MELSOFT

MITSUBISHI ELECTRIC

Engineering Software

# MX Sheet Version 3 Operating Manual

-SW3DND-SHEET-E

# SAFETY PRECAUTIONS

(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.
The precautions given in this manual are concerned with this product. For the safety precautions of the programmable controller system, refer to the user's manual for the module used and MELSEC iQ-R Module Configuration Manual.
In this manual, the safety precautions are classified into two levels: "⚠WARNING" and "⚠CAUTION".

| | |
|---|---|
| ⚠ **WARNING** | Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury. |
| ⚠ **CAUTION** | 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]

### ⚠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 CPU module, the corrective actions against a communication error due to such as a cable connection fault should be predetermined as a system.

## [Design Precautions]

### ⚠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]

### ⚠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

(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.

# 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.

# CONTENTS

# RELEVANT MANUALS

| Manual name [manual number] | Description | Available form |
|---|---|---|
| MX Sheet Version 3 Operating Manual [SH-082390ENG] (this manual) | Operation procedures, setting and operation methods of MX Sheet | e-Manual<br>PDF |
| MX Component Version 5 Reference Manual [SH-082395ENG] | Operation method, programming procedures, and error codes of MX Component Version 5 | e-Manual<br>PDF |

**Point**

e-Manual refers to the Mitsubishi Electric FA electronic book manuals that can be browsed using a dedicated tool.

e-Manual has the following features:

- Required information can be cross-searched in multiple manuals.
- Other manuals can be accessed from the links in the manual.
- Hardware specifications of each part can be found from the product figures.
- Pages that users often browse can be bookmarked.

# Generic term/abbreviation

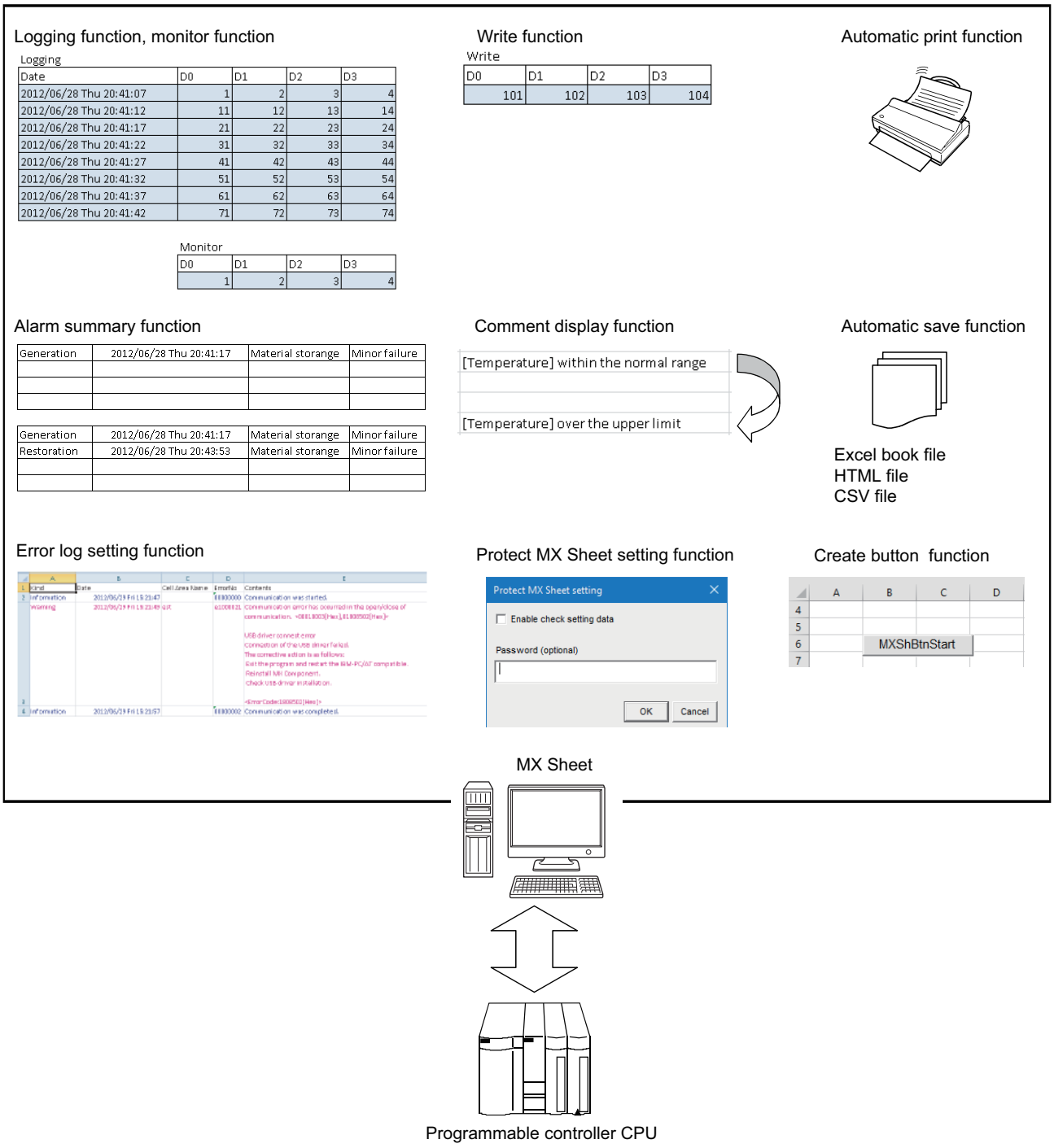
Unless otherwise specified, this manual uses the following generic terms and abbreviations.

| Term | Description |
|---|---|
| Ethernet communication | Abbreviation for communication by connecting the personal computer to Ethernet module or the built-in Ethernet CPU. |
| Ethernet Built-in CPU | Generic term for RCPUs, FX5CPU, Built-in Ethernet port QCPU and LCPU. |
| FX extended port | Generic term for FX3G-485-BD, FX3U-485-BD. |
| FX5CPU | Generic term for FX5UJ, FX5U, and FX5UC. |
| FXCPU | Generic term for FX3S, FX3G, FX3GC, FX3U, and FX3UC. |
| GOT | Abbreviation for Graphic Operation Terminal. |
| L series-compatible C24 | Generic term for LJ71C24 and LJ71C24-R2. |
| LHCPU | Generic term for L04H, L08H, and L16H. |
| Q series-compatible C24 | Generic term for QJ71C24, QJ71C24N, QJ71C24N-R2, and QJ71C24N-R4 |
| Q motion CPU | Generic term for Q172D, Q173D, Q172DS, and Q173DS |
| R series-compatible C24 | Generic term for RJ71C24, RJ71C24-R2, and RJ71C24-R4. |
| R Motion CPU | Generic term for R16MTCPU and R32MTCPU |
| RCPU | Generic term for RnCPU, RnENCPU, RnPCPU, RnPSFCPU, and RnSFCPU. |
| RnPCPU | Generic term for R08P, R16P, R32P, and R120P. |
| RnENCPU | Generic term for R04EN, R08EN, R16EN, R32EN, and R120EN. |
| RnSFCPU | Generic term for R08SF, R16SF, R32SF, and R120SF. |
| Inverter | Generic term for FREQROL-A800 series. |
| Personal computer | Generic term for personal computers on which Windows® operates. |
| Robot controller | Abbreviation for CR750-D/CRnD-700 series. |

# 1 FUNDAMENTALS OF MX Sheet

## 1.1 Before Using This Product

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

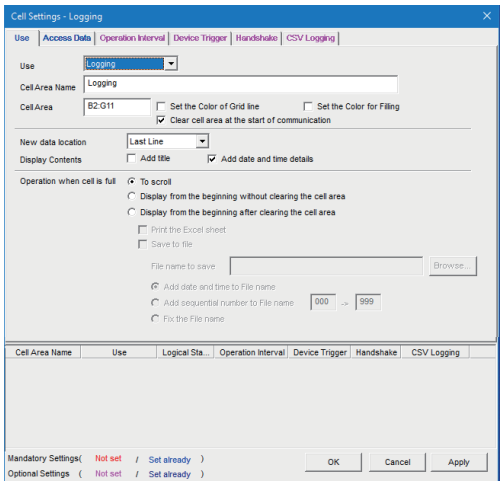


# Using MX Sheet

## Program-less and easy setting

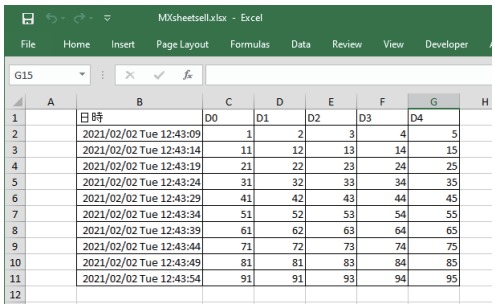
Device data of a CPU module can be collected/written by simple setting without programming.

MX Sheet




Performing simple setting

Excel

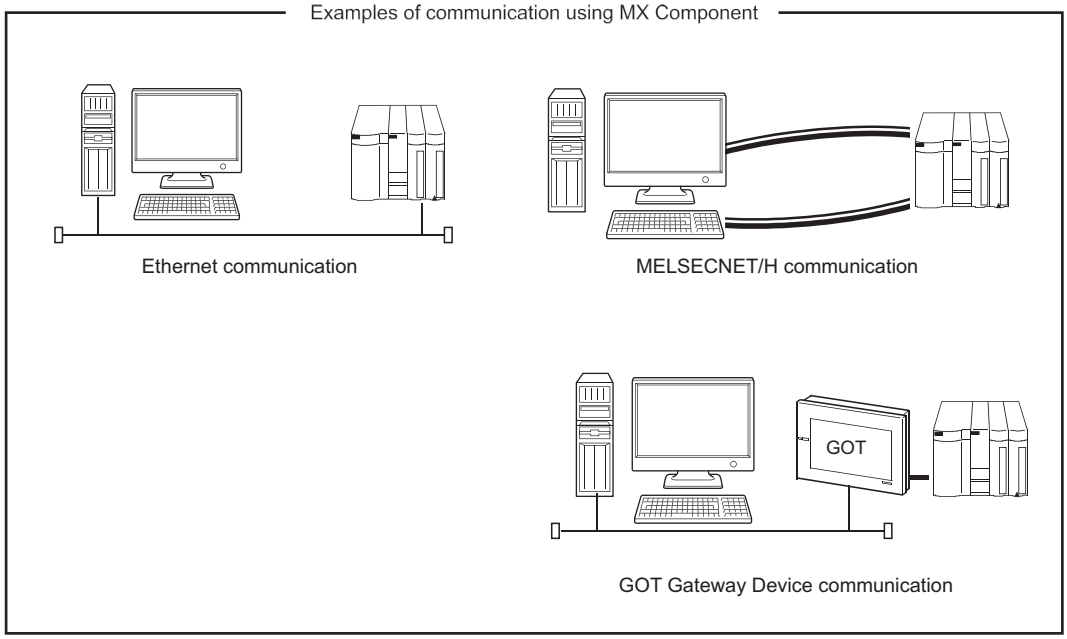



| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | 日時 | D0 | D1 | D2 | D3 | D4 | |
| 2 | | 2021/02/02 Tue 12:43:09 | 1 | 2 | 3 | 4 | 5 | |
| 3 | | 2021/02/02 Tue 12:43:14 | 11 | 12 | 13 | 14 | 15 | |
| 4 | | 2021/02/02 Tue 12:43:19 | 21 | 22 | 23 | 24 | 25 | |
| 5 | | 2021/02/02 Tue 12:43:24 | 31 | 32 | 33 | 34 | 35 | |
| 6 | | 2021/02/02 Tue 12:43:29 | 41 | 42 | 43 | 44 | 45 | |
| 7 | | 2021/02/02 Tue 12:43:34 | 51 | 52 | 53 | 54 | 55 | |
| 8 | | 2021/02/02 Tue 12:43:39 | 61 | 62 | 63 | 64 | 65 | |
| 9 | | 2021/02/02 Tue 12:43:44 | 71 | 72 | 73 | 74 | 75 | |
| 10 | | 2021/02/02 Tue 12:43:49 | 81 | 81 | 83 | 84 | 85 | |
| 11 | | 2021/02/02 Tue 12:43:54 | 91 | 91 | 93 | 94 | 95 | |
| 12 | | | | | | | | |

Programmable controller CPU device data is displayed on Excel spreadsheet.

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

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



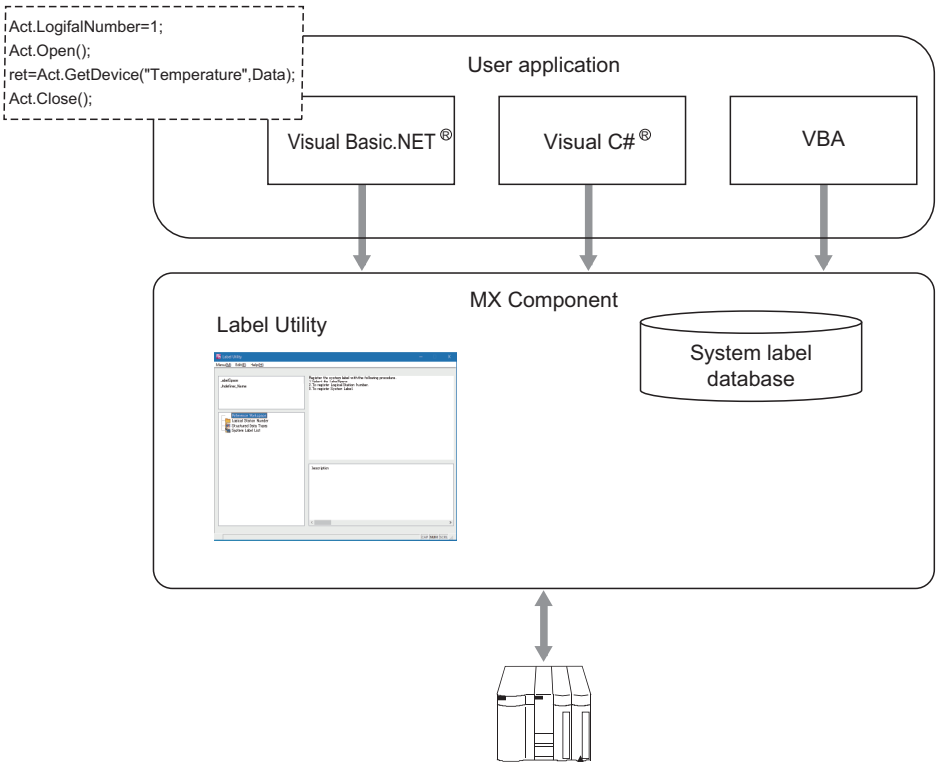
## Displaying and setting data with labels

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

Register the labels by using Label Utility of MX Component.

Using the system labels controlled by MELSOFT Navigator enables sharing labels with the iQ Works supported products.

There are two types of system labels for MELSOFT Navigator: system label ver.1 and system label ver.2.

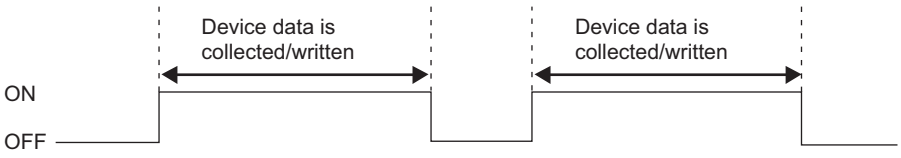



## Controlling each function by device condition

Conditions for collecting and writing device data can be set to a device in a CPU module.

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

### ■When the device data is collected/written while bit device is ON

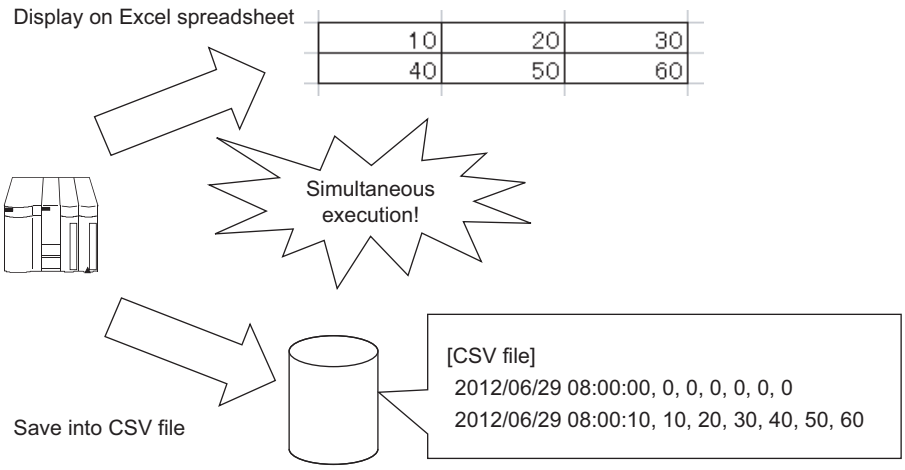



Corresponding functions

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

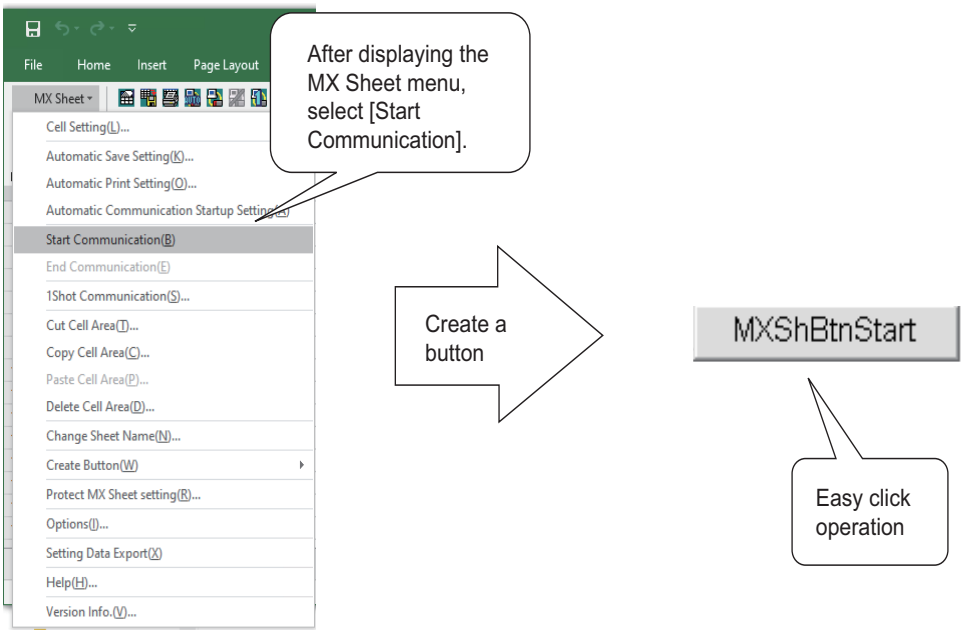
## Data logging using CSV file

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.



# Operating considerations

This section explains the considerations in the following order.

- Considerations of operating system and personal computer to be used
- Considerations for setting MX Sheet
- Considerations for setting cells and Excel spreadsheets
- Considerations for performing communication
- Considerations for using VBA
- Considerations for using other MELSOFT products

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

### ■Administrator authority when setting/changing communication setup

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.

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

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

Do not set any of the following functions on the personal computer.

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

## Considerations for setting MX Sheet

### ■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

### ■Editing table format cells

Note the following points when editing table format cells on the [Access Data] tab of the "Cell Settings" screen (☞ Page 55 Setting of the [Access Data] tab), or "Automatic Save" screen (☞ Page 120 Setting of "Automatic Save" Screen), etc.

- Edit the combo box after selecting the target cell.
- When editing cells, determine the edited cells with the Enter key before editing other cells or clicking other buttons.

### ■Reading character strings

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

- = (equal)
- ' (single quotation)

### ■Saving Excel spreadsheets

MX Sheet saves Excel book at the timing of closing the "Cell Settings" screen. Before editing data, backing up 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.

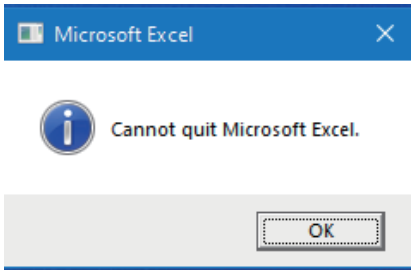
Therefore, make sure that the specified file name is different from other Excel book names.

### ■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.

### ■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.
Otherwise, the following message appears, and Excel cannot be closed.




### ■Size of saved Excel file according to setting cell formats

On Excel, setting the call format increases the saved file size.
Also on MX Sheet, the size of the saved Excel file may become several M bytes or more since the cell format is changed according to the setting.

**Ex.**

Settings that increases the saved file size

- 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

## Considerations for setting cells and Excel spreadsheets

### ■Save function

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

It may take time to save the book.

### ■Changing Excel spreadsheet name

When changing the sheet name of an Excel spreadsheet where MX Sheet is set, change it from the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Change Sheet Name].
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 an "ErrorLog" sheet.
Otherwise, the "ErrorLog" sheet does not operate properly.

### ■"ErrorLog" sheet name

In an 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.

## 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 CPU module

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

For the restrictions on communications between the personal computer and CPU module, refer to the following:

MX Component Version 5 Reference 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 occurs.

### ■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.

### ■Double-starting Excel books

Excel books with the same name can not be double-started.

### ■When logoff/shutdown is executed during communication

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

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

### ■USB communication

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

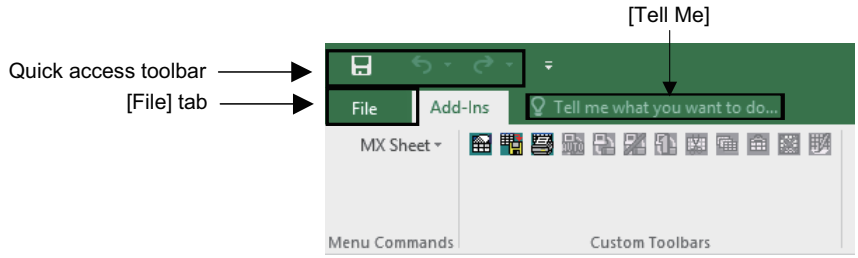
● If Excel is in either of the following status, MX Sheet cannot execute operations on Excel (e.g. displaying data into cells, saving or printing an Excel book).

- 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.

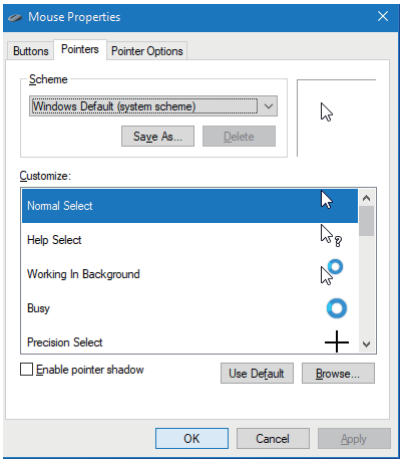
- Tabs on the ribbon are hidden.

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



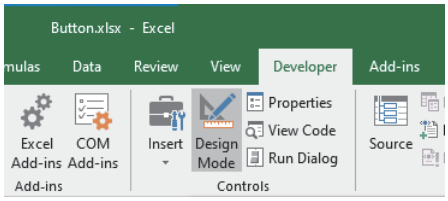

## ■Mouse cursor during communication

While MX Sheet is communicating, the mouse cursor setting of an Excel spreadsheet 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.



## Considerations for using VBA

### ■Incorporation of VBA program

When incorporating a user-created VBA program into an 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, MX Component Version 5 or later is required.

### ■Logical station number

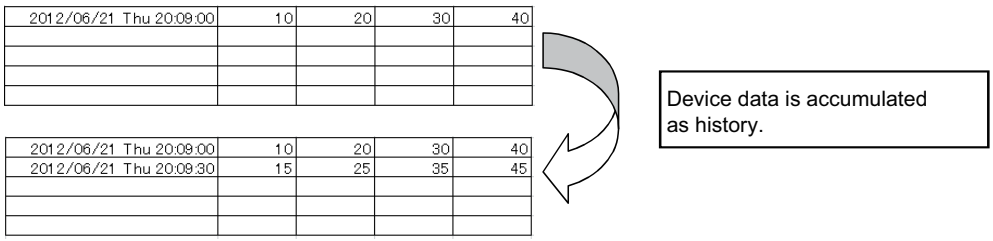
Before deleting a logical station number (☞ Page 43 Logical station number) from the communication setup utility of MX Component, check that the logical station number to be deleted is not used in MX Sheet.

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

# 1.2 Main Functions of MX Sheet

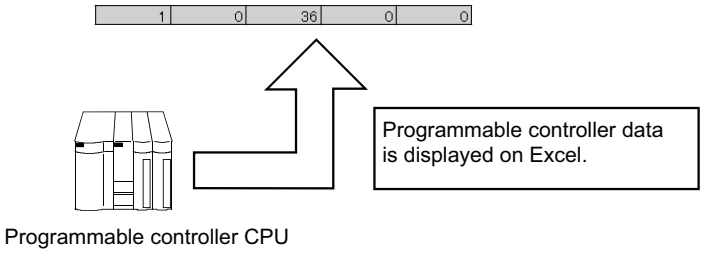
## Logging function

Accumulates device data collected from a programmable controller as history in the cell area selected on an Excel spreadsheet.(☞ Page 25 Logging)



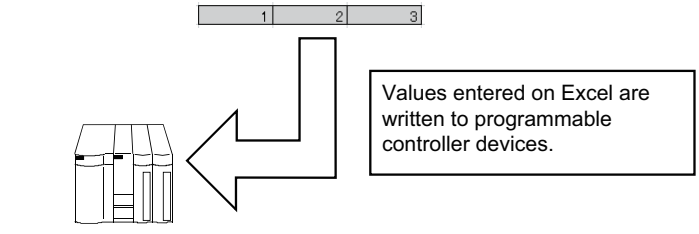

## Monitor function

Displays device data collected from a programmable controller in the cell area selected on Excel.(☞ Page 31 Monitoring)




## Write function

Writes values entered on an Excel spreadsheet to a programmable controller device.(☞ Page 34 Writing data)




## Automatic save function

Automatically saves an Excel book.(☞ Page 37 Automatic saving)
Automatic save is performed in the time specification and device trigger.

## Automatic print function

Automatically prints an Excel book or a specified Excel spreadsheet.(☞ Page 40 Automatic printing)
Automatic printing is performed in the time specification and device trigger.

## Create Button function

Executes the Start Communication, End Communication, and 1 Shot Communication functions by merely clicking the corresponding button. (☞ Page 42 Creating/Using button)

# 1.3 System Configuration

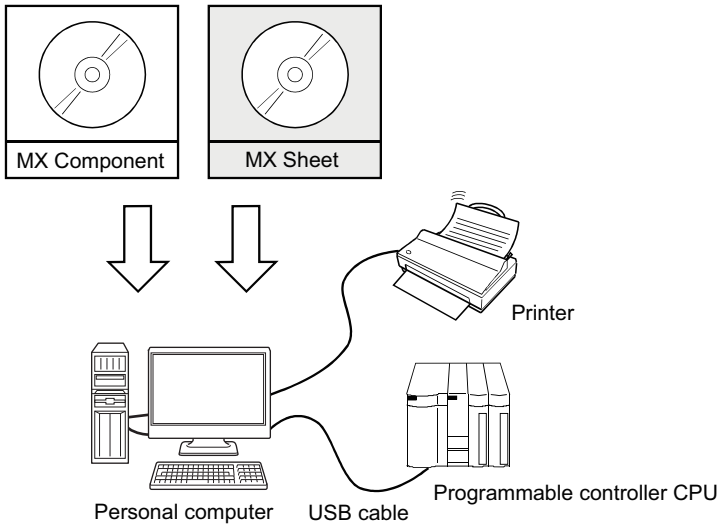
The system configuration for MX Sheet is the same as that for MX Component Version 5.

For details, refer to the following:

MX Component Version 5 Reference Manual

## System configuration

In this manual, the following system configuration is used to explain an example of operation.




| Item | | Description |
|---|---|---|
| Personal computer | | Personal computers that meet the operation environment of MX Sheet<br>MX Sheet Version 3 Installation Instructions |
| Software | OS | Microsoft Windows 10 Pro Operating System (English version) |
| | MX Sheet | MX Sheet Version 3 |
| | MX Component | MX Component Version 5 |
| | Excel | Microsoft Excel 2019 (64-bit version) (English) |
| CPU module | | R16CPU |
| USB cable | | MR-J3USBCBL3M |
| Printer | | Printers that support the specification of the personal computer |

## Accessible range

### Accessible CPUs

The accessible CPUs in MX Sheet are the same as those in MX Component Version 5.

For details, refer to the following:

MX Component Version 5 Reference Manual

### Accessible device ranges

The accessible device ranges in MX Sheet are the same as those in MX Component Version 5, except for the following item.

For details, refer to the following:

MX Component Version 5 Reference 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 46 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.

## Operating environment

| Item | Description |
|---|---|
| Personal computer | A personal computer on which Microsoft®Windows®operates<br>• CPU: Processor 1.6 GHz and 2 core or more<br>• Required memory: 2 GB or more recommended |
| Available hard disk capacity | • For installation: 1.6 GB or more free hard disk capacity*1<br>• For operation: 512 MB or more free virtual memory capacity |
| Monitor | Resolution 1024 × 768 pixels or higher |
| OS<br>(32-bit/64-bit) | • Windows 10 (Home, Pro, Enterprise, Education)<br>• Windows 10 IoT Enterprise 2016 LTSB*2 |
| Required software | • Microsoft Excel®2019 (32-bit version/64-bit version)<br>• MX Component Version 5 |

*1 Includes free space required for installing MX Component.
*2 64-bit version only

This product may not operate properly when using any of the following functions:

- Application start-up in Windows compatibility mode
- Fast user switching
- Remote desktop
- Windows Touch or Touch
- Modern UI
- Client Hyper-V
- Tablet mode
- Virtual Desktops
- Windows hibernate or standby
- Unified Write Filter

In the following cases, 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.).
- The resolution of the screen is changed in operation.
- Windows theme is changed in operation.
- The multi-display is set.

Excel spreadsheets created in the English environment are applicable to the English environment only, cannot be used in the other environment.
In this product, the period (.) is used as the symbol of the decimal point. Regardless of the setting of "Decimal symbol" on the control panel, use the period when enter the decimal point.

### Precautions

- A communication error may occur when communicating with a programmable controller CPU after setting the resume function, suspend setting, power-saving function, and/or standby mode of a personal computer.
  Therefore, when communicating with the programmable controller CPU, do not set the above functions.
- Surrogate pair characters and environment dependent characters are not available in MX Sheet.

# 1.4 Screen Configuration and Basic Operations

## Operation procedure for MX Sheet

### Operating procedure

1. Set the security setting of Excel. (☞ Page 20 Security settings of Excel)
2. Check if MX Sheet is installed properly. (☞ Page 21 Checking if the installation is completed properly)
3. Start Excel and save an Excel book.
4. Select the function to be used (☞ Page 23 MX Sheet menu), and set the MX Sheet setting. (☞ Page 25 Basic operations of MX Sheet)
5. Start the communication. (☞ Page 131 Start Communication)
6. End the communication. (☞ Page 133 End Communication)

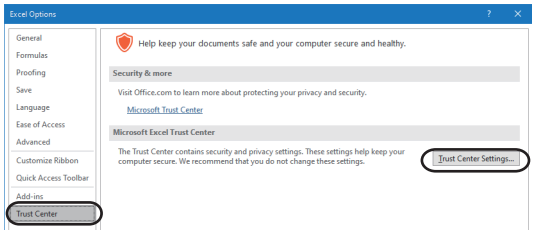
**Point**

Communication efficiency differs depending on the MX Sheet setting. (☞ Page 160 Processing Speed of MX Sheet, ☞ Page 167 Creating the Excel Spreadsheet for MX Sheet)

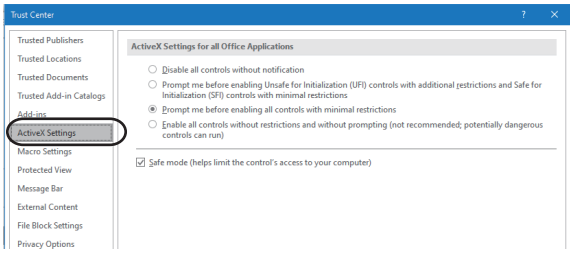
## Security settings of Excel

The following explains the security setting procedure that is required for using MX Sheet.

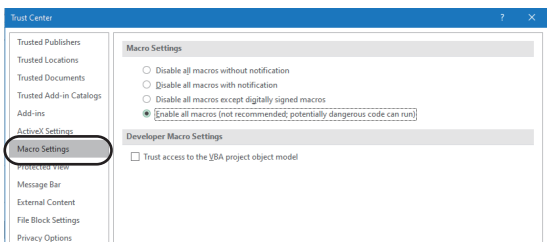
### Operating procedure




1. Select [File] ⇨ [Options] in Excel, and open the "Excel Options" screen. Select "Trust Center" form the list on the left side of the screen, and click the [Trust Center Settings] button.




2. Select "ActiveX Settings" from the list on the left side of the screen, and select the items other than "Disable all controls without notification."



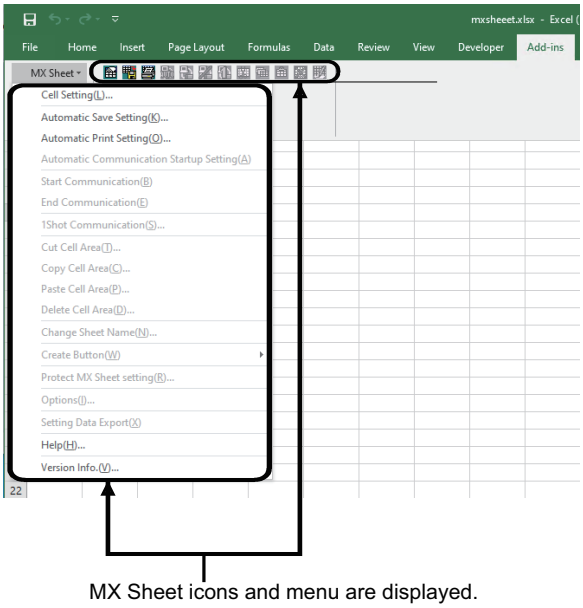

3. Select "Macro Settings" from the list on the left side of the screen, and select "Enabling all macros."

After set the settings, click the [OK] button to close Excel.

## Checking if the installation is completed properly

The following explains a procedure for checking if the installation of MX Sheet is completed normally.

1. Start Excel.
2. Check that [Add-ins] tab is added and an icon and menu of MX Sheet are added.




MX Sheet icons and menu are displayed.

3. Select [File] ⇨ [Options] ⇨ [Add-ins] in Excel ,and check that "Additional MX Sheet Add-in" and "MX Sheet" are registered in the "Add-in" window.

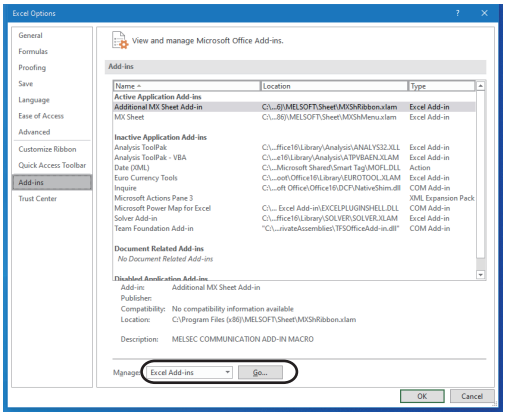
**Point**

If registration of an add-in fails at the installation, register the add-in manually.

☞ Page 21 Registering add-in manually

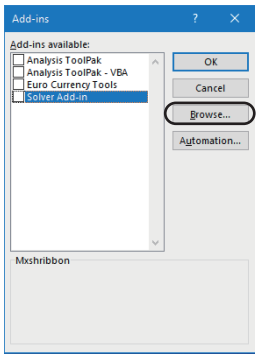
## Registering add-in manually

The following explains a procedure for registering an add-in from MX Sheet menu.

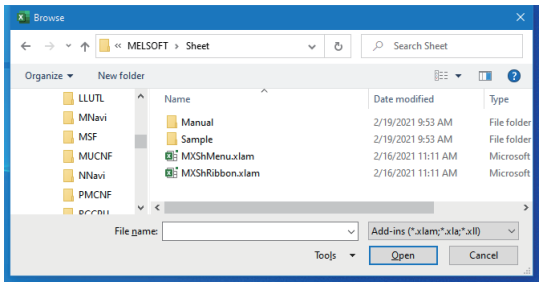



1. Select [File] ⇨ [Options] in Excel, and open the "Excel Options" screen.

Select "Add-ins" and select "Excel Add-ins" from "Manage," and then click the [Go] button.

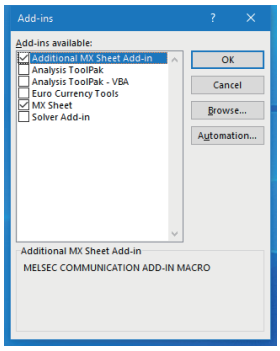



**2.** The "Add-ins" screen appears.
Click the [Browse] button.

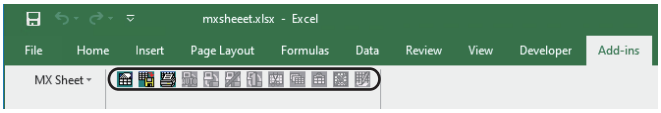



**3.** The "Browse" screen appears.
Select "MXShMenu.xlam" and click the [Open] button.
Perform the same operation on step 4 and 5 for "MXShRibbon.xlam."
"MXShMenu.xlam" and "MXShRibbon.xlam" are stored into "(installation folder)\Sheet" at the installation.
The installation destination folder is either of the following if it is not changed at the installation.

- 32-bit version operating system: C:\Program Files\MELSOFT\Sheet
- 64-bit version operating system: C:\Program Files (x86)\MELSOFT\Sheet




**4.** The "Add-ins" screen appears.
Check that the checkboxes of "MX Sheet" and "Additional MX Sheet Add-in" are selected.




**5.** Check that [MX Sheet] is added to the [Add-ins] tab.
The icon buttons are also displayed.

## Administrator authority when setting/changing communication setup

Administrator authority is required for setting/changing communication setup.

### Operating procedure

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

# MX Sheet menu

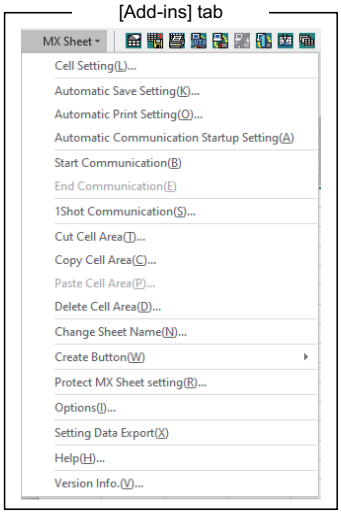


The following explains a procedure for displaying the menu to select a function of MX Sheet and details on the items to be selected.

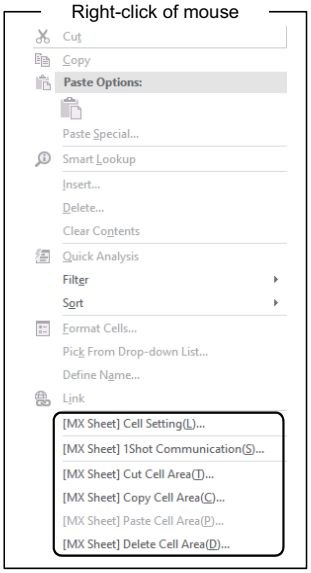
## Operating procedure

- Select the [Add-ins] tab ⇨ [MX Sheet]
- Specify the cell area and right-click.

[Add-ins] tab




Right-click of mouse




**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 46 CELL SETTING |
| Automatic Save Setting | |  | — | Set the automatic save setting. | Page 119 AUTOMATIC SAVE SETTING |
| Automatic Print Setting | |  | — | Set the automatic print setting. | Page 126 AUTOMATIC PRINT SETTING |
| Automatic Communication Startup Setting | |  | — | Set the automatic communication startup setting. | Page 129 AUTOMATIC COMMUNICATION STARTUP/CANCEL SETTING |
| Start communication | |  | — | Start the communication. | Page 131 Start Communication |
| End communication | |  | — | End the communication.*1 | Page 133 End Communication |
| 1 shot communication | |  | [MX Sheet] 1 Shot Communication | Perform 1 shot communication. | Page 134 1 SHOT COMMUNICATION |
| Cut Cell Area | |  | [MX Sheet] Cut Cell Area | Cut a cell area. | Page 136 Cutting Cell Area |
| Copy Cell Area | |  | [MX Sheet] Copy Cell Area | Copy a cell area. | Page 137 Copying Cell Area |
| Paste Cell Area | |  | [MX Sheet] Paste Cell Area | Paste a cell area. *2 | Page 138 Pasting Cell Area |
| Delete Cell Area | |  | [MX Sheet] Delete Cell Area | Delete a cell area. | Page 140 Deleting Cell Area |
| Change Sheet Name | |  | — | Change the Excel spreadsheet name. | Page 141 CHANGING SHEET NAME |
| Create button | Start Communication Button | — | — | Create the Start Communication Button. | Page 143 Start Communication Button |
| | End Communication Button | — | — | Create the End Communication Button. | Page 147 End Communication Button |
| | 1 Shot Communication Button | — | — | Create the 1 Shot Communication Button. | Page 148 1 Shot Communication Button |
| Protect MX Sheet setting | | — | — | Protect the MX Sheet setting. | Page 149 Protecting MX Sheet Setting |
| Unprotect MX Sheet setting | | — | — | Unprotect the MX Sheet setting. | Page 151 Unprotecting MX Sheet Setting |
| Options | | — | — | Set the error log options. | Page 152 OPTIONS |
| Setting data export | | — | — | Execute setting data export. | Page 155 SETTING DATA EXPORT |
| Help | | — | — | Start e-Manual Viewer and display the manual. | Page 42 Displaying the manual |
| Version Info. | | — | — | Display the MX Sheet version. | Page 42 Confirming method of MX Sheet version |

*1 Can be selected after start of communication.

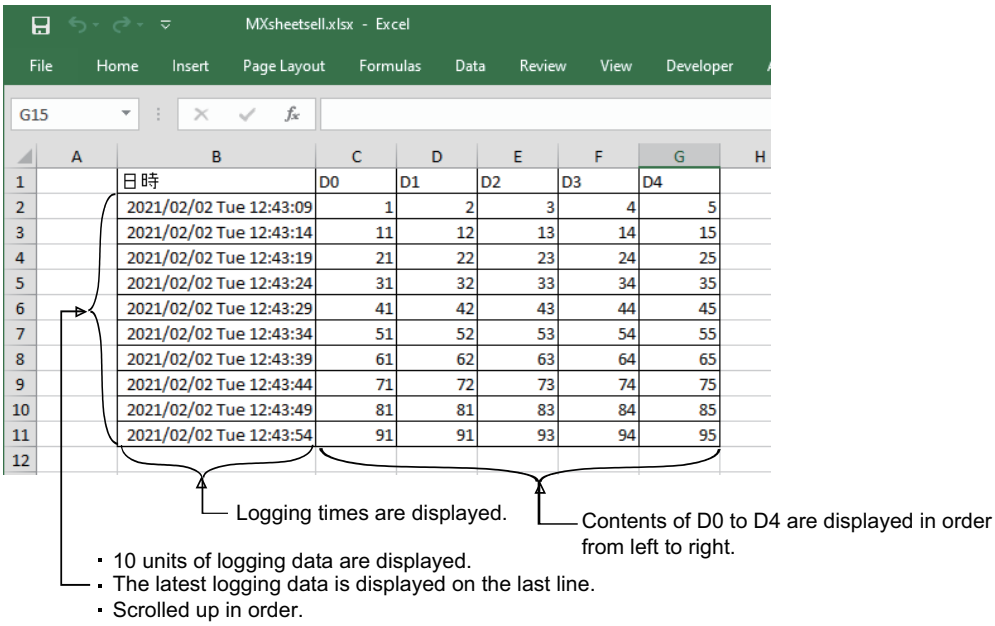
*2 Can be selected after the cell area is cut or copied.

# Basic operations of MX Sheet

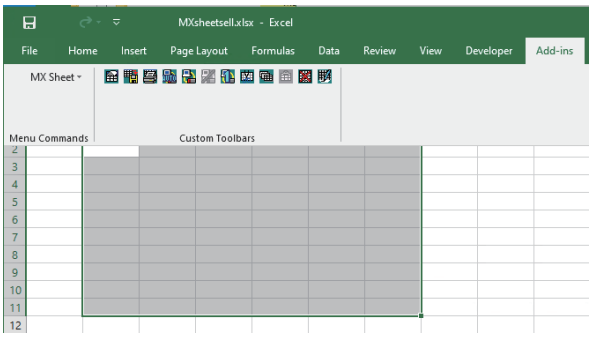
## Logging

The following explains an example of creating an Excel spreadsheet using the logging function.

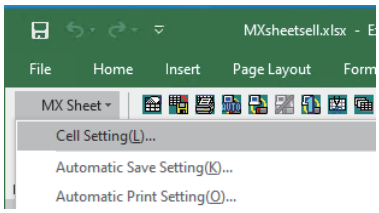
### Window



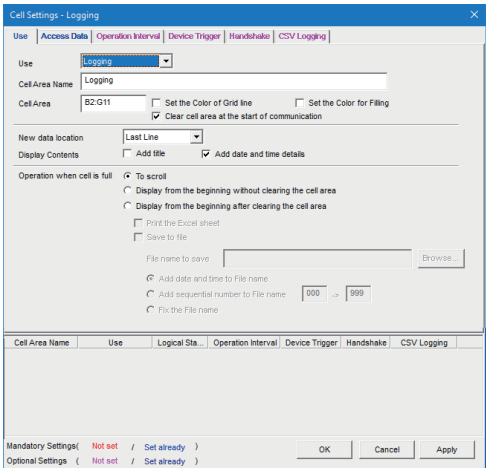

### Operating procedure




1. Start Excel and select [File] ⇨ [Save As] to save an Excel book with a new name.
2. Drag the cells (B2 to G11 in this example) on the left screen to specify the cell area in which logging data is to be displayed.



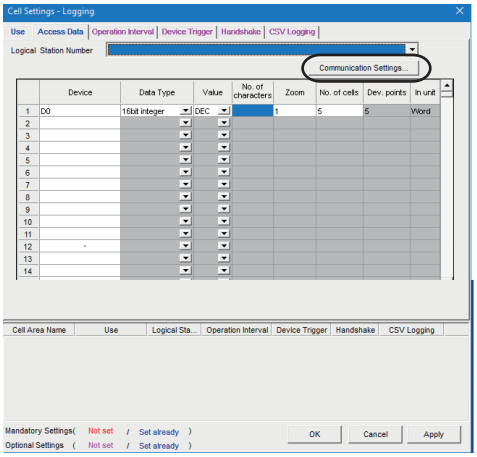

**3.** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Cell Setting] to display the "Cell Settings" screen.




**4.** Set the following items of the [Use] tab.

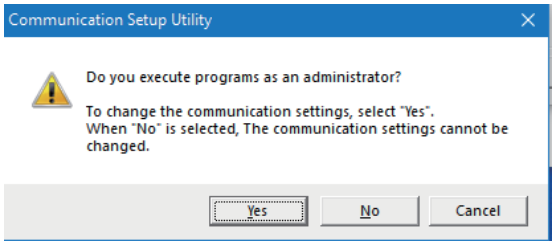
- Use: Logging
- Cell Area Name: Logging function
- Cell Area: B2:G11
- New data location: Last Line
- Display Contents: Add date and time details
- Operation when cell is full: To scroll

After set the settings, select the [Access Data] tab.

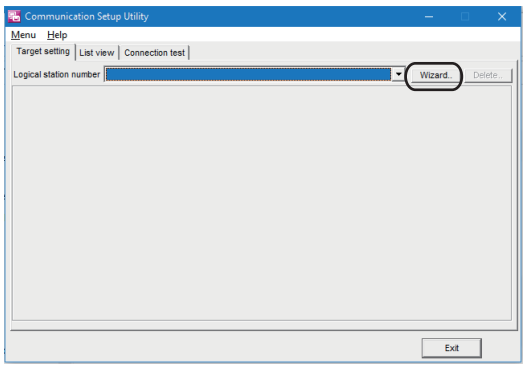



**5.** Click the [Communication Settings] button to start the communication setup utility for setting a logical station number(☞ Page 43 Logical station number).

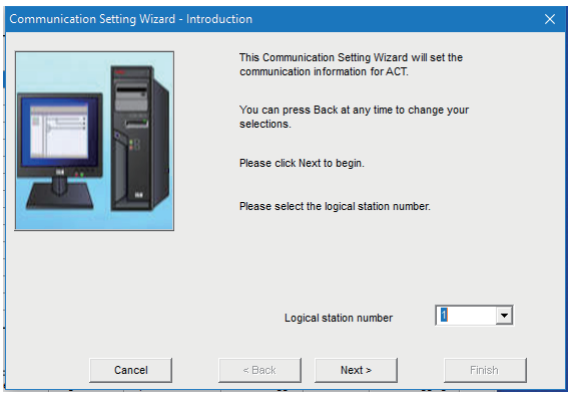
When the following screen appears, click the [Yes] button.



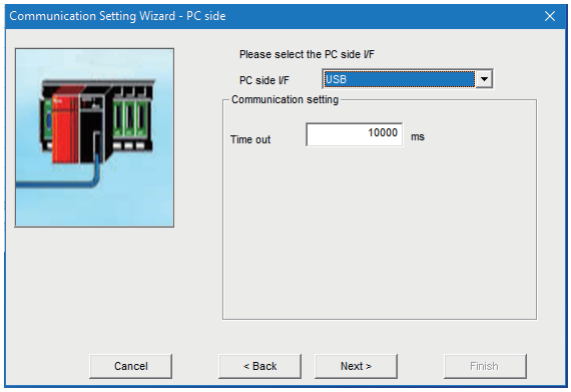

The "User Account Control" screen appears.
Click the [Yes] button.




**6.** After starting the communication setup utility, select the [Target Setting] tab and click the [Wizard] button.

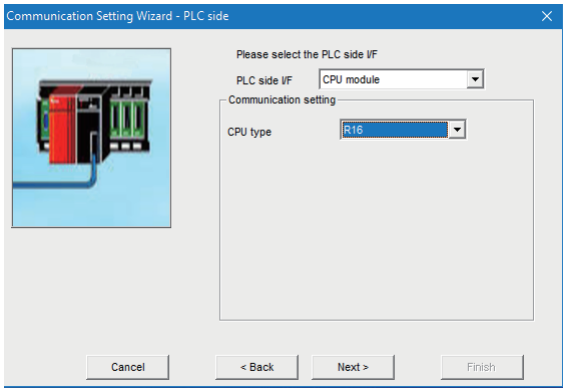



**7.** Set "1" in "Logical station number" and click the [Next] button.



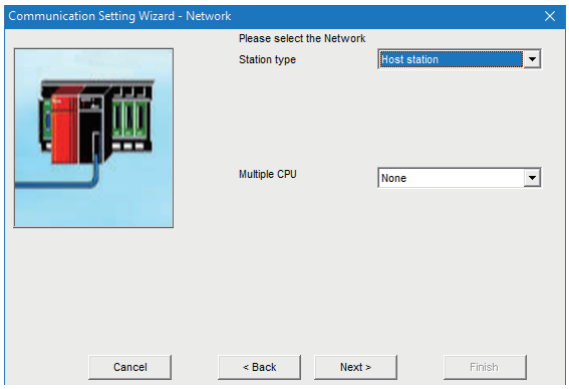

**8.** Set the personal computer side interface as follows, and click the [Next] button.

- PC side I/F: USB
- Time out: 10000



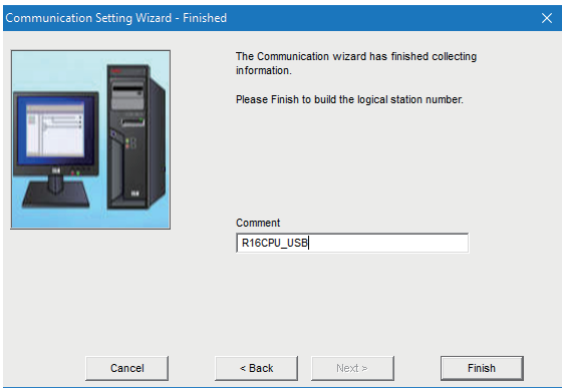

**9.** Set the programmable controller side interface as follows, and click the [Next] button.

- PLC side I/F: CPU module
- CPU type: R16CPU

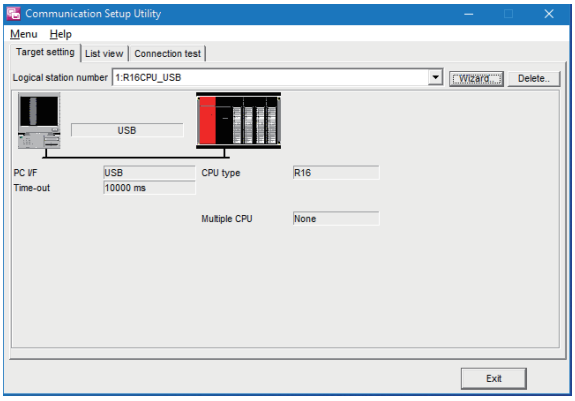



**10.** Select the communication route as follows, and click the [Next] button.

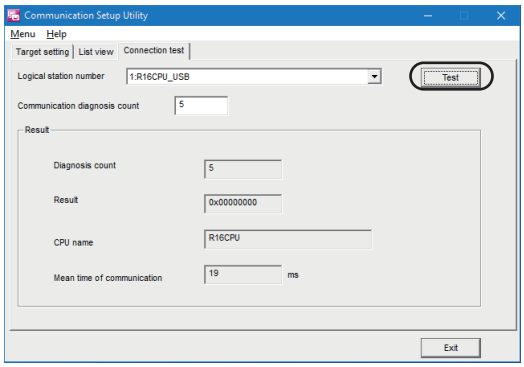
- Station type: Host station
- Multiple CPU: None




**11.** Enter any word (R16CPU_USB in this example) and click the [Finish] button.

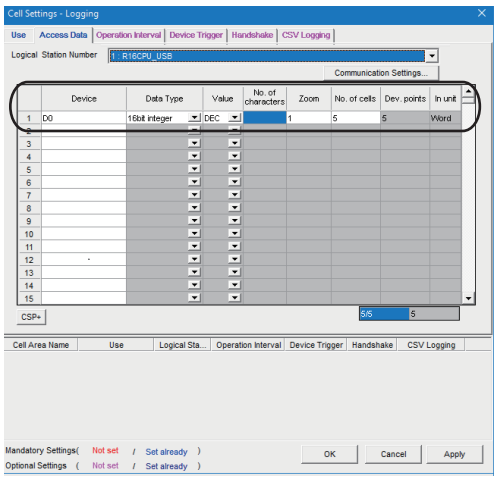



**12.** Check if the logical station number settings displayed on the [Target setting] tab of the Communication Setup Utility screen are correct.
After checking, select the [Connection test] tab.




**13.** Click the [Test] button to check that the programmable controller and personal computer are normally communicating.
After confirmation, click the [Exit] button to close the communication setup utility.

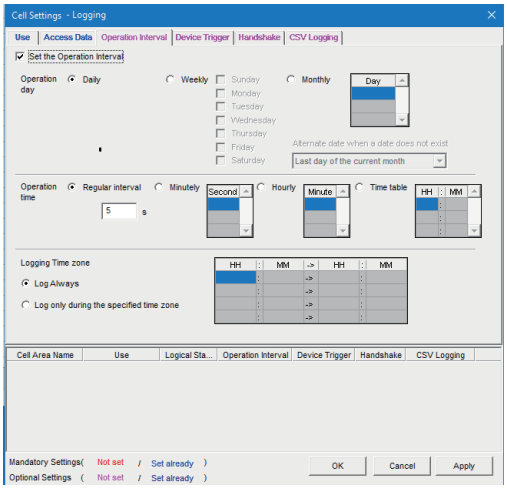
An error message appears if they are not communicating normally.
Check the error definition and remove the error.




**14.** Set the device to be logged as follows on the [Access Data] tab.

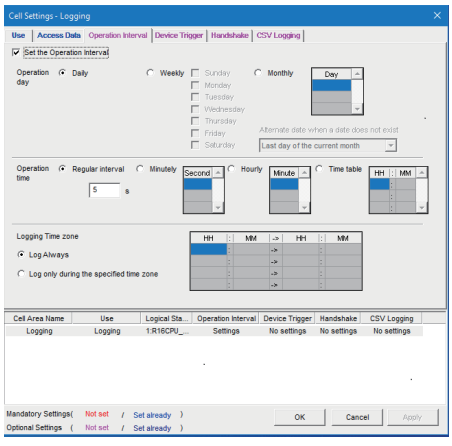
- Logical Station Number: 1
- Device: D0
- Data Type: 16bit integer
- Value: DEC
- Zoom: 1
- No. of cells: 5

The labels can be set to "Device."
When the system label is set to "Device," "1" is displayed to "No. of cells" and cannot be changed.
After set the settings, select the [Operation Interval] tab.



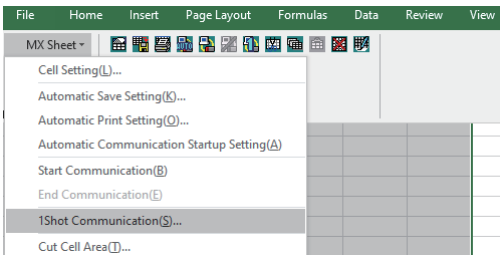

**15.** Set the logging operation interval as follows.

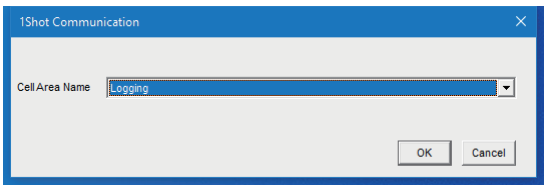
- Set the Operation Interval: Selected
- Operation day: Daily
- Operation time: Regular interval (5 seconds)
- Logging Time zone: Log Always




**16.** Click the [Apply] button to enable the settings of the "Cell Settings" screen.

Check that the cell area is registered in the screen shown on the left, and click the [OK] button.




**17.** Check if the settings from step 1 to 16 are correct by using the 1 shot communication function of MX Sheet.

Perform 1 shot communication in the following procedure.

❶ Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [1Shot Communication].

❷ Select the cell area name set in step 4 ("Logging function" in this example) as the "Cell Area Name" in the "1 Shot Communication" screen.

❸ Click the [OK] button to start 1 shot communication.

⇩

・Before adjustment

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | | ######## | 16 | 0 | 369 | 16 | 15 | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |

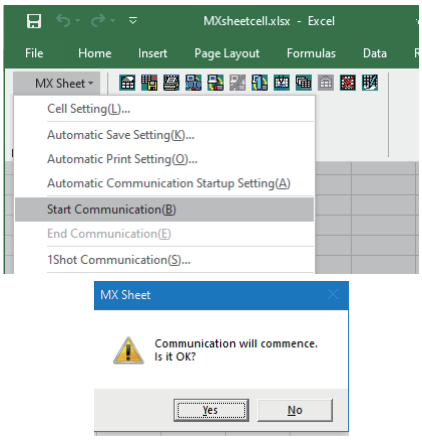
・After adjustment

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | | | | | | | | |
| 2 | | 2021/02/23 Tue 11:42:25 | 16 | 0 | 369 | 16 | 15 | |
| 3 | | | | | | | | |
| 4 | | | | | | | | |

**18.** After 1 shot communication, "########" is displayed in the date/time cell as shown on the left screen.

Adjust the cell width of Column B so that the date and time can be displayed.

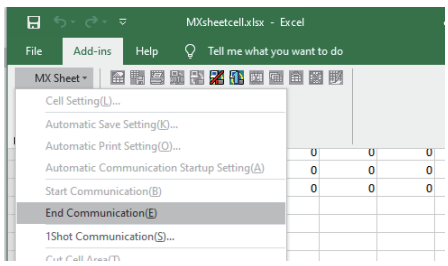
⇩




**19.** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Start Communication] to start logging.

Click the [Yes] button in the dialog box shown on the left, and start logging.

⇩

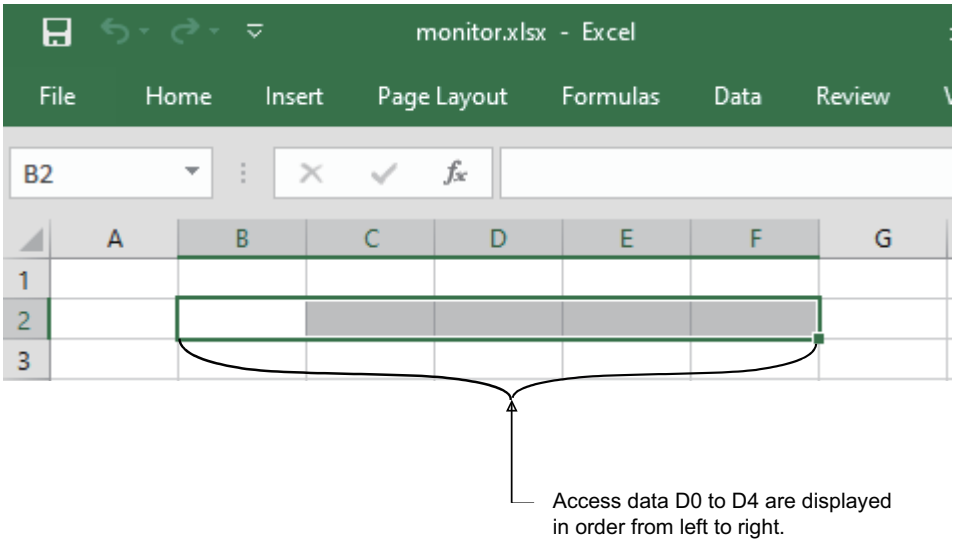



**20.** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [End Communication] to end logging.

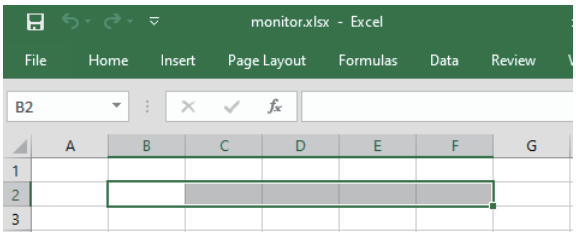
## Monitoring

The following explains an example of creating an Excel spreadsheet using the monitor function.

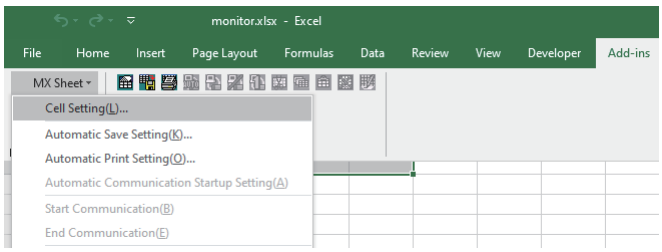
### Window



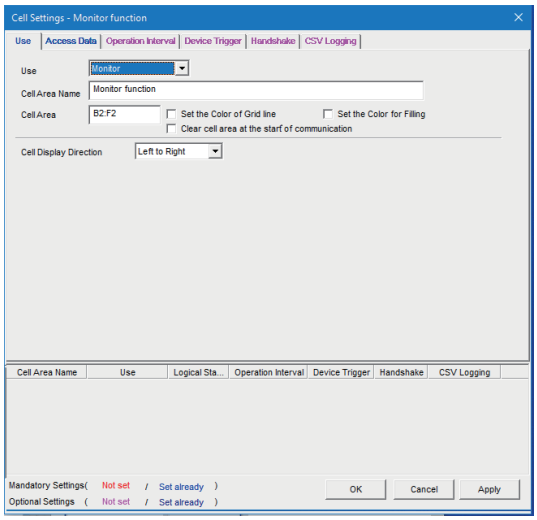

### Operating procedure

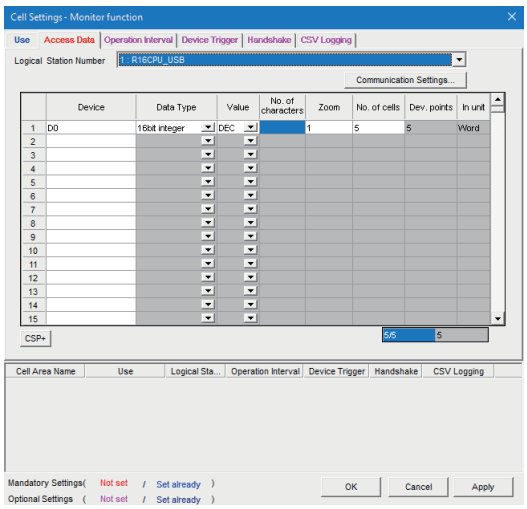


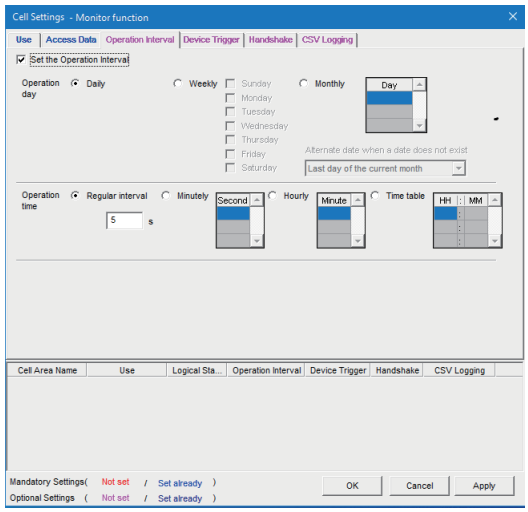

1. Start Excel and select [File] ⇨ [Save As] to save an Excel book with a new name.
2. Drag the cell (B2 to F2 in this example) on the left screen to specify the cell area in which monitor data is displayed.




3. Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Cell Setting] to display the "Cell Settings" screen.




***4.*** Set the following items on the [Use] tab.

- Use: Monitor
- Cell Area Name: Monitor function
- Cell Area: B2:F2
- Cell Display Direction: Left to Right

After set the settings, select the [Access Data] tab.

***5.*** Set the device to be monitored as follows.

- Logical Station Number: 1
- Device: D0
- Data Type: 16bit integer
- Value: DEC
- Zoom: 1
- No. of cells: 5

For the logical station number setting method, refer to the following:

☞ Page 43 Logical station number

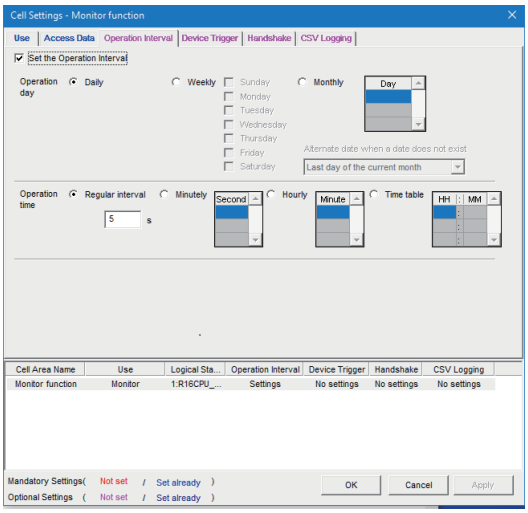
The labels can be set to "Device."

When the system label is set to "Device," "1" is displayed to "No. of cells" and cannot be changed.

After set the settings, select the [Operation Interval] tab.

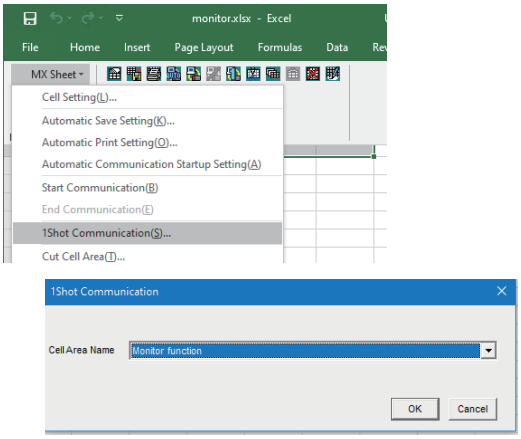
***6.*** Set the monitor operation interval as follows.

- Set the Operation Interval: Selected
- Operation day: Daily
- Operation time: Regular interval (5 seconds)




**7.** Click the [Apply] button to enable the settings of the "Cell Settings" screen.

Check that the cell area is registered in the screen shown on the left, and click the [OK] button.



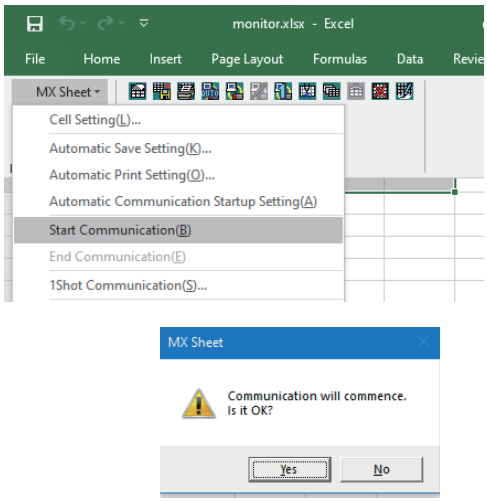

**8.** Check if the settings from step 1 to 7 are correct by using the 1 shot communication function of MX Sheet.

Perform 1 shot communication in the following procedure.

❶ Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [1Shot Communication].

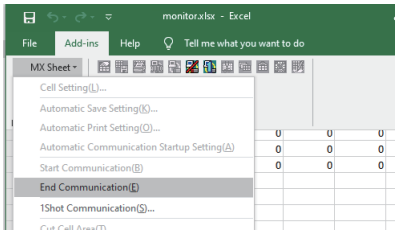
❷ Select the cell area name set in step 4 ("Monitor function" in this example) as the "Cell Area Name" in the "1 Shot Communication" screen.

❸ Click the [OK] button to start 1 shot communication.




**9.** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Start Communication] to start logging.

Click the [Yes] button in the dialog box shown on the left, and start monitoring.



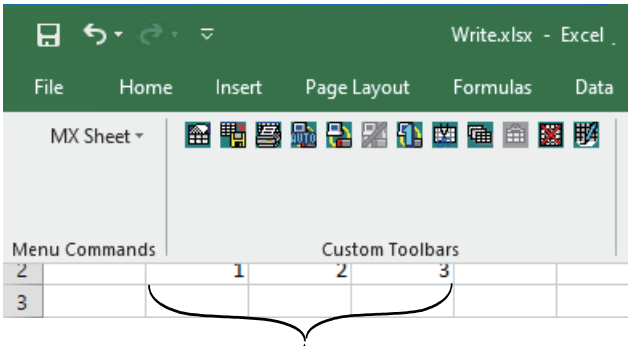

***10.*** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [End Communication] to exit monitor.

After ending the communication, delete the monitor data.

## Writing data

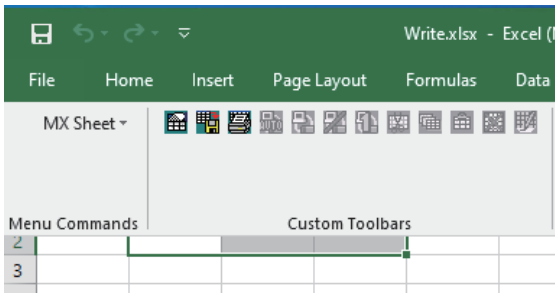
The following explains an example of creating an Excel spreadsheet using the write function.

### Window



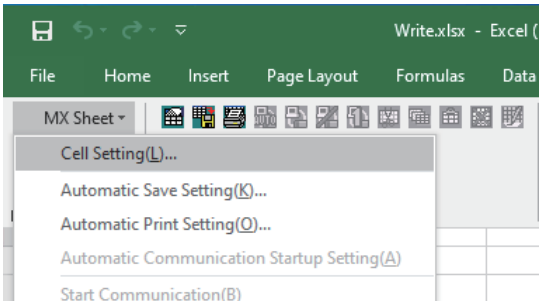

Enter values to be written to D0 - D2 in order from left to right.

### Operating procedure

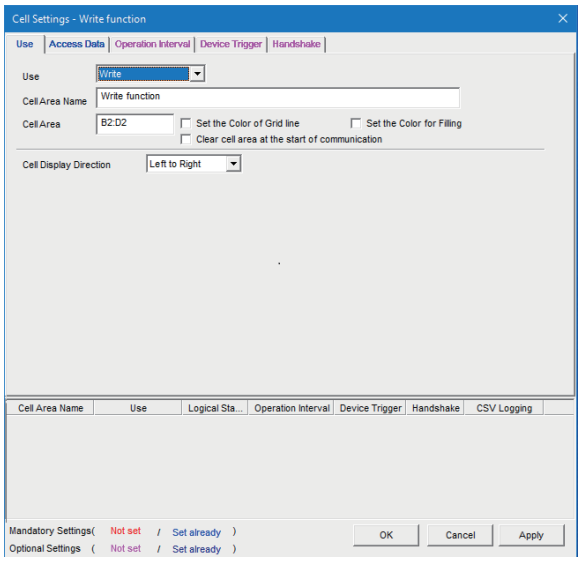



***1.*** Start Excel and select [File] ⇨ [Save As] to save an Excel book with a new name.

***2.*** Drag the cell (B2 to D2 in this example) on the left screen to specify the cell area in which monitor data is displayed.



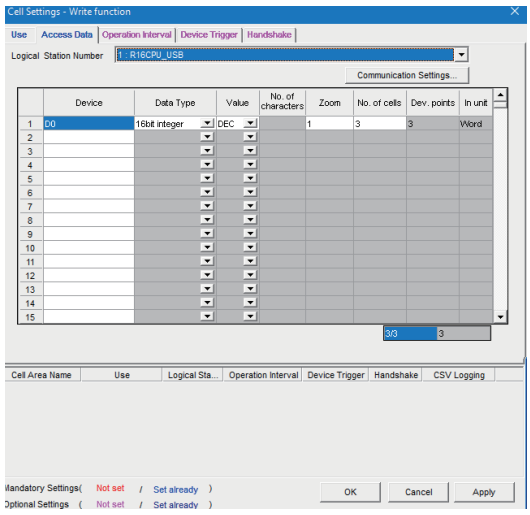

**3.** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Cell Setting] to display the "Cell Settings" screen.




**4.** Set the following items on the [Use] tab.

- Use: Write
- Cell Area Name: Write function
- Cell Area: B2:D2
- Cell Display Direction: Left to Right

After set the settings, select the [Access Data] tab.




**5.** Set the device to be written as follows.

- Logical Station Number: 1
- Device: D0
- Data Type: 16bit integer
- Value: DEC
- Zoom: 1
- No. of cells: 3

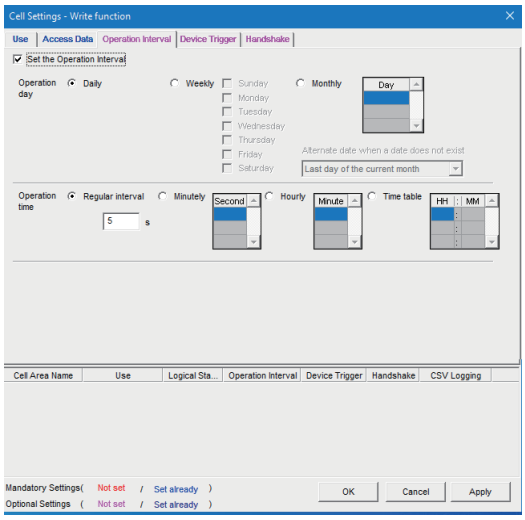
For the logical station number setting method, refer to the following:

☞ Page 43 Logical station number

The labels can be set to "Device."

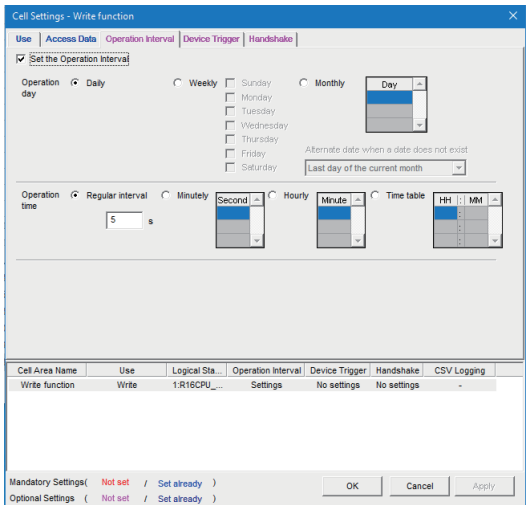
When the system label is set to "Device," "1" is displayed to "No. of cells" and cannot be changed.

After set the settings, select the [Operation Interval] tab.



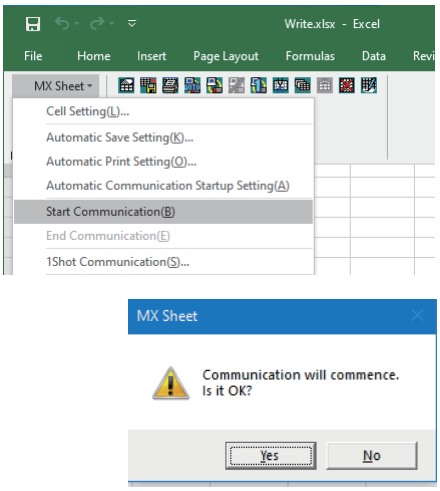

**6.** Set the writing operation interval as follows.

- Set the Operation Interval: Selected
- Operation day: Daily
- Operation time: Regular interval (5 seconds)




**7.** Click the [Apply] button to enable the settings of the "Cell Settings" screen.

Check that the cell area is registered in the screen shown on the left, and click the [OK] button.

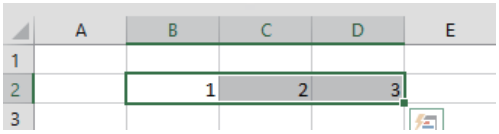


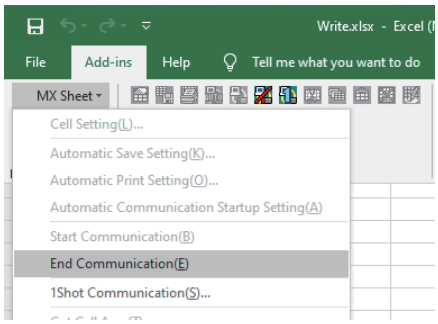




**8.** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Start Communication] to start logging.

Click the [Yes] button in the dialog box shown on the left, and start writing data.




***9.*** Enter the values to be written to devices into the cell area specified in step 2.

- Cell B2: 1 (value to be written to D0)
- Cell C2: 2 (value to be written to D1)
- Cell D2: 3 (value to be written to D2)

Check that the data on Excel are written to the programmable controller devices.

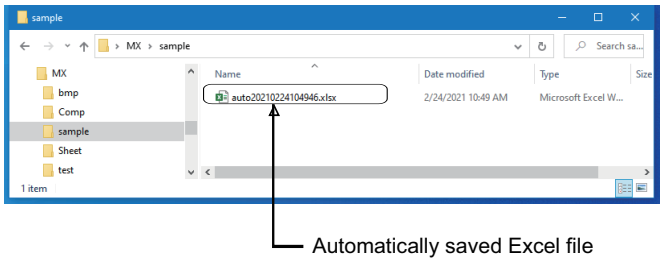
***10.*** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [End Communication] to end writing.

## Automatic saving

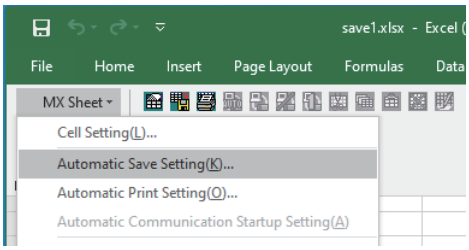
The following explains a procedure for saving an Excel book during MX Sheet operation automatically.

- Automatic save condition: Save when the device (Y0) turns on.
- Automatically saved file name: Add date and time to the file name of auto.xlsx.

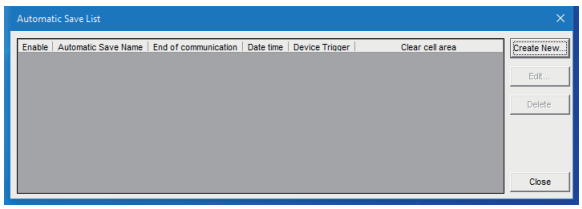
### Window



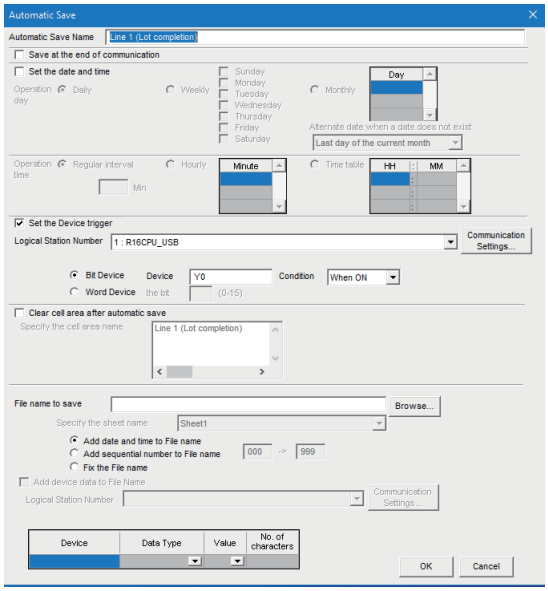

### Operating procedure

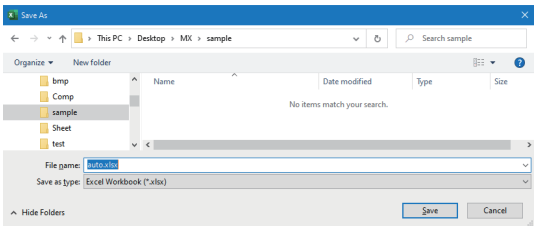



***1.*** Start Excel and select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Automatic Save Setting] to display the "Automatic Save List" screen.




***2.*** Click the [Create New] button to create new automatic save conditions.




**3.** Set the automatic save conditions as follows.

- Automatic Save Name: Line 1 (Lot completion)
- Set the Device trigger: Selected
- Logical Station Number: 1
- Bit device: Selected
- Device: Y0
- Condition: When ON
- Add date and time to File name: Selected

For the logical station number setting method, refer to the following:

☞ Page 43 Logical station number

The labels can be set to "Device."

Set the file name to be saved automatically.

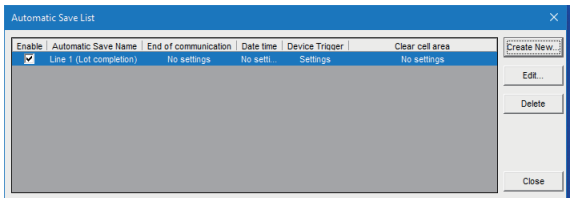
Clicking the [Browse] button displays the "Save As" screen.

Specify any save place and file name.

- File name: auto.xlsx
- Save as type: Excel Workbook (*.xlsx)

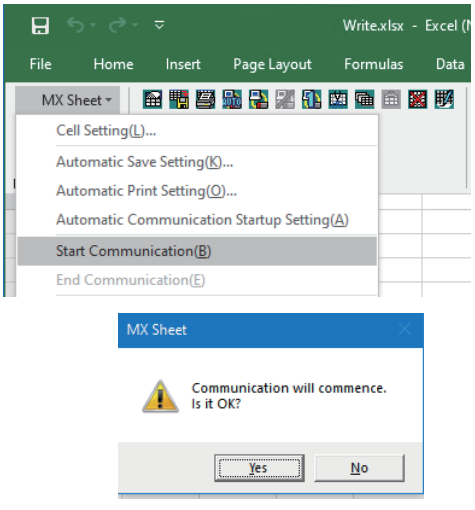
After specifying the file name, click the [Save] button.

After completing the above settings, click the [OK] button.



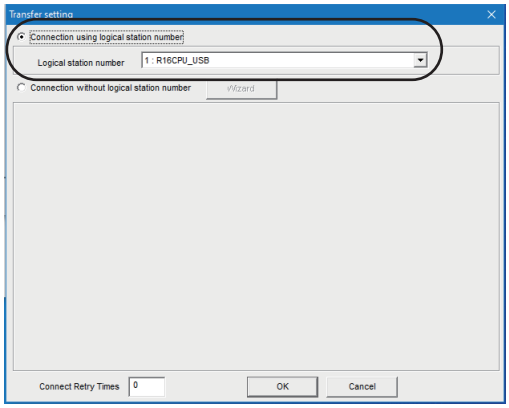

**4.** The automatic save name is added to the list.

Check that the check box of "Enable" is selected, click the [Close] button to close the "Automatic Save List" screen.




**5.** Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Start Communication] to start logging.

Click the [Yes] button in the dialog box shown on the left, and start the communication.

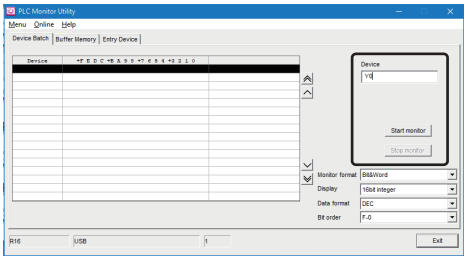



**6.** Start the PLC controller monitor utility.

As the "Transfer setting" screen is displayed, set the following items.

- Connection using logical station number: Selected
- Logical station number: 1

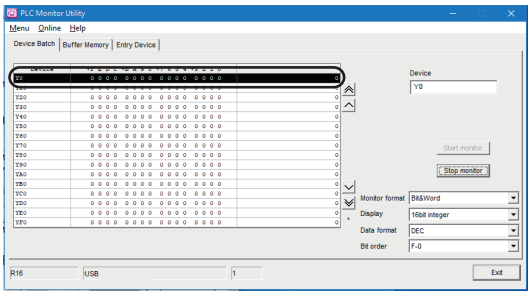
After completing the above settings, click the [OK] button.




**7.** Select the [Device Batch] tab of the "PLC Monitor Utility" screen and set the following items.

- Device: Y0

After completing the settings, click the [Start monitor] button.




**8.** Change the Y0 device status.

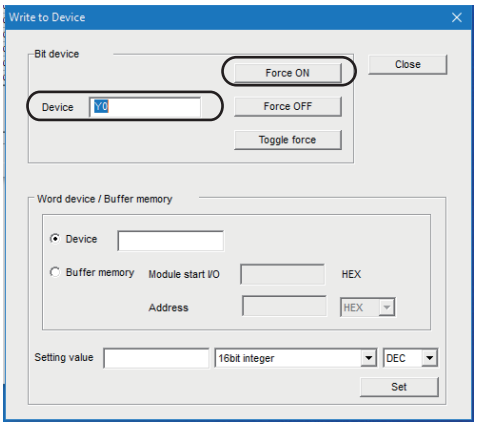
Double-click the monitor display area of the [Device Batch] tab to display the "Write to Device" screen.

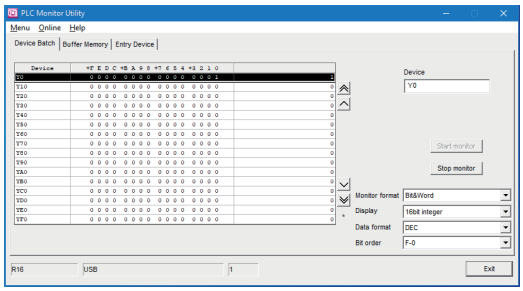
Forcibly turn ON Y0 in the following procedure.

❶ Enter "Y0" in "Device" in "Bit Device."

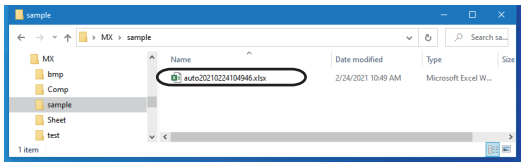
❷ Click the [Force ON] button.

After completing the above settings, click the [Close] button.





**9.** Check that Y0 is turned ON as set in step 8.
After checking, click the [Stop monitor] button and then the [Exit] button.



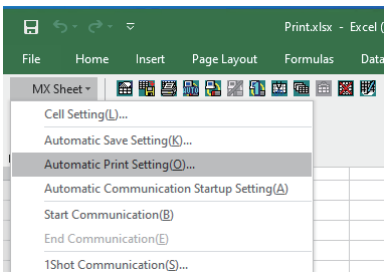
**10.** The operation in step 8 activates the automatic save setting function, and saves the Excel book automatically.
Start Explorer and check if the file specified in step 3 is saved correctly.
After checking the file, select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [End Communication] to end communication.

## Automatic printing

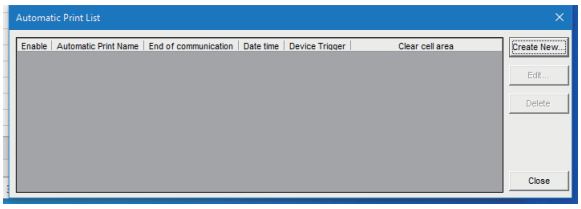
The following explains a setting procedure for automatically printing the whole Excel book or specified Excel spreadsheets during the MX Sheet operation.

- Automatic print condition: Printed at 17:00 every day.
- Print area: Sheet 1 and Sheet 3 are printed.

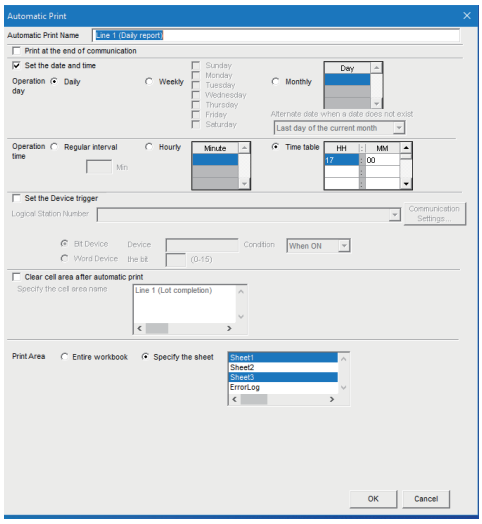
### Operating procedure




**1.** Start Excel and select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Automatic Print Setting] to display the "Automatic Print List" screen.




**2.** Click the [Create New] button to create new automatic print conditions.

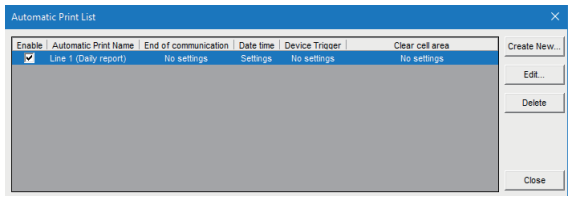



**3.** Set the automatic print conditions as follows.

- Automatic Print Name: Line 1 (Daily report)
- Set the date and time: Selected
- Operation day: Daily
- Operation time: Time table (17:00)
- Print Area: Specify the sheet (Sheet 1 and Sheet 3)

Multiple spreadsheets can be selected.

After the settings, click the [OK] button.




**4.** The automatic print name is added to the list.

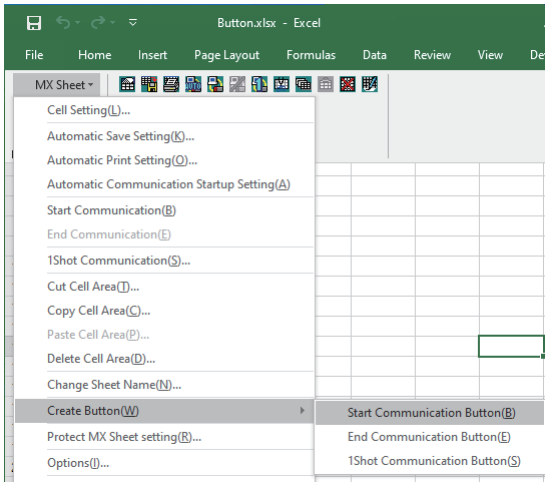
Check that the check box of "Enable" is selected, click the [Close] button to close the "Automatic Print List" screen.

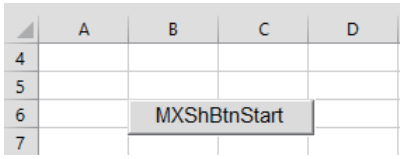
## Creating/Using button

The following explains a convenient communication starting method by Create Button.

- Button type: Start Communication button
- MX Sheet setting condition: Logging setting (☞ Page 25 Logging)

### Operating procedure



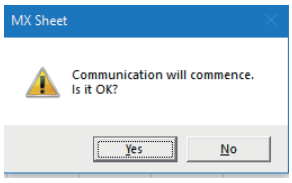




**1.** Start Excel and specify the cell where the button is placed.

Select the [Add-ins] tab ⇨ [MX Sheet] ⇨ [Create Button] ⇨ [Start Communication Button].

The start communication button is placed in the specified cell position.

The display characters and character font of the created button can be changed. (☞ Page 147 Property setting)




**2.** Click the start communication button created in step 1.

Click the [Yes] button in the dialog box shown on the left.

## Displaying the manual

Help is used for checking the operation method.

### Window

[MX Sheet] ⇨ [Help]

e-Manual Viewer starts and the manual appears.

## 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.

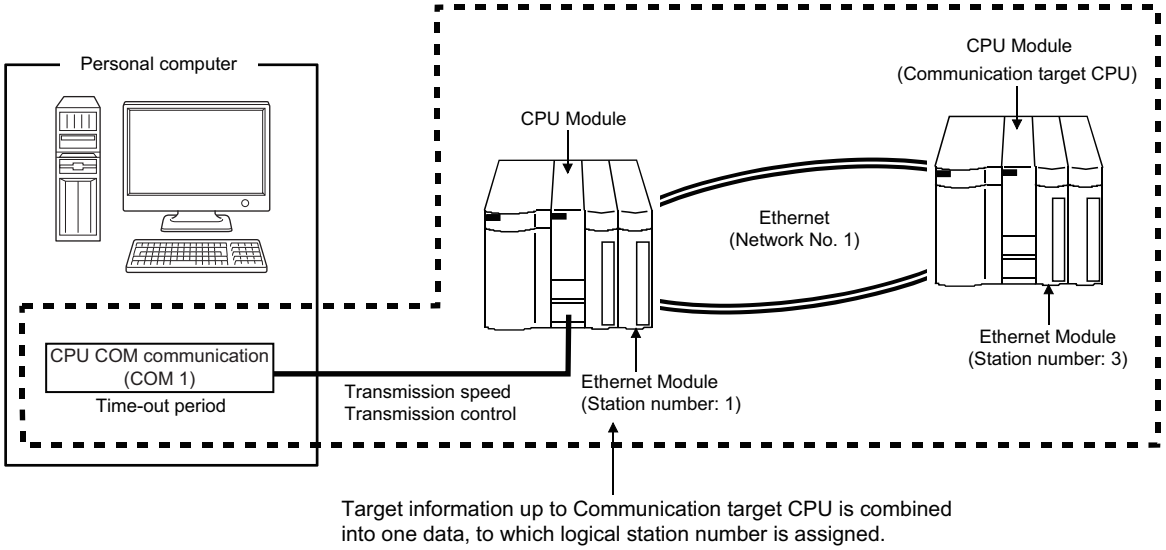
### Window

[MX Sheet] ⇨ [Version Info.]

# Logical station number



The logical station number is the logical number assigned to the data that is the compilation of the connection-destination information necessary to open a communication line into a single data by the communication setting utility.
In MX Sheet, communication is performed by using the logical station number set by the communication setup utility of MX Component.



# 2 FUNCTION LIST OF MX Sheet

| Function Name | Description | Available device points | Available cells | Reference |
|---|---|---|---|---|
| Logging | Displays device data collected from a CPU module in cell range selected on Excel. | 256 points *1*2 | 256 columns × 65536 rows | Page 47 When "Logging" is Selected |
| Monitor | Displays device data collected from a CPU module in cell range selected on Excel. | 2000 points *1*3 | 2000 | Page 83 When "Monitor" is Selected |
| Write | Writes values entered on Excel to a CPU module. | 2000 points *1*3 | 2000 | Page 92 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 *2*4 | 6 columns × 65536 rows | Page 100 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 *5 | 1 | Page 110 When "Comment" is Selected |
| Device trigger | Collects/Writes device data when set device conditions set for collection/write are met. | — | | Page 67 Setting of the [Device Trigger] tab |
| Handshake | Sets handshake with a CPU module for secure device data collection/write. | — | | Page 69 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 91 Setting of the [CSV Logging] tab |
| Automatic save | Automatically saves Excel book. | — | | Page 119 AUTOMATIC SAVE SETTING |
| Automatic print | Automatically prints Excel book. | — | | Page 126 AUTOMATIC PRINT SETTING |
| Automatic communication startup | Automatically starts communication with a CPU module when Excel book is started. | — | | Page 129 AUTOMATIC COMMUNICATION STARTUP/CANCEL SETTING |
| Start communication | Starts communication with a CPU module. | — | | Page 131 Start Communication |
| End communication | Ends communication with a CPU module. | — | | Page 133 End Communication |
| 1 shot communication | Executes functions set in the selected cell range at any desired timing. | — | | Page 134 1 SHOT COMMUNICATION |
| Create button | Creates buttons to facilitate Start Communication, End Communication, and 1 Shot Communication operations. | — | | Page 143 CREATING BUTTONS |
| Protect/Unprotect MX Sheet setting | Sets/Cancels the password for protecting the MX Sheet setting. | — | | Page 149 PROTECTING/ UNPROTECTING MX Sheet SETTING |
| Options | Sets the output format of the "ErrorLog" sheet. | — | | Page 152 OPTIONS |
| Setting data export | Outputs MX Sheet settings in CSV file format. | — | | Page 155 SETTING DATA EXPORT |

*1 This number of device points refers to the case where word device data is 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).

# MEMO

# 3 CELL SETTING

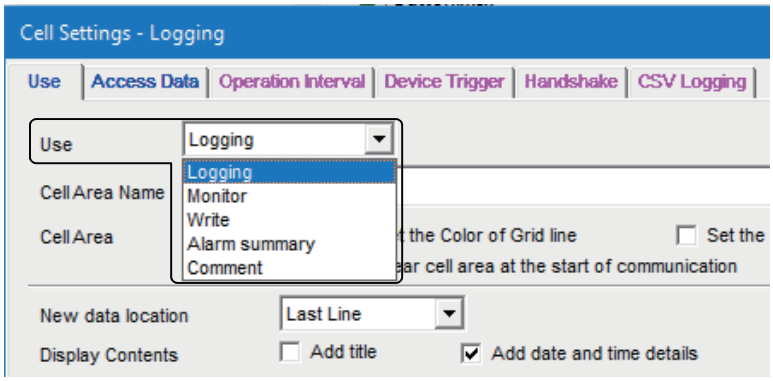
This chapter explains cell setting required to operate MX Sheet.

## 3.1 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 47 When "Logging" is Selected |
| Monitor | Set when using the monitor function. | Page 83 When "Monitor" is Selected |
| Write | Set when using the write function. | Page 92 When "Write" is Selected |
| Alarm summary | Set when using the alarm summary function. | Page 100 When "Alarm Summary" is Selected |
| Comment | Set when using the comment display function. | Page 110 When "Comment" is Selected |

**Point**

- Inverter communication/Robot controller communication is not supported other than "Logging".
- A system label*1 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 5 Reference 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 5 Reference Manual

# 3.2 When "Logging" is Selected

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

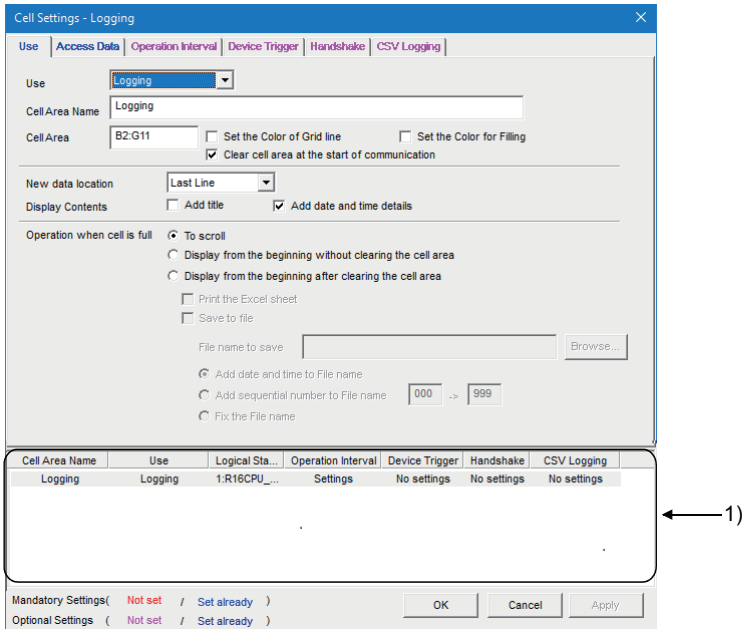
| | |
|---|---|
| [Use] tab | Required setting☞ Page 48 Setting of the [Use] tab |
| [Access Data] tab | Required setting☞ Page 55 Setting of the [Access Data] tab |
| [Operation Interval] tab | Required setting☞ Page 61 Setting of the [Operation Interval] tab |
| [Device Trigger] tab | Set as necessary ☞ Page 67 Setting of the [Device Trigger] tab |
| [Handshake] tab | Set as necessary ☞ Page 69 Setting of the [Handshake] tab |
| [CSV Logging] tab | Set as necessary ☞ Page 80 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

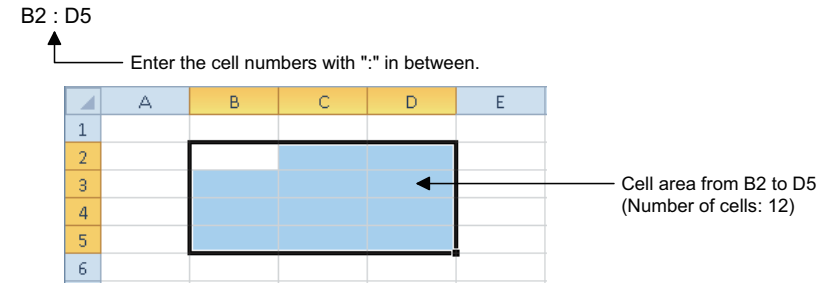
| Item | Description | Reference |
|---|---|---|
| Use | Set the function to be used for the specified cell area.<br>Select "Logging" when using the logging function. | — |
| Cell Area Name | Set the name of the specified cell area.<br>(Maximum number of cell area names: 100) | |
| Cell Area | Enter the value to specify the cell area. | Page 49 "Cell Area" |
| Set the Color of Grid line | Select this checkbox to add grid lines (including color designation) to the specified cell area. | Page 49 "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.<br>(Default: selected) | Page 50 "Clear cell area at the start of communication" |
| New data location | Set the latest data display position of the logging data.<br>• Last Line<br>The latest data is displayed at the last of the specified cell area.<br>• First Line<br>The latest data is displayed at the first of the specified cell area. | Page 51 "New data location" |
| Display Contents | Select a checkbox to add a title or date and time to the displayed logging data. | Page 52 "Display Contents" |
| Operation when cell is full | Set the operation to be performed when the specified cell area is full.<br>• To scroll<br>The displayed contents are scrolled and displayed.<br>• Display from the beginning without clearing the cell area<br>The data currently displayed in the cell area are overwritten and logging is resumed.<br>Before logging is resumed, the Excel spreadsheet can be printed and saved.<br>• Display from the beginning after clearing the cell area<br>The data displayed in the cell area are erased and logging is resumed.<br>Before logging is resumed, the Excel spreadsheet can be printed and saved. | Page 53 "Operation when cell is full" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "Cell Area"

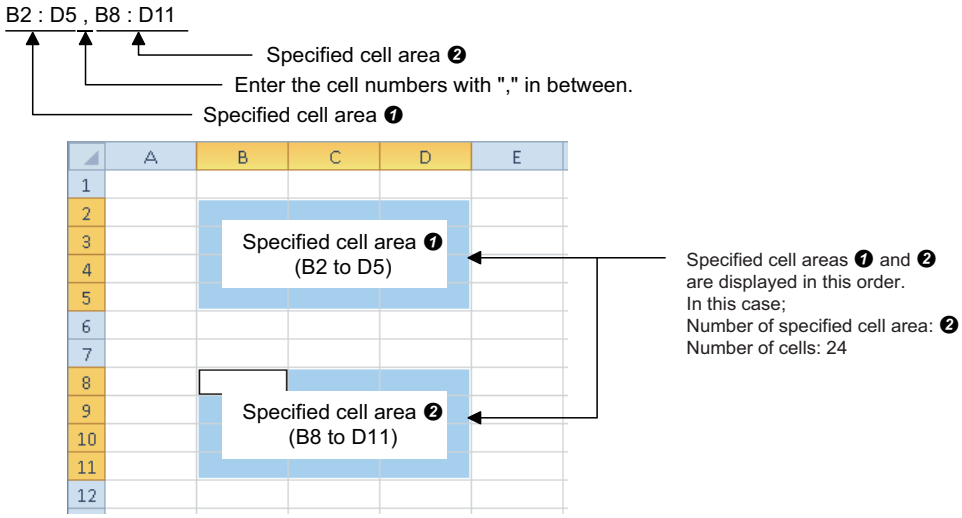
Set the cell area to be used by the logging function.

### ■Setting examples

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




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




### ■Setting ranges

The following shows the available number of cells and the number of specified cell areas.

| Item | Setting range |
|---|---|
| Cell | When date and time are added: 255 columns × 65536 rows<br>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 12 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>

| | | |
|---|---|---|
| 2021/03/25 Thu 13:00:00 | 15 | 37 |
| 2021/03/25 Thu 13:00:05 | 16 | 39 |
| 2021/03/25 Thu 13:00:10 | 17 | 42 |
| | | |

↓

<At the start of communication>

| | | |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

↓

<At the completion of the first collection>

| | | |
|---|---|---|
| 2021/03/25 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>

| | | |
|---|---|---|
| 2021/03/25 Thu 13:00:00 | 15 | 37 |
| 2021/03/25 Thu 13:00:05 | 16 | 39 |
| 2021/03/25 Thu 13:00:10 | 17 | 42 |
| | | |

↓

<At the start of communication>

| | | |
|---|---|---|
| 2021/03/25 Thu 13:00:00 | 15 | 37 |
| 2021/03/25 Thu 13:00:05 | 16 | 39 |
| 2021/03/25 Thu 13:00:10 | 17 | 42 |
| | | |

↓

<At the completion of the first collection>

| | | |
|---|---|---|
| 2021/03/25 Thu 13:00:00 | 15 | 37 |
| 2021/03/25 Thu 13:00:05 | 16 | 39 |
| 2021/03/25 Thu 13:00:10 | 17 | 42 |
| 2021/03/25 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

| | | |
|---|---|---|
| 2021/03/25 Thu 18:28:17 | 21 | 37 |
| 2021/03/25 Thu 18:28:22 | 26 | 39 |
| 2021/03/25 Thu 18:28:27 | 30 | 42 |
| 2021/03/25 Thu 18:28:32 | 35 | 44 |
| 2021/03/25 Thu 18:28:37 | 39 | 46 |

Old data

New data

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

| | | |
|---|---|---|
| 2021/03/25 Thu 18:31:06 | 21 | 16 |
| 2021/03/25 Thu 18:31:01 | 17 | 13 |
| 2021/03/25 Thu 18:30:56 | 12 | 11 |
| 2021/03/25 Thu 18:30:51 | 8 | 9 |
| 2021/03/25 Thu 18:30:46 | 3 | 6 |

New data

Old data

## "Display Contents"

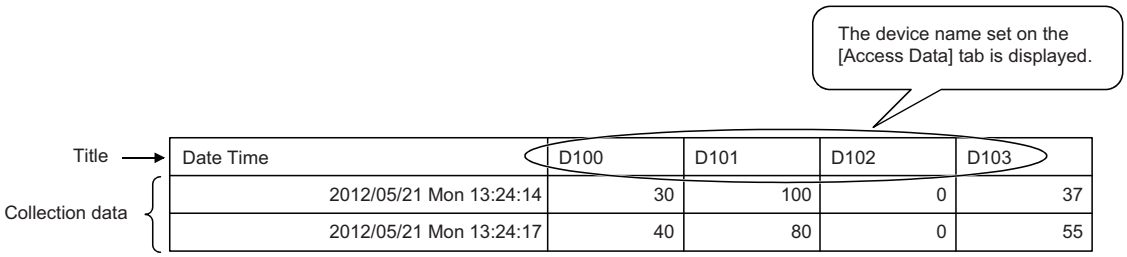
### ■"Add title" checkbox

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




| Date Time | D100 | D101 | D102 | D103 |
|---|---|---|---|---|
| 2012/05/21 Mon 13:24:14 | 30 | 100 | 0 | 37 |
| 2012/05/21 Mon 13:24:17 | 40 | 80 | 0 | 55 |

**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 |

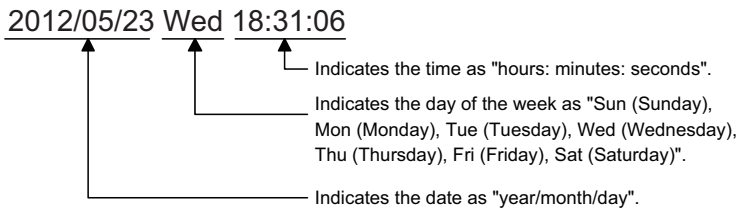
### ■"Add date and time details" checkbox

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.




**Point**

The above date and time can be edited on Excel.

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

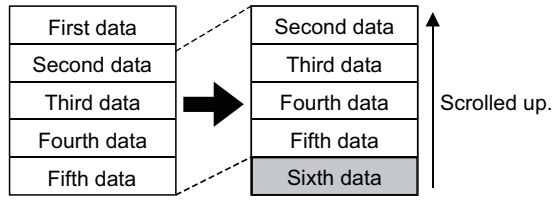
## "Operation when cell is full"

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

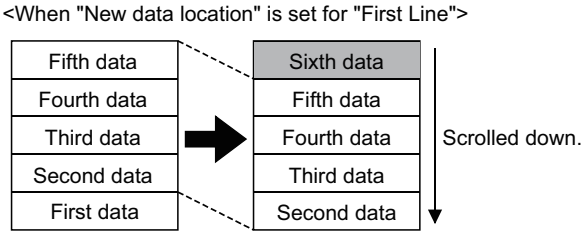
When "New data location" is set to "First Line", "Display from the beginning without clearing the cell area" cannot be selected.

### ■When "To scroll" is selected

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

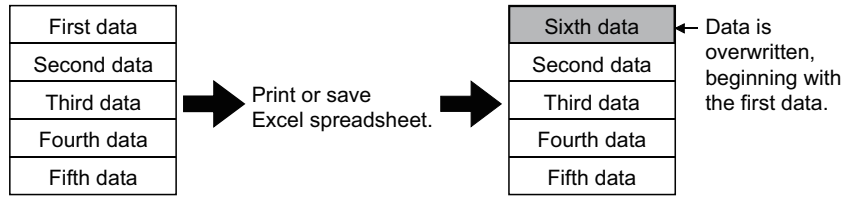



<When "New data location" is set for "First Line">



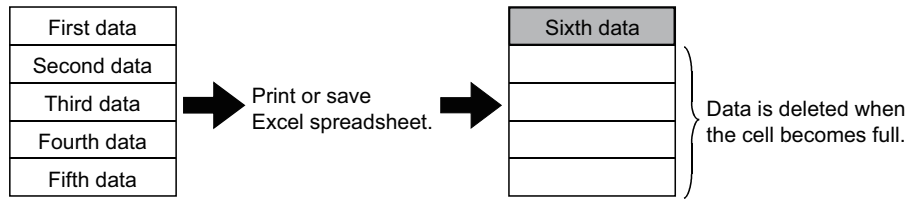

### ■When "Display from the beginning without clearing the cell area" is selected

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 is 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".

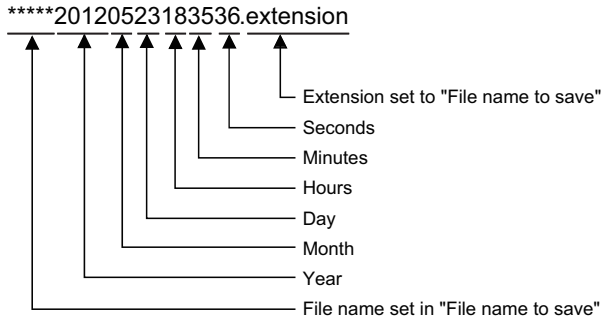
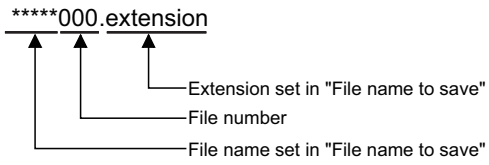
### ■When "Save to file" is selected

The Excel book is saved when the cell is full.

After completion of save, all data is 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*2<br>The Excel file (.xls, .xlsx, .xlsm, .xlsb), HTML file (.htm), or CSV file (.csv) can be set as the file type. *3 |
| 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.<br>The following shows a file name format when data is saved.<br>  |
| Add sequential number to File name | The file set in "File name to save" saves data with a number added to its file name.<br>A serial number can be set within the range from 000 to 999.<br>When the number reaches to the last, the file of the first number is overwritten by the newly saving file.<br>The following shows a file name format when data is saved.<br>  |
| Fix the File name | Data is overwritten to the file set in "File name to save." |

*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 For the continuous operation when saving data automatically in a file, refer to the following:
☞ Page 14 Continuous operation of Excel

*3 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.

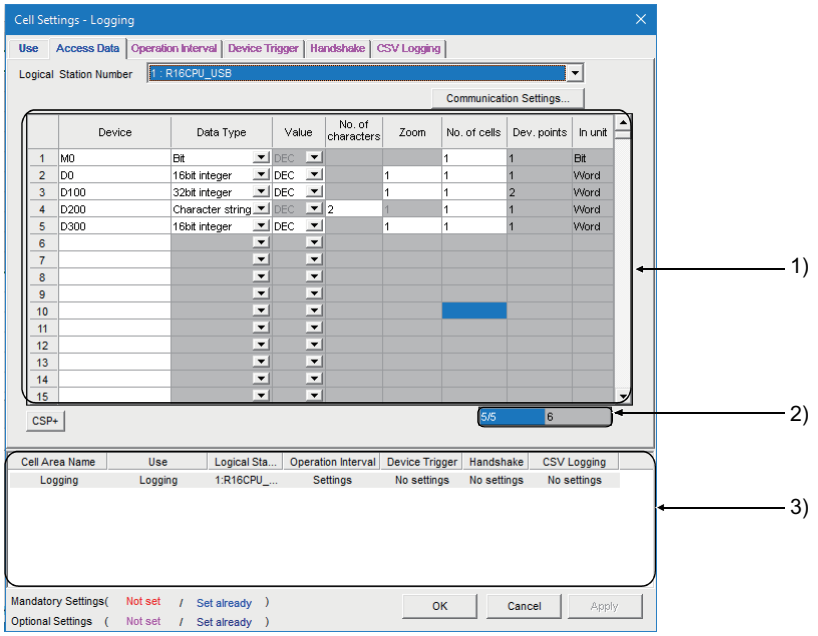
### ■Deleting the settings

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 a CPU module 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 55 "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 56 [Communication Settings] button |
| Remote password*1 | Enter the password when the password is set to the connection target CPU module. | Page 56 "Remote password" |
| [CSP+] button | Click this to display the "Getting CSP+ for machine" screen. | Page 60 Importing CSP+ for machine |
| 1) (Access data) | Set the devices or labels to be logged. | Page 56 Access data |
| 2) (Number of set devices) | The number of devices currently set is displayed. | Page 60 The number of set devices |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

*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

Click this to start the communication setup utility for setting a new logical station number and changing settings.
Select "Run as administrator" when the "User Account Control" (☞ Page 173 Overview of warning messages) screen asking if execute programs with administrator authority or not appears.
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 5 Reference 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.
Enter the password when the password is set to the connection target CPU module.
It need not be entered when the password is not set.

## Access data

### ■Order of display

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

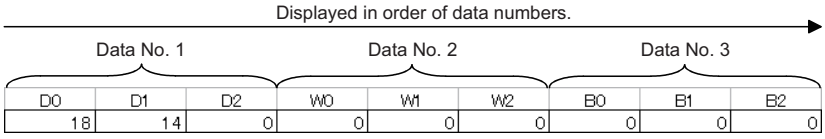
<Device data display example>

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 | Word |
| 2 | W0 | 16bit integer | DEC | | 1 | 3 | 3 | Word |
| 3 | B0 | Bit | DEC | | | 3 | 3 | Bit |

Data numbers

The device data is displayed on Excel as shown below.




### ■"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 18 Accessible range

## ■"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*1 | Displayed in a single cell in units of 1 word (16 bits), starting with the 16 bit integer device number set in "Device".*2 |
| | Word device | Displayed in a single cell in units of 1 word, starting with the device number set in "Device".*2 |
| 32 bit integer (-2147483648 to 2147483647) | Bit device*1 | Displayed in a single cell in units of 2 words (32 bits), starting with the device number set in "Device".*2 |
| | Word device | Displayed in a single cell in units of 2 words, starting with the device number set in "Device".*2 |
| | Double word device | Data of device number set to "Device" are displayed in a single cell in units of 1 device (32-bit).*2 |
| | Monitor type | Monitor types set in "Device" are displayed in a single cell in units of 2 words.*2 |
| Character string | Bit device*1 | Data of the device number set in "Device" are displayed in the cell as character strings.*3 |
| | Word device | Data of the device number set in "Device" are displayed in the cell as character strings.*3 |
| Real number ($\pm2^{-126} \leq$ value $< \pm2^{128}$, 0) | Bit device*1 | Displayed in a single cell in units of 2 words (32 bits), starting with the device number set in "Device".*2 |
| | Word device | Displayed in a single cell in units of 2 words, starting with the device number set in "Device".*2 |

*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 59 "Zoom")

*3 The unit and the number of displayed characters of the read data change depending on the "No. of characters" setting. (☞ Page 58 "No. of characters")

## ■"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

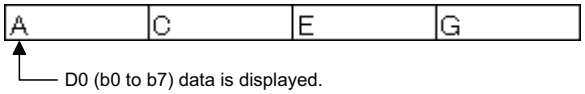
| | b15 to b8 | b7 to b0 |
|---|---|---|
| D0 | B | A |
| D1 | D | C |
| D2 | F | E |
| D3 | H | G |

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.

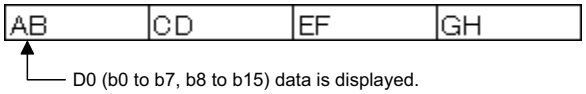
The character stored in b8 to b15 of D0 is not displayed.




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.

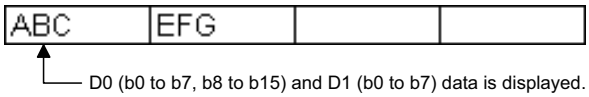



When "No. of characters" is set to "3"

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.

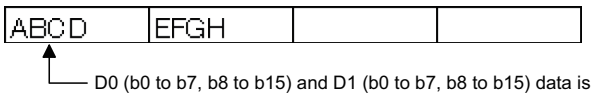
The character string stored in b8 to b15 of D1 is not displayed.




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

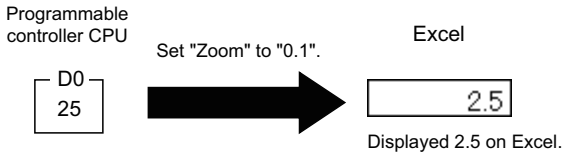
The data is displayed in a single cell in units of 2 words (32 bits).

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 a CPU module 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 and 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 | | | | | | | | |
| 4 | | | | | | | | |

Device: D0
Data type: 16 bit integer
Number of cells: 3

The device data is 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"

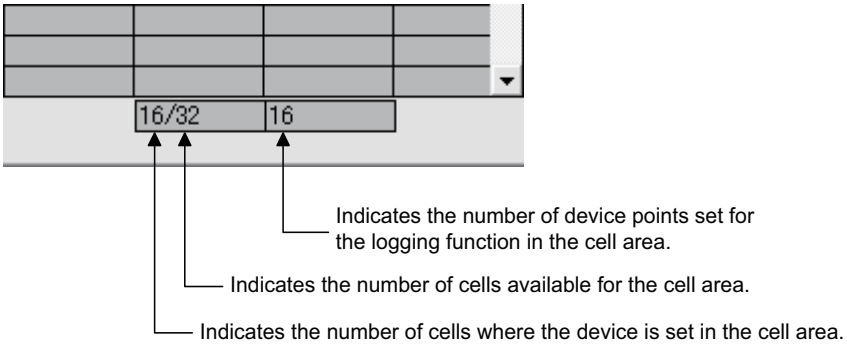
The points of the devices to be consecutively read starting with the device number set in "Device" are displayed.
When inverter communication setting/robot controller communication setting is set to the logical station number, '2' is displayed.

## ■"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

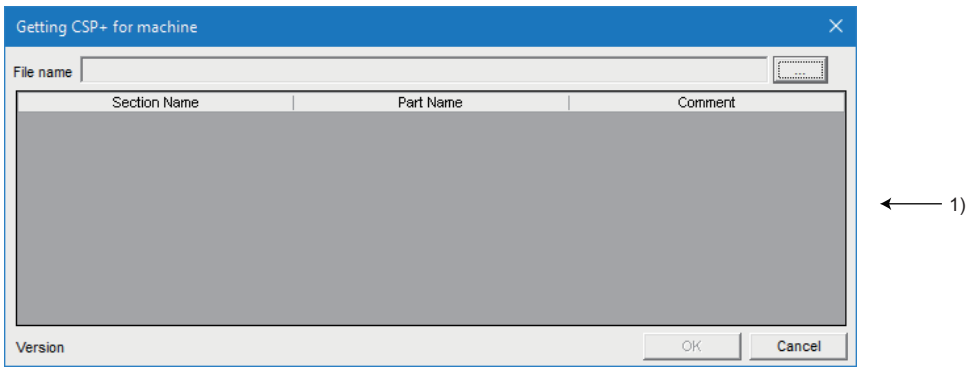
The number of device points and others set to the cell area are displayed.




## 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.<br>Select CSP+ for machine to import, and click the [OK] button. |
| 1) (Section part list) | SectionName | The LABEL of COMM_IF*1 of CSP+ for machine is displayed. |
| | Part Name | The LABEL of COMM_IF_VARIABLE *1 of CSP+ for machine is displayed.<br>For devices without this item are not displayed in this list. |
| | Comment | The COMMENTof COMM_IF_VARIABLE *1 of CSP+ for machine is displayed. |
| Version | | The file version of CSP+ for machine is displayed. |

*1 Check the setting value of COMM_IF and COMM_IF_VARIABLE with CSP+ for machine creation support tool. CSP+ for machine creation support tool can be downloaded from the CC-Link Partner Association website (www.cc-link.org/en/index.html).

### Operating procedure

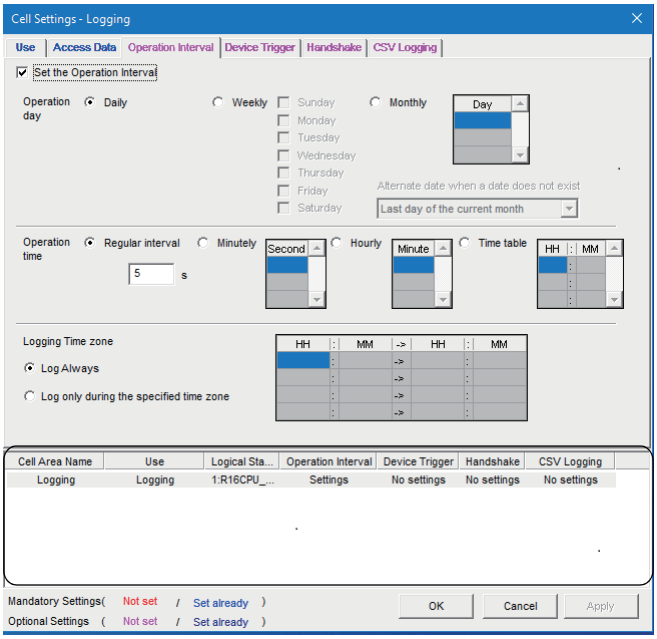
1. Click the [...] button, and select target CSP+ for machine.
2. Select a combination of a section and a part to set device data in Section part list, and click the [OK] button.

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




1)

## Displayed items

| Item | Description | Reference |
|---|---|---|
| Set the Operation Interval | Set the operation of the cell area valid or invalid. | Page 62 "Set the Operation Interval" |
| Operation day | Set the operation day of the logging activation. | Page 62 "Operation day" |
| Operation time | Set the operation time of the logging activation. | Page 63 "Operation time" |
| Logging Time zone | Set the time zone of the logging activation. | Page 64 "Logging Time zone" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "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

- 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 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 device data collection.

### ■When "Regular interval" is selected

Device data is collected at the set second intervals.

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 160 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:

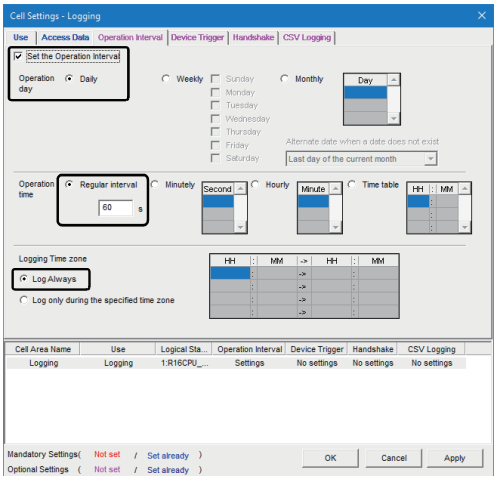
| HH | | MM | -> | HH | | MM |
|---|---|---|---|---|---|---|
| 22 | : | 0 | -> | 8 | : | 0 |
| | : | | -> | | : | |
| | : | | -> | | : | |
| | : | | -> | | : | |

## Setting examples

### ■When performing data logging always

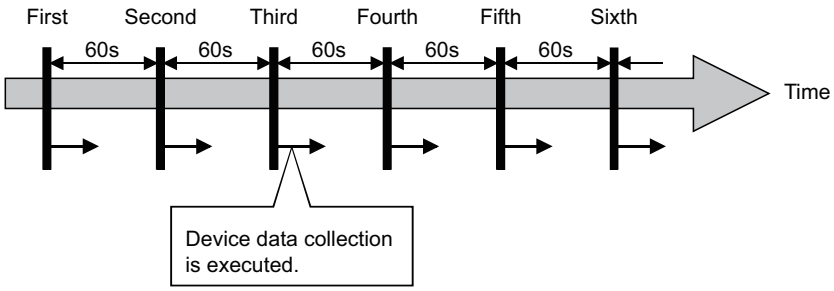
Ex.

Settings




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

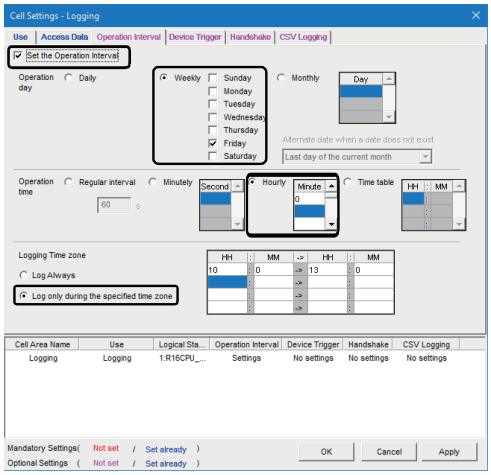
Operation timing



## ■When performing data logging only during the specified time zone

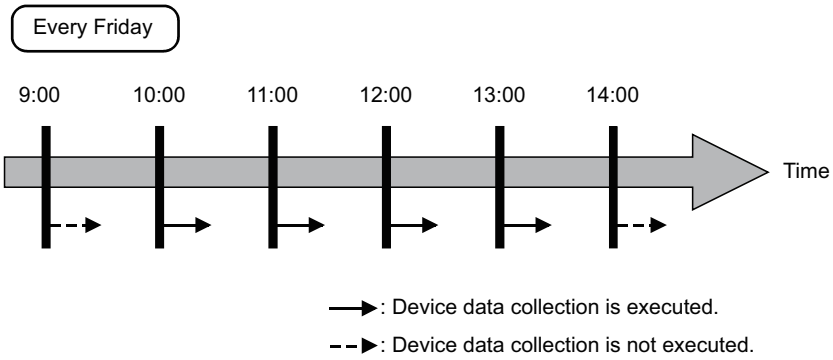
**Ex.**

Settings




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

Operation timing



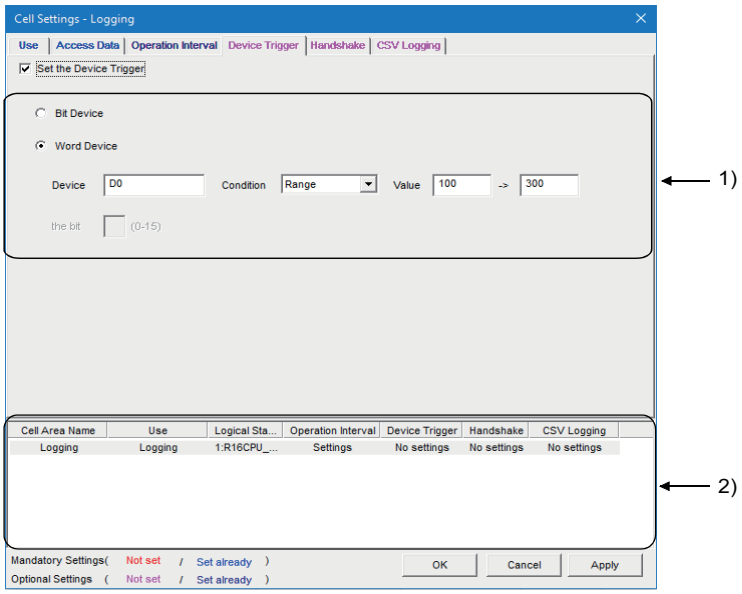

: Device data collection is executed.

: Device data collection is not executed.

# 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 67 "Set the Device Trigger" |
| 1) (Device conditions) | Set the device or label conditions. | Page 67 Device conditions |
| 2) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "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 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.

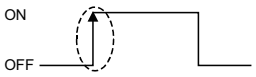
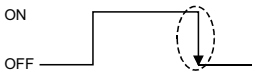
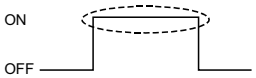
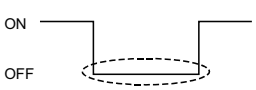
## ■"the bit"

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".

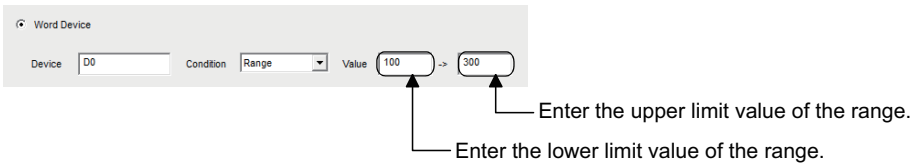
Setting range:

- 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"

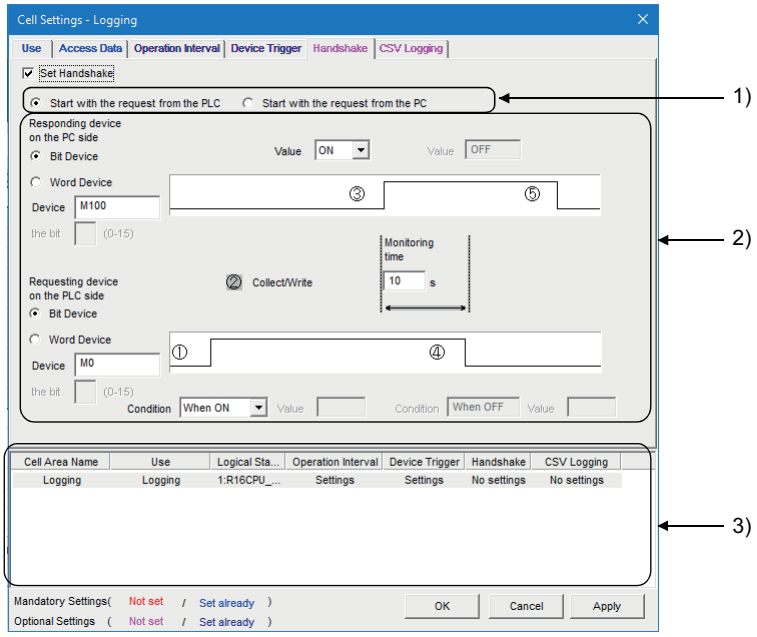
Enter the values in "Value" as shown below.



# 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 74 "Set Handshake" |
| 1) (Requesting source setting) | Set the requesting source of the handshake. | Page 74 Requesting source setting |
| 2) (Handshake processing) | Set the handshake processing. | Page 74 Handshake processing |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

**Point**

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

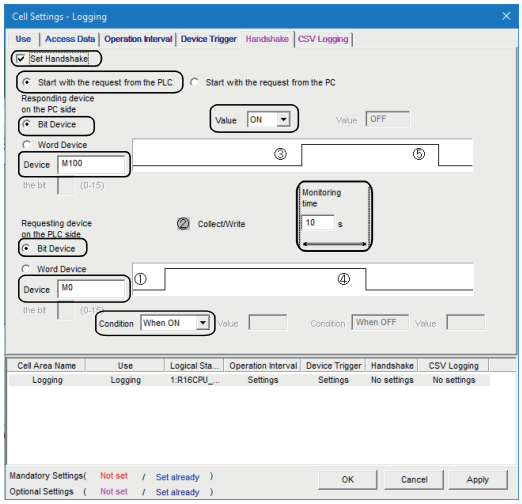
## Setting examples and operation timing

The following shows the handshake settings and operation timing.

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

**Ex.**

Settings

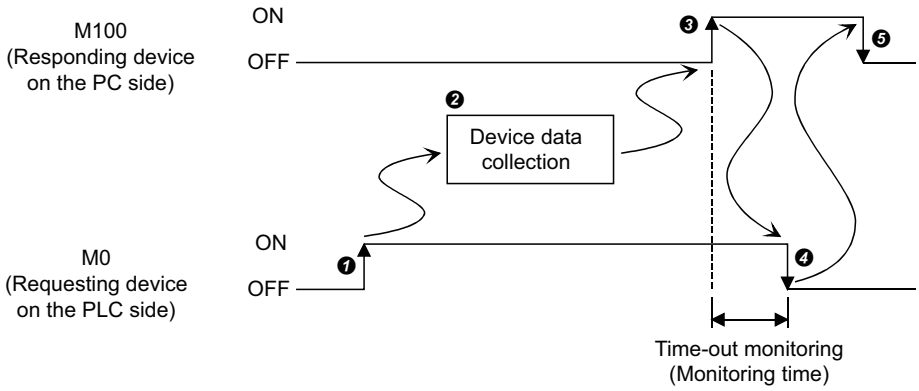



Set Handshake : Selected
Start with the request from the PLC : Selected
Responding device on the PC side
- Bit device : Selected
- Device : M100
- Value : ON

Requesting device on the PLC side
- Bit device : Selected
- Device : M0
- Condition : When ON

Monitoring time : 10 seconds

Operation timing

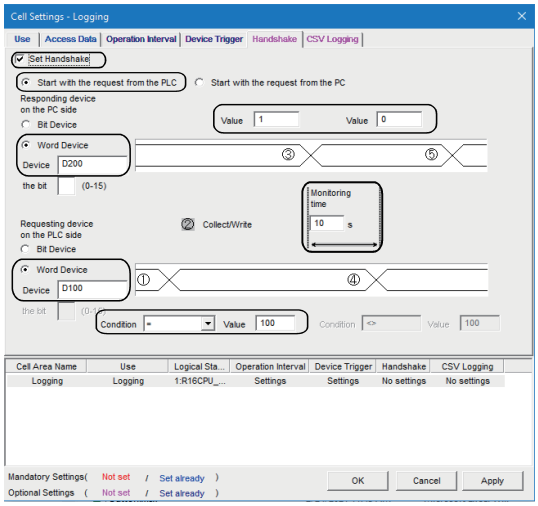



❶ When M0 turns on, processing in ❷ is started.
❷ Device data is collected.
❸ After device data is collected, M100 is turned on.
❹ M0 is turned off.
❺ M100 is turned off.

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

Ex.

Settings

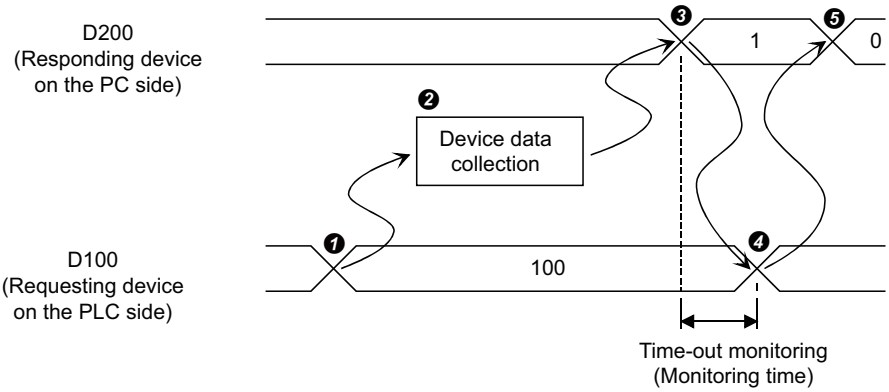



Set Handshake : Selected
Start with the request from the PLC : Selected
Responding device on the PC side
- Word device : Selected
- Device : D200
- Value : 1 (left), 0 (right)

Requesting device on the PLC side
- Word device : Selected
- Device : D100
- Condition : =
- Value : 100

Monitoring time : 10 seconds

Operation timing

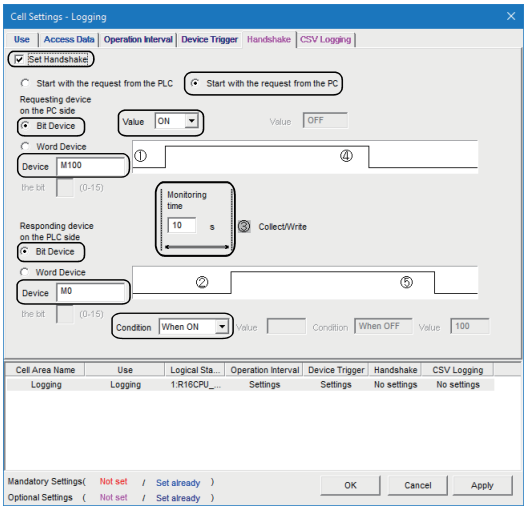



❶ When the D100 value reaches 100, processing in ❷ is started.
❷ Device data is collected.
❸ After device data is collected, the D200 value is changed to 1.
❹ The D100 value is changed to other than 100.
❺ The D200 value is changed to 0.

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

Ex.

Settings

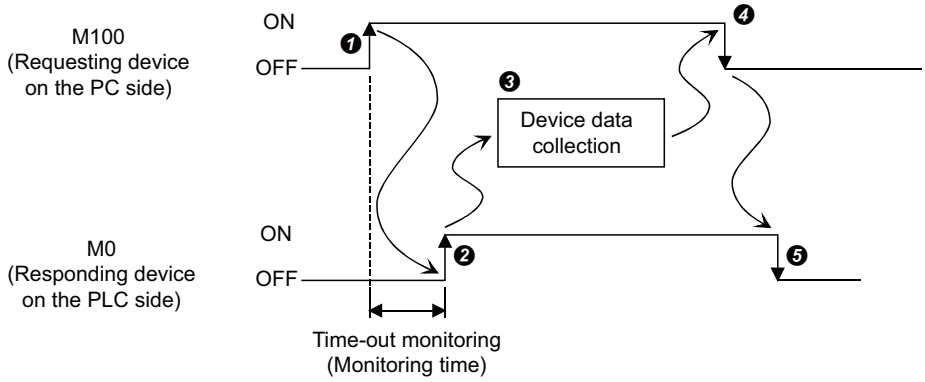



Set Handshake : Selected
Start with the request from the PC : Selected
Requesting device on the PC side
- Bit device : Selected
- Device : M100
- Value : ON

Responding device on the PLC side
- Bit device : Selected
- Device : M0
- Condition : When ON

Monitoring time : 10 seconds

Operation timing




❶ M100 is turned on.
❷ When M0 turns on, processing in ❸ is started.
❸ Device data is collected.
❹ After device data is collected, M100 is turned off.
❺ M0 is turned off.

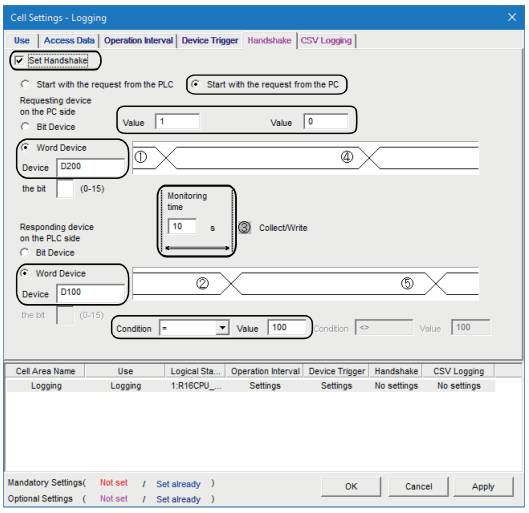
**Point**

Time-out monitoring is not executed between ❹ and ❺ above.
If the operation in ❺ is not performed in a CPU module, 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)

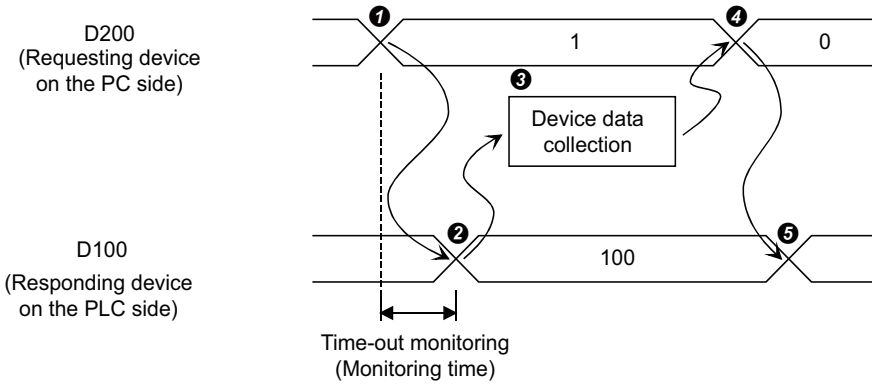
Ex.

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) |
| Responding device on the PLC side | |
| Word device | : Selected |
| Device | : D100 |
| Condition | : = |
| Value | : 100 |
| Monitoring time | : 10 seconds |

Operation timing




❶ The D200 value is changed to 1.
❷ When the D100 value reaches 100, processing in ❸ is started.
❸ Device data is collected.
❹ After device data is collected, the D200 value is changed to 0.
❺ The D100 value is changed to other than 100.

**Point**

Time-out monitoring is not executed between ❹ and ❺ above.
If the operation in ❺ is not performed in a CPU module, 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 a CPU module. |
| 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 a personal computer side and CPU module 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<br>(Bit specification) | |
| OFF | Bit device | Set when the value of the device used for PC side processing is set for OFF. |
| | Word device<br>(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)

## ■CPU module side processing

• Device type

Set the device type used for CPU module side processing.

| Item | Description |
|---|---|
| Bit device | Set when a bit device is used for CPU module side processing. |
| Word device | Set when a word device or double word device is used for CPU module side processing. |

• "Device"

Enter the device or label used for CPU module 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 CPU module side processing.

| Item | Available Device | Description |
|---|---|---|
| ON | Bit device | Set when the value of the device used for CPU module side processing is set for ON. |
| | Word device<br>(Bit specification) | |
| OFF | Bit device | Set when the value of the device used for CPU module side processing is set for OFF. |
| | Word device<br>(Bit specification) | |
| = | Word device, Double word device | Set when a CPU module side device value is equal to the "Value" setting. |

• "Value"

Set the value of the device used for a CPU module 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 a CPU module side device.

Setting range: 1 to 3600

The monitoring time changes depending on the requesting source setting.

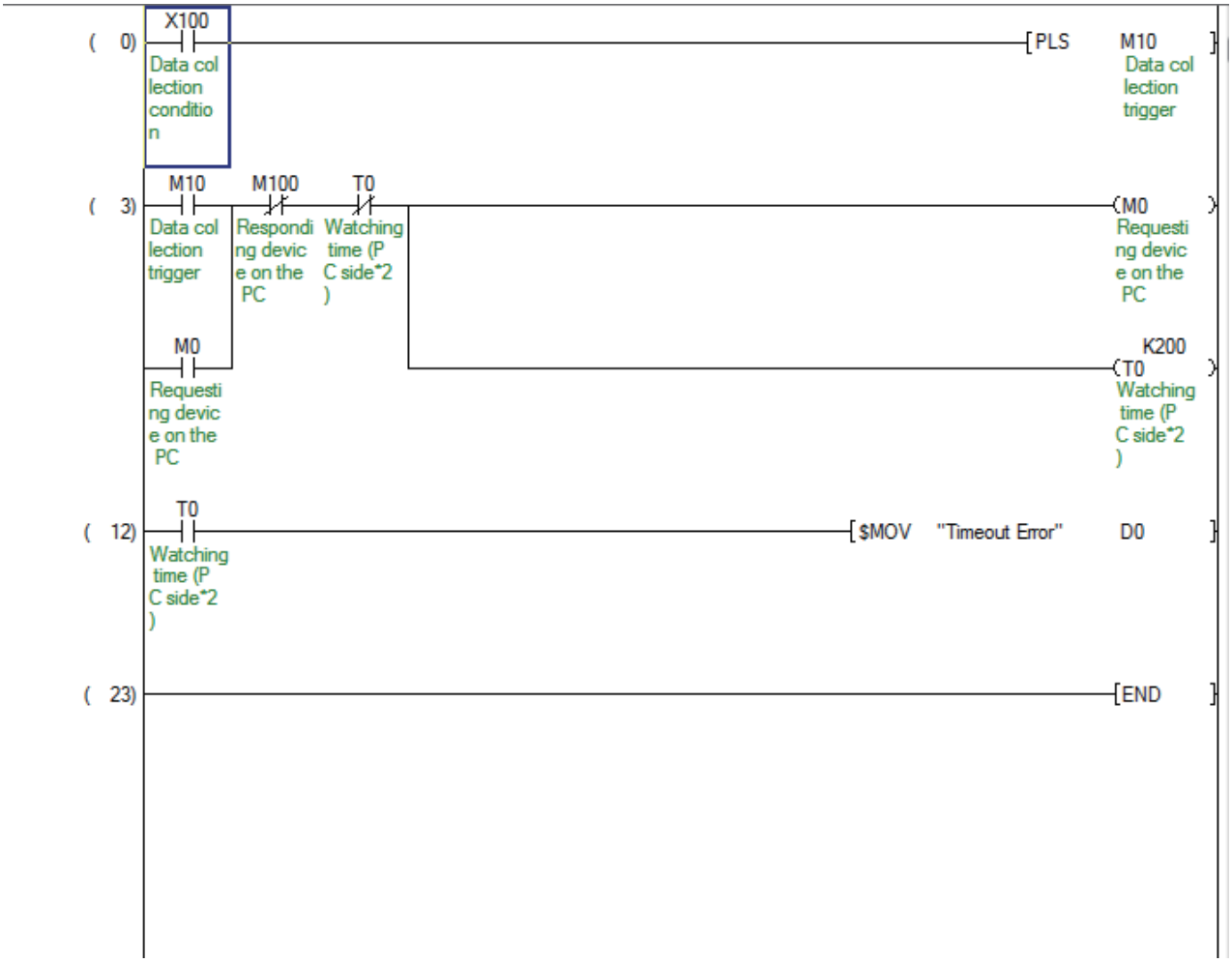
The following table shows the monitoring time.

| 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 side requesting device" is reset.<br>If the "programmable controller 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 side responding device" is set.<br>If the "programmable controller side requesting device" is not set after the elapse of the monitoring time, the error log is displayed on the "ErrorLog" sheet. |

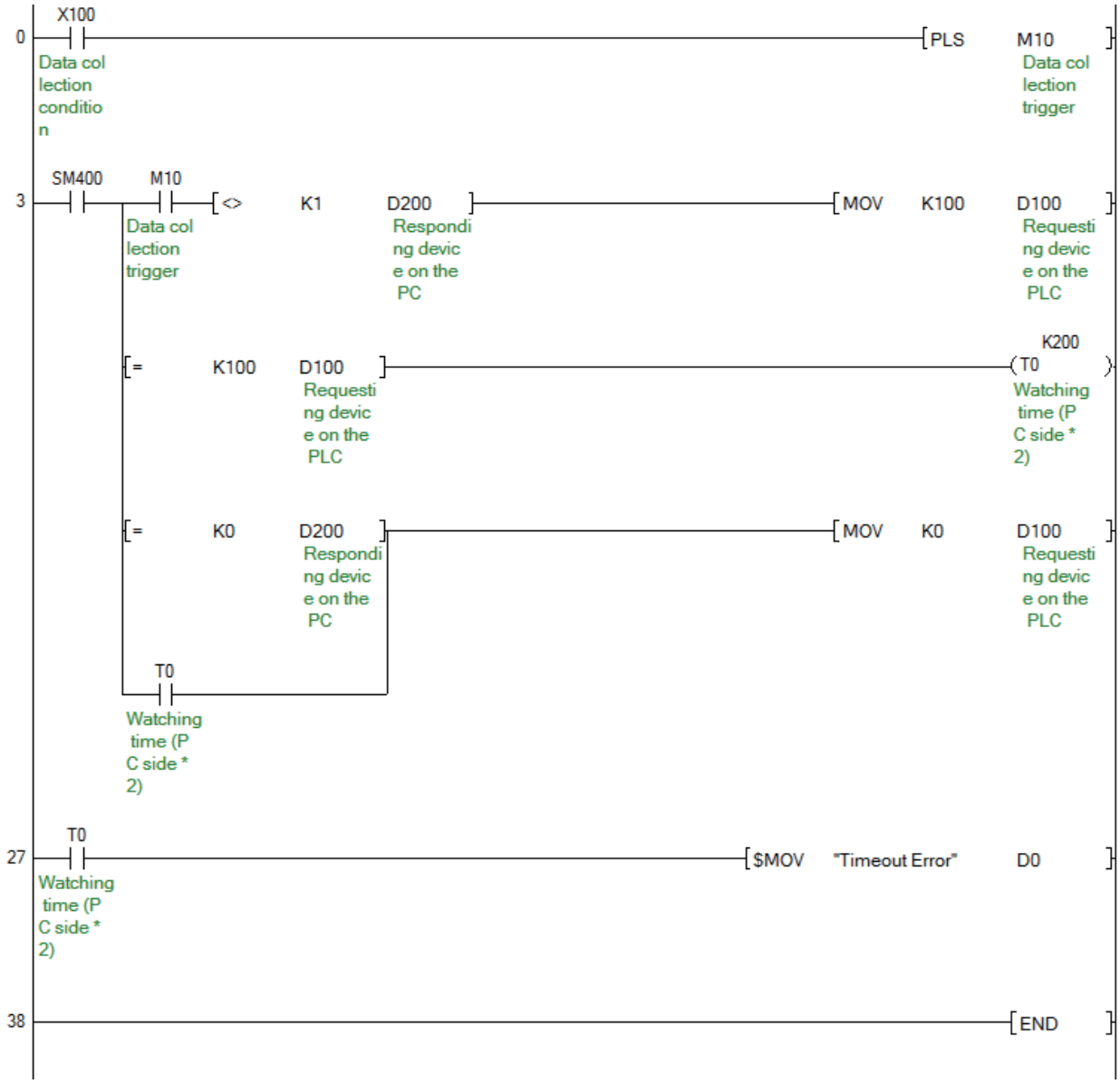
## Sample ladders for handshake

The following shows the sample ladders for handshake used in the settings (☞ Page 70 Setting examples and operation timing).

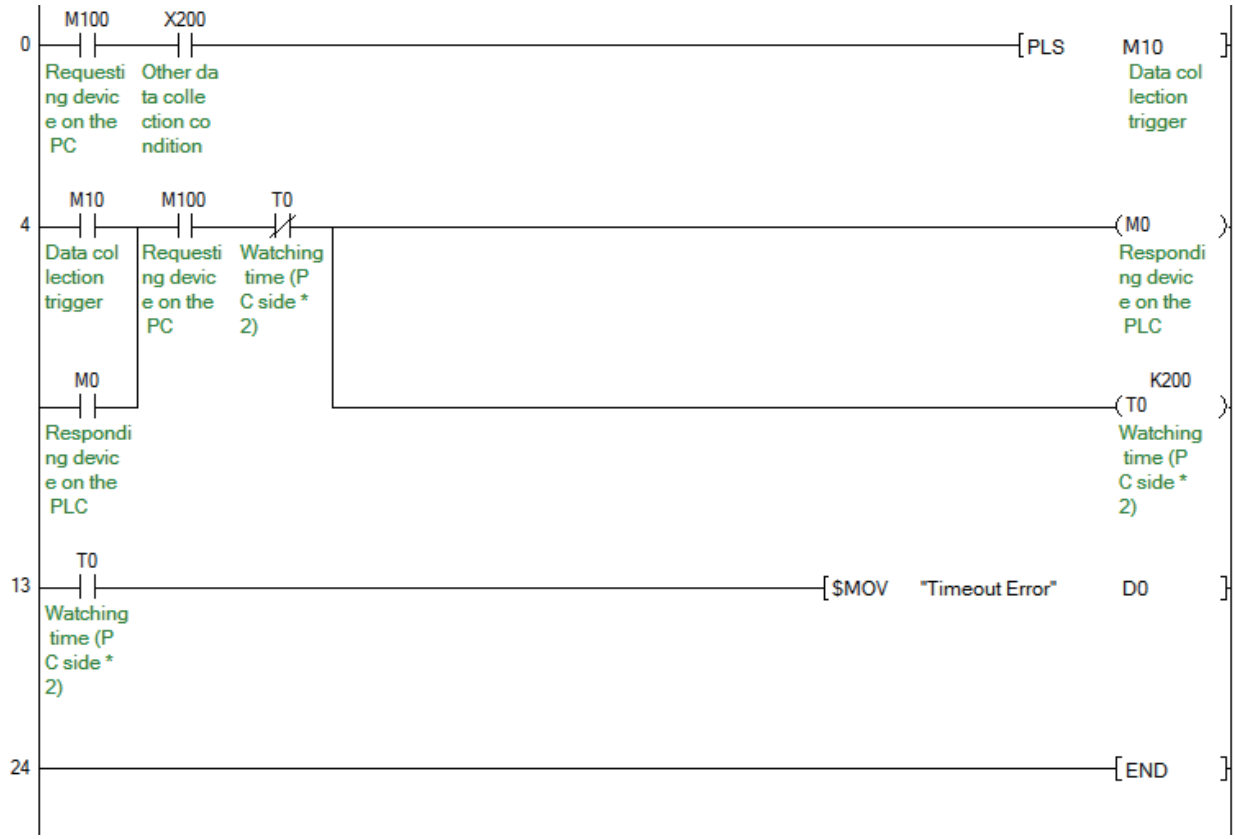
### ■When "Start with the request from the PLC" is selected (Device: Bit device)



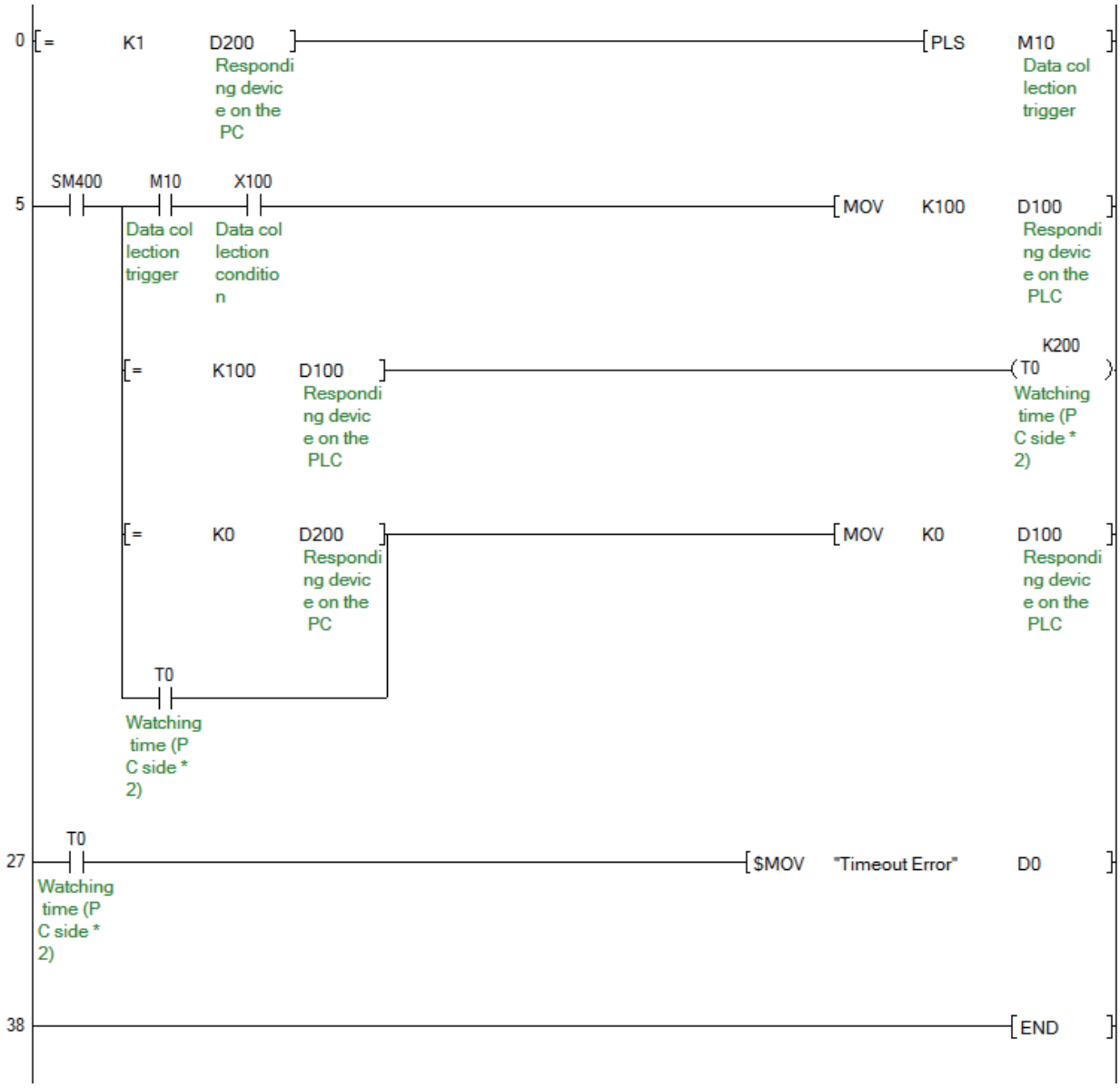
## ■When "Start with the request from the PLC" is selected (Device: Word device)



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



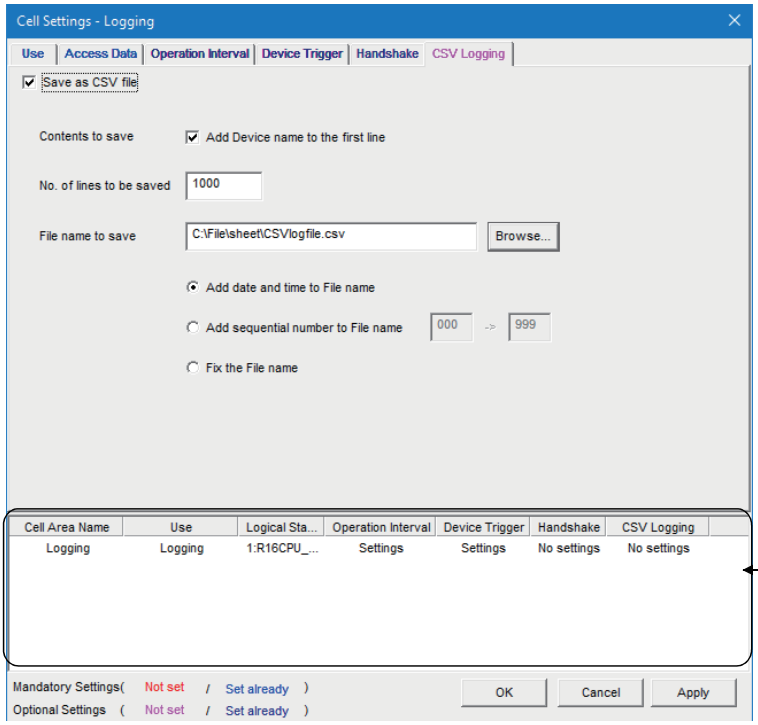
## ■When "Start with the request from the PC" is selected (Device: Word device)



# 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

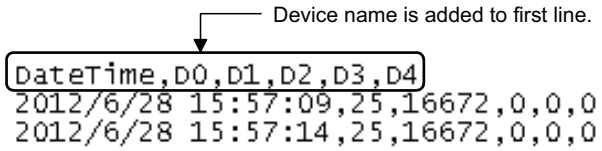
| Item | Description | Reference |
|---|---|---|
| Save as CSV file | Set when using the CSV logging. | Page 81 "Save as CSV file" |
| Contents to save | Set when adding the device name to the first line. | Page 81 "Contents to save" |
| No. of lines to be saved | Set the number of lines to be saved. | Page 81 "No. of lines to be saved" |
| File name to save | Set the file name to save. | Page 82 "File name to save" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "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.




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"

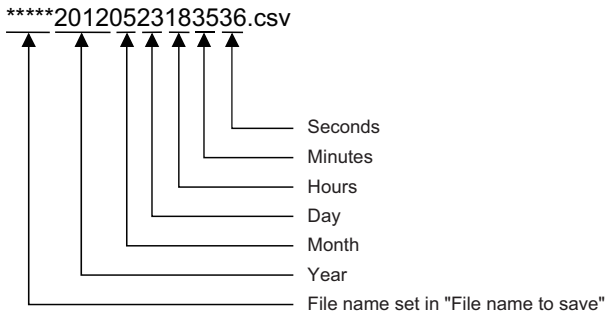
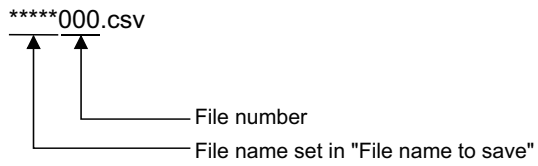
Set the number of lines to be saved into a single CSV file.

Setting range: 1 to 9999999[*1]

*1 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 | Adds the date and time data to the file name set in "File name to save" and saves it.<br>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.<br>The following shows a file name format when data is saved.<br>  |
| Add sequential number to File name | Adds the file number to the file name set in "File name to save" and saves it.<br>A serial number can be set within the range from 000 to 999.<br>When the number reaches to the last, the file of the first number is overwritten by the newly saving file.<br>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.<br>The following shows a file name format when data is saved.<br>  |
| Fix the File name | Overwrites data to the CSV file set in "File name to save".<br>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". |

*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.

# 3.3 When "Monitor" is Selected

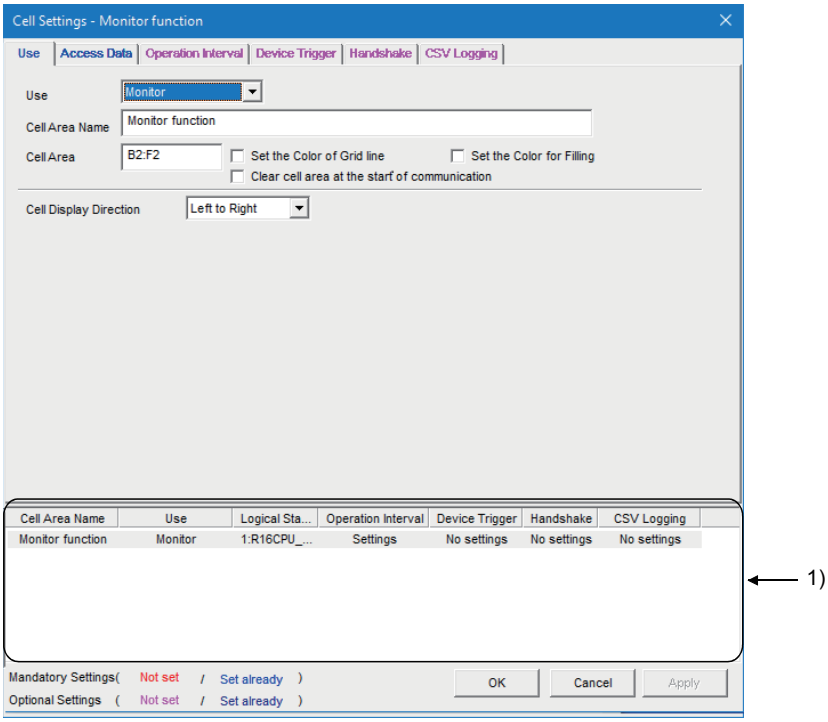
This section explains the "Cell Settings" screen when "Monitor" is selected from "Use" on the [Use] tab.

| | |
|---|---|
| [Use] tab | Required setting☞ Page 84 Setting of the [Use] tab |
| [Access Data] tab | Required setting☞ Page 87 Setting of the [Access Data] tab |
| [Operation Interval] tab | Required setting☞ Page 88 Setting of the [Operation Interval] tab |
| [Device Trigger] tab | Set as necessary ☞ Page 89 Setting of the [Device Trigger] tab |
| [Handshake] tab | Set as necessary ☞ Page 91 Setting of the [CSV Logging] tab |
| [CSV Logging] tab | Set as necessary ☞ Page 90 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.<br>Select "Monitor" when using the monitor function. | — |
| Cell Area Name | Set the name of the specified cell area.<br>(Maximum number of cell area names: 1000) | |
| Cell Area | Enter the value to specify the cell area. | Page 85 "Cell Area" |
| Set the Color of Grid line | Select this checkbox to add grid lines (including color designation) to the specified cell area. | Page 49 "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.<br>(Default: cleared) | Page 85 "Clear cell area at the start of communication" |
| Cell Display Direction | Set the monitor data display sequence.<br>• Left to Right<br>Monitor data is displayed from left to right in the specified cell area in order.<br>• Top to Bottom<br>Monitor data is displayed from top to bottom in the specified cell area in order. | Page 86 "Cell Display Direction" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "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 49 "Cell Area"

### ■Setting ranges

The following shows the available number of cells and the 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>

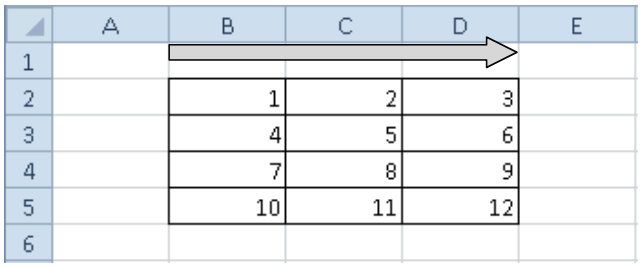
| | | | |
|---|---|---|---|
| 910 | 33 | 111 | 15 |
| 880 | 34 | 180 | 22 |
| 925 | 31 | 135 | 18 |

## "Cell Display Direction"

Set the monitor data display sequence.

### ■When "Left to Right" is selected

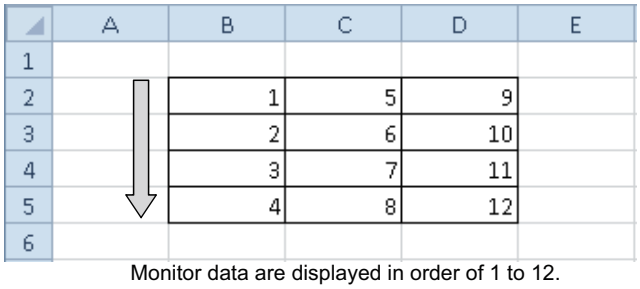
<When cell area (B2:D5) is set to "Left to Right">




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 ">

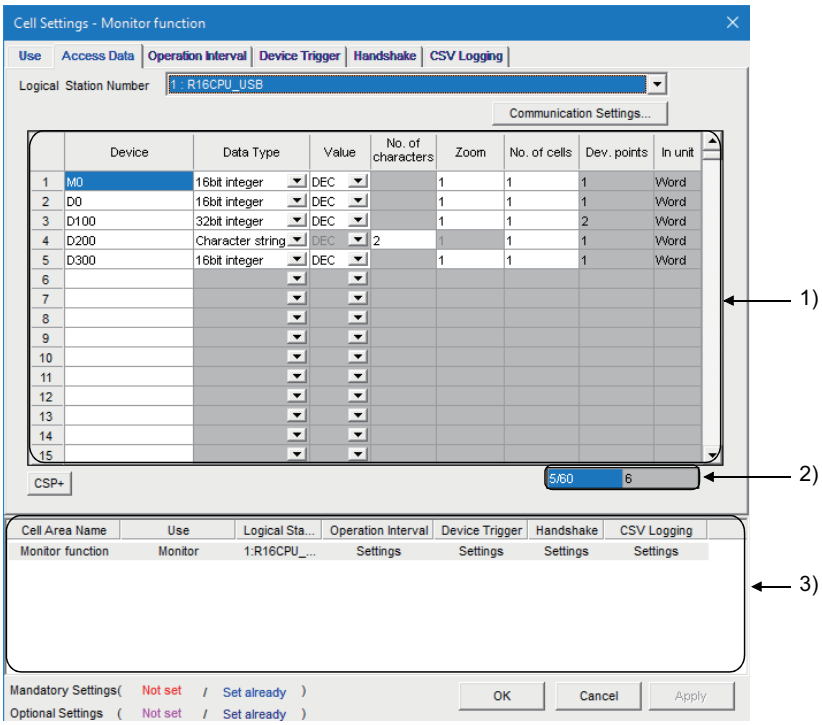



Monitor data are displayed in order of 1 to 12.

# 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 a CPU module 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 55 "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 56 [Communication Settings] button |
| Remote password*1 | Enter the password when the password is set to the connection target CPU module. | Page 56 "Remote password" |
| [CSP+] button | Click this to display the "Getting CSP+ for machine" screen. | Page 60 Importing CSP+ for machine |
| 1) (Access data) | Set the devices or labels to be monitored. | Page 56 Access data |
| 2) (Number of set devices) | The number of devices currently set is displayed. | Page 60 The number of set devices |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

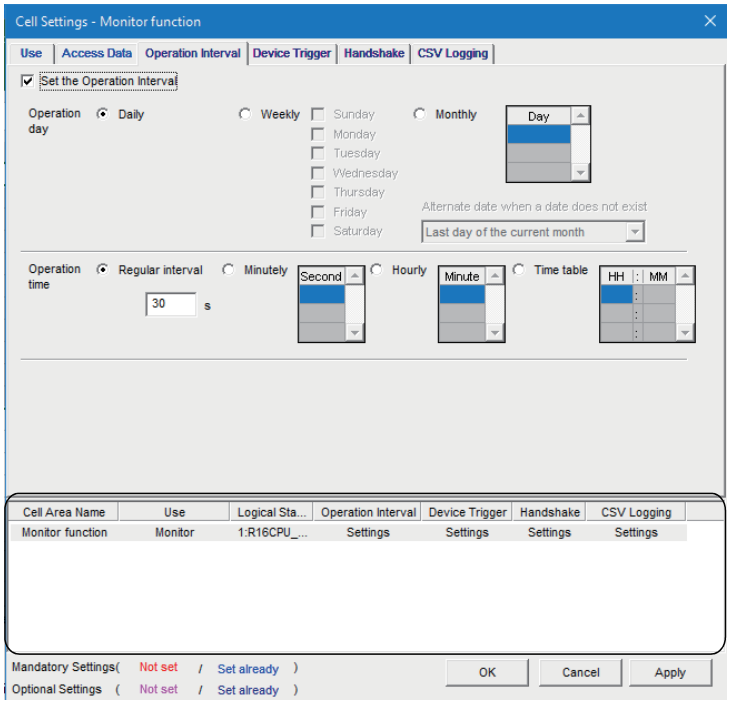
*1 "Remote password" is displayed when the logical station number selected in "Logical Station Number" on the [Access Data] tab is the one for the password function compatible module.

# 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 and time 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 62 "Set the Operation Interval" |
| Operation day | Set the operation day of the monitor function activation. | Page 62 "Operation day" |
| Operation time | Set the operation time of the monitor function activation. | Page 88 "Operation time" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "Operation time"

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

☞ Page 63 "Operation time"

### ■When "Regular interval" is selected

Device data is collected at the set second intervals.

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.

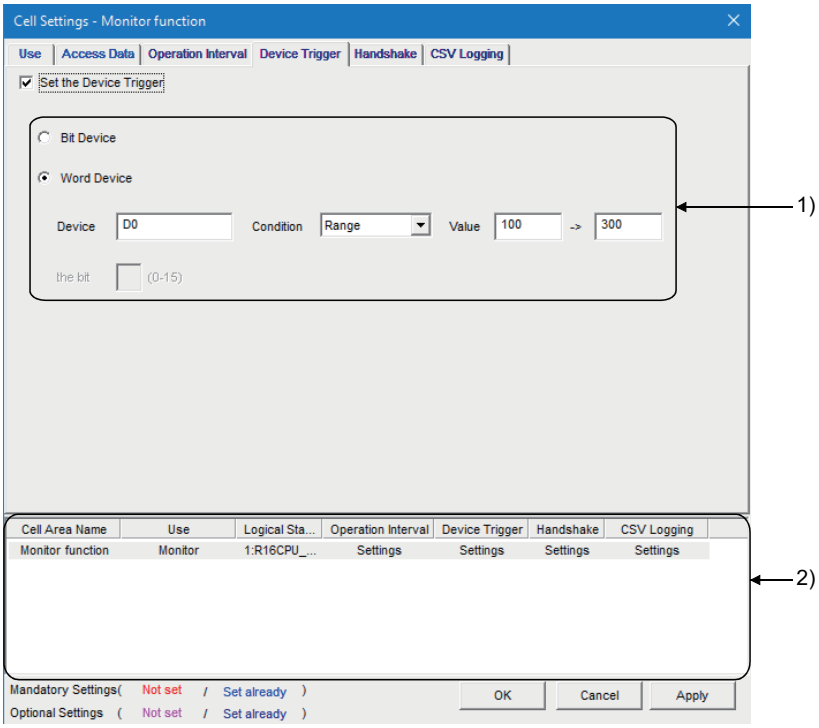
☞ Page 160 Processing Speed of MX Sheet

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



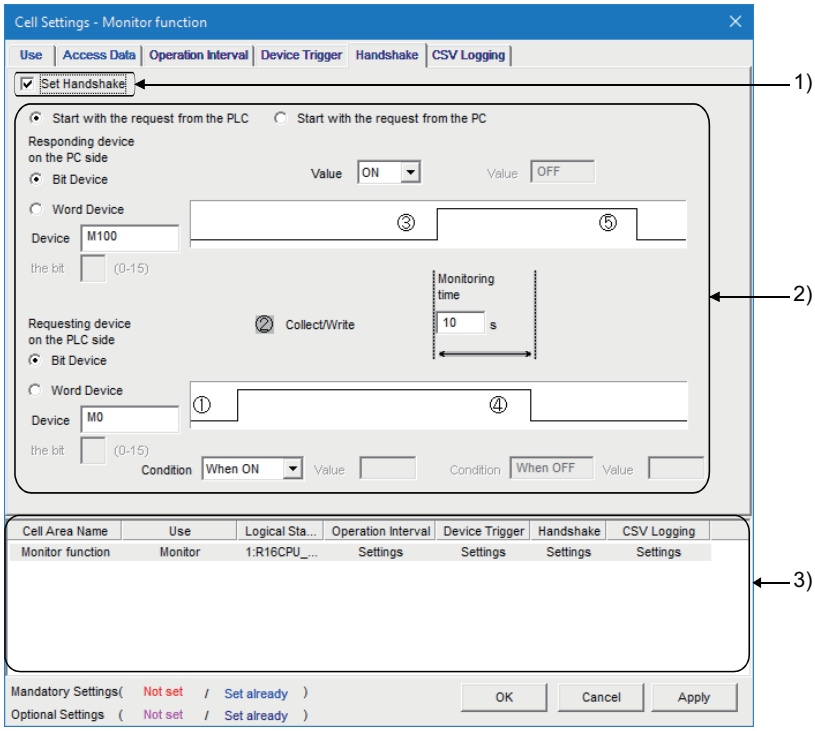

## Displayed items

| Item | Description | Reference |
|---|---|---|
| Set the Device Trigger | Set when the device trigger is used. | Page 67 "Set the Device Trigger" |
| 1) (Device conditions) | Set the device or label conditions. | Page 67 Device conditions |
| 2) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 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



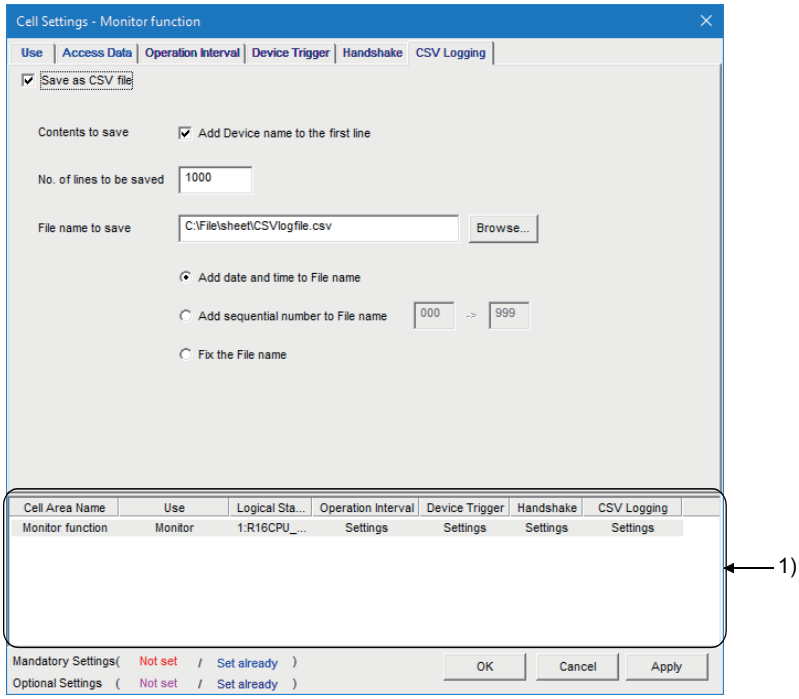

## Displayed items

| Item | Description | Reference |
|---|---|---|
| Set Handshake | Set when using a handshake. | Page 74 "Set Handshake" |
| 1) (Requesting source setting) | Set the requesting source of the handshake. | Page 74 Requesting source setting |
| 2) (Handshake processing) | Set the handshake processing. | Page 74 Handshake processing |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 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 81 "Save as CSV file" |
| Contents to save | Set when adding the device name to the first line. | Page 81 "Contents to save" |
| No. of lines to be saved | Set the number of lines to be saved. | Page 81 "No. of lines to be saved" |
| File name to save | Set the file name to save. | Page 82 "File name to save" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 3.4 When "Write" is Selected

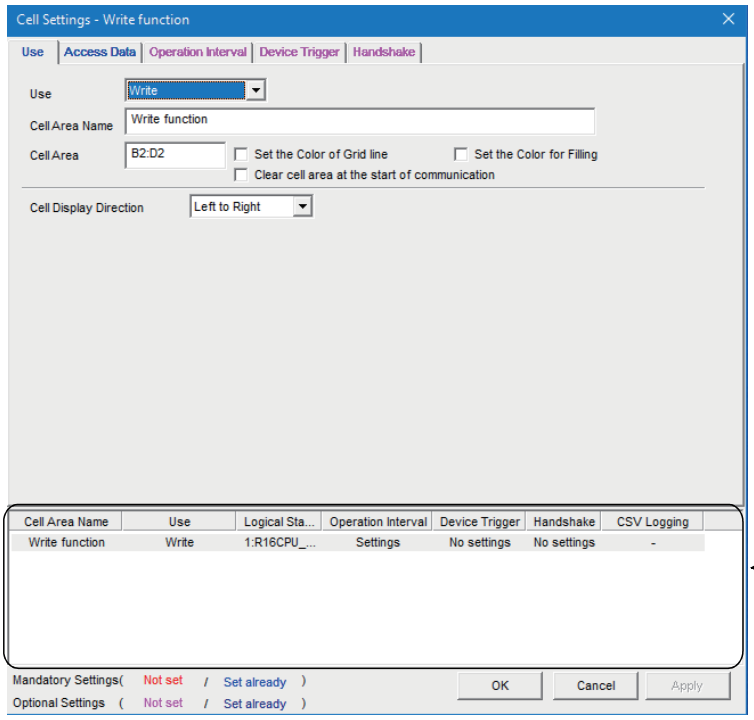
This section explains the "Cell Settings" screen when "Write" is selected from "Use" on the [Use] tab.

| | |
|---|---|
| [Use] tab | Required setting☞ Page 93 Setting of the [Use] tab |
| [Access Data] tab | Required setting☞ Page 95 Setting of the [Access Data] tab |
| [Operation Interval] tab | Required setting☞ Page 97 Setting of the [Operation Interval] tab |
| [Device Trigger] tab | Set as necessary ☞ Page 98 Setting of the [Device Trigger] tab |
| [Handshake] tab | Set as necessary ☞ Page 99 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 write data.

## Window




## Displayed items

| Item | Description | Reference |
|---|---|---|
| Use | Set the function to be used for the specified cell area.<br>Select "Write" when using the write function. | — |
| Cell Area Name | Set the name of the specified cell area.<br>(Maximum number of cell area names: 1000) | |
| Cell Area | Enter the value to specify the cell area. | Page 94 "Cell Area" |
| Set the Color of Grid line | Select this checkbox to add grid lines (including color designation) to the specified cell area. | Page 49 "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.<br>(Default: cleared) | Page 85 "Clear cell area at the start of communication" |
| Cell Display Direction | Set the display sequence of write data.<br>• Left to Right<br>Write data is set from left to right in the specified cell area in order.<br>• Top to Bottom<br>Write data is set from top to bottom in the specified cell area in order. | Page 94 "Cell Display Direction" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "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 49 "Cell Area"

### ■Setting ranges

The following shows the available number of cells and the number of specified cell areas.

Number of cells : 2000

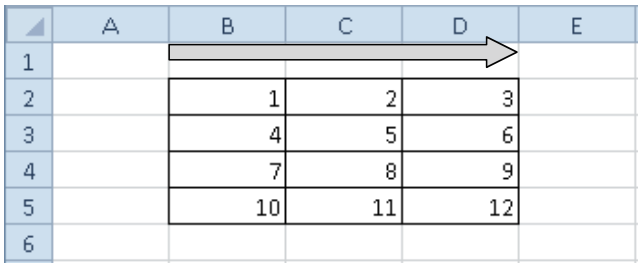
Number of specified cell areas : 16

## "Cell Display Direction"

Set the display sequence of write data.

### ■When "Left to Right" is selected

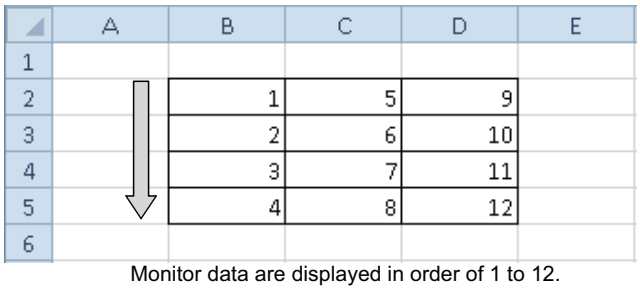
<When cell area (B2:D5) is set to "Left to Right">




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 ">

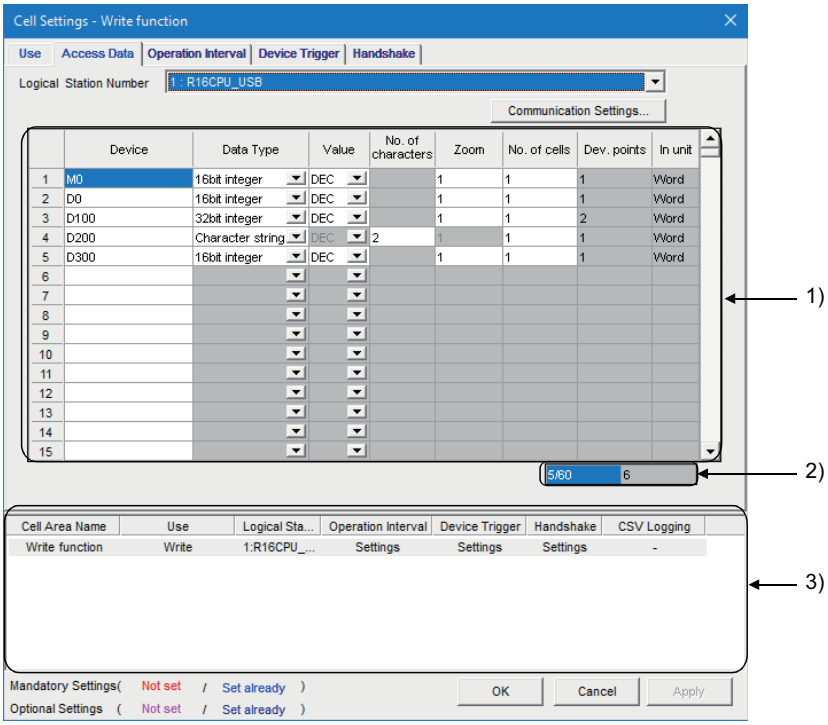



Monitor data are displayed in order of 1 to 12.

# 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 a CPU module 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 55 "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 56 [Communication Settings] button |
| Remote password*1 | Enter the password when the password is set to the connection target CPU module. | Page 56 "Remote password" |
| 1) (Access data) | Set the devices or labels to be written. | Page 96 Access data |
| 2) (Number of set devices) | The number of devices currently set is displayed. | Page 60 The number of set devices |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

*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.

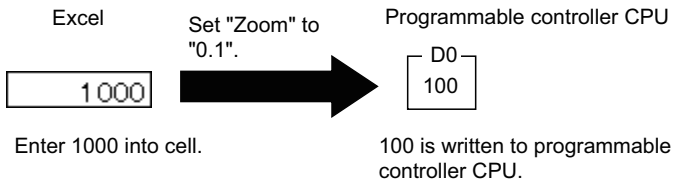
☞ Page 55 Setting of the [Access Data] tab

### ■"Zoom"

The value entered into the cell is multiplied by the zoom ratio and written to a CPU module 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**

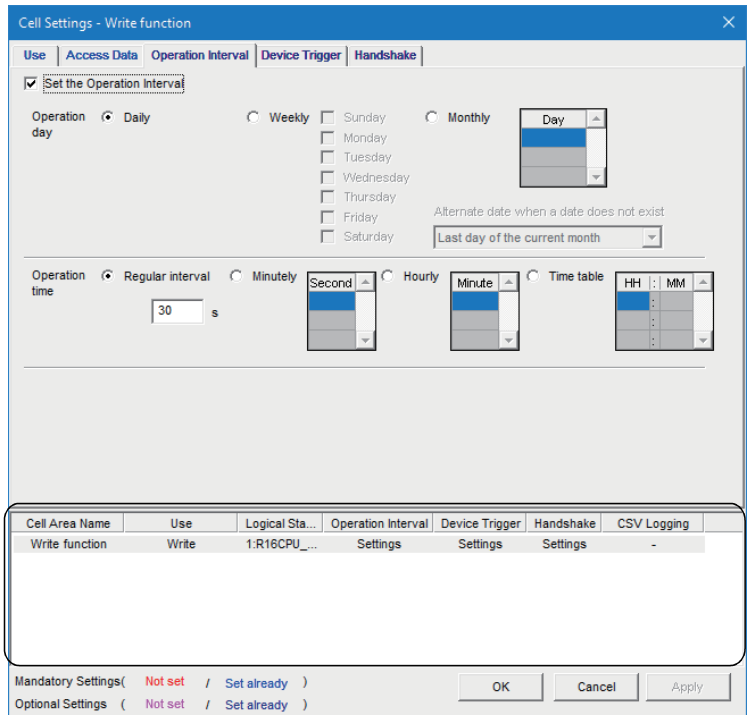
When "Zoom" is set for the write data and the data to be actually written to a CPU module is decimals, set "Real number" in "Data type."

# 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 and time 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 62 "Set the Operation Interval" |
| Operation day | Set the operation day of the write function activation. | Page 62 "Operation day" |
| Operation time | Set the operation time of the write function activation. | Page 97 "Operation time" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "Operation time"

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

☞ Page 63 "Operation time"

### ■When "Regular interval" is selected

Device data is written at the set second intervals.

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.

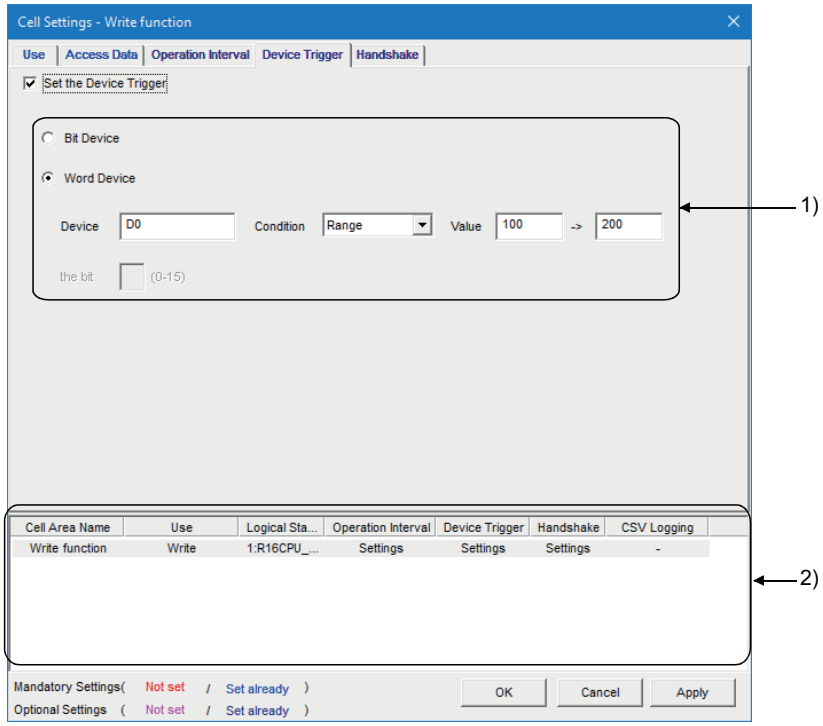
☞ Page 160 Processing Speed of MX Sheet

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

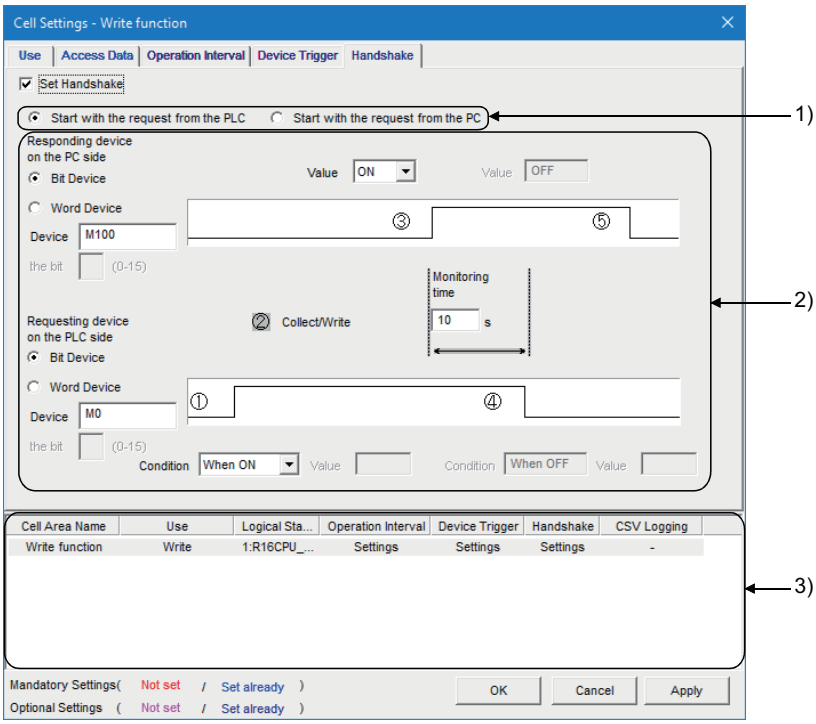
| Item | Description | Reference |
|---|---|---|
| Set the Device Trigger | Set when the device trigger is used. | Page 67 "Set the Device Trigger" |
| 1) (Device conditions) | Set the device or label conditions. | Page 67 Device conditions |
| 2) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 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




## Displayed items

| Item | Description | Reference |
|---|---|---|
| Set Handshake | Set when using a handshake. | Page 74 "Set Handshake" |
| 1) (Requesting source setting) | Set the requesting source of the handshake. | Page 74 Requesting source setting |
| 2) (Handshake processing) | Set the handshake processing. | Page 74 Handshake processing |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 3.5 When "Alarm Summary" is Selected

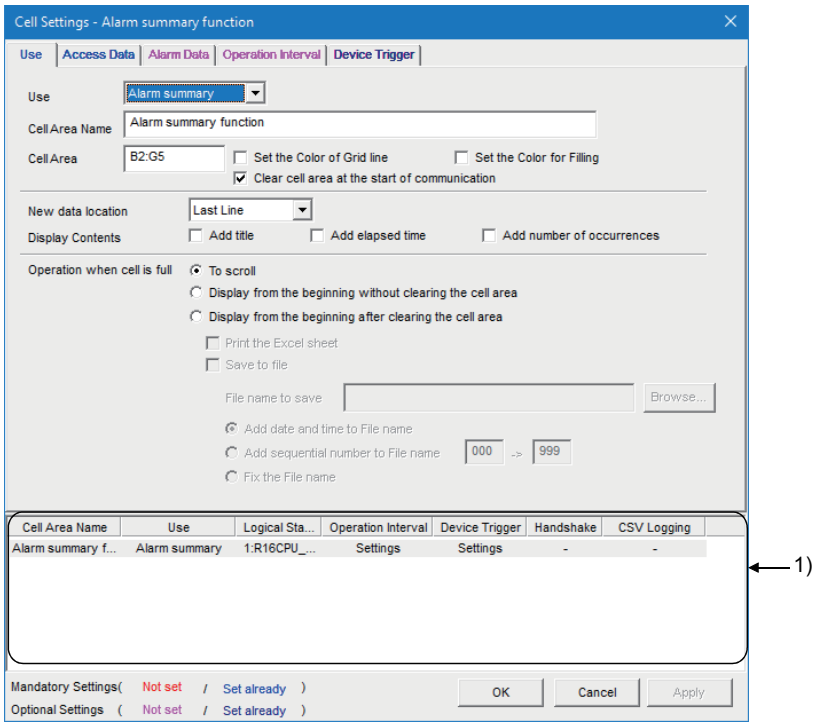
This section explains the "Cell Settings" screen when "Alarm summary" is selected from "Use" on the [Use] tab.

| | |
|---|---|
| [Use] tab | Required setting☞ Page 101 Setting of the [Use] tab |
| [Access Data] tab | Required setting☞ Page 104 Setting of the [Access Data] tab |
| [Alarm Data] tab | Set as necessary ☞ Page 106 Setting of the [Alarm Data] tab |
| [Operation Interval] tab | Set as necessary ☞ Page 108 Setting of the [Operation Interval] tab |
| [Device Trigger] tab | Set as necessary ☞ Page 109 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.<br>Select "Alarm summary" when using the alarm summary function. | — |
| Cell Area Name | Set the name of the specified cell area.<br>(Maximum number of cell area names: 100) | |
| Cell Area | Enter the value to specify the cell area. | Page 102 "Cell Area" |
| Set the Color of Grid line | Select this checkbox to add grid lines (including color designation) to the specified cell area. | Page 49 "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.<br>(Default: selected) | Page 50 "Clear cell area at the start of communication" |
| New data location | Set the latest data display position of the alarm summary.<br>• Last Line<br>The latest data is displayed at the last of the specified cell area.<br>• First Line<br>The latest data is displayed at the first of the specified cell area. | Page 51 "New data location" |
| Display Contents | Set whether the title, elapsed time, and number of occurrences is added to the Alarm Summary or not. | Page 102 "Display Contents" |
| Operation when cell is full | Set the operation to be performed when the specified cell area is full.<br>• To scroll<br>The displayed contents are scrolled and displayed.<br>• Display from the beginning without clearing the cell area<br>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.<br>• Display from the beginning after clearing the cell area<br>The data displayed in the cell area are erased and the alarm summary is resumed.<br>Before the alarm summary is resumed, the Excel spreadsheet can be printed and saved. | Page 53 "Operation when cell is full" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "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 49 "Cell Area"

### ■Setting ranges

The following shows the available number of cells and the number of specified cell areas.

Number of cells : 4 columns (indispensable) × 65536 rows[*1]

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 106 Setting of the [Alarm Data] tab)<br>"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 106 Setting of the [Alarm Data] tab) | Alarm |
| Status String set to the device(☞ Page 106 Setting of the [Alarm Data] tab) | Status |
| Elapsed time from when the device turns ON until it turns OFF(☞ Page 102 "Add elapsed time" checkbox) | Elapsed time |
| Number of times when the device turned from OFF to ON after the start of communication.(☞ Page 103 "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.

**Point**

- 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.

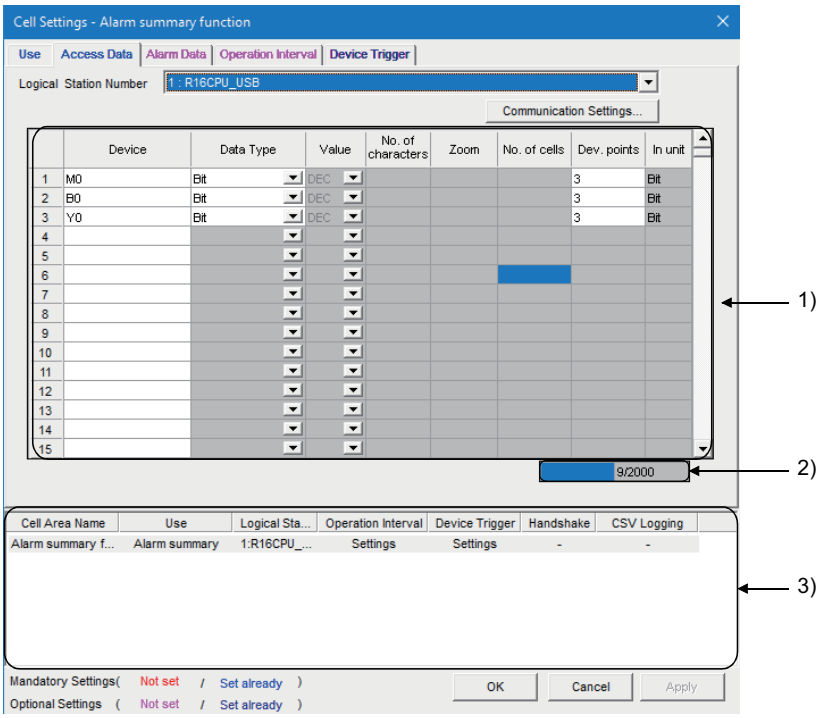
Display content on the Excel spreadsheet when the checkboxes of "Add title", "Add elapsed time", and "Add number of occurrences" are all selected

| 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 a CPU module 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 55 "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 56 [Communication Settings] button |
| Remote password*1 | Enter the password when the password is set to the connection target CPU module. | Page 56 "Remote password" |
| 1) (Access data) | Set the devices or labels use for the alarm summary function. | Page 105 Access data |
| 2) (Number of set devices) | The number of devices currently set is displayed. | Page 105 The number of set devices |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

*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 is 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 is displayed on the [Alarm Data] tab as shown below.

Displayed in order of data numbers.

| | Device | ON time String |
|---|---|---|
| 1 | M0 | Generation |
| 2 | M1 | Generation |
| 3 | M2 | Generation |
| 4 | B0 | Generation |
| 5 | B1 | Generation |
| 6 | B2 | Generation |
| 7 | Y0 | Generation |
| 8 | Y1 | Generation |
| 9 | Y2 | Generation |

Data No. 1 (rows 1 to 3)

Data No. 2 (rows 4 to 6)

Data No. 3 (rows 7 to 9)

### ■"Device"

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

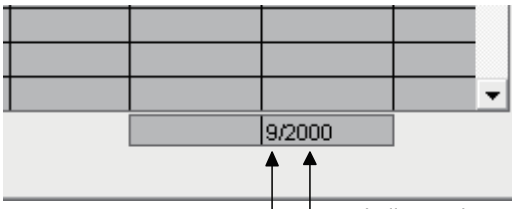
Enter a device name and device number in this order.

### ■"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.



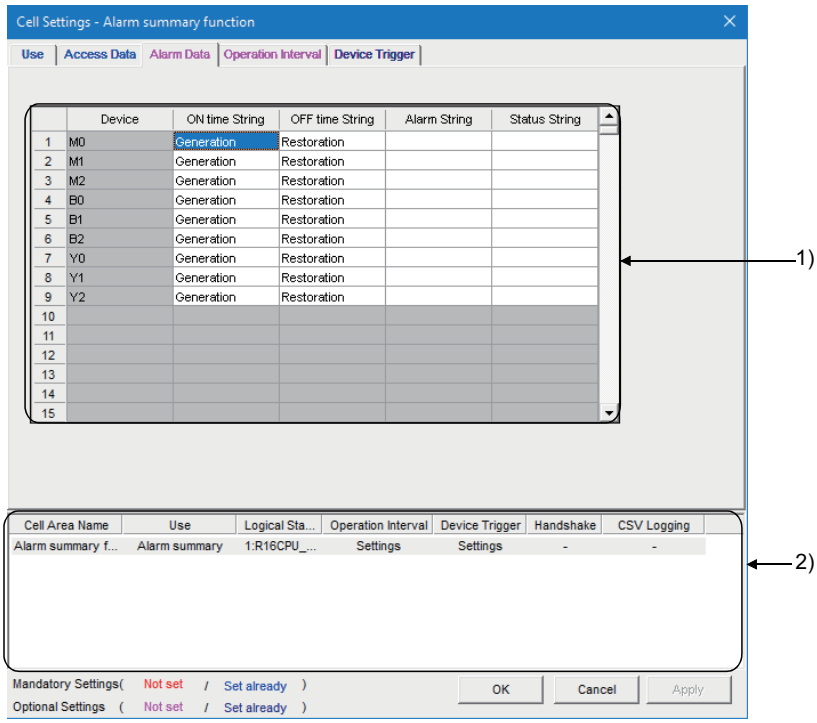

Indicates the number of device points that can be registered to the cell area.

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 106 "Device" to Page 107 "Status String" |
| 2) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

### "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 examples

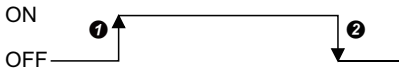
The following shows the [Alarm Data] tab setting example and the data displayed on the Excel spreadsheet.

The [Alarm Data] tab setting example

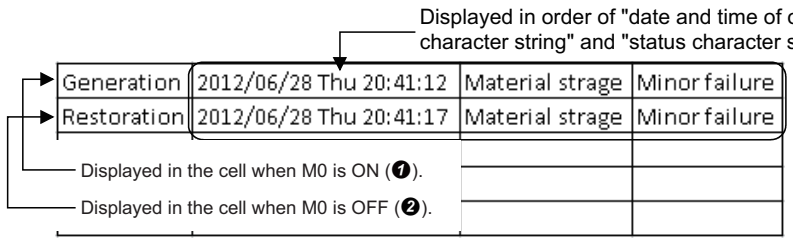
| | Device | ON time String | OFF time String | Alarm String | Status String |
|---|---|---|---|---|---|
| 1 | M0 | Generation | Restoration | Material strage | Minor failure |
| 2 | | | | | |
| 3 | | | | | |

Device : M0
ON time String : Generation
OFF time String : Restoration
Alarm String : Material storage
Status String : Minor failure

<Operation of M0>



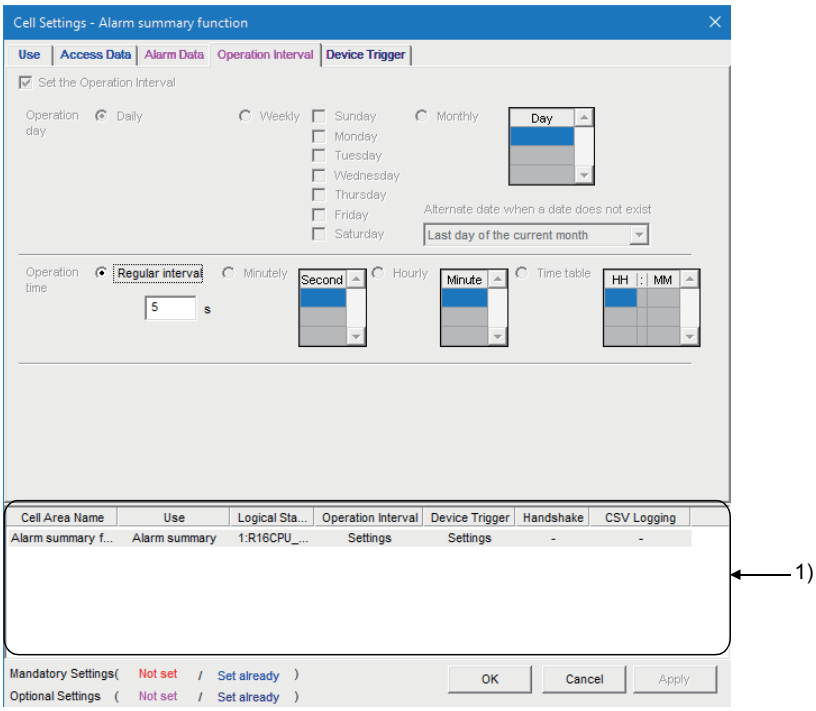

<Data displayed on Excel spreadsheet>



# 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 108 "Regular interval" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "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.

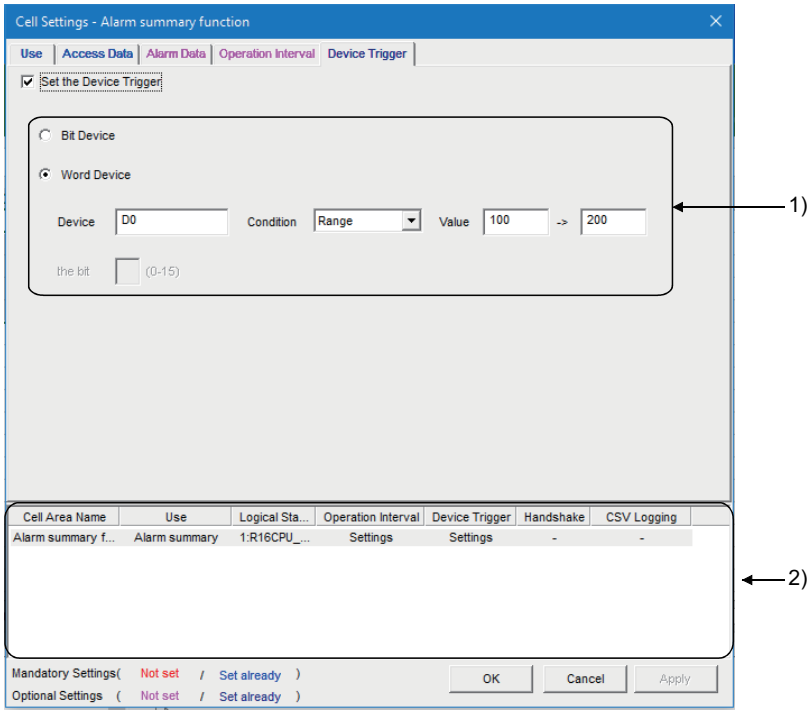
Ex.
When 0.2 seconds interval is set and the ON time is 20 hours 41 minutes 12 seconds 80

| | | | |
|---|---|---|---|
| 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 67 "Set the Device Trigger" |
| 1) (Device conditions) | Set the device or label conditions. | Page 67 Device conditions |
| 2) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 3.6 When "Comment" is Selected

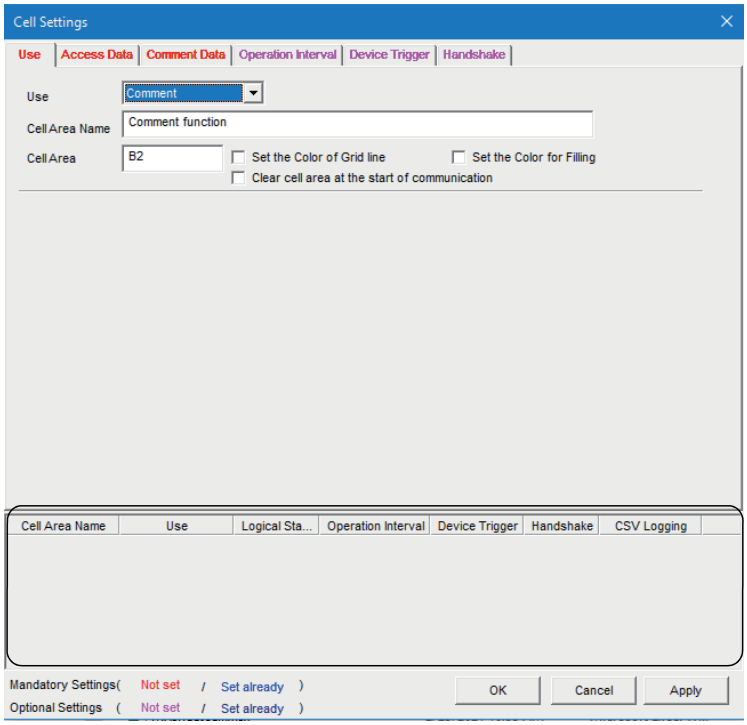
This section explains the "Cell Settings" screen when "Comment" is selected from "Use" on the [Use] tab.

| | |
|---|---|
| [Use] tab | Required setting☞ Page 111 Setting of the [Use] tab |
| [Access Data] tab | Required setting☞ Page 112 Setting of the [Access Data] tab |
| [Comment Data] tab | Required setting☞ Page 114 Setting of the [Comment Data] tab |
| [Operation Interval] tab | Set as necessary ☞ Page 116 Setting of the [Operation Interval] tab |
| [Device Trigger] tab | Set as necessary ☞ Page 117 Setting of the [Device Trigger] tab |
| [Handshake] tab | Set as necessary ☞ Page 118 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




1)

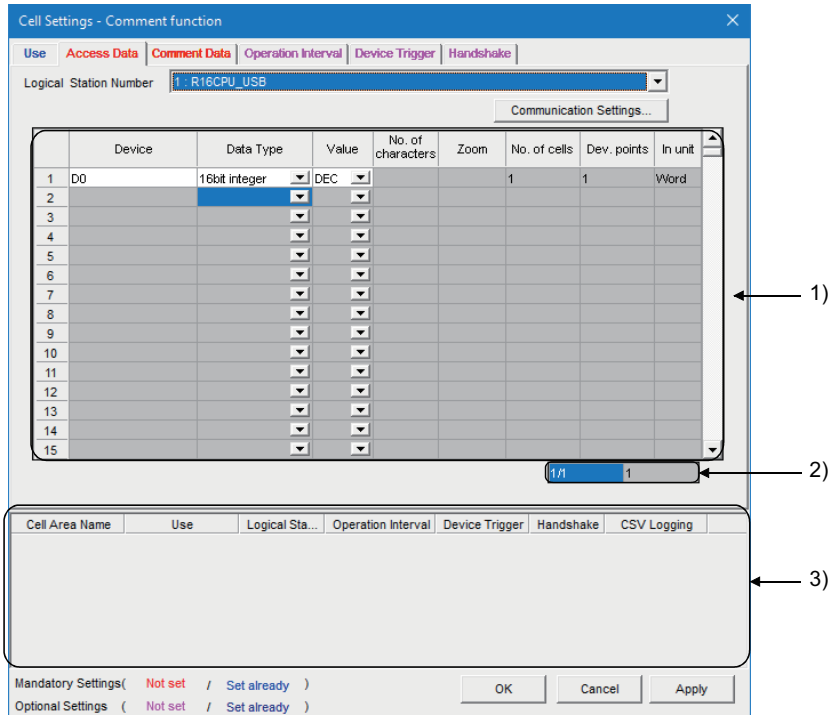
## Displayed items

| Item | Description | Reference |
|---|---|---|
| Use | Set the function to be used for the specified cell area.<br>Select "Comment" when using the comment display function. | — |
| Cell Area Name | Set the name of the specified cell area.<br>(Maximum number of cell area names: 500) | |
| Cell Area | Set the cell area to be used by the comment display function.<br>Setting range: 1 | — |
| Set the Color of Grid line | Select this checkbox to add grid lines (including color designation) to the specified cell area. | Page 49 "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.<br>(Default: cleared) | Page 50 "Clear cell area at the start of communication" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 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 a CPU module 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 55 "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 56 [Communication Settings] button |
| Remote password*1 | Enter the password when the password is set to the connection target CPU module. | Page 56 "Remote password" |
| 1) (Access data) | Set a device or label used for the comment display function. | Page 113 Access data |
| 2) (Number of set devices) | The number of devices currently set is displayed. | Page 60 The number of set devices |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

*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 a device or label used for the comment display function.

- 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 18 Accessible range

### ■"Data Type"

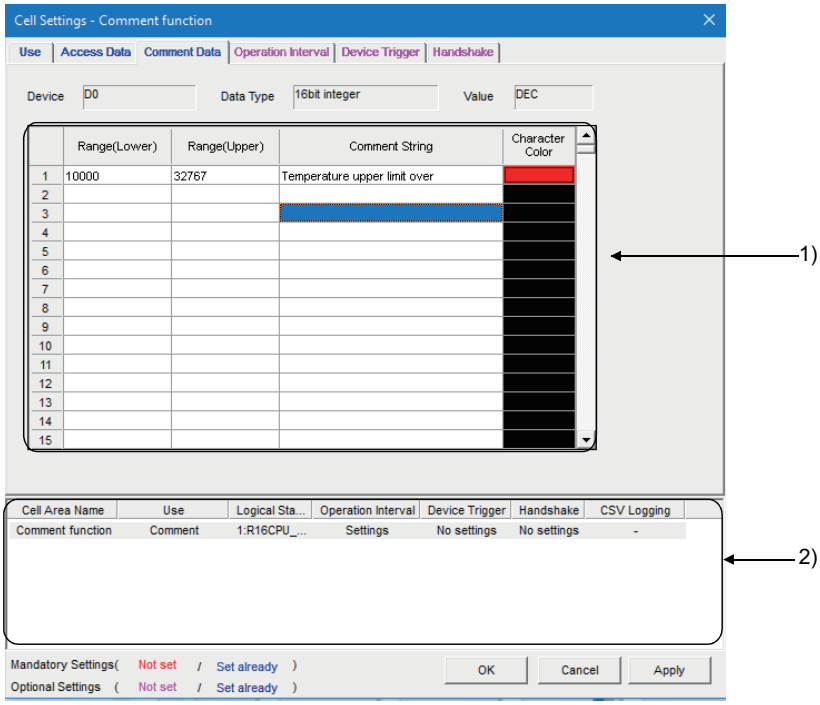
Set the data type of the device used for the comment display function.

| Item | Available Device | 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 114 Comment data |
| 2) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## 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 12 Considerations for setting MX Sheet



**Point**

If multiple comment data is 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 examples

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

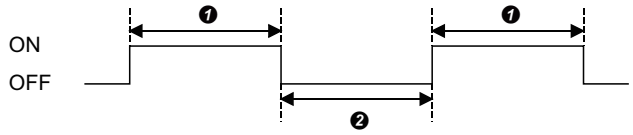
### ■When data type is set to "Bit"

[Comment data] tab setting example

Device: D0 Data Type: 16bit integer Value: DEC

| | Range(Lower) | Range(Upper) | Comment String | Character Color |
|---|---|---|---|---|
| 1 | 0 | 0 | Nomal operation | |
| 2 | 1 | 1 | Error occurrence | |

Operation of M0



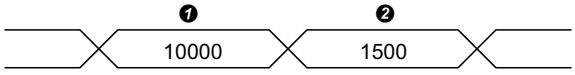

❶ While M0 is on, "Error occurrence" is displayed in the cell.
❷ While M0 is off, "Normal operation" is displayed in the cell.

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

[Comment data] tab setting example

| | Range(Lower) | Range(Upper) | Comment String | Character Color |
|---|---|---|---|---|
| 1 | 10000 | 32767 | Temperature upper limit over | |
| 2 | | | | |

Operation of D0

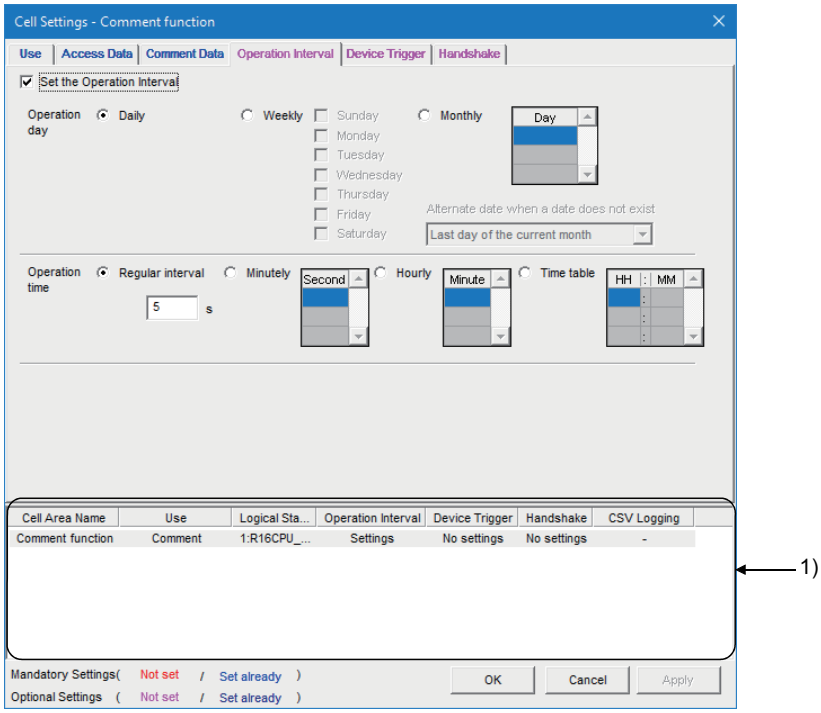



❶ If the D0 value is 10000 or more, "Temperature upper limit over" is displayed in the cell.
❷ If the D0 value is less than 10000, no comment character string is displayed.

# 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 and time 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 62 "Set the Operation Interval" |
| Operation day | Set the operation day of the comment display function activation. | Page 62 "Operation day" |
| Operation time | Set the operation time of the comment display function activation. | Page 116 "Operation time" |
| 1) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

## "Operation time"

The setting except for "Regular interval" is the same as that of the logging function.
☞ Page 63 "Operation time"

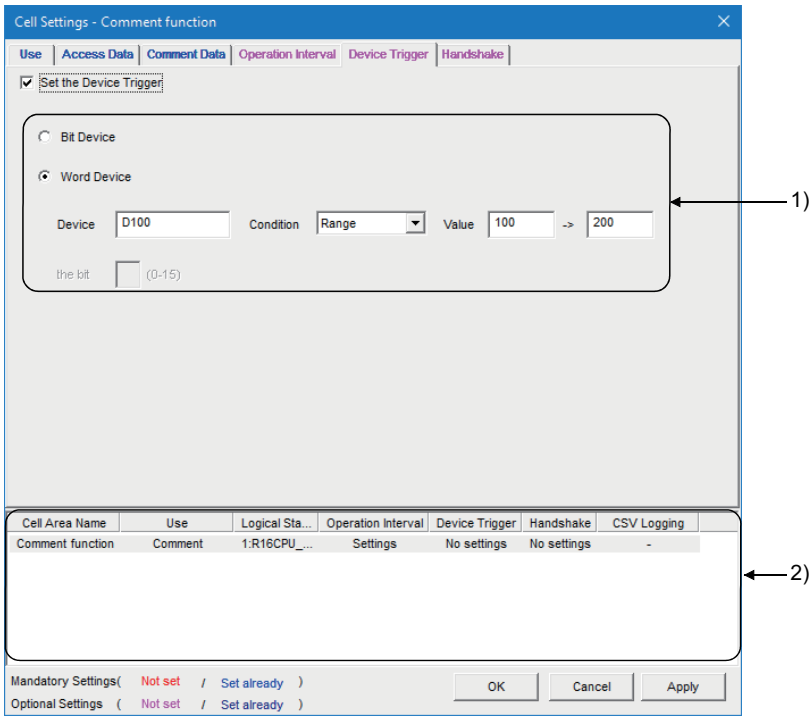
### ■When "Regular interval" is selected

Device data is collected at the set second intervals.
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 160 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



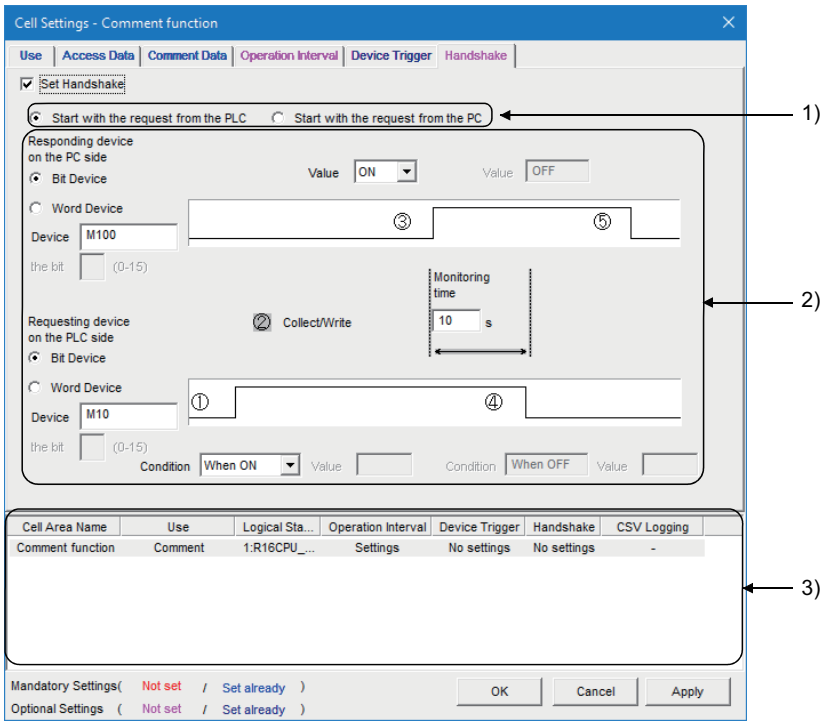

## Displayed items

| Item | Description | Reference |
|---|---|---|
| Set the Device Trigger | Set when the device trigger is used. | Page 67 "Set the Device Trigger" |
| 1) (Device conditions) | Set the device or label conditions. | Page 67 Device conditions |
| 2) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 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 74 "Set Handshake" |
| 1) (Requesting source setting) | Set the requesting source of the handshake. | Page 74 Requesting source setting |
| 2) (Handshake processing) | Set the handshake processing. | Page 74 Handshake processing |
| 3) (Preset cell areas) | The settings of the cell areas preset to the Excel book are displayed. | Page 54 Preset cell areas |

# 4 AUTOMATIC SAVE SETTING

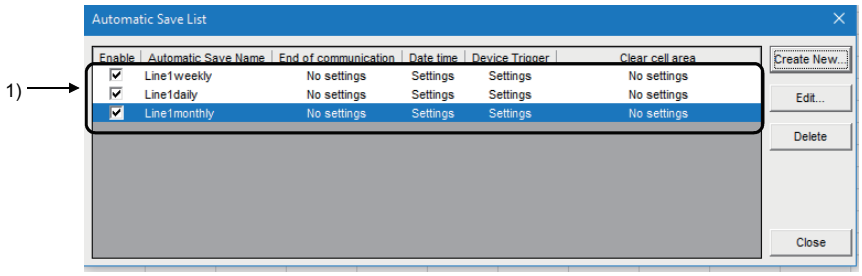
This chapter explains the setting content for saving the Excel book or Excel spreadsheet (CSV format) during MX Sheet operation (hereafter abbreviated to the Automatic save setting data).

## 4.1 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 | — | Display a list of automatic save names created in the "Automatic Save" screen (☞ Page 120 Setting of "Automatic Save" Screen). | — |
| | Enable | Select the checkbox of a target for automatic saving.<br>Selected when new data is created. | |
| | Automatic save name | Display the automatic save names created in the "Automatic Save" screen. | |
| | End of communication | 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. | |
| | Date time | 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. | |
| | Device trigger | 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. | |
| | Clear cell area | 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. | |
| [Create New] button | | Display the "Automatic Save" screen and create new automatic save setting data. | Page 120 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 Enter key is pressed with the clicked line highlighted, that operation has the same function as the [Edit] button.
- When the Delete key is pressed with the clicked line highlighted, that operation has the same function as the [Delete] button.

# 4.2 Setting of "Automatic Save" Screen

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

**Point**

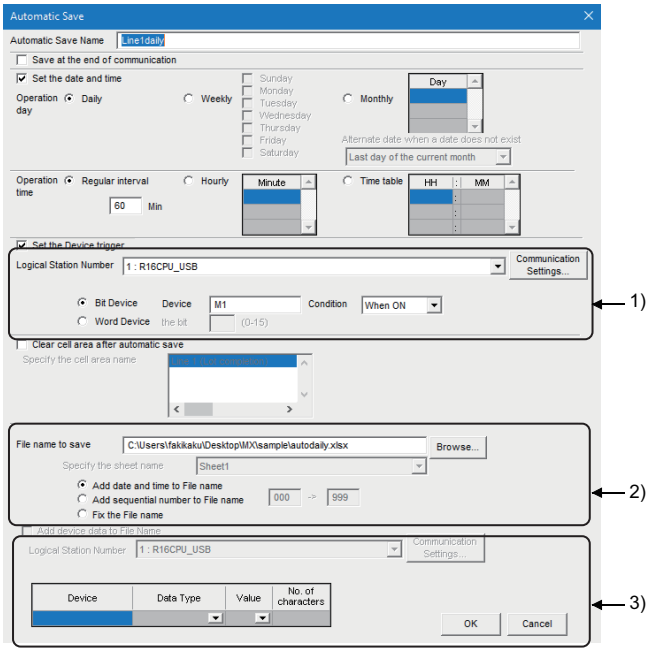
Save timing

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.<br>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 121 "Operation day" |
| Operation time | Set the operation time when automatic save is performed at the specified date and time. | Page 121 "Operation time" |
| Set the Device Trigger | Set this when performing automatic save using the device trigger. | Page 122 "Set the Device Trigger" |
| 1) (Device conditions) | Set the device conditions for the device trigger. | Page 122 Device conditions |
| Clear cell area after automatic save | Set when clearing the cell area data after automatic save. | Page 123 "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 123 "Specify the cell area name" |
| 2) (Save file setting) | Set the file name to automatically save data.*1 | Page 123 Save file setting |
| Add device data to File name | Set when adding device data to the file name automatically saved.*2 | Page 124 "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 124 Device setting |
| [OK] button | Register the newly created or edited "Automatic Save Name" to the "Automatic Save List" screen. | Page 125 Registration of an "automatic save name" |

*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.

Enter the password when the password is set to the connection target CPU module.

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

### ■[Communication Settings] button

Click this to start the communication setup utility for setting a new logical station number and changing settings.

Select "Run as administrator" when the "User Account Control" (☞ Page 173 Overview of warning messages) screen asking if execute programs with administrator authority or not appears.

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 5 Reference 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. |

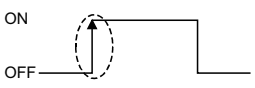
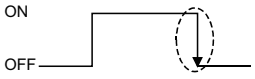
### ■"Device"

Enter the device or label used for the device trigger.

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

### ■"Condition"

Set the device trigger condition.

| Item | Available Device | Description |
|---|---|---|
| When ON<br>  | 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<br>  | 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, .xlsm. .xlsb), HTML file (.htm), or CSV file (.csv) can be set as the file type.*1

*1 For the continuous operation when saving data automatically in a file, refer to the following:
☞ Page 14 Continuous operation of Excel

### ■"Specify the sheet name"

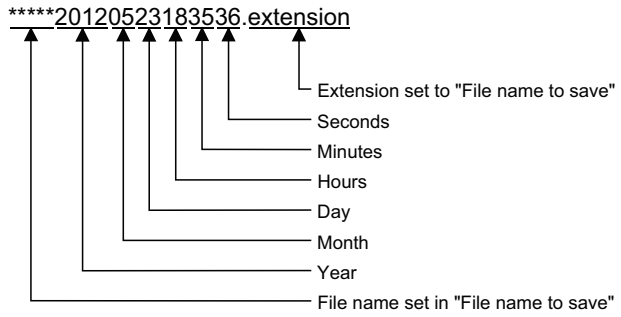
Select the sheet name to be saved from the combo box.

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

### ■"Add date and time to File name"

The 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.

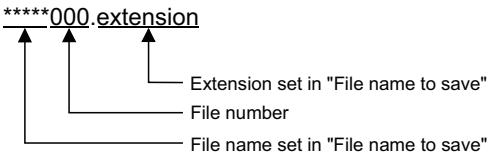



### ■"Add sequential number to File name"

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 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.

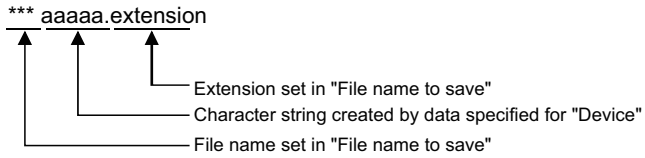



### ■"Fix the File name"

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.

Enter the password when the password is set to the connection target CPU module.

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

### ■[Communication Settings] button

Click this to start the communication setup utility for setting a new logical station number and changing settings.

Select "Run as administrator" when the "User Account Control" (☞ Page 173 Overview of warning messages) screen asking if execute programs with administrator authority or not appears.

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 5 Reference 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

## Registration of an "automatic save name"

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.<br>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.

# 5 AUTOMATIC PRINT SETTING

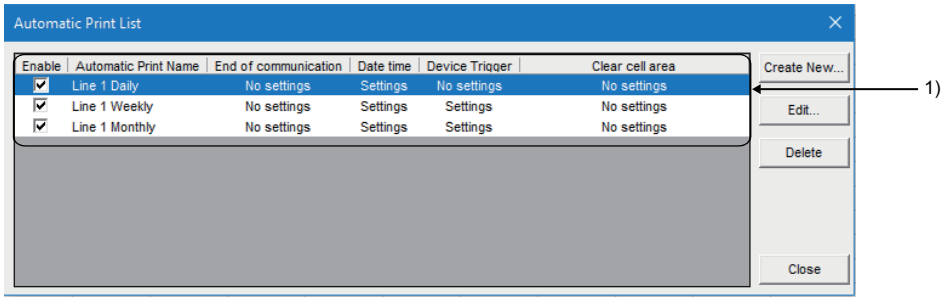
The following explains the setting content for printing the Excel book or Excel spreadsheet (CSV format) during MX Sheet operation (hereafter abbreviated to the Automatic print setting data).

## 5.1 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 127 Setting of "Automatic Print" Screen). | — |
| | Enable | Select the checkbox of an item for automatic printing.<br>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 127 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 Enter key is pressed with the clicked line highlighted, that operation has the same function as the [Edit] button.
- When the Delete key is pressed with the clicked line highlighted, that operation has the same function as the [Delete] button.

# 5.2 Setting of "Automatic Print" Screen

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

**Point**

Print timing

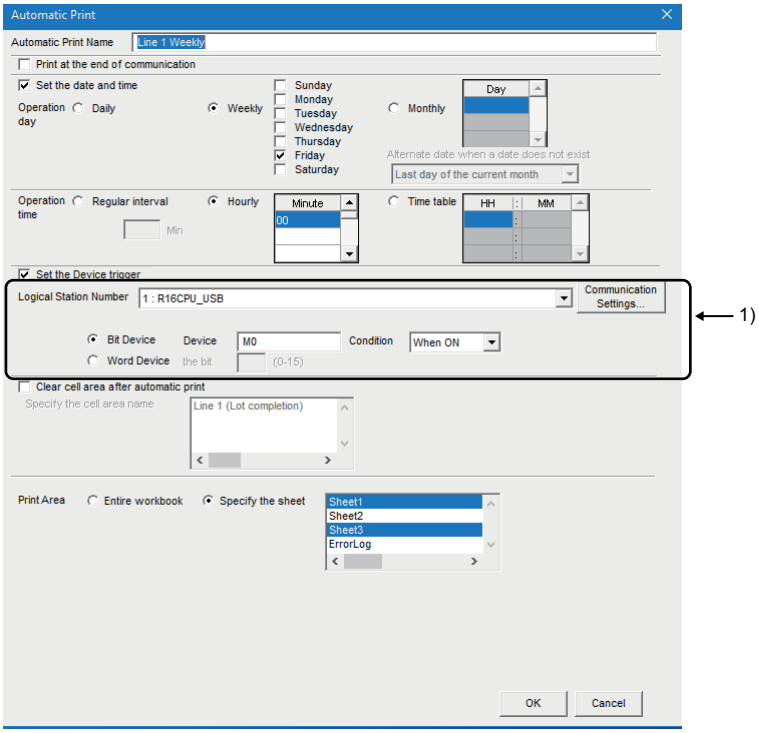
The following three timings are available for the automatic print setting. (All of them can be set at a time.) For the details, refer to the following:

☞ Page 119 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.<br>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 126 Operation of "Automatic Print 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 128 "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 128 "Specify the cell area name" |
| Print Area | Set the area where automatic print is performed. | Page 128 "Print Area" |

| Item | Description | Reference |
|---|---|---|
| [OK] button | Register the newly created or edited "Automatic Print Name" in the "Automatic Print List" screen. | Page 128 Registration of an "automatic print name" |

## "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.

## Registration of an "automatic print name"

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.<br>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].

# 6 AUTOMATIC COMMUNICATION STARTUP/ CANCEL SETTING

This chapter explains the settings for starting communication with a CPU module 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. Click the [Yes] button in the displayed screen to set the automatic communication startup setting to the Excel book being edited.
3. Click the [OK] button in the displayed screen.

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

## Automatic Communication Startup Disabled

### Operating procedure

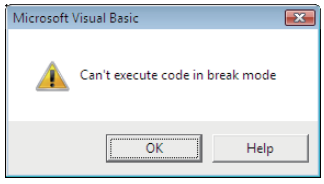
1. [MX Sheet] ⇨ [Automatic Communication Startup Setting] ( )
2. Click the [Yes] button in the displayed screen to set the automatic communication startup setting to the Excel book being edited.

**Point**

• 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 corrective action of "When MX Sheet setting is set, only the frame of Excel is displayed." in the following troubleshooting:
☞ Page 174 Troubleshooting

• 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 176 Countermeasures for errors as a result of using the automatic communication startup setting of MX Sheet in Microsoft Excel 2007 or Later

# MEMO

# 7 START COMMUNICATION AND END COMMUNICATION

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

## 7.1 Start Communication

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

### Operating procedure

1. [MX Sheet] ⇨ [Start Communication] ( )
2. Click the [Yes] button in the displayed screen.

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

**Point**

- The communication can be also started by clicking the created start communication button. (☞ Page 143 Start Communication Button)
- Do not operate other Excel book during communication.

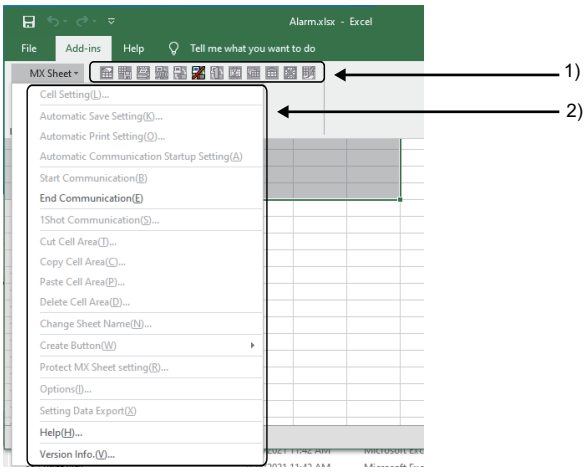


### Display of Excel book and task bar during communication

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

#### ■Display of Excel book

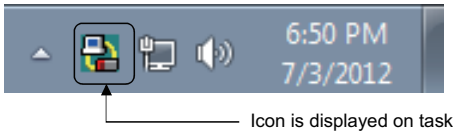
##### Window




| 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. |

#### ■Display of task bar

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



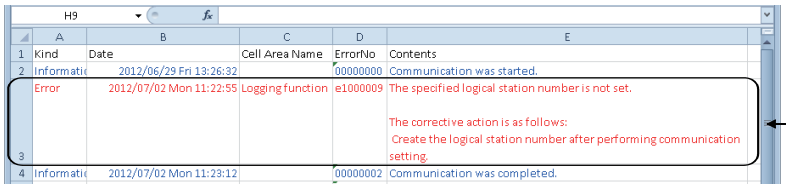
## Confirmation at communication error

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 153 "ErrorLog" sheet



| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Kind | Date | Cell Area Name | ErrorNo | Contents |
| 2 | Informatic | 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.<br><br>The corrective action is as follows:<br>Create the logical station number after performing communication setting. |
| 4 | Informatic | 2012/07/02 Mon 11:23:12 | | 00000002 | Communication was completed. |

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

# 7.2 End Communication

This section explains the procedure to end MX Sheet communication.

## Operating procedure

[MX Sheet] ⇨ [End Communication] ( )

**Point**

- The communication can also be ended by clicking the created end communication button. (☞ Page 147 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 153 "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.

# 8 1 SHOT COMMUNICATION

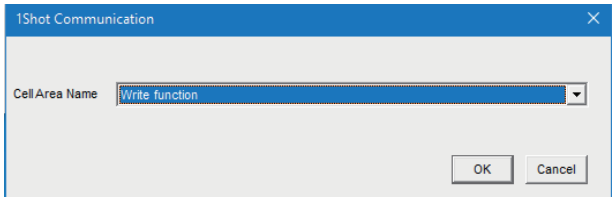
This chapter explains 1 shot communication function that makes communication with the selected cell area only once at any timing.
The "1 Shot Communication" screen is used to set a cell area and execute 1 shot communication for the cell area.

**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 148 1 Shot Communication Button)




## Displayed items

| Item | Description |
|---|---|
| Cell Area Name | Select the cell area for 1 shot communication.<br>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".<br>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.

# MEMO

# 9 CELL EDITING

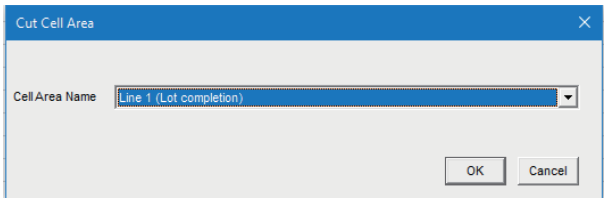
This chapter explains how to edit the cell area set using MX Sheet.

## 9.1 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.<br>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 138 Pasting Cell Area

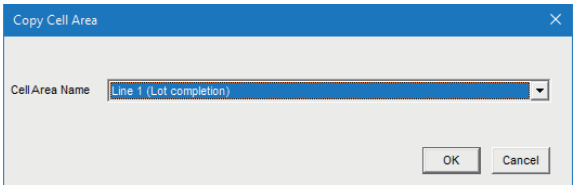
# 9.2 Copying Cell Area



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.<br>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.

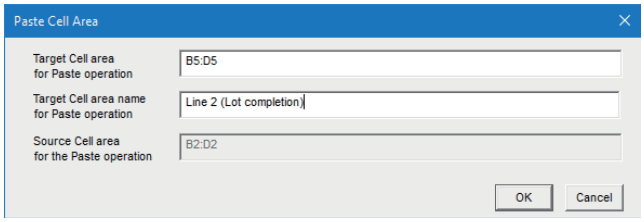
☞ Page 138 Pasting Cell Area

# 9.3 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] ( )




## 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.*1 |
| Source Cell area for the Paste operation | The cut or copied cell area is displayed. |
| [OK] button | Paste the cell area.<br>The button can be clicked after setting "Target Cell area for Paste operation" and "Target Cell area name for Paste operation". |

*1 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**

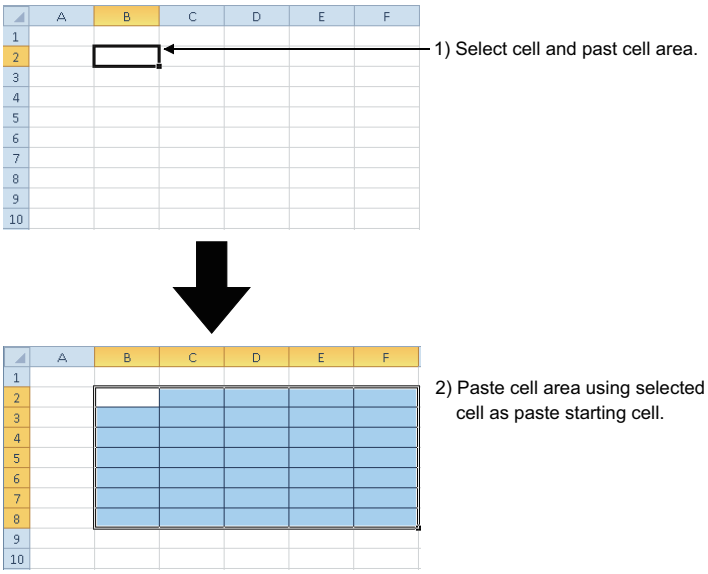
The cell area cannot be pasted unless the cell area is selected by cutting or copying it.

## Considerations for pasting the cell

Consider the following when pasting a cell area.

### ■Paste starting cell in cell area

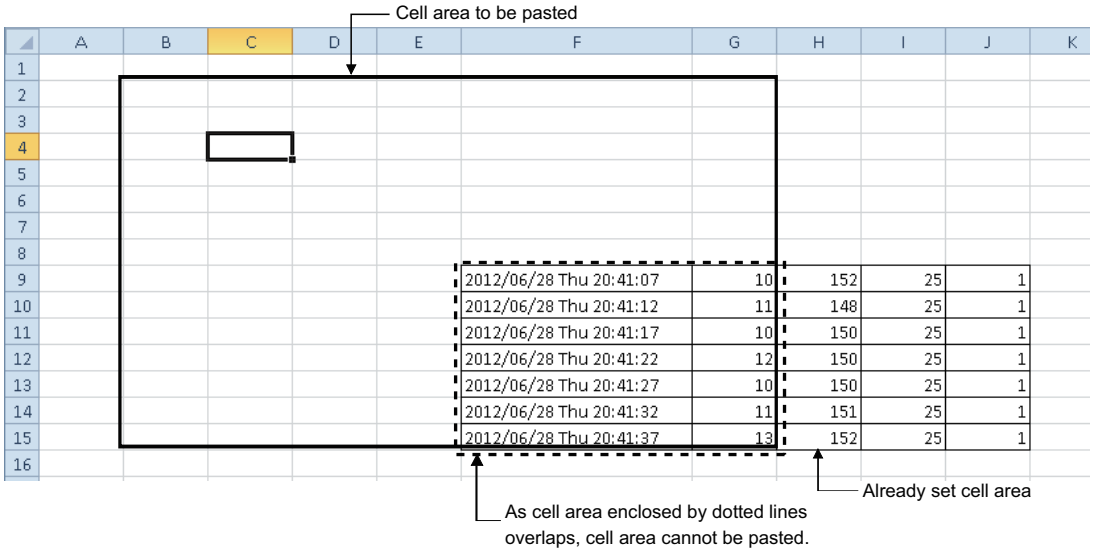
The paste starting cell in the cell area is the cell selected on the Excel spreadsheet.




### ■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.




**Point**

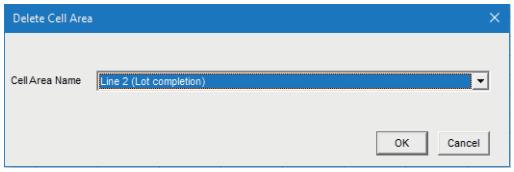
The cell can be pasted when both of the following conditions are met: the area of "Already set cell area" and "Cell area to be pasted" are completely matched, and "Monitor" and "Write" are set to "Use" on each "Cell Settings" screen.

# 9.4 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.<br>The button can be clicked after the cell area name is selected in "Cell Area Name". |

# 10 CHANGING SHEET NAME



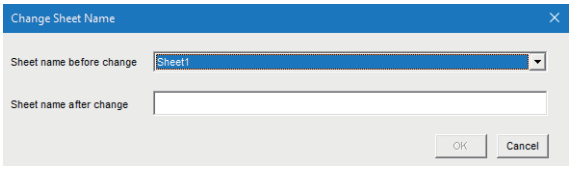
This chapter explains the changing the sheet name of the Excel spreadsheet where MX Sheet is set.
In the "Change Sheet Name" screen, select an Excel spreadsheet and set a new name for the sheet.

**Point**

Always change the sheet name of the Excel spreadsheet, 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 does not operate normally.

## Window

[MX Sheet] ⇨ [Change Sheet Name] ( )




## 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.<br>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

# 11 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.

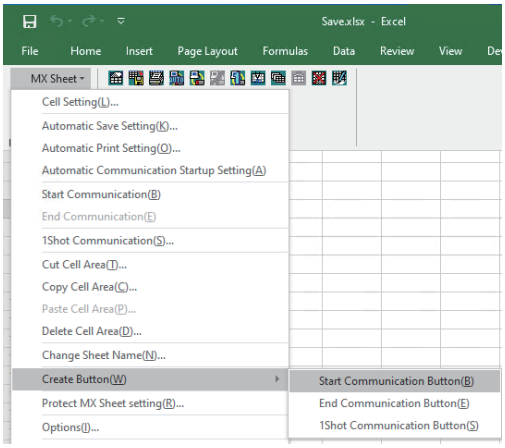


## 11.1 Start Communication Button

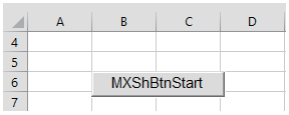
Create the button for execution of Start Communication and paste it to an Excel spreadsheet.

### 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.




The button is placed in the specified cell position.

**Point**

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

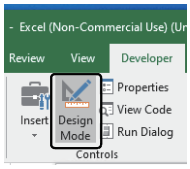
- Change the display characters on the button (font, size, etc.)
- Change if the start message is displayed/hidden displayed when executing the button

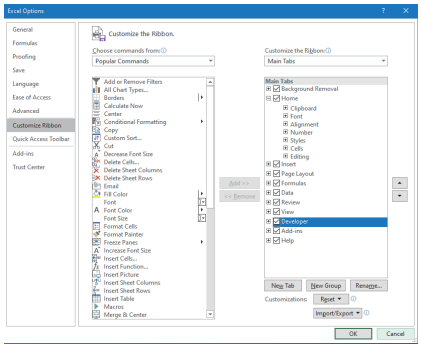
For the details of the property setting, refer to the following sections.

☞ Page 144 Property page starting method
☞ Page 145 Property setting

## Property page starting method

### Operating procedure

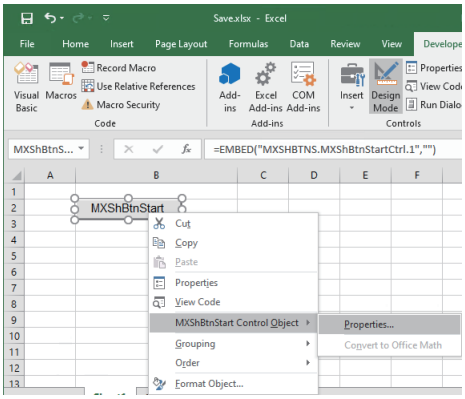


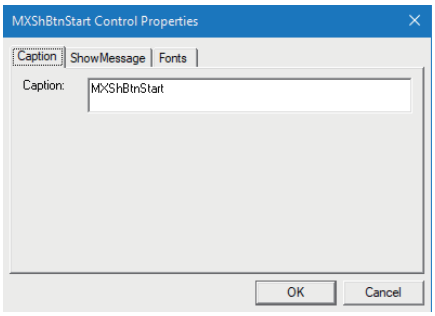
***1.*** Select the [Design Mode] in the [Developer] tab to enter the design mode.

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

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




***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 145 Property setting.

**Point**

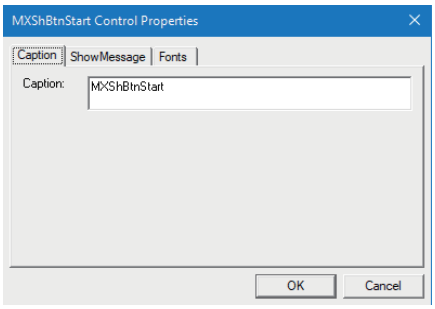
When the property setting is completed, select the [Design Mode] again to exit from the design mode.

## Property setting

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

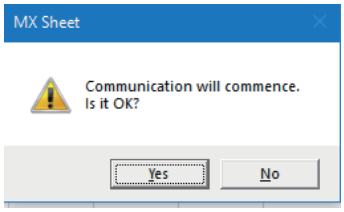
### ■[Caption] tab

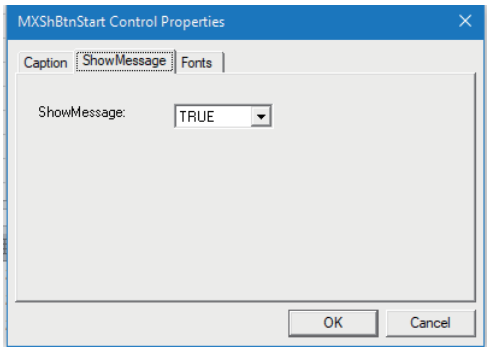
Edit the "Caption" (display characters on the button) of the button.




### ■[ShowMessage] tab

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

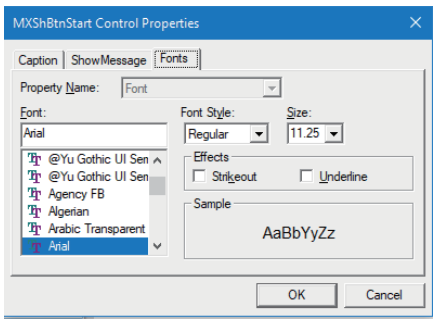



TRUE : Display
FALSE : Not display

### ■[Fonts] tab

Set the type and size of the caption font.



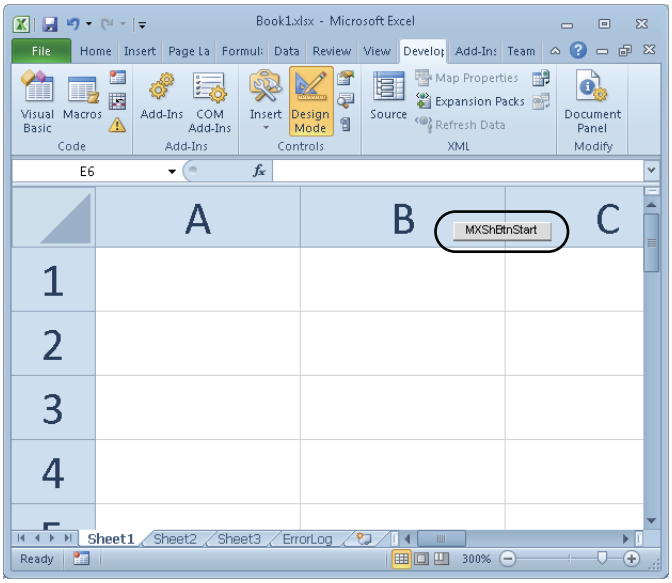
**Point**

- 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 the letters specified in 'Caption' are not displayed properly after changing the font name on the [Font] Tab of the property, set the font name to 'System' and change the property again. Letters may not be displayed properly in the language of operating system being used depending on the font name.
- 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.

# 11.2 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 143 Button pasting method

### Operating procedure

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

## Property page starting method

Same as the Start Communication Button.

☞ Page 144 Property page starting method

### Operating procedure

[MXShBtnEnd Control Object] ⇨ [Properties]

## Property setting

Set the Caption and Font properties.

☞ Page 145 Property setting

# 11.3 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 143 Button pasting method

### Operating procedure

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

## Property page starting method

Same as the Start Communication Button.

☞ Page 144 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.

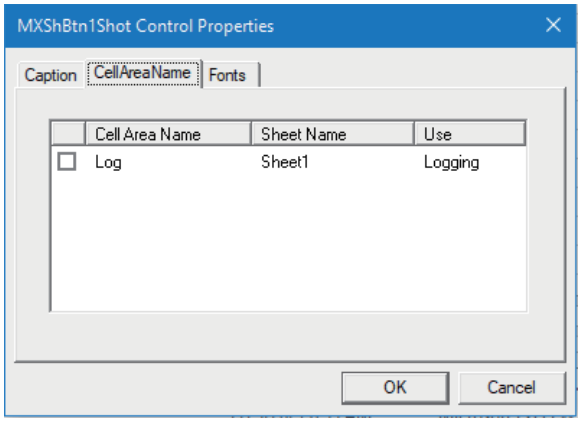
☞ Page 145 Property setting

### ■[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.



# 12 PROTECTING/UNPROTECTING MX Sheet SETTING

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

## 12.1 Protecting MX Sheet Setting

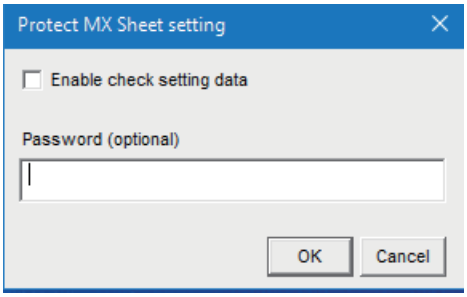
Protect the MX Sheet setting by a password so that the setting content cannot be changed.
The setting content cannot be edited until the MX Sheet setting is unprotected.

**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]




### 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 150 "Enable check setting data" |
| Password (optional) | Enter the password for protecting the setting contents.<br>The password may also be registered as a blank. | — |
| [OK] button | The "Confirm Password" screen is displayed.<br>When the password is blank, however, the "Confirm Password" screen is not displayed and the MX Sheet setting is protected. | — |

## "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 Setting | × | ○*1 |
| Automatic Save Setting | × | ○*1 |
| Automatic Print Setting | × | ○*1 |
| Automatic Communication Startup Setting | × | × |
| Start communication | ○ | ○ |
| End communication | ○ | ○ |
| 1 shot communication | ○ | ○ |
| Cut Cell Area | × | × |
| Copy Cell Area | × | × |
| Paste Cell Area | × | × |
| Delete Cell Area | × | × |
| Change 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 Setting
· Automatic Save Setting
· Automatic Save
· Automatic Print List
· Automatic Print

**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.

# 12.2 Unprotecting MX Sheet Setting

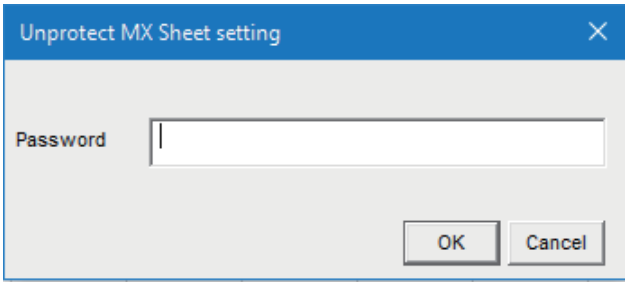
The MX Sheet setting is unprotected, and the setting content can be changed.

**Point**

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

## Window

[MX Sheet] ⇨ [Unprotect MX Sheet setting]



# 13 OPTIONS

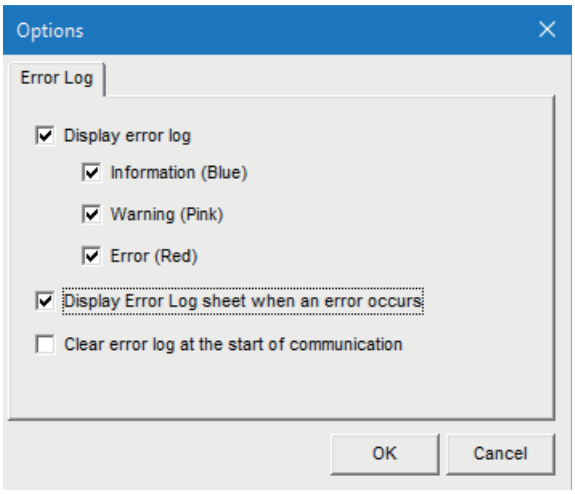
Set option setting for specifying such as an "ErrorLog" sheet output format.

## 13.1 Setting Error Logs

Set the "ErrorLog" sheet output format on the [Error log] tab on the "Options" screen.
For details of the "ErrorLog" sheet, refer to the following:
☞ Page 153 "ErrorLog" sheet

### Window

[MX Sheet] ⇨ [Options]




### Displayed items

| Item | | Description |
|---|---|---|
| Display error log | — | Set whether the information, warning, and error that occurred during the execution of communication is displayed on the "ErrorLog" sheet or not.<br>• Selected: Displayed<br>• No selected: Not displayed |
| | Information (Blue) *1 | Set whether the information message (blue) during the execution of communication is displayed on the "ErrorLog" sheet or not.<br>• Selected: Displayed<br>• No selected: Not displayed |
| | Warning (Pink) *1 | Set whether the warning message (pink) during the execution of communication is displayed on the "ErrorLog" sheet or not.<br>• Selected: Displayed<br>• No selected: Not displayed |
| | Error (Red) *1 | Set whether the error message (red) during the execution of communication is displayed on the "ErrorLog" sheet or not.<br>• Selected: Displayed<br>• No selected: Not displayed |
| Display Error Log sheet when an error occurs | | Set whether the display is switched to the "ErrorLog" sheet or not if a warning or error occurs during the execution of communication. (☞ Page 153 "ErrorLog" sheet)<br>• Selected: Display is switched to the "ErrorLog" sheet.<br>• No selected: Display is not switched to the "ErrorLog" sheet. |
| Clear error log at the start of communication | | Set whether the Error log is cleared or not at the start of communication.<br>• Selected: Cleared<br>• No selected: Not cleared |

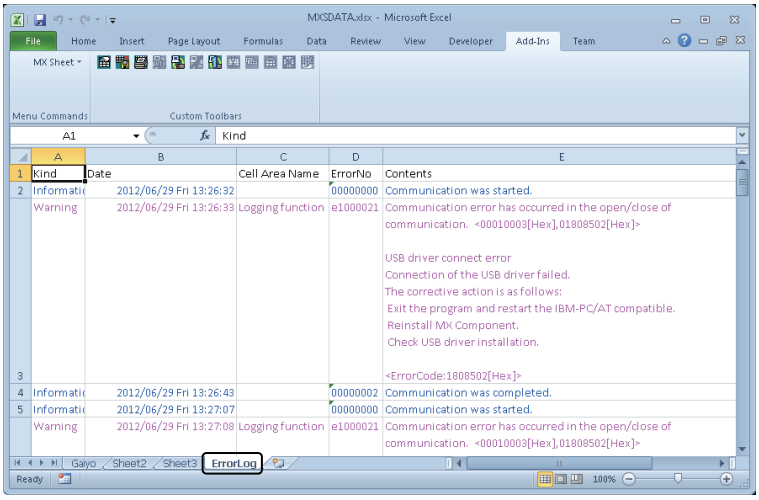
*1 Setting can be set only when the "Display error log" check box is selected.

# "ErrorLog" sheet

The following 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 153 "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 154 "Date" |
| Cell Area Name | The cell area name where the communication status is changed is displayed. | Page 154 "Cell Area Name" |
| ErrorNo | The error number of the error that has occurred is displayed. | Page 154 "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 154 "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. |
| Operation when cell is full | Overwritten in due order, starting with the first line. |

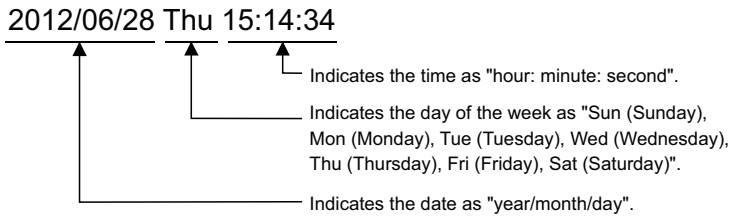
## "Kind"

The following table shows the communication status displayed in "Kind".

| Communication Status | Description |
|---|---|
| Information | Displayed when the communication with a CPU starts and ends, and 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.

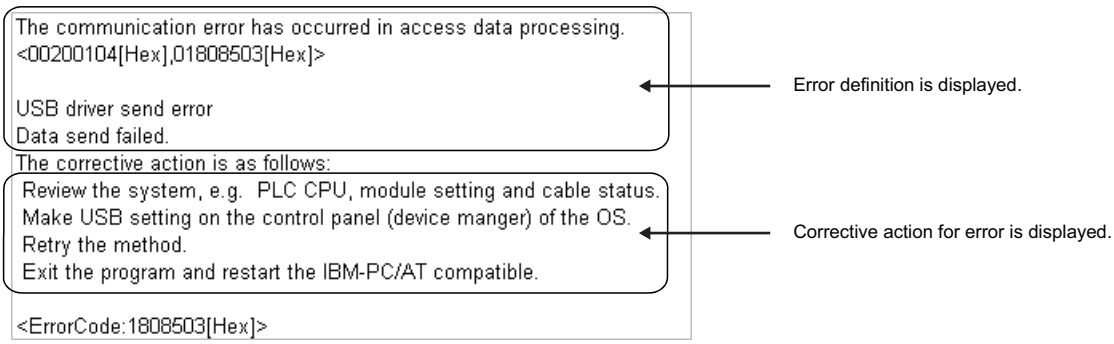
## "ErrorNo"

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 "ErrorLog" sheet output format in the "Options" screen (☞ Page 152 Setting Error Logs).

## Checking method for the error codes output on an "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 5 Reference Manual

# 14 SETTING DATA EXPORT

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

## Operating procedure

[MX Sheet] ⇨ [Setting Data Export]

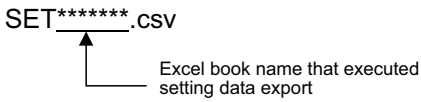
The details of MX Sheet set in the Excel book are output to the CSV file.

## 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.

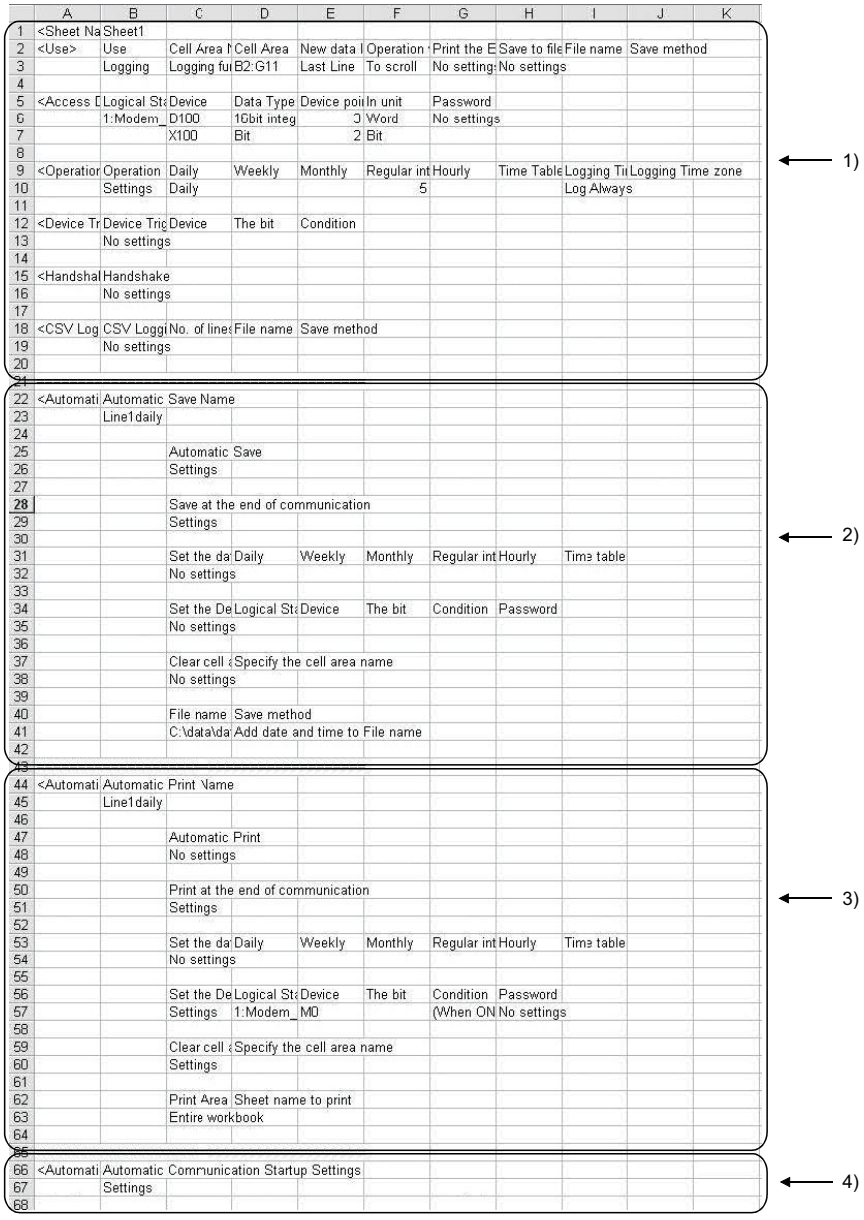
## File name of CSV file

The following shows the file name of the CSV file.



## 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 I | Cell Area | New data I | Operation | Print the E | Save to file | File name | Save method | |
| 3 | | Logging | Logging fu | B2:G11 | Last Line | To scroll | No setting | No settings | | | |
| 4 | | | | | | | | | | | |
| 5 | <Access D | Logical St | Device | Data Type | Device poi | In unit | Password | | | | |
| 6 | | 1:Modem_ | D100 | 16bit integ | | 3 Word | No settings | | | | |
| 7 | | | X100 | Bit | | 2 Bit | | | | | |
| 8 | | | | | | | | | | | |
| 9 | <Operatior | 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 Trig | Device | The bit | Condition | | | | | | |
| 13 | | No settings | | | | | | | | | |
| 14 | | | | | | | | | | | |
| 15 | <Handshal | Handshake | | | | | | | | | |
| 16 | | No settings | | | | | | | | | |
| 17 | | | | | | | | | | | |
| 18 | <CSV Log | CSV Loggi | No. of line | File name | Save method | | | | | | |
| 19 | | No settings | | | | | | | | | |
| 20 | | | | | | | | | | | |
| 21 | | | | | | | | | | | |
| 22 | <Automati | Automatic | Save Name | | | | | | | | |
| 23 | | Line1daily | | | | | | | | | |
| 24 | | | | | | | | | | | |
| 25 | | | Automatic | Save | | | | | | | |
| 26 | | | Settings | | | | | | | | |
| 27 | | | | | | | | | | | |
| 28 | | | Save at the end of communication | | | | | | | | |
| 29 | | | Settings | | | | | | | | |
| 30 | | | | | | | | | | | |
| 31 | | | Set the da | Daily | Weekly | Monthly | Regular int | Hourly | Time table | | |
| 32 | | | No settings | | | | | | | | |
| 33 | | | | | | | | | | | |
| 34 | | | Set the De | Logical St | Device | The bit | Condition | Password | | | |
| 35 | | | No settings | | | | | | | | |
| 36 | | | | | | | | | | | |
| 37 | | | Clear cell | Specify the cell area name | | | | | | | |
| 38 | | | No settings | | | | | | | | |
| 39 | | | | | | | | | | | |
| 40 | | | File name | Save method | | | | | | | |
| 41 | | | C:\data\da | Add date and time to File name | | | | | | | |
| 42 | | | | | | | | | | | |
| 43 | | | | | | | | | | | |
| 44 | <Automati | Automatic | Print Name | | | | | | | | |
| 45 | | Line1daily | | | | | | | | | |
| 46 | | | | | | | | | | | |
| 47 | | | Automatic | Print | | | | | | | |
| 48 | | | No settings | | | | | | | | |
| 49 | | | | | | | | | | | |
| 50 | | | Print at the end of communication | | | | | | | | |
| 51 | | | Settings | | | | | | | | |
| 52 | | | | | | | | | | | |
| 53 | | | Set the da | Daily | Weekly | Monthly | Regular int | Hourly | Time table | | |
| 54 | | | No settings | | | | | | | | |
| 55 | | | | | | | | | | | |
| 56 | | | Set the De | Logical St | Device | The bit | Condition | Password | | | |
| 57 | | | Settings | 1:Modem_ | M0 | | (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 | | | | | | | | | | | |

1)

2)

3)

4)

### Displayed items

| Item | Description |
|---|---|
| 1) (Cell Setting) | The settings of the sheet name and cell setting are displayed. |
| 2) (Automatic Save)*1 | 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 |

# 15 SAMPLE PROGRAMS

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

### Precautions

- The sample programs are stored in (installation folder)\Sheet\Sample at the installation. When executing the sample programs, copy them to any folder before using.
- Sample programs are provided as a reference for creating user application programs. Use the programs with your responsibility.

## Logical station number

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

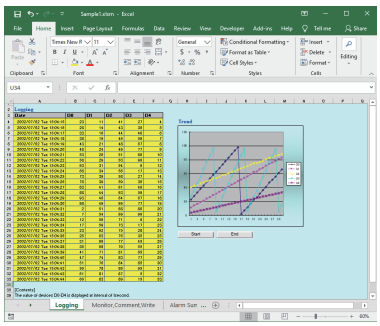
To use the sample programs, set the settings for the logical station number "1" or assign other logical station number and set the setting for the number.

## Sample program list

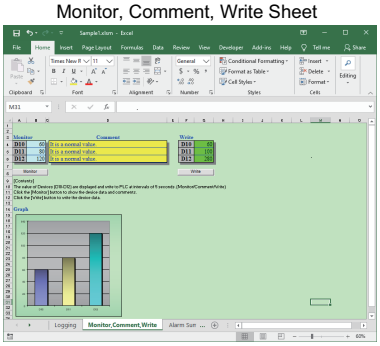
The following table shows the sample programs (Sample1.xlsm, Sample2.xlsm) that are registered under (installation folder)\Sheet\Sample at MX Sheet installation.

| Sample Program | | Description |
|---|---|---|
| **Excel book name** | **Excel spreadsheet name** | |
| Sample1.xlsm | 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.xlsm | 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.) |

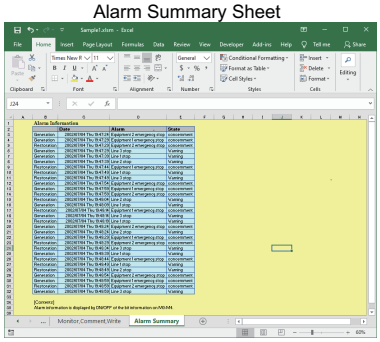
Logging Sheet



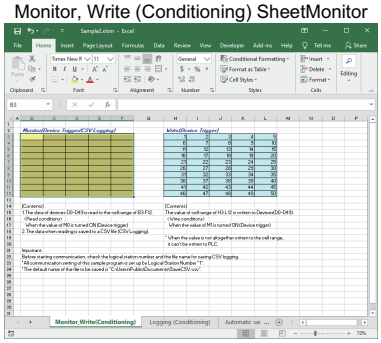
Monitor, Comment, Write Sheet



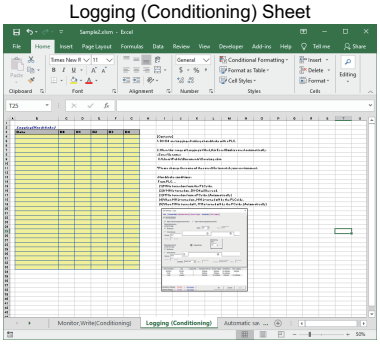
Alarm Summary Sheet



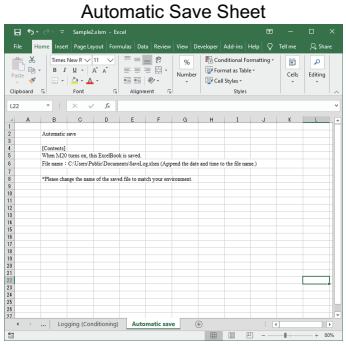
Monitor, Write (Conditioning) SheetMonitor



Logging (Conditioning) Sheet



Automatic Save Sheet



# MEMO

# APPENDIX

## Appendix 1 Additions and Changes from Previous Version

This section shows the additions and changes with upgrade.

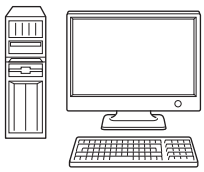
Additionally, the table also shows the version of MX Component that is supported by each version of MX Sheet.

| MX Sheet | Description | Supported MX Component |
|---|---|---|
| 3.000A | Microsoft Excel 2019(64-bit version) is supported. | 5.000A |
| | The supported Excel version is only Microsoft Excel 2019. | |
| | The supported operating system is only Windows10. | |
| | The default installation folder is changed from "C:\MELSEC" to "C:\Program Files\MELSOFT." | |
| | Available for e-Manual Viewer | |

# Appendix 2 Processing Speed of MX Sheet

## Performance values

This section explains the performance values 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 10 Enterprise (64bit)
CPU : Intel Core i5-4590(3.30GHz)
Memory : 16 GB
Excel : Microsoft Excel 2019(64bit)
Cell area : Only one

### Performance values for Ethernet communication

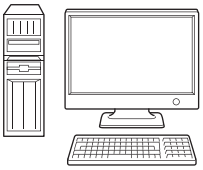
The following table shows the performance values when the monitor and logging functions are executed using Ethernet communication.
CPU type: R08CPU
Connected module: RJ71EN71

| Function | Operation Interval | Number of Device Points*1 |
|---|---|---|
| Monitor function | 0.005s (5ms) | 7 points |
| | 0.05s (50ms) | 70 points |
| | 0.5s (500ms) | 900 points |
| | 1s | 1700 points |
| | 5s | 2000 points |
| Logging function | 0.005s (5ms) | 6 points |
| | 0.05s (50ms) | 60 points |
| | 0.5s (500ms) | 256 points |
| | 1s | 256 points |
| | 5s | 256 points |

*1 This number of device points applies to the case the data type is set to a character string.

# 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 10 Enterprise (64bit)
CPU : Intel Core i5-4590(3.30GHz)
Memory : 16 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 units of 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.

# 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 a CPU module and the collection timing of device data.
The following explains the collection delay and data dropout.

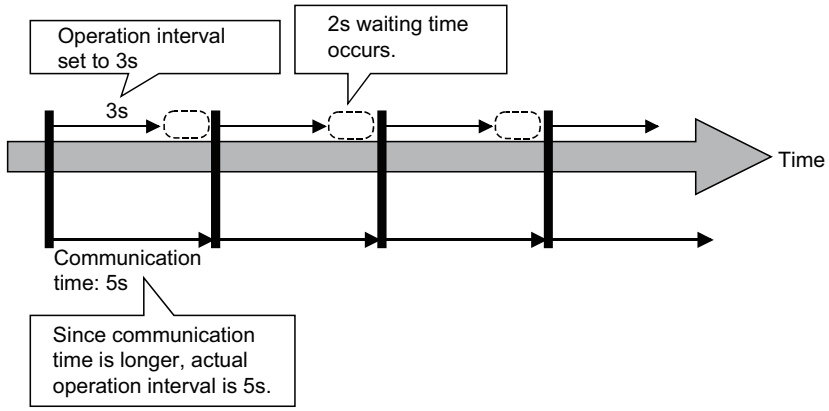
### Collection delay

Device data collection delay occurs depending on the communication time with a CPU module 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.
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 a CPU module 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 a CPU module is 5s

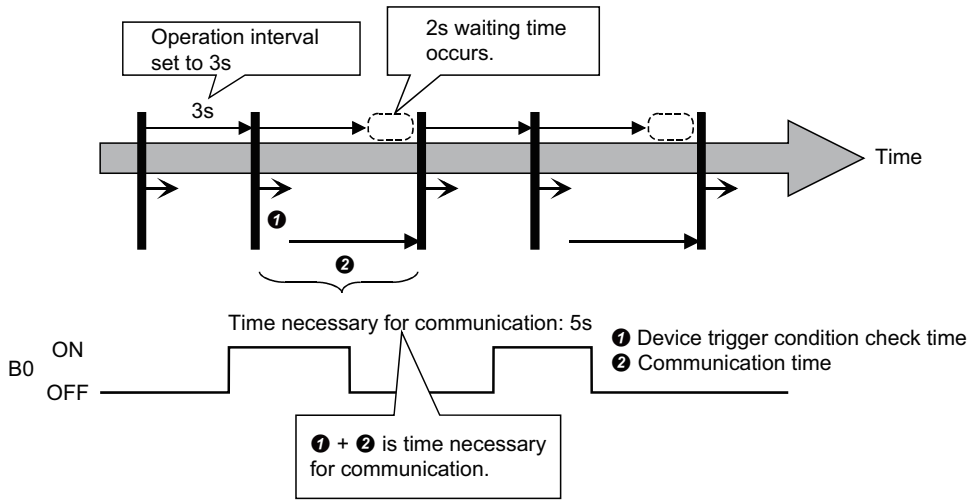


## ■Collection delay when device trigger function is used

When the sum of the device trigger condition check time and the communication time with a CPU module 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)

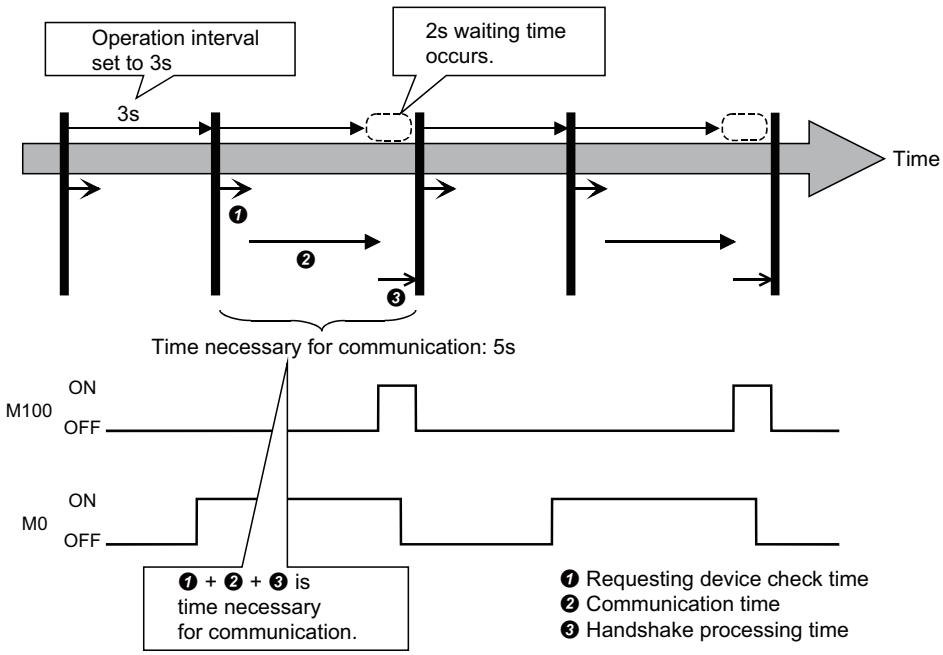



## ■Collection delay when handshake function is used

When the sum of the requesting device check time, the communication time with a CPU module 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 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 a CPU module 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

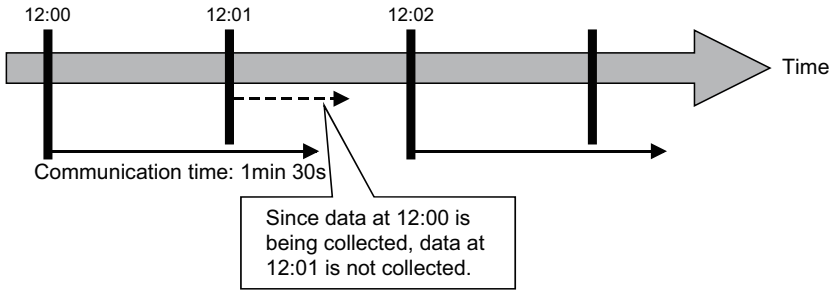
When the communication time with a CPU module is longer than the operation interval, the data to be collected dropouts.

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 a CPU module 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

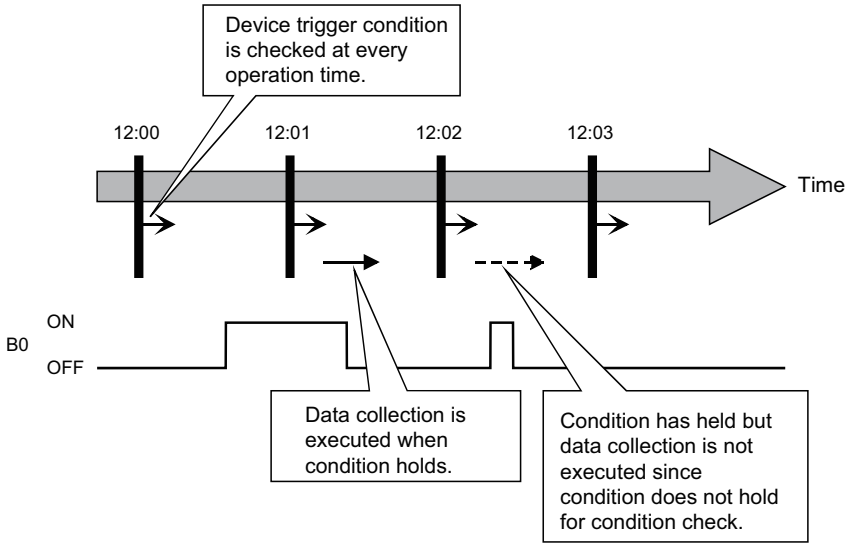
When the device trigger condition holds for the specified operation time, condition cannot be checked and the data to be collected dropouts.

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.




## Precautions

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

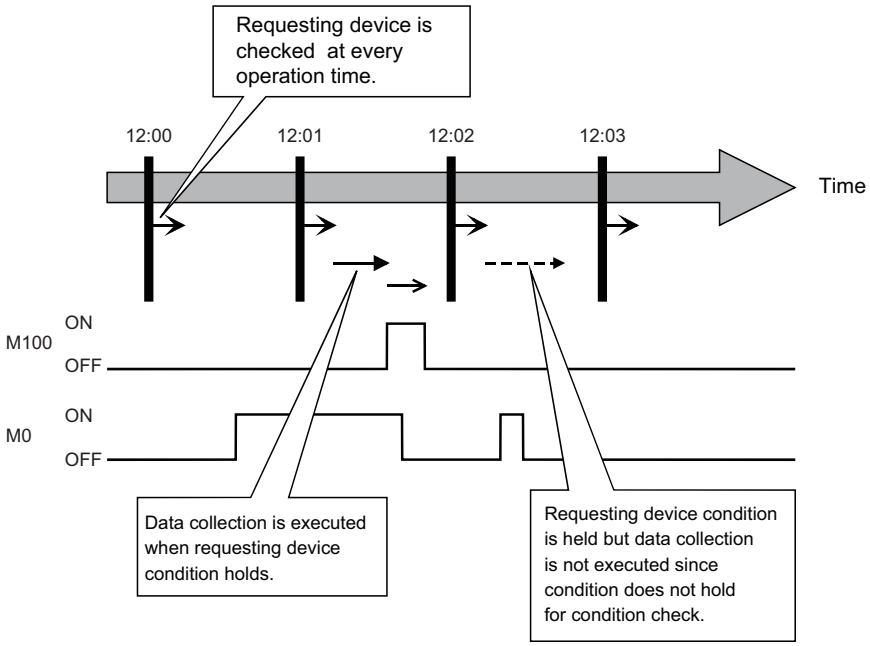
When the requesting device condition holds for the specified operation time, the data to be collected dropouts.

If a data dropout occurs during use of the handshake, decrease the operation interval setting of MX Sheet.

Ex.

When the "programmable controller 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.




### Precautions

Note that if a data dropout occurs during use of the handshake, error information is not displayed on the "ErrorLog" sheet.

A

# 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 performed 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.

(Error information is not displayed on the "ErrorLog" sheet because this symptom is not a collection delay.)

| | | |
|---|---|---|
| 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.

• Cause

Multiple cell areas are 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 action

Decrease the number of cells set to the Excel book.

Increase the "Regular interval" setting.

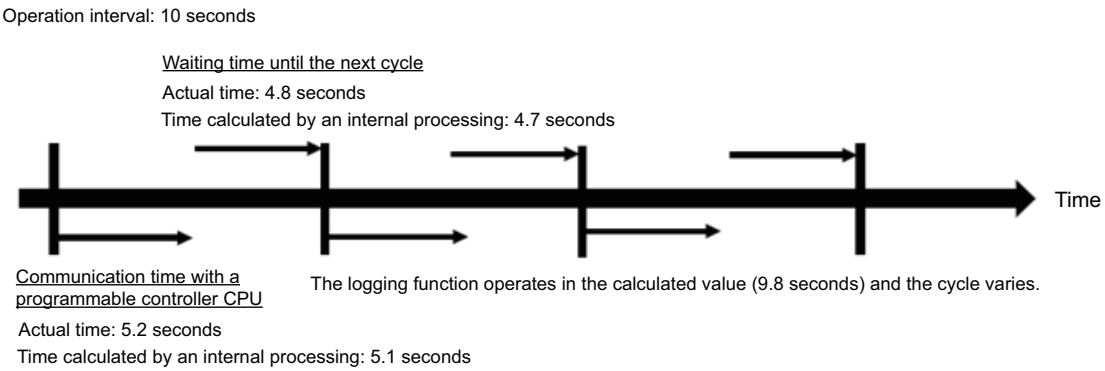
Reexamine the cell area settings. (☞ Page 167 Creating the Excel Spreadsheet for MX Sheet)

## 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.



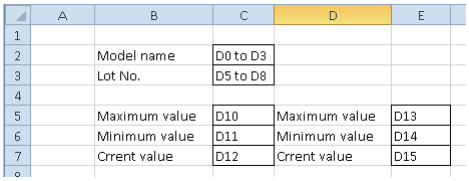
# Appendix 4 Creating the Excel Spreadsheet for MX Sheet

When collecting/writing device data by using MX Sheet, the efficiency of communication with a CPU module 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 a CPU module 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 CPU module.
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 | | Crrent value | D12 | Crrent 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 | | |

# Communication efficiency and access data setting

When one type of device is set as multiple devices, the efficiency of communication with a CPU module.
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 | | Crrent 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 | | | | | | | | |

**Point**

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 is displayed on Excel, the efficiency of communication with CPU module decreases if multiple cell areas are set.

The following setting example shows the case where inconsecutive device data is displayed on Excel.

• Setting example

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | | | Maximum value | Minimum value | Crrent 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.)

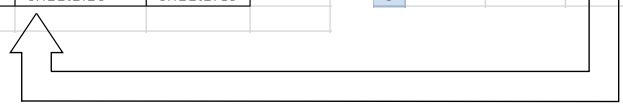
| Cell area name | Cell area | Access data settings | | | Operation Interval |
|---|---|---|---|---|---|
| | | Logical station number | Device setting | Number of cells | |
| Line information | A2:E5<br>(Area set to Sheet2) | 0:Ethernet | D0 16-bit integer | 20 | 1s interval |

Sheet 1 (Excel spreadsheet where device data is displayed actually)

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | | | | | | |
| 2 | | | Maximum value | Minimum value | Crrent 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 | | | | | | |



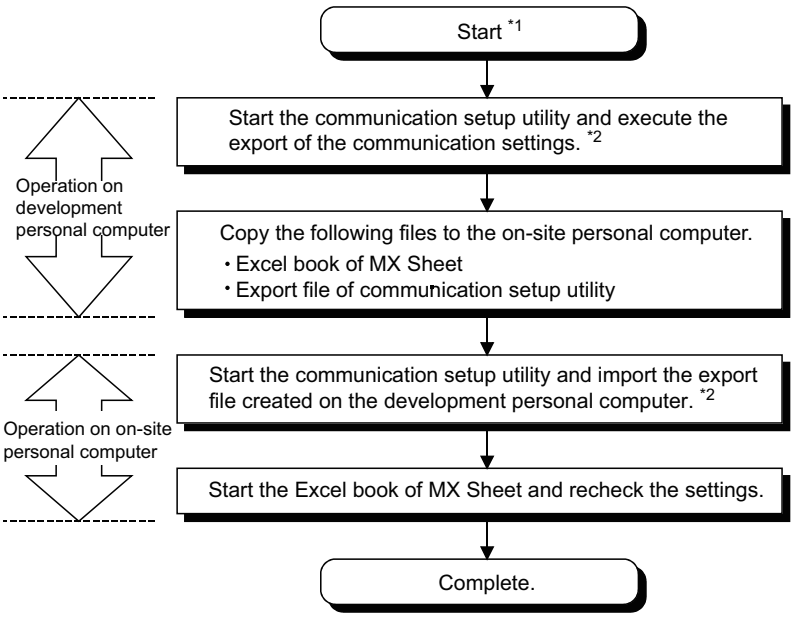
Set Sheet 1 to refer to cells of Sheet 2.

# 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.

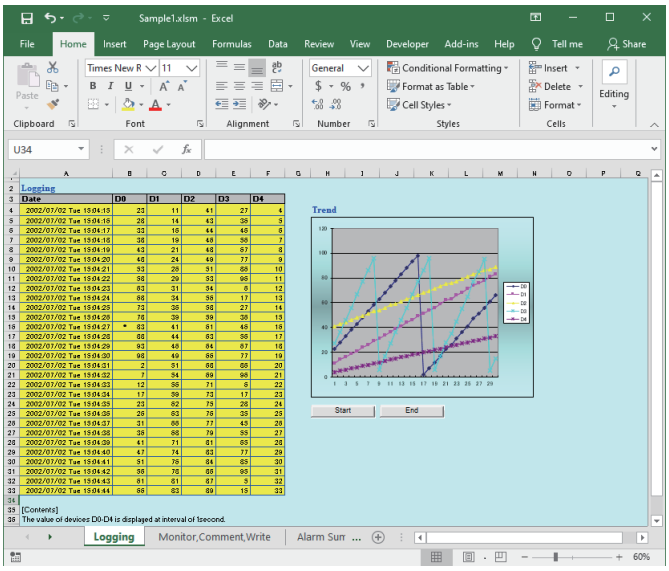
# Appendix 6 HTML FILE

This section explains the HTML file saved during MX Sheet operation.

## HTML file

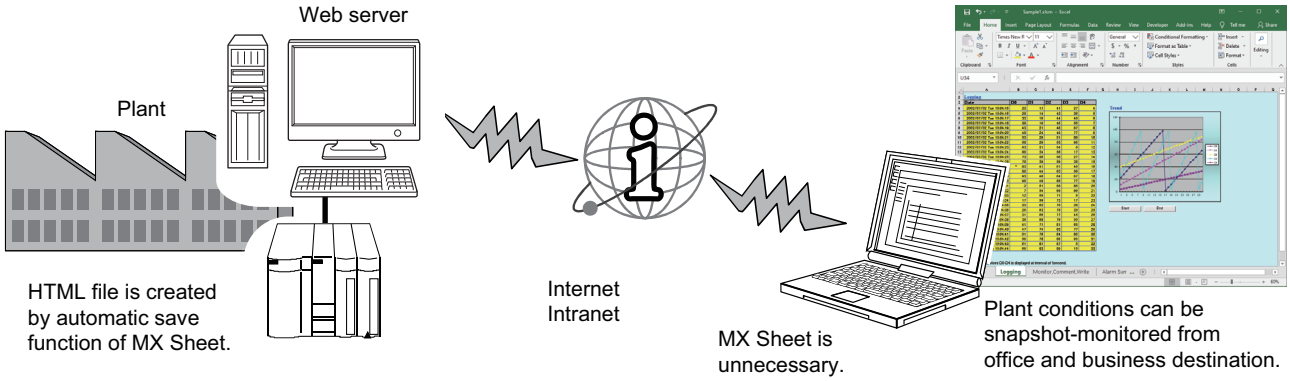
MX Sheet allows an HTML file to be saved automatically into the folder specified when any of the following functions is used.

- 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.



# Appendix 7 CSP+ For Machine

CSP+ file for machine is a file that expresses CSP+ for machine in XML format.
This section explains the CSP+ for machine that can be used for MX Sheet.
For CSP+, refer to the CC-Link Partner Association website (www.cc-link.org).

## 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 | Number of cells | Dev. points | In unit |
| BOOL | Bit | — | — | — | 1 | 1 | Bit |
| INT8 | 16 bit integer | Decimal | | 1 | | | Word |
| UNIT8 | | | | | | | |
| INT16 | | | | | | | |
| INTx (x: 2 to 15) | | | | | | | |
| UNIT16 | | | | | | | |
| UNITx (x: 2 to 15) | | | | | | | |
| WORD | | | | | | | |
| BIT_STRINGx (x: 2 to 15) | | | | | | | |
| DWORD | 32 bit integer | | | | | 2 | |
| UNIT32 | | | | | | | |
| INT32 | | | | | | | |
| BYTE | 16 bit integer | | | | | 1 | |
| STRINGx (x: 1 to 40) | Character string | — | x | — | | x/2 | |
| DATE | 16 bit integer | Decimal | — | 1 | 8 | 8 | |
| BIN8 | | | | | 1 | 1 | |
| BIN16 | | | | | | | |
| BINx (x: 1 to 15) | | | | | | | |
| BIN32 | 32 bit integer | | | | | 2 | |

## ASSIGN of CSP+ for machine

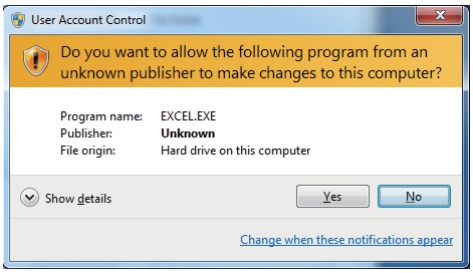
The following table shows the devices of ASSIGN of CSP+ for machine that can be used for MX Sheet.

| 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) | Bit |
| 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 10. By this function, a warning message is displayed when executing Excel with Administrator authority.




A

# Appendix 9 Troubleshooting

| Symptom | Check point | Corrective action |
|---|---|---|
| The following symptom occurs when upgrading the version of Excel.<br>• "Run-time error '9' : Subscript out of range" is displayed when Excel is started up. | Does a temporary file created by Excel remain? | Delete the temporary file according to the following procedure. (☞ Page 175 Considerations for deleting a temporary file)<br>❶ Enter '%temp%\Excel8.0' in Windows Explorer, and delete the files under '%temp%\Excel8.0.'<br>❷ Enter '%AppData%\Microsoft\Excel' in Windows Explorer, and delete the '.xlb' file under '%AppData%\Microsoft\Excel.' |
| The following symptom occurs when upgrading the version of MX Sheet.<br>• After Automatic communication startup is executed in MX Sheet, the available/unavailable buttons for the function is inappropriate. | Does a temporary file created by Excel remain? | Delete the temporary file according to the following procedure. (☞ Page 175 Considerations for deleting a temporary file)<br>❶ Enter '%temp%\Excel8.0' in Windows Explorer, and delete the files under '%temp%\Excel8.0.'<br>❷ Enter '%AppData%\Microsoft\Excel' in Windows Explorer, and delete the '.xlb' file under '%AppData%\Microsoft\Excel.' |
| Data is not written to a programmable controller after starting the communication. | Has the following error occurred in an "ErrorLog" sheet?<br>• The wrong value is inputted into the cell area. Write process of the corresponding cell area was not performed. | • If there is no data for the number of device points specified in the [Access Data] tab in the cell area specified in the "Cell Settings" screen, review the setting.<br>• Set the data which matches to the data type specified in the [Access Data] tab.<br>❶ For bit type: Either 0 or 1<br>❷ For integer/real number type: Numeric data (other than character string)<br>• If "zoom" has set, set the data so that the operation result does not overflow. |
| An communication error occurs during communication with a CPU module. | Is any of the following functions set to a personal computer on which MX Sheet is installed?<br>• Resume function<br>• Suspend function<br>• Power saving function<br>• Standby mode | Do not set any of the following functions on the personal computer.<br>• Resume function<br>• Suspend function<br>• Power saving function<br>• Standby mode |
| "Operation of Excel sheet failed." is displayed when selecting [Cell Setting] on the menu of MX Sheet. | • Has MX Component been installed?<br>• Is the sheet name changed by the operation of Excel? | • When MX Component has not been installed, install it.<br>• 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.<br>When the symptom cannot be solved by the above actions, take the following actions:<br>• Enable the ActiveX setting and the macro setting in the security setting of Excel. (☞ Page 20 Security settings of Excel)<br>• Start Excel from the [Run as administrator] menu. |
| The message "The selected cell range has already been set." is displayed at the time of cell setting. | Is the operation procedure for setting a cell correct? | Set the cell by the following procedure.<br>❶ Select a cell of an Excel spread sheet on which the cell is not set.<br>❷ Select [Cell Setting] on the menu of MX Sheet.<br>❸ Select a cell range to be edited from the cell range list on the "Cell Settings" screen. |
| When MX Sheet setting is set, only the frame of Excel is displayed. | Is the operation of logging off or shutting down of a personal computer performed during communication? | Remove the hidden attributes of the Excel book and overwrite the Excel book to restore the system by the following procedures.<br>❶ Select the [View] tab and select [Unhide].<br>❷ Select the Excel book to be displayed and click the [OK] button.<br>❸ As the Excel book is displayed, save the Excel book. |
| The timeout error (0x0180840B) occurs during communication. | — | Recover from the error by the following corrective actions.<br>• Check the CPU module, unit settings, state of the cable, etc.<br>• Check if communication can be established with the Ping command.<br>• Review the timeout time of the communication setup utility.<br>• Review the timeout time of the property of the control. |

| Symptom | Check point | Corrective action |
|---|---|---|
| The socket object generation error (0x01808007) occurs during communication. | Is GT SoftGOT used? | When using GT SoftGOT, right-click and select "Run as administrator" at the startup of the application.<br>When the symptom cannot be solved by the above action, set a port number different from one used for another application to the personal computer side.<br>If the symptom cannot be solved, check the following items, and contact your local Mitsubishi Electric sales office or representative.<br>• System configuration (model name of the target programmable controller, model name of the module, and used network)<br>• Name of personal computer (Manufacturer), CPU, memory size<br>• OS, Edition, 32-bit/64-bit<br>• MX Component version<br>• A function and argument of MX Component in which the symptom occurs<br>• Settings within "Communication Setup Utility"<br>• Occurrence frequency and procedure for a symptom |
| The start communication button cannot be moved. | Is the operation procedure of Excel correct? | Operate Excel by the following procedures.<br>❶ Select the [Design Mode] in the [Developer] tab to enter the design mode.<br>❷ Select the start communication button and drag it. |
| Any of the following messages appears.<br>• Acquisition of Excel sheet Information failed.<br>• Operation of Excel sheet failed. | Does MX Component support the connection target device that MX Sheet supports? | Use MX Component that supports the connection target device that MX Sheet supports. |
| An error message appears for the device specified on the [Access Data] tab. | Is the communication route of the logical station number assigned to the cell area supported by MX Sheet? | Use the logical station number which is supported by MX Sheet. |
| The following message appears on the "ErrorLog" sheet at the start of communication.<br>• Communication error has occurred in the open/close of communication. | • Is the logical station number supported by MX Component used?<br>• Has the communication route been changed to the one, which is not supported by MX Sheet after a logical number is assigned in MX Sheet? | • Use the logical station number which is supported by MX Component.<br>• Use the logical station number which is supported by MX Sheet. |
| • Excel stops responding.<br>• System error in MXShComnInitialize or the following message appears:<br>Can't execute code in break mode. | • Is an Excel book opened after configuring MX Sheet automatic communication startup setting?<br>• Is an Excel book opened with Microsoft Excel 2007 or later? | Perform the operation described in the "Corrective action" in the following:<br>☞ Page 176 Countermeasures for errors as a result of using the automatic communication startup setting of MX Sheet in Microsoft Excel 2007 or Later |

# Considerations for deleting a temporary file

Check the following before deleting the temporary file:

· 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 by the following procedures:

❶ Click the [Tools] tab in Explorer, and select [Folder Options].

❷ Click the [View] tab, and select "Show hidden files, folders, and drives" in the [Advanced settings] box.

· A file and folder may not exist.

**Point**

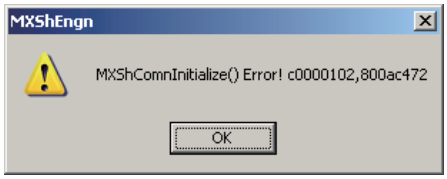
When "Display error log" is selected on the [Error log] tab on the "Options" screen (☞ Page 152 Setting Error Logs), errors occurred on MX Sheet are output to the "ErrorLog" sheet.

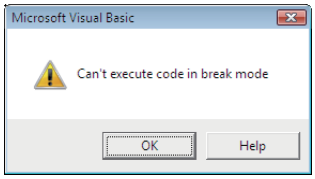
For the method for checking the error codes output on the "ErrorLog" sheet, refer to the following:

☞ Page 154 Checking method for the error codes output on an "ErrorLog" sheet

# 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 (☞ Page 129 AUTOMATIC COMMUNICATION STARTUP/CANCEL SETTING) is opened using Microsoft Excel 2007 or later, any of the following messages may appears.




## Corrective action

Take an action by the following procedures:

1. Check the required .NET Framework and the related modules, and install them. (☞ Page 176 Checking and installation of .NET Framework and the related module)
2. Execute "MXShRegRCom.exe." (☞ Page 177 Execution of "MXShRegRCom.exe")
3. Check if the action works. (☞ Page 178 Checking if the action works)

**Point**

Update MX Sheet or install Service Pack, .NET Framework, and the related module using the administrator account.

## 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 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 | Name of file in product DVD-ROM |
|---|---|---|
| Microsoft Excel 2019 | Microsoft .NET Framework 4.6 Extended | dotNetFx40_Full_x86_x64.exe |
| | Microsoft Visual Studio 2010 Tools for Office Runtime (x86) | vstor_redist.exe |

- 64-bit version

| Excel version | .NET Framework and the related module | Name of file in product DVD-ROM |
|---|---|---|
| Microsoft Excel 2019 | Microsoft .NET Framework 4.6 Extended | dotNetFx40_Full_x86_x64.exe |
| | Microsoft Visual Studio 2010 Tools for Office Runtime (x64) | vstor_redist.exe |

**Point**

Check if the required .NET Framework and the related module are installed or not by the following operations.
Select [Start] ⇨ [Control Panel] ⇨ [Uninstall a program].
Check if the "Uninstall or a change a program" screen displays the required .NET Framework and the related module.

## Execution of "MXShRegRCom.exe"

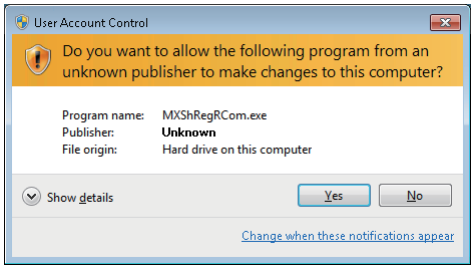
After installing .NET Framework and the related module, execute "MXShRegRCom.exe" in the folder where MX Sheet is installed (any of the following folders when the installation folder was not changed at installation).

- 32-bit version operating system: C:\Program Files\MELSOFT\Sheet
- 64-bit version operating system: C:\Program Files (x86) \MELSOFT\Sheet

When the user account control is enabled, the following screen is displayed.

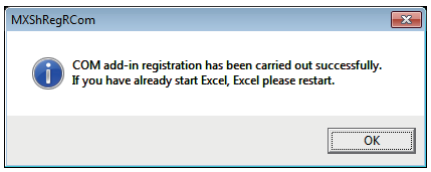
Click the [Yes] button.

<Windows 7>




The following message is displayed to notify the completion.

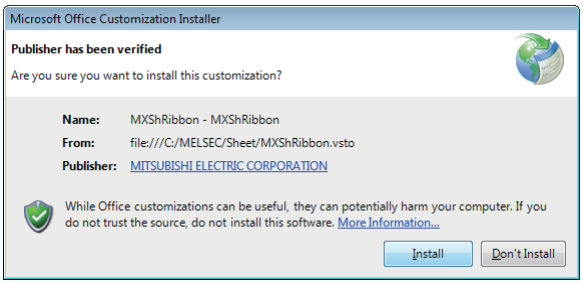
Click the [OK] button.

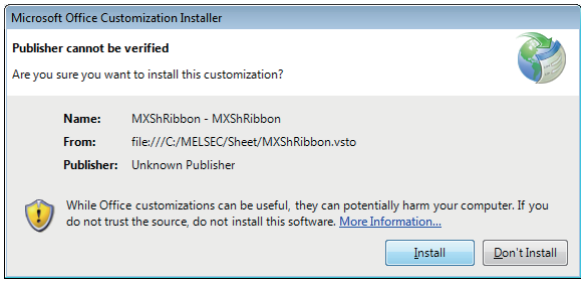



A

## Checking if the action works

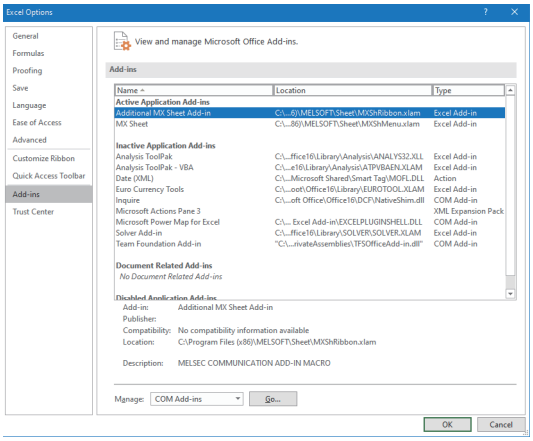
The following explains how to check if the action works or not.




**1.** Start Excel.

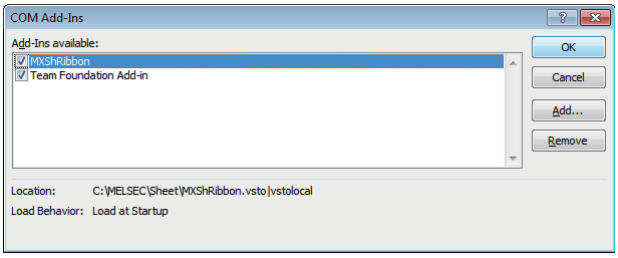
**2.** When either of the screens on the left is displayed, click the [Install] button.




**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.




**5.** "MXShRibbon" is displayed on the "COM Add-Ins" screen. Check that the checkbox of "MXShRibbon" is selected.

# Appendix 10 Useful Functions

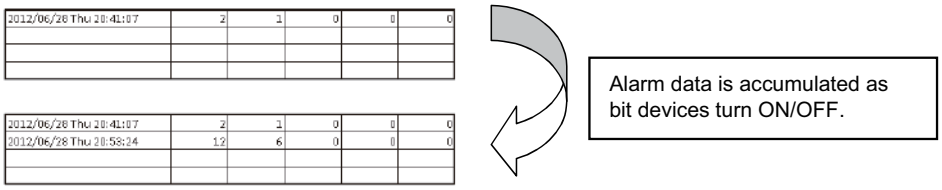
## Alarm summary

Alarm summary converts ON/OFF data of bit devices into alarm comment character strings that are set separately and accumulates them on an Excel spreadsheet as alarm history.

When the number of alarm histories reaches to the last row, the following operations can be specified:

- Scrolling
- Printing an Excel spreadsheet
- Saving an Excel Book

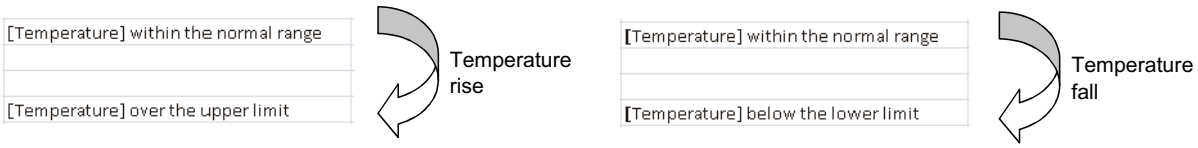
By accumulating the alarm history, status such as the operation rate of production line can be checked easily.




## Comment display

Comment display converts bit or device values into comment character strings that are set separately and displays them on an Excel spreadsheet. (The comment is displayed according to the change of the device value.)

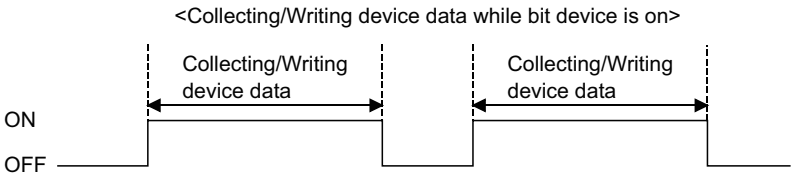
For example, the upper and lower limit values is set in a device, and when the device values becomes out of the range, a warning message appears.




## Device trigger

Device trigger sets device conditions for collecting/writing the device data, and collects/writes device data when the set device conditions are met.

- When the device data is collected/written while bit device is ON




Target functions

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

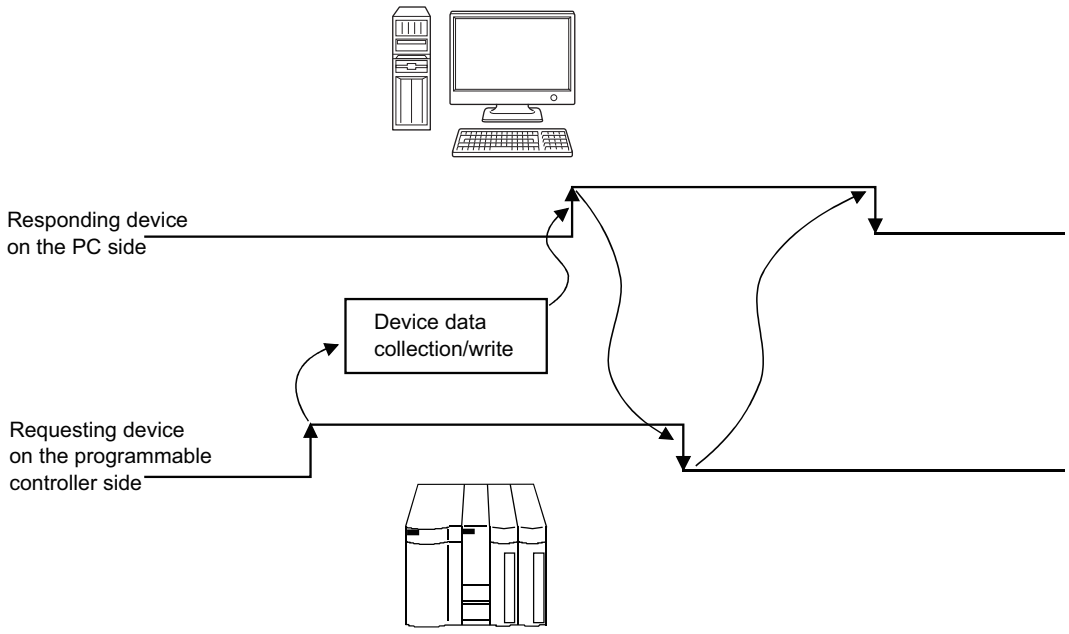
A

# Handshake

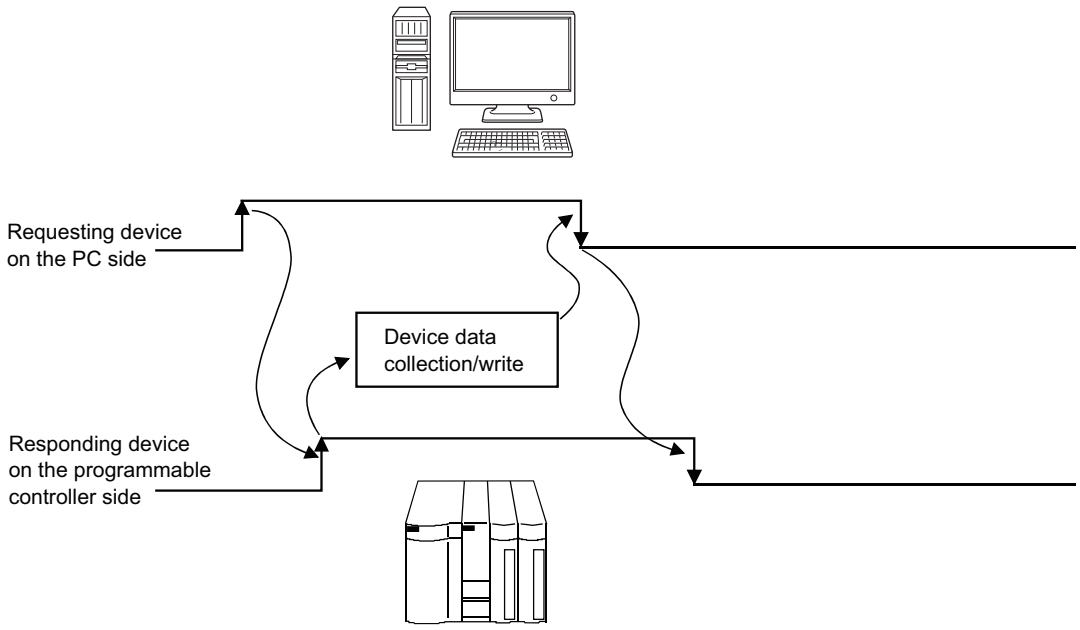
Handshake sets handshake with a CPU module for secure device data collection/write.

Handshake checks whether data transferring can be performed by exchanging the signal of sending request and receiving reply between a personal computer and a programmable controller at data updating, and sends data if it is possible.

When handshake begins with programmable controller side request

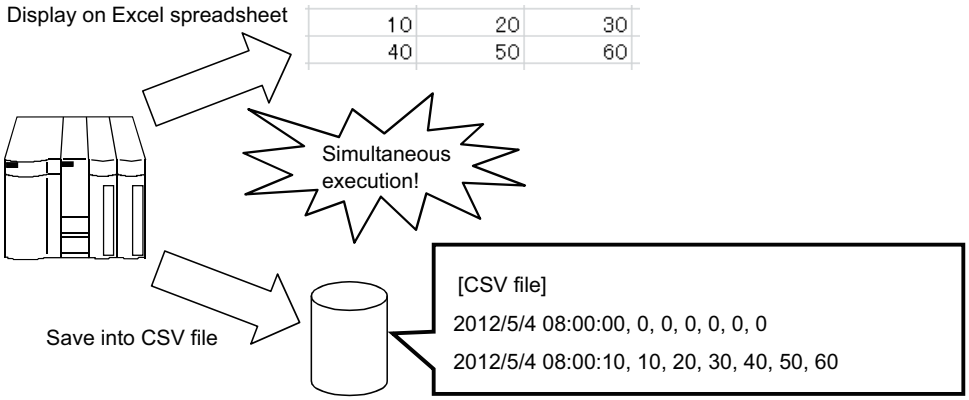



When handshake begins with PC side request



# CSV logging

CSV logging displays device data on an Excel spreadsheet with logging or monitor function, and simultaneously saves collected data as a CSV file.
Long-term data collection is available with a single CSV file.

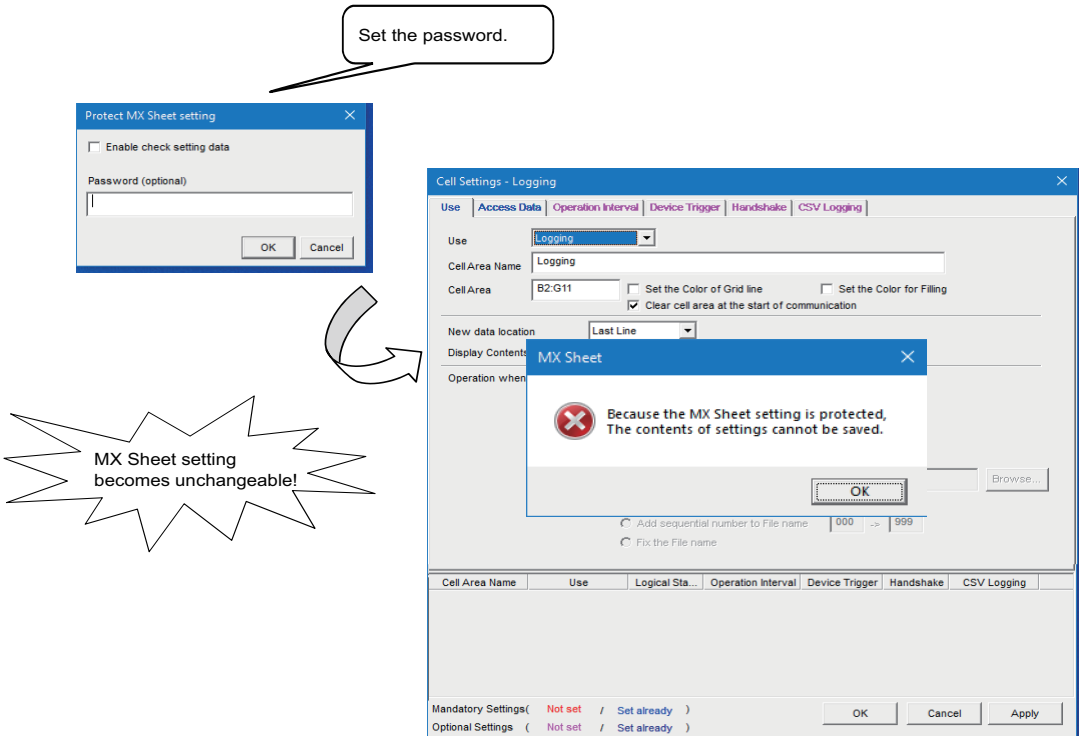



# Automatic communication startup setting

'Automatic communication startup setting' automatically starts communication with a CPU module when an Excel book where MX Sheet setting is set is started.
Selecting [Start Communication] from the MX Sheet menu is not required.

# Protecting MX sheet setting

MX Sheet settings is protected with a password.
Changing the content set by a user is prevented.



# Setting error logs

When staring the communication, an "ErrorLog" sheet which shows the communication status of MX Sheet is created, and the communication status, error information, and corrective action are output.
The following error log settings can be set to this "ErrorLog" sheet in the option setting.

## Type setting of error logs to be output

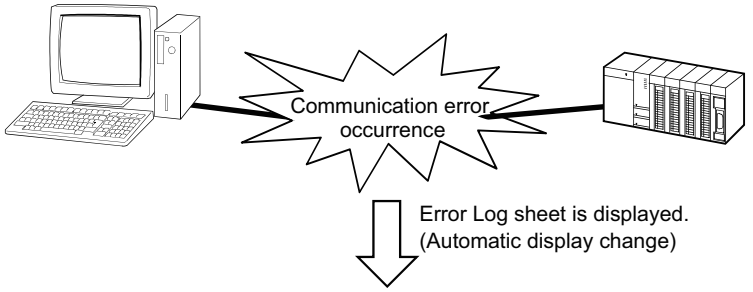
The types of error log to be output (information, error, warning) can be specified.

**Ex.**
When outputting all the error logs

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Kind | Date | Cell Area Name | ErrorNo | Contents |
| 2 | Information | 2012/06/29 Fri 15:21:47 | | 00000000 | Communication was started. |
| | Warning | 2012/06/29 Fri 15:21:49 | est | e1000021 | Communication error has occurred in the open/close of communication. <00010003[Hex],01808502[Hex]><br><br>USB driver connect error<br>Connection of the USB driver failed.<br>The corrective action is as follows:<br>Exit the program and restart the IBM-PC/AT compatible.<br>Reinstall MX Component.<br>Check USB driver installation. |
| 3 | | | | | <ErrorCode:1808502[Hex]> |
| 4 | Information | 2012/06/29 Fri 15:21:57 | | 00000002 | Communication was completed. |

## Automatic display switching setting of "ErrorLog" sheet

An "ErrorLog" sheet can be switched and displayed automatically when an error occurs.




| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Kind | Date | Cell Area Name | ErrorNo | Contents |
| 2 | Information | 2012/06/29 Fri 15:21:47 | | 00000000 | Communication was started. |
| | Warning | 2012/06/29 Fri 15:21:49 | est | e1000021 | Communication error has occurred in the open/close of communication. <00010003[Hex],01808502[Hex]><br><br>USB driver connect error<br>Connection of the USB driver failed.<br>The corrective action is as follows:<br>Exit the program and restart the IBM-PC/AT compatible.<br>Reinstall MX Component.<br>Check USB driver installation. |
| 3 | | | | | <ErrorCode:1808502[Hex]> |
| 4 | Information | 2012/06/29 Fri 15:21:57 | | 00000002 | Communication was completed. |

## Error log clearing setting at communication start

The error log can be cleared at the start of communication.

# Appendix 11 Compatibility With Existing Products

## Comparison with MX Sheet Version 2

This section explains the differences between MX Component Version 2 and Version 3.

### ■Operating environment (Applicable software)

| — | MX Sheet Version 2 | MX Sheet Version 3 |
|---|---|---|
| Operating system*1 | Microsoft Windows XP Professional<br>Microsoft Windows XP Home Edition<br>Microsoft Windows Vista Home Basic<br>Microsoft Windows Vista Home Premium<br>Microsoft Windows Vista Business<br>Microsoft Windows Vista Ultimate<br>Microsoft Windows Vista Enterprise<br>Microsoft Windows 7 Starter<br>Microsoft Windows 7 Home Premium<br>Microsoft Windows 7 Professional<br>Microsoft Windows 7 Ultimate<br>Microsoft Windows 7 Enterprise<br>Microsoft Windows 8<br>Microsoft Windows 8 Pro<br>Microsoft Windows 8 Enterprise<br>Microsoft Windows 8.1<br>Microsoft Windows 8.1 Pro<br>Microsoft Windows 8.1 Enterprise<br>Microsoft Windows 10 Home<br>Microsoft Windows 10 Pro<br>Microsoft Windows 10 Enterprise<br>Microsoft Windows 10 Education | Microsoft Windows 10 Home<br>Microsoft Windows 10 Pro<br>Microsoft Windows 10 Enterprise<br>Microsoft Windows 10 Education<br>Windows 10 IoT Enterprise 2016 LTSB |
| Excel*1 | Microsoft Excel 2003 (English version)<br>Microsoft Excel 2007 (English version)*1<br>Microsoft Excel 2010 (English version)*1<br>Microsoft Excel 2013 (English version)*1<br>Microsoft Excel 2016 (English version)*1<br>Microsoft Excel 2019 (English version) | Microsoft Excel 2019 (English version) |

*1 For the restrictions for each operating system and Excel version, refer to the following:
·MX Sheet Version 2: MX Sheet Version 2 Operating Manual
·MX Sheet Version 3: MX Sheet Version 3 Installation Instructions

**Point**

• Using the unsupported operating environment

Use MX Sheet Version 2 when using the operating environment which is not supported by MX Sheet Version 3.

## Compatibility

### ■Installation

MX Sheet Version 3 cannot be installed with MX Sheet Version 2 and MX Sheet Version 1.
Install MX Sheet Version 3 after uninstalling MX Sheet Version 2 and MX Sheet Version 1.

### ■Utilizing Excel books

Excel books created in MX Sheet Version 2 and MX Sheet Version 1 can be used in MX Sheet Version 2 without modifications.

#### Precautions

The operation of of the following case is not supported: when opening an Excel book saved in Excel (32-bit version) in Excel (64-bit version) or opening an Excel book saved in Excel(64-bit version) in Excel (32-bit version).

# MEMO

# REVISIONS

*The manual number is given on the bottom left of the back cover.

| Revision date | *Manual number | Description |
|---|---|---|
| April 2021 | SH(NA)-082390ENG-A | First edition |

Japanese manual number: SH-082389-A

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SH(NA)-082390ENG-A(2104)
MODEL:MXSV3-O-E

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