

## INTRODUCTION

Thank you for choosing Type SW2D5F-XMOP-E Monitoring Tool.

Before using Type SW2D5F-XMOP-E Monitoring 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.

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8. UTILITY OPERATIONS

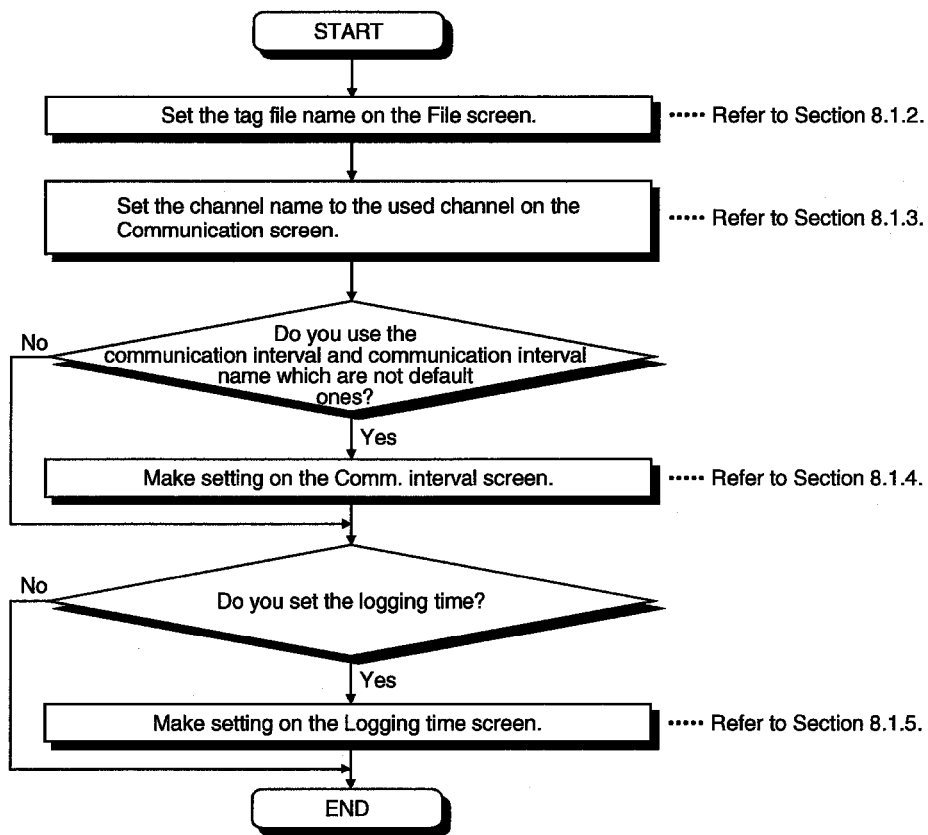
This chapter describes how to operate and set the utilities.

8.1 Environment Setup Utility

This section explains how to operate and set the Environment setup utility.

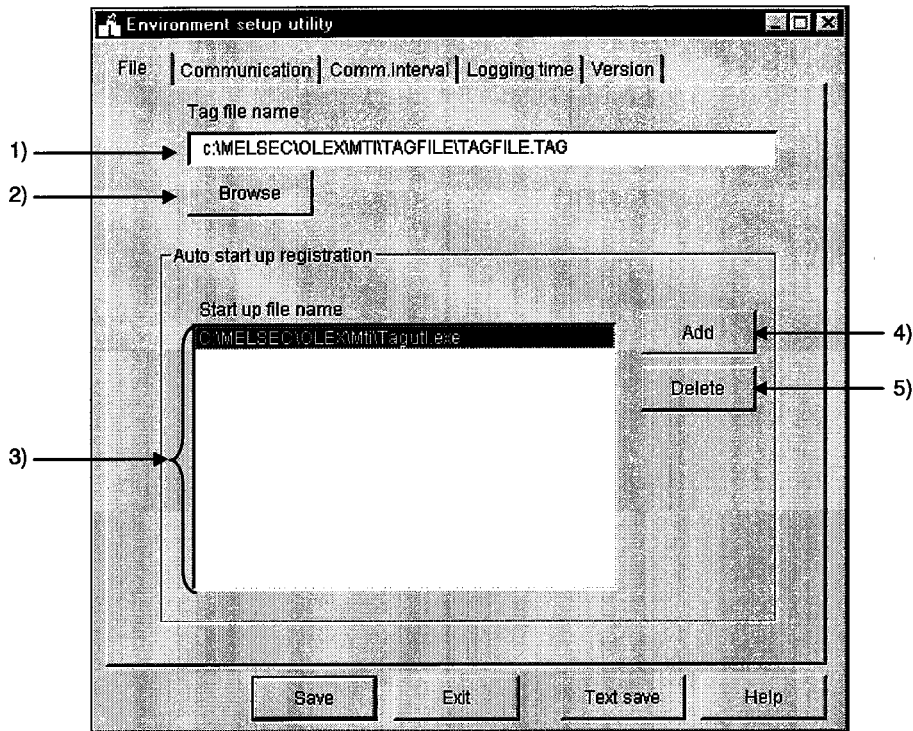
8.1.1 Operating Procedure

This section provides the procedure of operating the Environment setup utility.



## 8.1.2 Operations on the File Screen

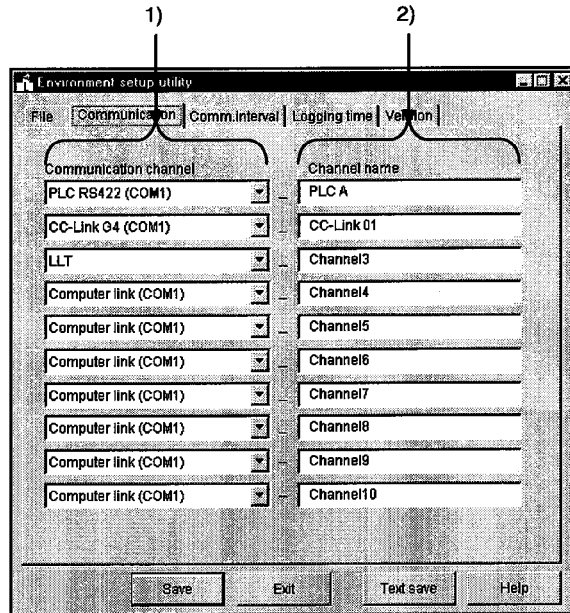
These operations include the setting of the tag file name to be read for execution of the Tag management process.



- 1) Tag file name  
Set the tag file which the Tag management process will read.
- 2) "Browse" button  
Used to find the tag file to be set in 1).  
As the file setting dialog box opens, choose the tag file.
- 3) Start up file name  
Shows the application started simultaneously with the starting of the Tag management process.
- 4) "Add" button  
Used to set the application started simultaneously.  
You can set up to a total of 16 files.  
However, the files that may be set are only those having EXE, XLS and MDB extensions. Any other files cannot be started if set.
- 5) "Delete" button  
Choose the file name registered in 3) by clicking it, and click this button to delete the file selected in 3) and release automatic start-up.

8.1.3 Operations on the Communication Screen

Set channel names relative to the Communication channels. (Up to 10 names)



1) Communication Channel

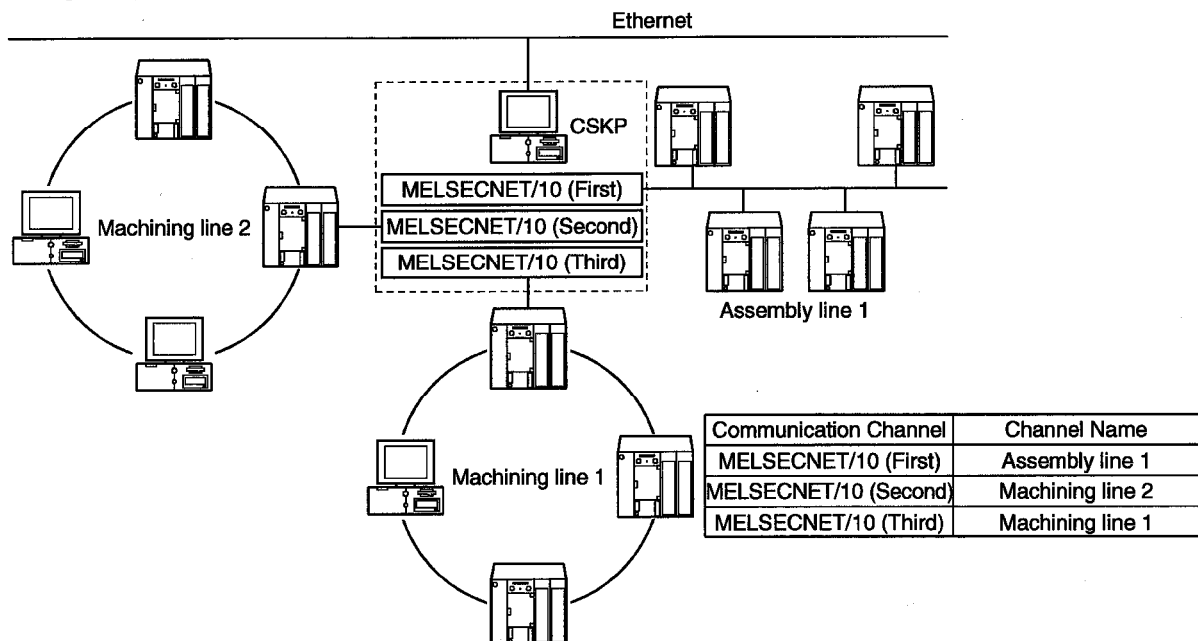
Choose the communication channels relative to the channel names.

2) Channel Name

Set only the channel names with which the user's desired names will be used.

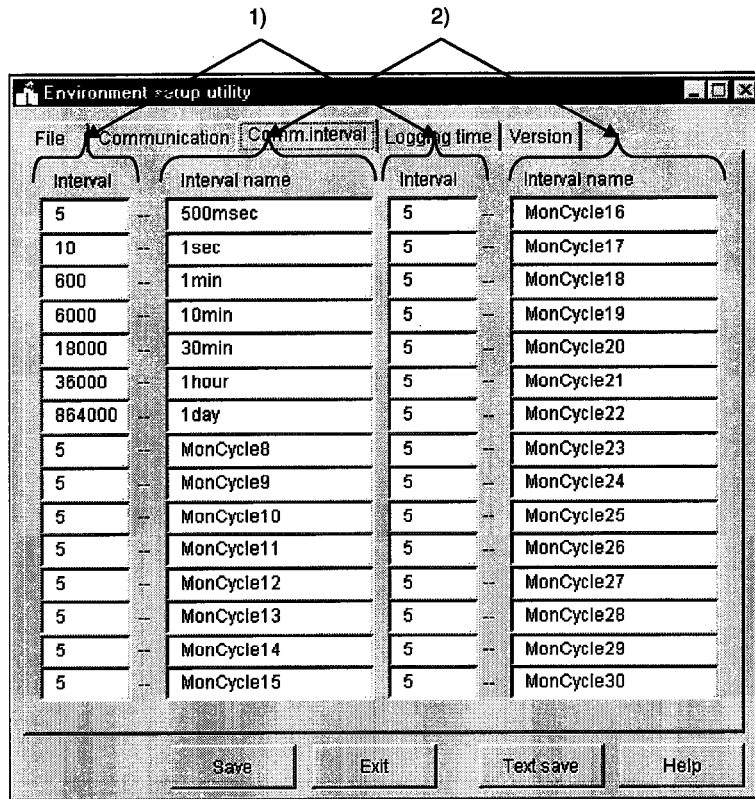
The user makes communication setting with the Tag setup utility on the basis of the channel names set.

Setting example



8.1.4 Operations on the Comm. Interval Screen

You can attach any names to the Communication intervals and define them as the communication names. (Up to 30 names)



1) Comm. Interval

Intervals can be set in 100ms increments.  
Hence, "5" sets the communication interval to 500ms.  
(The setting range is 1 to 864000.)

2) Comm. Interval Name

Set the user's desired names.  
The user makes communication setting with the Tag setup utility on the basis of the communication interval names set.

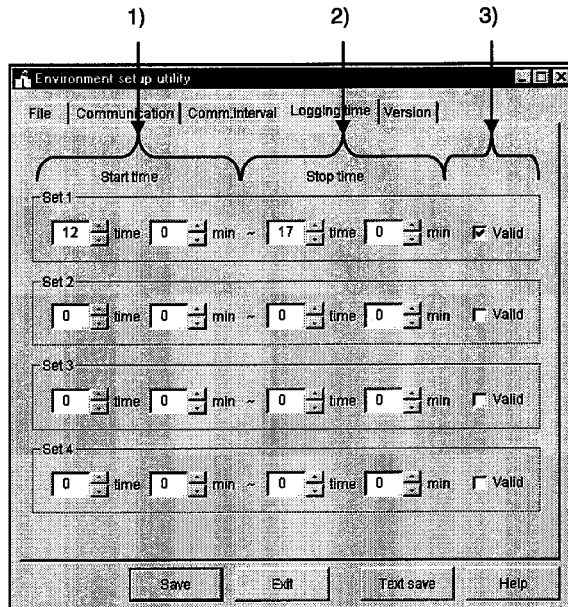


8.1.5 Operations on the Logging Time Screen

Set the time zones when the logging operation of the Tag management process will be performed.

You can set up to four zones.

(In XMOP, this screen is used when using a historical trend graph.)



1) Start time

Set the data logging operation-starting time of the Tag management process.  
Type the set time on a 24-hour basis. (Setting range: 0:00 to 23:59)

2) Stop time

Set the data logging operation-ending time of the Tag management process.  
Type the set time on a 24-hour basis. (Setting range: 0:00 to 23:59)

3) Valid/invalid check box

Set whether the set operation times are made valid or not.  
Check the box to make the set times valid.  
When the box is unchecked, the set times are invalid.

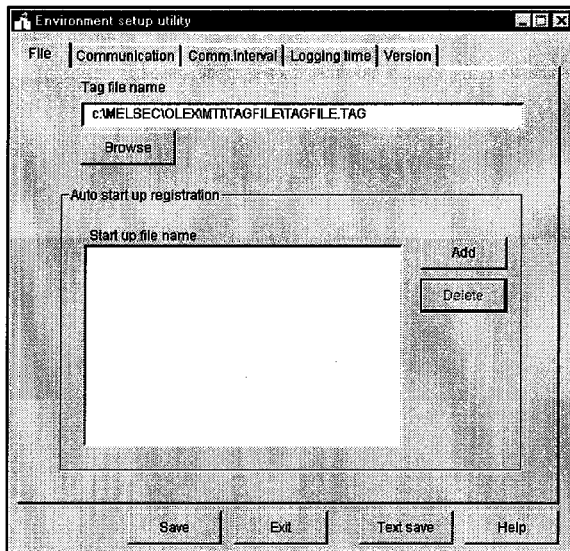
POINTS
(1) If the period between the Start time and the Stop time is longer than 24 hours, their settings cannot be made.
(2) The settings on this screen are valid only when you have checked "Log within the operation time period" in Logging Setting within "Extended" on the Tag setup utility. For details, refer to Section 8.2.6 (3).
(3) If you have made the logging setting, the following folder is created but never delete it. Deleting it will disable proper logging. If you want to delete all log information, delete all files in the folder.
<HD drive>-<User-defined folder>-<CSKP>-<MTI>-<LOGFILE>

## 8.1.6 About Saving Data as a Text

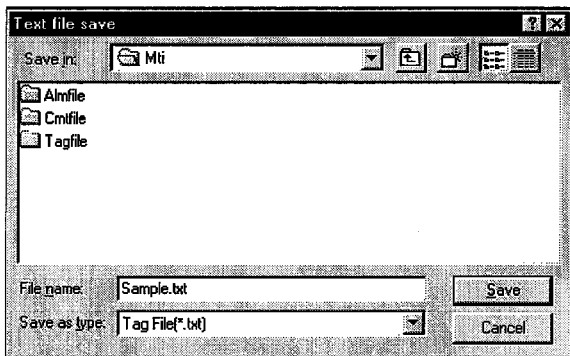
By clicking the "Text save" button at the bottom of the Environment setup utility, the settings made with the Environment setup utility can be saved as a text file.

## (1) Operation procedure

Perform the following procedure to save the data of the setting in a text file.



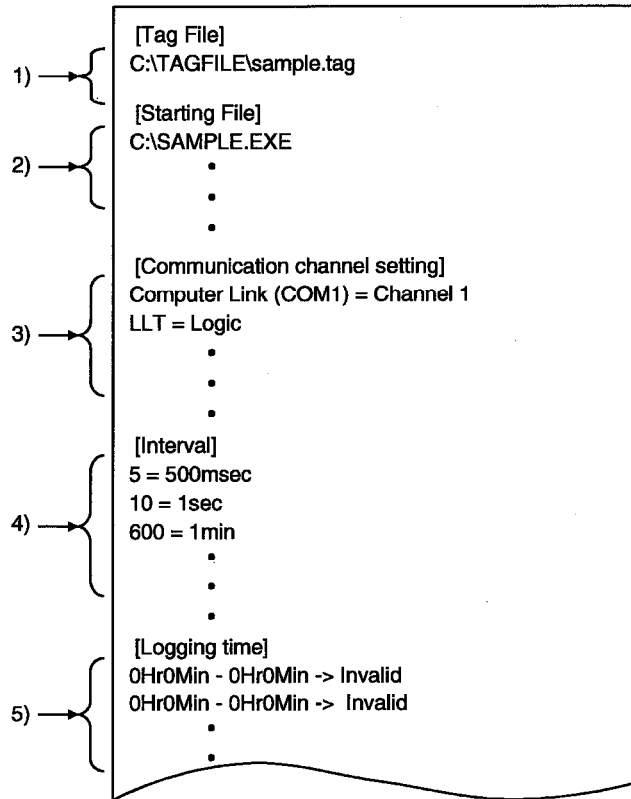
1. Click the "Text save" button on the Environment setup utility.



2. As the left dialog box appears, set the saving place and file name and click the "Save" button.

(2) File data

The data of the created text file will be described.



1) Indicates the data set to the tag file name on the "File" screen.

2) Indicates the data set to automatic start-up registration on the "File" screen.

3) Indicates the data set to the "Communication" screen.

4) Indicates the data set to the "Comm. interval" screen.

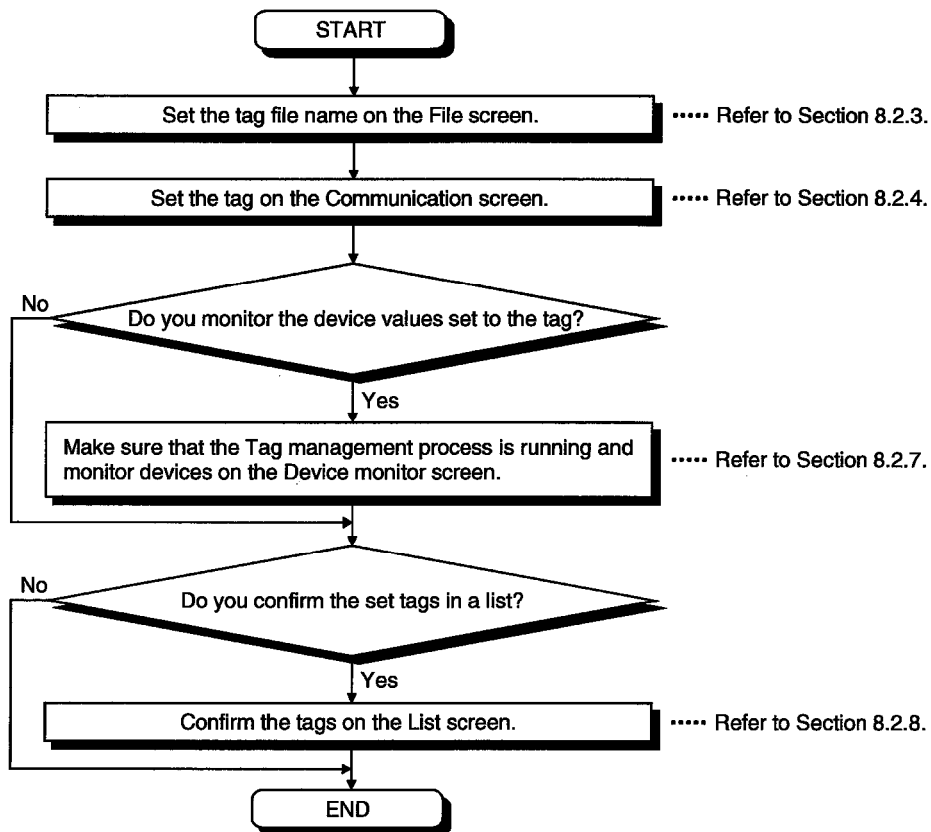
5) Indicates the data set to the "Logging time" screen.

8.2 Tag Setup Utility

This section provides how to operate and set the Tag setup utility.

8.2.1 Operating Procedure

The following flowchart provides the operation procedure of the Tag setup utility.



8.2.2 About the Tag Management Process

The Tag management process is a process which provides a communication method using a tag on the basis of the information set with the Environment setup utility and the information of the tag file.

When using a tag, the Tag management process must be running.

(1) Starting method

Click [Start]-[Programs]-[MELSEC APPLICATION]-[MONITORING TOOL (XMOP-E)]-[Tag management]-[Tag management process].

<b>POINT</b>
Before starting the Tag management process, you need to create a tag file with the Tag setup utility and specify the tag file with the Environment setup utility.

(2) Ending method

To close the Tag management process, force it to end.

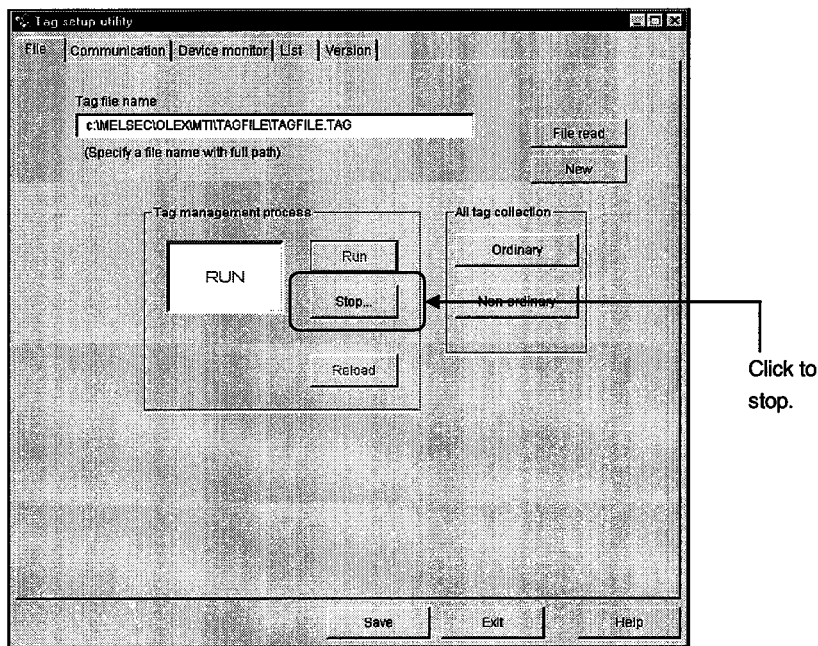
Alternatively, choose "Tag management process" on the task bar and press the "Alt" + "F4" keys.

(3) Reloading procedure

The Tag management process must be reloaded to reflect the modified/added tag file for use during execution of the Tag management process.

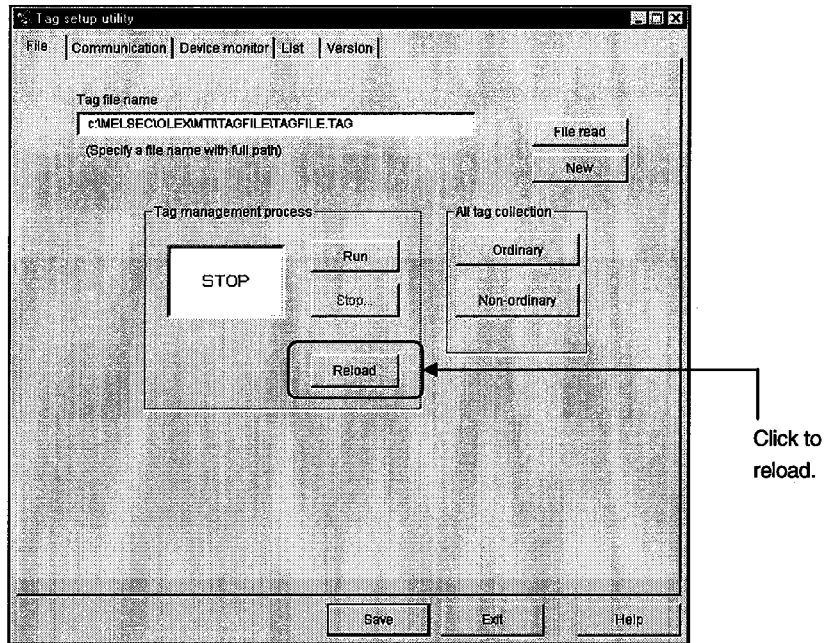
1) Stop the Tag management process.

Open the "File" screen and click the "Stop..." button.

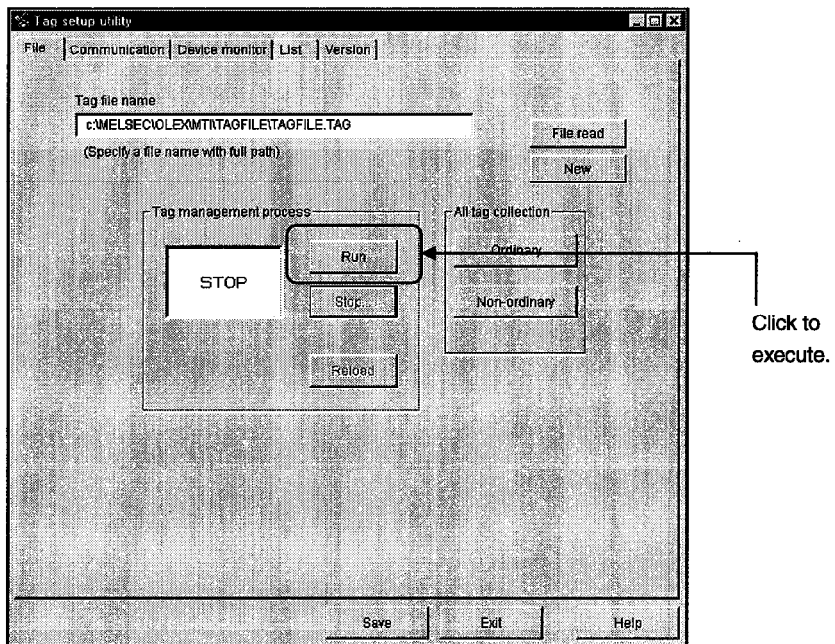


2) Edit the tag file.

- 3) Update the modified/added tag information.  
Open the "Communication" screen, modify/add tags and click the "Tag Update" button.
- 4) Click the "Save" button to save the information.
- 5) Reload the Tag management process.  
Click the "Reload" button to reload the Tag management process.

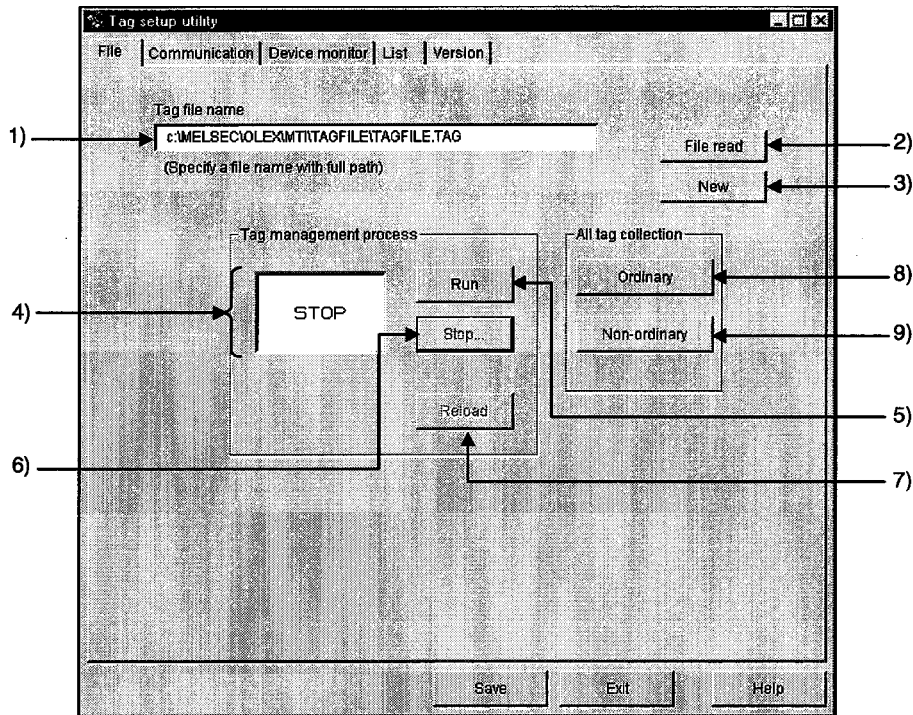


- 6) Execute the Tag management process.  
Click the "Execute" button to run the Tag management process.



8.2.3 Operations on the File Screen

Set the tag file to be saved, collection timing, and whether the Tag management process is run or stopped.



- 1) Tag file name  
Specify the tag file name to be set.
- 2) "File read" button  
Used to find the tag file to be set in 1).  
As the file setting dialog box opens, choose the tag file.
- 3) "New" button  
Used to create a new tag file.  
As the file setting dialog box opens, set the name of a new tag file to be created.
- 4) Tag management process operating status  
Indicates the current status of the Tag management process.  
  
 RUN..... Indicates that the Tag management process is "running".  
 STOP ..... Indicates that the Tag management process is "at a stop".  
 NOT RUN..... Indicates that the Tag management process is not started.
- 5) "Run" button  
Used to run the Tag management process.  
You cannot use this button to start the Tag management process.  
(This button cannot be selected when the Tag management process has not yet been started.)

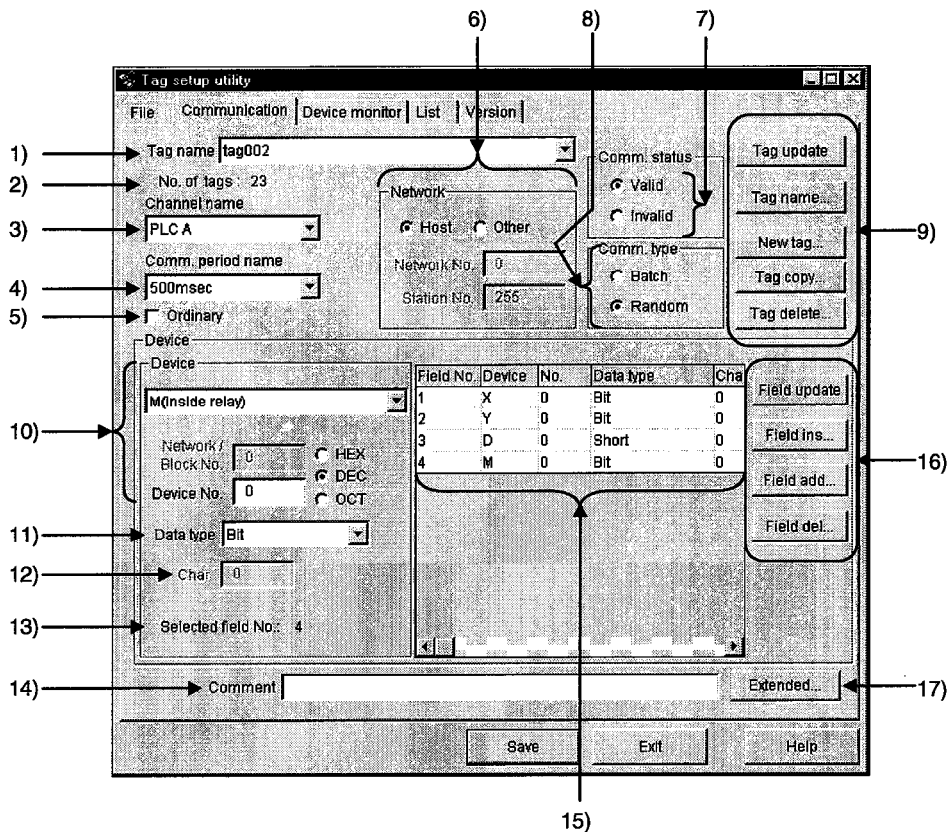
- 6) "Stop..." button  
Used to stop the Tag management process.  
You cannot use this button to end the Tag management process.  
(This button cannot be selected when the Tag management process has not yet been started.)
- 7) "Reload" button  
Used to reload the Tag management process.  
Note that this button may be selected only during the stop of the Tag management process.
- 8) "Ordinary" button  
Used to set all collection timings of the set tags to "Ordinary" in batch.  
  
Ordinary .....Data is always collected independently of whether the application using the tags is active or inactive.
- 9) "Non-ordinary" button  
Used to set all collection timings of the set tags to "Non-ordinary" in batch.  
  
Non-ordinary .....Data is collected only when the application using the tags is active.

POINT
The Tag management process has great influence on the processing speed of the personal computer. When using other application, it is recommended to stop the Tag management process.



8.2.4 Operations on the Communication Screen

Set the network, devices, etc. to the tag.



1) Tag Name

Choose the tag name to which the setting will be registered.

2) No. of tags

Shows the number of tags registered currently.

3) Channel name

Choose the channel name set with the Environment setup utility. (Refer to Section 8.1.3.)

4) Comm. period name

Choose the communication interval name set with the Environment setup utility. (Refer to Section 8.1.4.)

5) Ordinary

When this box is checked, data is always collected independently of whether the application using the tags is active or inactive.

When this box is unchecked, data is collected only when the application using the tags is active.

6) Network

Set the communication network.

If other station has been selected, the network number and station number can be set. For details, refer to Section 8.2.5.

7) Comm. status

Set whether the communication of the set tag is valid or invalid.

If you set Invalid, communication is not made.

8) Comm. type

Specify "Batch" or "Random" as the way of access to the PLC.

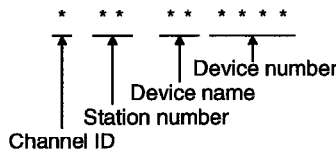
Batch ..... Choose this when accessing the specified points of a single device name.

Random.... Choose this when accessing one point of each of many device names.

9) Tag-related buttons

"Tag Update" .....Used to update the tag data set to the tag file.  
To save the data, click the "Save" button.

"Tag name..." .....Used to create the tag name automatically or change it.  
The tag name created automatically is set as follows.  
(The default tag name is the automatically created tag name.)



Example: When channel ID 1 is selected and W device No. 0 of the own station is specified

Tag name: 1FFWD0000

"New tag..." .....Used to create a new tag. (Up to 32 characters)

When entering a tag name, you cannot use the following characters.

"\", "/", ":", ":", ":", "?", ":", "<", ">", ":", "|"

"Tag copy" ..... Used to copy the tag currently being edited.

"Tag delete" ..... Used to delete the tag currently being edited.

10)Device

Device..... Choose the type of the device used for communication.

Network/Block No. ... You can enter data when you specify any of the following devices.

Device Name	Description
L* (Except L)	Set the block No. of the specified device.
ER	
EM	
ED	

Device No. .... Set the device No. of the specified device type.

HEX, DEC, OCT ..... Specify the hexadecimal, decimal or octal when setting the extension No. or device No.

HEX ..... Hexadecimal

DEC ..... Decimal

OCT ..... Octal

POINT
<p>If you selected Batch in Communication Type and "Bit" in Data Type, specify the device number as a multiple of 8 (0, 8, 16, ...) and the field count as a multiple of 16 (0, 16, 32, ...).</p> <p>For Ethernet communication, however, specify the device number as a multiple of 16 (0, 16, 32, ...).</p>

11)Data type

Determine the data type relative to the set device.

12)Char

Specify the number of characters to reserve the number of device points.

The number of characters is up to 40 characters.

(Valid only when Char is selected in Data Type.)

13) Selected (Field No.)

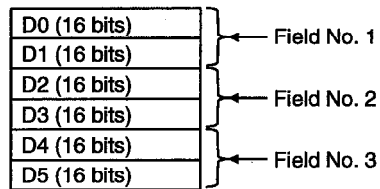
Selected field No. .... This number appears when the communication type is Random.

The field No. of the item currently selected in the field preview appears.

Field count ..... This number appears when the communication type is Batch.

Set the field count which reserves the devices in the unit specified in Data Type.

Example: If Device = D, Device No. = 0, Data Type = Long, and field count = 3, devices of 32 bits are reserved as a single field since the data type is Long.



14) Comment

Comment the tag.

15) Field preview

Shows the field data set until now.

Alternatively, clicking selects the field.

(Appears only when "Random communication" is chosen in Communication Type.)

16) Field button (valid only when Random is selected in Communication Type)

"Field update" ..... Used to register the current setting in the selected field.

"Field ins..." ..... Used to insert a new field in a place preceding the currently selected field.

"Field add..." ..... Used to create a new field in the last field.

"Field del..." ..... Used to delete the currently selected field.

## 17) Extended...

Used to show the dialog screen where logging setting and Hand shake are set.

(Refer to Section 8.2.6.)

## (Setting example for random communication)

For random communication with W100 (Short), D0 (Long) and ER0 (block No.

1) (Short)

- |              |   |   |
|--------------|---|---|
| W100 setting | { | 1) Choose communication type "Random".  |
|              | { | 2) Choose device type "W" and type device number "100".                               |
|              | { | 3) Click the "Field update" button. (Use the data type of default single precision.)  |
|              | { | 4) Click the "Field add" button.  |
| D0 setting   | { | 5) Choose device type "D" and type "0" in Device No.                                  |
|              | { | 6) Choose data type "Long".   |
|              | { | 7) Click the "Field update" button.   |
|              | { | 8) Click the "Field add" button.  |
| ER0 setting  | { | 9) Choose device type "ER" and type "0" in Device No.                                 |
|              | { | 10) Type block No. "1".   |
|              | { | 11) Click the "Field update" button. (Use the data type of default single precision.) |
|              | { | 12) Click the "Tag Update" button.  |
|              | { | 13) Click the "Save" button.  |

## (Setting example for batch communication)

For batch communication with 10 points starting from W100 (Short)

- |              |   |   |
|--------------|---|---|
| W100 setting | { | 1) Choose communication type "Batch".                   |
|              | { | 2) Choose device type "W" and type device number "100". |
|              | { | 3) Type "10" in Field.                                  |
|              | { | 4) Click the "Tag Update" button.                       |
|              | { | 5) Click the "Save" button.                             |

## 8.2.5 About the Network Setting

The settings of "Network" on the "Communication" screen change with the communication path used as indicated below.

Network

Host  Other

Network No. 1

Station No. 1

## (1) Host setting

When you choose Host in the network setting, the settings are as follows.

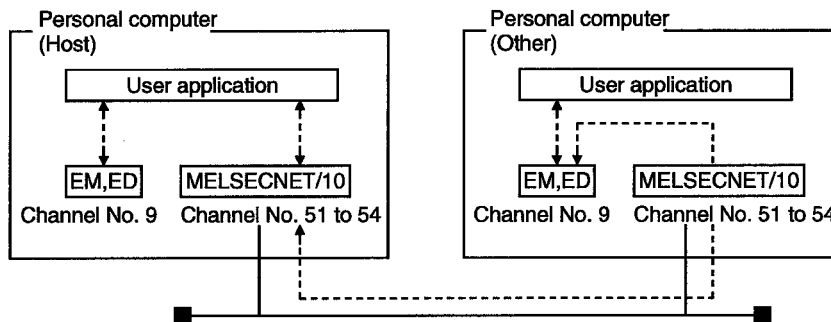
Communication	Description
Computer link	Not used.
Ethernet	Not used.
RS-422	Access is made to the PLC CPU directly connected.
MELSECNET/10	Access is made to the own personal computer.
CC-Link	
CC-Link G4	Not used.
Shared device	Access is made to the EM and ED devices of the own personal computer.
LLT	Access is made to LLT on the own personal computer.

(2) Other setting

When you select Other in "Network Setting", the settings are as follows.

Communication		Description	
		Network number	Station number
Computer link		Not used.	Set the logical station number specified on the utility.
Ethernet			
CC-Link G4			
CPU RS-422	Via MELSECNET/10	Set the network number.	Set the station number.
MELSECNET/10		Set the network number.	Set the station number.
CC-Link		Not used.	Set the station number.
Shared device	Via MELSECNET/10	Set the network number	Set the station number.
LLT		Not used.	Not used.

<b>POINTS</b>
<p>(1) The shared devices (EM, ED) may be set only on Windows NT4.0 using the shared device utility. They cannot be set on Windows 95 or Windows 98. However, the shared devices (EM, ED) on Windows NT4.0 can be accessed from Windows 95 or Windows 98.</p> <p>(2) To access the shared devices (EM, ED) of the other personal computer (other station), specify the channel of MELSECNET/10 which is used as a communication path.</p>



8.2.6 Operations on the Extended Screen

Set the Condition, Logging and Hand shake.

(1) Explanation of buttons

The buttons function as follows.

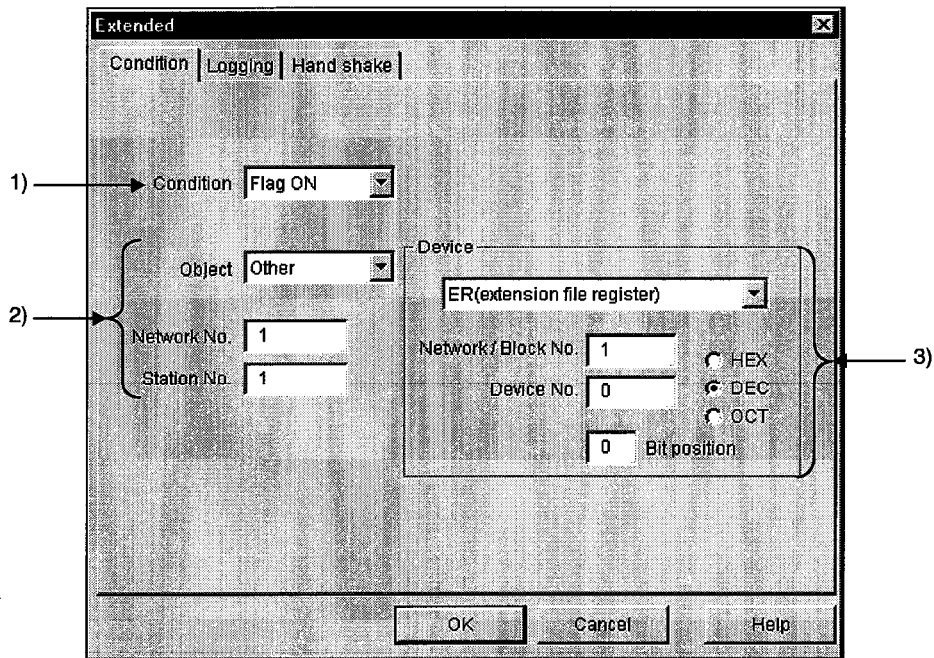
"OK" ..... Used to make the setting valid and return to the Communication Setting screen.

"Cancel"... Used to make the setting invalid and return to the Communication Setting screen.

"Help" ..... Used to display Help.

(2) Condition

Set the condition of signaling data collection.



1) Condition

Set the condition of collecting data.

No Setting ..... The collection condition on this screen is not reflected.

Flag ON ..... Data can be collected only when the specified bit device is ON.

Flag OFF ..... Data can be collected only when the specified bit device is OFF.



2) Network setting

Set the network No. and station No. of the device used as the collection condition.

Object ..... Choose any of the following items in the combo box.

Host ..... The device of the own station is set as the collection condition.

Other ..... The device of the other station is set as the collection condition.

Also, you can enter the network No..

According to Tag ..... The device of the station number whose setting was Updated on the communication setting screen is set as The collection condition. (Refer to Section 8.2.4.)

Network No. .... Specify the network No.  
(Valid only when Other Station is selected in Station Setting.)

Station No. .... Set the station number.  
(Valid only when Other Station is selected in Station Setting.)

POINTS
(1) Note that if you have specified "According to Tag" in Station Setting and then changed the station number in "Communication", that change is not reflected on the station setting of "Extended".
(2) When setting "Other" in Station Setting (making transient communication), it is assumed that the communication speed will be affected greatly. Therefore, when specifying the station, we recommend you to specify "Host".

3) Device

Device type..... Choose the type of the device used for communication.

Network/Block No. .. You can enter data when you specify any of the following devices.

Device Name	Description
L*	Set the network No. of the specified device.
ER	Set the block No. of the specified device.
EM	
ED	

Device No. .... Set the device No. of the specified device type.

HEX, DEC, OCT ..... Specify the hexadecimal, decimal or octal when setting the extension No. or device No.

HEX..... Hexadecimal

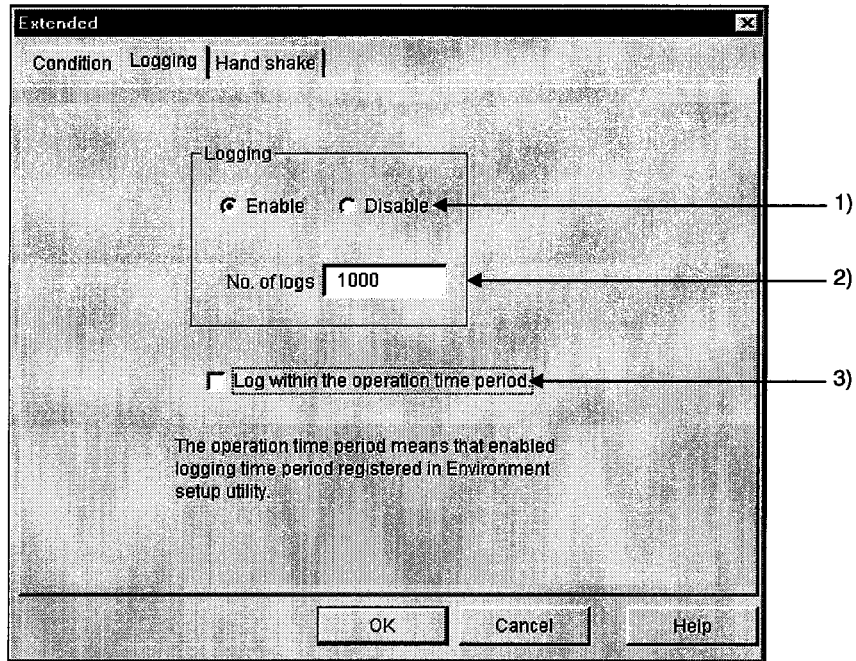
DEC..... Decimal

OCT..... Octal

Bit Position ..... Set the bit used as the collection condition when you specified the word device.

(3) Logging

Set whether logging is specified or not.



1) Logging

Set whether logging is made or not.

Enable.....As soon as the Tag management process has started, data collection starts and log data is saved.

Disable..... Logging is not made.

2) No. of logs

Set the number of log data to be collected. (1 to 10000)

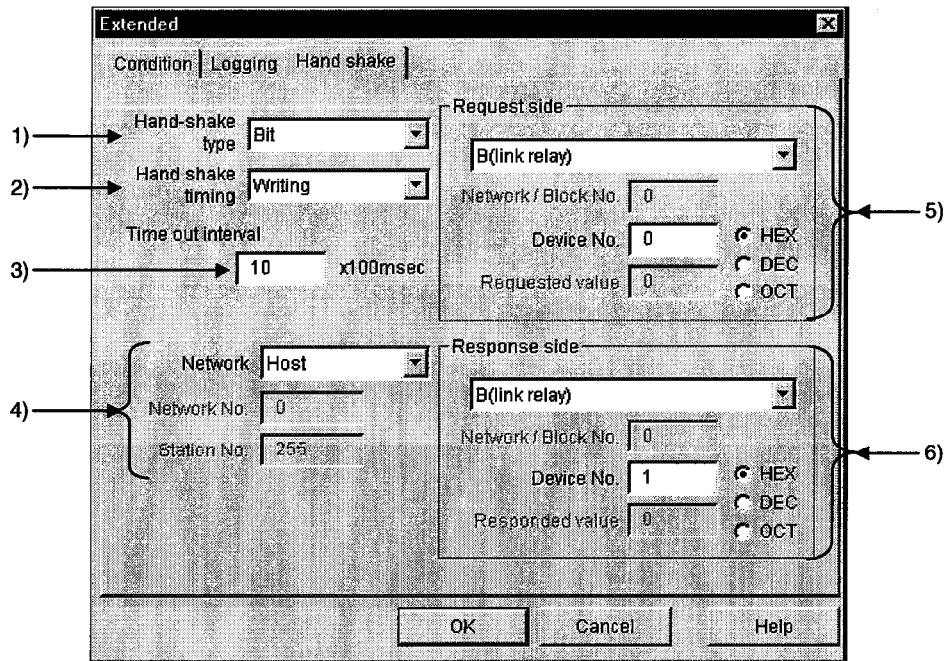
3) Logging within the operation time period

Data is collected according to the operation time set on the Environment setup utility.

(Refer to Section 8.1.5.)

POINT
Set the communication interval to 1 seconds or longer in the tag to which log setting is made.

(4) Hand shake  
Set the Hand shake data.



1) Hand-shake type  
Choose the way of handshaking.

Bit.....Hand shake is made in accordance with ON and OFF of bit devices.

• Operation sequence

Request bit ON → Data transfer → Response bit ON → Request bit OFF → Response bit OFF → Completion

Word .....Hand shake is performed according to the values stored into word devices.

• Operation sequence

Request value stored into request word device → Data transfer → Response value stored into response word device → 0 stored into request word device → 0 stored into response word device → Completion

Unconditional ..... Data transfer is made without Hand shake.

2) Hand shake timing  
Set the timing of handshaking.

3) Time out interval  
Set the time-out period. (1 to 36000)  
Time-out is a period from "request device set" to "request device reset" for write, and a period from "response device set" to "response device reset" for read.

4) Network

Set the network No. and station No. of the devices used for Hand shake.

Choose any of the items in the Network Setting combo box.

Host ..... The devices of the own station are set to Hand shake.

Other ..... The devices of the other station are set to Hand shake.  
Also, you can enter the network No.

According to tag ..... The devices of the station number set on the  
Communication setting screen are set to Hand shake.  
(Refer to Section 8.2.4.)

Network No. .... Specify the network No.  
(Valid only when Other Station is selected in Station  
Setting.)

Station. No. .... Set the station number.  
(Valid only when Other Station is selected in Station  
Setting.)

5) Request side

Specify the device used as a request side flag.

Set the device type, network/block No., device number, and HEX, DEC or OCT  
as in this section, (2), (3).

Request value ..... Set the value written to the word device as a request  
value.  
(Valid only when the word device is selected in Hand-  
shake type.)

6) Response side

Specify the device used as a response side flag.

Set the device type, network/block No., device number, and HEX, DEC or OCT  
as in this section, (2), (3).

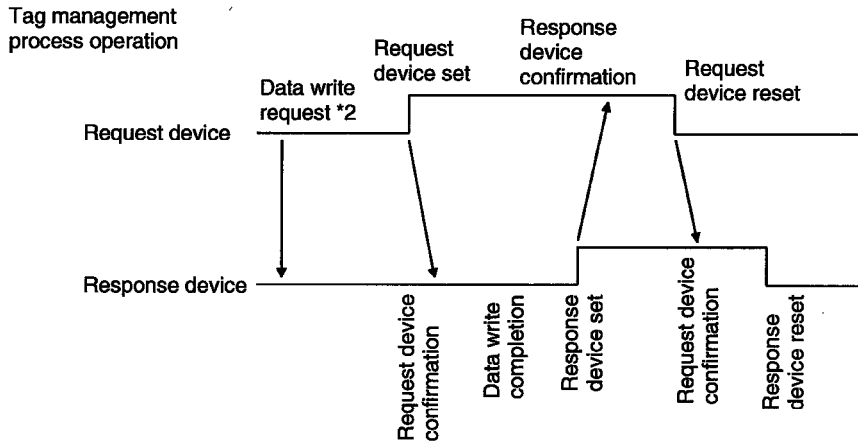
Response value..... Set the value written to the word device as a response  
value.  
(Valid only when the word device is selected in Hand-  
shake type.)

POINTS
(1) Note that if you have specified "According to tag" in Network Setting and then changed the station number in "Communication", that change is not reflected on the station setting of "Extended".
(2) When setting "Other" in Network Setting (making transient communication), it is assumed that the communication speed will be affected greatly. Therefore, when specifying the station, we recommend you to specify "Host".
(3) When the tag specified for handshake is specified to Logging for reading, the data collection of the other tag communicating at the same time will be affected extremely. (It will take longer time.)
(4) Set the Hand shake time out interval so that the communication interval value is greater than the Hand shake time out value.

(a) Hand shake timing

Hand shake is made as shown in the following timing charts.

1) When data is written to Tag management process device memory



PLC operation \*1

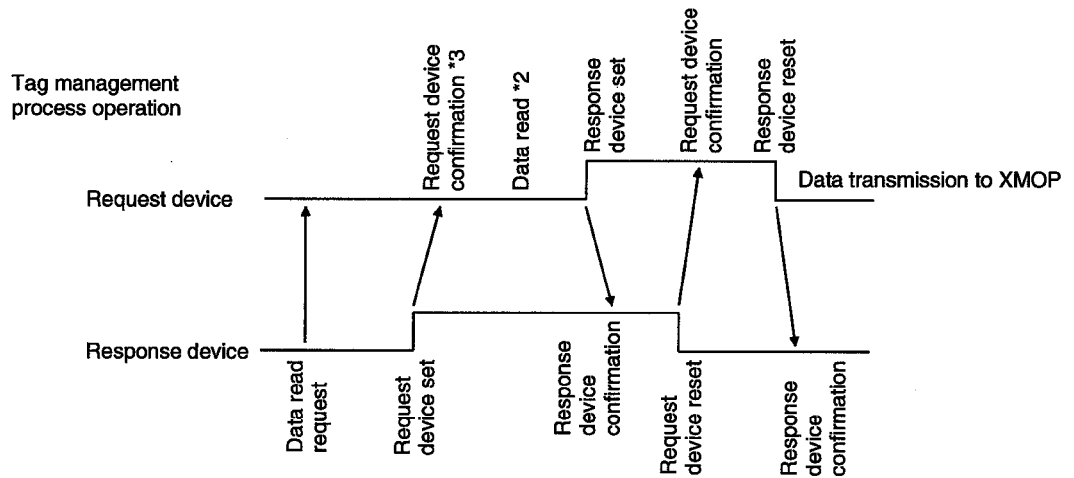
\*1 For PLC operation, a program must be written using the sequence ladder or MELSEC data link library.

\*2 Request of XMOP to write data to device memory.

Since the Tag management process makes this request actually, the Tag management process is on the request side.

2) When data is read from Tag management process device memory

When time-out occurs, read data is discarded.



PLC operation \*1

\*1 For PLC operation, a program must be written using the sequence ladder or MELSEC data link library.

\*2 The Tag management process reads the device memory data.

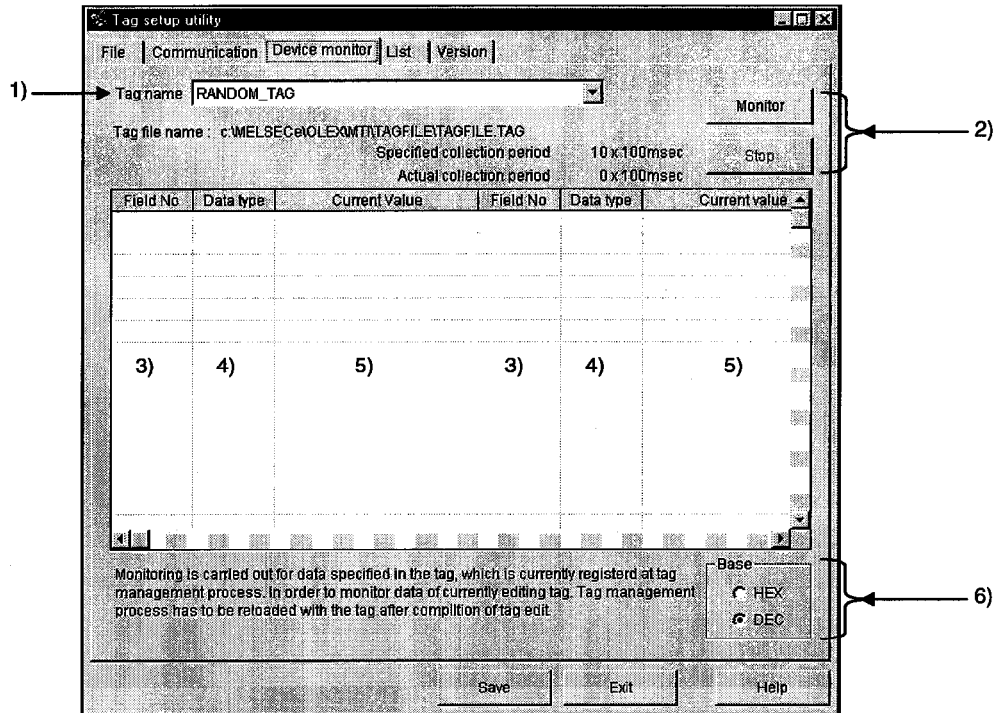
It is not read unless the request device is set on XMOP.

After reading data, the Tag management process sets the response device.

\*3 An error (-30) occurs if the request device has not been set for request device confirmation.

8.2.7 Operations on the Device Monitor Screen

Monitor devices based on the data of the tag file currently under control of the Tag management process.

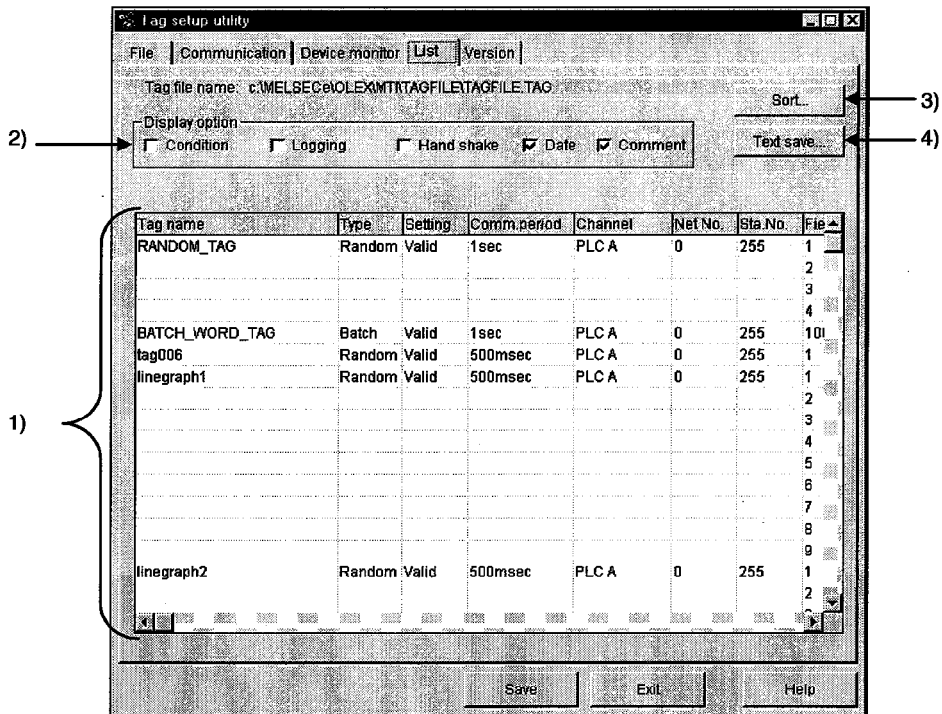


- 1) Tag name  
Devices are monitored based on the data of the tag specified here.
- 2) Monitor and Stop buttons  
"Monitor": Used to start monitor. "Stop": Used to stop monitor.
- 3) Field No.  
Shows the field numbers being monitored.
- 4) Data type  
Shows the data types of the devices set to the fields.
- 5) Current value  
Shows the current device values. (When bit device is ON: "\*\*")
- 6) Base  
Set the format of the data to be displayed.  
HEX ... Hexadecimal display  
DEC ... Decimal display

POINTS
(1) Monitor stops when you change the screen (to the file setting, communication setting or other screen) by tab operation.
(2) When monitoring the tag being edited, save the edited tag and restart the Tag management process.

8.2.8 Operations on the List Screen

List the data set to the tag file.



1) Setting display

Tags registered to the tag file are listed.

2) Display option

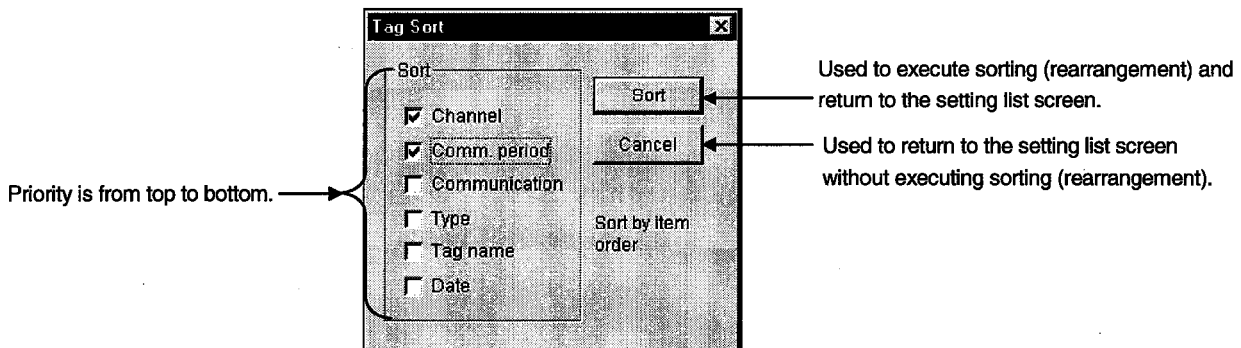
Check and display the items you want to display in addition to the data currently being shown.

3) "Sort..." button

As the following dialog box opens, set the sort conditions (Two or more conditions may be set.)

Note that priority is from top to bottom.

Items not checked return to the initial states.



POINTS

- (1) Sorting of character strings, such as comments, are made in ASCII code order. (Not in alphabetical order.)
- (2) Data in the sorted status cannot be saved in the tag file.

4) "Text save" button

Used to save the currently displayed data in the specified text file.

POINT
Data is saved as a text in the sorted status.

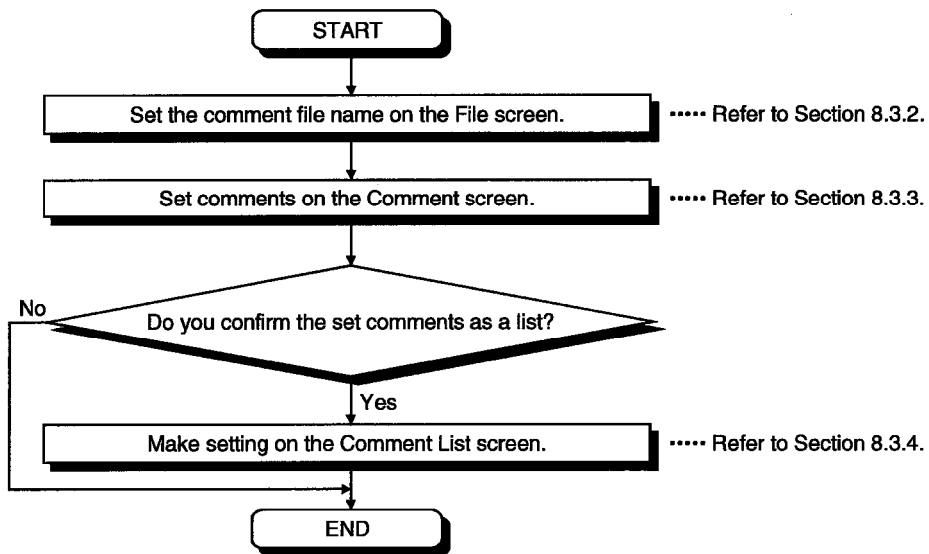


8.3 Comment Setup Utility

This section describes the operation and setting procedures of the Comment setup utility.

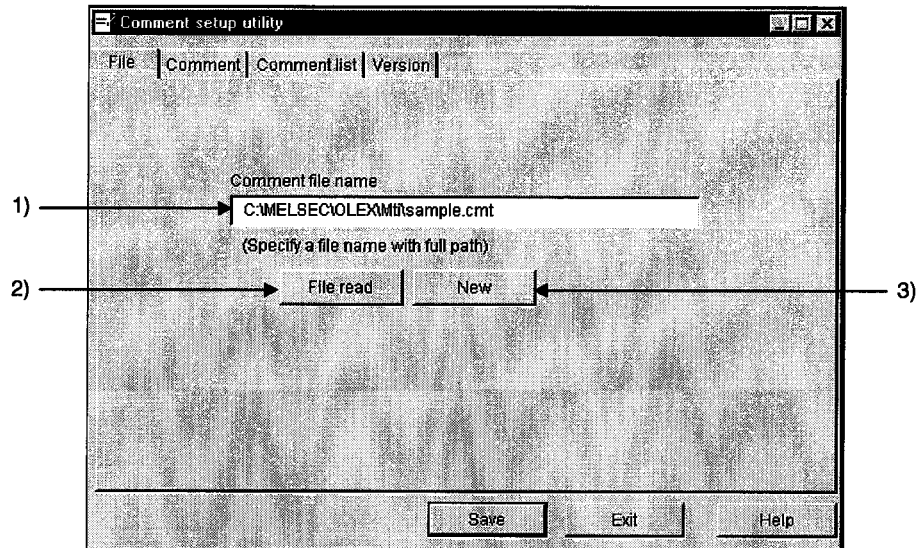
8.3.1 Operation Procedure

The following flowchart provides the operation procedure of the Comment setup utility.



## 8.3.2 Operations on the File Screen

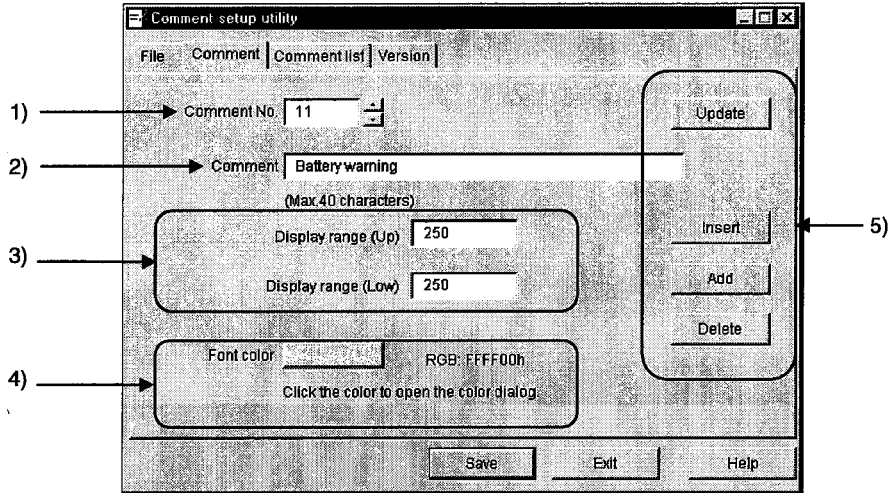
Set the file where comments will be saved.



- 1) Comment file name  
Specify the comment file name to be set.
- 2) "File read" button  
Used to find the comment file to be set in 1).  
As the file setting dialog box opens, set the comment file.
- 3) "New" button  
Used to create a new comment file.  
As the file setting dialog box opens, set a new comment file.

8.3.3 Operations on the Comment Screen

Set the definition, display range and character color of a comment.



1) Comment No.

Set the comment number where the comment definition, display range, character color and so on are saved. (Up to No. 1000)

2) Comment

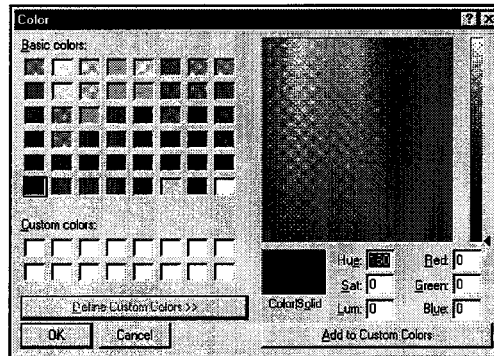
Describe the comment definition relative to the comment number. (Up to 40 characters)

3) Comment range

Set the upper and lower limits of the device value for displaying the comment. The comment is displayed when the device value is within the setting range. When specifying one point, set the same value to the upper and lower limits.

4) Font color

Clicking the color display area opens the following dialog box. Set the character color of the comment in this dialog box.



5) Buttons

"Update" ... Used to update the definition of the comment currently being selected.

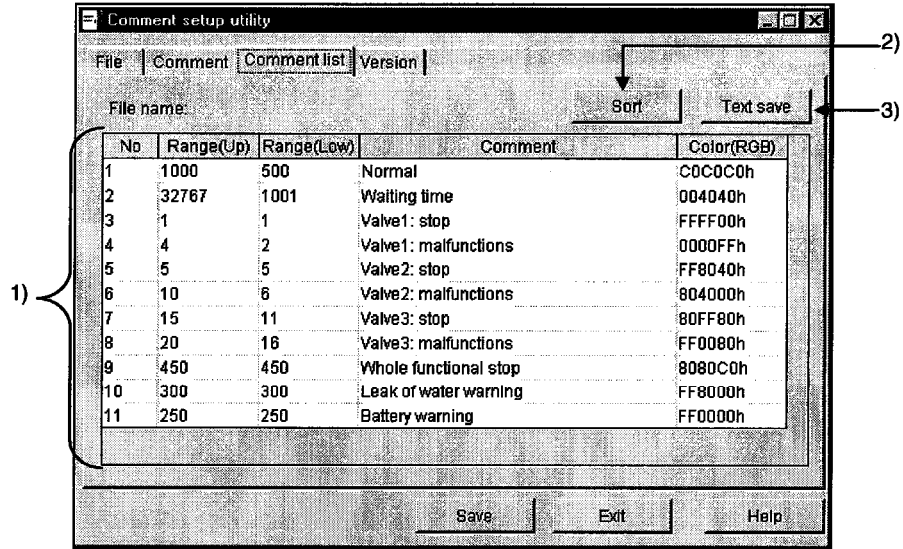
"Insert" ..... Used to add a new comment in a place preceding the comment currently being selected.

"Add" ..... Used to add a new comment in a place next to the last comment number.

"Delete" ..... Used to delete the comment currently being selected.

8.3.4 Operations on the Comment List Screen

Show the set comments as a list.



1) Setting display screen

Shows the comments registered to the comment file as a list.

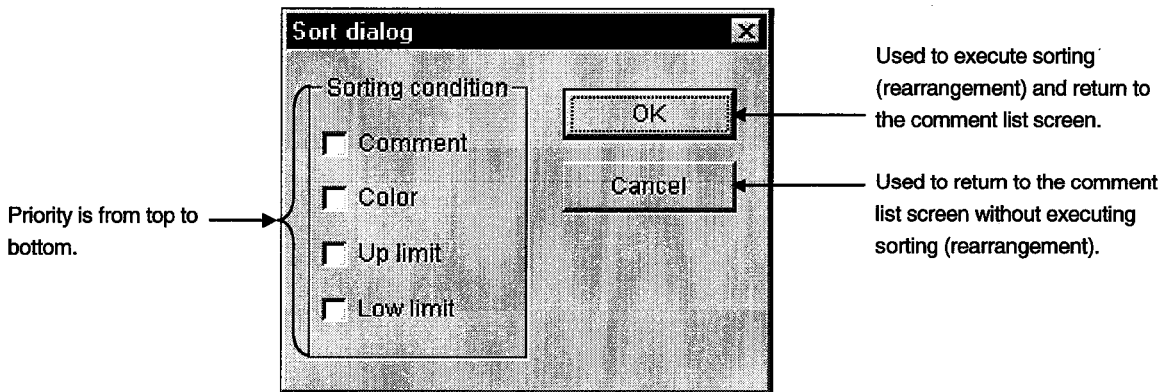
2) "Sort" button

As the following dialog box opens, set the sort conditions

(Two or more conditions may be set.)

Note that priority is from top to bottom.

Items not checked return to the initial states.



POINTS

- (1) Sorting of character strings, such as comments, are made in character code order. (Not in alphabetical order.)
- (2) Data in the sorted status cannot be saved in the comment file.

3) "Text save" button

Used to save the currently displayed data in the specified text file.

When sorting has been executed, data is saved as a text in the sorted status.

8.3.5 Comment File Format

The comment file is saved in a text file in the following format.

(Example) \*. CMT

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CMT 00A
1, 1, 2, Waiting time, 0[Enter]
2, -32000, -30000, Battery warning, FFFFFFFF[Enter]
3, 100000, 200000, Line 1: stop, FF00[Enter]
4, 201, 201, Line 1: start, FF0000[Enter]
    
```

1) 2) 3) 4) 5) [Enter] ... Line feed

- 1) Comment number
- 2) Lower limit
- 3) Upper limit
- 4) Comment character string
- 5) Color code (RGB code)

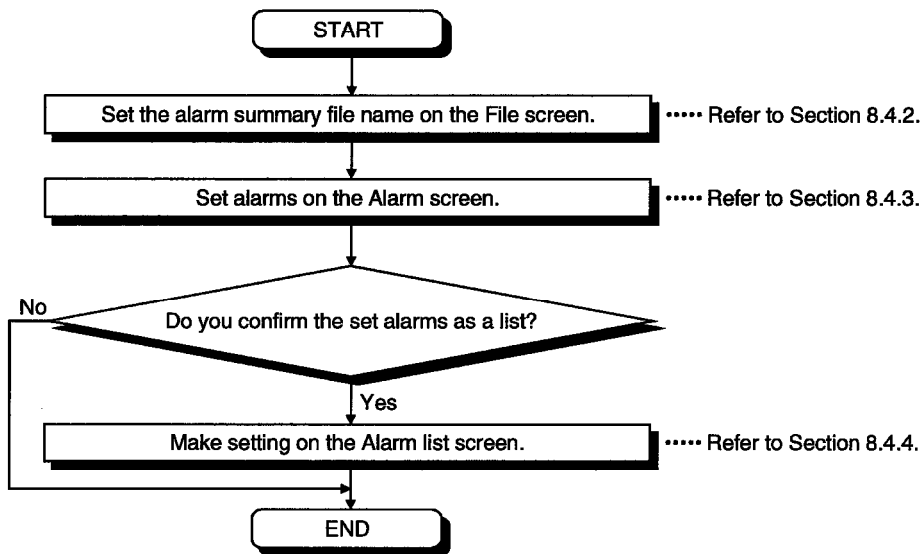
POINTS
(1) Settings should be separated by a comma (,).
(2) The line starting with "/" is handled as a comment.

8.4 Alarm Summary Setup Utility

This section describes the operation and setting procedures of the Alarm summary setup utility.

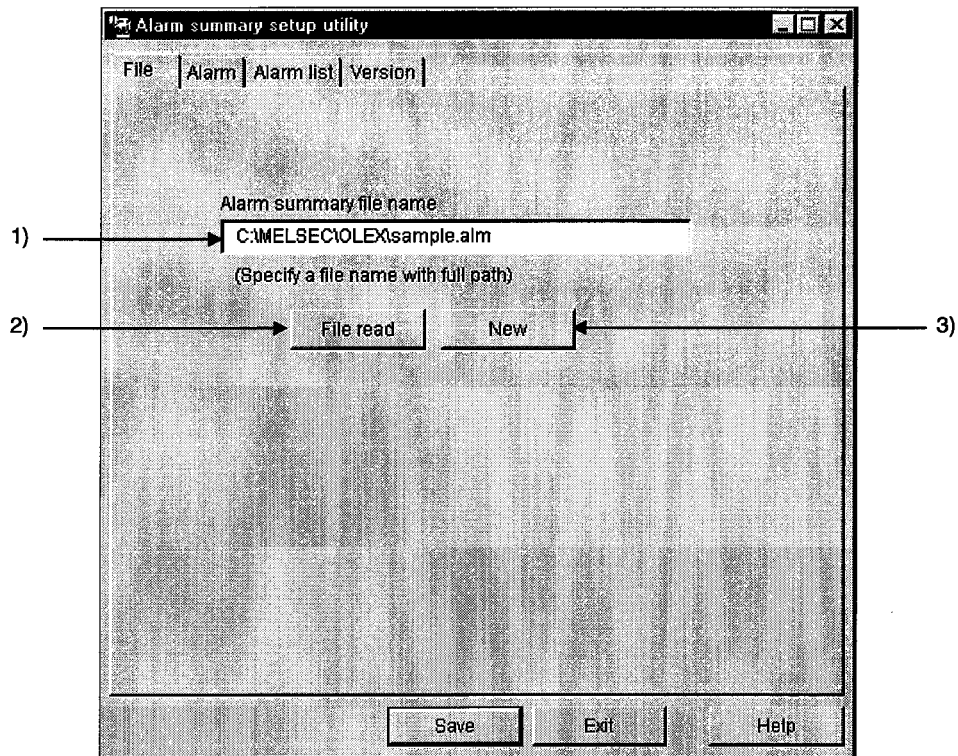
8.4.1 Operation Procedure

The following flowchart provides the operation procedure of the Alarm summary setup utility.



## 8.4.2 Operations on the File Screen

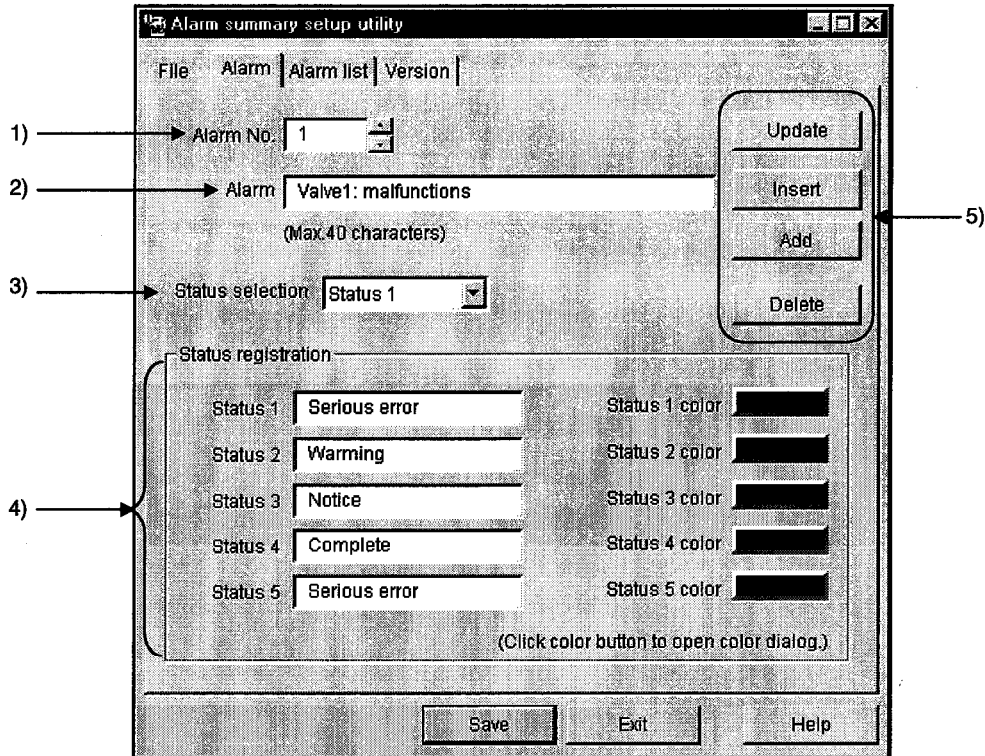
Set the file where alarm summary information will be saved.



- 1) Alarm summary file name  
Specify the file name where the data set with this utility will be saved.
- 2) "File read" button  
Used to find the alarm summary file to be set in 1).  
As the file setting dialog box opens, set the alarm summary file.
- 3) "New" button  
Used to create a new alarm summary file.  
As the file setting dialog box opens, set a new alarm summary file name.

8.4.3 Operations on the Alarm Screen

Set the definition, classification character strings and character colors of an alarm.



1) Alarm No.

Set the file name where the data set with this utility will be saved. (Up to No. 300)

2) Alarm

Describe the definition of the alarm message relative to the alarm number. (Up to 40 characters)

3) Status selection

Select the status which will be displayed simultaneously with the alarm definition.  
Set the data to be selected in Set Status.



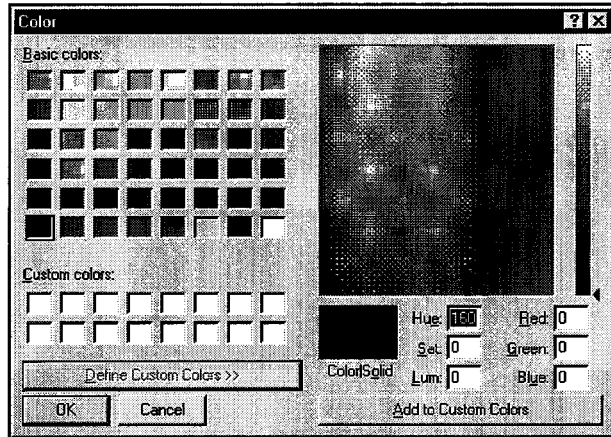
4) Status registration

Set the character strings and colors of the classifications to be displayed.

Status .....Set the character string of the classification to be displayed. (Up to 16 characters)

Status (1 to 5) Color .....Set the character color of the classification to be displayed. Clicking the color display area opens the following dialog box.

Set the character color of the comment in this dialog box.



5) Buttons

"Update" ... Used to update the data currently being selected.

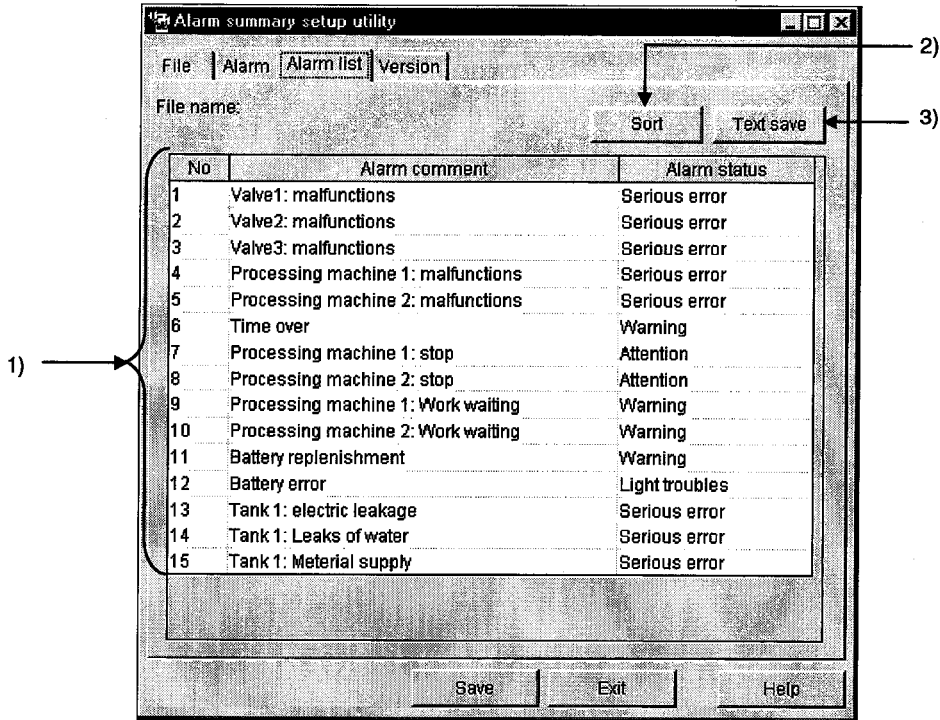
"Insert" ..... Used to insert a new alarm in a place preceding the alarm currently being selected.

"Add" ..... Used to add a new alarm in a place next to the last alarm number.

"Delete" ..... Used to delete the alarm summary currently being set.

8.4.4 Operations on the Alarm List Screen

Show the set alarms as a list.



1) Setting display screen

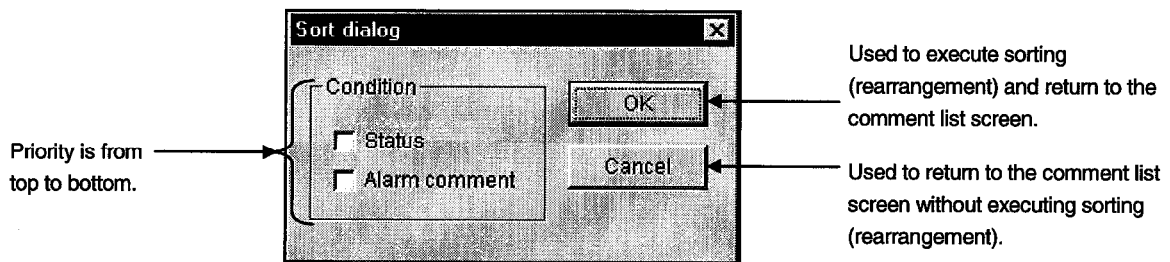
Shows the set alarm comments and alarm states as a list.

2) "Sort" button

As the following dialog box opens, set the sort conditions (Two or more conditions may be set.)

Note that priority is from top to bottom.

Items not checked return to the initial states.



POINTS

- (1) Sorting of character strings, such as comments, are made in ASCII code order. (Not in alphabetical order.)
- (2) Data in the sorted status cannot be saved in the alarm summary file.

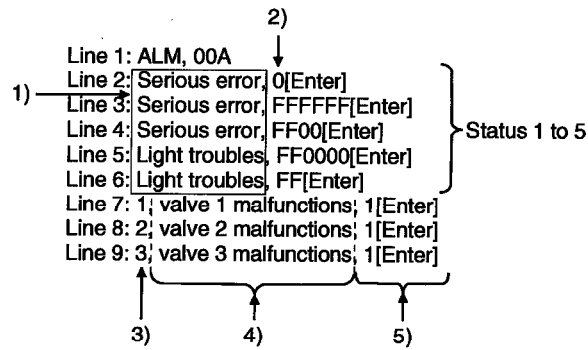
3) "Text save" button

Used to save the currently displayed data in the specified text file.

8.4.5 Alarm Summary File Format

The alarm summary file is saved in a text file in the following format.

(Example)



- 1) Status
- 2) Color code for status (RGB code)
- 3) Alarm number
- 4) Alarm comment character string
- 5) Status number

**POINT**

Settings should be separated by a comma (,).

MEMO

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9. ABOUT THE XMOP CUSTOM CONTROLS

9.1 Properties

(1) OCX-standard properties

Among the properties that may be set, the OCX-standard properties can also be set to the custom controls of XMOP.

Setting these properties determines the attributes and so on of the characters and frames displayed.

Property	Description	Details	Initial Value	Change during Execution
Alignment	Set the arrangement of a numeric value or character string displayed in a text.	0: Left alignment 1: Right alignment 2: Center alignment	—	Not allowed
Appearance	Set a 3D effect on the drawing style.	True : With 3D effect False : Flat (Without 3D effect)	True	Allowed
BackColor	Set the background color of a control.	Set in RGB code.	—	
ForeColor	Set the foreground color of a control.			
BorderStyle	Set the style of a border line of a control.	True : With border line False : Without border line	True	
Enabled	Set whether a control is forced to recognize the event caused by user operation.	True : Recognizes False : Does not recognize	True	
Font	Set the font.	—	System	

**POINT**  
 Do not set the DragMode property to Automatic.  
 XMOP does not support DragDrop.

(2) XMOP-common properties

Properties which can be set in common to any custom controls of XMOP.

Property	Variable Type	Description	Details	Initial Value	Change during Execution
MErrorID	SHORT	Error identifier	0 : Communication error 1 : Tag management process error 2, 3 : XMOP-specific error	0	Not allowed
MErrorNo	SHORT	Detailed error information	Error code		
MMonSTOP	BOOL	Monitoring stop flag	True : Monitoring stop False : Monitoring execution	Flase	Allowed
MTagName	STRING	Tag name	Choose the tag name registered in the tag file.	First tag name in tag file	Not allowed
MFieldNo	SHORT	Field number	Field number of the tag name read	1	

<b>POINT</b>
<ul style="list-style-type: none"> <li>• The MMonStop property does not exist in XMWRWORD (word write), XMWRBIT (bit write), XMCLOCK (clock display) and XMERROR (error).</li> <li>• The MFieldNo property does not exist in XMHSTTRD (historical trend graph), XMCLOCK (clock display) and XMERROR (error).</li> <li>• Even during execution of the MMonStop property, a change can be made to any custom controls (with the exception of those which do not monitor devices and which must ordinarily collect data).</li> <li>• The MfieldNo property is valid for not only for random-specified tags but also for batch-specified tags. For batch-specified tags, specify which device will be monitored.</li> </ul>

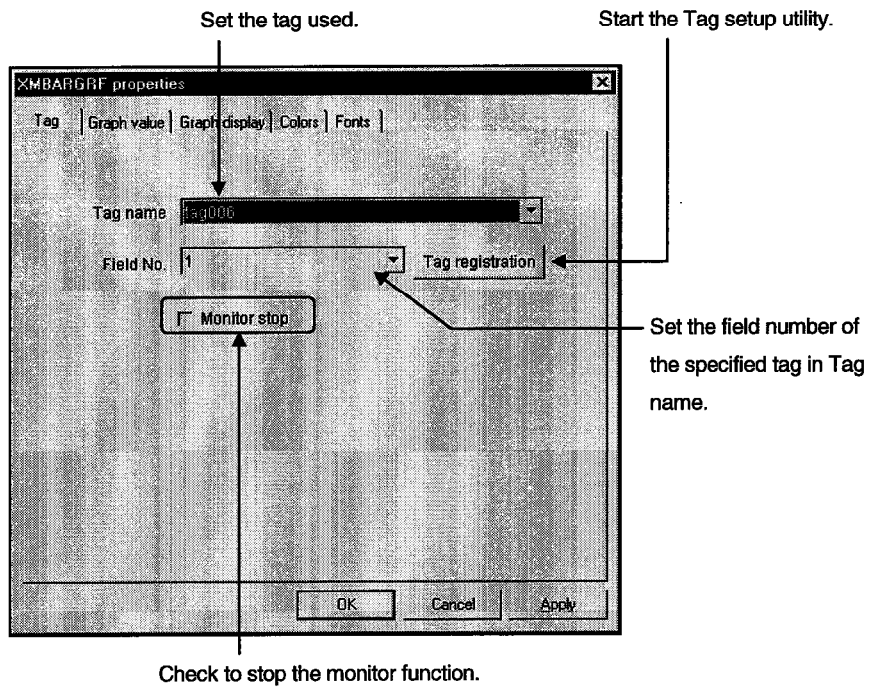
(3) Properties specific to the custom controls of XMOP

Refer to the description of the custom controls in Chapters 10 to 15 and later.

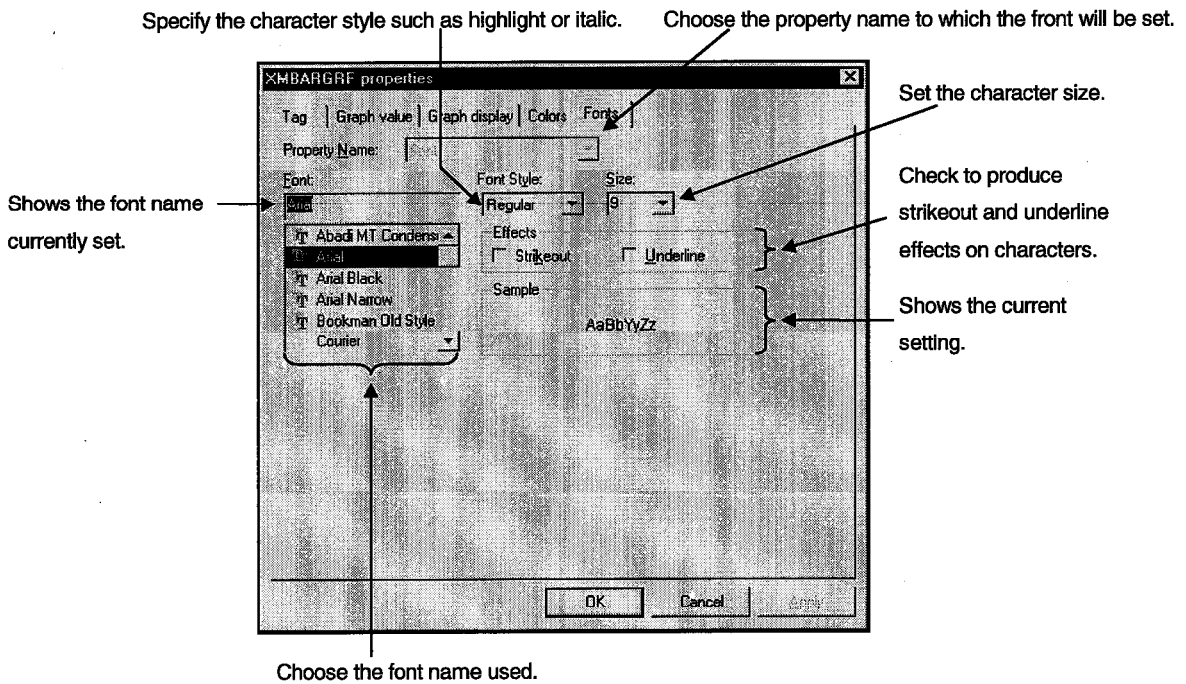
9.2 Property Page

This page appears when you choose the pasted XMOP custom control and click [Properties...] in the right-click menu.

(1) Tag



(2) Fonts

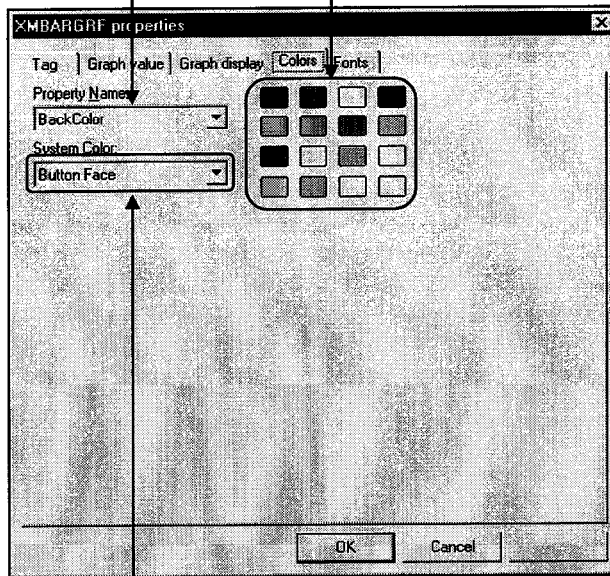


(3) Colors

Choose the property name to which the color will be set.

Choose the color used.

When the required color is not found, double-click the property name in the Properties window and select the color.



Specify the place where the color will be set.



9.3 Methods

This section explains various methods used with the custom controls.

Method Name	Returned Value	Argument	Description
DoClick	None	None	When this method is executed by VB, the "Click" event is generated by the specified control.
Refresh	None	None	When this method is executed by VB, redrawing is performed by the specified control.
SetPlcValue	LONG	None	Supported only by the word write and bit write custom controls. When this method is executed by VB, the data specified by the property is written. If an error occurs, it is returned as a returned value.
GetPlcValue	SHORT LONG STRING	None	When this method is executed by VB, the corresponding XMOP custom controls return the monitored device values of the PLC CPU. Note that the forms of the values returned by the custom controls used are as follows.  SHORT type Bit device operation custom control Event occurrence custom control Snap shot custom control Blink display custom control LONG type Level display custom control Comment display custom control Graphic display custom control Alarm display custom control Alarm sound output custom control Numeric data display/input custom control Line graph display custom control Trend graph display custom control Bar graph display custom control Pareto chart display custom control Numeric block data display/input custom control STRING type Character string data display/input custom control Character string block data display custom control

<b>POINT</b>
The GetPlcValue method cannot be used with the historical trend graph, alarm summary and clock display custom controls to acquire values. In addition, the GetPlcValue method cannot be used with the controls which do not perform device monitoring.

9.4 Monitoring Start and Stop Timings

Monitoring can be started and stopped in any of the following three patterns.

(1) Start

- 1) Monitoring starts when the form to which the custom control has been set appears.
- 2) Monitoring resumes when the "hidden (Hide)" form is "displayed".
- 3) Monitoring resumes when the MMonStop property of the custom control turns from True to False.

(2) Stop

- 1) Monitoring stops when the form to which the custom control has been set is closed (UNLOAD).
- 2) Monitoring stops when the form is "hidden (Hide)".
- 3) Monitoring stops when the MMonStop property of the custom control turns to True.  
(Data collection continues.)

Also note the following.

- When the form is unloaded  
It is erased from memory and reloaded when it is displayed next time.
- When the form is hidden (Hide)  
The form resides on memory but the XMOP custom control other than the following stops drawing.  
  

Ordinary collection of Trend graph display	Historical trend graph
Alarm summary	Event occurrence
- Monitoring stopped by the MMonStop property  
Monitoring is stopped per custom control and the stop/resume command can be given from the VB program.

POINTS
<ul style="list-style-type: none"> <li>• Since monitoring does not stop at other than the points noted above, the processing speed may be reduced under the influence of hidden windows if one window has a small number of monitoring points. In that case, exercise display window hiding, closing or other control in the VB program.</li> <li>• Data collection is not made when memory is not loaded with the form to which trend graph ordinary collection, alarm summary, event occurrence or other setting has been made. Also, to hide the form when ordinary collection is required, do not set Unload but set Hide.</li> </ul>

9.5 Events

Like the VB controls, the XMOP custom controls allow you to describe procedures executed by events.

Create these processing procedures in the code window.

The procedure name of each event is fixed.

Generated events change with the custom controls.

The XMOP custom controls have the following event generating functions.

(1) Generated event list classified by custom controls

Custom Control Name (OCX)	Click	Drag drop	Drag over	Lost focus	Get focus	Numeric change	Write	Error	Upper limit excess	Lower limit excess	Alarm	Bit monitor	Scroll	Snap shot	Clock
Graphic display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>							
Blink display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>							
Comment display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>							
Level display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>				
Line graph display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Trend graph display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Bar graph display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Pareto chart display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>							
Historical trend graph display								<input type="checkbox"/>							
Numeric block data display/input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		
Character string block data display/input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					<input type="checkbox"/>		
Numeric data display/input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Character string data display/input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
Bit device operation (bit input)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>							
Word write							<input type="checkbox"/>	<input type="checkbox"/>							
Bit write							<input type="checkbox"/>	<input type="checkbox"/>							
Event occurrence								<input type="checkbox"/>				<input type="checkbox"/>			
Snap shot		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>						<input type="checkbox"/>	
Alarm display	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>							
Alarm sound output						<input type="checkbox"/>		<input type="checkbox"/>							
Alarm summary display		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>							
Error								<input type="checkbox"/>							
Clock display		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>							<input type="checkbox"/>

(2) Event details

Event Name	Procedure	Event Occurrence Timing
Click	Click	When a control is clicked.
Drag drop	DragDrop	Must not be used.
Drag over	DragOver	Must not be used.
Get focus	GotForcus	When an object acquired a focus.
Lost focus	LostForcus	When an object lost a focus.
Numeric change	MPlcChange	When the device set to any custom control has changed from the value read just before.
Write	MWrite	When the custom control data having the write function is written. (Occurs after write is over.)
Error	MError	When any custom control has detected an error.
Upper limit excess	MUpper	When the device value has risen above the upper limit setting.
Lower limit excess	MLower	When the device value has fallen below the lower limit setting.
Alarm	MEmergency	The level displayed has risen above the upper limit alarm level or fallen below the lower limit alarm level.
Scroll (vertical)	MVscroll	When the scroll bar (vertical) is moved in block data display.
Scroll (horizontal)	MHscroll	When the scroll bar (horizontal) is moved in block data display.
Bit monitor	MBitAction	When the device changed in bit monitoring.
Snap shot	MSnapShot	When snap shot is made.
Clock	MClock	Per unit (second) set by the user in the clock display custom control.

**POINT**

The DragDrop and DragOver events are not supported by the XMOP custom controls.  
In addition, the DragMode property cannot be run in the automatic mode (1-Automatic).

Example: Displaying Form2 if the device value exceeds 30000 in numeric data display

```

Sub XMNumdat1_MPlcChange( )
    If XMNumdat1.GetPlcValue > 30000 Then      'Current value comparison
        Form2. Show 1                          'Form2 display
    End If
End Sub
    
```

XMNumdat1 : Object name of numeric display/input OCX  
 XMNumdat1.GetPlcValue : Method which acquires the current value of numeric display

## 9.6 Examples of Using the Custom Controls

The custom controls provided by XMOP may be used in the following applications.

**Graphic display custom control**

- Represents on the screen the image of a product sequence in an FA line.
- Represents machining processes using figures.
- Shows alarm information using figures.

**Blink display custom control**

- Represents machine and other faults in an FA line.

**Comment display custom control**

- Shows the comments of operating states.
- Shows the comments of alarm information.

**Level display custom control**

- Indicates remaining amounts in factory tanks.

**Line graph display custom control**

- Shows productions in the whole line as a line graph.
- Shows the numbers of malfunctions in the whole line as a line graph.
- Shows productions product-by-product as a line graph.
- Shows the numbers of malfunctions product-by-product as a line graph.

**Trend graph display custom control**

- Shows laboratory temperature transitions as a trend graph.
- Shows productions product-by-product as a trend graph.
- Shows productions in the whole line as a trend graph.
- Shows the numbers of malfunctions product-by-product as a trend graph.
- Shows the numbers of malfunctions in the whole line with a trend graph.

**Bar graph display custom control**

- Shows remaining amounts in factory tanks in batches.
- Shows production quantities product-by-product.

**Pareto chart display custom control**

- Shows fault causes as a Pareto chart.
- Shows production results as a Pareto chart.

**Historical trend graph display custom control**

- Shows the past production quantities.
- Shows a malfunction history on a daily basis.
- Shows a production quantity history on a daily basis.

**Numeric block data display/input custom control**

- Shows real-time productions in batches.
- Shows/enters various parameter data in batches.

**Character string block data display/input custom control**

- Shows manufactured product names line-by-line in batches.
- Shows/enters character string parameters in batches.

**Numeric data display/input custom control**

- Shows a real-time production.
- Production command
- Shows/enters parameter data.

**Character string data display/input custom control**

- Shows/enters a character string parameter.

**Bit operation custom control**

- Production command
- Button control using a switch

**Word write custom control**

- Writes a numeric value to the word device which uses VB (e.g. production command, batch parameter write).

**Bit write custom control**

- ON/OFF control of the bit device which uses VB (e.g. operation start/stop processing).

**Event occurrence custom control**

- Starting of a remedy due to trouble occurrence
- Screen switching by bit device

**Snap shot custom control**

- Saving/printing of fault condition
- Saving/printing of final production condition



**Alarm display custom control**

- Shows the operating status, etc. of an FA line.
- Alerts the operator to a fault by indication and sound using the voice function.



**Alarm sound output custom control**

- Alerts the operator to a fault using the voice function.



**Alarm summary display custom control**

- Shows FA line fault conditions in batches.



**Error custom control**

- Alerts the operator to all errors that occurred in the tag management process.



**Clock display custom control**

- Shows the system clock data of a personal computer on the control.
- Shows/writes the clock data of the specified PLC.

