MITSUBISHI

Type SW2D5F-OLEX-E Excel Communication Support Tool

Operating Manual

MELSEC

Mitsubishi Programmable Logic Controller

• SAFETY INSTRUCTIONS •

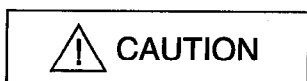(Always read these instructions before using this equipment.)

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 a serious consequence according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[Design Instructions]

◇ DANGER
• When data change is to be made from a peripheral device to the running PLC, configure up an interlock circuit in the outside of the PLC system to ensure that the whole system will always operate safely. Also, determine corrective actions to be taken for the system when a communication error occurs due to a cable connection fault or the like in online operation performed from the peripheral device to the PLC CPU.

[Design Instructions]

⚠ CAUTION
• Online operation performed with a peripheral device connected to the running CPU module (especially forced output) should be started after carefully reading the manual and fully ensuring safety. Not doing so can cause machine damage or accident due to an operation mistake.

REVISIONS

Print Date	* Manual Number	Revision
Mar., 1999	IB (NA) 66897-A	First edition

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(1) Starting the Tag management process
OLEX will not operate if the Tag management process has not started.

(2) About Ethernet communication
(a) When TCP/IP is used for Ethernet communication, there are the following restrictions.
1) During automatic execution, the write function (OLEXWrite) cannot be used in relation to the PLC CPUs of the same logical station number.
2) OLEX (Tag management process) and the other process (e.g. device monitor utility, user application) cannot have simultaneous access to the PLC CPUs of the same logical station number.
(b) If the CPU goes down or the Ethernet module is reset during Ethernet communication, the communication loop will be cut off.
In that case, restart the personal computer.

(3) About errors that occur on OLEX
Errors, which occur on OLEX, are registered to the error viewer.
For details, refer to the error viewer.

(4) About changing the sheet name
After cell setting, do not change the sheet name.
If you do so, we cannot guarantee the data.

(5) About write during automatic execution
• During automatic execution, you cannot change cell values.
When writing values, you should write sheet values in advance.
• An error will occur if a cell value is NULL (00H).
You should write values to cells in advance.

(6) When using Windows NT 4.0
When using Windows NT 4.0, OLEX may be installed and used only on the administrator's authority.

(7) About computer link communication and RS-422 communication on Windows 95
On Windows 95, communication using the COM port, e.g. computer link communication or RS-422 communication, will cause a memory leak. Therefore, do not perform continuous operation.

(8) About simultaneous use of OLEX and GPPW
When using GPPW and OLEX together on the same E71 module to make Ethernet communication, make the following settings.
• Set the protocol of the "Target" screen on the Ethernet utility of CSKP to "UDP/IP".
• Set SW2 of the communication status setting switches of the E71 module to "OFF (binary)".

(9) About overwrite installation

When performing overwrite installation, install the software in the folder where it had already been installed.

(10) About the start menu

When you have uninstalled OLEX, the item may remain in the start menu.
In such a case, restart the personal computer.

(11) About reinstallation after uninstalling CSKP

If you uninstalled CSKP with OLEX installed and then you reinstalled CSKP, the communication setting information (information set with various utilities such as the computer link utility) will be lost.
At this time, you must make communication settings again.

(12) About the number of licenses

The number of licenses are set to OLEX.
Installation decreases the number of licenses by 1.
Conversely, uninstallation increases the number of licenses by 1.
Therefore, when deleting OLEX, always uninstall it.
Note that the number of licenses will not increase if the folder and files are deleted on Explorer or the like.

(13) Restrictions on OLEX

OLEX utilizes OLE automation to perform communication processing.
That means restrictions on OLE automation are restrictions on OLEX.
It has been reported that there are the following restrictions on Excel or an Excel macro during use of OLEX or user-created OLE automation.
• VBA: DoEvents must not be put in a For-Next loop.
• VBA: Incorporating [Analyzing tool-VBA] will result in an error.
• VBA: Closing the book opened by automation will result in an error.
• VBA: Incorporating a virus detection add-in and executing the Quit method will
        result in an error.
• VBA: fileFilter is ignored in the GetSaveAsFileName method

INTRODUCTION

Thank you for choosing Type SW2D5F-OLEX-E Excel Communication Support Tool.
Before using Type SW2D5F-OLEX-E Excel Communication Support Tool, please read this manual carefully to use the product to its optimum.
A copy of this manual should be forwarded to the end user.

CONTENTS

| 12. OLEX FUNCTIONS | 12- 1 to 12- 10 |

| APPENDICES | APP- 1 to APP- 4 |

About Manuals

The following manuals are also related to this product.
In necessary, order them by quoting the details in the tables below.

Related Manuals

Manual Name	Manual Number (Model Code)
Type SW2D5F-CSKP-E Basic Communication Support Tool Operating Manual This manual describes how to set up and use each utility for communication. (Including in the product package)	IB-66888 (1LMS42)
Type SW2D5F-CSKP-E Basic Communication Support Tool Programming Manual Provides the programming procedure, detailed explanations, and error codes of the MELSEC data link library. (Including in the product package)	IB-66889 (1LMS43)
Type A70BDE-J71QLP23GE/A70BDE-J71QLP23/ A70BDE-J71QBR13 MELSECNET/10 Interface Board User's Manual (For SW2DNF-MNET10) Describes the features, specifications, part names and settings, and driver installation and uninstallation, etc. of the MELSECNET/10 card. (Including in the product package)	IB-66894 (13JL81)
Type A80BDE-J61BT13 CC-Link Interface Board User's Manual (For SW2DNF-CCLINK) Describes the features, specifications, part names and settings, and driver installation and uninstallation, etc. of the CC-Link card. (Including In the product package)	IB-66895 (13JL82)

How to Use This Manual

"How to Use This Manual" is described by purposes of using OLEX. Refer to the following and use this manual.

(1) To know the features (Section 1.1)
   Features are given in Section 1.1.

(2) Menu and utility lists (Sections 1.2 and 1.3)
   The OLEX menu list is provided in Section 1.2 and the utility list in Section 1.3.

(3) To know the system configuration (Section 2.1)
   This section provides system configurations available by use of OLEX.

(4) To know OLEX's operating environment and usable PLC CPUs (Sections 2.2 and 2.3)
   OLEX's operating environment is given in Section 2.2.
   Since usable PLC CPUs are the same as those of CSKP, refer to the CSKP Operating Manual.

(5) To install or uninstall OLEX (Chapter 3)
   Read Chapter 3 which describes how to install and uninstall OLEX.

(6) To make add-in registration to Excel (Chapter 4)
   Chapter 4 provides how to add OLEX into Excel.

(7) To know the functions of OLEX (Chapter 5)
   Chapter 5 describes the functions of OLEX briefly.

(8) To know the operation procedures of OLEX (Chapters 6 to 8)
   Chapter 6 provides the operation procedures of OLEX, Chapter 7 deals with the way of creating a tag file necessary to use OLEX, and Chapter 8 gives simple operation procedures for communication by actually using OLEX.

(9) To know the operation methods of the utilities (Chapters 9 and 10)
   Chapter 9 provides operations common to the utilities, and Chapter 10 describes how to perform operation on a utility basis.
   Read these chapters when using the utilities.

(10) To use OLEX (Chapters 11 and 12)
   Chapter 11 gives detailed explanations for use of OLEX, and Chapter 12 describes the OLEX functions.
   Read these chapters when using OLEX.

(11) To know the accessible devices and ranges
   The CSKP Operating Manual provides the accessible devices and ranges.
   Refer to the CSKP Operating Manual.

About the Generic Terms and Abbreviations

Unless otherwise specified, this manual uses the following generic terms and abbreviations to describe Type SW2D5F-OLEX-E Excel Communication Support Tool.

Generic Term/Abbreviation	Description
OLEX	Abbreviation of Type SW2D5F-OLEX-E Excel Communication Support Tool
CSKP	Abbreviation of Type SW2D5F-CSKP-E Basic Communication Support Tool
Windows NT 4.0	Abbreviation of Microsoft Windows NT Workstation 4.0
Windows 95	Abbreviation of Microsoft Windows 95
Windows 98	Abbreviation of Microsoft Windows 98
Windows	Generic Term of Microsoft Windows 95, Microsoft Windows 98 and Microsoft Windows NT Workstation 4.0
Excel	Abbreviation of Microsoft Excel 97
Personal computer	DOS/V-compatible personal computer of IBM PC/AT and its compatibles
CC-Link G4 module	Abbreviation of Type AJ65BT-G4 GPP function peripheral device connection module
GPPW	Abbreviation of GPP Function Software for Windows SW□D5C-GPPW-E/SW□D5F-GPPW-E
Ladder Logic Test Tool (LLT)	Abbreviation of Ladder Logic Test Function Tool Software for Windows SW□D5C-LLT-E/ SW□D5F-LLT-E
MELSECNET/10 card	Abbreviation of Type A70BDE-J71QLP23GE/A70BDE-J71QLP23/A70BDE-J71QBR13 MELSECNET/10 interface card
CC-Link card	Abbreviation of Type A80BDE-J61BT13 CC-Link interface card
AnNCPU	Generic term of the A0J2HCPU, A1SCPU, A1SCPU-S1, A1SCPUC24-R2, A1SHCPU, A1SJCPU, A1SJCPU-S3, A1SJHCPU, A1SJHCPU-S8, A1NCPU, A2CCPU, A2CCPUC24, A2CCPUC24-PRF, A2CJCPU, A2NCPU, A2NCPU-S1, A2SCPU, A2SCPU-S1, A2SHCPU, A2SHCPU-S1 and A1FXCPU
AnACPU	Generic term of the A2ACPU, A2ACPU-S1, A2ASCPUP21/R21, A2ACPUP21/R21-S1, A3ACPUP21/R21, A3NCPU and A3ACPU
AnUCPU	Generic term of the A2UCPU, A2UCPU-S1, A2ASCPU, A2ASCPU-S1, A2ASCPU–S30, A3UCPU and A4UCPU
QnACPU	Generic term of the Q2ACPU, Q2ACPU-S1, Q2ASCPU, Q2ASCPU-S1, Q2ASHCPU, Q2ASHCPU–S1, Q3ACPU, Q4ACPU and Q4ARCPU
ACPU	Generic term of the AnNCPU, AnACPU and AnUCPU
FXCPU	Generic term of the FX$_0$, FX$_{0S}$, FX$_{0N}$, FX$_1$, FX$_2$, FX$_{2C}$, FX$_{2N}$ and FX$_{2NC}$ series
C24	Generic term of the A1SCPUC24-R2, A1J71C24-PRF, A1SJ71C24-R2, A2CCPUC24, A2CCPUC24-PRF, AJ71C24-S6 and AJ71C24-S8
UC24	Generic term of the AJ71UC24, AJ71UC24-PRF, A1SJ71UC24-R2 and A1SJ71UC24-PRF
QC24	Generic term of the AJ71QC24, AJ71QC24-R2, AJ71QC24-R4, A1SJ71QC24, A1SJ71QC24-R2, AJ71QC24N, AJ71QC24N-R2, AJ71QC24N-R4, A1SJ71QC24N and A1SJ71C24N-R2
E71	Generic term of the AJ71E71, AJ71E71-S3, A1SJ71E71-B2, A1SJ71E71-B5, A1SJ71E-B2-S3 and A1SJ71E71-B5-S3
QE71	Generic term of the AJ71QE71, AJ71QE71-B5, A1SJ71QE71-B2 and A1SJ71QE71-B5

Meanings and Definitions of the Terms

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

(1) Tag management process

Process which must have been started when using OLEX.

Normally, this process is started simultaneously with Windows.

For full information, refer to Section 10.2.2.

(2) Tag

Data table which contains a set of information necessary for communication with the PLC, e.g. communication settings, devices and data types.

For full information, refer to Section 7.1.

(3) Field

Device information created in a tag.

For full information, refer to Section 7.1.

(4) Cell area

Area on Excel which displays the data alarm messages or comment of device information set on a tag.

(5) Cell area name

Name specified by the user to identify a cell area uniquely.

(6) Refresh timing

Timing at which the screen is updated.

Note that this timing is different from the communication interval of a tag.

Product Makeup

OLEX consists of the following products.

(1) Type SW2D5F-OLEX-E Excel Communication Support Tool

2FDs, total

(1/2)　　　　(2/2)

(2) Manual

Operating Manual　1 manual total

(3) Others

Software License Agreement　Reply envelope　1 pcs each

MEMO
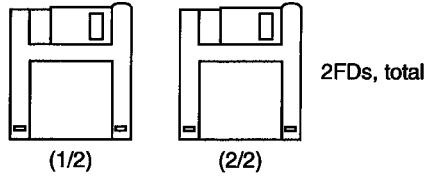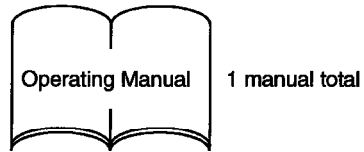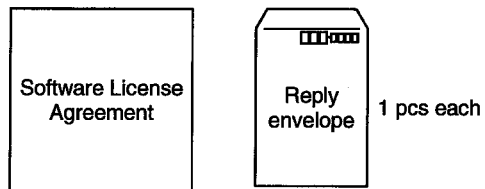
1. OVERVIEW

Type SW2D5F-OLEX-E Excel Communication Support Tool is add-in software for use in Microsoft Corporation's spreadsheet software "Excel".

OLEX utilizes OLE automation to perform communication processing.

You can have direct access to data by simple operation without caring about the communication program of the PLC.

To handle the data developed in worksheets, you can use the printing, graphing and other functions of Excel as they are.

Simplicity communication establishment!

Hard disk
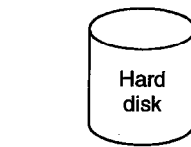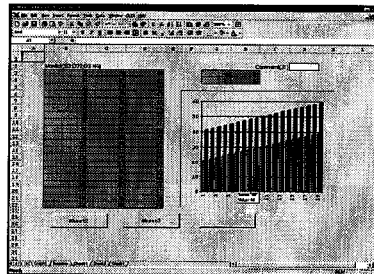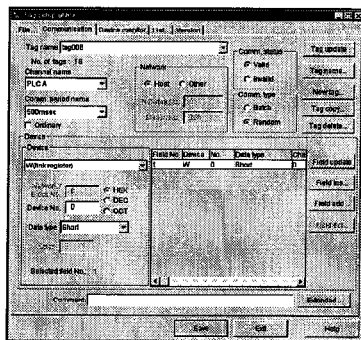
Automatic saving
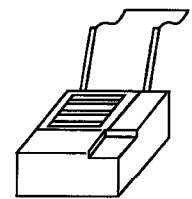
Automatic printing

Program-less!
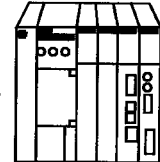
IMPORTANT

CSKP is required to create applications with OLEX.

When using the created execution file for monitoring, set the communication means with the CSKP utility.

For details, refer to the CSKP Operating Manual.

REMARKS

The screens given in this manual are those of Windows 95.

Therefore, they may slightly be different from those of Windows NT Workstation 4.0 and Windows 98.

1.1 Features

OLEX has the following features.

(1) High functions

By simply connecting a personal computer with the PLC via a communication path supported by CSKP, you can transfer PLC data directly to/from an Excel worksheet.

Namely, you can perform "program-less" operation.

	A	B	C	D	E
1					
2			D	W	
3		0	12	120	
4		1	10	84	
5		2	1	34	
6		3	-12	85	
7		4	30	65	
8		5	40	-30	
9					

Personal computer

Data read from PLC is displayed.

Communication path
(e.g. computer link communication, Ethernet communication)

PLC
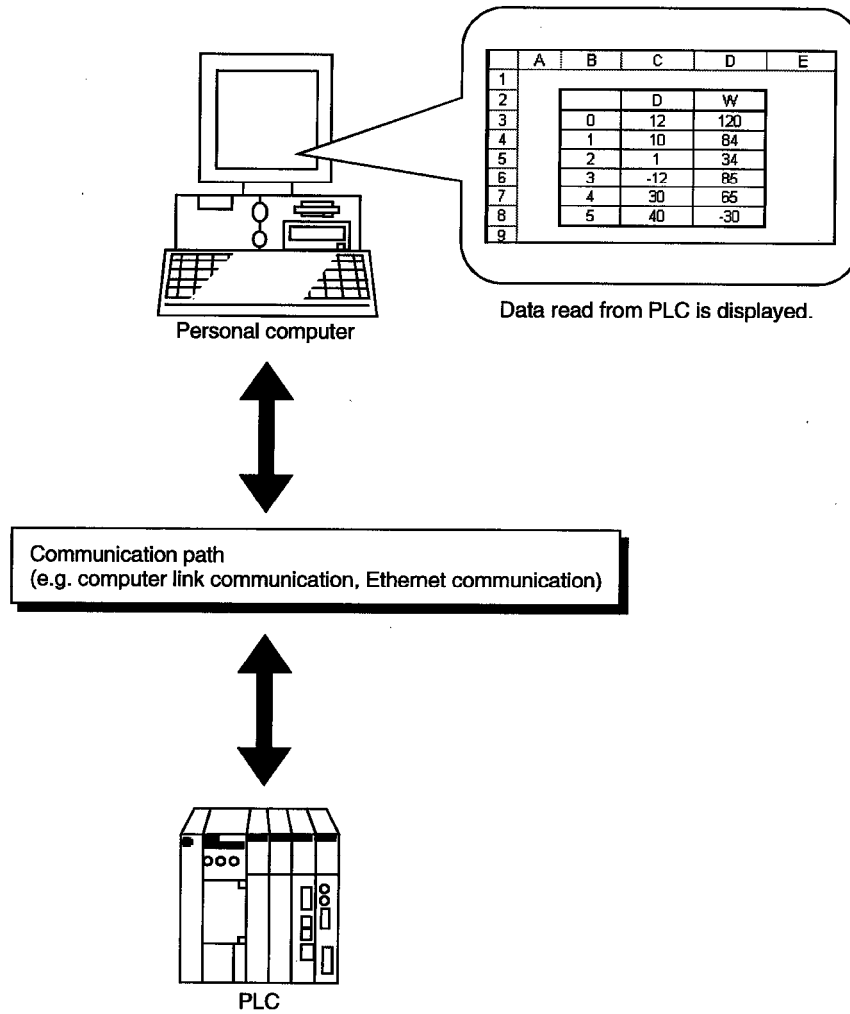
(2) Excellent operability
- Used as an add-in program in the menu, this software can be used easily by those who understand Excel.
- The production command data under control of Excel can be written unchanged from the Excel screen onto the specified devices of the PLC, without using a program.
- The operation results and quality data set to devices can be read onto an Excel worksheet, without using a program.
- The read data can be printed with the Excel function as imagined.
- For data communication timing, you can set automatic communication such as periodic communication or conditional communication.
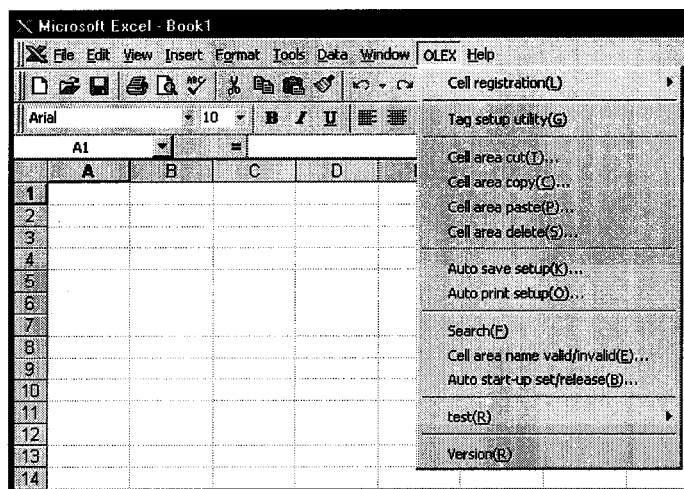
(3) Alarm summary and comment indications
An alarm message preset for error occurrence can be displayed with the date/time and a comment can be shown with the change of the corresponding device value.

<Alarm summary>

Type	Time	Alarm	Class
Occurred	4/25/97	Fuel shortage	Light trouble

0	Valve 1: malfunction!
1	Material shortage
2	Fuel shortage
3	Tank 1: malfunction
4	Valve 2: malfunction!

<Comment>

0 to 100	Lower than normal temperature
101 to 200	Normal operation
201 to 300	Higher than normal temperature
301 to 500	Malfunction

A	B
	Higher than normal temperature
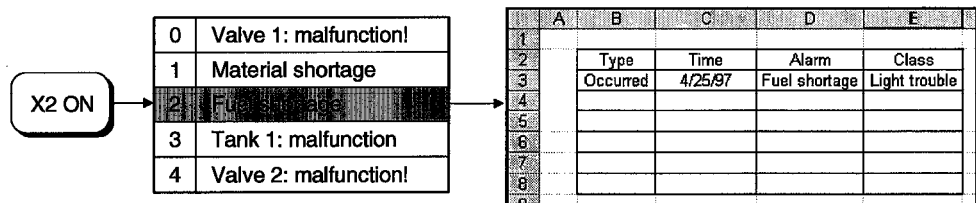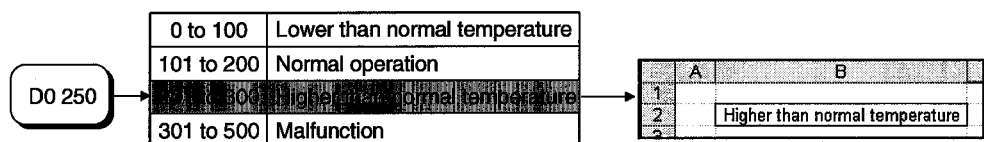
(4) Logging, automatic saving, printing

You can make a daily/monthly report easily by using the logging function which accumulates data in more than one cell per collection timing and the function of saving/printing an Excel worksheet automatically at the set time.

Executed at specified intervals!

Hard disk

Automatic saving

Automatic printing

Time	D0	D1	D2
13: 30: 00	10	25	30
13: 35: 00	30	60	23
13: 40: 00	26	40	50

Logging
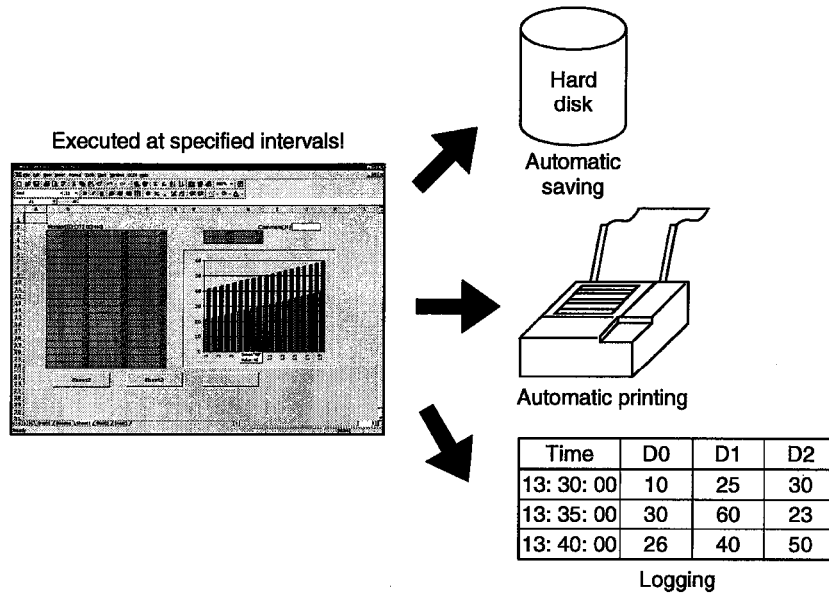
(5) Data can be transferred at any timing using the OLEX functions

By using the OLEX functions as Excel macros, you can transfer the data of the specified cell area at any timing.

<When OLEX function is set to button (Read)>

Button click!

Read

	A	B	C	D	E
1					
2			D	W	
3		0	12	120	
4		1	10	84	
5		2	1	34	
6		3	-12	85	
7		4	30	65	
8		5	40	-30	
9					
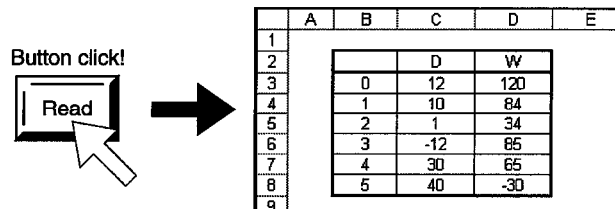
Device values are read to the cell area specified with the OLEX function.

(6) Simple communication using tags

When OLEX merely uses a tag having such information as the device types and device numbers in the environment where the Tag management process is running, you can easily access the devices set to the tag.
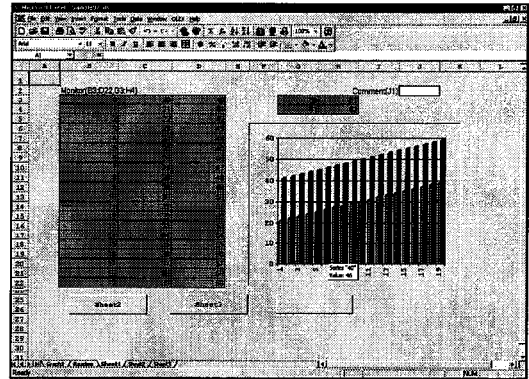
Set tags used on OLEX.
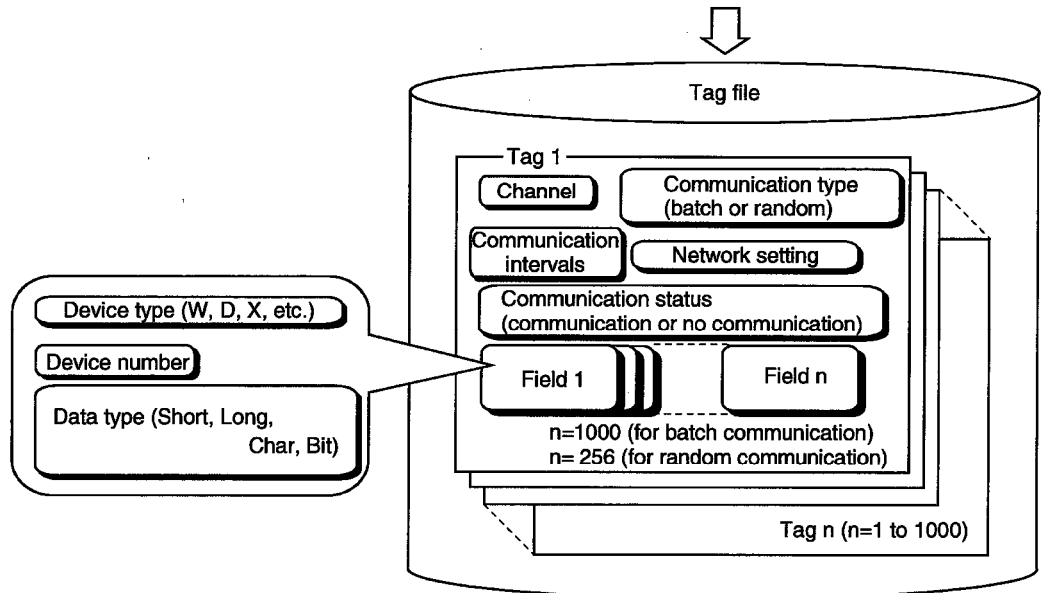
Tag file

Tag 1

Channel

Communication type (batch or random)

Communication intervals

Network setting

Communication status (communication or no communication)

Device type (W, D, X, etc.)

Device number

Data type (Short, Long, Char, Bit)

Field 1

Field n

n=1000 (for batch communication)
n= 256 (for random communication)

Tag n (n=1 to 1000)

Communication path
(e.g. computer link communication, Ethernet communication)

Access to PLC devices

PLC
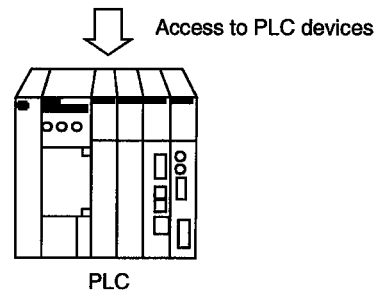
1.2 Menu List

The following is the menu list of OLEX.

Menu		Description
Cell setup	Monitor setup/revision	Used to set/correct the cell area for read/write.
	Logging setup/revision	Used to set/correct the cell area for logging.
	Alarm setup/revision	Used to set the cell area for using the alarm function.
	Comment setup/revision	Used to set the cell area for using the comment function.
Tag setup utility start		Used to start the Tag setup utility.
Cell area cut		Used to cut the cell area set with OLEX.
Cell area copy		Used to copy the cell area set with OLEX.
Cell area paste		Used to paste the cell area set with OLEX.
Cell area delete		Used to delete the cell area set with OLEX.
Auto save setup		Used to set the automatic saving of a worksheet.
Auto print setup		Used to set the automatic printing of a worksheet.
Search		Used to search a cell area.
Cell area name valid/invalid		Used to set the cell area made valid for automatic execution.
Auto start-up set/release		Used to set or release the automatic start-up of an edit file.
Test	Read test	Used to make a communication test on the set read area.
	Write test	Used to make a communication test on the set write area.
Version		Used to display the version information of OLEX.

```
┌─────────┐
│  POINT  │
└─────────┘──────────────────────────────────────────────
The numbers of cell area names that can be set with OLEX are as follows.
(1) Monitor setting    : 1000
(2) Logging setting    : 100
(3) Alarm setting      : 100
(4) Comment setting : 500
```

1.3 Utility List

The OLEX utilities are listed below.

Utility Name	Description	Refer to
Environment setup utility	Used to set the environment when the Tag management process starts.	Section 10.1
Tag setup utility	Used to set the tag file used by the Tag management process.	Section 10.2
Comment setup utility	Used to set the comment file used for the comment function.	Section 10.3
Alarm summary setup utility	Used to set the alarm summary file used for the alarm function.	Section 10.4

2. SYSTEM CONFIGURATION

This chapter deals with the system configuration, operating environment and usable CPU.

2.1 System Configuration

The system configuration for OLEX is similar to that for CSKP. Refer to the CSKP Operating Manual.

2.2 Operating Environment

The operating environment of OLEX is indicated below.

Item	Description
Model	Personal computer on which Windows 95, Windows 98 or Windows NT Workstation 4.0 *1 operates
Operating System	Windows 95, Windows 98, Windows NT Workstation 4.0 *1
CPU	Pentium 100MHz or more (multiprocessor incompatible)
Display	Resolution 800 × 600 dots or more (recommended 1024×768 dots)
Required memory capacity	32MB or more
Hard disk free space	40MB or more
Disk drive	3.5 inch (1.44MB) floppy disk drive
Corresponding application	Excel 97

*1 Service Pack 3 or higher is required for use of Windows NT Workstation 4.0.

2.3 Usable PLC CPU

The PLC CPU usable with OLEX is the same as those with CSKP. Refer to the CSKP Operating Manual.

MEMO

3. INSTALLATION AND UNINSTALLATION

This chapter describes how to install and uninstall OLEX.

3.1 Installation

This section describes how to install OLEX.

POINTS
(1) Installation decreases the number of licenses by one.
(2) When the OS is Windows NT 4.0, log on as a user who has an administrator attribute.
(3) Start installation after removing all applications included in Startup and restarting Windows.
(4) CSKP must have been installed.
(5) Make the first floppy disk write-enabled.

1. After powering on the personal computer, start Windows.
2. Choose [Start]-[Settings]-[Control Panel].
   When the control panel has opened, choose "Add/Remove Programs".

↓

(To the next page)

(From the preceding page)

↓

Add/Remove Programs Properties

Install/Uninstall | Windows Setup | Startup Disk |

To install a new program from a floppy disk or CD-ROM drive, click Install.

[Install...]

The following software can be automatically removed by Windows. To remove a program or to modify its installed components, select it from the list and click Add/Remove.

SW2D5-CSKP-E

Add/Remove...

OK | Cancel | Apply
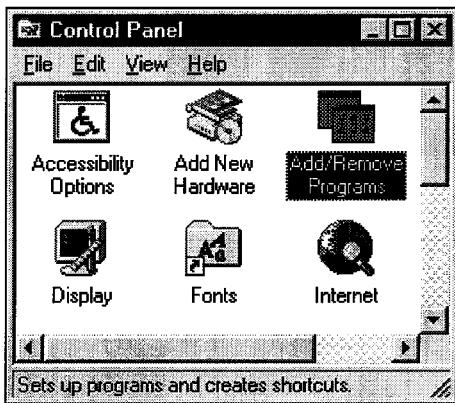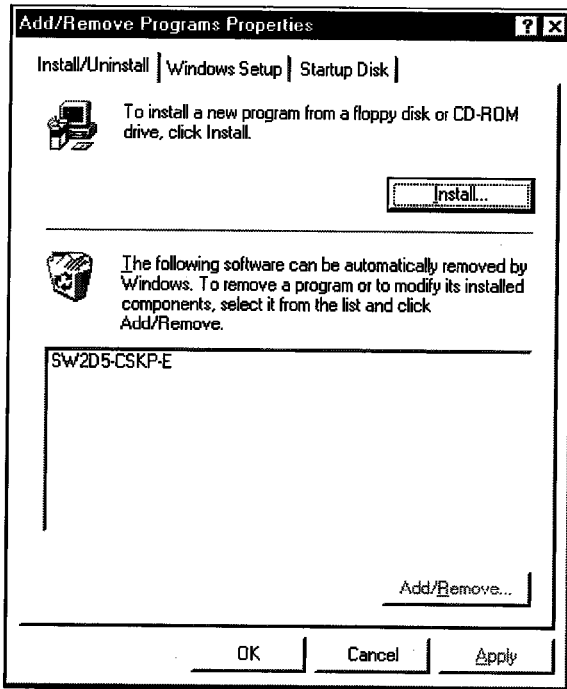
3. Click the "Install..." button.

↓

Install Program From Floppy Disk or CD-ROM

Insert the product's first installation floppy disk or CD-ROM, and then click Next.

< Back | Next > | Cancel
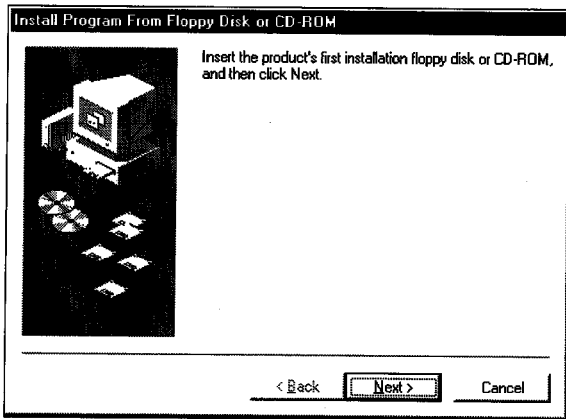
4. When the left screen has appeared, insert the first floppy disk into the FDD and click the "Next>" button.

↓

Run Installation Program

If this is the correct installation program, click Finish. To start the automatic search again, click Back. To manually search for the installation program, click Browse.

Command line for installation program:

A:\SETUP.EXE

Browse...

< Back | Finish | Cancel
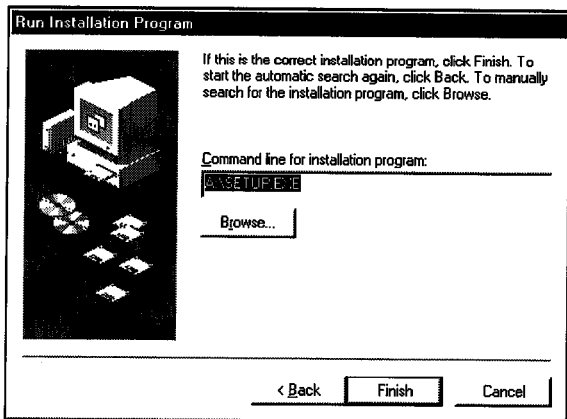
5. When the left screen has appeared, click the "Finish" button.
   If "SETUP.EXE" could not be found, click the "Browse..." button to find "SETUP.EXE" in the FDD.

↓

(To the next page)

(From the preceding page)

↓

Information ☒

(i) Remained lisence is 11 lisence.

OK

↓
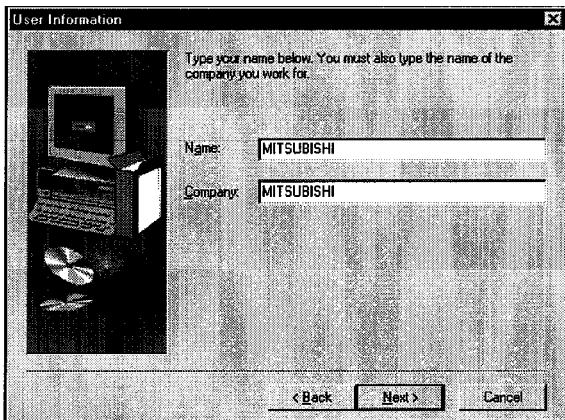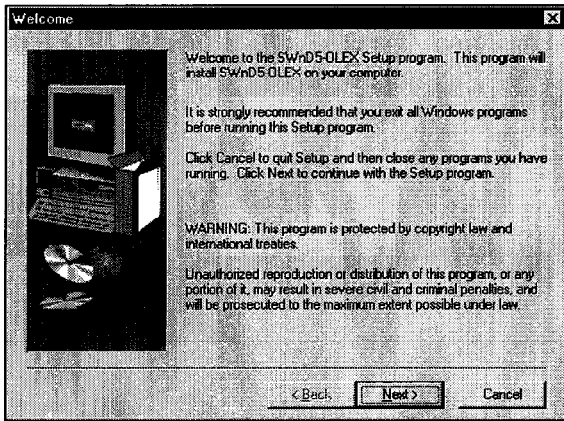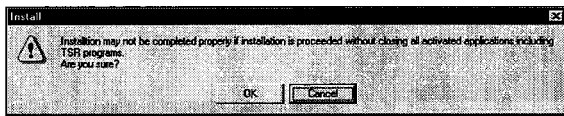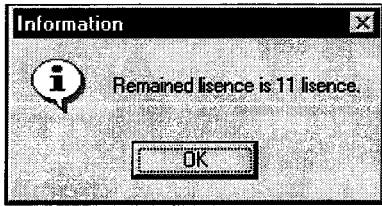
6. After a while, the screen as shown on the left will appear.

Confirm the number of remaining licenses and click the "OK" button.

When there is no licenses left, installation cannot be performed.

*The actual number of licenses is the number of licenses plus a spare license.

Install ☒

⚠ Installation may not be completed properly if installation is proceeded without closing all activated applications including TSR programs. Are you sure?

OK Cancel

↓

7. After making sure that all your running programs are closed, click the "OK" button.

If your programs are running, close all running programs.

8. Confirm the instructions and click the "Next>" button.

Welcome ☒

Welcome to the SWnD5-OLEX Setup program. This program will install SWnD5-OLEX on your computer.

It is strongly recommended that you exit all Windows programs before running this Setup program.

Click Cancel to quit Setup and then close any programs you have running. Click Next to continue with the Setup program.

WARNING: This program is protected by copyright law and international treaties.

Unauthorized reproduction or distribution of this program, or any portion of it, may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under law.

< Back Next > Cancel

↓

9. Type your name and company name, and click the "Next>" button.

User Information ☒

Type your name below. You must also type the name of the company you work for.

Name: MITSUBISHI

Company: MITSUBISHI

< Back Next > Cancel

↓

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↓
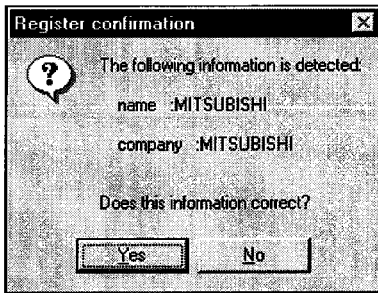
10. Confirm your name and company name registered.
    If they are correct, click the "Yes" button.
    To change any name, click the "No" button.
    This returns to the preceding screen.

↓
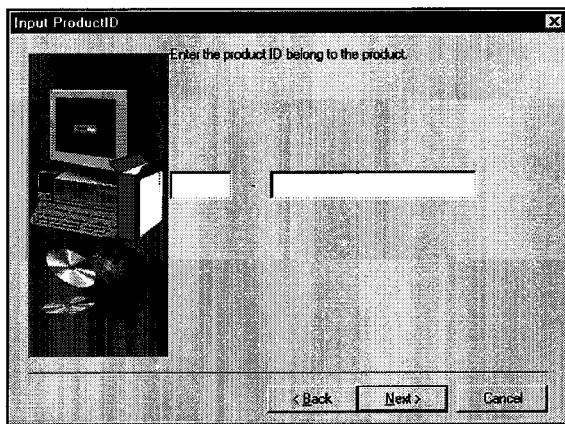
11. Enter the product ID and click the "Next>" button.
    The product ID is given in the "Software Registration
    Card" packed with the product.

↓
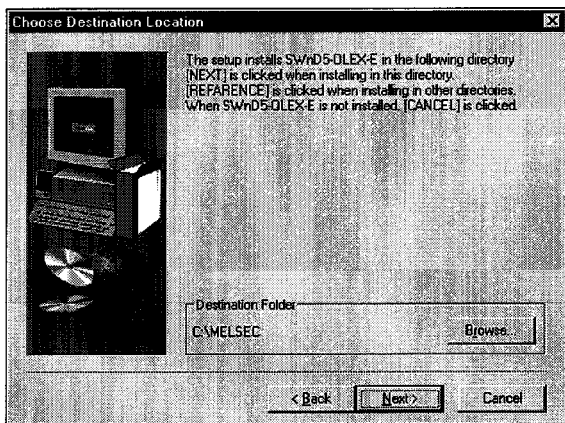
12. Specify the installation destination folder.
    The destination folder of OLEX defaults to
    "C:\MELSEC".
    To choose the default folder, click the "Next>" button.
    To change the destination folder, click the "Browse..."
    button and change the folder.

↓

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↓

TagManagementProcess

22 %

Cancel

↓
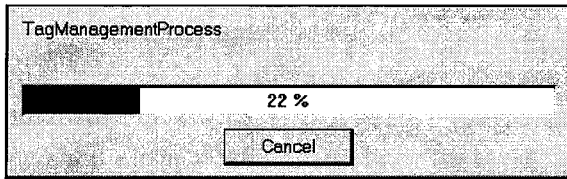
13.As installation starts, exchange the floppy disks in order according to the prompt.

Information

(i) Setup completed. Start Tag management process to use SWnD5-OLEX-E.

OK

↓
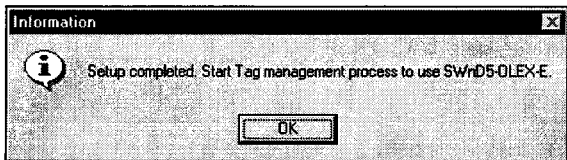
14.As the left screen appears, confirm the message, and then click the "OK" button.

Setup Complete

Setup has finished copying files to your computer.
You must restart Windows or your computer.

• Yes, I want to restart my computer now.
○ No, I will restart my computer later.

Remove any disks from their drivers, and then click Finish to complete setup.

Back   Finish
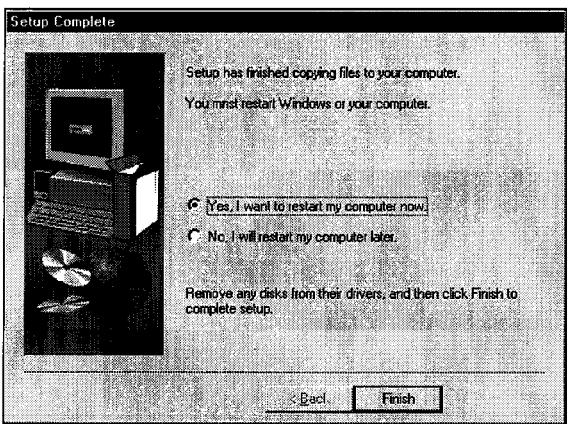
15.When the left dialog box appears, installation is complete.
To restart, make sure that "Yes, I want to restart my computer now." is checked, and then click the "Finish" button.
To restart later, check "No, I will restart my computer later." and then click the "Finish" button.
* The number of licenses decreases by 1 on completion of installation.

POINT
If installation failed at any point in the above procedure and uninstallation can be performed, uninstall the program. The number of licenses will decrease by 1 if you do not perform uninstallation.

3.2 Icons Registered

Installing OLEX registers the following icons in [Start]-[Programs]-[MELSEC APPLICATION]-[EXCEL COMMUNICATION SUPPORT (OLEX-E)].

(1) Tag management

    (a) Alarm summary setup utility

        Used to start the Alarm summary setup utility.

    (b) Comment setup utility

        Used to start the Comment setup utility.

    (c) Tag management process

        Used to start the Tag management process.

    (d) Tag setup utility

        Used to start the Tag setup utility.

    (e) Environment setup utility

        Used to start the Environment setup utility.

(2) OLEX Help

    Used to show the Help screen of OLEX.

3.3 Uninstallation

This section provides how to uninstall OLEX.

```
┌─────────────────────────────────────────────────────────────────┐
│ ┌─────────┐                                                      │
│ │ POINTS  │                                                      │
│ └─────────┘                                                      │
│ (1) Always uninstall the program from the control panel.         │
│     Do not start installed "Uninstaller.exe" directly.           │
│ (2) Uninstallation increases the number of licenses by 1.        │
│     Therefore, always uninstall the program when deleting OLEX.   │
│     The number of licenses will not return to the previous value  │
│     if a folder or file is deleted by the user on Explorer or     │
│     the like.                                                     │
│ (3) Make the first floppy disk write-enabled.                    │
└─────────────────────────────────────────────────────────────────┘
```


1. Choose the [Start]-[Settings]-[Control Panel] menu.
2. As the control panel appears, double-click "Add/Remove Programs".

↓
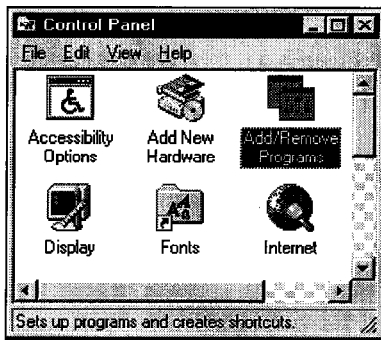
3. Choose "SW2D5-OLEX-E and click the "Add/Remove..." button.

↓
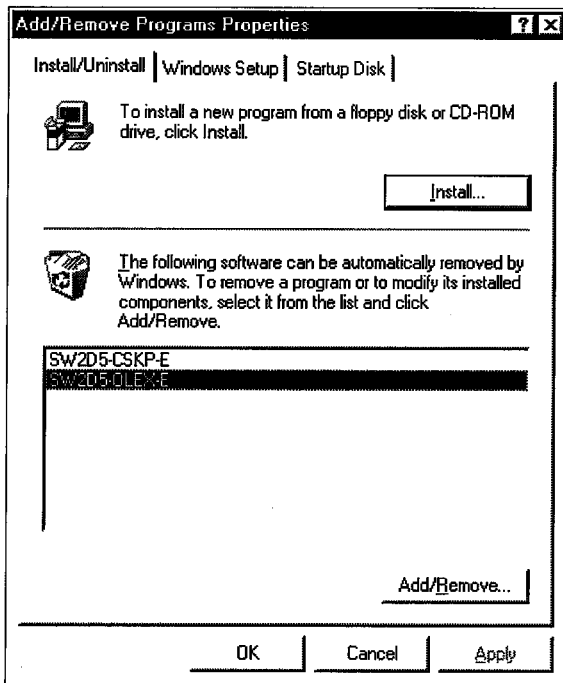
(To the next page)

(From the preceding page)
↓
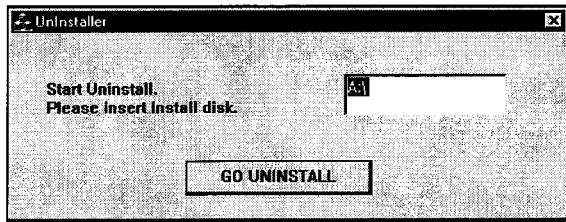
4. As the left screen appears, insert the first floppy disk into the floppy disk drive and click the "GO UNINSTALL" button.

↓

5. Clicking the "OK" button starts uninstallation.

↓
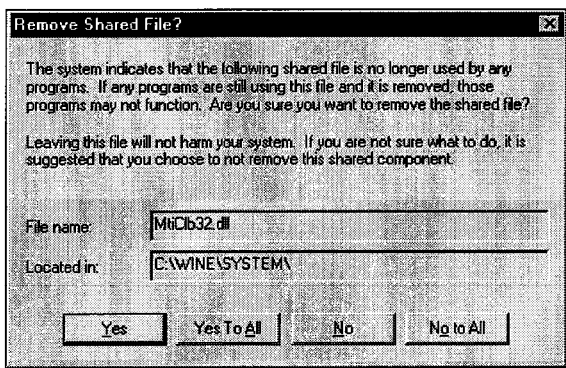
6. If the left screen has appeared, click the "No to All" button.
   If you click the "Yes" or "Yes to All" button, the shared file of the MELSEC software packages is removed and the other software packages may not start properly.

↓
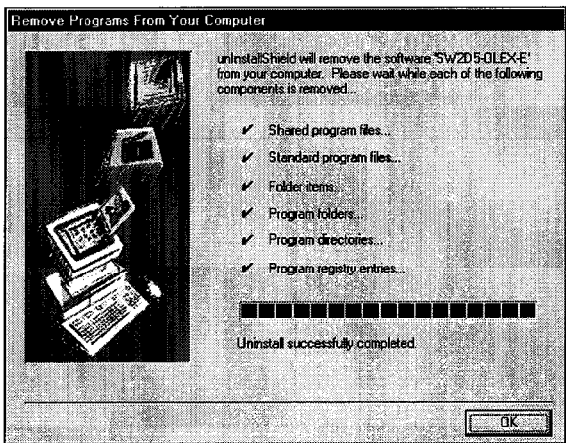
7. When uninstallation is completed, click the "OK" button.
   * The number of licenses increases by 1 on completion of uninstallation.

4. ADD-IN REGISTRATION

This chapter explains how to register add-ins of OLEX.
Note that the Operating System and Excel have already been installed.

The following procedure performs add-in registration using Excel 97.

1. Start the Tag management process. For full information, refer to Section 10.2.2.

2. Start Excel 97.

3. Choose [Tools]-[Add-Ins...] on the menu bar.

↓
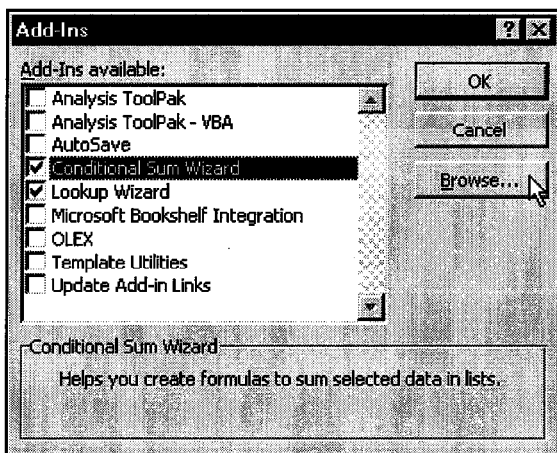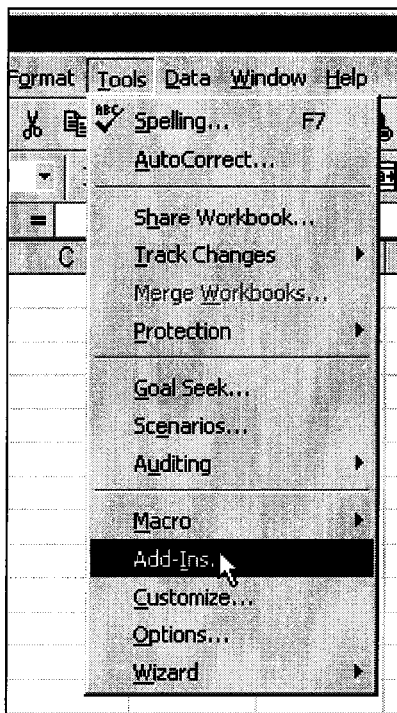
4. When the dialog box opens, click the "Browse..." button to open the "Browse" dialog box.

↓

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↓

↓

↓
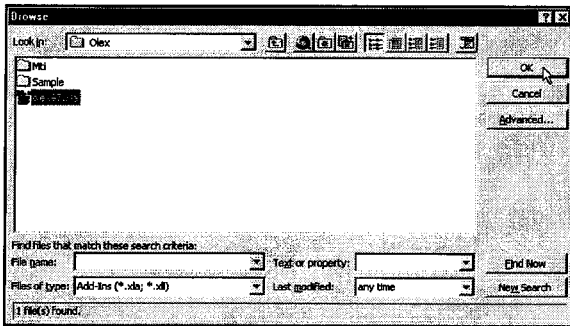
5. Choose "OLEX97.XLA" in C:\MELSEC\OLEX\(default) and click the "OK" button.
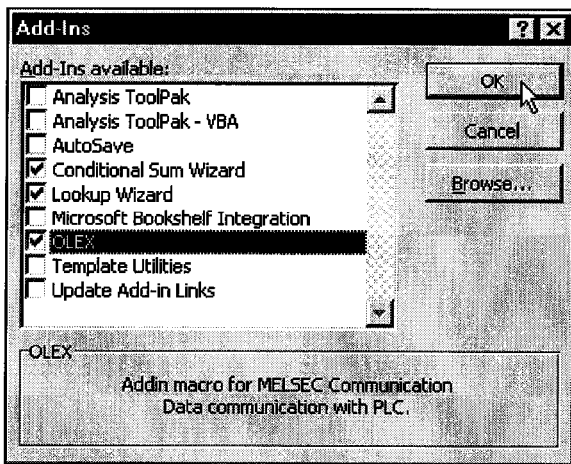
6. As the left dialog box opens, make sure that "OLEX" has been added to Add-Ins available and checked, and click the "OK" button.
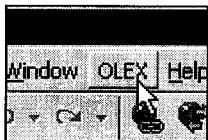
7. "OLEX" is added to the menu bar.

5. FUNCTIONS OF OLEX

This chapter describes the functions of OLEX.

5.1 Monitor Function

With this function, the device data values set to a tag are displayed on an Excel sheet.
Also, the Excel sheet data are written to devices according to the tag setting.
When using the monitor function, making settings as in (1) and (2) displays data as in (3).

(1) Tag setup utility setting
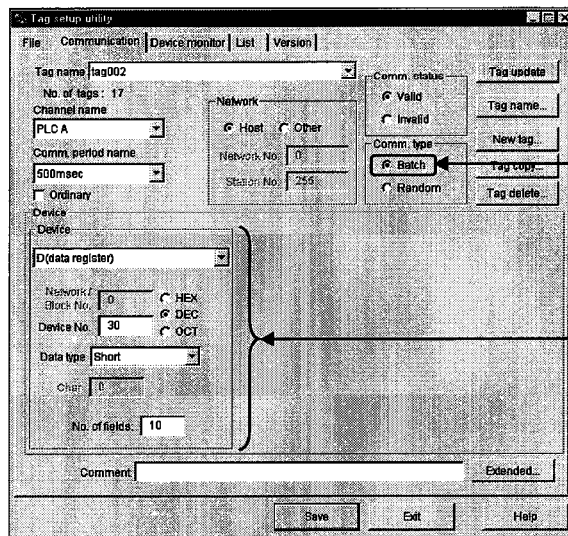
Batch is specified.
(Random may also be specified)

10 points are reserved in short
(16 bits), beginning with device
D30 (D30 to D39).

(2) OLEX setting
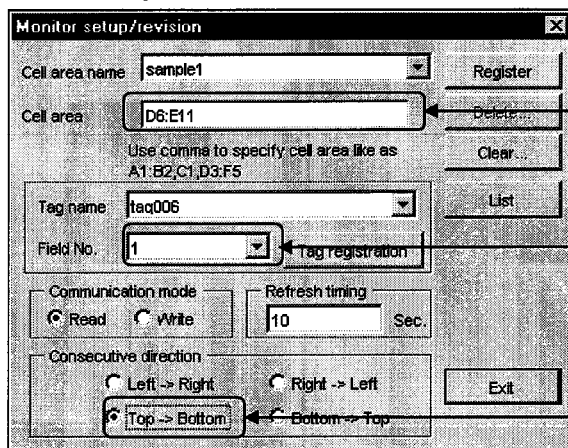
Cell area (D6 to E11)

Fields are displayed, starting with
field No. 3 (D32).

Data is displayed from top to
bottom.

(3) Display format
When the settings made are as shown in (1) and (2), the data of D32 to D39 on tag "tag002" are stored.

	C	D	E
5			
6		D32 value	D38 value
7		D33 value	D39 value
8		D34 value	No indication
9		D35 value	No indication
10		D36 value	No indication
11		D37 value	No indication
12			

5.2 Logging Function

With this function, the data gathered by the tag set for logging are displayed on an Excel sheet and accumulated in an Excel book.

When using the logging function, making setting as in (1) and (2) displays data as in (3).

(1) Tag setup utility setting
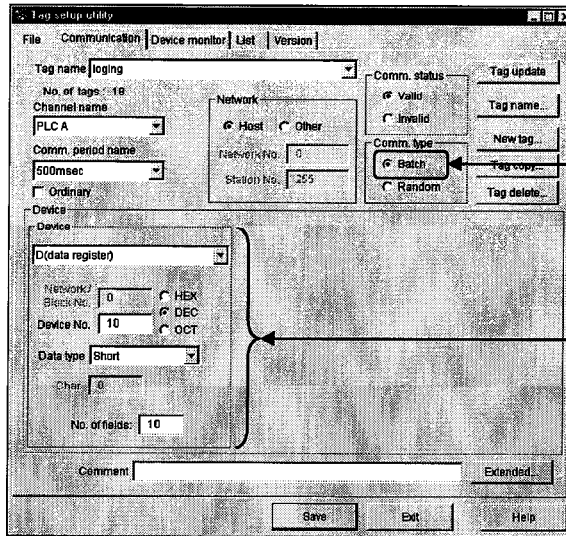
Batch is specified.
(Random may also be specified)

D10 to D19 (10 points) specified.

(2) OLEX setting
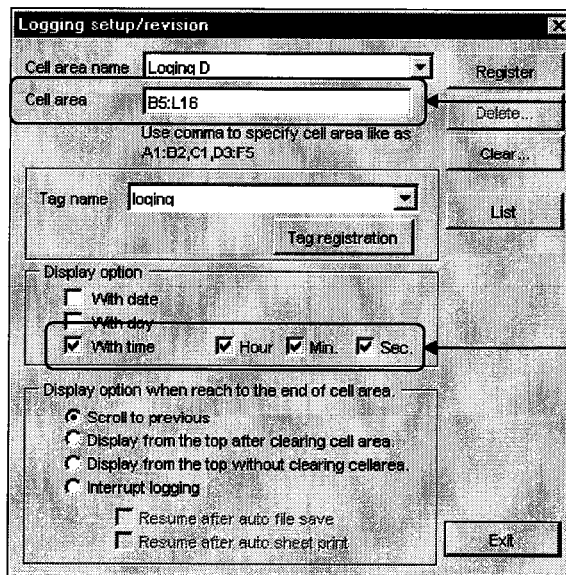
Cell area (B5 to I16)

Displayed in the left-end cell of the specified area.

(3) Display format

	A	B	C	D	E	F	G	H	I	
4										Older
5		Time(1)	D10 value(1)	D11 value(1)	D11 value(1)	D11 value(1)	D11 value(1)	D11 value(1)	D11 value(1)	↑
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16		Time(12)	D10 value(12)	D11 value(12)	D11 value(12)	D11 value(12)	D11 value(12)	D11 value(12)	D11 value(12)	↓ Newer

Time appears.

As the cell area is smaller than the number of fields, up to the fields acceptable on the screen (D10 to D16) appear. D17 to D19 are not displayed.

POINT

This function logs the data of all fields specified in the tag. However, there are the following restrictions.

(1) If the number of cells is less than the number of fields, only the fields corresponding to the cells are displayed.

(2) If the number of fields is less than the number of cells, only the specified fields are displayed and no fields appear in the extra cells.

5.3 Alarm Function

With this function, the alarm messages registered beforehand in the alarm summary file are displayed on an Excel sheet to create a failure history or the like when the bit devices set to the tag turn on.

When using the alarm function, making setting as in (1) to (3) displays data as in (4). The alarm function shows alarm comments when the corresponding bit devices turn on.

(1) Tag setup utility setting
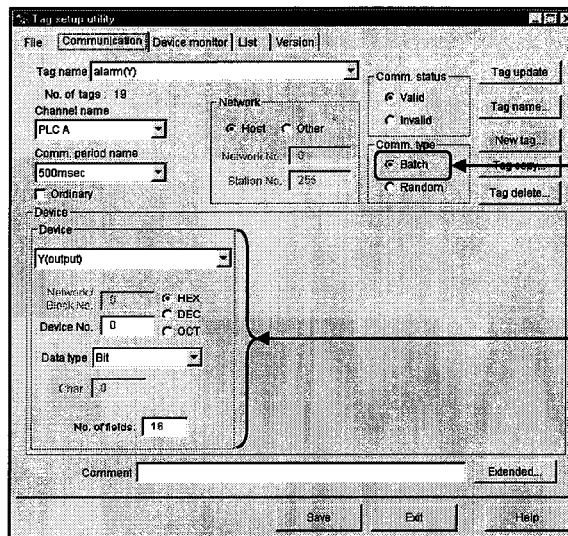
Batch is specified.
(Random may also be specified)

Y0 to Y15 specified.

POINTS

(1) The devices specified must be bit devices.

(2) Make setting so that the number of alarm comments is equal to or greater than the number of devices.

---

(2) Alarm summary setup utility setting

No	Alarm comment	Alarm status
1	Over an upper limit - tank 1	Warning
2	Over an lower limit - tank 1	Warning
3	Over an upper limit - tank 2	Warning
4	Over an lower limit - tank 2	Warning
5	Over an upper limit - tank 3	Warning
6	Over an lower limit - tank3	Warning
7	Complete - parts 1	Complete
8	Complete - parts 2	Complete
9	Complete - parts 3	Complete
10	Complete - parts 4	Complete
11	Error - parts 1	Serious error
12	Error - parts 2	Serious error
13	Error - parts 3	Serious error
14	Error - parts 4	Serious error
15	Writing in the production was permitted	Notice
16	Writing in the tank value was permitted	Notice

Corresponding to Y0 to Y15

When the corresponding bit turns on, the alarm comment appears.

Example: When Y0 turns on, "Over an upper limit - tank 1" appears.

POINT
The color setting made in the Alarm summary setup utility is invalid for OLEX.

(3) OLEX setting

Cell area (B3 to E13)

Field No. 1 (Y0) corresponds to alarm No. 1.

(4) Display format
When the corresponding bit turns on, the alarm comment appears in the cell.
The type shown is "Occurred" when the bit turns on, or "Restored" when the bit turns off.

	A	B	C	D	E
2					
3		Type(1)	Time(1)	Alarm message(1)	Class(1)
4		.	.	.	.
5		.	.	.	.
6		.	.	.	.
7		.	.	.	.
8		.	.	.	.
9		.	.	.	.
10		.	.	.	.
11		.	.	.	.
12		.	.	.	.
13		Type(11)	Time(11)	Alarm message(11)	Class(11)

Newer
↑

↓
Older

5.4 Comment Function

With this function, a comment registered in advance to a comment file is displayed on an Excel sheet according to the device data value set to a tag.
When using the comment function, making setting as in (1) to (3) displays data as in (4).
The comment function checks the data value of a single field to show the comment.

(1) Tag setup utility setting

— Batch is specified.
(Random may also be specified)

— D10 is specified as short.
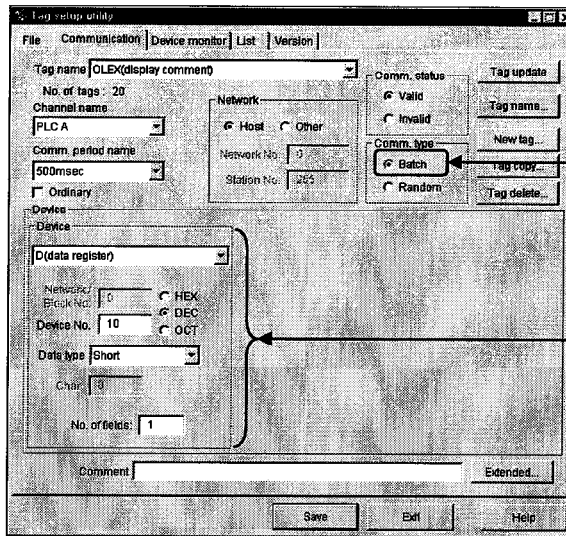
POINT
Three device types are usable: Short, Long and Bit.

(2) Comment setup utility setting

No	Range(Up)	Range(Low)	Comment	Color(RGB)
6	-101	-32768	Temperature fall is dangerous	0000FFh
3	-76	-100	Temperature fall is abnormal	800080h
2	-51	-75	Temperature fall	80FF00h
1	50	-50	Temperature maintenance	00FF00h
4	75	51	Temperature rise	400040h
5	100	76	Temperature rise is abnormal	808040h
7	32767	101	Temperature rise is dangerous	FF8040h

A comment appears when the D10 value falls within this range.

When the specified device falls within the range set to the Comment setup utility, the corresponding comment is displayed.

Example: When D10 has changed to 50, "Temperature maintenance" appears.

POINT
The color setting made in the Comment setup utility is invalid for OLEX.

(3) OLEX setting

Cell area (B3)

The displayed comment changes with the value of field No. 1 (D10)

(4) Display format

The comment is displayed according to the change of the specified device value.

5.5 OLEX Functions

By providing a function with the preset cell area name (cell area name of monitor setting or logging setting) as an argument using the setting function of OLEX, data can be read to the corresponding cell area or the data in the corresponding cell area can be written.
Refer to Chapter 12 for full information.

POINTS
(1) The cell areas where data can be transferred with the OLEX functions are only the cell areas specified in the monitor setting and logging setting. Data cannot be transferred to/from the cell areas specified in the comment setting and alarm setting.
(2) When OLEX is automatically executed in Ethernet communication, the read/write function cannot be executed.

MEMO

6. OPERATING PROCEDURES

This chapter deals with the operating procedures of OLEX.

6.1 Common Operating Procedure

The following flowchart provides a common operation procedure performed before using any function of OLEX.

```
        ┌─────────────────┐
        │      START      │
        └─────────────────┘
                 │
┌────────────────────────────────────────────┐
│ When using a communication card, set the   │ ········· Refer to the corresponding communication card manual.
│ communication card.                         │
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Install CSKP.                               │ ········· Refer to the CSKP Operating Manual.
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Install Excel.                              │
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Install OLEX.                               │ ········· Refer to Section 3.1.
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Set the communication path using the        │ ········· Refer to the CSKP Operating Manual.
│ MELSEC data link utility.                   │
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Start the Environment setup utility and     │ ········· Refer to Section 9.1, 9.2, 10.1.
│ make setting. After setting, close the      │
│ utility.                                    │
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Start the Tag setup utility and make        │ ········· Refer to Section 9.1, 9.2, 10.2.
│ setting. After setting, close the utility.  │
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Start the Tag management process.           │ ········· Refer to Section 10.2.2
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Start Excel.                                │
└────────────────────────────────────────────┘
                 │
┌────────────────────────────────────────────┐
│ Register OLEX add-ins to Excel.             │ ········· Refer to Chapter 4.
└────────────────────────────────────────────┘
                 │
        (To any of Sections 6.2 to 6.6)
```

6

6.2 Using the Monitor Function

The following flowchart gives an operating procedure performed when using the monitor function.

Please read Section 6.1 before reading this section.

(From Section 6.1)

Select the cell area where the monitor function will be set, choose [OLEX]-[Cell setup]-[Monitor setup/revision], and make setting.	· · · · · · · Refer to Section 11.1.1.
Choose [OLEX]-[test] and make test communication.	· · · · · · · Refer to Section 11.3.
Choose [OLEX]-[Cell area name valid/invalid] and make setting so that the set cell area is made valid.	· · · · · · · Refer to Section 11.4.
Save the sheet.	
Choose [OLEX]-[Auto start-up set/release] and make auto start-up valid.	· · · · · · · Refer to Section 11.5.
Log off or restart.	
Start theTag management process.	· · · · · · · Refer to Section 10.2.2.

END

6.3 Using the Logging Function

The following flowchart gives an operating procedure performed when using the logging function.
Please read Section 6.1 before reading this section.

(From Section 6.1)

| Select the cell area where the monitor function will be set, choose [OLEX]-[Cell setup]-[Logging setup/revision], and make setting. | ・・・・・・ Refer to Section 11.1.2. |

| Choose [OLEX]-[test] and make test communication. | ・・・・・・ Refer to Section 11.3. |

| Choose [OLEX]-[Cell area name valid/invalid] and make setting so that the set cell area is made valid. | ・・・・・・ Refer to Section 11.4 |

| Save the sheet. |

| Choose [OLEX]-[Auto start-up set/release] and make auto start-up valid. | ・・・・・・ Refer to Section 11.5 |

| Log off or restart. |

| Start the Tag management process. | ・・・・・・ Refer to Section 10.2.2. |

END

POINTS

(1) When performing the logging function, create a tag as a log-specified tag dedicated to logging.
(2) Set the tag collection intervals to 1 second or longer.

6.4 Using the Alarm Function

The following flowchart gives an operating procedure performed when using the alarm function.

Please read Section 6.1 before reading this section.

(From Section 6.1)

| Start the alarm summary setting utility and make setting. After setting, close the utility. | · · · · · · · · Refer to Section 9.1, 9.2, 10.4. |

| Select the cell area where the monitor function will be set, choose [OLEX]-[Cell setup]-[Alarm setup/revision], and make setting. | · · · · · · · · Refer to Section 11.1.3. |

| Choose [OLEX]-[test] and make test communication. | · · · · · · · · Refer to Section 11.3. |

| Choose [OLEX]-[Cell area name valid/invalid] and make setting so that the set cell area is made valid. | · · · · · · · · Refer to Section 11.4 |

| Save the sheet. |

| Choose [OLEX]-[Auto start-up set/release] and make auto start-up valid. | · · · · · · · · Refer to Section 11.5. |

| Log off or restart. |

| Start the Tag management process. | · · · · · · · · Refer to Section 10.2.2. |

END

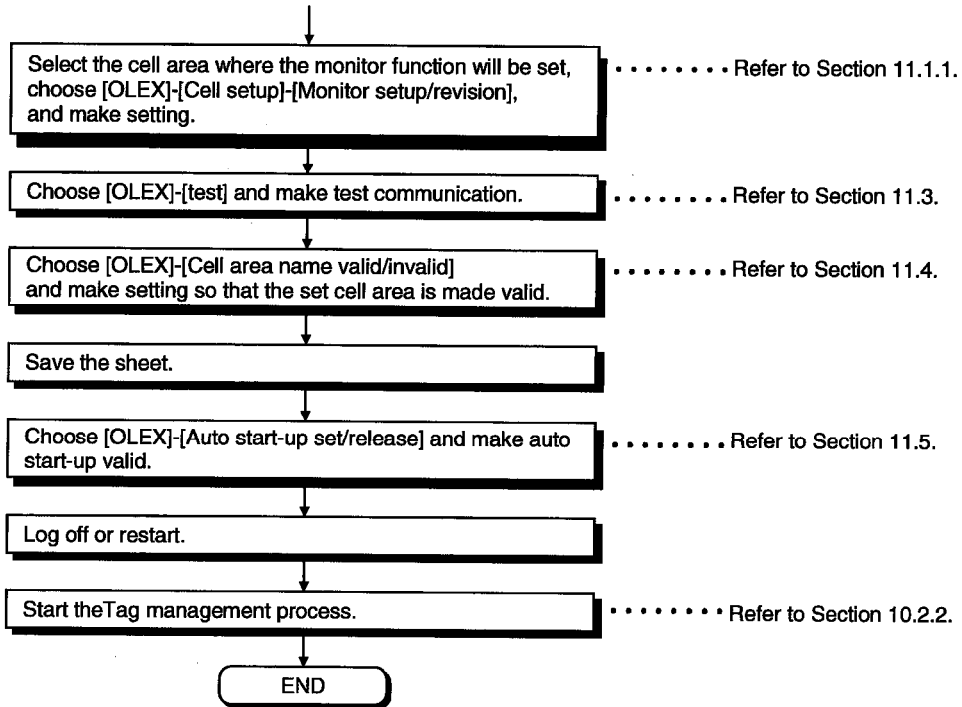| POINT |
| Setting of the cell area requires cells in four or more columns. Similarly, setting of two or more consecutive areas requires cells in four or more columns. |

6.5 Using the Comment Function

The following flowchart gives an operating procedure performed when using the comment function.
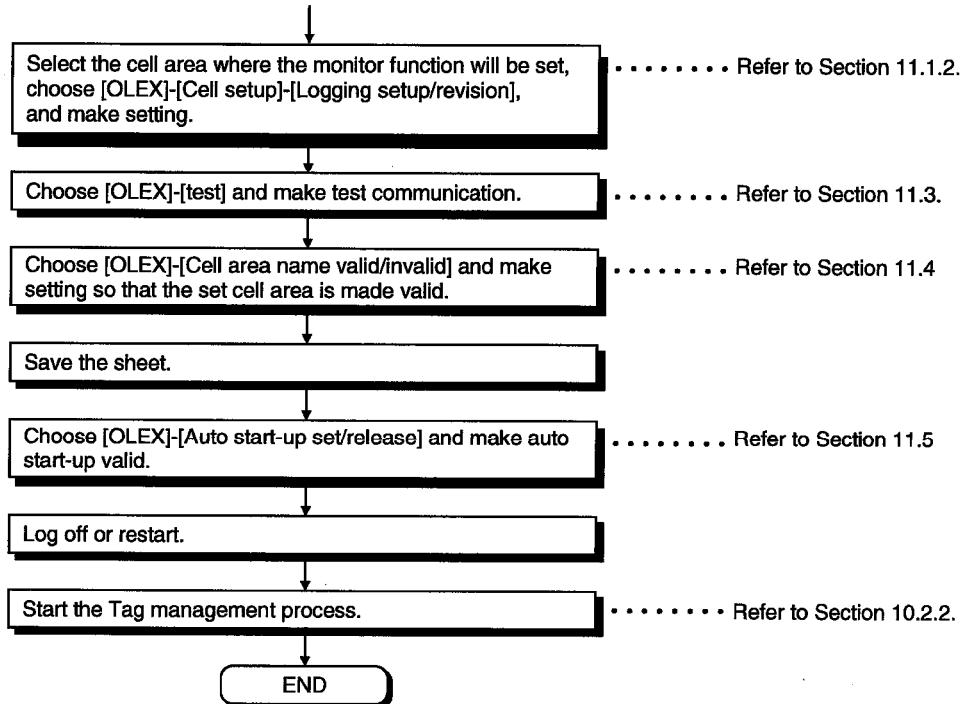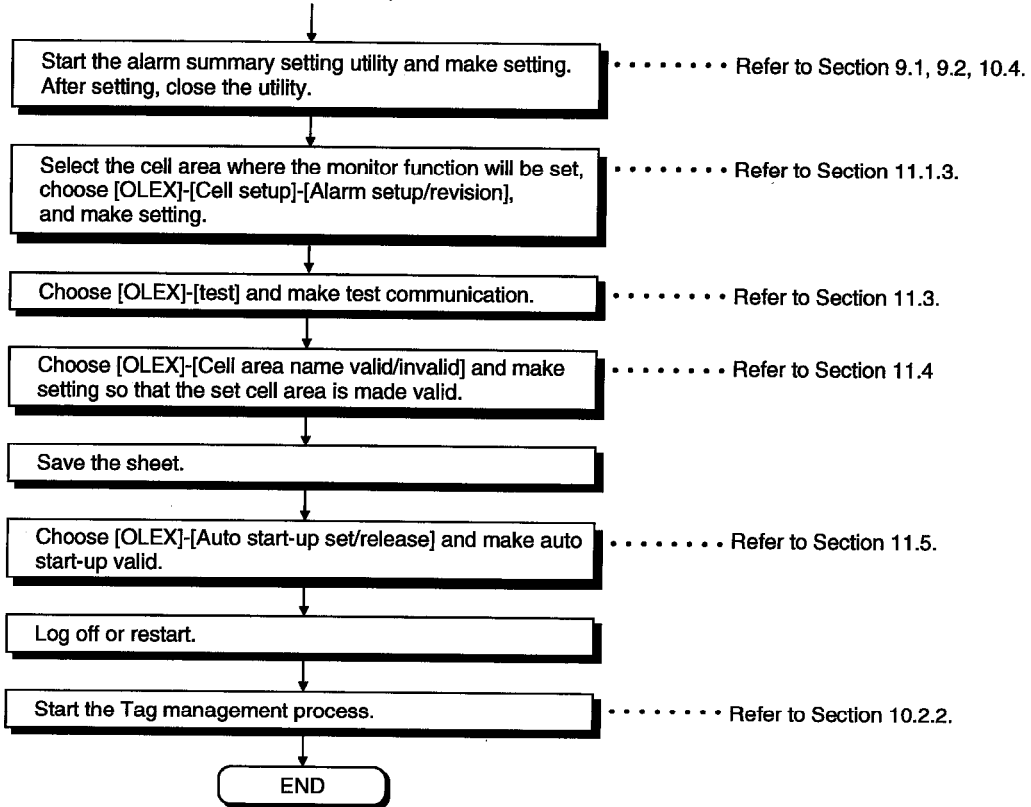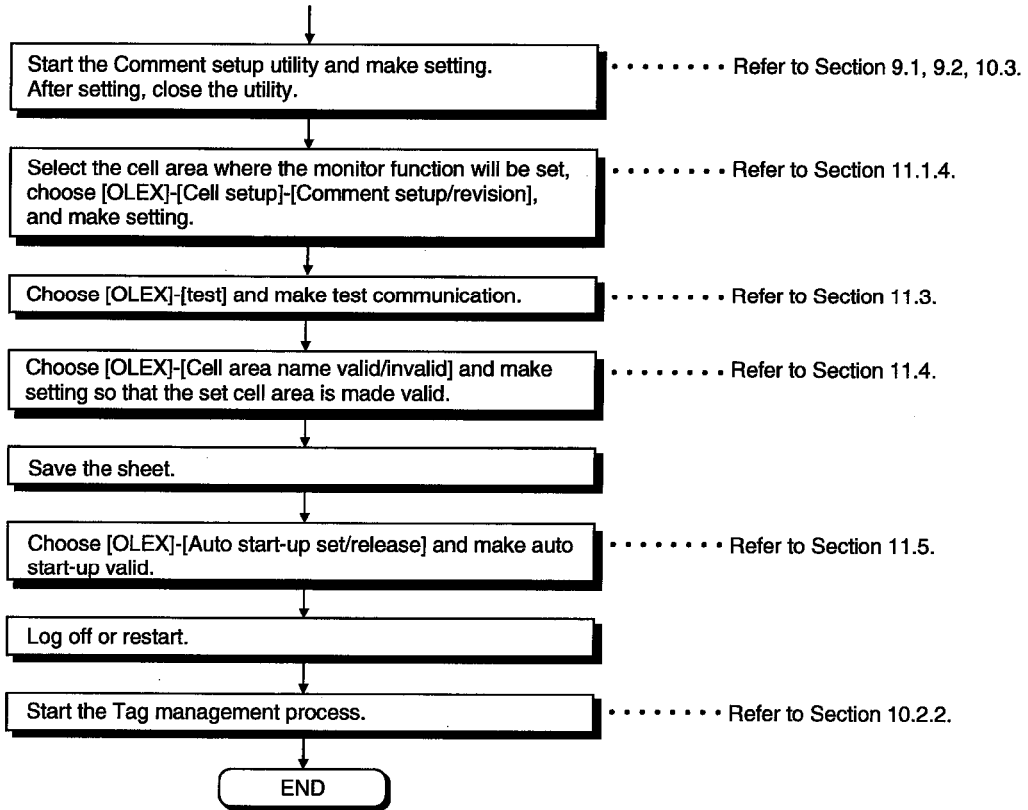Please read Section 6.1 before reading this section.

(From Section 6.1)

| Start the Comment setup utility and make setting. After setting, close the utility. | • • • • • • • Refer to Section 9.1, 9.2, 10.3. |

| Select the cell area where the monitor function will be set, choose [OLEX]-[Cell setup]-[Comment setup/revision], and make setting. | • • • • • • • Refer to Section 11.1.4. |

| Choose [OLEX]-[test] and make test communication. | • • • • • • • Refer to Section 11.3. |

| Choose [OLEX]-[Cell area name valid/invalid] and make setting so that the set cell area is made valid. | • • • • • • • Refer to Section 11.4. |

| Save the sheet. |

| Choose [OLEX]-[Auto start-up set/release] and make auto start-up valid. | • • • • • • • Refer to Section 11.5. |

| Log off or restart. |

| Start the Tag management process. | • • • • • • • Refer to Section 10.2.2. |

(END)

| POINT |
| Set only one cell. |

6.6 Using the OLEX Functions

The following flowchart gives an operating procedure performed when using the OLEX functions.

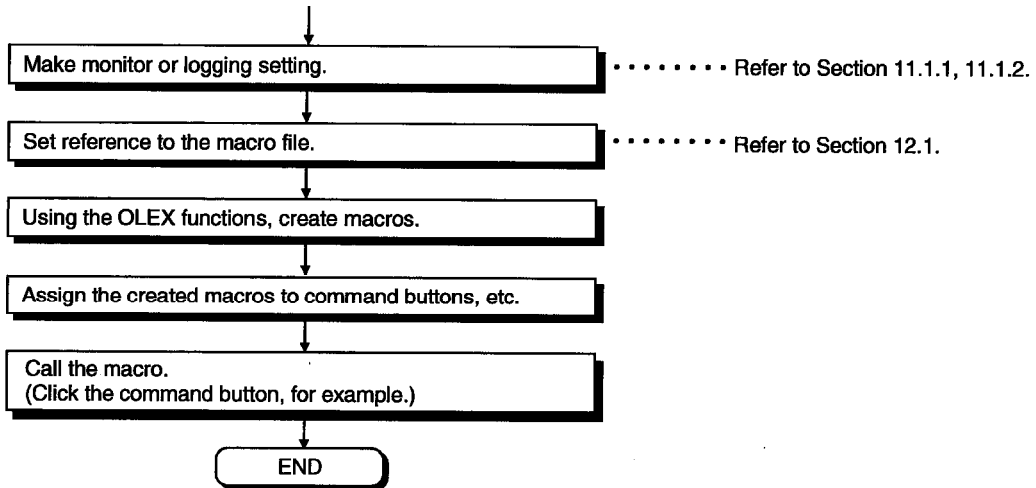Please read Section 6.1 before reading this section.

(From Section 6.1)

| Make monitor or logging setting. | ········ Refer to Section 11.1.1, 11.1.2. |

| Set reference to the macro file. | ········ Refer to Section 12.1. |

| Using the OLEX functions, create macros. |

| Assign the created macros to command buttons, etc. |

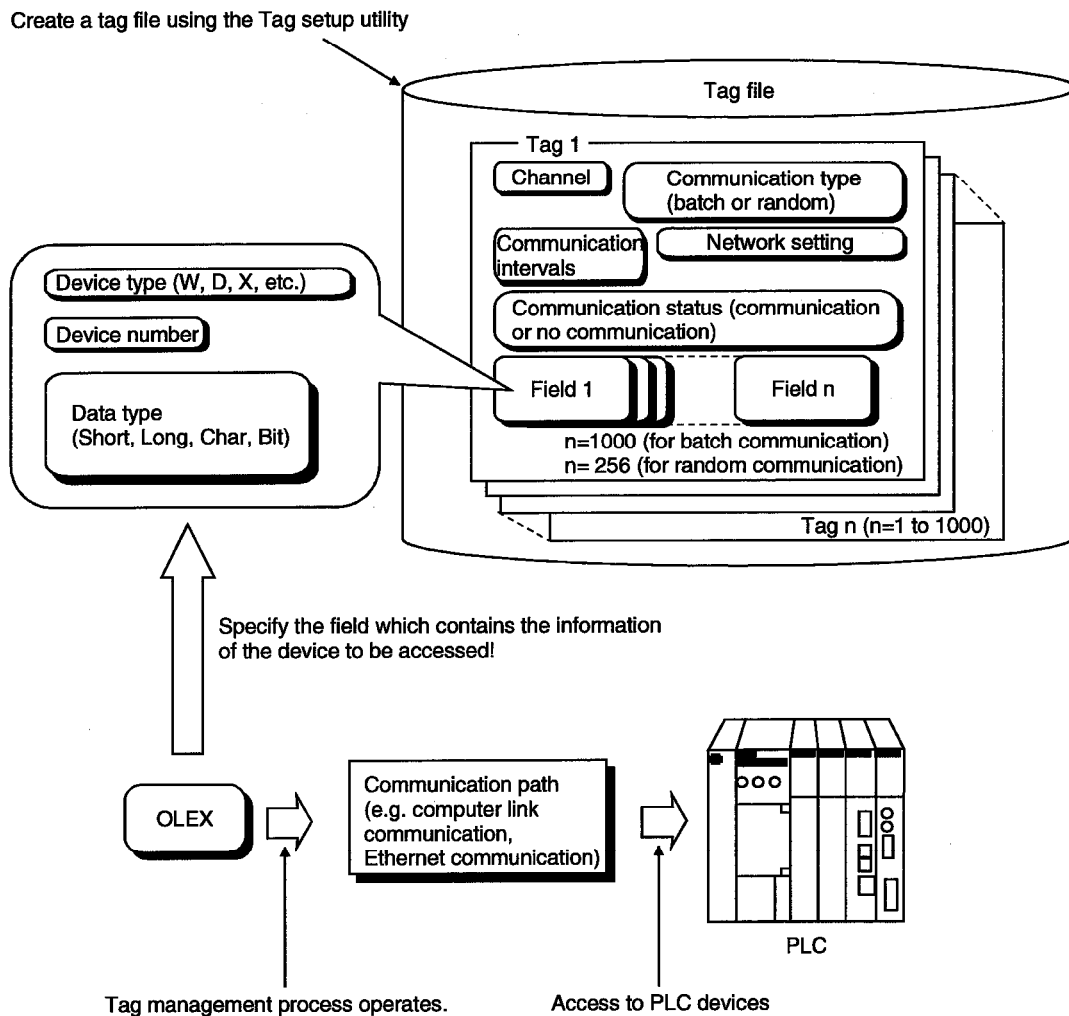| Call the macro.
(Click the command button, for example.) |

END

7. CREATING A TAG FILE

This chapter explains how to create a tag file which is utilized when using OLEX.

7.1 Getting Information on "Tag"

A tag is a data table which contains a set of information necessary for communication with the PLC CPU, e.g. communication setting, devices and data types.
By specifying a tag, OLEX can access devices defined in the tag.

Create a tag file using the Tag setup utility

Tag file

Tag 1

Channel · Communication type (batch or random)

Communication intervals · Network setting

Communication status (communication or no communication)

Field 1 · Field n

n=1000 (for batch communication)
n= 256 (for random communication)

Tag n (n=1 to 1000)

Device type (W, D, X, etc.)

Device number

Data type (Short, Long, Char, Bit)

Specify the field which contains the information of the device to be accessed!

OLEX

Communication path (e.g. computer link communication, Ethernet communication)

PLC

Tag management process operates.

Access to PLC devices

POINT
When using a tag, the Tag management process must be running. For full information, refer to Section 10.2.2.

7

7.2 What Should Be Done First

This section describes the operation to be preformed first when creating a tag file. Please read this section before creating the tag of any communication path.
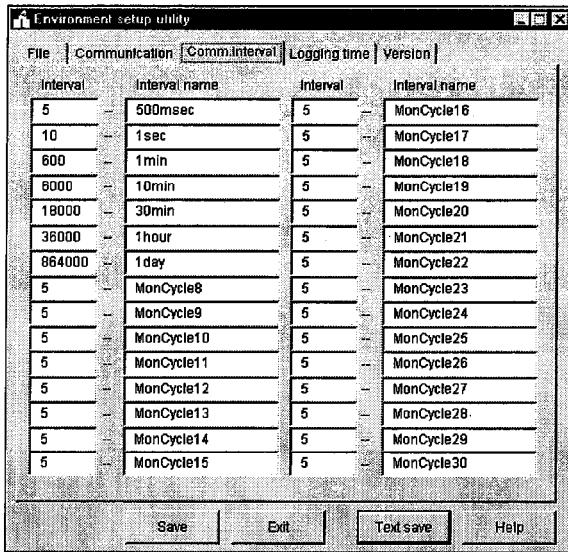
1. Set the corresponding utility according to the communication form used (e.g. computer link, Ethernet).

2. Start the Environment setup utility. (Refer to Section 9.1.)

3. Open the "File" screen and set the tag file name used. When creating a new tag, specify the name of the tag file you want to create.

↓

↓
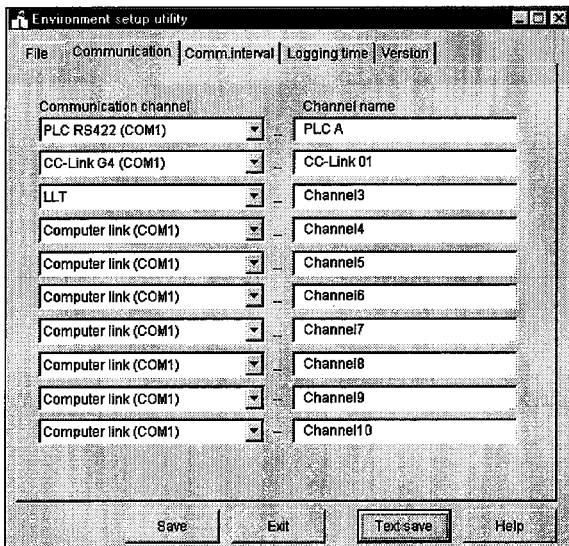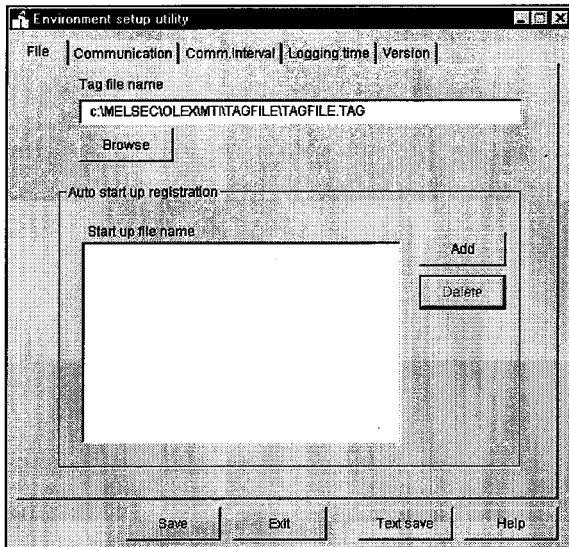
(To the next page)

4. Open the "Communication" screen and set channel names (aliases) to the communication channels used. The channel names set here are reflected on the Tag setup utility.

(From the preceding page)

↓

Interval	Interval name	Interval	Interval name
5	500msec	5	MonCycle16
10	1sec	5	MonCycle17
600	1min	5	MonCycle18
6000	10min	5	MonCycle19
18000	30min	5	MonCycle20
36000	1hour	5	MonCycle21
864000	1day	5	MonCycle22
5	MonCycle8	5	MonCycle23
5	MonCycle9	5	MonCycle24
5	MonCycle10	5	MonCycle25
5	MonCycle11	5	MonCycle26
5	MonCycle12	5	MonCycle27
5	MonCycle13	5	MonCycle28
5	MonCycle14	5	MonCycle29
5	MonCycle15	5	MonCycle30

Environment setup utility

File | Communication | Comm.interval | Logging time | Version

Save | Exit | Text save | Help

↓

(To Section 7.3)

5. Open the "Comm. interval" screen and set communication interval names (aliases) to the communication intervals.
   The communication interval names set here are reflected on the Tag setup utility.

6. Save the data and close the Environment setup utility.
   (Refer to Section 9.2 and 9.3.)

7.3 Creating a Tag File

This section gives how to create a tag file when collecting the device information of the PLC CPU connected via a computer link module.
Please read Section 7.2 before making setting in this section.

Tag file name   : C:\MELSEC\USER\SAMPLE2.TAG
Specified devices   : tag001 ... D0 to D15 (Short) (for 16 points)
                                         tag002 ... M100 (Bit), D200 (Long)
Logical station number   : 0 (set on the computer link utility)

Personal computer   PLC

Connected to the computer link
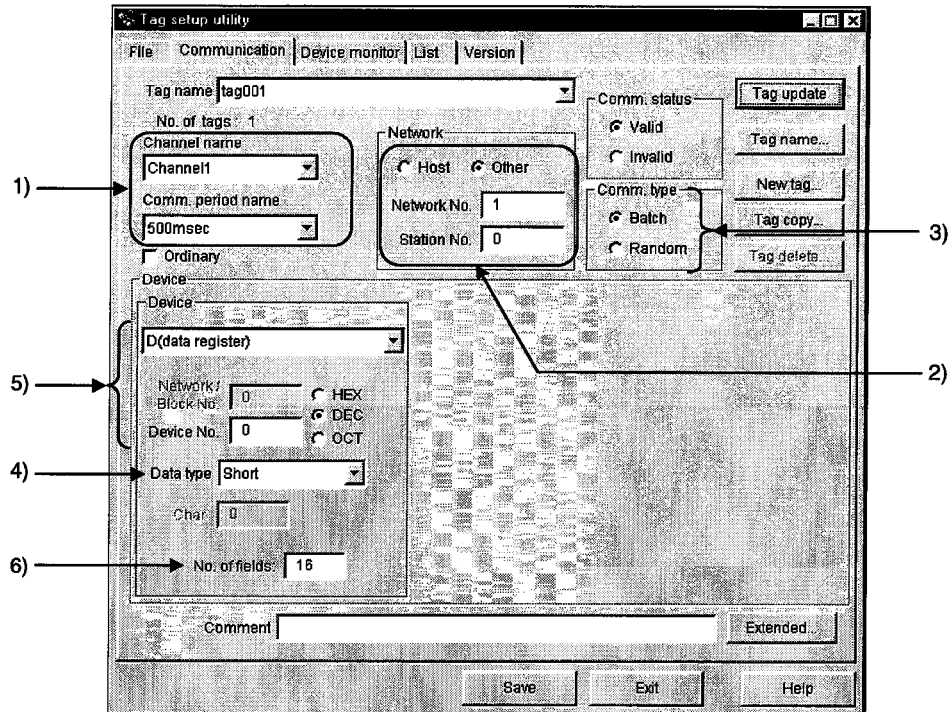(serial communication) module.
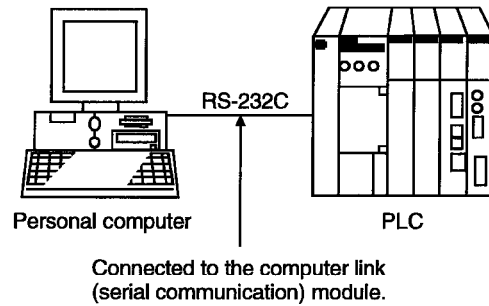
(1) Start the Tag setup utility.
    (Refer to Section 9.1.)

(2) Open the "File" screen and specify the tag file name to be set.
    If you had created no tag files, click the "New" button and create a tag file.
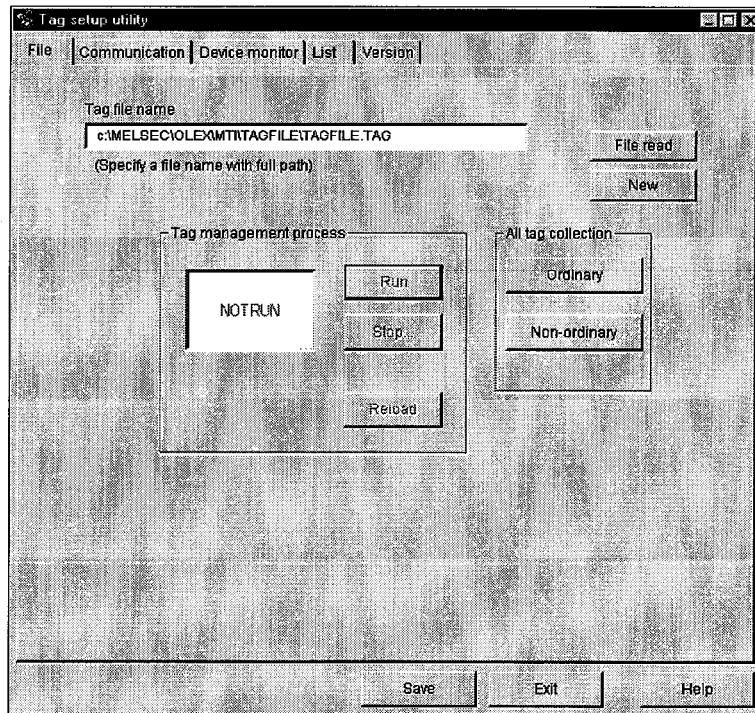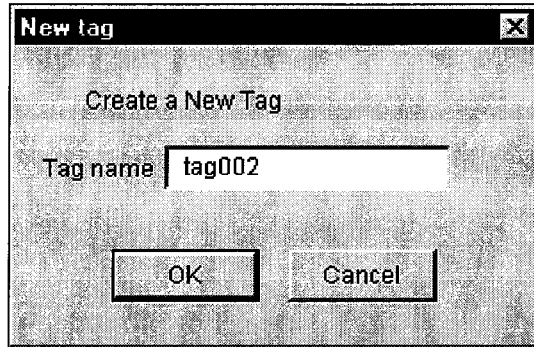
(3) Open the "Communication" screen, make setting as shown on the screen below, and click the "Tag update" button.
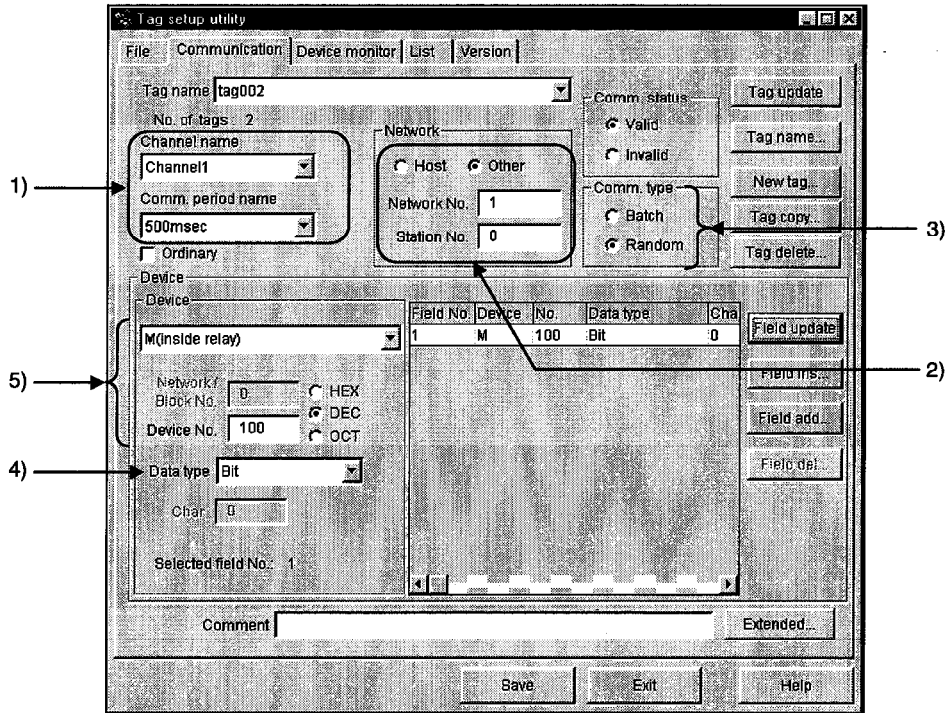(Set D0 to D15.)

1) The data set on the Environment setup utility are reflected here.
Set the channel of the communication form used.
Here, set the channel name of the computer link communication.

2) Set the Network No. and Station No..
Here, set the logical station number in the Sta. No. box.

3) Since only D devices are set, specify Batch here.
When setting two or more devices, specify Random.

4) Set Short.

5) Set D0 in decimal.
When specifying bit devices, set a multiple of 8 (a multiple of 16 for Ethernet communication).

6) Set 16 points.
When specifying bit devices, set a multiple of 16.

(4) Click the "New tag..." button and create a new tag.
Here, tag002 is created.

(5) Make setting as shown on the screen below and click the "Field update" button.
(Set M100.)

1) The data set on the Environment setup utility is reflected here.
   Here, set the channel name of the computer link communication.

2) Set the logical station number in the Station No. box.
   Ignore the network number as it is not used.

3) Since two devices, M100 and D200, are specified, set Random.

4) Set Bit.

5) Set M100 in decimal.

(6) Click the "Field add..." button.

(7) Make setting as shown on the screen below and click the "Field update" button.
(Set D200.)
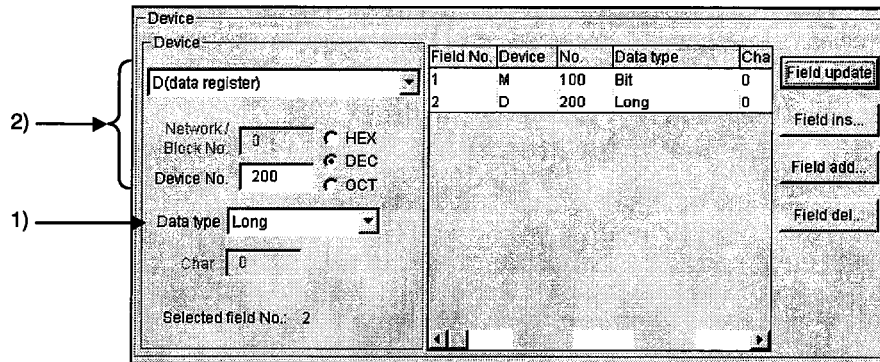
1) Set Long.

2) Set D200 in decimal.

(8) Click the "Tag update" button.

(9) After clicking the "Save" button, click the "Exit" button to close the Tag setup utility.

MEMO