV format) during MX Sheet operation (hereafter abbreviated to the Automatic print setting data).

## 8.1 Operation of "Automatic Print List" screen

Manage the automatic print conditions in the form of a list in the "Automatic Print List" screen.

### Window

[MX Sheet] ⇒ [Automatic Print Setting] (  )



### Displayed items

Item	Description	Reference
1) Automatic print name list	Display a list of automatic print names created on the "Automatic Print" screen (  Page 115 Setting of "Automatic Print" Screen).	—
Enable	Check the one to be automatic printed. Selected when new data is created.	
Automatic print name	Display the automatic print name created on the "Automatic Print" screen.	
End of communication	Display whether the "Print at the end of communication" check box in the "Automatic Print" screen is checked or not in the form of Settings or No settings.	
Date time	Display whether the "Set the date and time" check box in the "Automatic Print" screen is checked or not in the form of Settings or No settings.	
Device trigger	Display whether the "Set the Device trigger" check box in the "Automatic Print" screen is checked or not in the form of Settings or No settings.	
Clear cell area	Display whether the "Clear cell area after automatic print" check box in the "Automatic Print" screen is checked or not in the form of Settings or No settings.	
[Create New] button	Display the "Automatic Print" screen and create new automatic print setting data.	Page 115 Setting of "Automatic Print" Screen
[Edit] button	Display the "Automatic Print" screen and change the content of the existing automatic print setting data.	—
[Delete] button	Delete the selected automatic print name from the automatic print name list.	—

### Point

- When the automatic print name list is double-clicked or the  key is pressed with the clicked line highlighted, that operation has the same function as the [Edit] button.
- When the  key is pressed with the clicked line highlighted, that operation has the same function as the [Delete] button.

## 8.2 Setting of "Automatic Print" Screen

Set the print timing and print area in the "Automatic Print" screen.

### Point

#### Print timing

The following three timings are available for the automatic print setting. (All of them can be set at a time.) For the details, refer to the following chapter.

☞ Page 107 AUTOMATIC SAVE SETTING

- Automatic print is performed at the end of communication.
- Automatic print is performed at a specified time.
- Automatic print is performed using the device trigger.

### Window

Click the [Create New] button or the [Edit] button on the "Automatic Print List" screen.

Item	Description	Reference
Automatic Print Name	Manage the automatic print setting data with specific names. Up to 50 automatic print names can be registered.	—
Print at the end of communication	Set when performing automatic print at the end of communication.	Page 107 Operation of "Automatic Save List" Screen
Set the date and time	Set when performing automatic print at the specified date and time.	
Operation day	Set the operation day when automatic print is performed at the specified date and time.	
Operation time	Set the operation time when automatic print is performed at the specified date and time.	
Set the device trigger	Set when performing automatic print using the device trigger.	
1) (Device conditions)	Set the device conditions for the device trigger.	
Clear cell area after automatic print	Make setting when clearing the cell area data after automatic print.	Page 116 "Clear cell area after automatic print"
Specify the cell area name	From the list, select the cell area name that is the target of "Clear cell area after automatic print".	Page 116 "Specify the cell area name"
Print Area	Set the area where automatic print is performed.	Page 116 "Print Area"

Item	Description	Reference
[OK] button	Register the newly created or edited "Automatic Print Name" in the "Automatic Print List" screen.	Page 116 [OK] button

## "Clear cell area after automatic print"

Set whether the data of the cell area selected in the "Specify the cell area name" is cleared or not after automatic print is performed.

To clear the cell area data after automatic print, select the check box.

## "Specify the cell area name"

From the list box, select the "Cell Area Name" of the cell area whose data is cleared after automatic print. (Multiple names can be selected.)

The list box displays all "Cell Area Names" set in the "Cell Settings" screen.

## "Print Area"

Set the area where automatic print is performed.

### ■"Entire workbook"

The entire Excel book (all sheets) where automatic print setting is set is printed automatically.

### ■"Specify the sheet"

Automatic print is executed for the specified sheet only.

Multiple sheets can be selected and printed simultaneously.

## [OK] button

Register the newly created or edited automatic print setting data.

When the registration is completed, the automatic print name and settings are displayed in the "Automatic Print List" screen as described below.

Operation		Display in "Automatic print list"
Create New		The automatic print name and settings are additionally displayed at the bottom of the list, and "Enable" is selected.
Edit	When automatic print name is changed	The automatic print name and settings are additionally displayed at the bottom of the list, and "Enable" is selected.
	When automatic print name is the same	The automatic print name and settings are displayed in the same position of the list. When the settings are changed, the new settings are displayed.

### Point

- When registering the existing automatic print setting data under a different automatic print name, change the automatic print name in the "Automatic Print" screen.
- When multiple printers are set to a single personal computer, the Excel spreadsheet where automatic print is set is output from the printer specified to "Set as Default" in [Start] ⇒ [Control Panel] ⇒ [Hardware and Sound] ⇒ [Devices and Printers].

This chapter explains the settings for starting communication with the programmable controller CPU automatically at the start of the Excel book.

Also, explains the method for cancelling the automatic communication setting to be set.

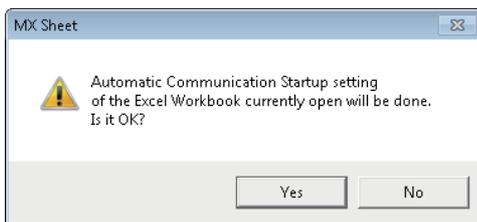
## Automatic Communication Startup Setting

### Operating procedure

1. [MX Sheet] ⇒ [Automatic Communication Startup Setting] (  )

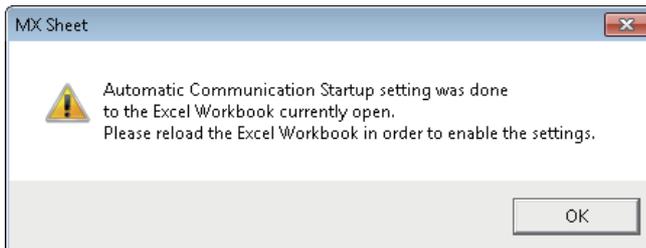
2. The following message is displayed.

Click the [Yes] button to set the automatic communication startup setting to the Excel book being edited.



3. The following message is displayed.

Click the [OK] button.



After editing the Excel book, restart the Excel book to set the automatic communication startup setting to valid.

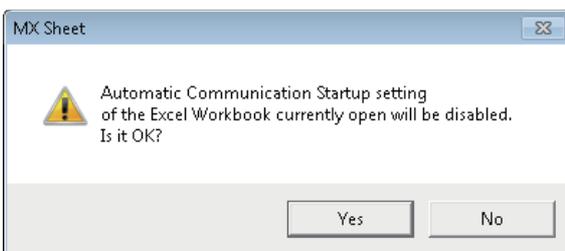
## Automatic Communication Startup Disabled

### Operating procedure

1. [MX Sheet] ⇒ [Automatic Communication Startup Setting] (  )

2. The following message is displayed.

Click the [Yes] button to disable the automatic communication startup setting of the Excel book being edited.



- For the automatic communication startup setting, do not save the Excel book under the hidden status. An error occurs when starting the Excel book and MX Sheet cannot be used. In such case, save the Excel book under the display status, and restart Excel.

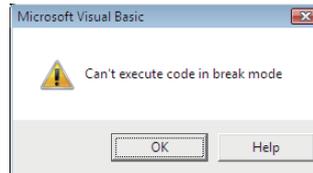
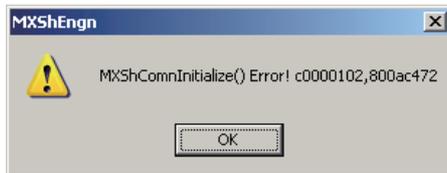
For the method to display the Excel book, refer to the following consideration.

☞ Page 8 When logoff/shutdown is executed during communication

- When a workbook that has been configured for "Automatic Communication Startup" using MX Sheet is opened using Microsoft Excel 2007 or later, the following anomalous situations may occur.

·Excel stops responding.

·One of the following error messages is displayed.



If the symptoms described above occur, refer to the following appendix and install the COM add-in "MXShRibbon".

☞ Page 175 Countermeasures for Errors as a Result of Using the Automatic Communication Startup Setting of MX Sheet in Microsoft Excel 2007 or Later

# 10 START COMMUNICATION AND END COMMUNICATION

This chapter explains the start and end of MX Sheet communication.

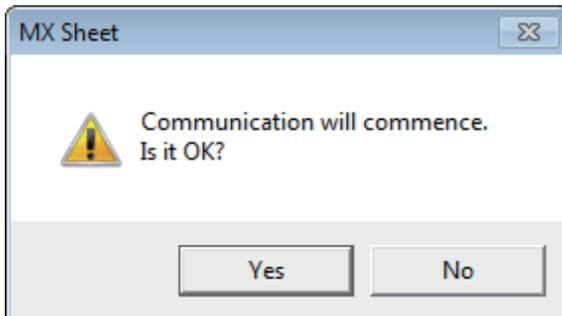
## 10.1 Start Communication

This section explains the procedure to start MX Sheet communication manually.

### Operating procedure

1. [MX Sheet] ⇒ [Start Communication] (  )

The following message is displayed.



2. Click the [Yes] button.

Start communication between the Excel book being edited, and the programmable controller CPU and read/write device data.

### Point

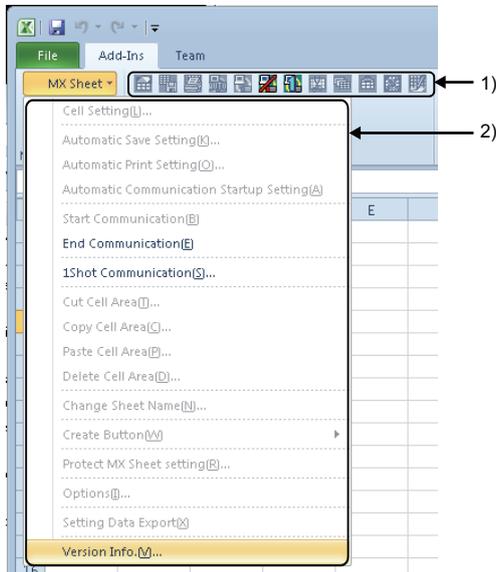
- When using Microsoft Excel 2003, select [MX Sheet] ⇒ [Start Communication] on the menu bar to start communication.
- The communication can be also started by clicking the created start communication button. (  Page 131 Start Communication Button)
- Do not operate other Excel book during communication.

## Display of Excel book and task bar during communication

The following shows how the Excel book, which is communicating with the programmable controller CPU using MX Sheet, and the task bar are displayed.

### ■Display of Excel book

#### Window



Item	Status during Communication
1) (Icon)	Only the Communication End and 1 Shot Communication icons can be selected.
2) (MX Sheet menu)	Only [Communication End], [1 Shot Communication], and [Version Info] can be selected.

#### Point

When using Microsoft Excel 2003, the [Add-Ins] tab is not displayed.

### ■Display of task bar

During communication with the programmable controller CPU using MX Sheet, the following icon is displayed on the task bar of Windows.



Icon is displayed on task bar.

## Confirmation at communication error

If an error occurs at the start of communication or during communication, the error information is displayed on the "ErrorLog" sheet.

When a communication error has occurred, end MX Sheet communication and correct the error in accordance with the corrective action on the "ErrorLog" sheet.

For details of the "ErrorLog" sheet, refer to the following chapter.

☞ Page 146 ERRORLOG SHEET

1	Kind	Date	Cell Area Name	ErrorNo	Contents
2	Information	2012/06/29 Fri 13:26:32		00000000	Communication was started.
3	Error	2012/07/02 Mon 11:22:55	Logging function	e1000009	The specified logical station number is not set.  The corrective action is as follows: Create the logical station number after performing communication setting.
4	Information	2012/07/02 Mon 11:23:12		00000002	Communication was completed.

At occurrence of communication error, error information is displayed on the "ErrorLog" sheet.

## 10.2 End Communication

This section explains the procedure to end MX Sheet communication.

### Operating procedure

[MX Sheet] ⇒ [End Communication] (  )

#### Point

- When using Microsoft Excel 2003, select [MX Sheet] ⇒ [End Communication] on the menu bar to end communication.
- The communication can also be ended by clicking the created end communication button. (☞ Page 135 End Communication Button)

## Confirmation at communication end

At the end of communication, MX Sheet displays the communication end message on the "ErrorLog" sheet.

Confirm the message on the "ErrorLog" sheet at the end of communication.

For details of the "ErrorLog" sheet, refer to the following chapter.

☞ Page 146 ERRORLOG SHEET

	A	B	C	D	E	F	G	H
1	Kind	Date	Cell Area Name	ErrorNo	Contents			
2	Information	2012/07/04 Wed 09:41:03		00000000	Communication was started.			
3	Information	2012/07/04 Wed 09:41:16		00000002	Communication was completed.			
4								

At end of communication, communication end message is displayed on "ErrorLog" sheet.

# 11 1 SHOT COMMUNICATION

This chapter explains 1 shot communication function that makes communication with the selected cell area only once at any timing.

The "1 Shot Communication" screen is used to set a cell area and execute 1 shot communication for the cell area.

## Point

- 1 shot communication function ignores the device trigger and handshake settings set to the cell area, and performs communication only once.
- 1 shot communication function cannot work with the alarm summary function.

## Window

- [MX Sheet] ⇒ [1 Shot Communication] (  )
- Click the 1 shot communication button. (  Page 136 1 Shot Communication Button)



## Displayed items

Item	Description
Cell Area Name	Select the cell area for 1 shot communication. Only the cell area name set in the currently selected Excel spreadsheet is displayed in "Cell Area Name".
[OK] button	The button can be clicked after the cell area name is selected in "Cell Area Name". Execute 1 shot communication.

## Point

- When "1 Shot Communication" screen is activated after selecting the cell area set on the Excel spreadsheet with the mouse, the cell area name of the selected cell area is displayed on "Cell Area Name".
- Setting the cell area name in "Cell Area Name" displays the cell area on the Excel spreadsheet.



# 12 CELL EDITING

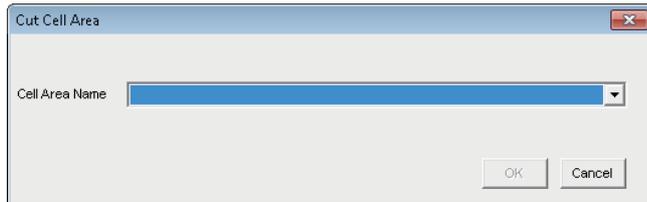
This chapter explains how to edit the cell area set using MX Sheet.

## 12.1 Cutting Cell Area

This section explains the procedure to delete the settings of the selected cell area and paste them to another cell area.

### Window

[MX Sheet] ⇒ [Cut Cell Area] (  )



### Displayed items

Item	Description
Cell Area Name	Select the cell area name to be cut.
[OK] button	Cut the cell area. The button can be clicked after the cell area name is selected in "Cell Area Name".

### Point

For pasting the cell area, refer to the following section.

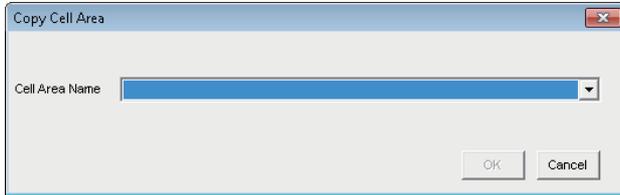
 [Page 126 Pasting Cell Area](#)

# 12.2 Copying Cell Area

This section explains the procedure to copy the settings of the selected cell area to another cell area.

## Window

[MX Sheet] ⇒ [Copy Cell Area] (  )



## Displayed items

Item	Description
Cell Area Name	Select the cell area name to be copied.
[OK] button	Copy the cell area. The button can be clicked after the cell area name is selected in "Cell Area Name".

### Point

For pasting the cell area, refer to the following section.

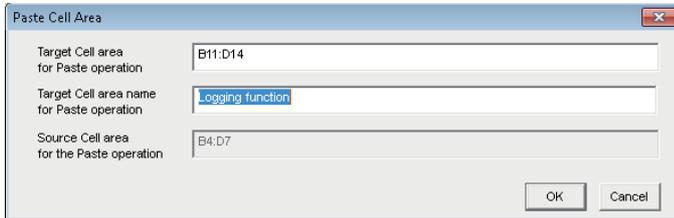
 [Page 126 Pasting Cell Area](#)

## 12.3 Pasting Cell Area

This section explains the procedure to paste the cut or copied cell area to another cell area.

### Window

[MX Sheet] ⇨ [Paste Cell Area] (  )



Paste Cell Area

Target Cell area for Paste operation: B11:D14

Target Cell area name for Paste operation: Logging function

Source Cell area for the Paste operation: B4:D7

OK Cancel

### Displayed items

Item	Description
Target Cell area for Paste operation	Enter the cell area to be pasted.
Target Cell area name for Paste operation	Enter the cell area name to be pasted. <sup>*1</sup>
Source Cell area for the Paste operation	The cut or copied cell area is displayed.
[OK] button	Paste the cell area. The button can be clicked after setting "Target Cell area for Paste operation" and "Target Cell area name for Paste operation".

<sup>\*1</sup> When pasting the cell area after copying it, enter into "Target Cell area name for Paste Operation" the cell area name that differs from the copied cell area name.

### Point

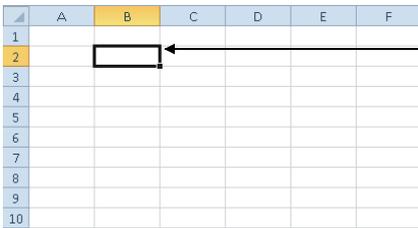
The cell area cannot be pasted unless the cell area is selected by cutting or copying it.

## Considerations for pasting the cell

Consider the following when pasting a cell area.

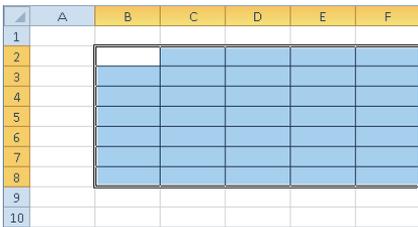
### ■ Paste starting cell in cell area

The paste starting cell in the cell area is the cell selected on the Excel spreadsheet.



	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

1) Select cell and past cell area.



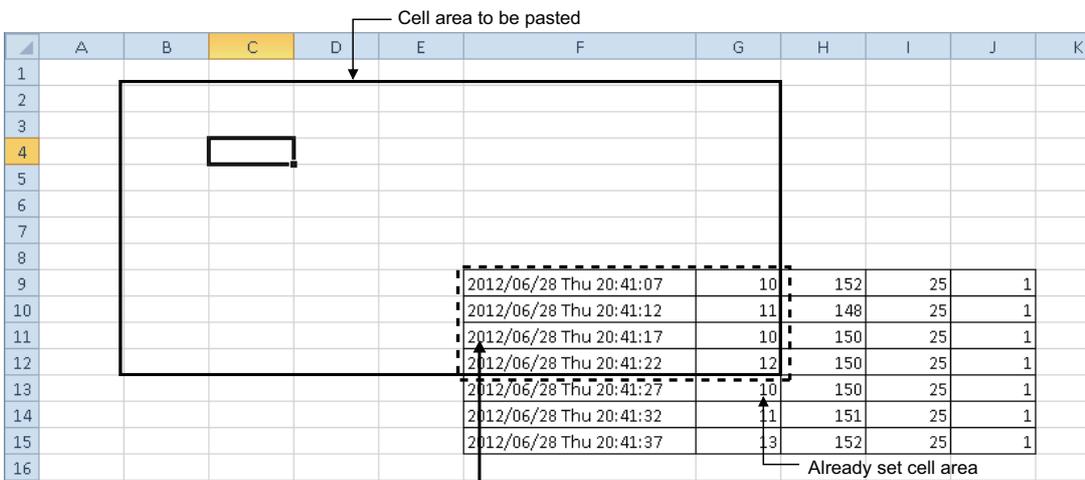
	A	B	C	D	E	F
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

2) Paste cell area using selected cell as paste starting cell.

### ■ Overlap of cell areas

If the paste area overlaps the other cell area that is already set, the selected cell cannot be pasted.

Paste the cell after checking the other cell area.



	A	B	C	D	E	F	G	H	I	J	K
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											

As cell area enclosed by dotted lines overlaps, cell area cannot be pasted.

### Point

The cell can be pasted when both of the following conditions are met: the area of "Already set cell area" and "Cell area to be pasted" are completely matched, and "Monitor" and "Write" are set to "Use" on each "Cell Settings" screen.

# 12.4 Deleting Cell Area

This section explains the procedure to delete the settings of the cell area.

## Window

 [MX Sheet] ⇨ [Delete Cell Area] ()

## Displayed items

Item	Description
Cell Area Name	Select the cell area name to be deleted.
[OK] button	Delete the cell area. The button can be clicked after the cell area name is selected in "Cell Area Name".

# 13 CHANGING SHEET NAME

This chapter explains the changing the sheet name of the Excel sheet where MX Sheet is set. In the "Change Sheet Name" screen, select an Excel sheet and set a new name for the sheet.

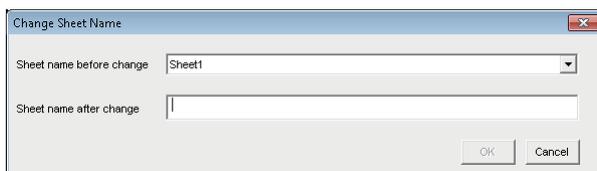
## Point

Always change the sheet name of the Excel sheet, where MX Sheet is set, from the "Change Sheet Name" screen.

If the sheet name is changed from Excel directly or from a VBA program, MX Sheet is not operate normally

## Window

[MX Sheet] ⇄ [Change Sheet Name] (  )



13

## Displayed items

Item	Description
Sheet name before change	Select the Excel spreadsheet of which sheet name to be changed.
Sheet name after change	Enter a new sheet name.
[OK] button	Change the sheet name. The button can be clicked after the "Sheet name before change" and "Sheet name after change" are selected.

## Changing the sheet name

If the sheet name of the Excel spreadsheet, where MX Sheet is set, is changed from Excel directly or from a VBA program, return the sheet name to the old one from Excel.

If the sheet name is changed from the VBA program, delete the program part that changes the sheet name.

# MEMO

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# 14 CREATING BUTTONS

The following explains the Start Communication, End Communication and 1 Shot Communication execution button creation procedures and the property setting.

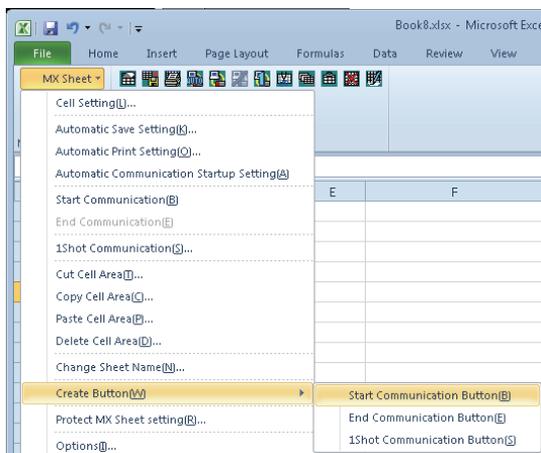
By merely clicking the created button, Start Communication, End Communication or 1 Shot Communication operation can be performed and easily operated.

## 14.1 Start Communication Button

Create the button for execution of Start Communication and paste it to an Excel spreadsheet.

### Button pasting method

#### Operating procedure



1. Specify the cell on the Excel spreadsheet where the button is placed, and select the [Add-Ins] tab ⇒ [MX Sheet] ⇒ [Create Button] ⇒ [Start Communication Button] on the menu bar.

When using Microsoft Excel 2003, select [MX Sheet] ⇒ [Create Button] ⇒ [Start Communication Button] on the menu bar.

The button is placed in the specified cell position.

#### Point

The following settings about the placed button can be changed in the property setting.

- Change the display characters on the button (font, size, etc.)
- Change if the start message is displayed/hidden displayed when executing the button

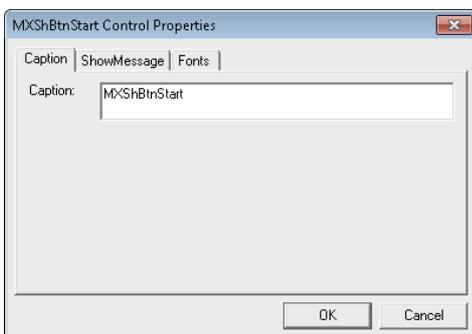
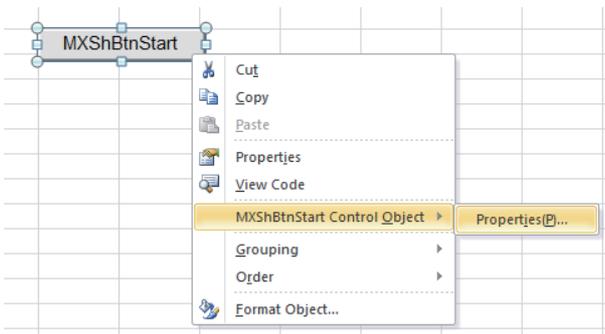
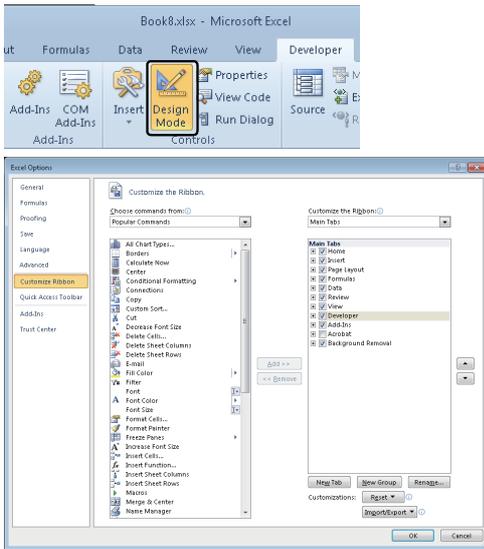
For the details of the property setting, refer to the following sections.

☞ Page 132 Property page starting method

☞ Page 133 Property setting

## Property page starting method

### Operating procedure



1. Select the [Design Mode] in the [Developer] tab to enter the design mode.

In order to display the [Developer] tab, select the [File] tab ⇒ [Options].

Select "Customize Ribbon" and check the "Developer" checkbox, and then click the [OK] button.

<When using Microsoft Excel 2003>

Check the "Control Toolbox" on the [Toolbars] tab in the screen that is displayed by selecting [Tools] ⇒ [Customize] in the Excel menu.

<When using Microsoft Excel 2007>

Select the Office button ⇒ [Excel Options] button. Select "Show [Developer] tab in the Ribbon" in the Excel Options screen.

2. Select [MXShBtnStart Control Object] ⇒ [Properties] in the menu displayed by right-clicking the created button.

3. Start the property page.

For the property settings, refer to Page 133 Property setting.



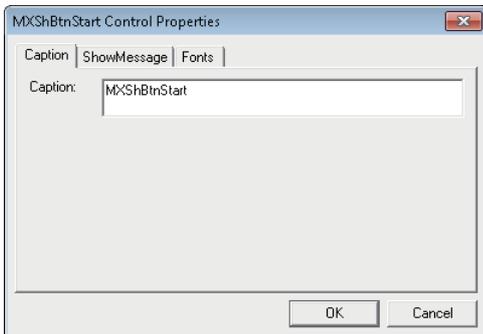
When the property setting is completed, select the [Design Mode] again to exit from the design mode.

## Property setting

Set the "Caption", "Show Message" and "Fonts" properties.

### ■[Caption] tab

Edit the "Caption" (display characters on the button) of the button.



### ■[ShowMessage] tab

Set if the following message is displayed or not when clicking the start communication button.



TRUE : Display  
FALSE : Not display

### ■[Fonts] tab

Set the type and size of the caption font.

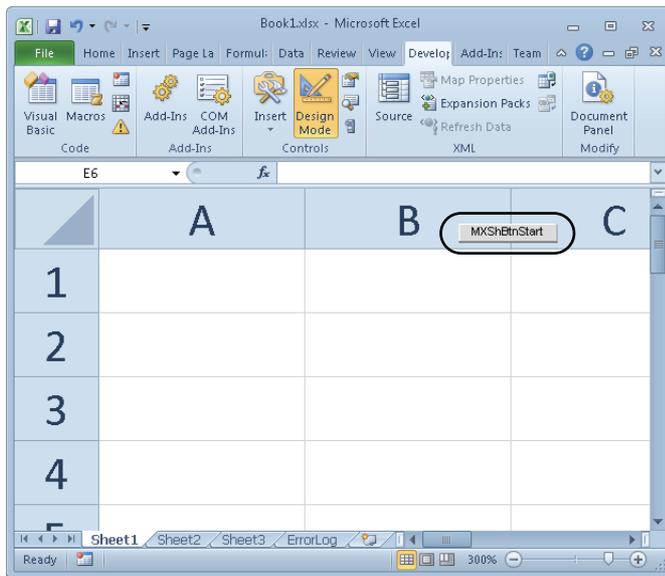


- Save the Excel book when the button is created or any property is changed.
- Do not execute [Grouping] ⇔ [Ungroup] from the right-click menu of the button. Executing Ungroup disables the button from functioning.
- If the font size is set on the [Font] Tab of the property, a value (error) different from the set font size may be displayed when the [Font] Tab is displayed next time.

<Example>

When the font size is set to 8, 8.25 is displayed next time.

- If [Split], [Freeze Panes] or [New Window] in the [Window] menu is executed for the Excel spreadsheet where buttons is placed, correct operation may not be performed, e.g. the buttons remain displayed or the buttons cannot be clicked.
- If the zoom of Excel is set to a large magnification, the button may be displayed above the row/column number. If it occurs, click the button. The button is then move to the correct position.



- If a button is created in design mode and then the mode is ended and set repeatedly, the button may not be clicked.

In this case, minimize and restore the Excel book window. This enables the button to be clicked.

- When moving a button or changing button size after creating it, the button is not checked for its position.
- If the button position exceeds the supported range (256 columns × 65536 rows) when Excel from 97 to 2003 version is saved in book format, any of the following occurs depending on the button size, button position, height of the row and/or cell width.
  - When saved Book is reopened, the button is reduced or moved so that it is fit within the supported range.
  - The button is deleted when saved Book is reopened.
  - The Compatibility Checker screen is displayed on the Excel at saving the Book.

## 14.2 End Communication Button

---

Create the button for execution of End Communication and paste it to an Excel spreadsheet.

### Button pasting method

Same as the Start Communication Button.

☞ Page 131 Button pasting method

### Operating procedure

[MX Sheet] ⇒ [Create Button] ⇒ [End Communication Button]

### Property page starting method

Same as the Start Communication Button.

☞ Page 132 Property page starting method

### Operating procedure

[MXShBtnEnd Control Object] ⇒ [Properties]

### Property setting

Set the Caption and Font properties.

☞ Page 133 Property setting

# 14.3 1 Shot Communication Button

Create the button for execution of 1 Shot Communication and paste it to an Excel spreadsheet.

## Button pasting method

Same as the Start Communication Button.

☞ Page 131 Button pasting method

## Operating procedure

[MX Sheet] ⇒ [Create Button] ⇒ [1 Shot Communication Button]

## Property page starting method

Same as the Start Communication Button.

☞ Page 132 Property page starting method

## Operating procedure

[MXShBtn1Shot Control Object] ⇒ [Properties]

## Property setting

Set the Caption, CellAreaName and Font properties.

For Caption and Font, refer to the following section.

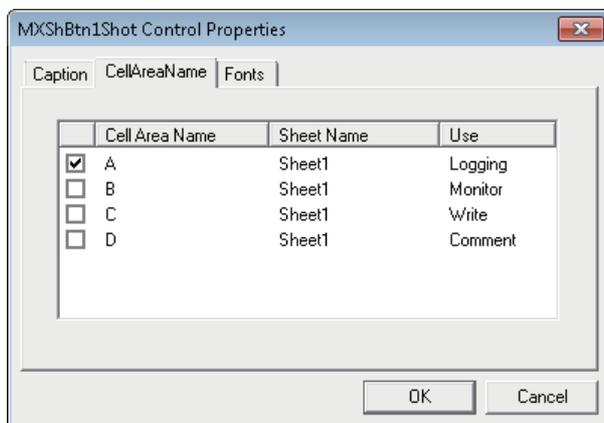
☞ Page 133 Property setting

### ■[CellAreaName] Tab

The Cell Area Name list displays all Cell Area Names of Logging, Monitor, Write and Comment in the Excel book.

Select the check box for the Cell Area Name that is the target of 1 Shot Communication.

Up to 10 Cell Area Names can be selected.



# 15 PROTECTING/UNPROTECTING MX Sheet SETTING

The following explains Protect MX Sheet setting and Unprotect MX Sheet setting by a password.

## 15.1 Protecting MX Sheet Setting

Protect the MX Sheet setting by a password so that the setting content cannot be changed.

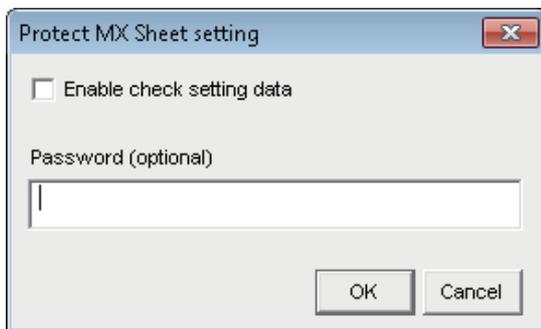
The setting content cannot be edited until the MX Sheet setting is unprotected.

### Point

When Protect MX Sheet setting is set, the [Unprotect MX Sheet setting] is displayed instead of the [Protect MX Sheet setting].

### Window

[MX Sheet] ⇒ [Protect MX Sheet setting]



15

### Displayed items

Item	Description	Reference
Enable check setting data	The menu that can be selected when Protect MX Sheet setting is set changes depending on if a check mark exists.	Page 138 "Enable check setting data"
Password (optional)	Enter the password for protecting the setting contents. The password may also be registered as a blank.	—
[OK] button	The "Confirm Password" screen is displayed. When the password is blank, however, the "Confirm Password" screen is not displayed and the MX Sheet setting is protected.	Page 138 [OK] button

## "Enable check setting data"

Depending on whether "the item is cleared" (setting content cannot be confirmed) or "Selected" (setting content can be confirmed), the menu that can be selected when Protect MX Sheet setting is set changes as shown in the following table.

○: Can be selected, ×: Cannot be selected

MX Sheet menu	Cleared	Selected
Cell Settings	×	○*1
Automatic Save Setting	×	○*1
Automatic Print Setting	×	○*1
Automatic Communication Startup Setting	×	×
Communication Start	○	○
Communication End	○	○
1 Shot Communication	○	○
Cutting the Cell Area	×	×
Copying the Cell Area	×	×
Pasting the Cell Area	×	×
Deleting the Cell Area	×	×
Changing the Sheet Name	×	×
Create Button	×	×
Unprotect MX Sheet setting	○	○
Options	×	×
Setting data export	×	×
Version Info.	○	○

\*1 [Read only] is displayed after the title of the following screen related to the cell settings, automatic save setting and automatic print setting.

The setting content can be confirmed but cannot be changed.

Cell settings

Automatic save list

Automatic save

Automatic print list

Automatic print

## [OK] button

The "Confirm Password" screen is displayed.

Enter the password entered in the "Protect MX Sheet setting" screen again.



## Displayed items

Item	Description
[OK] button	Close the "Confirm Password" screen and protect the MX Sheet settings.

## Point

If the MX Sheet setting is protected, the properties of the start communication button, end communication button, and the 1 shot communication button can be edited.

# 15.2 Unprotecting MX Sheet Setting

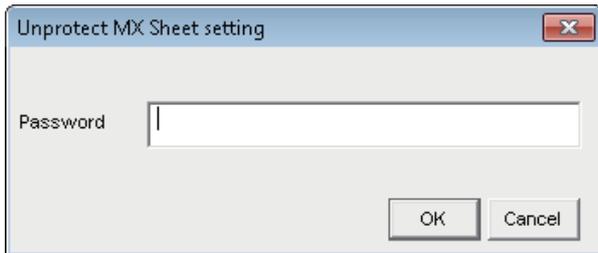
The MX Sheet setting is unprotected, and the setting content can be changed.

### Point

- When Protect MX Sheet setting is not set, the [Unprotect MX Sheet setting] menu is not displayed.
- When the password is blank, the "Unprotect MX Sheet setting" screen is not displayed and the MX Sheet setting is unprotected.

### Window

[MX Sheet] ⇄ [Unprotect MX Sheet setting]



### Displayed items

Item	Description
Password	Enter the password set in the "Protect MX Sheet setting" screen.
[OK] button	The "Unprotect MX Sheet setting" screen is closed, and the MX Sheet setting is unprotected. The MX Sheet menu selection and setting screen editing restriction are canceled.

# 16 OPTIONS

Set option setting for specifying such as an Error log sheet output format.

## 16.1 Setting Error Logs

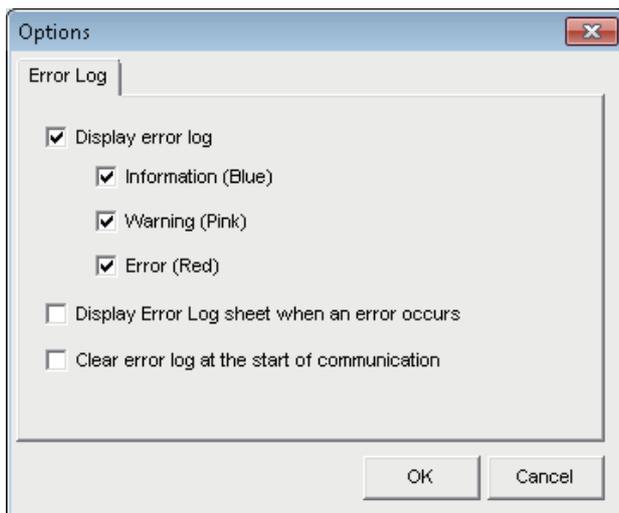
Set the Error log sheet output format on the [Error log] tab on the "Options" screen.

For details of the Error log sheet, refer to the following chapter.

☞ Page 146 ERRORLOG SHEET

### Window

[MX Sheet] ⇄ [Options]



### Displayed items

Item	Description
Display error log	— Set whether the information/warning/error that occurred during the execution of communication is displayed on the Error log sheet or not. • Selected: Displayed • No selected: Not displayed
Information (Blue) *1	Set whether the information message (blue) during the execution of communication is displayed on the Error log sheet or not. • Selected: Displayed • No selected: Not displayed
Warning (Pink) *1	Set whether the warning message (pink) during the execution of communication is displayed on the Error log sheet or not. • Selected: Displayed • No selected: Not displayed
Error (Red) *1	Set whether the error message (red) during the execution of communication is displayed on the Error log sheet or not. • Selected: Displayed • No selected: Not displayed
Display Error Log sheet when an error occurs	Set whether the display is switched to the Error log sheet or not if a warning or error occurs during the execution of communication. • Selected: Display is switched to the Error log sheet. • No selected: Display is not switched to the Error log sheet.
Clear error log at the start of communication	Set whether the Error log is cleared or not at the start of communication. • Selected: Cleared • No selected: Not cleared

\*1 Setting can be set only when the "Display error log" check box is selected.



# 17 SETTING DATA EXPORT

This chapter explains the procedure to output the settings of MX Sheet to a CSV file.

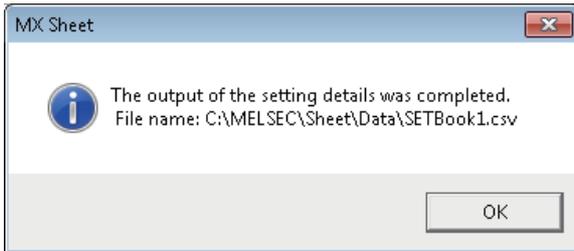
## "Setting Data Export" procedure

### Operating procedure

[MX Sheet] ⇒ [Setting Data Export]

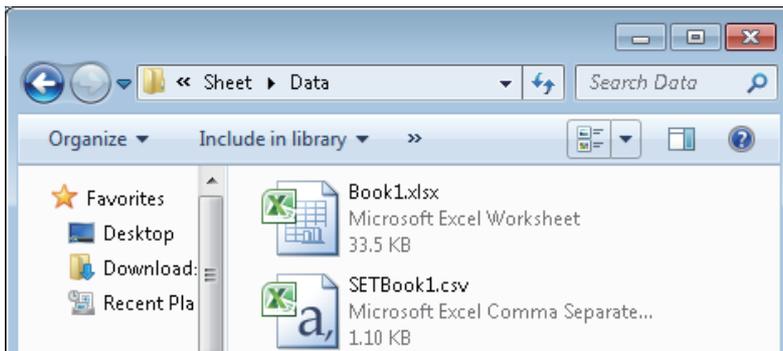
The details of MX Sheet set in the Excel book are output to the CSV file.

After setting data export, the following message is displayed.



## Save destination of CSV file

After setting data export, MX Sheet saves the CSV file in the folder where the original Excel book is saved.



## File name of CSV file

The following shows the file name of the CSV file.

SET\*\*\*\*\*.csv  
↑  
Excel book name that executed setting data export

## Saved content of CSV file

The following shows the content of the CSV file saved by the setting data export.

	A	B	C	D	E	F	G	H	I	J	K
1	<Sheet Na	Sheet1									
2	<Use>	Use	Cell Area	Cell Area	New data	Operation	Print the E	Save to file	File name	Save method	
3		Logging	Logging fut	B2:G11	Last Line	To scroll	No setting	No settings			
4											
5	<Access	Logical St	Device	Data Type	Device poi	In unit	Password				
6		1:Modem	D100	16bit integ	J	Word	No settings				
7			X100	Bit	2	Bit					
8											
9	<Operator	Operation	Daily	Weekly	Monthly	Regular int	Hourly	Time Table	Logging Ti	Logging Time zone	
10		Settings	Daily			5			Log Always		
11											
12	<Device Tr	Device Tric	Device	The bit	Condition						
13		No settings									
14											
15	<Handshal	Handshake									
16		No settings									
17	<CSV Log	CSV Loggi	No. of line	File name	Save method						
18		No settings									
19											
20											
21											
22	<Automati	Automatic Save Name									
23		Line1	daily								
24											
25			Automatic Save								
26			Settings								
27											
28			Save at the end of communication								
29			Settings								
30			Set the da	Daily	Weekly	Monthly	Regular int	Hourly	Time table		
31			No settings								
32											
33			Set the De	Logical St	Device	The bit	Condition	Password			
34			No settings								
35											
36			Clear cell	Specify the cell area name							
37			No settings								
38											
39			File name	Save method							
40			C:\data\da	Add date and time to	File name						
41											
42											
43											
44	<Automati	Automatic Print Name									
45		Line1	daily								
46											
47			Automatic Print								
48			No settings								
49											
50			Print at the end of communication								
51			Settings								
52			Set the da	Daily	Weekly	Monthly	Regular int	Hourly	Time table		
53			No settings								
54											
55											
56			Set the De	Logical St	Device	The bit	Condition	Password			
57			Settings	1:Modem	MD		(When ON	No settings			
58											
59			Clear cell	Specify the cell area name							
60			Settings								
61											
62			Print Area	Sheet name to print							
63			Entire workbook								
64											
65											
66	<Automati	Automatic Communication Startup	Settings								
67		Settings									
68											

## Displayed items

Item	Description
1) (Cell Setting)	The settings of the sheet name and cell setting are displayed.
2) (Automatic Save)* <sup>1</sup>	The settings of automatic save are displayed.
3) (Automatic Print)	The settings of automatic print are displayed.
4) (Automatic Communication Startup)	The settings of automatic communication startup are displayed.

\*1 When adding device data to the saved file name, the following contents are added at the end of <Automatic Save>. (When selecting "Character string" for "Data type")

43		Add device data to File name	Logical Station Number	Device	Data Type	Value	No. of characters	Password
44		Settings	1000	D100	Character string		10	No settings

# 18 SAMPLE PROGRAMS

This chapter explains the sample programs registered at MX Sheet installation.

## Sample programs

The sample programs are attached for reference when creating user programs.

Use them on customer's own responsibility.

### ■Logical station number

"1" is assigned to all sample programs as logical station number by default.

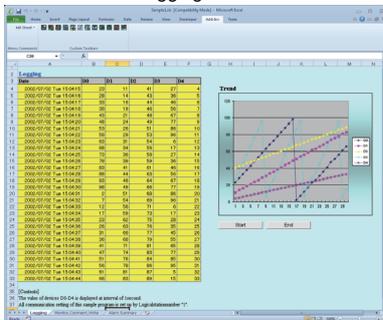
To use the sample programs, set the settings for the logical station number "1" or assign other logical station number and set the setting for the number.

## Sample program list

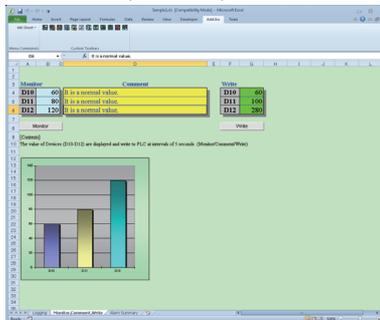
The following table shows the sample programs (Sample1.xls, Sample2.xls) that are registered by selecting install destination folder (C:\MELSEC) ⇒ [Sheet] ⇒ [Sample] at MX Sheet installation.

Sample Program		Description
Excel book name	Excel spreadsheet name	
Sample1.xls	Logging	Logging is performed for D0 to D4 at 1 second intervals.
	Monitor, Comment, Write	Monitor, display their assigned comments and write the device data. D10 to D12 at intervals of 5 seconds.
	Alarm Summary	Alarm summary is performed using M0 to M4.
Sample2.xls	Monitor, Write (Conditioning)	Monitor and write the device data using device trigger.
	Logging (Conditioning)	Logging is performed using handshake.
	Automatic Save	Save the data on the Excel spreadsheet automatically when M20 turns on. (Automatic save is described in Excel spreadsheet.)

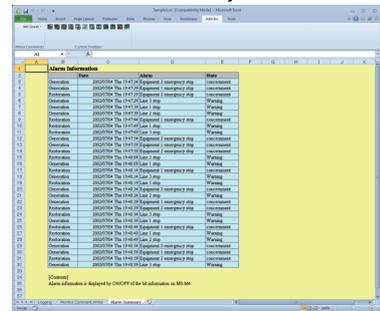
Logging Sheet



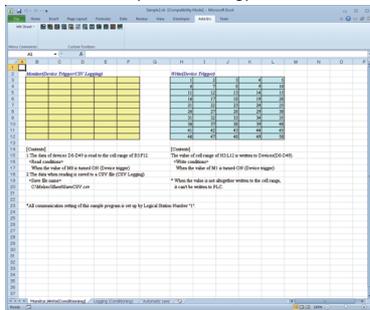
Monitor, Comment, Write Sheet



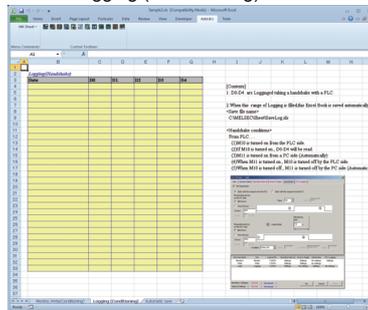
Alarm Summary Sheet



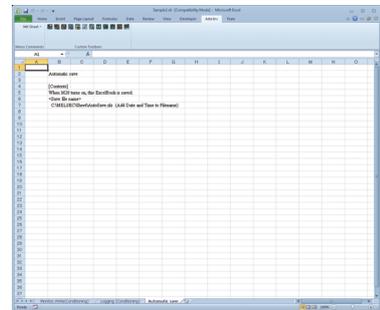
Monitor, Write (Conditioning) Sheet



Logging (Conditioning) Sheet



Automatic Save Sheet



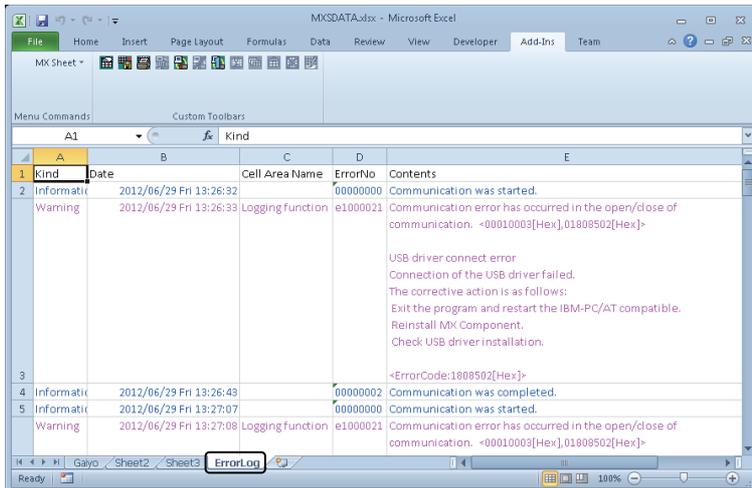


# 19 ERRORLOG SHEET

This chapter explains the ErrorLog sheet that displays the communication status of MX Sheet. The communication status, error information and corrective action of MX Sheet are displayed on the ErrorLog sheet. Troubleshooting can be performed by confirming the corrective action displayed on the ErrorLog sheet.

## Window

Select "ErrorLog" sheet in an Excel book.



## Displayed items

Item	Description	Reference
Kind	The type of the communication status is displayed.	Page 147 "Kind"
Date	The date and time when the communication status is changed are displayed. The displayed time is the date and time of the personal computer where MX Sheet is operating.	Page 147 "Date"
Cell Area Name	The cell area name where the communication status is changed is displayed.	Page 147 "Cell Area Name"
ErrorNo	The error number of the error that has occurred is displayed.	Page 147 "ErrorNo"
Contents	The details of the communication status is displayed. The error definition, error code and corrective action are displayed when an error occurs.	Page 147 "Contents"

## ErrorLog sheet

The following table indicates the ErrorLog sheet specifications.

Item	Description
Maximum number of display lines	2000 lines (fixed)
New data location	The last line has the latest data.
Operating when cell is full	Overwritten in due order, starting with the first line.

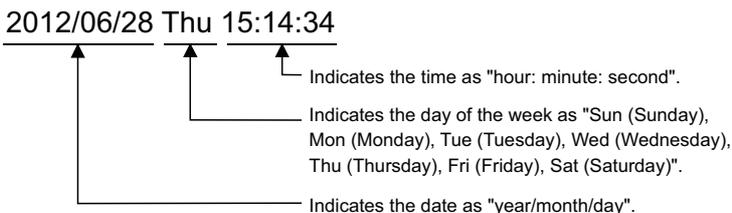
## "Kind"

The following table shows the communication status displayed in "Kind".

Communication Status	Description
Information	Displayed when the communication with the programmable controller CPU starts and ends during 1 shot communication.
Error	Displayed when a fatal error occurred and the function of the cell area stopped.
Warning	Displayed when communication error or collection delay occurs.

## "Date"

"Date" displays the date and time of the personal computer at ErrorLog sheet registration.



## "Cell Area Name"

The cell area name registered to the ErrorLog sheet is displayed.

It is not displayed when the communication starts and ends.

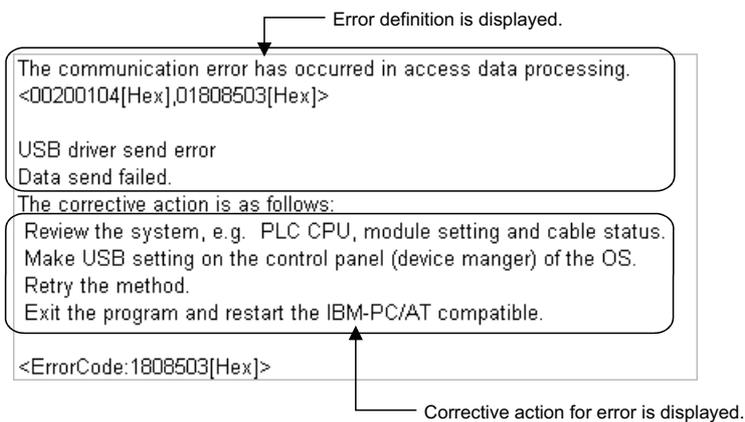
## "ErrorNo"

The error number is displayed.

Specify the error number when inquiring about errors.

## "Contents"

The data displayed in "Contents" are shown below.



### Point

- If the same error occurs twice or more successively in the same cell area, only the error information of the first error is registered to the ErrorLog sheet. (The error information of the second error or later is not displayed.)
- Set the setting related to the Error Log sheet output format in the "Options" screen ( Page 140 Setting Error Logs).

# APPENDIX

## Appendix 1 Additions and Changes from Previous Version

This section shows the additions and changes with upgrade.

Additionally, the table also shows the version of MX Component Version 4 that is supported by each version of MX Sheet Version 2.

MX Sheet Version 2	Description	MX Component Version 4
2.16S	<p>FX5UJCPU is supported.</p> <p>The following communication routes are supported:</p> <ul style="list-style-type: none"> <li>The Ethernet communication whose connected station is FX5UJCPU</li> <li>The CPU COM communication whose connected station is FX5UJCPU</li> <li>The CPU USB communication whose connected station is FX5UJCPU</li> <li>The GOT transparent communication whose connected station is FX5UJCPU</li> </ul>	4.21X
2.15R	<ul style="list-style-type: none"> <li>VBA for Microsoft Excel 2019 (32-bit version) and Microsoft Access 2019 (32-bit version) is supported.</li> <li>LHCPU is supported.</li> </ul>	4.19V
2.14Q	The problem that a timeout error may occur when performing 1 shot communication is solved.	4.16S
2.13P	Importing CSP+ for machine is supported.	
2.12N	<ul style="list-style-type: none"> <li>R00CPU, R01CPU, and R02CPU are supported.</li> <li>R08PSFCPU, R16PSFCPU, R32PSFCPU, and R120PSFCPU are supported.</li> <li>Visual Studio 2017 is supported.</li> <li>The default port number of FX5CPU simulator is changed to 5511.</li> </ul> <p>The communication route to RnPCPU is supported by using any of the following boards:</p> <ul style="list-style-type: none"> <li>CC-Link IE Controller Network board</li> <li>CC-Link IE Field Network board</li> <li>CC-Link Ver.2 board</li> </ul>	
2.11M	<ul style="list-style-type: none"> <li>'MELSOFT' is added in front of the product name in the version information display.</li> <li>In FX5CPU, the communication route using CC-Link is supported.</li> <li>The available communication route for GOT transparent communication is added.</li> <li>The problem of a connection destination, which an unset destination is used if multiple destinations are set when using the 'add device data to File name' function, is solved.</li> </ul>	4.14Q
2.10L	<ul style="list-style-type: none"> <li>Device data can also be specified for a saved file name that is set by automatic save function.</li> <li>Ethernet module (LJ71E71) for LCPU is supported.</li> <li>GX Simulator3 for FX5CPU is supported.</li> </ul> <p>The communication route to RnCPU is supported by using any of the following boards:</p> <ul style="list-style-type: none"> <li>CC-Link IE Controller Network board</li> <li>CC-Link IE Field Network board</li> <li>CC-Link Ver.2 board</li> <li>MELSECNET/H board</li> </ul>	4.13P
2.09K	<ul style="list-style-type: none"> <li>Visual Studio 2015 is supported.</li> <li>VBA for Microsoft Excel 2016 (32-bit version) and Microsoft Access 2016 (32-bit version) is supported.</li> <li>Windows 10 is supported.</li> <li>The redundant mode of RnPCPU is supported.</li> </ul> <p>The connection to FX5UCPU using CC-Link IE Field Network by specifying other station on the following communication route is supported.</p> <ul style="list-style-type: none"> <li>The Ethernet communication whose connected station are FX5CPU and RCPU</li> <li>The CPU COM communication whose connected station is FX5CPU</li> <li>The USB COM communication whose connected station are RCPU</li> <li>The GOT transparent communication whose connected stations are FX5CPU and RCPU</li> </ul>	4.12N
2.08J	<ul style="list-style-type: none"> <li>Q26DHCCPU-LS is supported.</li> <li>Q24DHCCPU-VG is supported.</li> <li>R12CCPU-V is supported.</li> <li>RnENCPU is supported.</li> <li>GX Simulator3 is supported.</li> <li>The structures can be specified to the structure type of system label Ver.2.</li> </ul> <p>The GOT transparent communication for the following CPUs is supported.</p> <ul style="list-style-type: none"> <li>A target CPU is RnPCPU, RnSFCPU, or FX5UCPU</li> <li>A target CPU is RnPCPU or RnSFCPU which relays R series supported C24/Q series supported C24</li> </ul>	4.11M

MX Sheet Version 2	Description	MX Component Version 4
2.07H	<ul style="list-style-type: none"> <li>R08SFPCPU, R16SFPCPU, R32SFPCPU, and R120SFPCPU are supported.</li> <li>R08PCPU, R16PCPU, R32PCPU, and R120PCPU are supported.</li> <li>Less than 100 ms can be specified for an operation interval.</li> </ul>	4.10L
	<p>The following communication routes are supported:</p> <ul style="list-style-type: none"> <li>The Ethernet communication whose connected station are RnPCPU and RnSFPCPU</li> <li>The CPU COM communication whose connected station are RnPCPU and RnSFPCPU</li> <li>The CPU USB communication whose connected station are RnPCPU and RnSFPCPU</li> </ul>	
2.06G	FX5UCPU is supported.	4.09K
2.05F	The problem of memory consumption when using read/write function for .NET control repeatedly is solved.	4.08J
	<ul style="list-style-type: none"> <li>Visual Studio 2013 is supported.</li> <li>The system label Ver.2 is supported.</li> <li>CR750-D and CRnD-700 are supported.</li> </ul>	4.07H
2.04E	The problem of the alarm summary function, which its execution result was not displayed at the start of communication, is solved.	—
2.03D	<ul style="list-style-type: none"> <li>The problem of .NET controls, which a property cannot be set to each .NET control when using multiple controls in one program, is solved.</li> <li>Windows 8.1 is supported.</li> </ul>	4.06G
2.02C	<ul style="list-style-type: none"> <li>R16MTCPU and R32MTCPU are supported.</li> <li>R04CPU, R08CPU, R16CPU, R32CPU, and R120CPU are supported.</li> </ul>	
	<ul style="list-style-type: none"> <li>The gateway function (GOT2000) is supported.</li> <li>The GOT transparent function with GOT2000 is supported.</li> <li>FX3SCPU is supported.</li> <li>Q12DCCPU-V (Extended mode) is supported.</li> <li>Q24DHCCPU-LS is supported.</li> <li>VBA for Microsoft Excel 2013 (32-bit version) and Microsoft Access 2013 (32-bit version) is supported.</li> <li>FR-A800 is supported.</li> </ul>	4.05F
2.01B	<ul style="list-style-type: none"> <li>FX3U-ENET-ADP is supported.</li> <li>L02SCPU, L06CPU, and L26CPU are supported.</li> <li>Windows 8 is supported.</li> <li>Visual C#.NET is supported.</li> </ul>	4.04E
	<p>The following communication routes are supported:</p> <ul style="list-style-type: none"> <li>The CPU COM communication (via another station on CC-Link) whose connected station is FXCPU</li> <li>The USB communication (via another station on CC-Link) whose connected station is FXCPU</li> <li>The Ethernet communication whose connected station is Ethernet adapter</li> <li>MT Simulator2 communication</li> <li>The GOT transparent communication (via another station on CC-Link) with serial connection whose connected station is FXCPU</li> <li>The GOT transparent communication (via another station on CC-Link) with USB connection whose connected station is FXCPU</li> <li>The GOT transparent communication whose connected station is Ethernet adapter/module</li> <li>The GOT transparent communication with Ethernet connection whose connected station is FXCPU</li> </ul>	
2.00A	The problem of vulnerability in an ActiveX control, used in the communication setup utility, is solved.	4.03D
	<ul style="list-style-type: none"> <li>The problem of unintended memory consumption when Label Utility has never been activated after the installation is solved.</li> <li>FX3GC is supported.</li> <li>Q24DHCCPU-V is supported.</li> <li>QnUDVPCPU is supported.</li> </ul>	4.02C
	The problem that a remote password lock cannot be unlocked is solved.	4.01B
	<ul style="list-style-type: none"> <li>Q17nCPU, Q17nHPCPU, Q17nDCPU, and Q17nDSCPU are supported.</li> <li>The system label is supported.</li> </ul>	4.00A



## Errors that may occur

---

The following shows errors that may occur between MX Sheet and MX Component.

### ■System error in MXShComnInitialize

The following messages are displayed.

- Acquisition of Excel sheet Information failed.
- Operation of Excel sheet failed.

The possible cause of the error is as follows.

- MX Component is not supported by the connection target device that MX Sheet supports.

### ■Device specification error in MX Sheet

An error message is displayed for the device specified on the [Access Data] tab.

The possible cause of the error is as follows.

- The communication route of the logical station number assigned to the cell range is not supported by MX Sheet.

### ■Error at communication start of MX Sheet

The following message is displayed on the ErrorLog sheet at the start of communication.

- Communication error has occurred in the open/close of communication.

The possible cause of the error is as follows.

- The communication route which is not supported by MX Component is used.
- The communication route has been changed to the one, which is not supported by MX Sheet after a logical number is assigned in MX Sheet.

## Confirming method of MX Sheet version

---

This section explains how to confirm the MX Sheet version.

Confirm the MX Sheet version in the "Product information about MX Sheet" screen.

### Window

[MX Sheet] ⇨ [Version Info.]

# Appendix 2 Processing Speed of MX Sheet

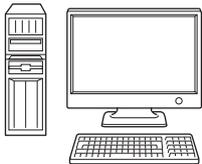
## Performance values and scroll processing performance

This section explains the performance values and the scroll processing performance of Excel when the monitor and logging functions is executed using the personal computer of the following performance.

The performance values indicate the numbers of device points where no collection delay occurs when only one cell area is set to the Excel book and the device data of D device are collected by the monitor or logging function. (If multiple cell areas is set, reduce the number of device points per cell to maintain the same performance.)

The actual performance values vary depending on the performance or similar of the personal computer.

Use the performance values explained in this section as reference values.



Operating system : Windows 7 Professional SP1 (64-bit)  
 CPU : Intel Core i7-2790 (3.60 GHz)  
 Memory : 8.00 GB  
 Excel : Microsoft Office Professional Plus 2010 (32-bit)  
 Cell area : Only one

<Setting example 1>

The setting example 1 shows the case where only one access data is set.

	Device	Data Type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit
1	D0	16bit integer	DEC		1			vWord
2								
3								

<Setting example 2>

The setting example 2 shows the case where two or more access data are set.

	Device	Data Type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit
1	D0	16bit integer	DEC		1			vWord
2	D500	16bit integer	DEC		1			vWord
3								

## Performance values for Ethernet communication

The following table shows the performance values when the monitor and logging functions are executed using Ethernet communication.

CPU type: R120CPU

Connected module: RJ71EN71

Function	Operation Interval	Number of Device Points*1	
		Setting example 1	Setting example 2
Monitor function	0.005s (5ms)	Collection delay occurs	Collection delay occurs
	0.05s (50ms)	450 points	50 points
	0.5s (500ms)	9500 points	3000 points
	1s	18000 points	7500 points
	5s	18000 points	18000 points
Logging function	0.005s (5ms)	4000 points	4 points
	0.05s (50ms)	5080 points	750 points
	0.5s (500ms)	5080 points	5080 points
	1s	5080 points	5080 points
	5s	5080 points	5080 points

\*1 This number of device points applies to the case the data type is set to a character string.



## Performance values for USB communication

The following table shows the performance values when the monitor and logging functions are executed using USB communication.

CPU type: R120CPU

Function	Operation Interval	Number of Device Points <sup>*1</sup>	
		Setting example 1	Setting example 2
Monitor function	0.005s (5ms)	4000 points	100 points
	0.05s (50ms)	18000 points	1000 points
	0.5s (500ms)	18000 points	6000 points
	1s	18000 points	14000 points
	5s	18000 points	18000 points
Logging function	0.005s (5ms)	4000 points	4 points
	0.05s (50ms)	5080 points	750 points
	0.5s (500ms)	5080 points	5080 points
	1s	5080 points	5080 points
	5s	5080 points	5080 points

\*1 This number of device points applies to the case the data type is set to a character string.

## Scroll processing performance of Excel

The following table shows the times required by Excel for scroll processing when the logging function is used.

The following times applies to the case only Excel is started on the personal computer.

Scroll Range	Time Required for Scroll Processing
10 columns × 1000 rows	0.95s
10 columns × 2000 rows	1.1s
10 columns × 65536 rows	6.1s
256 columns × 1000 rows	4.5s
256 columns × 2000 rows	6.8s
256 columns × 65536 rows	20min and 30s

Measurement environment: Pentium III 800MHz, 256MB, Windows XP Professional, Microsoft Excel 2007

## File size at save and required time

The following table shows references for file size at save and time taken for saving a file depending on Excel version (Book format).

In Microsoft Excel 2007 or later (especially in standard format), file size may increase or time taken for saving a file may lengthen.

Excel version	Cell range					
	12 columns × 30 rows		128 columns × 32768 rows		255 columns × 65535 rows	
	Size (MB)	Time (second)	Size (MB)	Time (second)	Size (MB)	Time (second)
Microsoft Excel 2007 (standard format)	0.034	Less than 1	11.1	7	42.5	23
Microsoft Excel 2007 (binary format)	0.022	Less than 1	0.45	3	14.3	11
Microsoft Excel 2010 (standard format)	0.035	Less than 1	11.1	4	42.5	14
Microsoft Excel 2010 (binary format)	0.022	Less than 1	0.46	2	14.3	8
Microsoft Excel 2013 (standard format)	0.032	Less than 1	10.9	8	41.8	14
Microsoft Excel 2013 (binary format)	0.020	Less than 1	0.459	4	13.9	8
Microsoft Excel 2016 (standard format)	0.033	Less than 1	10.9	5	41.7	14
Microsoft Excel 2016 (binary format)	0.020	Less than 1	0.458	2	13.9	9
Microsoft Excel 2019 (standard format)	0.039	Less than 1	12.64	4	48.2	7
Microsoft Excel 2019 (binary format)	0.022	Less than 1	0.682	2	22.3	5

Measurement condition: 1 type is set for cell settings (application: logging)

Measurement environment:

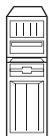
- Intel Core 2 Duo E8400 3.0GHz, 1GB MM Windows XP Professional SP3 (Microsoft Excel 2007, Microsoft Excel 2010)
- Intel Core Quad Q9550 2.83GHz, 4GB MM Windows 8.1 (Microsoft Excel 2013)
- Intel Core Quad Q9550 2.83GHz, 4GB MM Windows 10 Enterprise (Microsoft Excel 2016)
- Intel Core i7-4790 CPU 3.60GHz, 16GB (Installed RAM) Windows 10 Enterprise (Microsoft Excel 2019)

## Number of processable device points when using system labels

This section shows the performance values (the number of processable device points) when executing the monitor and logging functions by using a personal computer with the following performance.

The actual performance values vary depending on the performance or similar of the personal computer.

Use the performance values explained in this section as reference values.



OS : Windows Vista  
 CPU : Intel Core 2Duo (2GHz)  
 Memory : 2.00 GB  
 Target CPU : R120PCPU  
 (Connecting personal computer and target CPU on 1:1 basis)  
 Cell area : Only one

<Setting example 1>

The setting example 1 shows the case where only one access data is set.

	Device	Data Type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit	
1	SBL101	16bit integer	DEC		1	1	1	Word	
2									
3									

<Setting example 2>

The setting example 2 shows the case where two or more access data are set.

	Device	Data Type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit	
1	SBL101	16bit integer	DEC		1	1	1	Word	
2	SBL102	16bit integer	DEC		1	1	1	Word	
3	SBL103	16bit integer	DEC		1	1	1	Word	

### Point

Only one cell can be specified with a system label on the [Access Data] tab in the cell settings screen.  
 Up to 256 cells can be specified for the logging function.

## Performance values for Ethernet communication

The following table shows the performance values when the monitor and logging functions are executed using Ethernet communication.

Function	Operation Interval	Number of Device Points*1	
		Setting example 1	Setting example 2
Monitor function	0.005s (5ms)	Collection delay occurs	Collection delay occurs
	0.05s (50ms)	1 point	60 points
	0.5s (500ms)	1 point	600 points
	1s	1 point	1300 points
	5s	1 point	2000 points
Logging function	0.005s (5ms)	Collection delay occurs	Collection delay occurs
	0.05s (50ms)	1 point	50 points
	0.5s (500ms)	1 point	256 points
	1s	1 point	256 points
	5s	1 point	256 points

\*1 This number of device points applies to the case the data type is set to a character string.

## Performance values for USB communication

The following table shows the performance values when the monitor and logging functions are executed using USB communication.

Function	Operation Interval	Number of Device Points*1	
		Setting example 1	Setting example 2
Monitor function	0.005s (5ms)	Collection delay occurs	Collection delay occurs
	0.05s (50ms)	1 point	70 points
	0.5s (500ms)	1 point	900 points
	1s	1 point	1700 points
	5s	1 point	2000 points
Logging function	0.005s (5ms)	Collection delay occurs	Collection delay occurs
	0.05s (50ms)	1 point	60 points
	0.5s (500ms)	1 point	256 points
	1s	1 point	256 points
	5s	1 point	256 points

\*1 This number of device points applies to the case the data type is set to a character string.

# Appendix 3 Processing MX Sheet

This section explains the processing of MX Sheet.

## Collection delay and data dropout

On MX Sheet, collection delay, data dropout or similar problem may occur depending on the communication time with the programmable controller CPU and the collection timing of device data.

The following explains the collection delay and data dropout.

### Collection delay

Device data collection delay occurs depending on the communication time with the programmable controller CPU and the corresponding processing time.

Collection delay occurs only when "Operation time" is set to "Regular interval".

When a collection delay occurs, it is registered to the ErrorLog sheet as error information.

When a collection delay occurs, check the ErrorLog sheet.

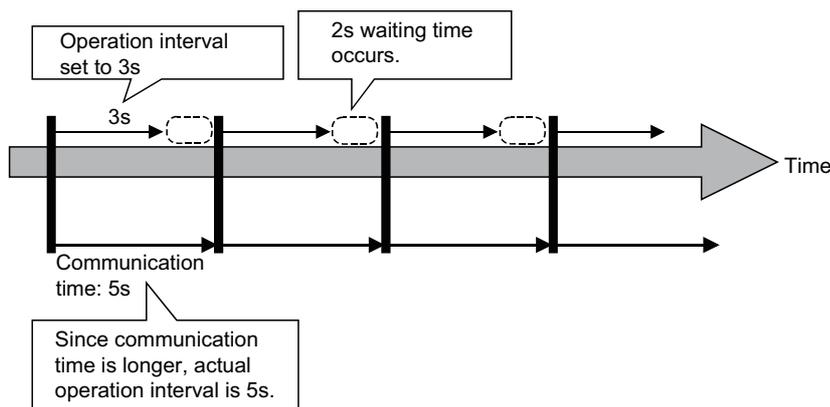
The following explains the cases where a collection delay occurs.

#### ■When the actual communication time is longer than the specified operation interval

When the communication time with the programmable controller CPU is longer than the operation interval of MX Sheet, a device data collection delay occurs.

Ex.

"Operation time" is set to "Regular interval (3s)" but the communication time with the programmable controller CPU is 5s

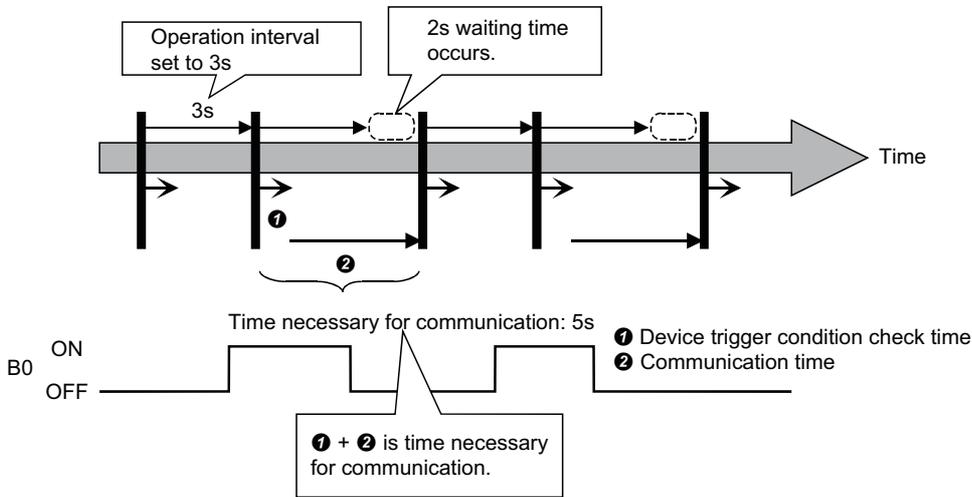


### ■Collection delay when device trigger function is used

When the sum of the device trigger condition check time and the communication time with programmable controller CPU is longer than the operation interval of MX Sheet, a collection delay occurs during the next device trigger condition check.

**Ex.**

When "B0" = "When ON" is set as the device trigger condition (operation interval is 3s)

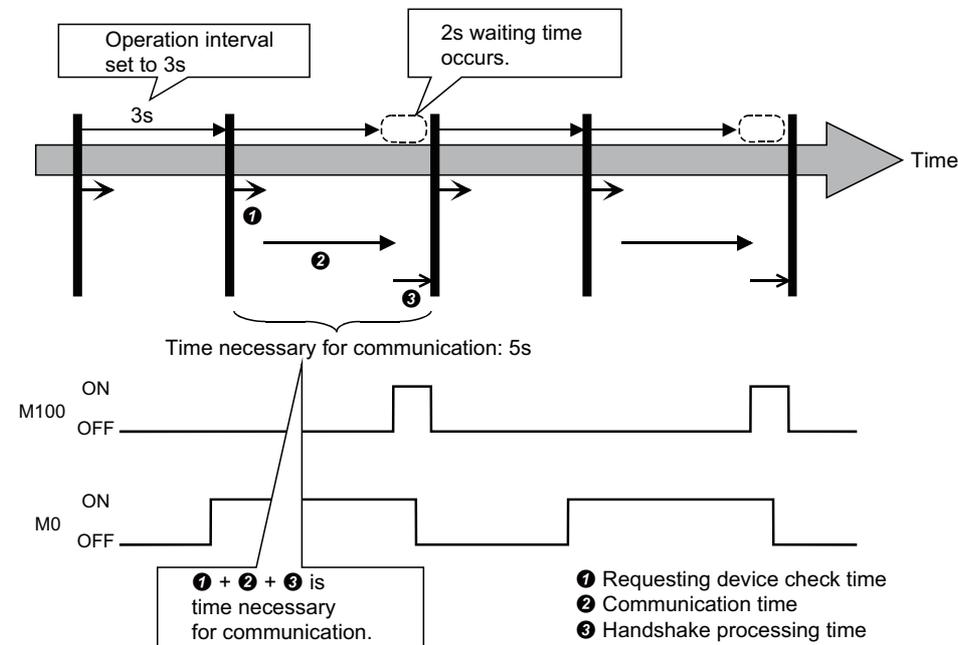


### ■Collection delay when handshake function is used

When the sum of the requesting device check time, the communication time with programmable controller CPU and the handshake processing time is longer than the operation interval of MX Sheet, a collection delay occurs during the next requesting device check.

**Ex.**

When the programmable controller CPU side requesting device is set to "M0" and the PC side responding device to "M100" (operation interval is 3s)



A

## Data dropout

The data to be collected may dropout depending on the communication time with the programmable controller CPU and the collection timing of device data.

The following explains the cases where a data dropout occurs.

### ■When the actual communication time is longer than the specified operation interval

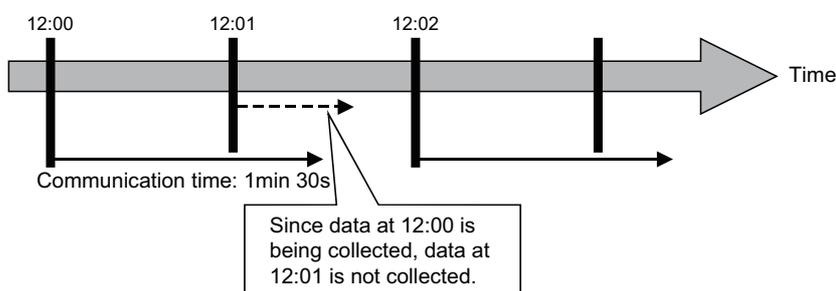
When the communication time with the programmable controller CPU is longer than the operation interval, the data to be collected dropouts.

If a data dropout has occurred, increase the operation interval setting of MX Sheet.

**Ex.**

When "Operation time" is set to "Hourly (0min, 1min, 2min)" but the communication time with the programmable controller CPU is longer than 1min

If previous data collection is still being executed when it is reached the operation time as shown below, a data dropout occurs on MX Sheet.



### ■Data dropout when device trigger function is used

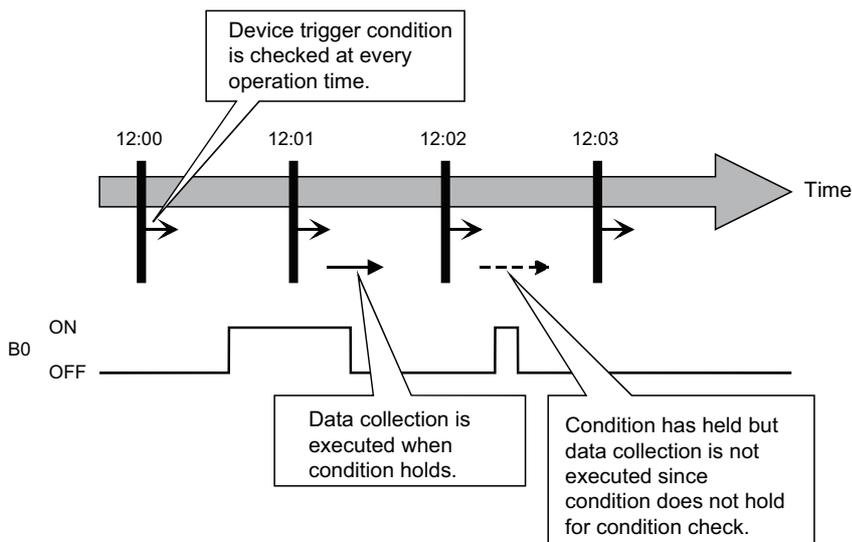
When the device trigger condition holds for the specified operation time, condition cannot be checked and the data to be collected dropouts.

If a data dropout occurs during use of the device trigger, decrease the operation interval setting of MX Sheet.

**Ex.**

When "B0" = "When ON" is set as the device trigger condition (operation interval is 60s)

If the device trigger condition holds for the specified operation time as shown below, a data dropout occurs on MX Sheet.



### Point

Note that if a data dropout occurs during use of the device trigger, error information is not displayed on the ErrorLog sheet.

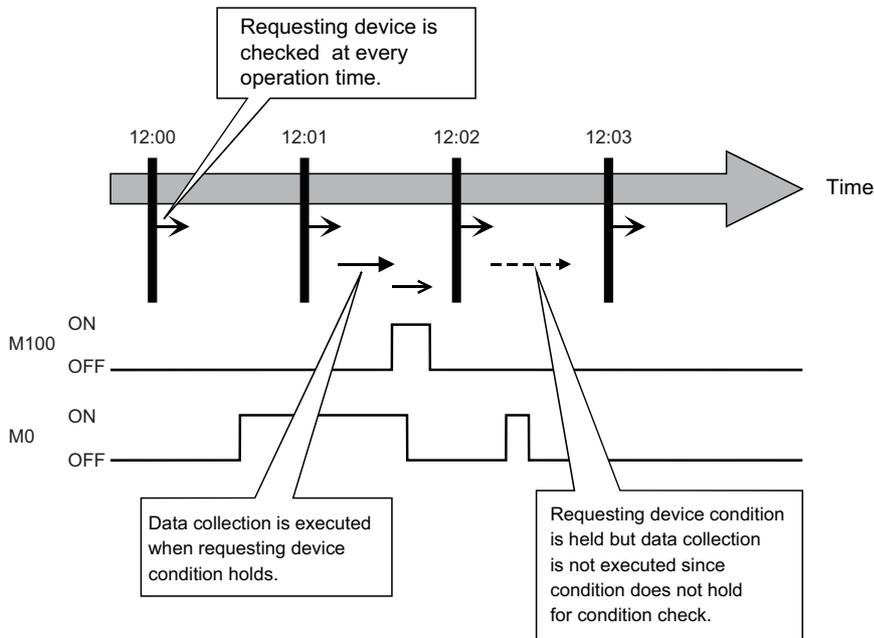
## ■Data dropout when handshake function is used

When the requesting device condition holds for the specified operation time, the data to be collected dropouts. If a data dropout occurs during use of the handshake, decrease the operation interval setting of MX Sheet.

### Ex.

When the programmable controller CPU side requesting device is set to "M0" and the PC side responding device to "M100" (operation interval is 60s)

If the requesting device condition holds for the operation time as shown below, a data dropout occurs on MX Sheet.



### Point

Note that if a data dropout occurs during use of the handshake, error information is not displayed on the ErrorLog sheet.

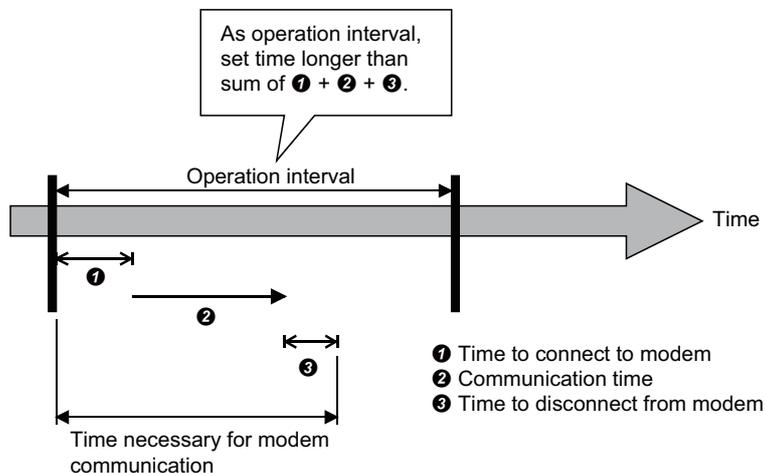
A

## Data dropout when modem communication function is used

When modem communication function is used and "Telephone line connectivity time zone" is set for "Connect each time depending on the operation interval", a data dropout occurs due to use of a modem.

To collect the programmable controller CPU device data using modem communication function, set MX Sheet while considering the modem connection time.

If a data dropout occurs during modem communication, increase the operation interval setting of MX Sheet.



# Logging function

## Date and time

When the logging function and CSV logging are used, the date and time in the cell area and the CSV file may not be displayed correctly.

The following explains an example of the incorrect display, the causes and corrective actions.

<Example (when "Regular interval" is set to 1s)>

Although communication is made at the specified interval, the date and time are not displayed correctly as shown below, since the time when data is actually read exceeds the regular interval.

(Unlike with collection delay, the error information is not displayed in the ErrorLog sheet.)

2012/06/28 Thu 20:41:06	1	2
2012/06/28 Thu 20:41:07	11	12
2012/06/28 Thu 20:41:07	21	12
2012/06/28 Thu 20:41:09	31	32

← Time of 20:41:08 is incorrectly displayed as 20:41:07.

<Causes>

Multiple cell areas is set to the Excel book.

Multiple cell areas use the same communication route.

"Operation time" of the [Operation Interval] tab is set to "Regular interval".

<Corrective actions>

Decrease the number of cells set to the Excel book.

Increase the "Regular interval" setting.

Reexamine the cell area settings. (📄 Page 161 Creating the Excel Spreadsheet for MX Sheet)

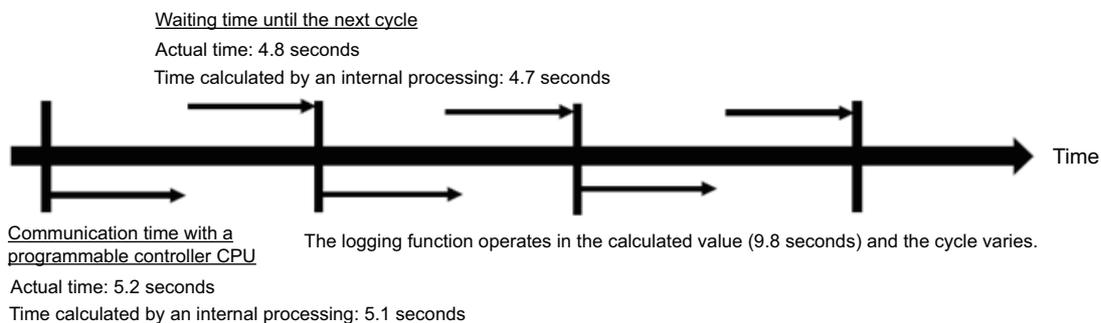
## Variation of logging cycle

If "Regular interval" is set in "Operation time", the logging function will operate as shown in the figure below. (For example, when a cycle is 10 seconds and communication time is 5.2 seconds, the logging function waits for the next cycle for 4.8 seconds.)

A communication time and waiting time can be calculated in an internal processing of MX Sheet using the time on Windows. Since an internal processing is affected by time deviation on Windows and the load state of a personal computer, the time between the calculated time and the actual time may differ.

Consequently, logging cycles vary.

Operation interval: 10 seconds



# Appendix 4 Creating the Excel Spreadsheet for MX Sheet

When collecting/writing device data by using MX Sheet, the efficiency of communication with the programmable controller CPU varies depending on the cell area settings.

The following provides the example of setting cell area for more effective communication.

## Communication efficiency and cell area specifying method

When multiple cell areas are set, MX Sheet executes communication with the programmable controller CPU in order of the cell areas.

When the same communication route is set to multiple cell areas, communication efficiency decreases since all cell areas use one communication route to communicate with the programmable controller CPU.

The following setting example shows the case where the same communication route is set to multiple cell areas.

<Setting example>

	A	B	C	D	E
1					
2		Model name	D0 to D3		
3		Lot No.	D5 to D8		
4					
5		Maximum value	D10	Maximum value	D13
6		Minimum value	D11	Minimum value	D14
7		Current value	D12	Current value	D15

### ■Inefficient setting

When the above setting example is divided into four cell areas as shown in the following table, MX Sheet executes communication four times. This causes communication load to increase; therefore decreases communication efficiency.

Cell area name	Cell area	Access data settings			Operation Interval
		Logical station number	Device setting	Number of cells	
Product type	C2	0:Ethernet	D0 Character string	1	1s interval
Lot No.	C3		D5 Character string		
A	C5:C7		D10 16-bit integer	3	
B	E5:E7		D20 16-bit integer		

### ■Efficient setting

When the above setting example is integrated into one cell area as shown in the following table, the collection/writing of device data is completed by performing communication once. This enables communication load to decrease; therefore improves communication efficiency.

Cell area name	Cell area	Access data settings			Operation Interval
		Logical station number	Device setting	Number of cells	
Product information	C2, C3, C5:C7, E5:E7	0:Ethernet	D0 Character string	1	1s interval
			D5 Character string		
			D10 16-bit integer	3	
			D20 16-bit integer		

A

## Communication efficiency and access data setting

When one type of device is set as multiple devices, the efficiency of communication with the programmable controller CPU decreases.

The following setting example shows the case where one type of device is specified consecutively.

<Setting example>

	A	B	C	D
1				
2		Maximum value	D0	
3		Minimum value	D1	
4		Current value	D2	
5				

### ■ Inefficient setting

When the above setting example is divided into three access data as shown below, MX Sheet recognizes them as three types of devices and executes communication. Therefore the communication efficiency is decreased.

1	D0	16bit integer	DEC	1	1	1	Word
2	D1	16bit integer	DEC	1	1	1	Word
3	D2	16bit integer	DEC	1	1	1	Word

### ■ Efficient setting

When the above setting example is integrated into one access data as shown below, MX Sheet recognizes it as one type of device and executes communication. Therefore the communication efficiency can be improved.

1	D0	16bit integer	DEC	1	3	3	Word
2							
3							



Any of the following settings prevents the improvement of communication efficiency even if an efficient setting is configured.

- When "Data Type" is set to "Bit", the device number setting of "Device" is not a multiple of 16.
- CN200 (current value of 32-bit counter device) or later of the FXCPU is set.

## Communication efficiency and use of Excel function (cell reference)

When inconsecutive device data are displayed on Excel, the efficiency of communication with the programmable controller CPU decreases if multiple cell areas are set.

The following setting example shows the case where inconsecutive device data are displayed on Excel.

<Setting example>

	A	B	C	D	E	F
1						
2			Maximum value	Minimum value	Crrrent value	
3		Line A	D0	D1	D2	
4		Line B	D5	D6	D7	
5		Line C	D10	D11	D12	
6		Line D	D15	D16	D17	
7						

### ■Inefficient setting

When the above setting example is divided into four cell areas as shown in the following table, MX Sheet executes communication four times. This causes communication load to increase; therefore decreases communication efficiency.

Cell area name	Cell area	Access data settings			Operation Interval
		Logical station number	Device setting	Number of cells	
Line A	C3:E3	0:Ethernet	D0 16-bit integer	3	1s interval
Line B	C4:E4		D5 16-bit integer		
Line C	C5:E5		D10 16-bit integer		
Line D	C6:E6		D15 16-bit integer		

### ■Efficient setting

By integrating the above setting example into one cell area and collecting device data into the other Excel spreadsheet (Sheet2) as shown in the following table, these decrease communication load; therefore improves communication efficiency. Set cell references so that Excel spreadsheet (Sheet1) that actually displays the device data is refer to the corresponding cells within Excel spreadsheet (Sheet2) that collects the device data.

(MX Sheet need not be set in the Excel spreadsheet (Sheet1) where device data is displayed.)

Cell area name	Cell area	Access data settings			Operation Interval
		Logical station number	Device setting	Number of cells	
Line information	A2:E5 (Area set to Sheet2)	0:Ethernet	D0 16-bit integer	20	1s interval

Sheet 1 (Excel spreadsheet where device data is displayed actually)

	A	B	C	D	E	F
1						
2			Maximum value	Minimum value	Crrrent value	
3		Line A	=Sheet2!A2	=Sheet2!B2	=Sheet2!C2	
4		Line B	=Sheet2!A3	=Sheet2!B3	=Sheet2!C3	
5		Line C	=Sheet2!A4	=Sheet2!B4	=Sheet2!C4	
6		Line D	=Sheet2!A5	=Sheet2!B5	=Sheet2!C5	
7						

Sheet 2 (Excel spreadsheet where device data is collected)

	A	B	C	D	E	F
1	Line monitor					
2	D0	D1	D2	D3	D4	
3	D5	D6	D7	D8	D9	
4	D10	D11	D12	D13	D14	
5	D15	D16	D17	D18	D19	
6						



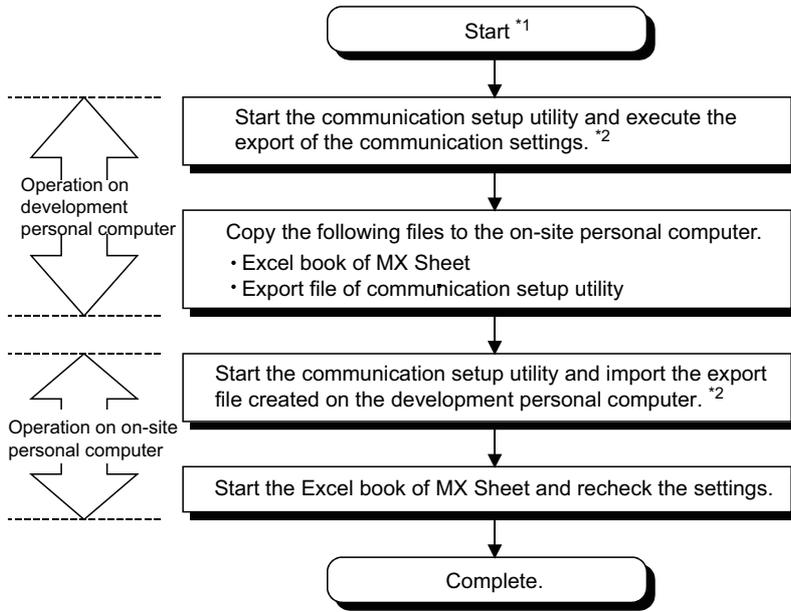
Set Sheet 1 to refer to cells of Sheet 2.

# Appendix 5 Procedure to Transport Data to Other Personal Computer

This section explains the procedure to transport the settings of MX Sheet from a development personal computer to an on-site personal computer.

**Point** 

MX Sheet and MX Component must be installed in the personal computer where the settings of MX Sheet is transported.



\*1 The Excel book for MX Sheet should be created on the development personal computer.

\*2 For the import and export operations of communication settings, refer to  MX Component Version 4 Operating Manual.

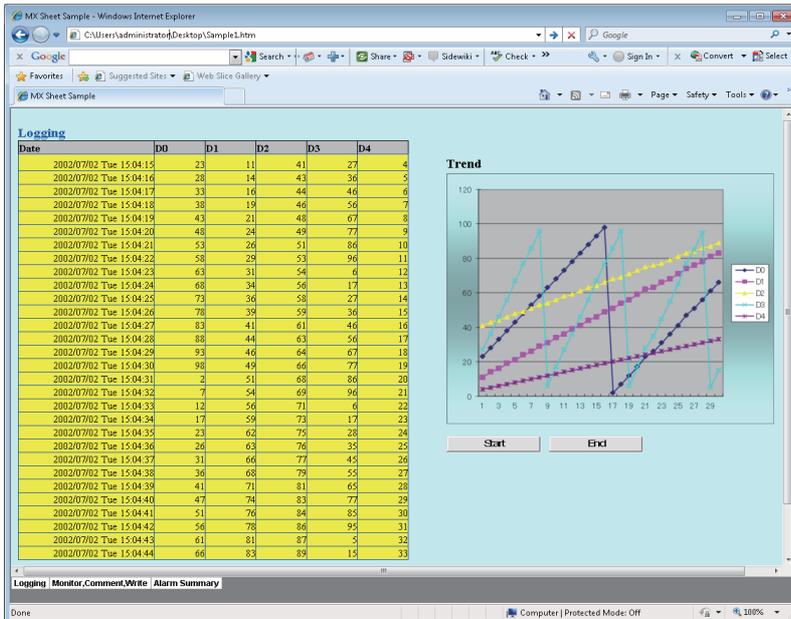
# Appendix 6 HTML Files

This section explains the HTML file saved during MX Sheet operation.

## HTML file

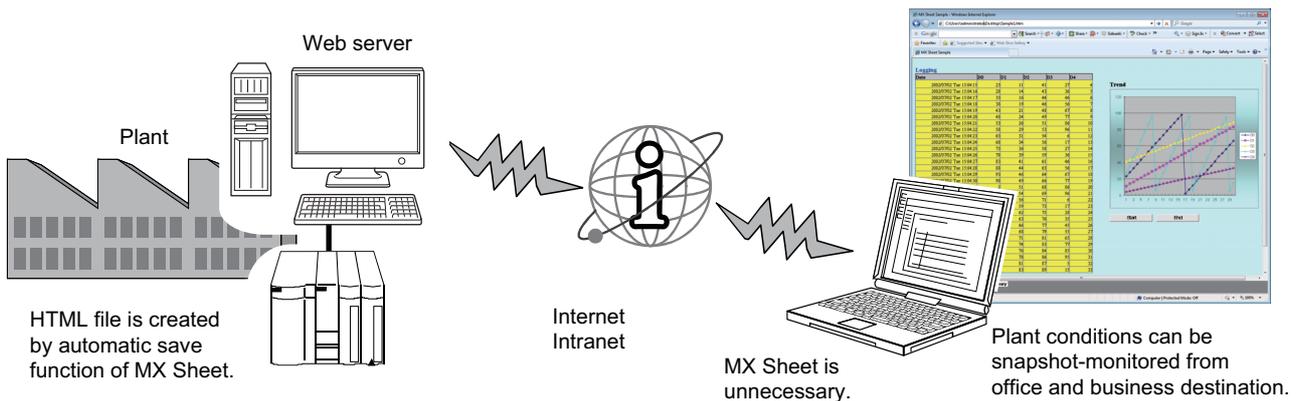
MX Sheet allows an HTML file to be saved automatically into the folder specified when any of the following functions is used.

- Logging function (when cell is full)
- Alarm summary function (when cell is full)
- Automatic save setting



## Convenient use of HTML file

The data collected by MX Sheet can be snapshot-monitored from a business destination, office or other places via the Internet/intranet, with the plant side personal computer (a personal computer where MX Sheet is operating) used as a Web server.



## Continuous operation when saving data automatically in HTML format

Do not operate MX Sheet continuously when the Automatic save function is set to save data in HTML format.

For operating MX Sheet continuously, exit and reactivate Excel periodically.

If data are saved repeatedly in HTML format with the Automatic save function, Excel may not operate properly.

The time for allowable continuous operation differs according to the operating environment.

# Appendix 7 CSP+ for Machine

This section explains the CSP+ for machine that can be used for MX Sheet.

## Specification versions of CSP+ for machine

Specification versions of CSP+ for machine that can be used for MX Sheet are the major version 1 and 2.

## DATATYPE of CSP+ for machine

The following table shows the data types of MX Sheet corresponding to those of DATATYPE of CSP+ for machine that can be used for MX Sheet.

CSP+ for machine DATATYPE	MX Sheet						
	Data type	Value	No. of characters	Zoom	No. of cells	Dev. points	In unit
BOOL	Bit	—	—	—	1	1	Bit
INT8	16-bit integer	Decimal	—	1	1	1	Word
UNIT8							
INT16							
INTx (x: 2 to 15)							
UNIT16							
UNITx (x: 2 to 15)							
WORD							
BIT_STRINGx (x: 2 to 15)							
DWORD							
UNIT32							
INT32							
BYTE	16-bit integer	—	—	—	1	1	—
STRINGx (x: 1 to 40)	String	—	x	—	—	x/2	—
DATE	16-bit integer	Decimal	—	1	8	8	—
BIN8	16-bit integer	Decimal	—	1	1	1	—
BIN16							
BINx (x: 1 to 15)							
BIN32							

## ASSIGN of CSP+ for machine

The following table shows the devices of ASSIGN of CSP+ for machine that can be used for MX Sheet.

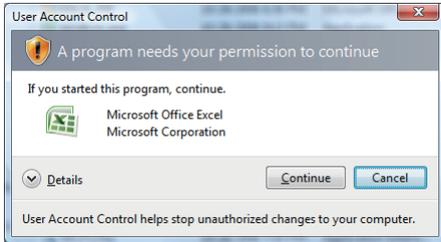
Device	Type
Special relay (SM)	Bit
Special register (SD)	Word
Input (X)	Bit
Output (Y)	Bit
Internal relay (M)	Bit
Latch relay (L)	Bit
Annunciator (F)	Bit
Edge relay (V)	Bit
Link relay (B)	Bit
Data register (D)	Word
Link register (W)	Word
Link special relay (SB)	Word
Link special register (SW)	Word
Extension file register (ZR)	Word

# Appendix 8 Warning Messages on Windows

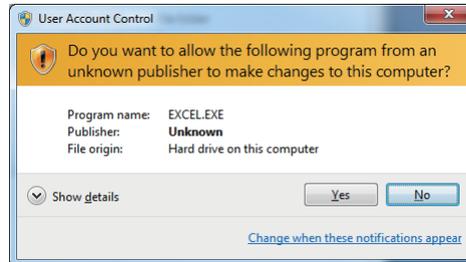
## Overview of warning messages

The user account control function is added to Windows Vista or later. By this function, a warning message is displayed when executing Excel with Administrator authority. (☞ Page 28 MX Sheet OPERATION PROCEDURE)

<Windows Vista>



<Windows 7 or later>



## Methods for disabling the warning messages

### Point

- The user account control (UAC) function prevents a crash (e.g. prevention of startup of a program which executes unintended operation). Before setting this function, grasp that the security function offered by UAC is disabled and fully understand the risk.
- The method of allowing the setting without displaying the warning message cannot be attempted for Windows 8 or later.

The following two methods are available for disabling a warning message.

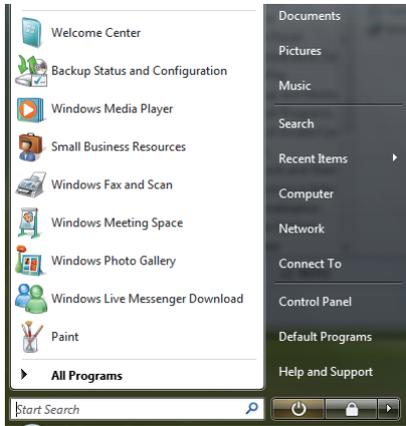
- ☞ Page 168 Disabling the user account control function
- ☞ Page 172 Allowing the warning message without showing it

## Disabling the user account control function

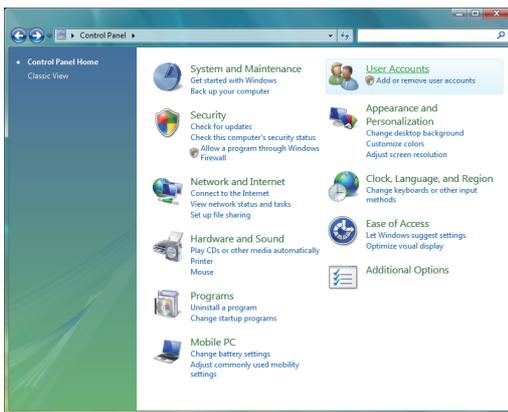
The following shows a procedure for disabling the user account control function.

### ■When using Windows Vista

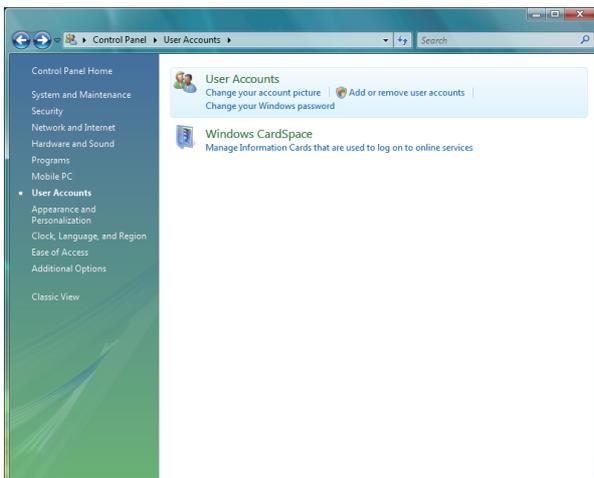
#### Operating procedure



1. Select [Start] ⇒ [Control Panel].



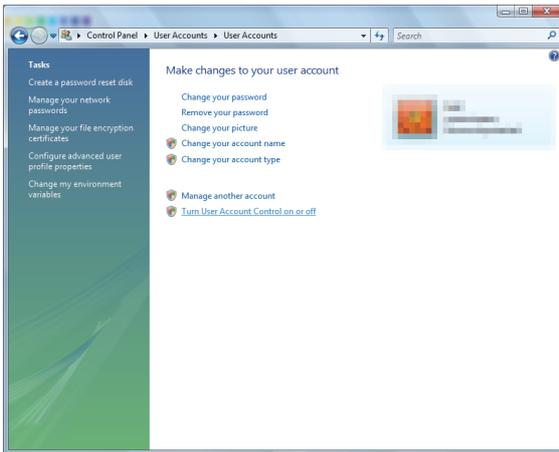
2. Select [User Accounts].



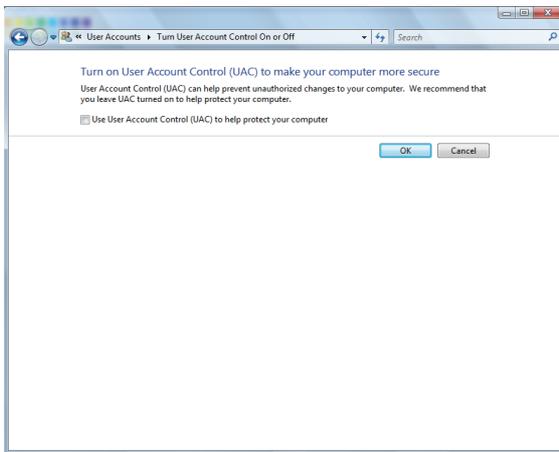
3. Select [User Accounts].



4. Select [Turn User Account Control on or off].



5. Clear [Use User Account Control (UAC) to help protect your computer] and click the [OK] button.

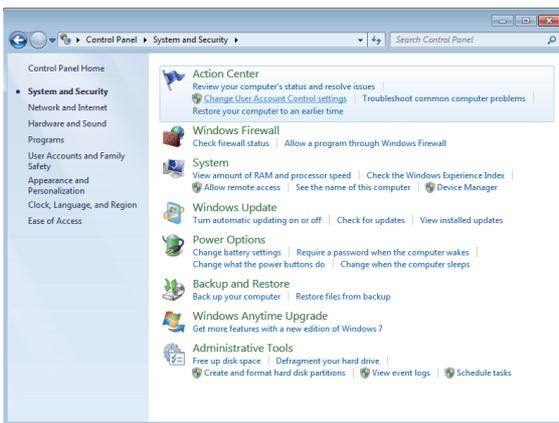
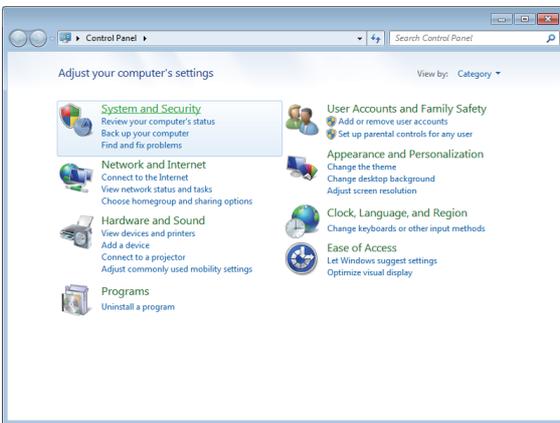
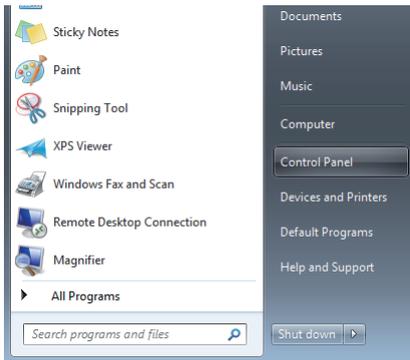


Setting completed



## ■ When using Windows 7

### Operating procedure

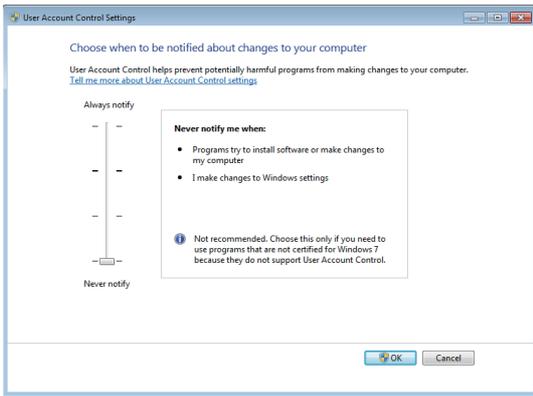


1. Select [Start] ⇒ [Control Panel].

2. Select [System and Security].

3. Select [Change User Account Control settings].

4. Set the slide bar "Never notify" and click the [OK] button.

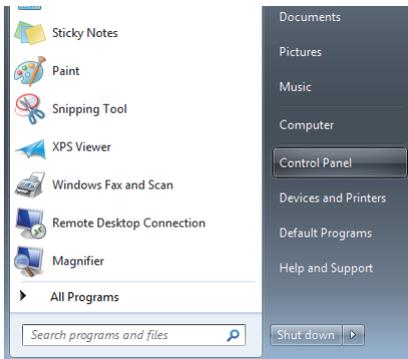


⇩  
Setting completed

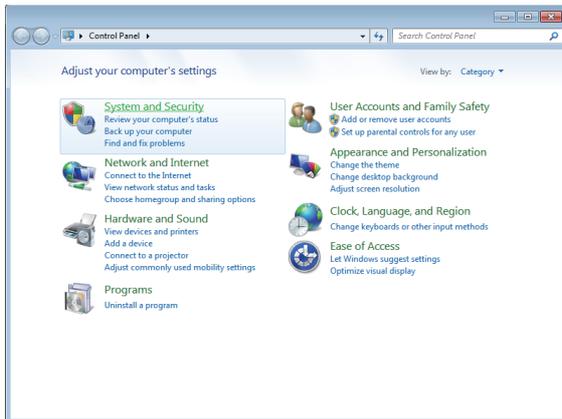
## Allowing the warning message without showing it

The following shows a procedure for allowing a warning message without showing it.

### Operating procedure

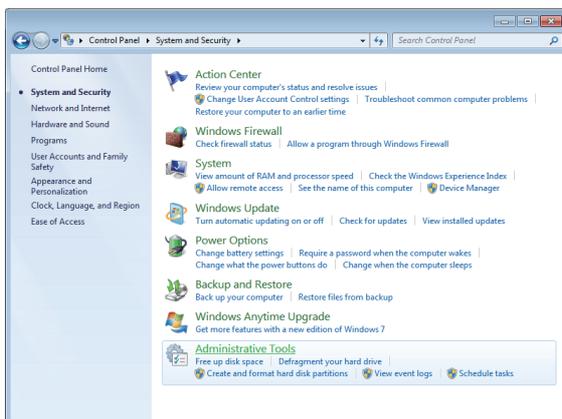


1. Select [Start] ⇒ [Control Panel].



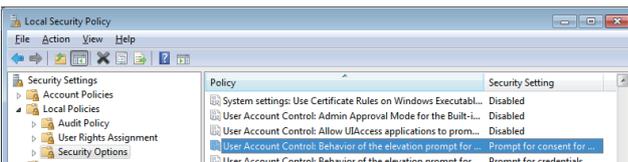
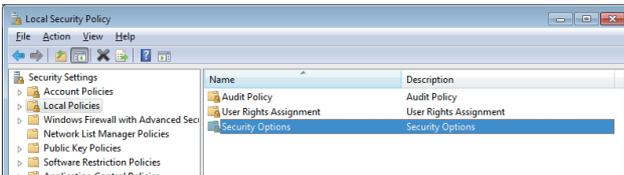
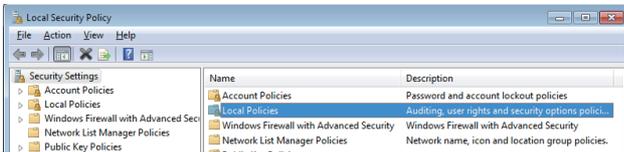
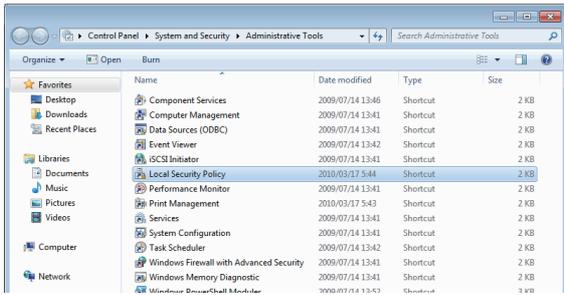
2. Select [System and Security].

When using Windows Vista, select [Classic View].



3. Select [Administrative Tools].





#### 4. Select [Local Security Policy].

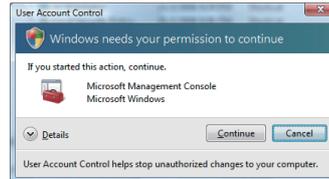
When user account control is enabled, the following screen is displayed.

Click the [Yes] button or the [Continue] button.

<Windows Vista>



<Windows 7 or later>



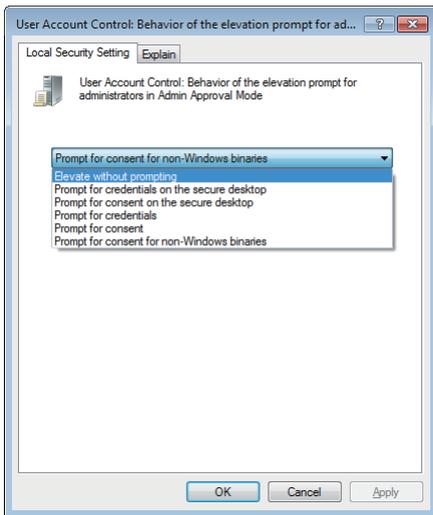
#### 5. Select [Local Policies].

#### 6. Select [Security Options].

#### 7. Select [User Account Control: Behavior of the elevation prompt for administrators in Admin Approval Mode Prompt for consent].



8. Select "Elevate without prompting" in the [Local Security Setting] tab and click the [OK] button.



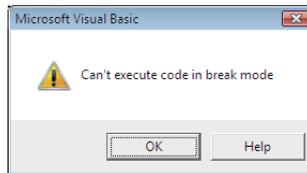
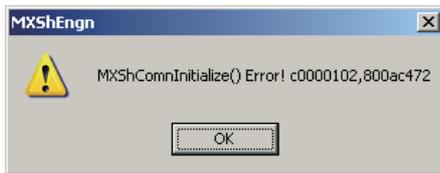
Setting completed

# Appendix 9 Countermeasures for Errors as a Result of Using the Automatic Communication Startup Setting of MX Sheet in Microsoft Excel 2007 or Later

When a workbook that has been configured for the automatic communication startup setting using MX Sheet is opened using Microsoft Excel 2007 or later, the following anomalous situations may occur. (Page 117 AUTOMATIC COMMUNICATION STARTUP/CANCEL SETTING)

## Situations

- Excel stops responding.
- One of the following error messages is displayed.



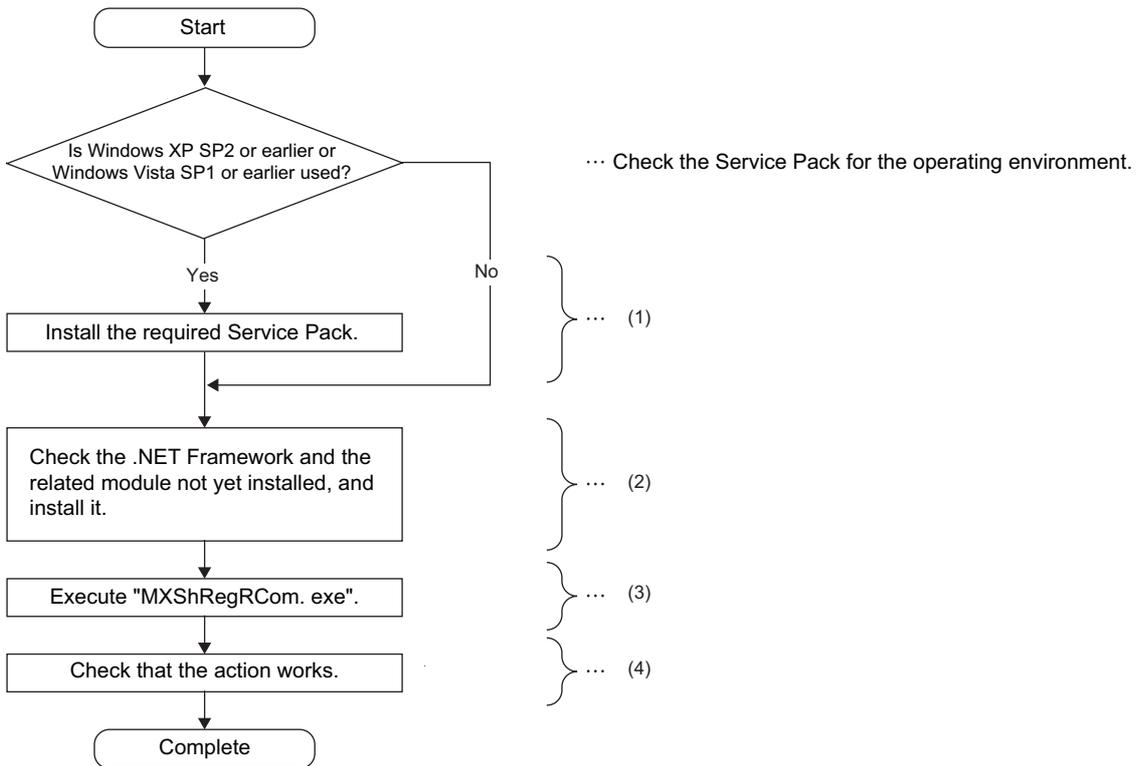
## Cause of anomalous situations

These situations may occur if the following conditions are met.

- An Excel book is opened after configuring MX Sheet automatic communication startup setting.
- An Excel book is opened with Microsoft Excel 2007 or later.

# Corrective action

Use the following flowchart to determine the course of action.



- (1) 📖 Page 176 Installation of Service Pack
- (2) 📖 Page 177 Checking and installation of .NET Framework and the related module
- (3) 📖 Page 180 Execution of "MXShRegRCom.exe"
- (4) 📖 Page 181 Checking if the action works

**Point** 🔍 Update MX Sheet or install Service Pack, .NET Framework, and the related module using the administrator account.

## Installation of Service Pack

Install the Service Pack required for the used operating system.  
For details of required service pack, refer to the following section.  
📖 Page 24 Operating Environment

## Checking and installation of .NET Framework and the related module

The following tables list .NET Frameworks and the related module required for each operating environment.

If they are not installed, install them in the order listed in the table.

The file is in the "DOTNET" folder.

### ■When using Windows XP

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 3.5 SP1	dotnetfx35.exe
	Microsoft .NET Framework 4.0 Extended	dotNetFx40_Full_x86_x64.exe
	Microsoft Visual Studio® 2010 Tools for Office Runtime (x86)	vstor_redist.exe
Microsoft Excel 2010	Microsoft .NET Framework 4.0 Extended	dotNetFx40_Full_x86_x64.exe
	Microsoft Visual Studio 2010 Tools for Office Runtime (x86)	vstor_redist.exe

### ■When using Windows Vista

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 4.0 Extended	dotNetFx40_Full_x86_x64.exe
Microsoft Excel 2010	Microsoft Visual Studio 2010 Tools for Office Runtime (x86)	vstor_redist.exe

## ■When using Windows 7

- 32-bit version

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 4.0 Extended	dotNetFx40_Full_x86_x64.exe
Microsoft Excel 2010	Microsoft Visual Studio 2010 Tools for Office Runtime (x86)	vstor_redist.exe
Microsoft Excel 2013		
Microsoft Excel 2016		

- 64-bit version

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 4.0 Extended	dotNetFx40_Full_x86_x64.exe
Microsoft Excel 2010	Microsoft Visual Studio 2010 Tools for Office Runtime (x64)	vstor_redist.exe
Microsoft Excel 2013		
Microsoft Excel 2016		

## ■When using Windows 8 and Windows 8.1

".NET Framework 4.5 Advanced Services" needs to be enabled in "Turn Windows features on or off" on Control Panel.

- 32-bit version

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 4.5 Extended	dotNetFx40_Full_x86_x64.exe
Microsoft Excel 2010	Microsoft Visual Studio 2010 Tools for Office Runtime (x86)	vstor_redist.exe
Microsoft Excel 2013		
Microsoft Excel 2016		

- 64-bit version

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 4.5 Extended	dotNetFx40_Full_x86_x64.exe
Microsoft Excel 2010	Microsoft Visual Studio 2010 Tools for Office Runtime (x64)	vstor_redist.exe
Microsoft Excel 2013		
Microsoft Excel 2016		

## ■When using Windows 10

".NET Framework 4.6 Advanced Services" needs to be enabled in "Turn Windows features on or off" on Control Panel.

- 32-bit version

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 4.6 Extended	dotNetFx40_Full_x86_x64.exe
Microsoft Excel 2010	Microsoft Visual Studio 2010 Tools for Office Runtime (x86)	vstor_redist.exe
Microsoft Excel 2013		
Microsoft Excel 2016		
Microsoft Excel 2019		

- 64-bit version

Excel version	.NET Framework and the related module	File name on the CD-ROM
Microsoft Excel 2007	Microsoft .NET Framework 4.6 Extended	dotNetFx40_Full_x86_x64.exe
Microsoft Excel 2010	Microsoft Visual Studio 2010 Tools for Office Runtime (x64)	vstor_redist.exe
Microsoft Excel 2013		
Microsoft Excel 2016		
Microsoft Excel 2019		

### Point

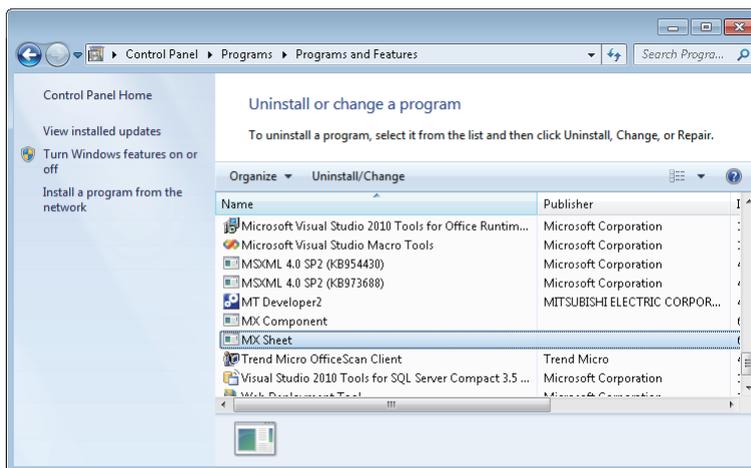
Check if the required .NET Framework and the related module are installed or not by the following operations.

- When using Windows XP

Select [Start] ⇒ [Control Panel] ⇒ [Add or Remove Programs].

- When using Windows Vista or later

Select [Start] ⇒ [Control Panel] ⇒ [Uninstall a program].



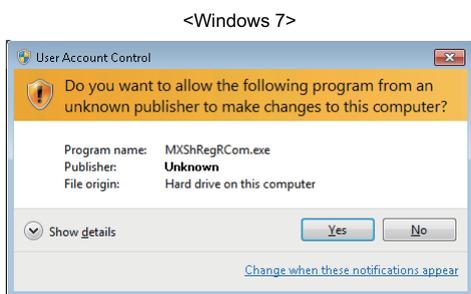
Check if the "Add or Remove Programs" screen or the "Uninstall or a change a program" screen displays the required .NET Framework and the related module.

## Execution of "MXShRegRCom.exe"

After installing .NET Framework and the related module, execute "MXShRegRCom.exe" in the folder where MX Sheet is installed ("C:\MELSEC\Sheet\" when the installation location folder was not changed at installation).

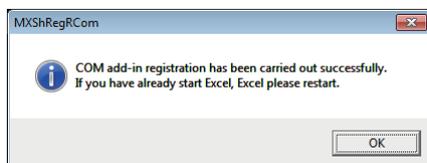
When the user account control is enabled, the following screen is displayed.

Click the [Yes] button.



The following message is displayed to notify the completion.

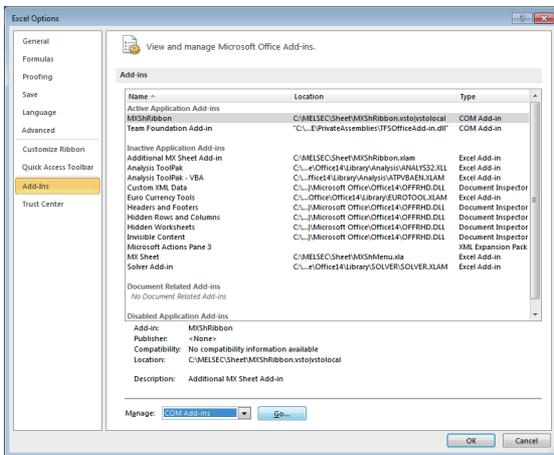
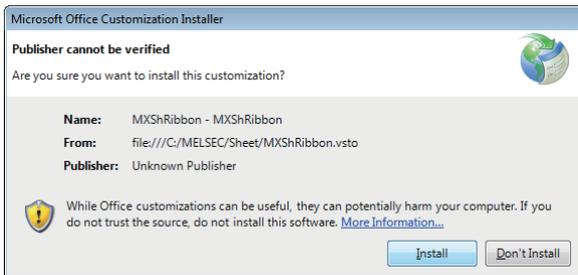
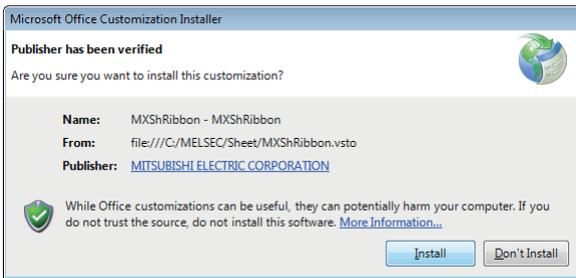
Click the [OK] button.



## Checking if the action works

The following explains how to check if the action works or not.

1. Start Excel.
2. When either of the screens on the left is displayed, click the [Install] button.



3. Select the [File] tab ⇒ [Options].  
The "Excel Options" screen is displayed.
4. Select "Add-Ins", change the item in "Manage" to "COM Add-ins", and click the [Go] button.

<Microsoft Excel 2007>

Select the office button ⇒ the [Excel Options] button.



5. "MXShRibbon" is displayed on the "COM Add-Ins" screen. Check that the checkbox of "MXShRibbon" is selected.



Setting completed



# Appendix 10 Differences with Previous Version of MX Sheet

## Comparison with MX Sheet Version 1

This section explains the differences between MX Sheet Version 2 and MX Sheet Version 1.

### ■ Operating environment (Applicable software)

	MX Sheet Version 1	MX Sheet Version 2
Operating system* <sup>1</sup>	Microsoft Windows 98 Microsoft Windows Millennium Edition Microsoft Windows NT <sup>®</sup> Workstation Microsoft Windows 2000 Professional Microsoft Windows XP Professional Microsoft Windows XP Home Edition Microsoft Windows Vista Home Basic Microsoft Windows Vista Home Premium Microsoft Windows Vista Business Microsoft Windows Vista Ultimate Microsoft Windows Vista Enterprise Microsoft Windows 7 Starter Microsoft Windows 7 Home Premium Microsoft Windows 7 Professional Microsoft Windows 7 Ultimate Microsoft Windows 7 Enterprise	Microsoft Windows XP Professional Microsoft Windows XP Home Edition Microsoft Windows Vista Home Basic Microsoft Windows Vista Home Premium Microsoft Windows Vista Business Microsoft Windows Vista Ultimate Microsoft Windows Vista Enterprise Microsoft Windows 7 Starter Microsoft Windows 7 Home Premium Microsoft Windows 7 Professional Microsoft Windows 7 Ultimate Microsoft Windows 7 Enterprise Microsoft Windows 8 Microsoft Windows 8 Pro Microsoft Windows 8 Enterprise Microsoft Windows 8.1 Microsoft Windows 8.1 Pro Microsoft Windows 8.1 Enterprise Microsoft Windows 10 Home Microsoft Windows 10 Pro Microsoft Windows 10 Enterprise Microsoft Windows 10 Education
Excel* <sup>1</sup>	Microsoft Excel 2000 (English version) Microsoft Excel 2002 (English version) Microsoft Excel 2003 (English version) Microsoft Excel 2007 (English version) Microsoft Excel 2010 (English version)	Microsoft Excel 2003 (English version) Microsoft Excel 2007 (English version) Microsoft Excel 2010 (English version) Microsoft Excel 2013 (English version) Microsoft Excel 2016 (English version) Microsoft Excel 2019 (English version)

\*<sup>1</sup> There are restrictions on the supported Service Pack



- Using the unsupported operating environment

Use MX Sheet Version 1 when using the operating environment which is not supported by MX Sheet Version 2.

MX Sheet Version 1 is included on the CD-ROM of MX Sheet Version 2.

- Details of operating environment

Refer to the following section and manual.

Page 24 Operating Environment

MX Sheet Version 1 Operating Manual

The manual is included on the CD-ROM of MX Sheet Version 2 in a PDF file format.

## Compatibility

### ■ Installation

MX Sheet Version 2 cannot be installed with MX Sheet Version 1.

Install MX Sheet Version 2 after uninstalling MX Sheet Version 1.

### ■ Utilizing Excel books

Excel books created in MX Sheet Version 1 can be used in MX Sheet Version 2 without modifications.

# REVISIONS

\*The manual number is given on the bottom left of the back cover.

Revision date	*Manual number	Description
July 2012 to September 2018	SH(NA)-081080ENG-A to SH(NA)-081080ENG-M	Due to the transition to the e-Manual, the details on revision have been deleted.
January 2020	SH(NA)-081080ENG-N	Complete revision (layout change) ■Added or modified parts OPERATING CONSIDERATIONS, TERMS, Section 2.1, Appendix 1, Appendix 2, Appendix 9, Appendix 10 ■Deleted part Appendix 11
November 2020	SH(NA)-081080ENG-O	■Added or modified parts SAFETY PRECAUTIONS, CONDITIONS OF USE FOR THE PRODUCT, TERMS, Section 2.1, Appendix 1
November 2021	SH(NA)-081080ENG-P	■Added or modified parts OPERATING CONSIDERATIONS, Section 6.2, Section 7.2, TRADEMARKS

Japanese manual number: SH-081078-P

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MODEL: SW2DNC-SHEET-O-E

MODEL CODE: 13JU73

## **MITSUBISHI ELECTRIC CORPORATION**

HEAD OFFICE : TOKYO BUILDING, 2-7-3 MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN  
NAGOYA WORKS : 1-14 , YADA-MINAMI 5-CHOME , HIGASHI-KU, NAGOYA , JAPAN

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