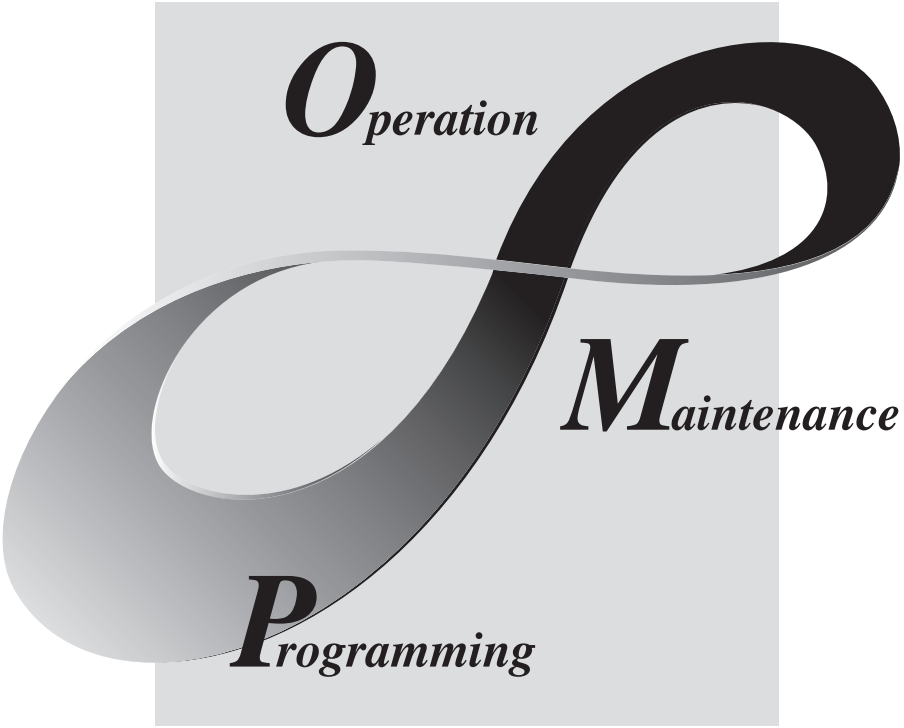
MX Sheet Version 1

MITSUBISHI

Operating Manual

(Introduction)

MELSOFT



MELSOFT
Integrated FA Software

SW1D5C-SHEET-E

• SAFETY PRECAUTIONS •

(Always read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.
The instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the CPU module user's manual.
In this manual, the safety instructions are ranked as "DANGER" and "CAUTION".

⚠ DANGER	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 medium or slight personal injury or physical damage.

Note that the ⚠CAUTION level may lead to serious consequences according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

Please save this manual in a convenient place so that you can refer to it and always forward it to the end user.

[Design Instructions]

⚠ DANGER

- Build an interlock circuit outside the PLC system to ensure that the whole system always works safely when changing the data of the running PLC or controlling the PLC status from the personal computer.
  In addition, be sure to incorporate the corrective action into the system to deal with the communication error due to the poor cable connection while operating the PLC CPU online from the peripheral device.

[Operating Precautions]

⚠ CAUTION

- Read the manual carefully and confirm the safety before connecting a personal computer with the running CPU module to perform the online operation (especially forced output and operating status change).
  Misoperation may cause the machine damage or accidents.

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REVISIONS

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

Print Date	* Manual Number	Revision
Aug., 2002	SH (NA)-080347E-A	First edition
Dec., 2003	SH (NA)-080347E-B	Addition SOFTWARE USER REGISTRATION Correction Section 3.1.2
Aug., 2004	SH (NA)-080347E-C	Addition Section 6.6, Appendix 1.8, Appendix 1.9 Correction Section 1.1, Section 1.2, Chapter 2, Section 3.1.1, Section 3.1.3, Section 6.1, Section 6.2, Section 6.3, Section 6.4, Section 6.5
Sep., 2005	SH (NA)-080347E-D	Correction Chapter 2, Section 6.1, Section 6.2, Section 6.3
Oct., 2007	SH (NA)-080347E-E	Addition Generic Terms and Abbreviations, Chapter 2, Section 3.1.1, Section 3.1.2, Section 3.1.3, Section 3.1.4, Section 3.2
May, 2008	SH (NA)-080347E-F	Correction Generic Terms and Abbreviations, Chapter 2, Section 3.1.1, Section 3.1.2, Section 3.2

Japanese Manual Version SH-080345-F

—— SOFTWARE USER REGISTRATION ——

After agreeing to the terms of the Software License Agreement included in the package, please access the MELFANSweb Home page (http://www.MitsubishiElectric.co.jp/melfansweb) and make a software user registration. (User registration is free of charge.)
You can also make a registration by faxing or mailing the "Software Registration Card" packed with the product.

1. Software Registration
   You can make a software registration by accessing the MELFANSweb Home Page or faxing or mailing the "Software Registration Card" packed with the product.
   After you have made a software registration, we will register the user and send the "Software registration confirmation" together with the user ID.
   The latest information of new product, version up, and other will be available by direct mail.

2. Notes on Contact
   Please ask questions concretely and clearly using terms listed in the manual.
   When requesting us to solve a problem, provide us with detailed information for reproducing the problem.
   In addition, contact the respective manufacturers when asking questions about the operating system (OS) or the other vender's software products

User registration is valid only in Japan.

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INTRODUCTION

Thank you for choosing the Mitsubishi Integrated FA Software MELSOFT series.
Read this manual and make sure you understand the functions and performance of MELSOFT series thoroughly in advance to ensure correct use.

CONTENTS

Manuals

The following manuals are relevant to this software package.
Refer to the table when ordering the manuals.

Relevant Manuals

Manual Name	Manual Number (Model Code)
MX Sheet Version 1 Operating Manual Explains the operation procedures, setting and operation methods of MX Sheet. (Sold separately)	SH-080348E (13JU35)
MX Component Version 3 Operating Manual Explains the setting and operation methods of each utility on MX Component. (Sold separately)	SH-0800271 (13JU32)
MX Component Version 3 Programming Manual Explains the programming procedures, details and error codes for ACT control. (Sold separately)	SH-080272 (13JF66)

Note: The MX Sheet Version 1 Operating Manual is included on the CD-ROM with the corresponding software package as a set.
Any of the manuals is available separately in printed form. Please indicate its manual number (model code) in the above table, when ordering the printed manual.

NOTICES

- We don't guarantee the commercially-available Windows-based software products that have been introduced in this manual.
- We hold the copyrights of this software package.
- No part of this manual may be transcribed or duplicated in any form without prior permission by Mitsubishi Electric Corporation.
- We have attempted to cover all the revisions of software and hardware, but this manual may not contain the latest revisions.
- We assume that one software package will be used on one personal computer.
- We permit the user to use this software package (including this manual) based on the Software License Agreement.
- We are not liable for consequences or influences due to this software package (including this manual).
- The specifications of this software package and the descriptions in this manual may be altered in future without prior notice.

Generic Terms and Abbreviations

Unless otherwise stated, this manual uses the following abbreviations and terms for the explanation of MX Sheet.

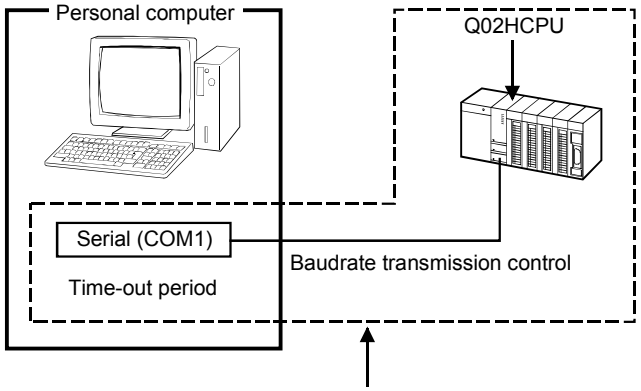
Generic Term/Abbreviation	Description
MX Sheet	Generic product name for product types SW1D5C-SHEET-E and SW1D5C-SHEET-EA. -EA indicates a volume license product.
IBM-PC/AT compatible	Abbreviation of the IBM PC/AT or its compatible personal computer
PC CPU module	Abbreviation of the MELSEC-Q series corresponding PC CPU module (CONTEC CO., LTD.).
Personal computer	Generic term of PC CPU module and IBM-PC/AT compatible Personal computer.
MX Component	Generic product name for product types SW3D5C-ACT-E and SW3D5C-ACT-EA. -EA indicates a volume license product.
Windows Vista®	Generic term of Microsoft® Windows Vista® Home Basic Operating System, Microsoft® Windows Vista® Home Premium Operating System, Microsoft® Windows Vista® Business Operating System, Microsoft® Windows Vista® Ultimate Operating System and Microsoft® Windows Vista® Enterprise Operating System.
Windows® XP	Generic term of Microsoft® Windows® XP Professional Operating System and Microsoft® Windows® XP Home Edition Operating System.

Definitions of Terms

The terms used in this manual have the following meanings and definitions.

(1) Logical station number

A number assigned to the group of data that is integrated from the connection target information required for communication within the Communication Setup Utility.



Connection target information on up to CPU to communicate with is combined into one data, to which logical station number is assigned.

(2) 1 shot communication

This function executes the function set to the selected cell area at any timing.

MEMO

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1 OVERVIEW

1.1 What Is MX Sheet?

MX Sheet is a communication support software package that enables device data collection by simple program-less setting using Excel.
This manual explains the basic using methods of MX Sheet.
For details, refer to the MX Sheet Version 1 Operating Manual.

Logging function, monitor funciton

Logging

Date	D0	D1	D2	D3
2002/7/31 Wed 17:00:00	1	2	3	4
2002/7/31 Wed 17:05:00	11	12	13	14
2002/7/31 Wed 17:10:00	21	22	23	24
2002/7/31 Wed 17:15:00	31	32	33	34
2002/7/31 Wed 17:20:00	41	42	43	44
2002/7/31 Wed 17:25:00	51	52	53	54
2002/7/31 Wed 17:30:00	61	62	63	64
2002/7/31 Wed 17:35:00	71	72	73	74

Monitor

D0	D1	D2	D3
1	2	3	4

Write function

Write

D0	D1	D2	D3
101	102	103	104

Automatic print function

Alarm summary function

Generation	2002/07/31 Wed 16:57:30	Material storange	Minor failure

Generation	2002/07/31 Wed 16:57:30	Material storange	Minor failure
Restoration	2002/07/31 Wed 16:59:35	Material storange	Minor failure

Comment display function

[Temperature] within the normal range

[Temperature] over the upper limit

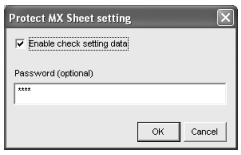
Automatic save function

Excel book file
HTML file
CSV file

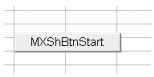
Error log setting function

Kind	Date	Cell Area Name	ErrorNo	Contents
Informatior	2004/07/14 Wed 19:45:03		00000000	Communication wa
Warning	2004/07/14 Wed 19:45:05	Logging function	e1000021	Communication er <00010003(Hex),0 Time-out error Though the time-o The corrective acti Review the time-o Set it again on the Review the syster Retry the method. Perform Close on Exit the program <ErrorCode:18084
Informatior	2004/07/14 Wed 19:45:13		00000002	Communication wa

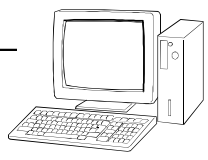
Protect MX Sheet setting function

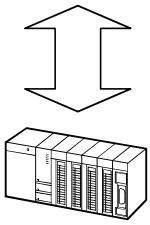


Create button function



MX Sheet





PLC CPU

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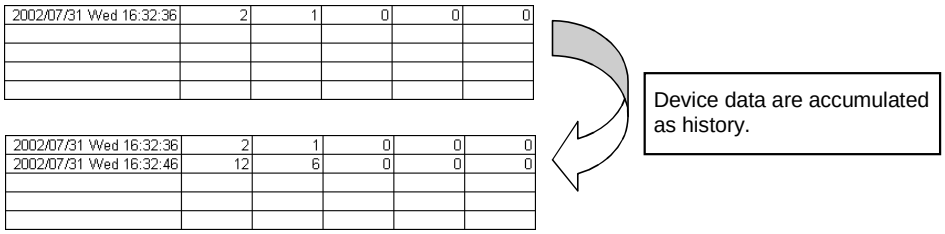
1.2 Functions Explained in This Manual

This manual explains the following MX Sheet functions.

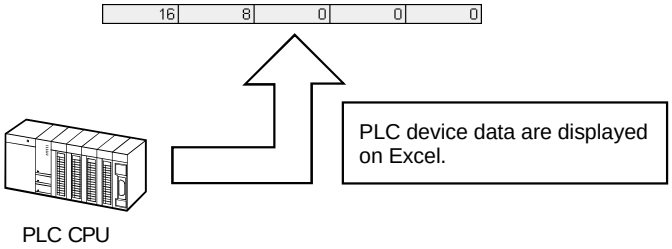
(1) Logging function (refer to Section 6.1)

This function accumulates the device data collected from the PLC as a history in the cell area selected on an Excel sheet.



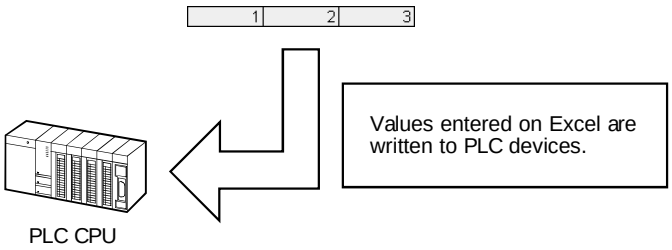
(2) Monitor function (refer to Section 6.2)

This function displays the device data collected from the PLC in the cell area selected on an Excel sheet.



(3) Write function (refer to Section 6.3)

This function writes the values entered on an Excel sheet to PLC devices.



(4) Automatic save function (refer to Section 6.4)

This function saves the Excel book automatically, when the specified device is triggered at the specified time.

(5) Automatic print function (refer to Section 6.5)

This function prints the Excel book or specified Excel sheets automatically, when the specified device is triggered at the specified time.

(6) Create button function (refer to Section 6.6)

This function executes each of the Start Communication, End Communication and 1 Shot Communication functions by merely clicking the corresponding button created from Create Button.

2 OPERATING ENVIRONMENT

The following table indicates the operating environment of MX Sheet.

Item		Description
Computer	IBM PC/AT compatible personal computer	Pentium® 200MHz or higher*1 IBM PC/AT compatible personal computer installed with applicable OS*2
	PC CPU module	MELSEC-Q series compatible PC CPU module (CONTEC CO., LTD.)
Required memory		64MB or more*4
Hard disk free space		100MB or more*5
Disk drive		CD-ROM disk drive
Display		Resolution 1024 × 768 pixels or higher
OS		Microsoft® Windows® 98 Operating System (English version), Microsoft® Windows® Millennium Edition Operating System (English version), Microsoft® Windows NT® Workstation Operating System Version 4.0 (English version)*3, Microsoft® Windows® 2000 Professional Operating System (English version), Microsoft® Windows® XP Professional Operating System (English version), Microsoft® Windows® XP Home Edition Operating System (English version), Microsoft® Windows Vista® Home Basic Operating System (English version), Microsoft® Windows Vista® Home Premium Operating System (English version), Microsoft® Windows Vista® Business Operating System (English version), Microsoft® Windows Vista® Ultimate Operating System (English version) or Microsoft® Windows Vista® Enterprise Operating System (English version)
Required Software	Excel *6	Microsoft® Excel 2000 (English version), Microsoft® Excel 2002 (English version), Microsoft® Excel 2003 (English version) or Microsoft® Excel 2007 (English version)*7
	MX Component	MX Component version 3.01B or later

*1: A Pentium® 300MHz processor or higher is recommended when using Windows® XP and 1GHz processor or higher is recommended when using Windows Vista® .

*2: This product does not work with a multiprocessor IBM-PC/AT-compatible personal computer, because the driver is not compatible with it.

*3: Service Pack 3 or more is needed when using Windows NT® Workstation 4.0.

*4: 128MB or more is recommended when using Windows® XP and 1GB or more is recommended when using Windows Vista® .

*5: 40GB or more having 15GB free space at minimum is recommended for Windows Vista® .

*6: Excel sheets created in the English environment can be used in the English environment only. They cannot be used in the other environment.

*7: Windows® XP Service Pack 2 or later is required for Microsoft® Excel 2007.

POINT

When Microsoft® Windows® XP or Windows Vista® is used, the following new functions cannot be used.
If any of the following new functions is used, this product may not operate normally.
- Start of application in Windows® compatible mode
- Fast user switching
- Remote desktop
- Big fonts (Details setting of Screen properties)

Additionally, 64-bit OS is not available.

MEMO

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3 INSTALLATION AND UNINSTALLATION

This chapter explains the installation and uninstallation procedures of MX Sheet.
The screens used in this chapter are those of the Microsoft® Windows® XP Professional Operating System.
Though they differ slightly from those of the other OSs, refer to REMARK and perform operations.

3.1 Installation

This section explains MX Sheet installation.

3.1.1 Installation precautions

(1) Precautions on the OS

Log on as the user who has the Administrator attributes, when any of the following OSs is used.

Microsoft® Windows NT® Workstation Operating System Version 4.0
Microsoft® Windows® 2000 Professional Operating System
Microsoft® Windows® XP Professional Operating System
Microsoft® Windows® XP Home Edition Operating System
Microsoft® Windows Vista® Home Basic Operating System
Microsoft® Windows Vista® Home Premium Operating System
Microsoft® Windows Vista® Business Operating System
Microsoft® Windows Vista® Ultimate Operating System
Microsoft® Windows Vista® Enterprise Operating System

(2) Software confirmation

Make sure that the following software programs have been installed in the personal computer where MX Sheet will be installed.

MX Component Version 3.01B or later
Microsoft® Excel 2000 or later

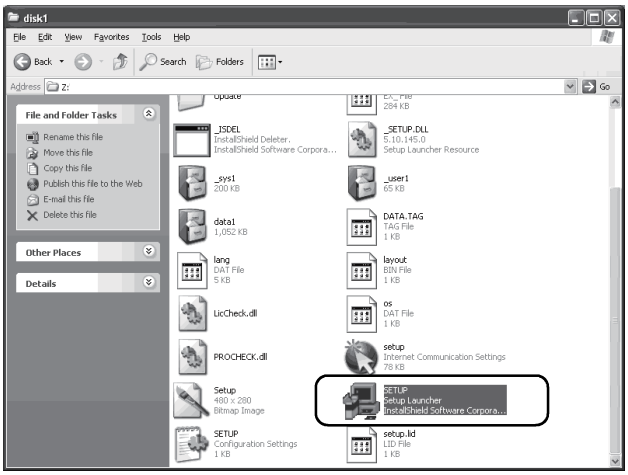
(3) Precautions on using Microsoft® Excel 2007

Installing Visual Basic for Applications (hereafter, abbreviated as VBA) is required for Microsoft® Office 2007.
If not installed, the following error message appears when add-in is registered at MX Sheet installation, and MX Sheet cannot be used.

3.1.2 Installation

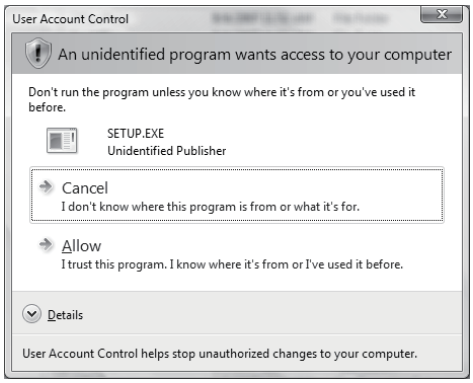
(1) Installing the product

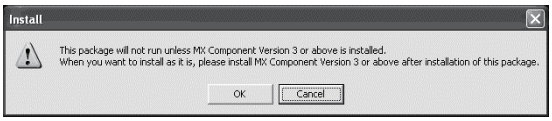
1) Start Windows® after powering on the personal computer.



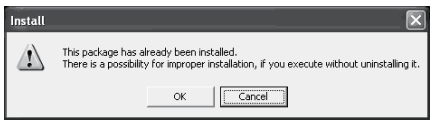
2) Start Explorer and click the drive in which the CD-ROM has been inserted.
Double-click "SETUP.exe".
To display Explorer, right-click [Start] and choose [Explorer].

* When user account control is enabled in Windows Vista® , the following screen appears.
Click "Allow".

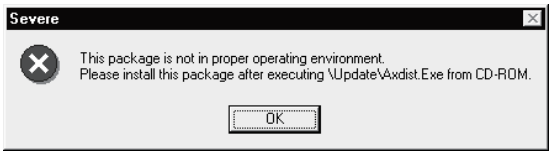




If the left message appears, click OK, install MX Sheet, and then install MX Component.



If the left message appears, click Cancel, uninstall MX Sheet, and then reinstall it.



If the left message appears, operate as instructed in (a) of "(2) When message appears at start of installation".
After the operation is complete, restart installation operation.

If the left screen appears, operate as instructed in (b) of "(2) When message appears at start of installation".
After the operation is complete, restart installation operation.

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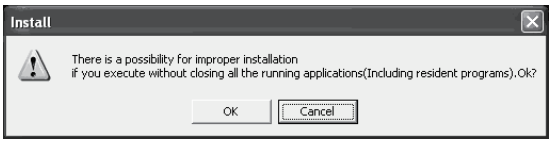
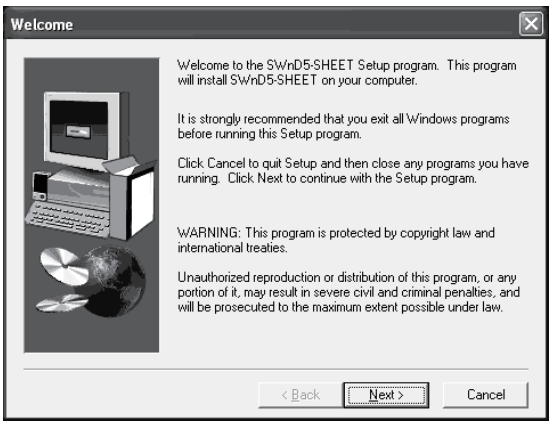
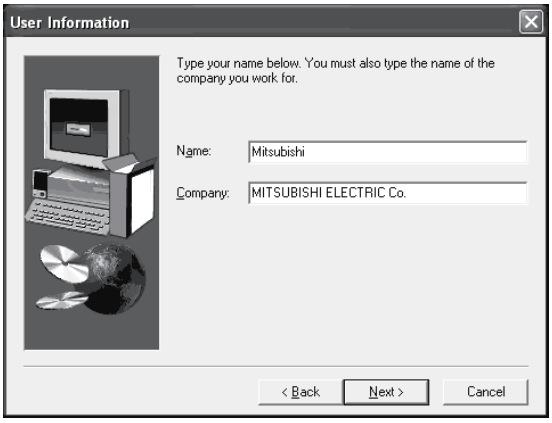


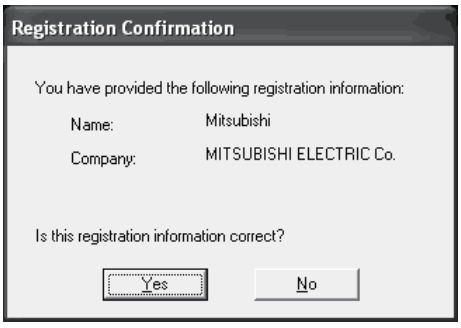
3) As the left screen appears, make sure that all applications have been closed and click the OK.
If the applications are running, close all the running applications.



4) Setup starts.
As the left screen appears, read the information and click the Next>.



5) Enter the name and company name, and then click the Next>.



6) Confirm the registered name and company name.
If they are correct, click the Yes.
To make a change, click the No to return to the previous screen.

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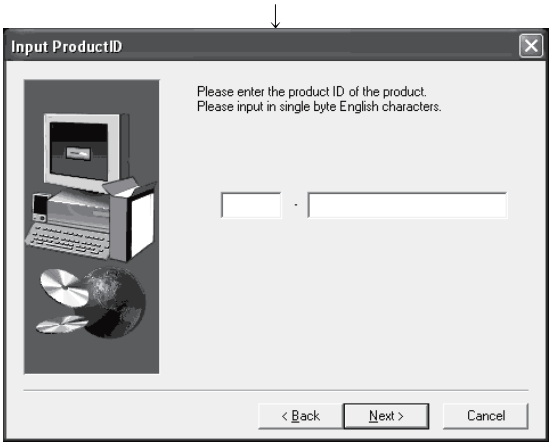

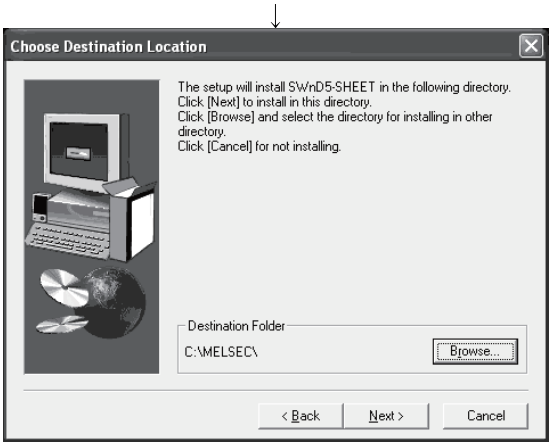

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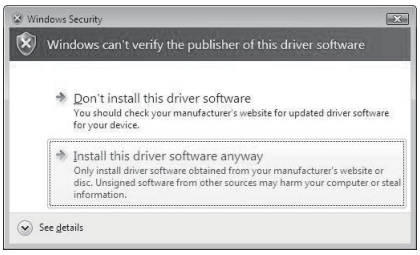
7) Register the product ID of the product.
Enter the product ID and click the Next>.
The product ID is printed on the Software User Registration card.

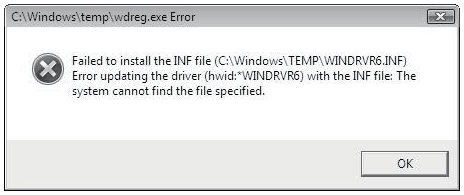
8) Specify the installation destination folder.
If you do not change the destination folder, click Next>.
If you change the destination folder, click Browse… and specify a new drive and folder.

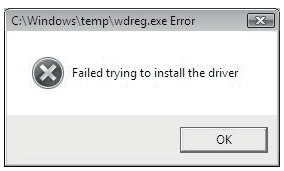
∗: The following screen appears in Windows Vista® .
Click "Install this driver software anyway".
This screen may appear in several times.



The either of the following screens may appear behind the Windows Security screen. Then, press the Alt + Tab keys to bring it to the front.

Click OK on the following screens.





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9) Register the MX Sheet to Excel as an add-in software.
Mark the checkbox, when registering an add-in.
(The checkbox is marked by default.)
Click Next>.

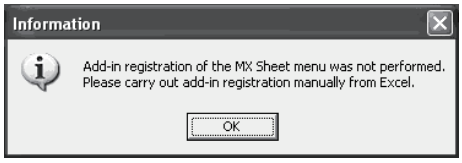
For confirmation, the left message appears.
Click OK.

↓

(To the next page)

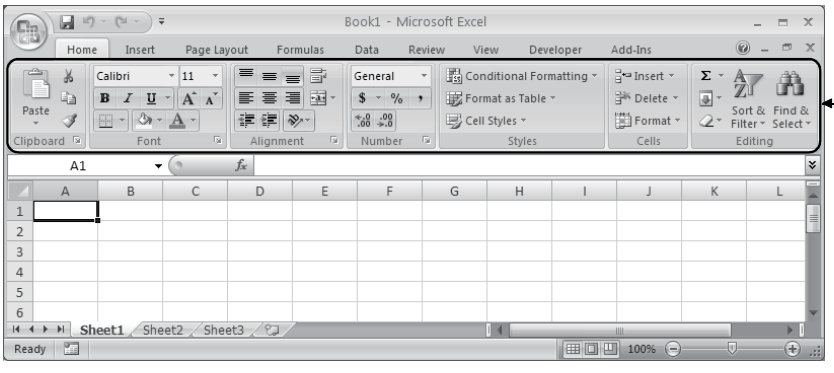
POINT

- To make MX Sheet available, register it to Excel as an add-in software.
  Normally, register an add-in software as instructed in step 9).
  If the "Register add-in checkbox" is unmarked in step 9), the following message appears after installation.



  Refer to Section 3.1.4 for the manual MX Sheet add-in registration method.

- When registering add-in in Microsoft® Excel® 2007, add-in that hides the tabs is automatically registered to Excel.



POINT

If VBA is not installed when add-in is registered in Microsoft® Excel 2007, the following error message appears, and MX Sheet cannot be used.
Register add-in manually after installing VBA.

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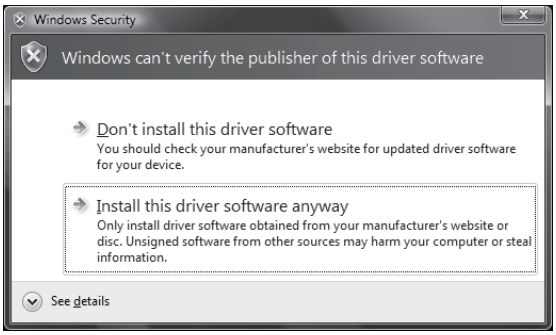
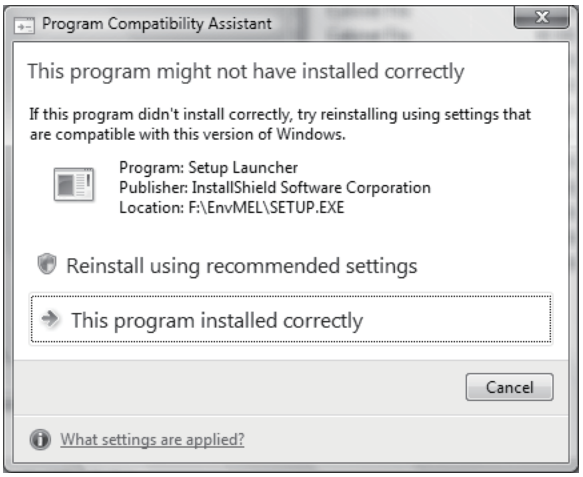
* When user account control is enabled in Windows Vista® , the following screen appears.
Click "Install this driver software anyway".



10) The left screen appears, when installation is complete.
Click OK.



11) When the left screen appears on Windows Vista® , regardless of the installation result, choose "This program installed correctly".

Do not choose "Reinstall using recommended settings", because the installer installs an incorrect module.
If choose, reinstall MX Sheet with following POINT on the next page.

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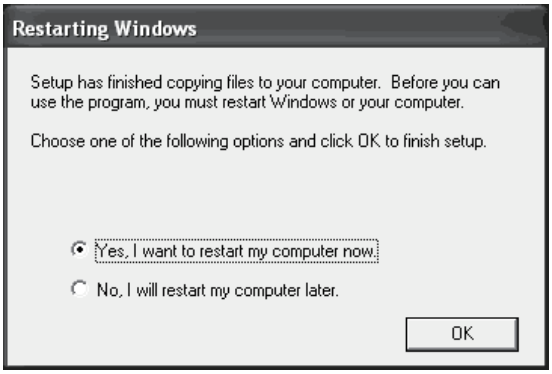

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Complete!

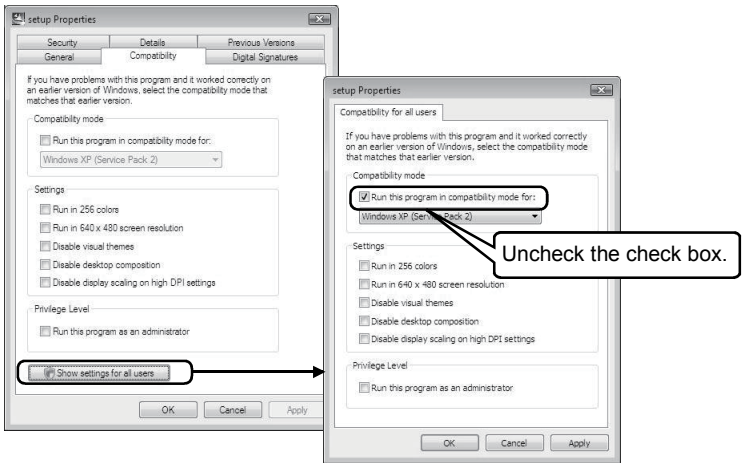
12) When making a restart, make sure that the "Yes, I want to restart my computer now." checkbox is marked, and then click OK.
When not making a restart, mark the "No, I will restart my computer later." checkbox, and click OK.

POINT

Note the following instructions when the installer is started from the hard disk drive of the personal computer for which Windows Vista® has been installed.

If the "Program Compatibility Assistant" screen appears after the installation, choose "This program installed correctly".
If "Reinstall using recommended settings" is selected by mistake, 'Windows XP SP2 compatibility mode' is set automatically.
Disable the 'Windows XP SP2 compatibility mode' by following the procedure described below, and perform the reinstallation.

1. Right-click on the setup.exe icon of the installation target in the Windows explorer, and open the "setup Properties" screen.
2. Select the "Compatibility" tab and click the "Show settings for all users" button.
3. Uncheck the "Run this program in compatibility mode for:" check box of compatibility mode in the "Compatibility for all users" tab and click the OK button.
4. Click the OK button on the "setup Properties" screen.



3 - 7

(2) When message appears at start of installation

When starting the installation of this product, the "This package is not in proper operating environment" message appears, disabling normal completion of installation.

In such a case, close all applications and perform the (a) or (b) operation.

(a) Installing dcom95.exe or Axdist.exe

Execute dcom95.exe or Axdist.exe provided for MX Sheet.

Install MX Sheet after executing the exe file and restarting the personal computer.

Execute the exe file on the corresponding operating system as follows.

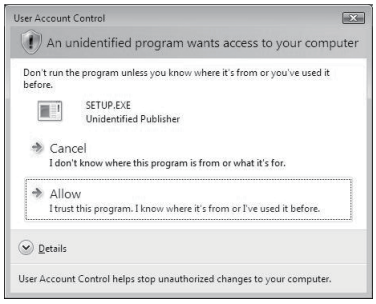
OS	File name
Microsoft® Windows® 98 Operating System	dcom95.exe Axdist.exe
Microsoft® Windows NT® Workstation Operating System Version 4.0	Axdist.exe

(Dcom95.exe and Axdist.exe are in the [Update] folder on CD-ROM.)

(b) Installing EnvMEL

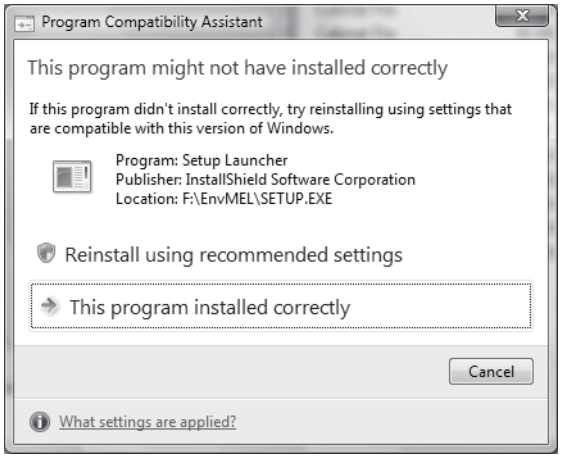
Execute Setup.exe in the [EnvMEL] folder on this product CD-ROM.
Install this product after executing the [Setup.exe].

*: When user account control is enabled in Windows Vista® , the following screen appears.
Click "Allow".



*: After executing the above exe file, install the product again. If this product is not installed properly at this time, reboot the personal computer.

When the following screen appears on Windows Vista® , regardless of the installation result, choose "This program installed correctly".
Do not choose "Reinstall using recommended settings", because the installer installs an incorrect module.



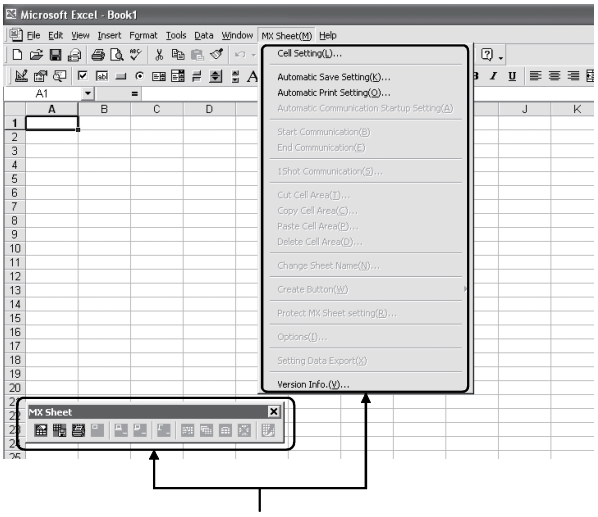
3.1.3 Installation check

Check whether MX Sheet has been installed normally or not as follows.

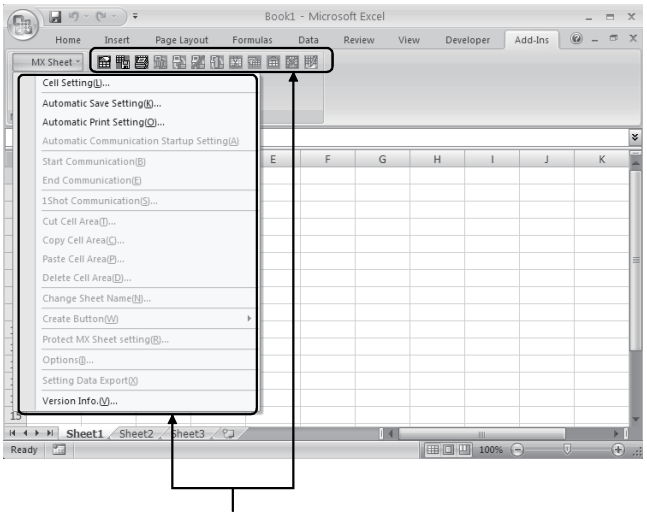
(1) Start Excel.

(2) If the [MX Sheet] item has been added to the menu bar, MX Sheet has been installed normally.

< Microsoft® Excel 2003 or earlier>



< Microsoft® Excel 2007 >



POINT

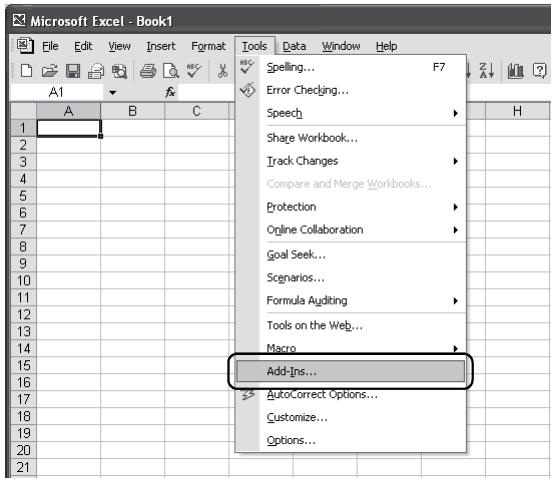
(1) If the following screen appears during installation, [MX Sheet] is not registered to the menu bar.
Register MX Sheet as an add-in software manually.

(2) If the "Register add-in" is not marked in the "Select add-in" dialog box in step 9) of Section 3.1.2, the [MX Sheet] menu will not be registered to the menu bar.
Register MX Sheet as an add-in software manually after installation.
Refer to Section 3.1.4 for the manual add-in registration method.

3.1.4 Manual add-in registration

[MX Sheet] menu will not be registered to Excel if "Register add-in" is not marked in "Select add-in" dialog in step 9) of Section 3.1.2. during installation.
Add-in registration is required to use MX Sheet.
Register MX Sheet as an add-in software in the following procedure.

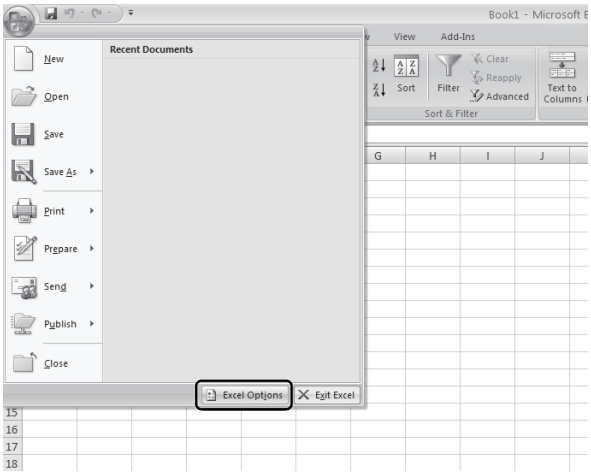
1) Start Excel.



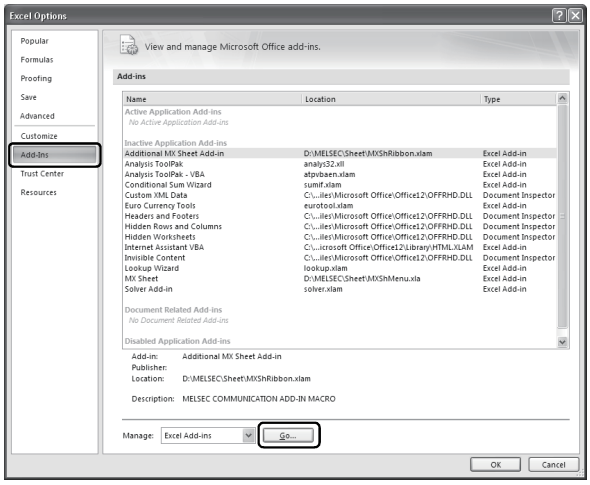
2) Choose [Tools] → [Add-Ins] from the menu bar to display the "Add-Ins" dialog box. *1

*1: For Microsoft® Excel 2007, follow 2) –1 and 2) –2.

2) –1 Select [Office button] → [Excel Options].



2)- 2 The "Excel Options" screen appears. Select [Add-Ins] and click the Go button.



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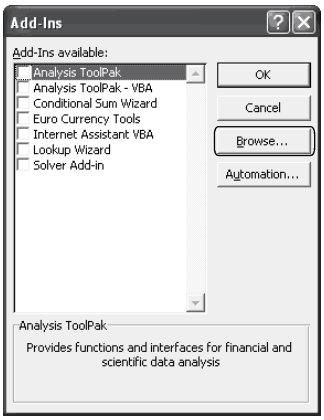

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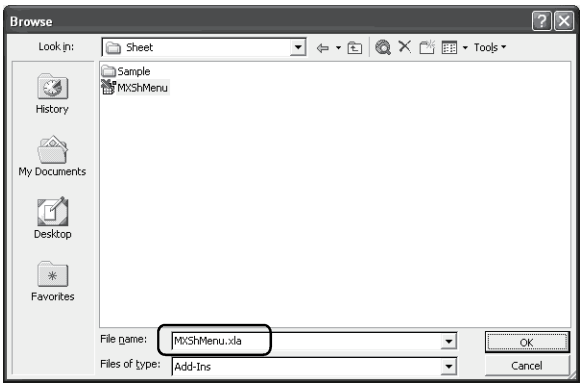
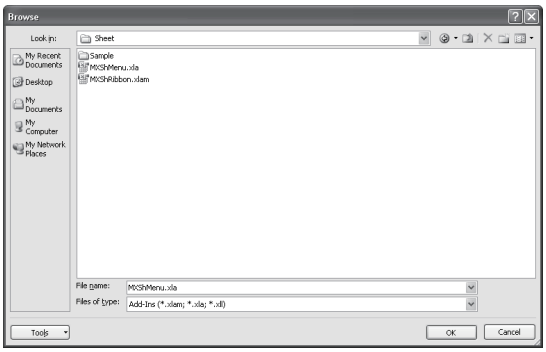
3) As the left screen appears, click Browse….

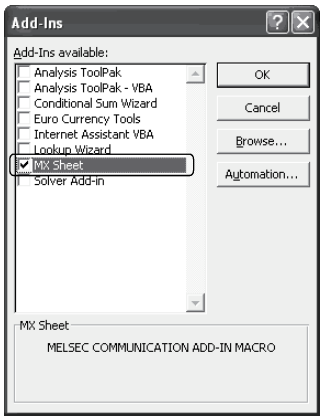


4) As the left screen appears, enter "MXShMenu.xla" in "File name" and click OK.
"MXShMenu.xla" has been stored into [User-specified folder*1] → [Sheet] at installation.

*1: The installation destination folder will be "C:\Melsec\Sheet" if it has not been changed at installation.

* The following screen appears in Microsoft® Excel 2007.





5) As the left screen appears, make sure that the "MX Sheet" checkbox is marked, and click OK. *2

*2: For Microsoft® Excel 2007, click the Browse… button again and register add-in that hides the tabs to Excel by operations 6) and 7).

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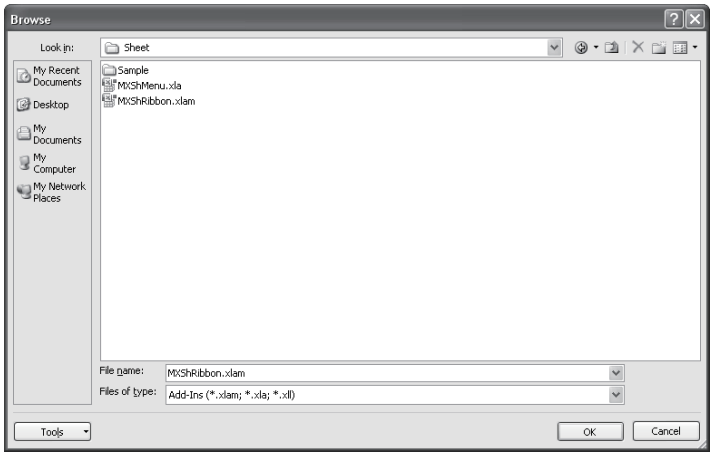
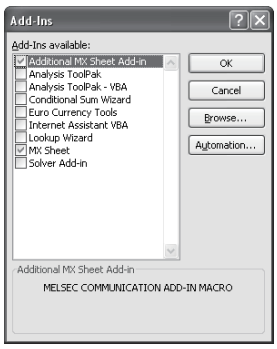


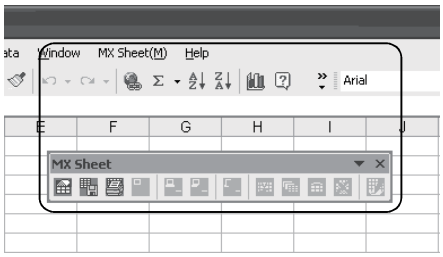
6) Only for Microsoft® Excel 2007, enter "MXShRibbon.xlam" in "File name" on the displayed “Browse” screen and click the OK button.

↓



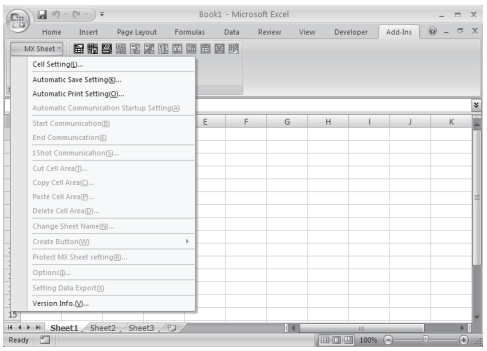
7) Only for Microsoft® Excel 2007, confirm that "Additional MX Sheet Add-in" checkbox on the displayed "Add-Ins" dialog box is selected and click the OK button.

↓



8) Make sure that [MX Sheet] has been added to the menu bar. *1
The icon buttons are also displayed.
This means manual add-in registration is complete.

*1: For Microsoft® Excel 2007, the << Add-Ins >> tab is added on the ribbon, and [MX Sheet] group and icons are added to it.



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Registration complete!

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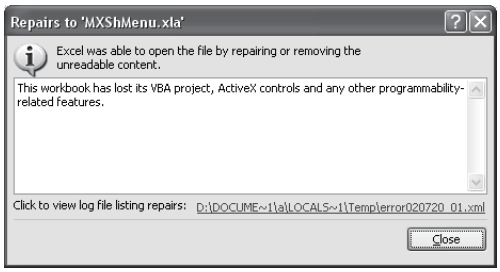
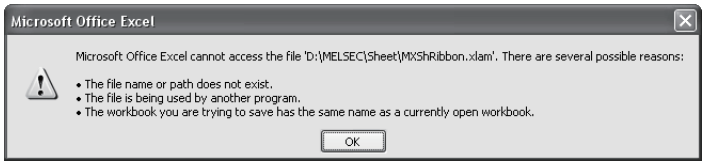
POINT

(1) To manually register "MXShMenu.xla" to add-in in Microsoft® Excel 2007, install VBA.
If not installed, the following error message appears and MX Sheet cannot be used.

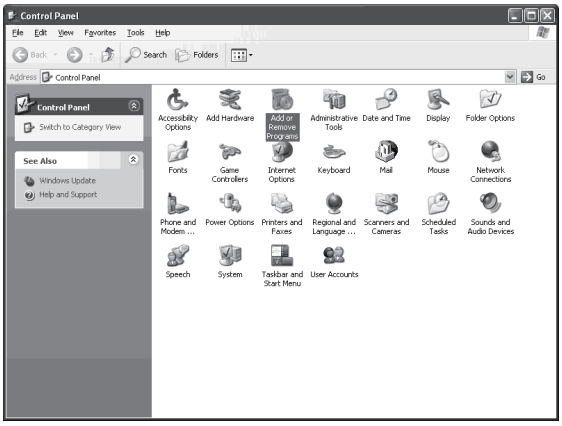


(2) To manually register "MXShRibbon.xlam" to add-in in Microsoft® Excel 2007, install VBA.
If not installed, the following error message appears and MX Sheet cannot be used.



3.2 Uninstallation

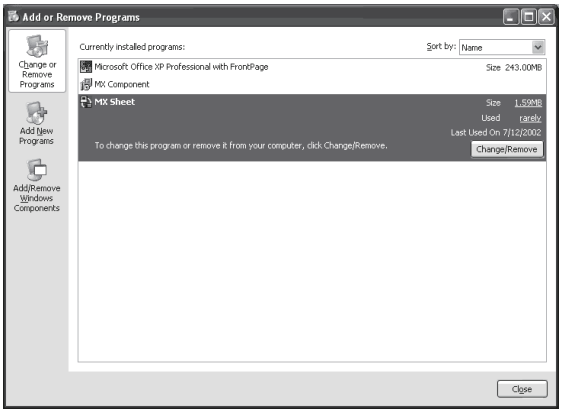
This section explains MX Sheet unistallation.



1) Choose "Add or Remove Programs" from Control Panel and double-click it.
   To display Control Panel, choose [Start] → [Control Panel].

REMARK

When any of Windows® 98, Windows NT® Workstation 4.0 and Windows® 2000 Professional is used, choose "Add or Remove Programs" from Control Panel and double-click it.
To display Control Panel, choose [Start] → [Control Panel].
Chose "Uninstall a program" on the Control Panel in Windows Vista® .



2) Select MX Sheet and click Change/Remove.

REMARK

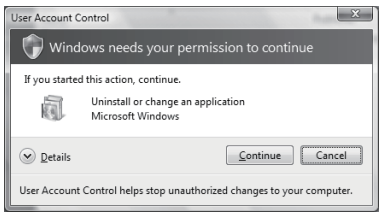
The left screen is that of Windows® XP Professional. The displayed screen varies depending on the OS. Perform the following operations when any of Windows® 98, Windows NT® Workstation 4.0, Windows® 2000 Professional or Windows Vista® is used.

< Windows® 98 or Windows NT® Workstation 4.0 >
(a) Click the <<Install and Remove>> tab.
(b) Select MX Sheet.
(c) Click Add/Remove.

< Windows® 2000 Professional >
(a) Click "Add or Remove Programs".
(b) Select MX Sheet.
(c) Click Change/Remove.

< Windows Vista® >
Choose "MX Component" on the "Uninstall or change a program" screen, and click "Uninstall/Change".

* When user account control is enabled in Windows® Vista, the following screen appears. Click the Continue button.



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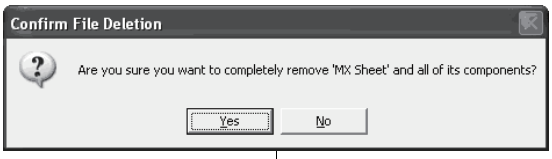
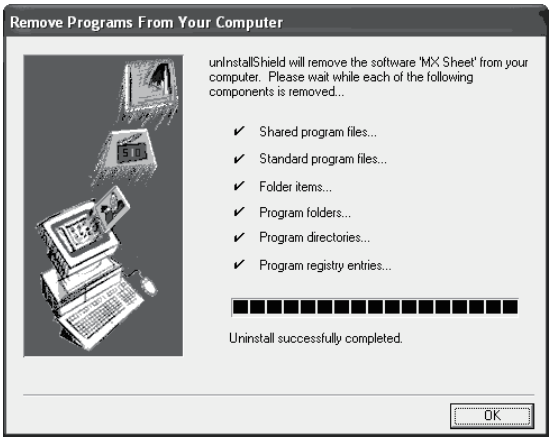


3) The dialog asks if you really want to uninstall MX Sheet for confirmation.
To uninstall it, click Yes.
When not uninstalling it, click No.
Clicking No returns to the previous screen.

*Components indicate the installed icons and files.



4) When a message appears and shows that the files have been deleted, click OK.
Be sure to restart the personal computer, if some files remain undeleted.

↓

Complete!

REMARK

When uninstallation is executed using any of the following OSs, MX Sheet remains displayed in the application list of "Add or Remove Programs" if uninstallation is completed normally.
After uninstallation is completed, restart "Add or Remove Programs" and check whether MX Sheet has been removed from the application list.

- Windows® 98
- Windows® Me
- Windows NT® Workstation 4.0

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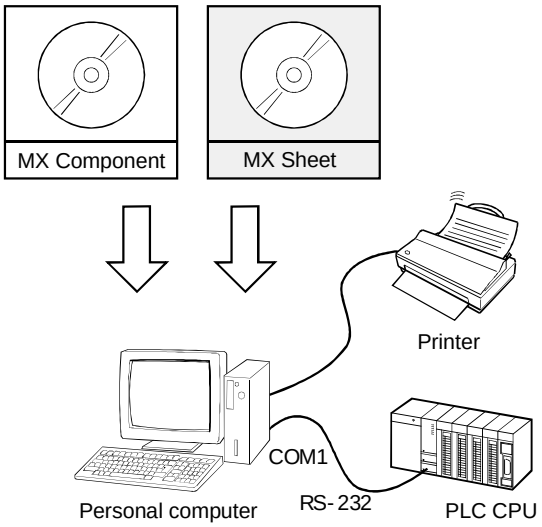
4 SYSTEM CONFIGURATION USED IN THIS MANUAL

This manual explains system configuration as follows:

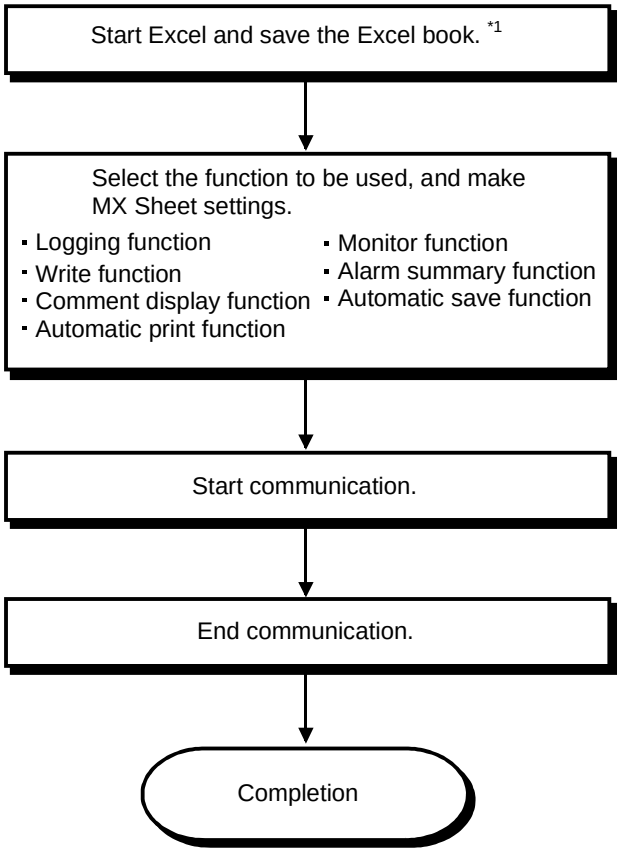


System Equipment		Description
Personal computer		Personal computer that satisfies the operating environment of MX Sheet. Refer to Chapter 2 for details.
Software	OS	Microsoft® Windows® XP Professional Operating System (English version)
	MX Sheet	MX Sheet Version 1
	MX Component	MX Component Version 3.01B
	Excel	Microsoft® Excel 2002 (English version)
PLC CPU		Q02HCPU
RS-232 cable		QC30R2 (Connect to COM1 on personal computer side.)
Printer		Printer compliant with the personal computer specifications.

MEMO

5 MX Sheet OPERATION PROCEDURE

This chapter explains the MX Sheet operation procedure.



*1: Be sure to save the Excel book before making the MX Sheet settings. MX Sheet cannot be set unless the Excel book is saved.

REMARK

Refer to the Excel manual for Excel operation.

MEMO

5 - 2

6 OPERATING MX Sheet

This chapter explains the following functions with examples.

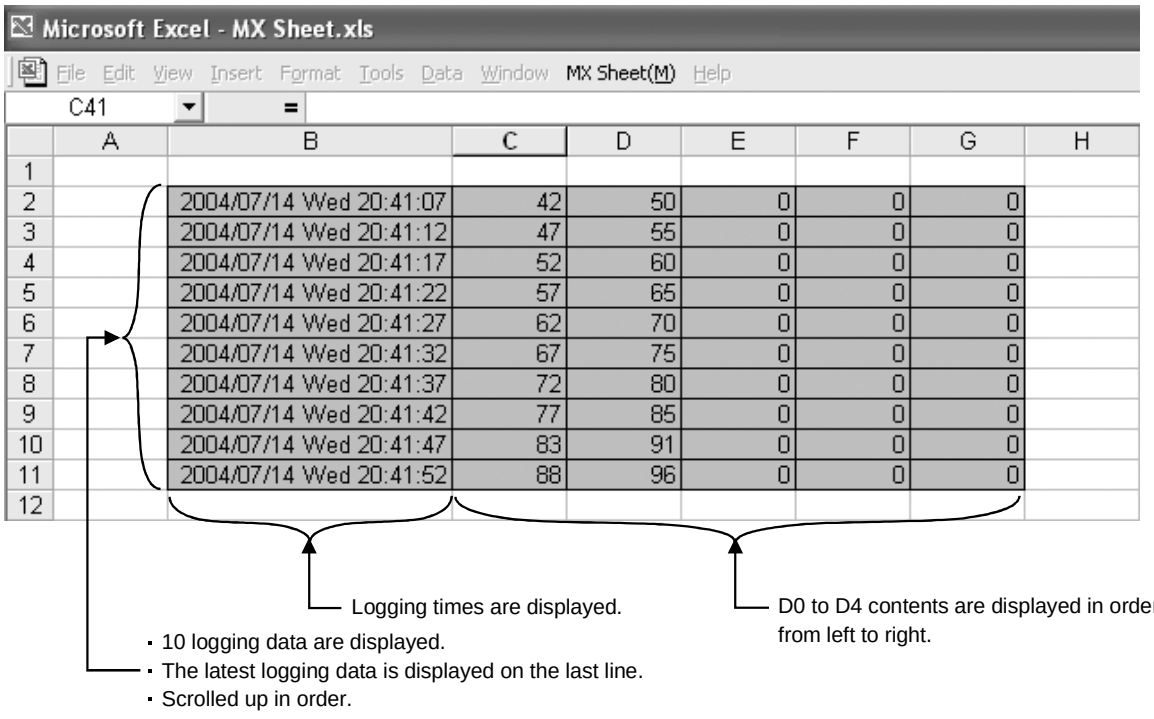
Function	Reference Section
Logging function	Section 6.1
Monitor function	Section 6.2
Write function	Section 6.3
Automatic save function	Section 6.4
Automatic print function	Section 6.5
Create button function	Section 6.6

6.1 Logging

This section provides an example of creating an Excel sheet using the logging function.

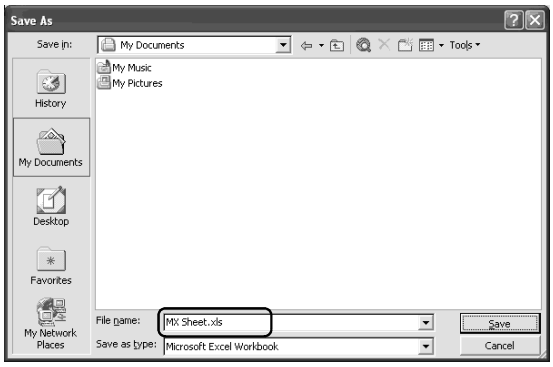
(1) Creation example

Set the following Excel sheet as instructed in (2).

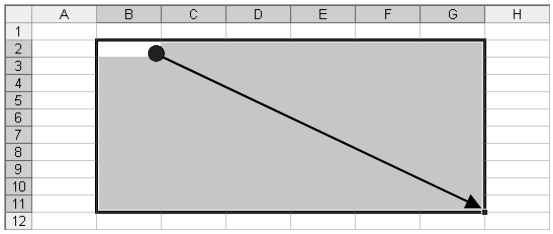


(2) Setting MX Sheet

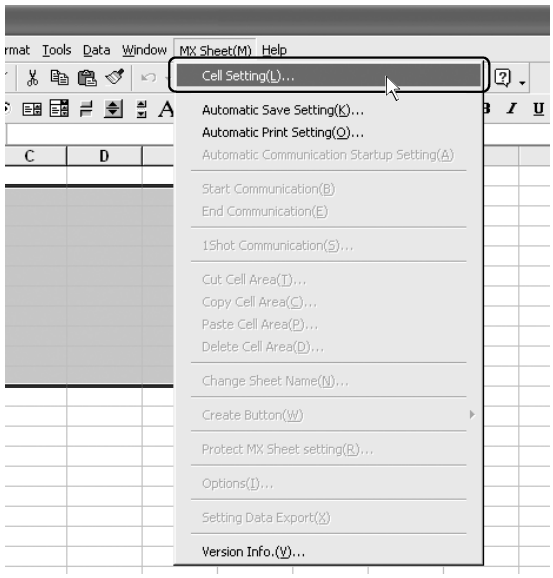
This section explains the procedure of creating an Excel sheet for logging function.



1) Saving the Excel book
Start Excel and save the Excel book.



2) Specifying the cell area
Drag the cell (B2 to G11 in this example) on the left screen to specify the cell area in which logging data will be displayed.



3) Displaying the "Cell Setting" dialog box
Choose [MX Sheet] → [Cell Setting] from the menu bar to display the "Cell Setting" dialog box.

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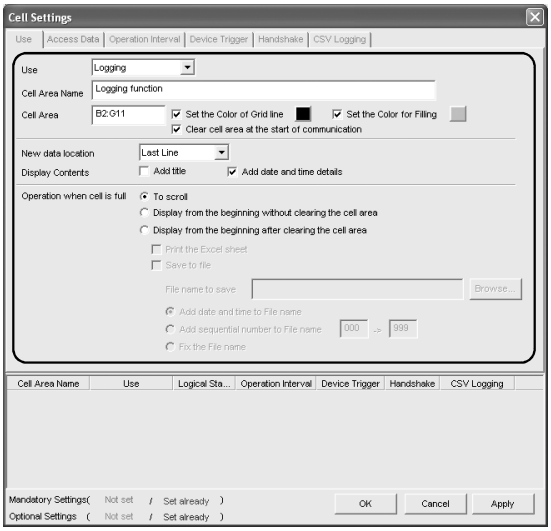
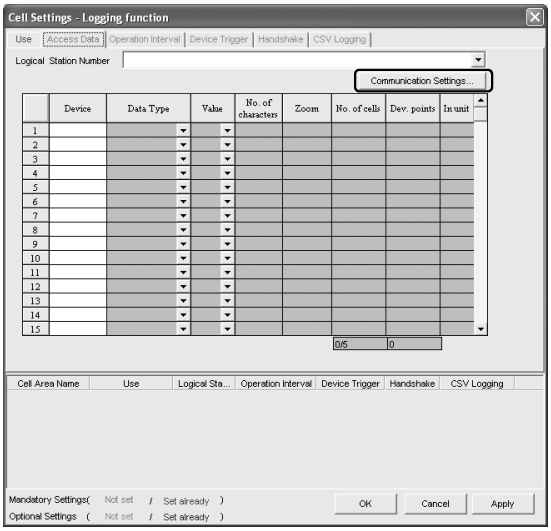


4) Setting the <<Use>> tab

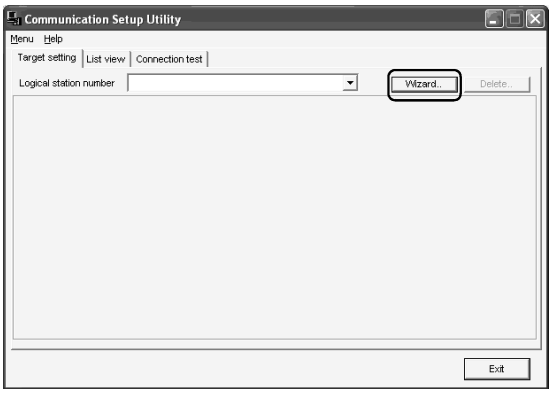
Set the setting items of the <<Use>> tab as follows:
After setting, click the <<Access Data>> tab.

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



5) Setting the logical station number of the <<Access Data>> tab

Click Communication Settings to start the Communication Setup Utility for setting the logical station number.



6) Starting the Communication Setting Wizard

After starting the Communication Setup Utility, click the <<Target Setting>> tab and click Wizard.

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TERM
What is logical station? A number assigned to the group of data that is integrated from the connection target information required for communication within the Communication Setup Utility.

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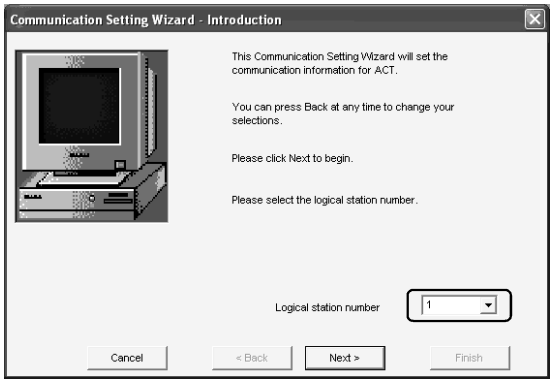
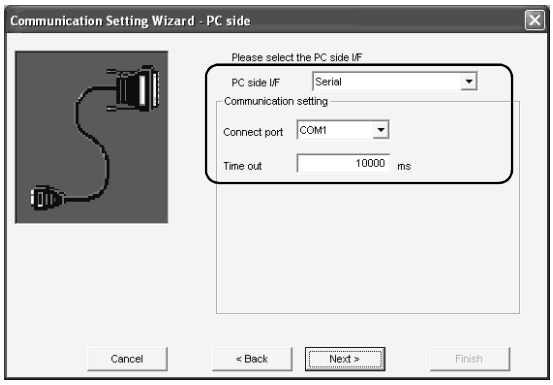


7) Setting the logical station number
Enter "1" in "Logical station number" and click Next>.

↓



8) Setting the personal computer side interface
Make the following settings and click Next>.

PC side I/F : Serial
Connect port : COM1
Time out : 10000

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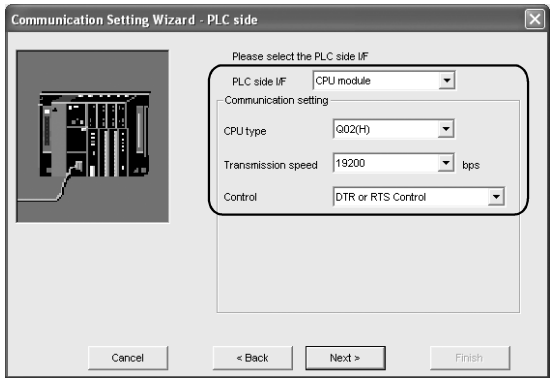

9) Setting the PLC side interface
Make the following settings and click Next>.

PLC side I/F : CPU module
CPU type : Q02(H)
Transmission speed : 19200
Control : DTR or RTS Control

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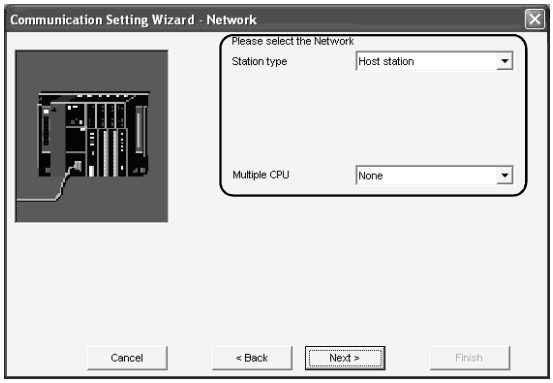
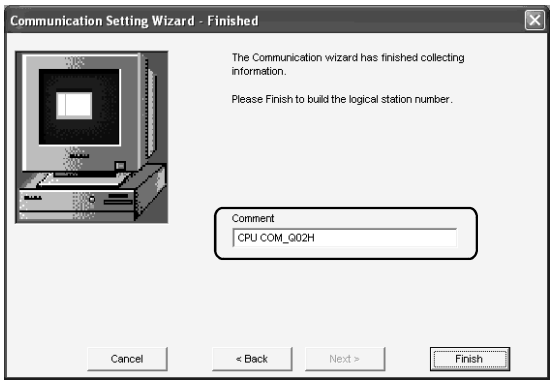


10) Selecting the communication path
Make the following settings and click Next>.

Station type : Host station
Multiple CPU : None

↓



11) Enter any word (CPU COM_Q02H in this example) and click Finish.

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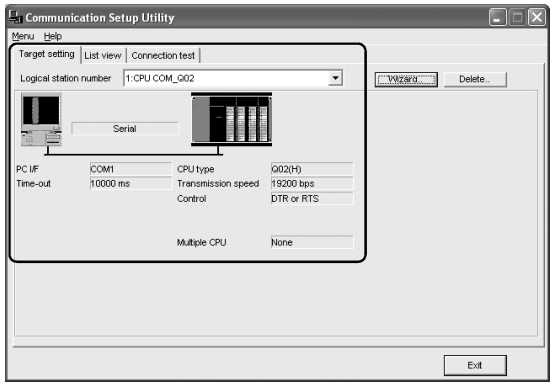

12) Check whether the logical station number settings displayed on the <<Target setting>> tab of the Communication Setup Utility are correct or not. After checking, click the <<Connection test>> tab.

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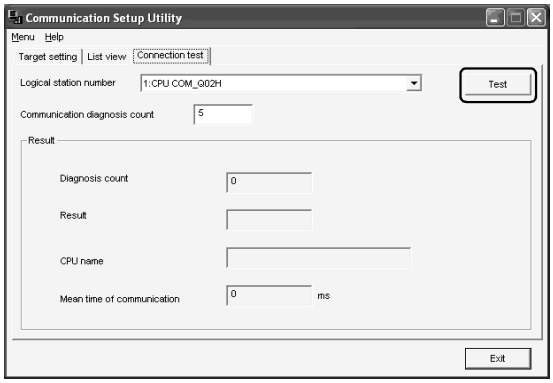


13) Connection test

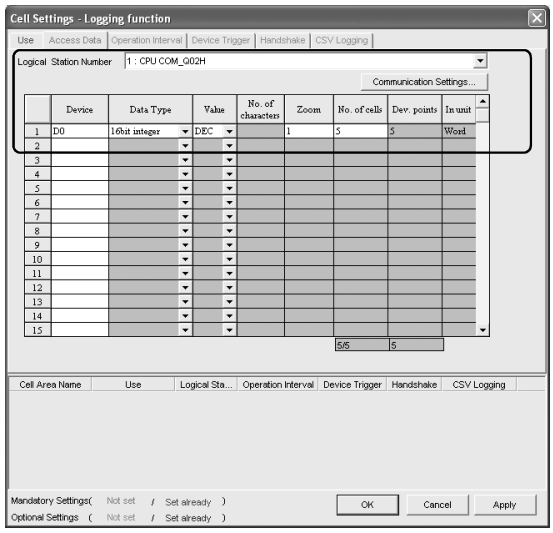
Click Test to make sure that the PLC and personal computer are normally communicating.

After confirmation, click Exit 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) Setting the <<Access Data>> tab

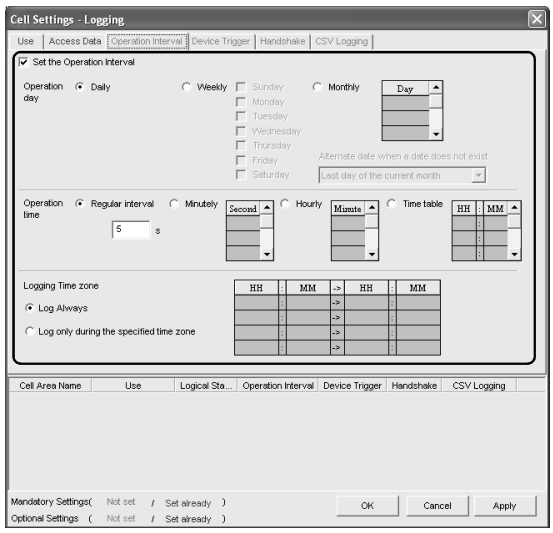
Set the device of which data to be logged.

Make the following settings.

After setting, click the <<Operation time>> tab.

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

↓



15) Setting the <<Operation Interval>> tab

Set the logging operation interval.

Make the following settings.

Set the Operation Interval	: Check
Operation day	: Daily
Operation time	: Regular interval (5 seconds)
Logging Time Zone	: Log Always

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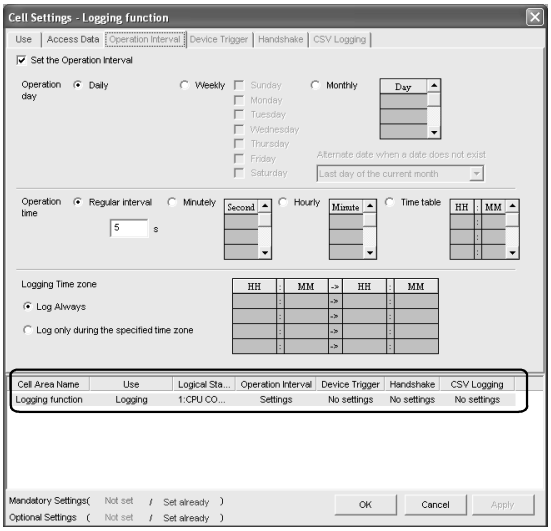
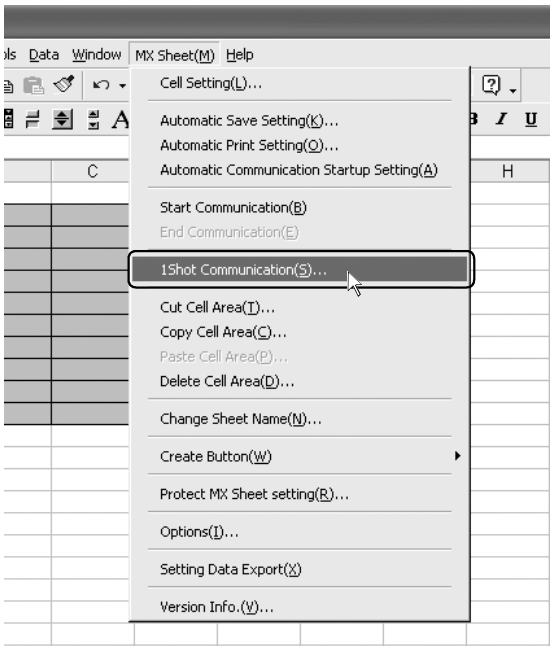


16) Applying the settings

Click Apply to enable the settings of the "Cell Setting" dialog box.

After clicking Apply, check that the cell area has been registered as shown on the left screen, and click OK.

↓

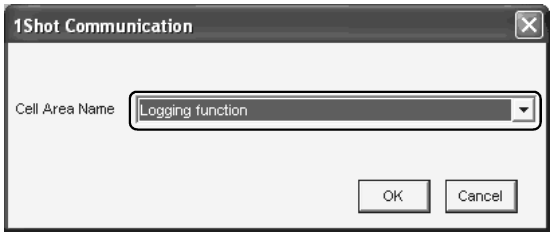


17) Checking the settings

Check whether the settings in steps 1) to 16) are correct or not by using the 1 shot communication function of MX Sheet.

Make 1 shot communication in the following procedure.

1. Choose [MX Sheet] → [1 Shot Communication] from the menu bar.
2. As the "1 Shot Communication" dialog box appears, select the cell area name set in step 4) (logging function in this example) as the "Cell Area Name".
3. Click OK to start 1 shot communication.



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TERM
What is 1 shot communication? This function executes the function set to the selected cell area at any timing.

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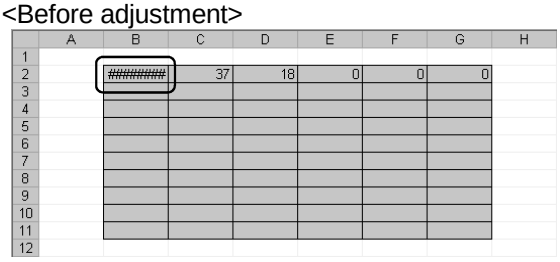
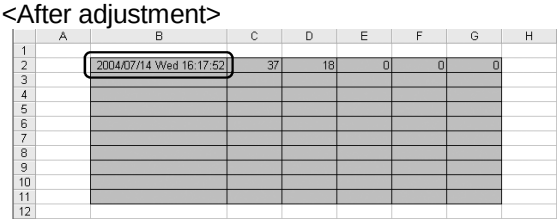
<Before adjustment>



18) Adjusting the display

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.

<After adjustment>



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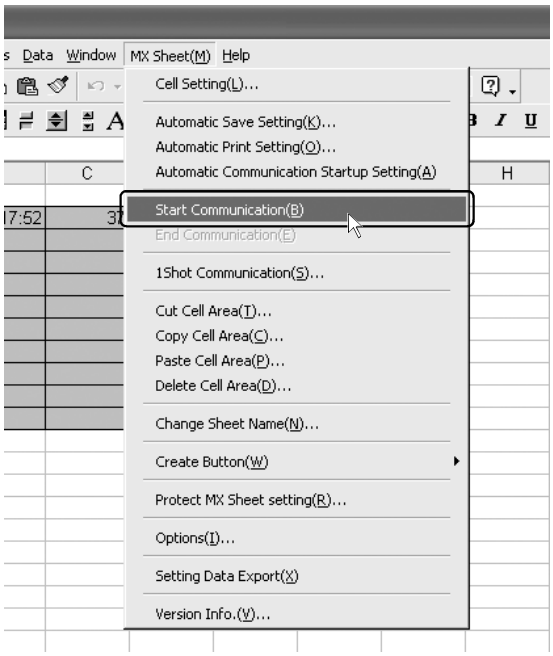
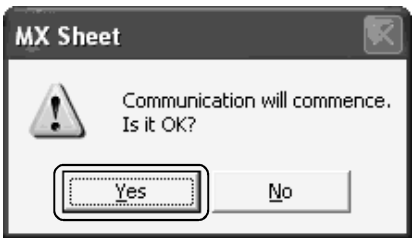


19) Starting communication

Choose [MX Sheet] → [Start Communication] from the menu bar to start logging.
As the confirmation dialog box appears, click Yes.



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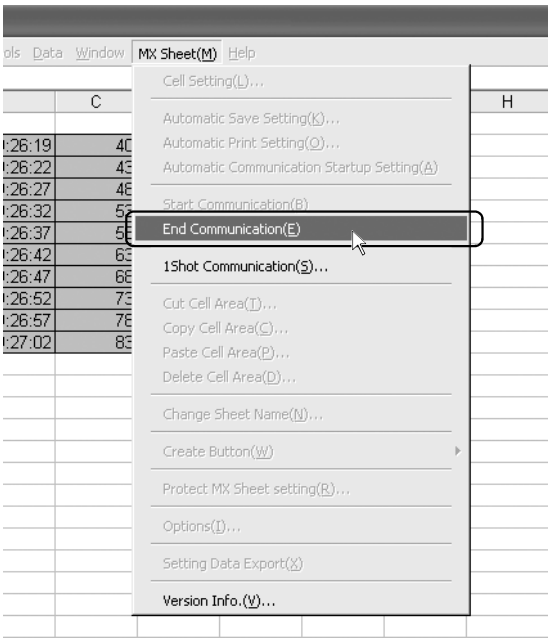


↓

Complete!

20) Ending communication

Choose [MX Sheet] → [End Communication] from the menu bar to end logging.

The Excel sheet for logging function is now completed.

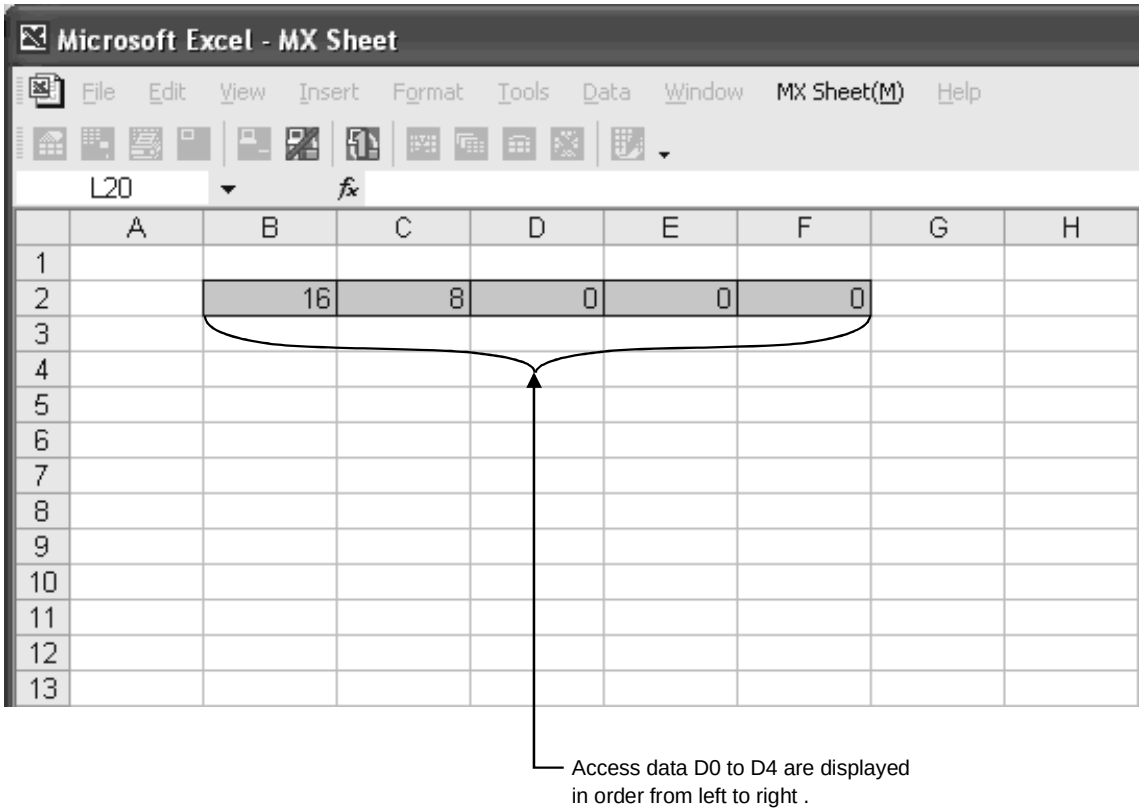
6 - 9

6.2 Monitor

This section provides an example of creating an Excel sheet using the monitor function.

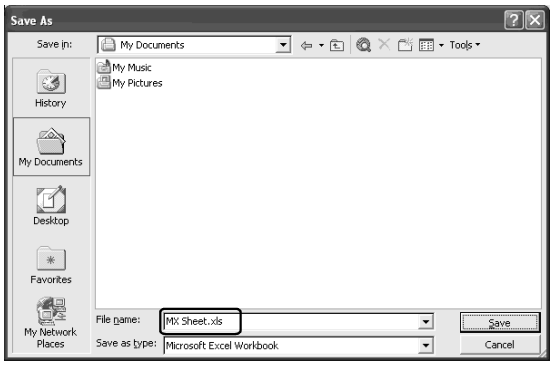
(1) Creation example

Set the following Excel sheet as instructed in (2).



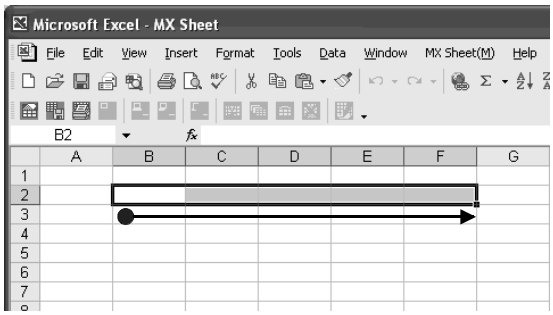
(2) Setting MX Sheet

This section explains the procedure of creating an Excel sheet for monitor function.



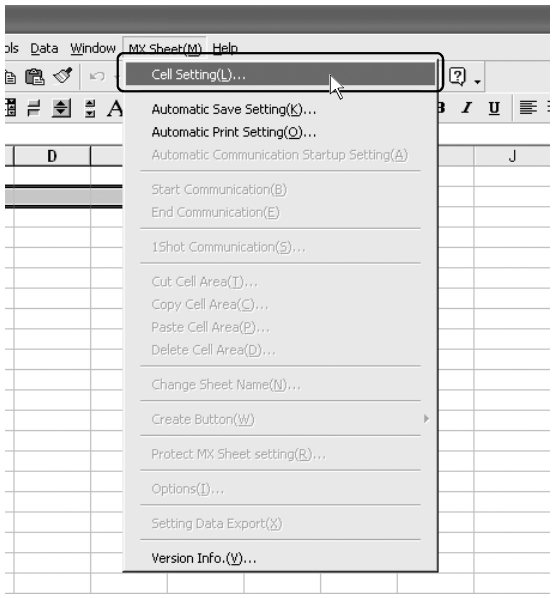
↓

1) Saving the Excel book
Start Excel and save the Excel book.



↓

2) Specifying the cell area
Drag the cell (B2 to F2 in this example) on the left screen to specify the cell area in which monitor data will be displayed.



↓

3) Displaying the "Cell Setting" dialog box
Choose [MX Sheet] → [Cell Setting] from the menu bar to display the "Cell Setting" dialog box.

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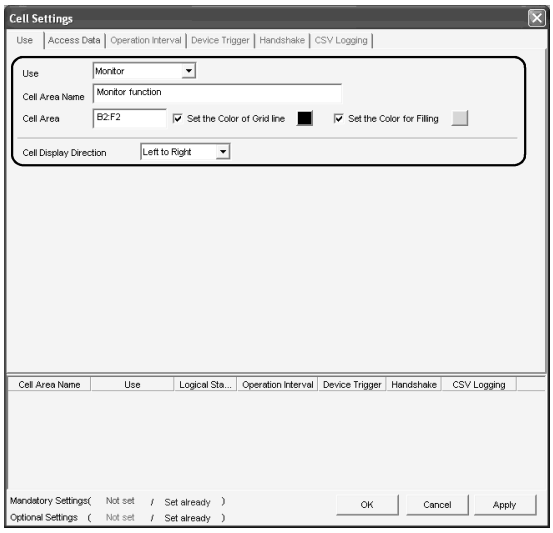
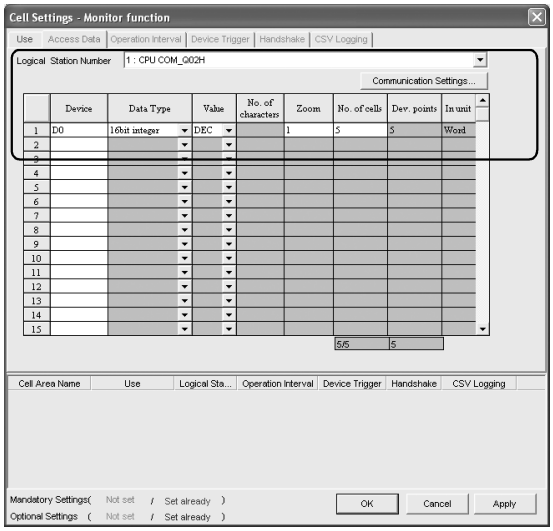


4) Setting the <<Use>> tab

Set the setting items of the <<Use>> tab as follows:
After setting, click the <<Access Data>> tab.

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

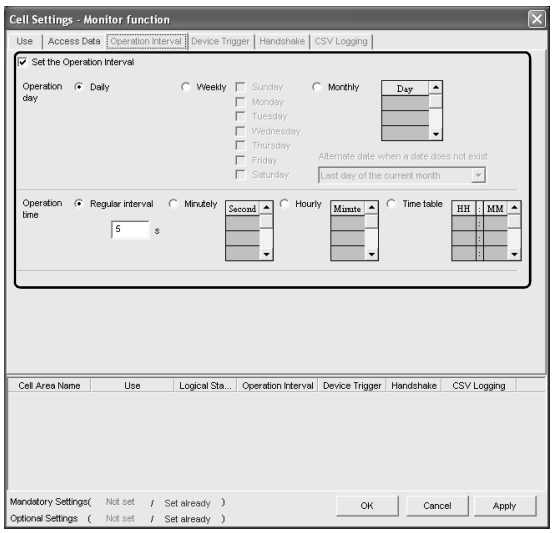


5) Setting the <<Access Data>> tab

Set the device of which data to be monitored.
Make the following settings.
After setting, click the <<Operation Interval>> tab.

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

*1: Refer to Section 6.1 for the logical station number setting method.



6) Setting the <<Operation Interval>> tab

Set the monitor operation interval.
Make the following settings.

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

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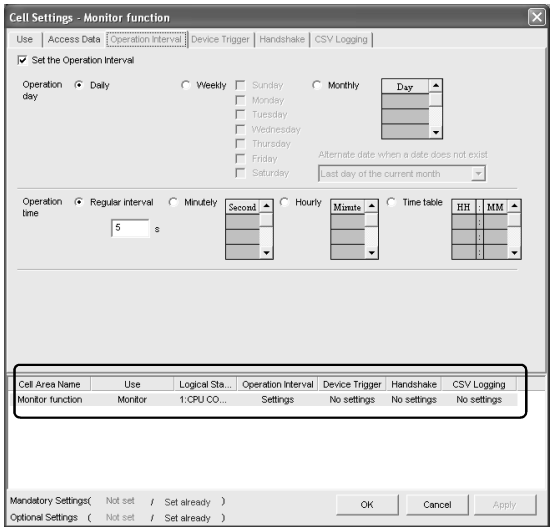
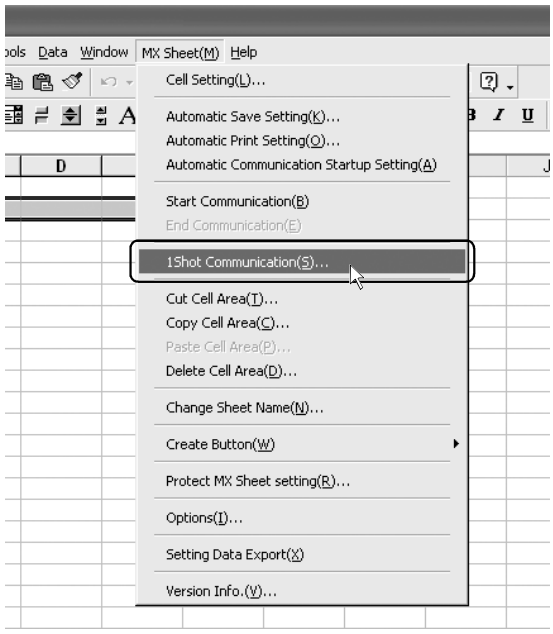


7) Applying the settings

Click Apply to enable the settings of the "Cell Setting" dialog box.

After clicking Apply, check that the cell area has been registered as shown on the left screen, and click OK.

↓

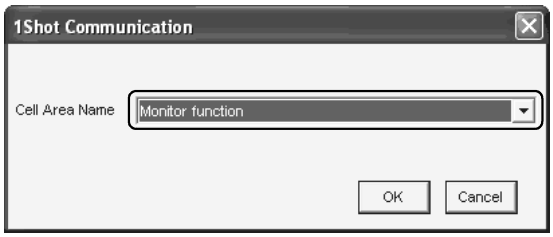


8) Checking the settings

Check whether the settings in steps 1) to 7) are correct or not by using the 1 shot communication function of MX Sheet.

Make 1 shot communication in the following procedure.

1. Choose [MX Sheet] → [1 Shot Communication] from the menu bar.
2. As the "1 Shot Communication" dialog box appears, select the cell area name set in step 4) (monitor function in this example) as the "Cell Area Name".
3. Click OK to start 1 shot communication.



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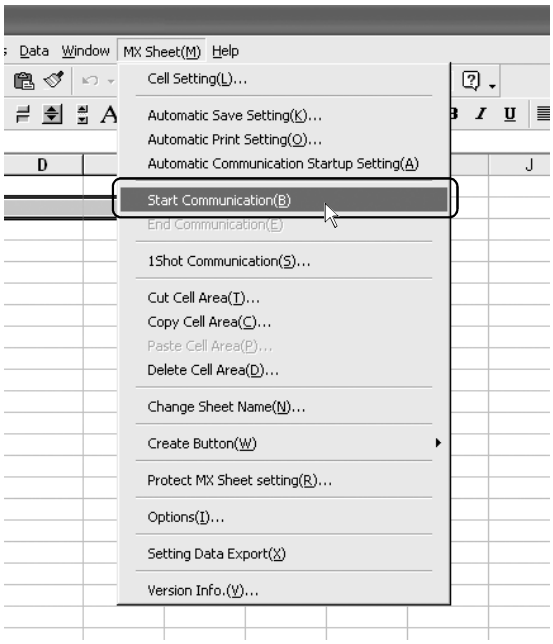
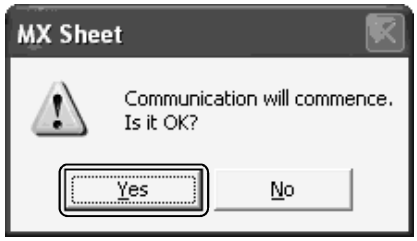


9) Starting communication

Choose [MX Sheet] → [Start Communication] from the menu bar to start monitor.

As the confirmation dialog box appears, click Yes.



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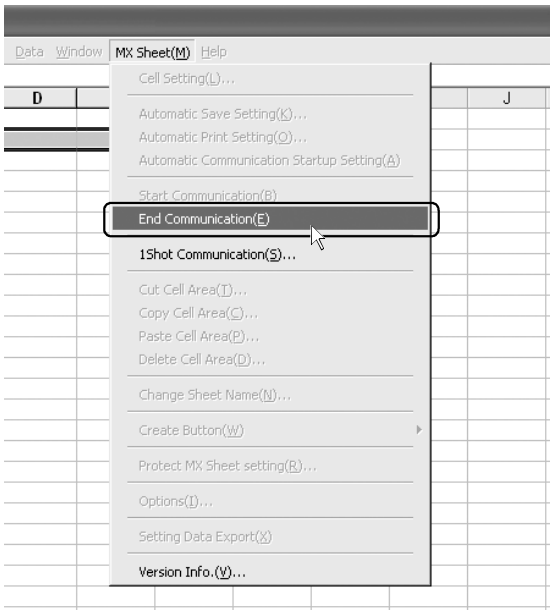


10) Ending communication

Choose [MX Sheet] → [End Communication] from the menu bar to exit monitor.

After ending the communication, delete the monitor data.

↓

Complete!

The Excel sheet for monitor function is now completed.

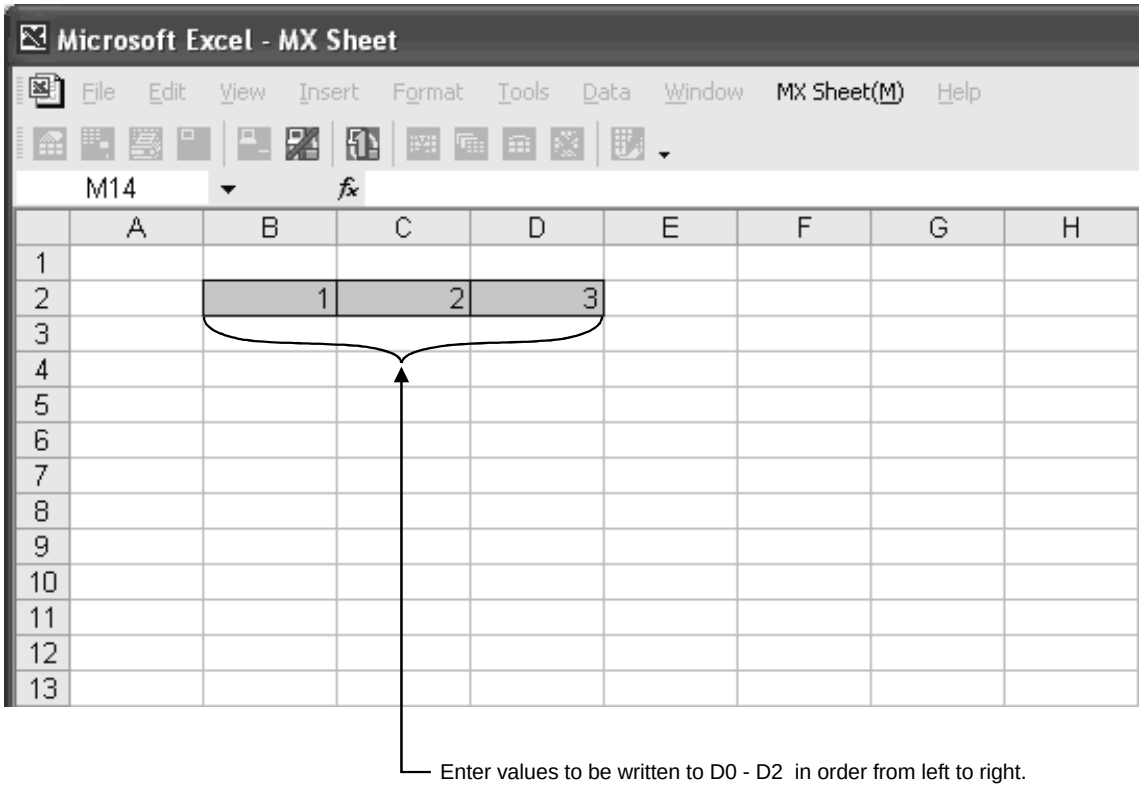
6 - 14

6.3 Data Write

This section provides an example of creating an Excel sheet using the write function.

(1) Creation example

Set the following Excel sheet as instructed in (2).



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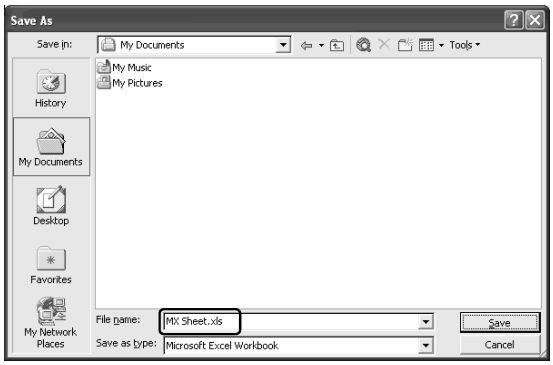
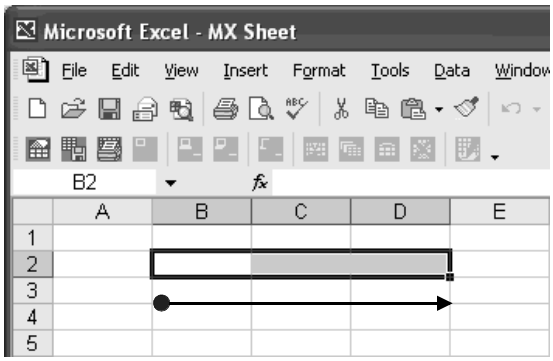
(2) Setting MX Sheet

This section explains the procedure of creating an Excel sheet for monitor function.



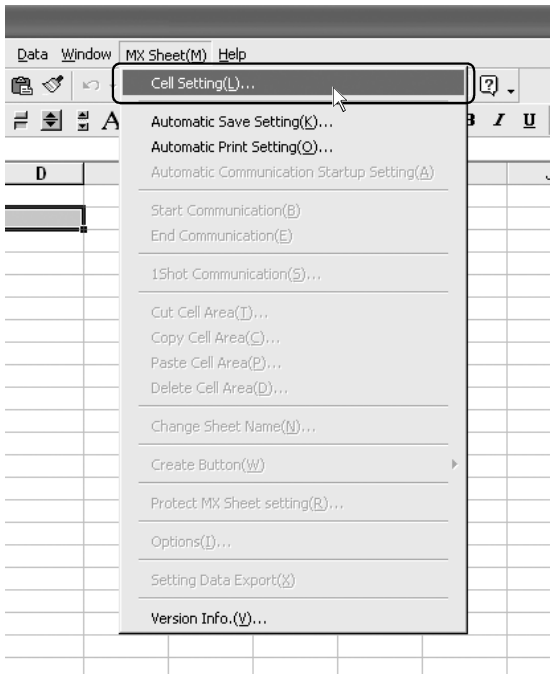
↓

1) Saving the Excel book
Start Excel and save the Excel book.



↓

2) Specifying the cell area
Drag the cell (B2 to D2 in this example) on the left screen to specify the cell area in which written data will be entered.



↓

3) Displaying the "Cell Setting" dialog box
Choose [MX Sheet] → [Cell Setting] from the menu bar to display the "Cell Setting" dialog box.

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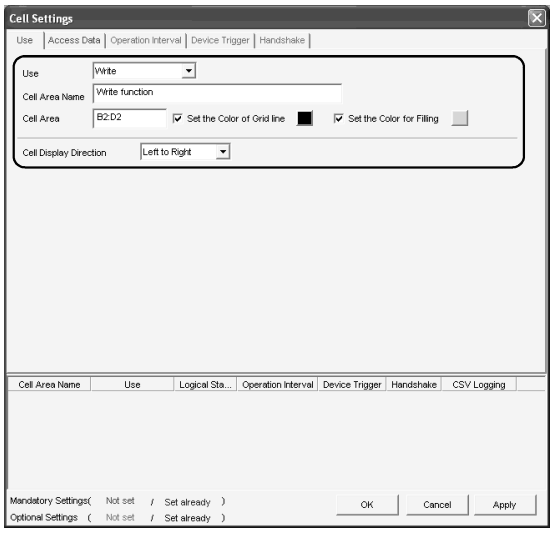
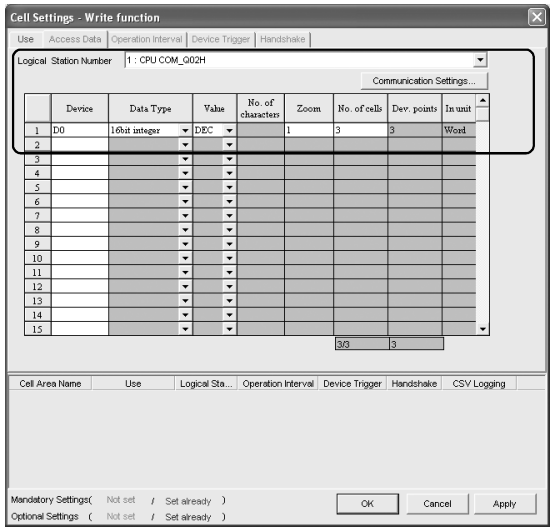


4) Setting the <<Use>> tab

Set the setting items of the <<Use>> tab as follows:
After setting, click the <<Access Data>> tab.

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



5) Setting the <<Access Data>> tab

Set the device where data will be written.
Make the following settings.
After setting, click the <<Operation Interval>> tab.

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

*1: Refer to Section 6.1 for the logical station number setting method.

6) Setting the <<Operation Interval>> tab

Set the write operation interval.
Make the following settings.

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

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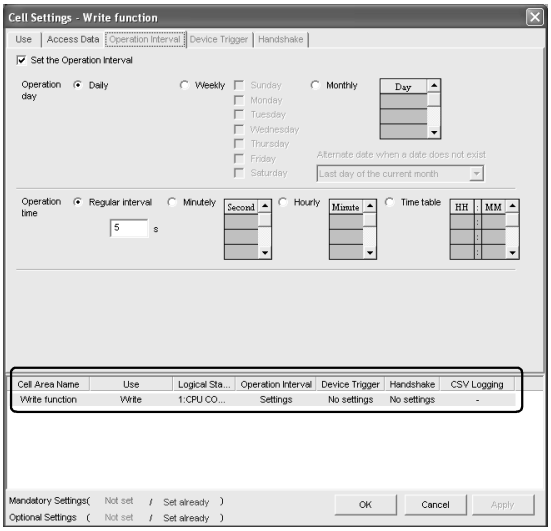
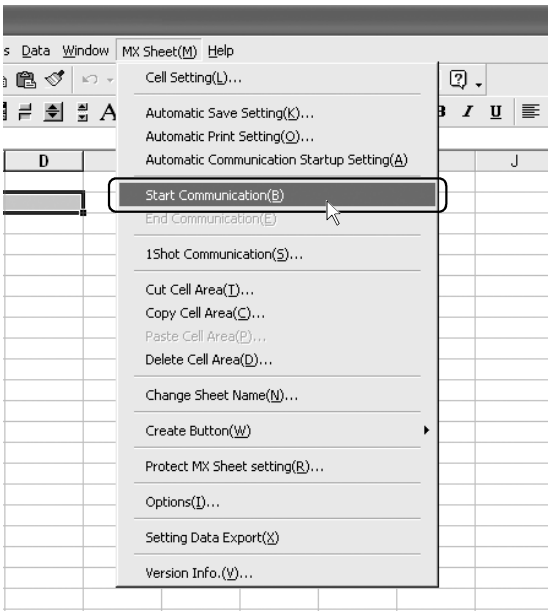


↓

7) Applying the settings

Click Apply to enable the settings of the "Cell Setting" dialog box.

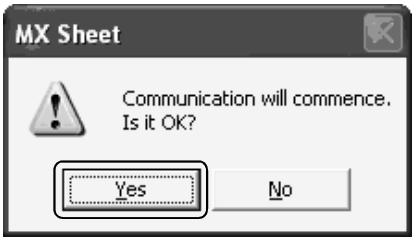
After clicking Apply, check that the cell area has been registered as shown on the left screen, and click OK.



8) Starting communication

Choose [MX Sheet] → [Start Communication] from the menu bar to start writing.

As the confirmation dialog box appears, click Yes.



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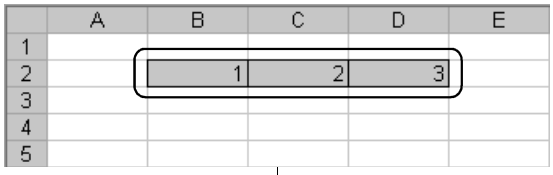


9) Entering the written values

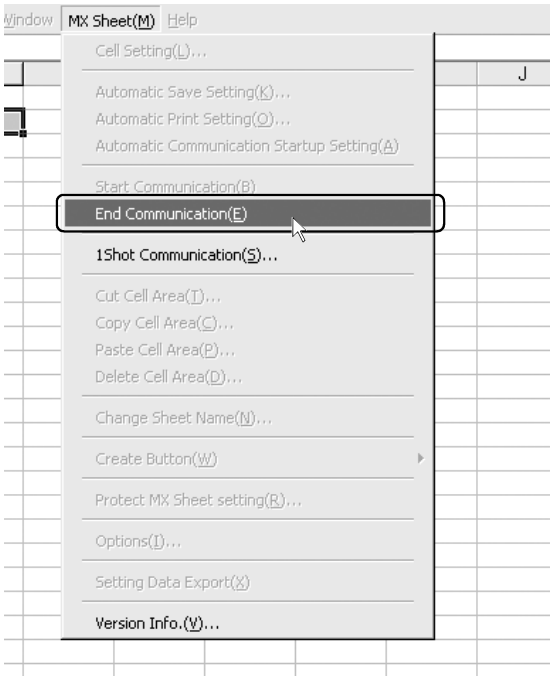
Enter the values to be written to devices into the cell area specified in step 2).

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)

Make sure that the data on Excel are written to the PLC devices.



10) Ending communication

Choose [MX Sheet] → [End Communication] from the menu bar to end writing.

Complete!

The Excel sheet for write function is now completed.

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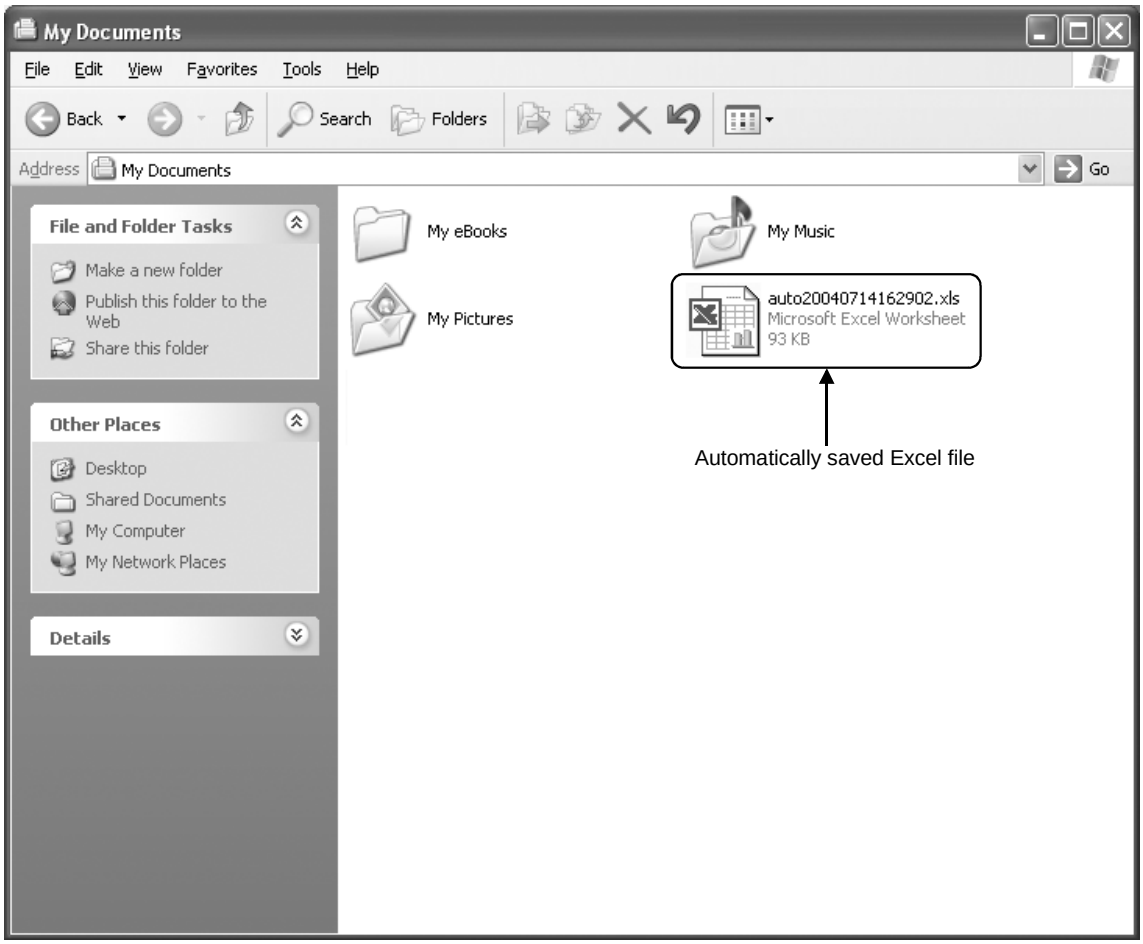
6.4 Automatic Save

This section explains a setting procedure for automatically saving the Excel book during MX Sheet operation.

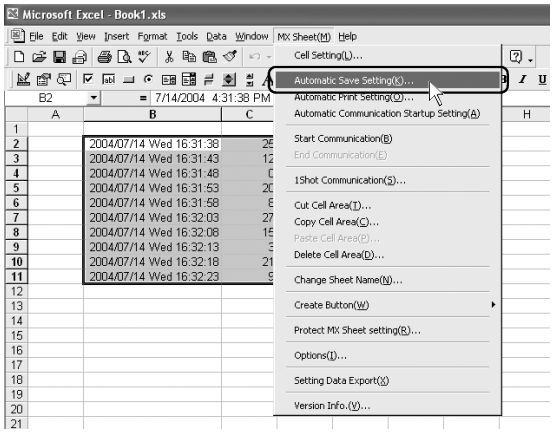
(1) Setting example

Automatic save condition : Saved when the device (Y0) turns on.
Automatically saved file name : Date and time are added to the file auto.xls.



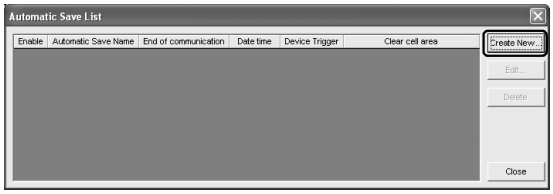
(2) Setting automatic save

This section explains an Excel book automatic save setting procedure.



1) Selecting automatic save setting

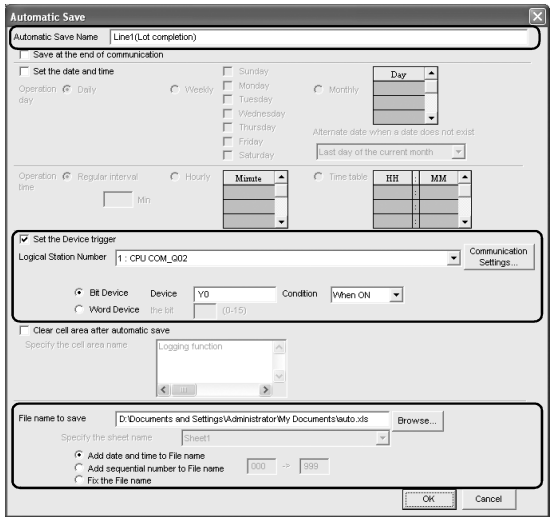
Start Excel and choose [MX Sheet] → [Automatic Save Setting] from the menu bar to display the "Automatic Save" dialog box.



2) Creating new automatic save conditions

Create new automatic save conditions.

Click the [Create New] button.

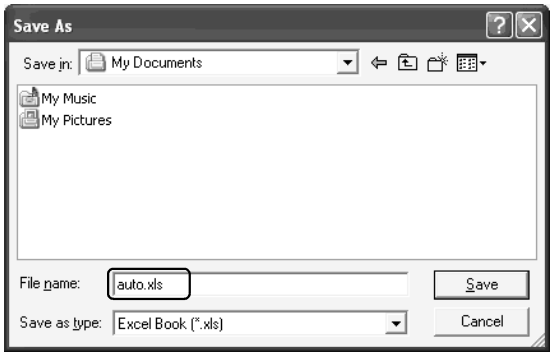


3) Setting the automatic save conditions

Set the automatic save conditions as follows:

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

*1: Refer to Section 6.1 for the logical station number setting method.



Set the file name to be saved automatically.

Clicking Browse displays the "Save As" dialog box.

Specify any save place and file name.

File name	: auto.xls
Save as type	: Excel book (*.xls)

After specifying the file name, click Save.

After making the above settings, click OK.

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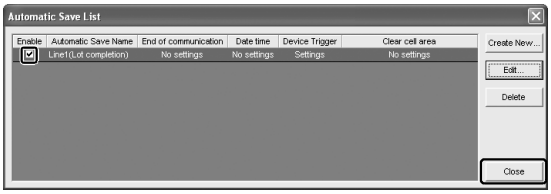
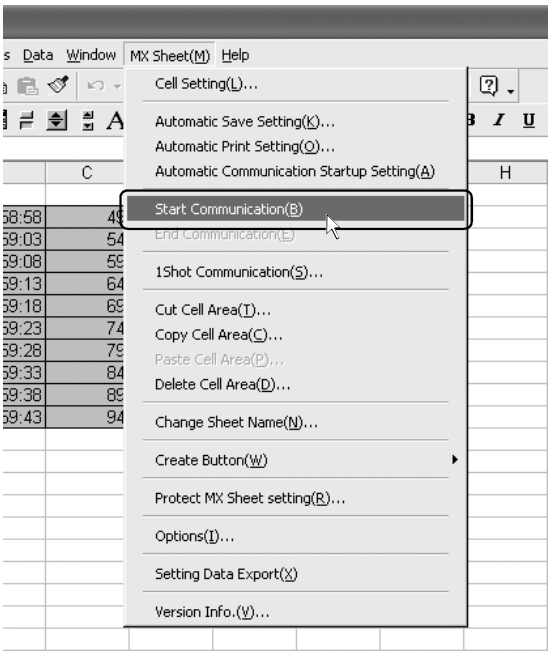
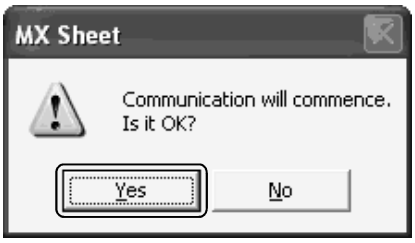


4) Specifying the automatic save conditions
After making sure that the automatic save name has been added to the list and the Enable filed has a check mark, click the [Close] button to close the Automatic save list.

↓



5) Starting communication
Choose [MX Sheet] → [Start Communication] from the menu bar to start communication.
As the confirmation dialog box appears, click Yes.



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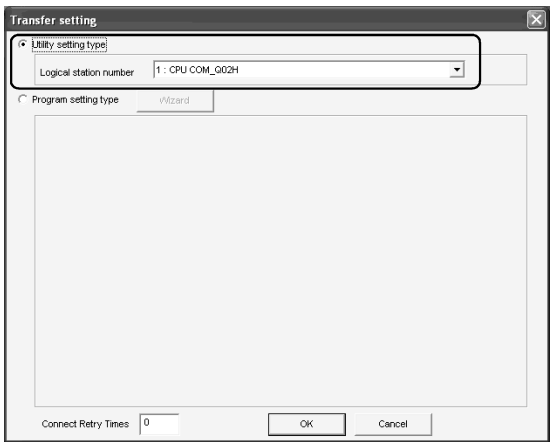

6) Starting the PLC Monitor Utility
From the [Start] menu, choose [All Programs] → [MELSOFT Application] → [MX Component] → [PLC Monitor Utility] to start the PLC Monitor Utility.
As the "Transfer setting" dialog box appears, make the following settings.

Utility setting type : Check
Logical station number : 1

After making the above settings, click OK.

↓

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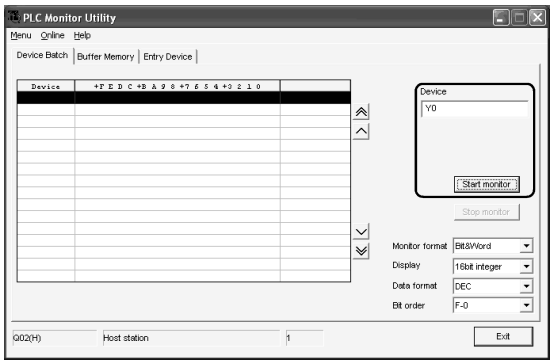
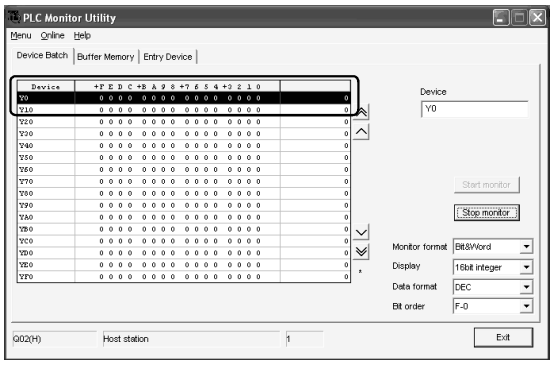


7) Specifying the monitor device

Choose the <<Device Batch>> tab of the PLC Monitor Utility and make the following setting.

Device : Y0

After making the above settings, click Start monitor.



8) Writing to device

Change the Y0 device status.

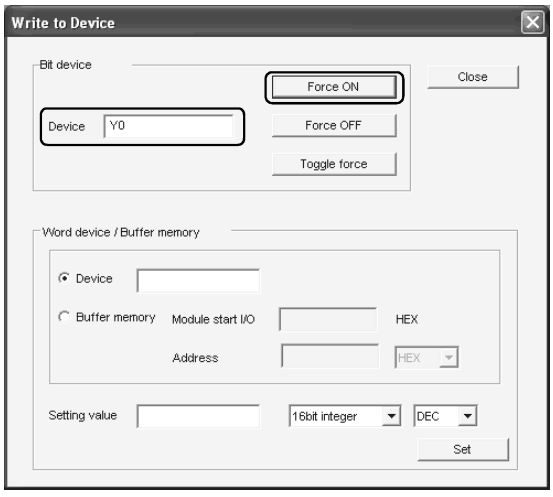
Double-click the monitor display area of the <<Device Batch>> tab.

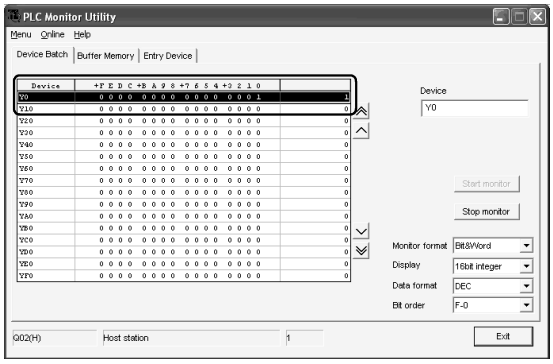
The "Write to Device" dialog box appears.

Forcibly turn on Y0 in the following procedure.

1. Type "Y0" in "Device" in "Bit Device".
2. Click Force ON.

After making the above settings, click Close.





9) Checking the device status

The Y0 device status has been changed as set in step 8).

Check whether it has been changed or not.

After checking, click Stop monitor and then Exit .

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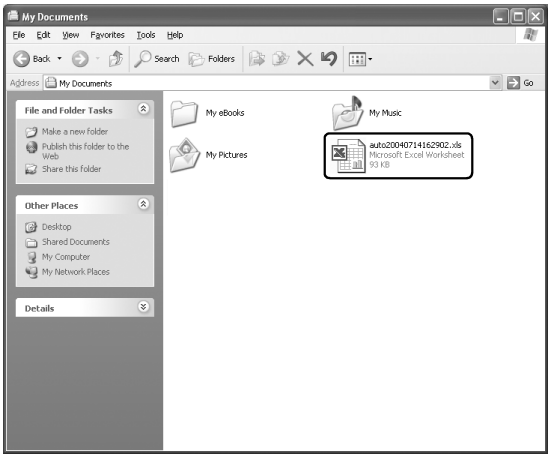

10) Checking the saved file

The operation in step 8) activates the automatic save setting function and saves the Excel book automatically. Start Explorer and check whether the file specified in step 3) has been saved correctly.

After checking the file, choose [MX Sheet] → [End Communication] from the menu bar to end communication.

↓

Setting complete!

The automatic save setting is now completed.

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6.5 Automatic Print

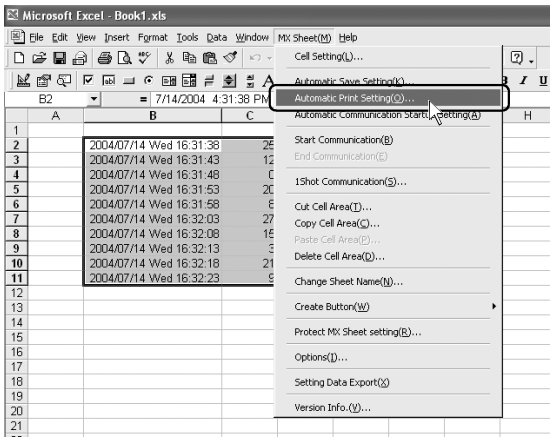
This section explains a setting procedure for automatically printing the whole Excel book or specified Excel sheets during MX Sheet operation.

(1) Setting example

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

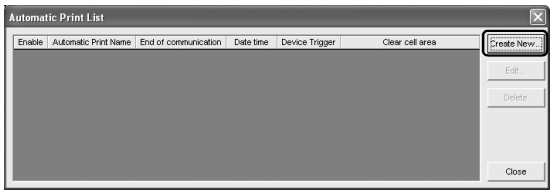
(2) Setting automatic print

This section explains an Excel sheet automatic print setting procedure.



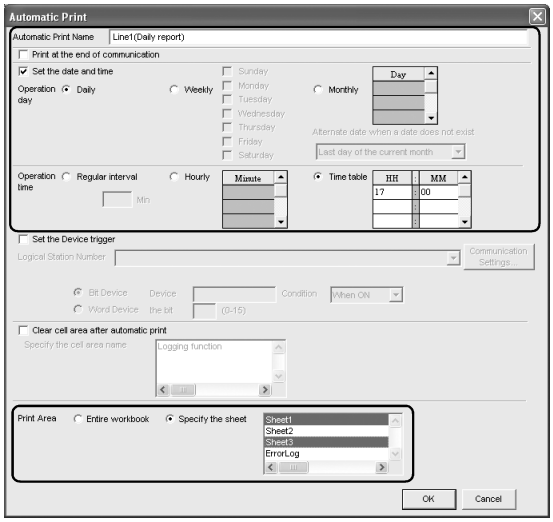
1) Selecting automatic print setting
Start Excel and choose [MX Sheet] → [Automatic Print Setting] on the menu bar to display the "Automatic Print" dialog box.

↓



2) Creating new automatic print conditions
Create new automatic print conditions.
Click the [Create New] button.

↓



3) Setting the automatic print conditions
Set the automatic print conditions.
Set as indicated below.

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

After making the above setting, click OK.

*1: Multiple sheets can be specified.
Specify the corresponding sheet only.

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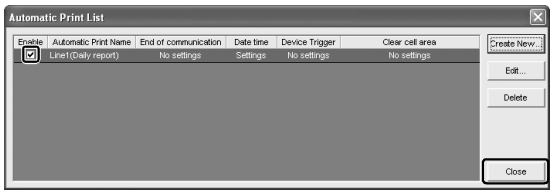

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Setting complete!

4) Specifying the automatic print conditions
After making sure that the automatic print name has been added to the list and the Enable filed has a check mark, click the [Close] button to close the Automatic print list.

POINT

If multiple printers are set within the personal computer, the default printer (set within [My Computer] → [Printers]) is used to print the Excel sheet, when "Automatic Print" setting is selected.

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6.6 Using the Button

This section explains a convenient communication starting method by Create Button.

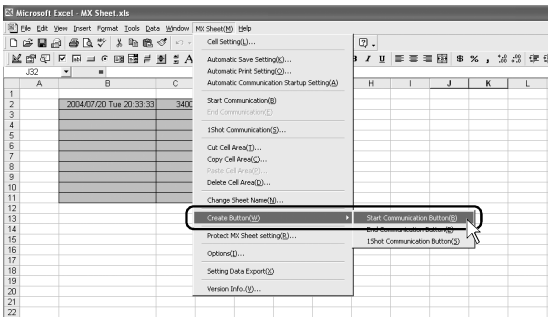
(1) Setting example

Button type*1 : Start Communication button
MX Sheet setting condition : Logging setting (Refer to Section 6.1)

*1: The End Communication or 1 Shot Communication button is also available.

(2) Creating the button and starting communication

The following describes a procedure from button creation to a communication start using the button.

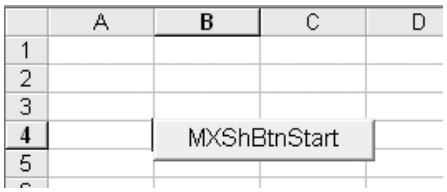


1) Choosing Create Button

Start Excel and specify the cell where the button will be placed.
Choose [MX Sheet] - [Create Button] - [Start Communication Button] on the menu bar.

The Start Communication Button is placed in the specified cell position. *2

*2: The display characters and character font of the created button can be changed. Refer to the MX Sheet Version 1 Operating Manual for details.



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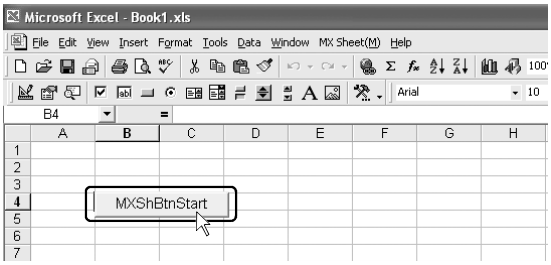
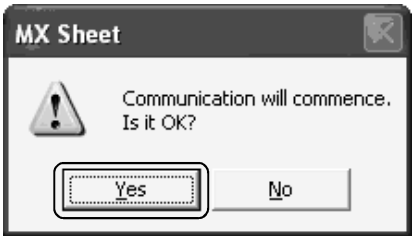


2) Starting communication

Click the Start Communication Button created in Step 1).



↓

Complete!

APPENDICES

Appendix 1 Useful Functions of MX Sheet

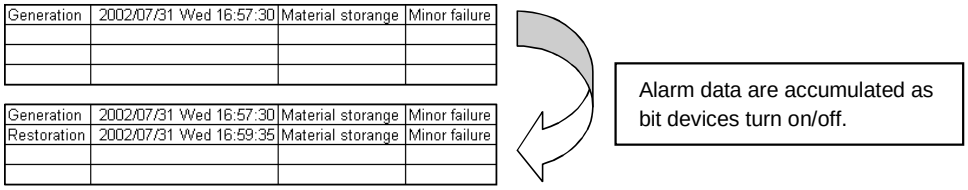
In addition to the functions explained in this manual (Chapter 6), MX Sheet has useful functions. This section provides the outlines and brief explanations of the functions. For more details, refer to the MX Sheet Version 1 Operating Manual.

Appendix 1.1 Alarm summary

The alarm summary function converts the ON/OFF information into the corresponding alarm comment character strings and accumulates them on an Excel sheet as an alarm history.
The followings are available by specifying in advance when the alarm history reaches the last line.

- Scrolling
- Printing Excel sheet
- Saving Excel book

The line operation ratio and other conditions can be checked easily by accumulating the alarm data history.



APP

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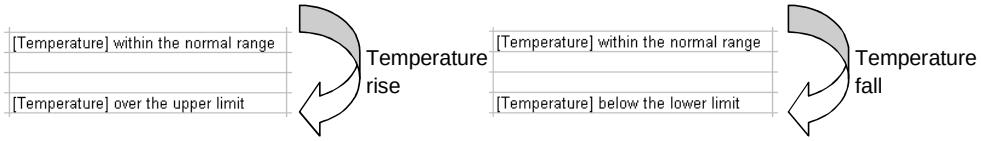
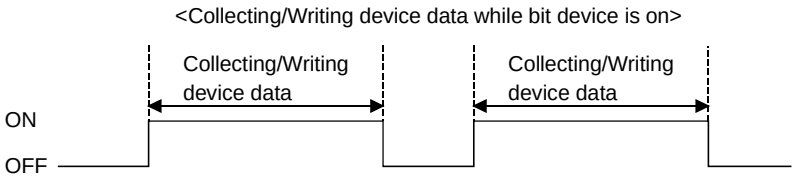
Appendix 1.2 Comment display

The comment display function converts a bit device value or word device value into the corresponding comment character strings and displays them on an Excel sheet. (A comment is displayed according to the change of device value.)
In the following example, the upper and lower limit values are set for a device so that the corresponding warning message will appear when the device value falls outside the range.



Appendix 1.3 Device trigger

The device trigger function sets the device condition for device data collection/write, and collects or writes the device data when the set device condition holds.



Target functions

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

APP

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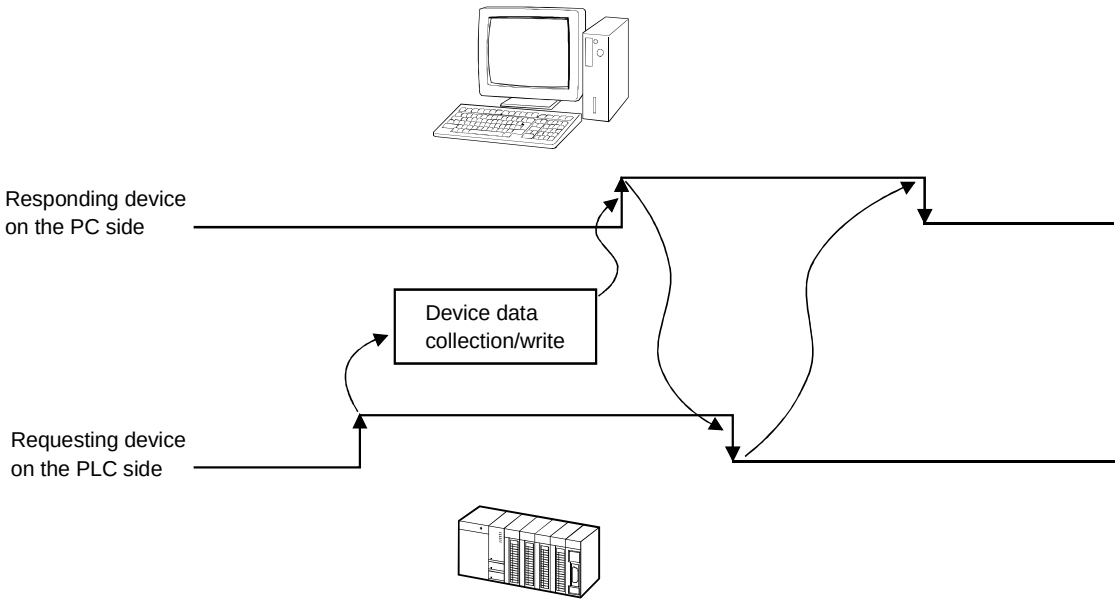
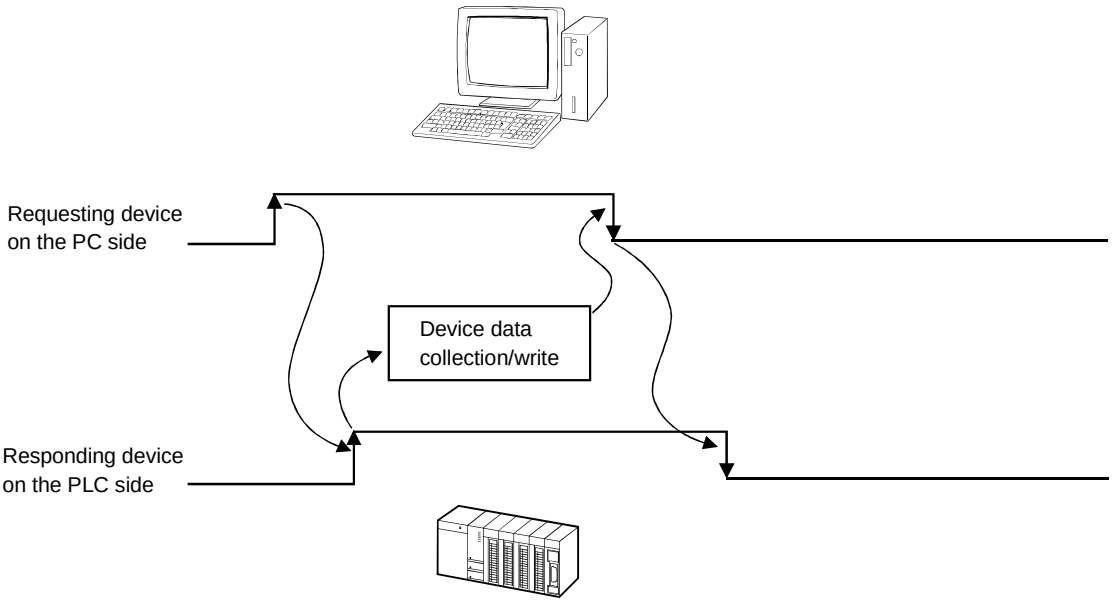
Appendix 1.4 Handshake

Setting a handshake between the PLC and personal computer ensures the device data collection/write.
The handshake function determines whether to send data or not, based on the send request and receive response signals exchanged between the personal computer and PLC, before data updating.

When handshake begins with PLC side request

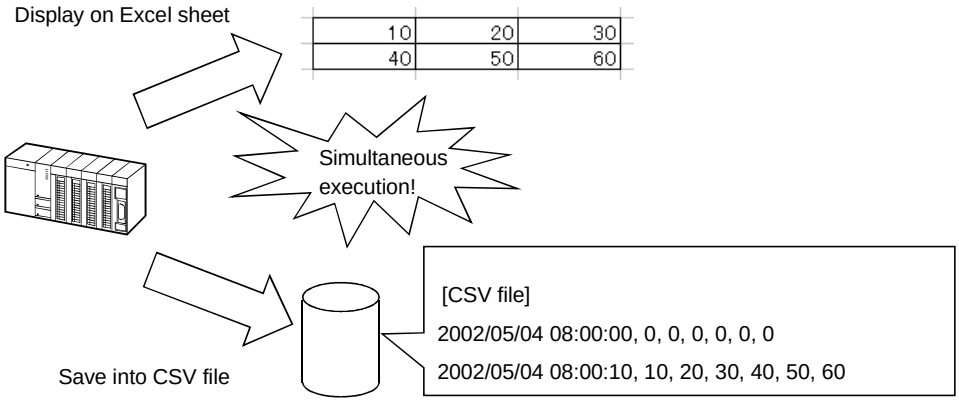


When handshake begins with PC side request



Appendix 1.5 CSV logging

The CSV logging function simultaneously displays device data on an Excel sheet using the logging or monitor function, and saves collected data as a CSV file.
Using a single CSV file enables long-term data collection file.



Appendix 1.6 Automatic Communication Startup Setting

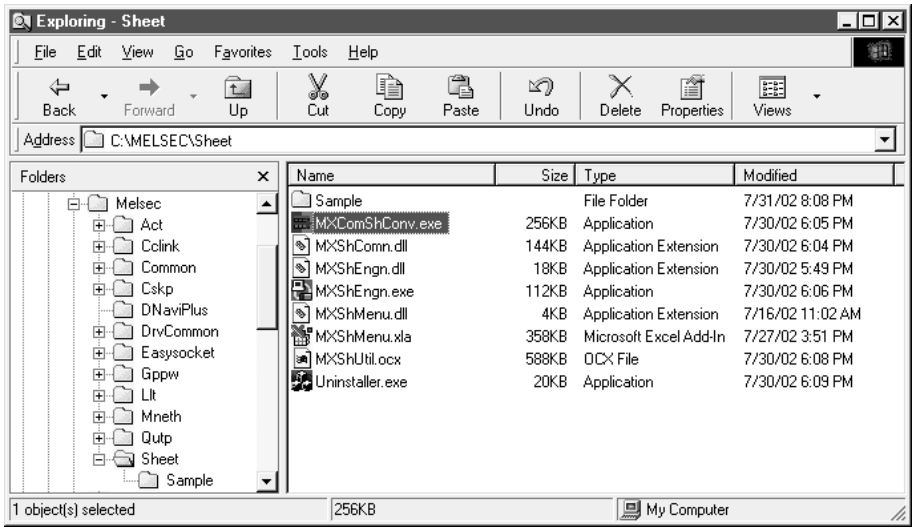
Automatic Communication Startup Setting automatically starts communication with the PLC when the Excel book where MX Sheet settings have been made is started.
This setting eliminates the need of selecting [Start Communication] from the MX Sheet menu.

Appendix 1.7 Data conversion function

The data conversion function converts the communication settings of MX Links (SW3D5F-CSKP-E) and various settings of MX Chart (SW3D5F-OLEX-E) into the logical station number of MX Component and cell settings of MX Sheet, respectively. This function ensures efficient utilization of the conventional assets.

<Starting method>

[Explorer] → [MELSEC] → [Sheet] → [MXComShConv.exe]



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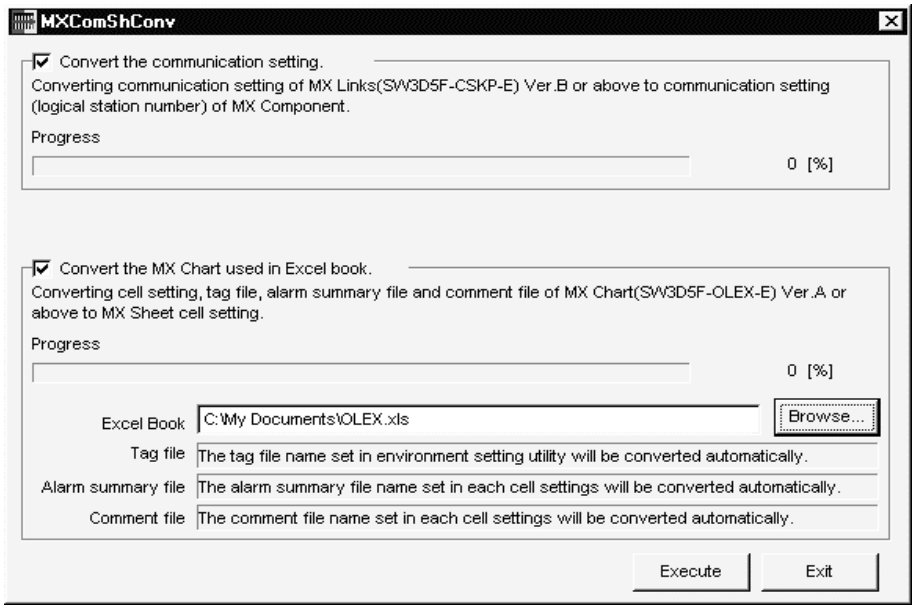
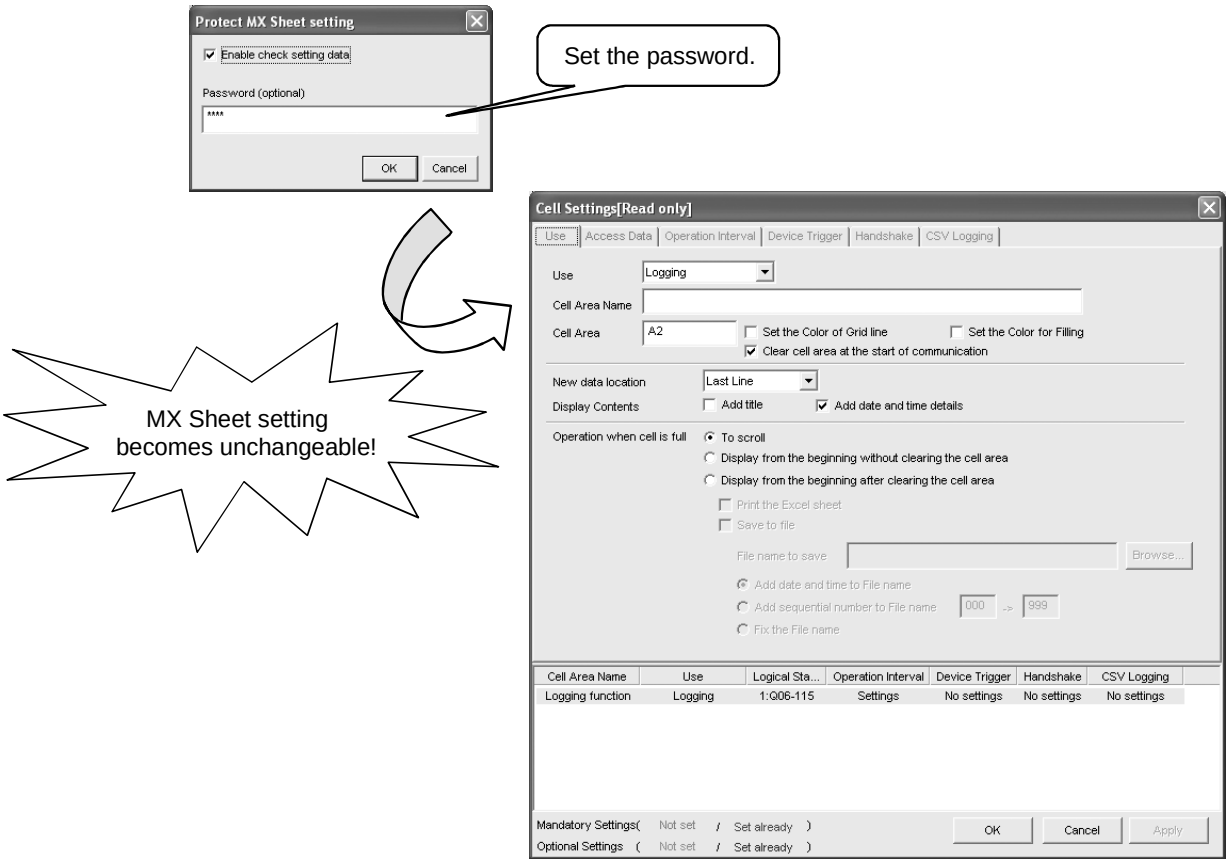


Appendix 1.8 Protect MX Sheet setting

The MX Sheet setting can be protected by a password. *1
The user settings can be made unchangeable.



*1: The password can be set or cancelled by choosing [MX Sheet] - [Protect MX Sheet setting]/[Unprotect MX Sheet setting] on the menu bar.

Appendix 1.9 Error log setting

When communication is started, an Error Log sheet that indicates the communication status of MX Sheet is created, and the communication status, error information and corrective actions are output.
To this Error Log sheet, the following error log setting can be made by Option setting.

(1) Setting the error log types to be output

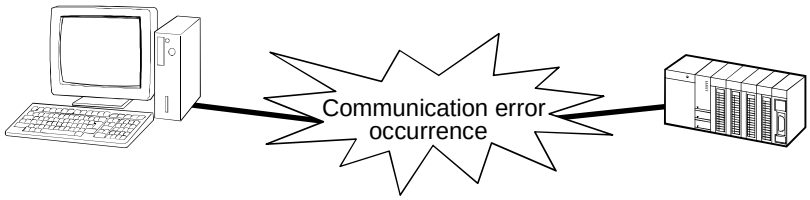
The error log types (Information, Warning, Error) to be output can be specified.

(Setting for outputting all error log)

	A	B	C	D	E
1	Kind	Date	Cell Area Name	ErrorNo	Contents
2	Informatior	2004/07/14 Wed 17:31:05		00000000	Communication was started.
3	Error	2004/07/14 Wed 17:31:06	Monitor function	e1000009	The specified logical station number is not set. The corrective action is as follows: Create the logical station number after performing communication setting.
4	Warning	2004/07/14 Wed 17:31:08	Logging function	e1000021	Communication error has occurred in the open/close of communication. <00010003[Hex],0180840b[Hex]> Time-out error Though the time-out period had elapsed, data could not be received. The corrective action is as follows: Review the time-out value of the property. Set it again on the communication settings utility. Review the system, e.g. PLC CPU, module setting and cable status. Retry the method. Perform Close once and execute Open again. Exit the program and restart the IBM-PC/AT compatible. <ErrorCode:180840b[Hex]>
5	Informatior	2004/07/14 Wed 17:31:40		00000002	Communication was completed.
6					

(2) Automatic Error Log sheet display change setting

At error occurrence, the Error Log sheet displayed can be automatically changed.



Error Log sheet is displayed.
(Automatic display change)

	A	B	C	D	E
1	Kind	Date	Cell Area Name	ErrorNo	Contents
2	Informatior	2004/07/14 Wed 17:34:35		00000000	Communication was started.
3	Warning	2004/07/14 Wed 17:34:36	Logging function	e1000021	Communication error has occurred in the open/close of communication. <00010003[Hex],0180840b[Hex]> Time-out error Though the time-out period had elapsed, data could not be received. The corrective action is as follows: Review the time-out value of the property. Set it again on the communication settings utility. Review the system, e.g. PLC CPU, module setting and cable status. Retry the method. Perform Close once and execute Open again. Exit the program and restart the IBM-PC/AT compatible. <ErrorCode:180840b[Hex]>

(3) Error log clear setting at communication start

At the start of communication, the error log can be cleared.

SH (NA)-080347E-F

MX Sheet Version 1

Operating Manual (Introduction)

MODEL	MELS1-SHEET-NY-E
MODEL CODE	13JU34
SH(NA)-080347E-F(0805)MEE	

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