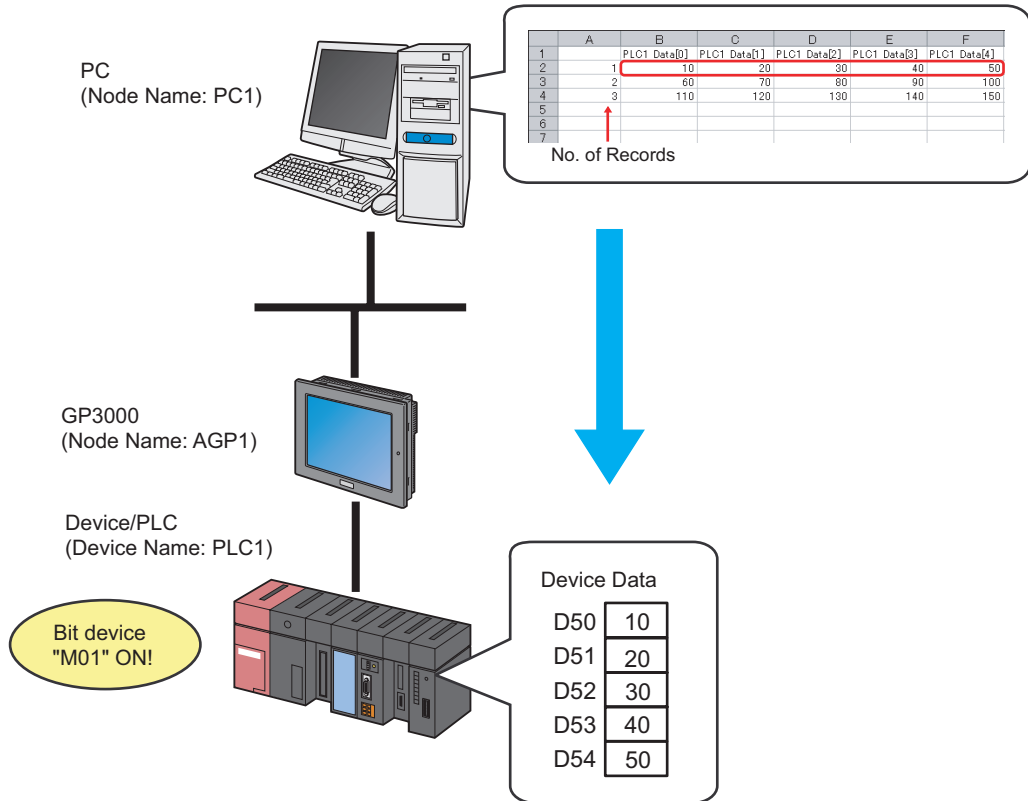# 11.1   Try to Write Recipe Data in Device/PLC
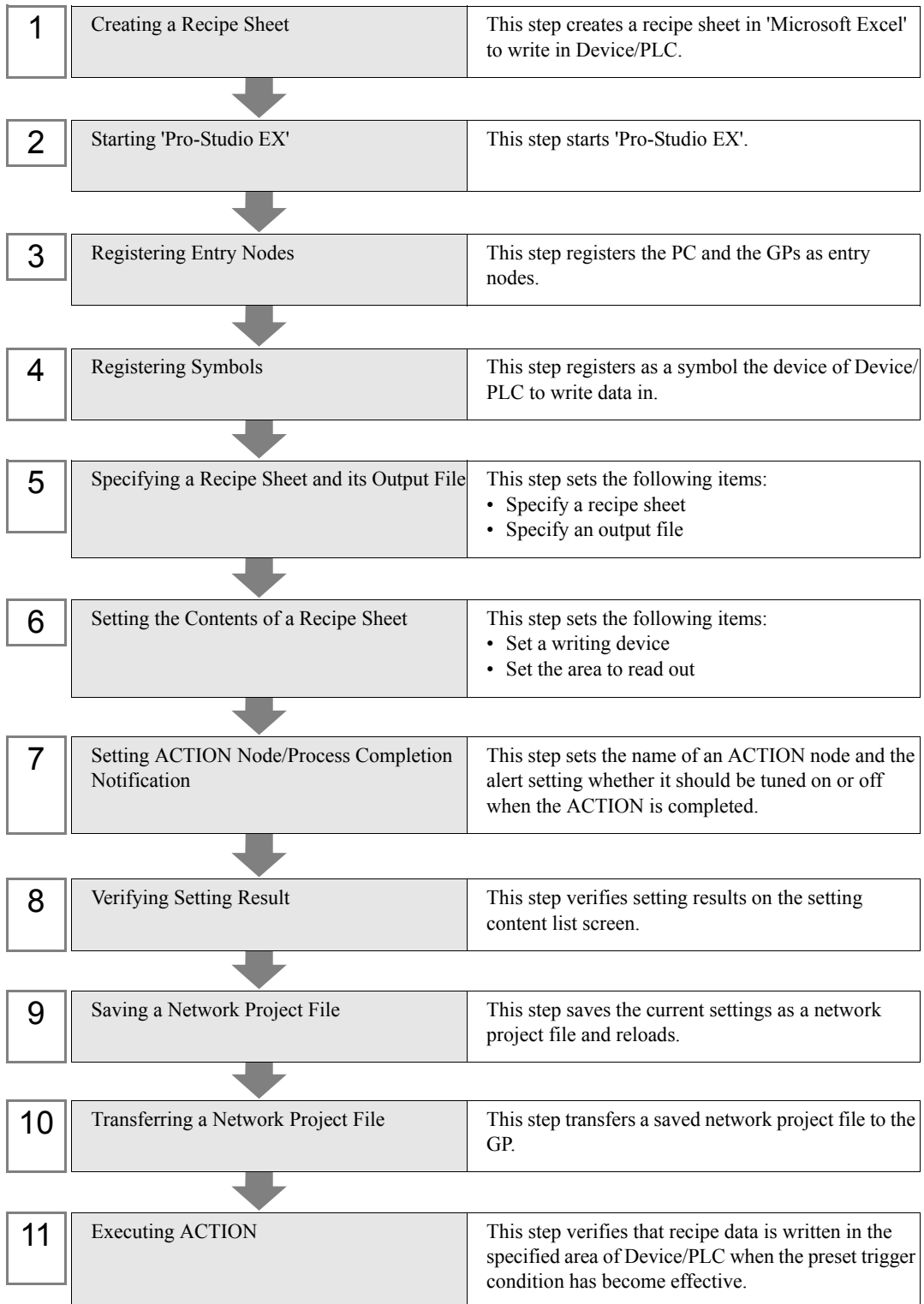
[Action Example]

Detect the rising of the trigger device (bit device: "M01") of Device/PLC and write recipe sheet data created in Excel into 5 devices (word device: address "D50" to "D54") of Device/PLC.

(Example) Writing the data of record No. "1" of a recipe sheet.

This section describes the setting procedures for executing the above action (ACTION) as an example.

[Setting Procedure]

1	Creating a Recipe Sheet	This step creates a recipe sheet in 'Microsoft Excel' to write in Device/PLC.
2	Starting 'Pro-Studio EX'	This step starts 'Pro-Studio EX'.
3	Registering Entry Nodes	This step registers the PC and the GPs as entry nodes.
4	Registering Symbols	This step registers as a symbol the device of Device/PLC to write data in.
5	Specifying a Recipe Sheet and its Output File	This step sets the following items: • Specify a recipe sheet • Specify an output file
6	Setting the Contents of a Recipe Sheet	This step sets the following items: • Set a writing device • Set the area to read out
7	Setting ACTION Node/Process Completion Notification	This step sets the name of an ACTION node and the alert setting whether it should be tuned on or off when the ACTION is completed.
8	Verifying Setting Result	This step verifies setting results on the setting content list screen.
9	Saving a Network Project File	This step saves the current settings as a network project file and reloads.
10	Transferring a Network Project File	This step transfers a saved network project file to the GP.
11	Executing ACTION	This step verifies that recipe data is written in the specified area of Device/PLC when the preset trigger condition has become effective.

11.1.1 Creating a Recipe Sheet

This step creates a recipe sheet where data to write in Device/PLC exists.

1 Start 'Microsoft Excel' and create the recipe sheet below in Sheet 1.

[Creation Example]

"Symbol Name" insert field

	A	B	C	D	E	F
1						
2		10	20	30	40	50
3		60	70	80	90	100
4		110	120	130	140	150
5						

"No. of Records" insert field   Recipe data

Leave both spaces for "Symbol Name" (Cells B1 to F1) and those for "Record No." (Cells A2 to A4) blank for these will be automatically allotted and filled in after completing the setting.

NOTE	• You can prepare multiple recipe data on Excel.
	Allot a record No. for each recipe to specify data to write in Device/PLC. For details, refer to "11.1.6 Setting the Contents of a Recipe Sheet" mentioned later.

2 Save the recipe sheet with the file name "recipe.xls" on PC desktop after creating.

NOTE	• You can create a recipe sheet in the direction (horizontal) as shown below.

"No. of Records" insert field

	A	B	C	D
1				
2		10	60	110
3		20	70	120
4		30	80	130
5		40	90	140
6		50	100	150
7				

"Symbol Name" insert field   Recipe data

11.1.2   Starting 'Pro-Studio EX'

This step starts 'Pro-Studio EX'.

Refer to "3 Trial of Pro-Server EX" for details about starting method.

11.1.3   Registering Entry Nodes

This step registers the PC and the GP connected with network as nodes.

Refer to "29 Node Registration" for details about entry nodes.

Node Name   :PC1

IP Address   :192.168.0.1
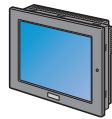
Node Name   :AGP1

IP Address   :192.168.0.100

Device/PLC Information

Ex.

Entry node	Setting item	Setting example
PC	Node Name	PC1
	IP Address	192.168.0.1
GP	Type	GP3000 series
	Node Name	AGP1
	IP Address	192.168.0.100

11.1.4   Registering Symbols

This step registers as a symbol the device address of Device/PLC to which device data is written.

Refer to "30 Symbol Registration" for details about symbols.
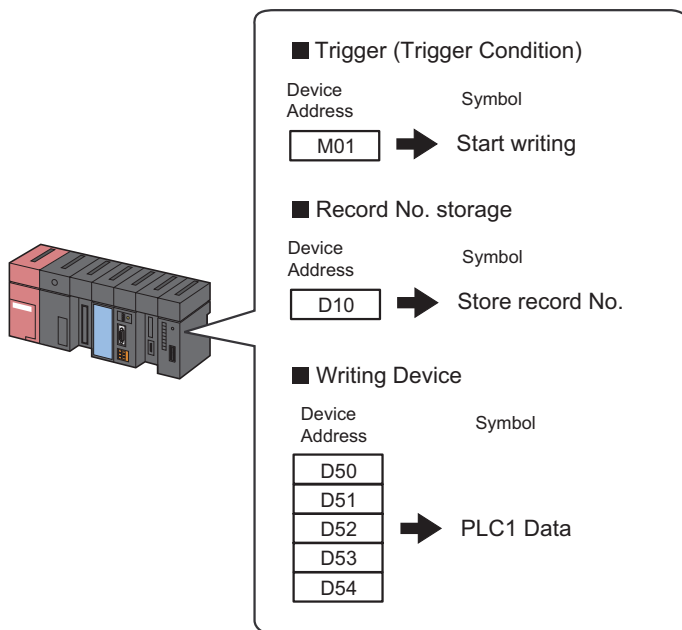
///// Ex. /////

• Trigger (Trigger Condition)

Setting item	Setting content
Symbol Name	Start writing
Data Type	Bit
Device address for symbol registration	"01" of Device/PLC (PLC1)
No. of Devices	1

• Record No. storage

Setting item	Setting content
Symbol Name	Record No. Storage
Data Type	16Bit (Unsigned)
Device address for symbol registration	"10" of Device/PLC (PLC1)
No. of Devices	1

• Writing Device

Setting item	Setting content
Symbol Name	PLC1 data
Data Type	16Bit (Signed)
Device address for symbol registration	"D50" to "D54" of Device/PLC (PLC1)
No. of Devices	5

11.1.5   Specifying a Recipe Sheet and its Output File

This step specifies the pre-created recipe sheet and its output file.

Refer to "11.3 Setting Guide" for more details.

Ex.

Setting item		Setting content
Specify a Template	Template File	C:\Documents and Settings\Administrator\Desktop\recipe.xls
Output File	Folder Name	C:\Documents and Settings\Administrator\Desktop
	File Name	Recipe write.xls
	Start with the output file checked	Not checked

1 Click the [Feature] icon on the toolbar.
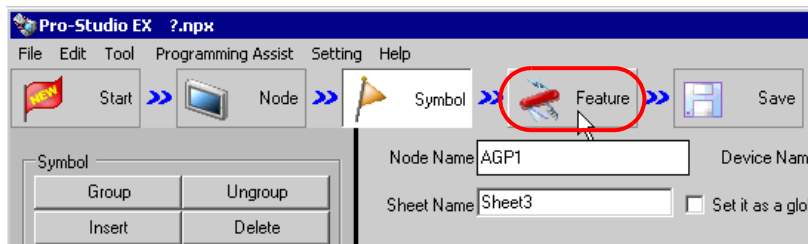
2 Select [ACTION] from the tree display on the left of the screen, then click the [Add] button.
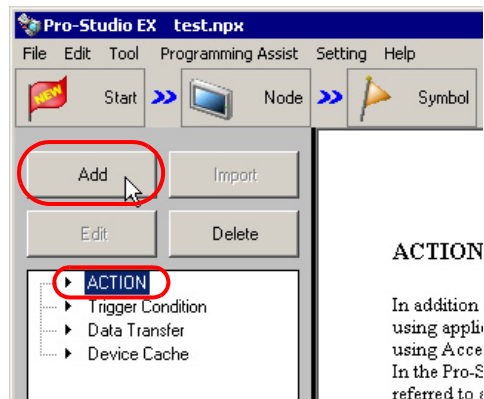
3 Click the [ACTION Type] list button, and select "Create form using EXCEL".

Then, enter the name of ACTION to set in the [ACTION Name] field. In this example, enter "Recipe write".

NOTE • [ACTION Name] can be an arbitrary name.
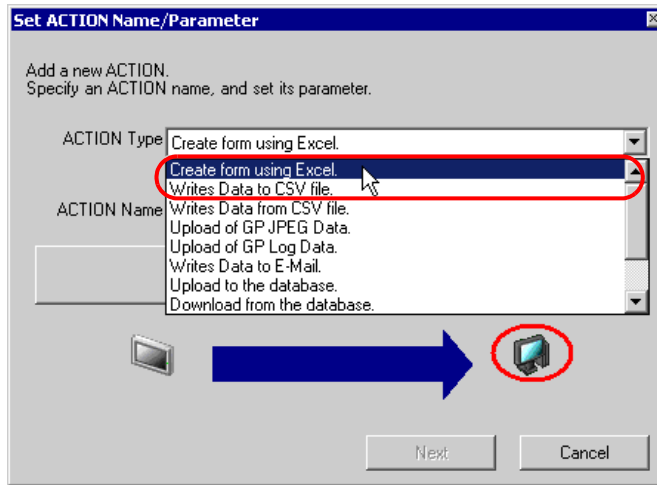
4 Click the [Click here to set ACTION parameter] button.
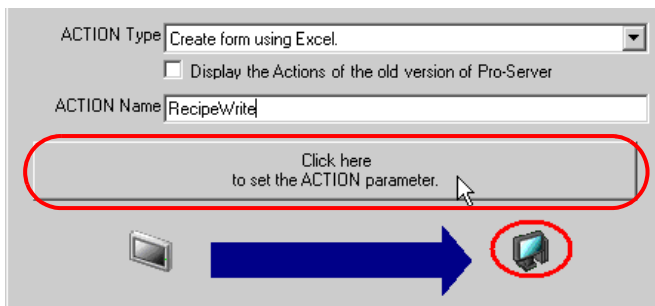
5 Make settings regarding an Excel template and its output file.

   1) Click the [More] button of [Template file] to set the template file "templete.xlt" which you created.
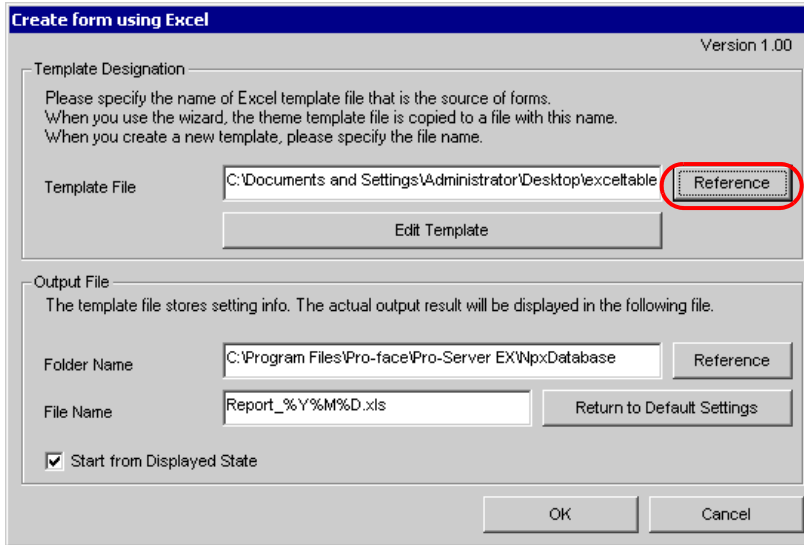
   2) Click the [More] button of [Folder Name] and specify "Desktop" as a folder to save the output file.
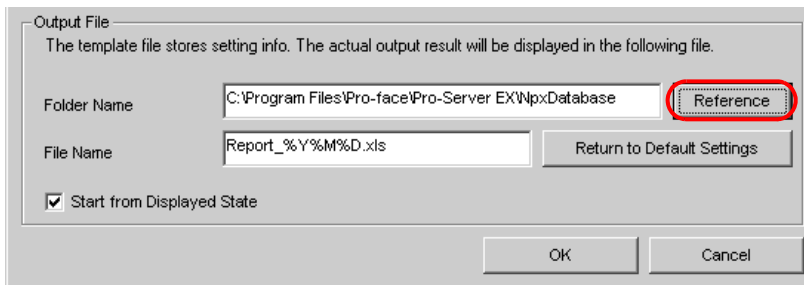
   3) Set the file name "Recipe write.xls" in the [File Name] field for the output file to set.
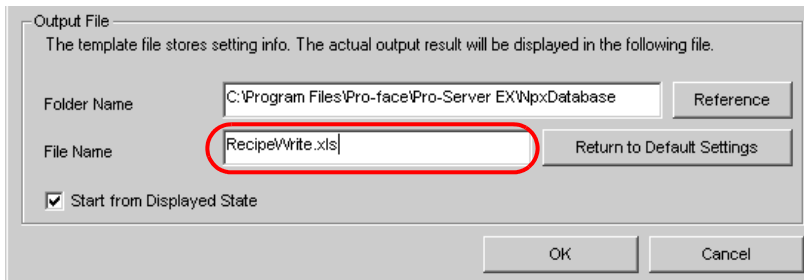
11.1.6 Setting the Contents of a Recipe Sheet

This step sets the contents of a recipe sheet for writing data to Device/PLC.

The example below shows the setting of data write area (recipe area) of a recipe sheet.

Refer to "11.3 Setting Guide" for more details.

Device address/Symbol name will be displayed.

Data direction

Record No. will be inserted.

Target Cell Range

Ex.
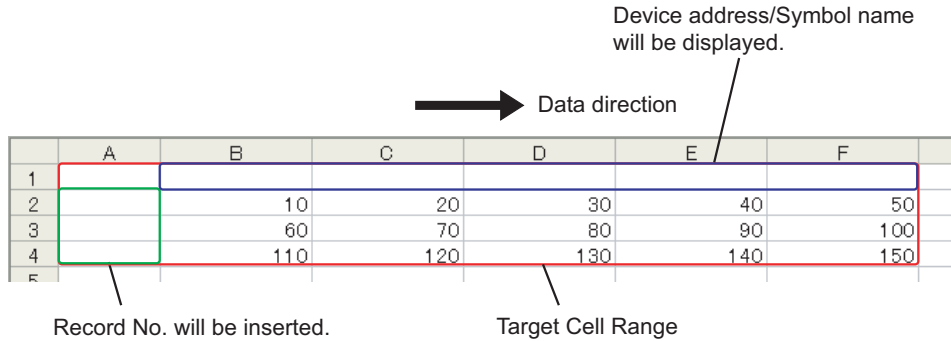
Setting item	Setting content
Entry Node	AGP1
Device Name	PLC1
Device Address/Symbol Group	PLC1 data
Add Device Address/ Symbol Name	Checked
Target Cell Range	A1 to F4
Data Direction	Specify the direction of record No.s as "Vertical".
Trigger Condition Name	Turn on write start bit
Trigger Condition	When "Start writing" (M01) is ON

1 Click the [Edit Template] button.
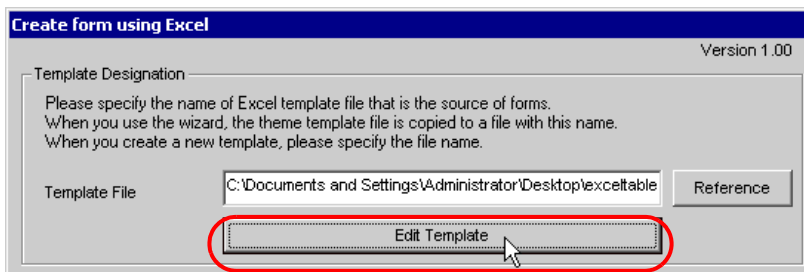
The recipe sheet appears.

2 Set a data write area.

1) Click the [Recipe Area] icon on Excel.
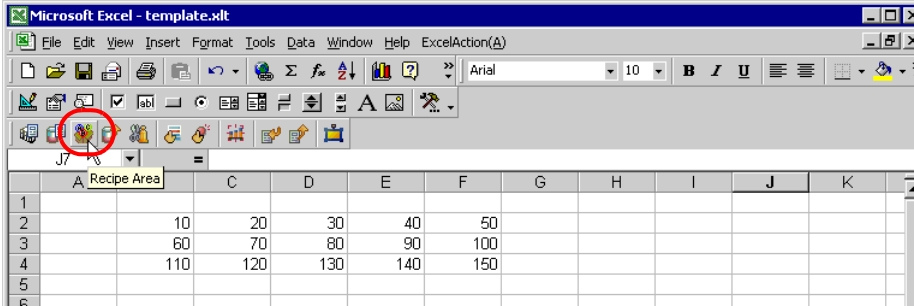
NOTE
• Selecting "Recipe Area" from [Excel ACTION] of the menu displays the same screen.
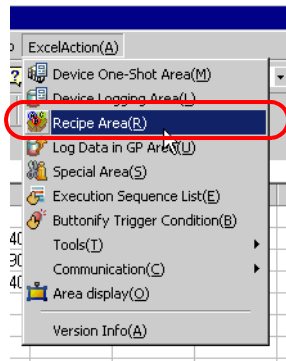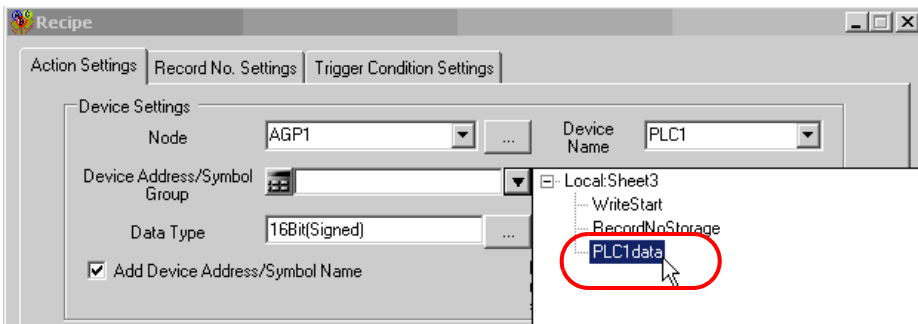

2) Click the list button of [Entry Node] and select "AGP1" as a data transfer destination node.
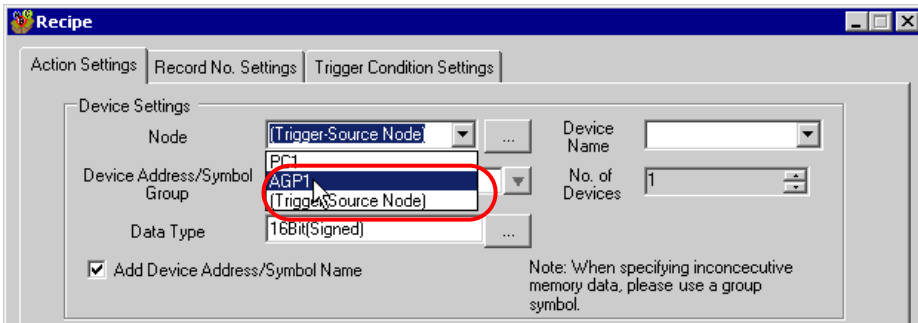
3) Click the list button of [Device Name] and select "PLC1" as a data transfer destination device.
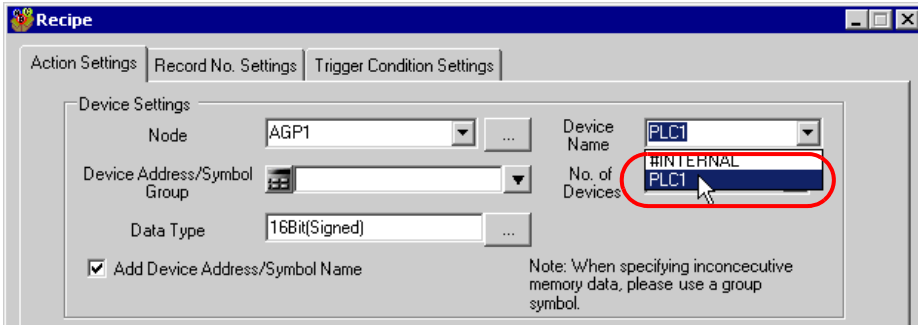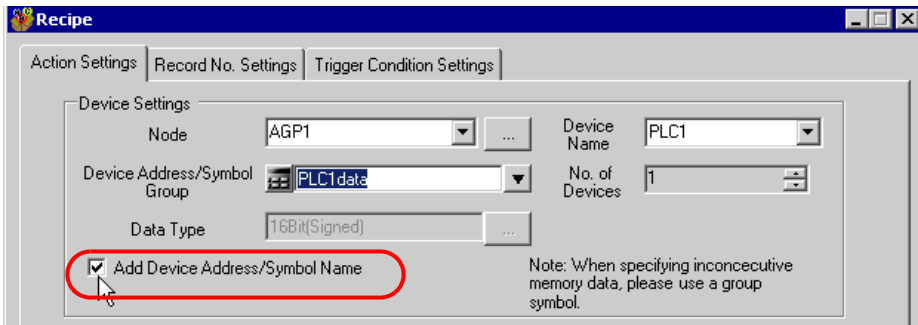

4) Click the list button of [Device Address/Symbol Group] and select "PLC1 data" as a symbol of the data to write in.

The device number "1" will be automatically entered in [No. of Devices], and "16Bit(Signed)" in [Data Type].
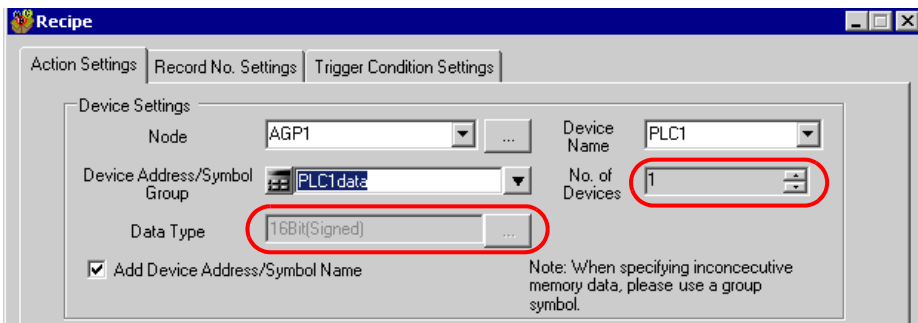
5) Check [Add Device Address/Symbol Name].

NOTE
• The Device Address/Symbol Name will be reflected in the template after "11.1.9 Saving a Network Project File" mentioned later.

6) Click the cell range specify button of [Target Cell Range].
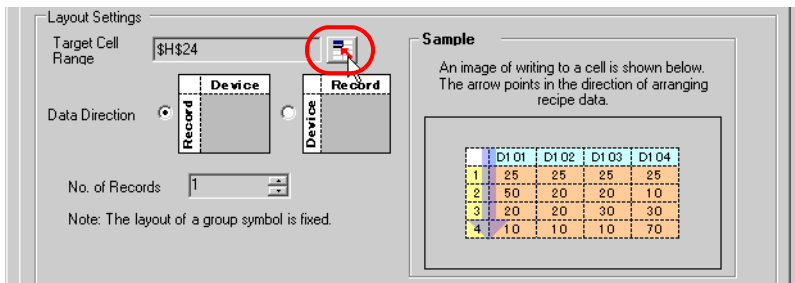
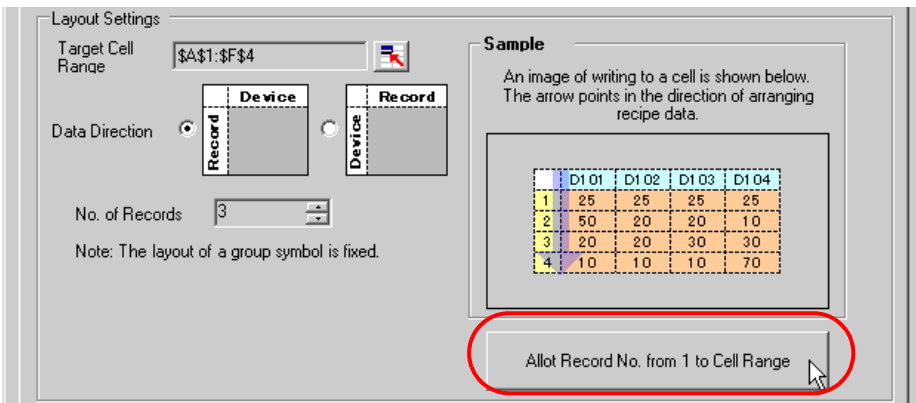7) Drag the mouse to specify the data write area (cells A1 to F4). Then click the [OK] button.
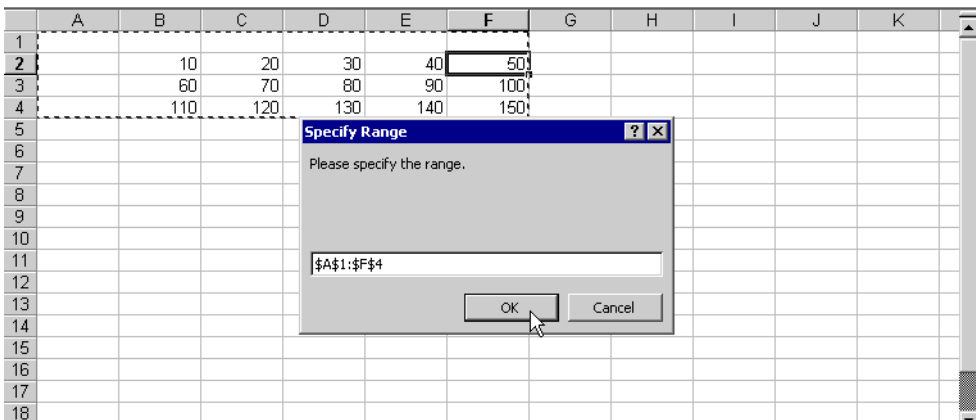
NOTE
• When specifying the area, cover the cells to insert record No.s and Device Address/Symbol Names.

8) Select "Vertical" of [Data Direction].
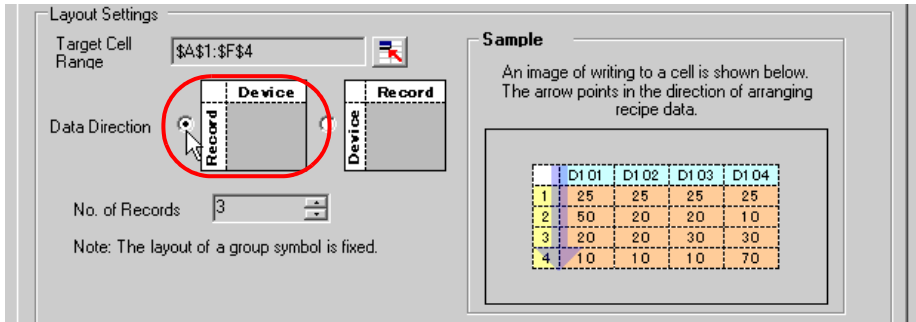
9) Click [Allot Record No. from 1 to Cell Range].

NOTE • Specify the recipe data to write in Device/PLC with record No.s This example allots record No.s to the recipe data.

Record No.s and ruled lines are automatically added on the recipe sheet.

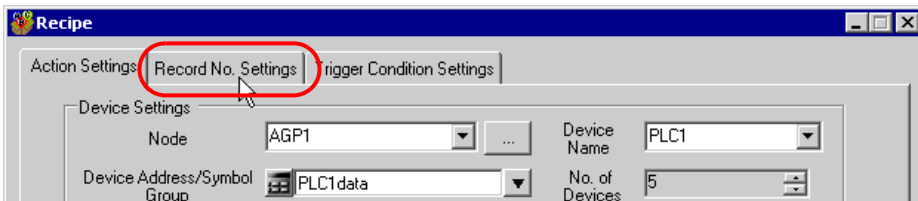|	A	B	C	D	E	F
1		PLC1data[0]	PLC1data[1]	PLC1data[2]	PLC1data[3]	PLC1data[4]
2	1	10	20	30	40	50
3	2	60	70	80	90	100
4	3	110	120	130	140	150

3 Specify a record No.

Specify the recipe data by entering a record No. in the symbol "Record No. Storage" from GP or Device/PLC.
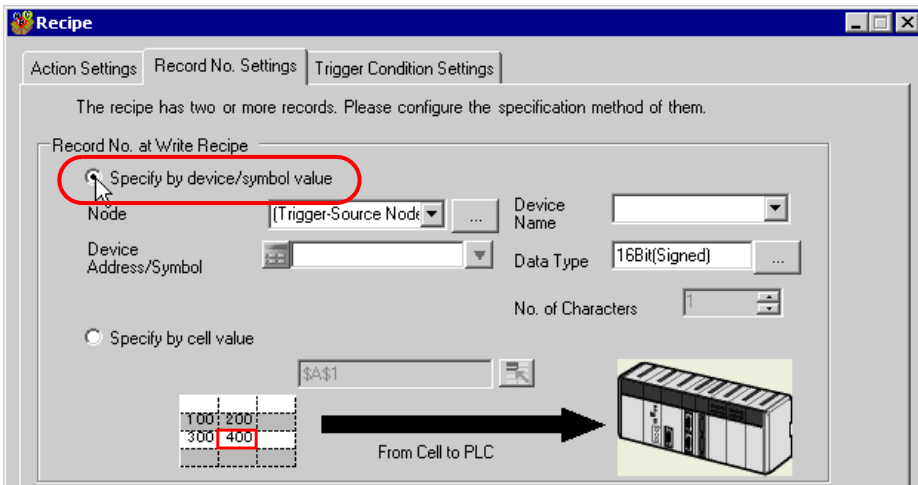
(Example) In case of storing device data "1" in the device "Record No. Storage".

Write data of record No. "1"
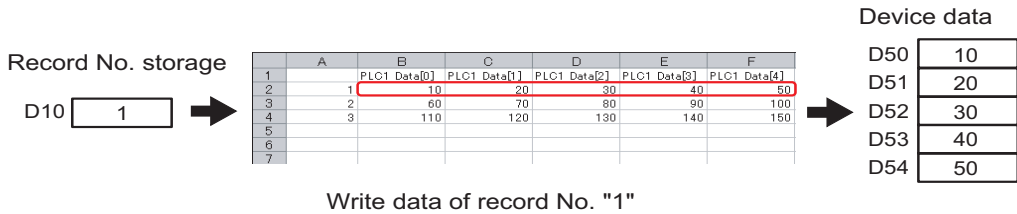
1) Click the [Record No. Settings] tab.

2) Click "Specify by Device/Symbol Values" in [Record No. at Write Recipe].

| NOTE	• If you select [Specify by cell value], specify any cell on Excel. The number entered in the cell is recognized as the record No. Refer to "11.3 Setting Guide" for more details.

3) Click the list button of [Entry Node] and select the node name "AGP1" which has the Device/PLC to store the record No.
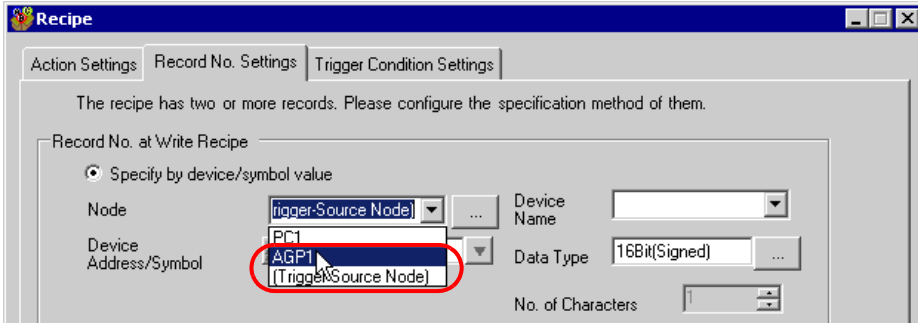
4) Click the list button of [Device Name] and select the Device/PLC "PLC1" to store the record No.
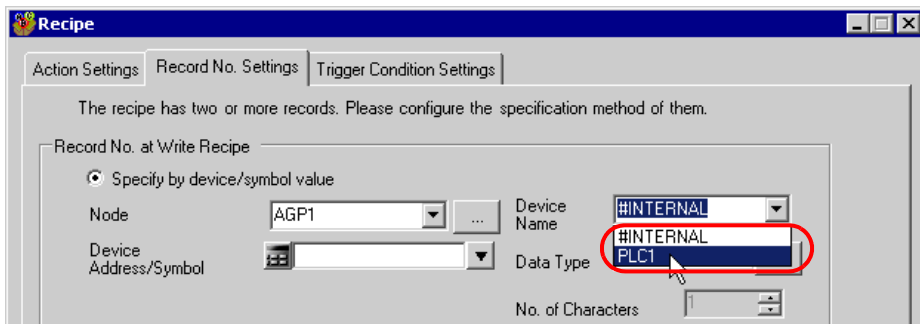
5) Click the list button of [Device Address/Symbol] and select the symbol name "Record No. Storage" of the device to store the record No.
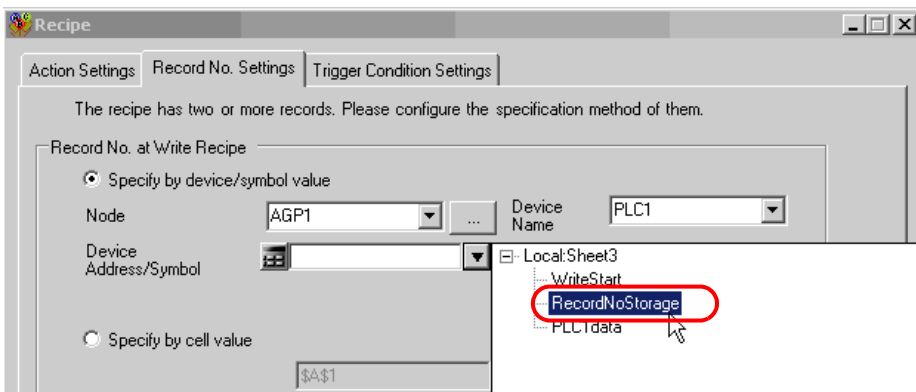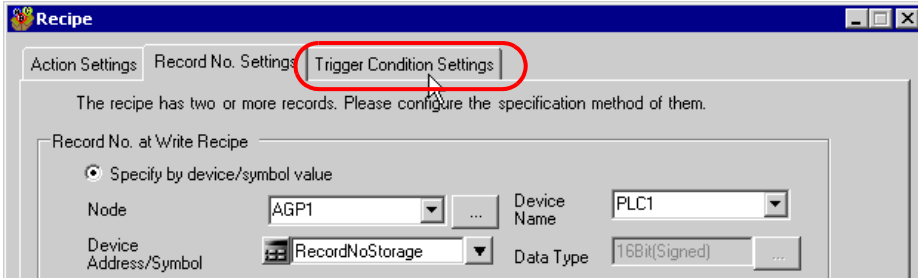
The device data type "16Bit(Unsigned)" will be automatically entered in [Data Type].
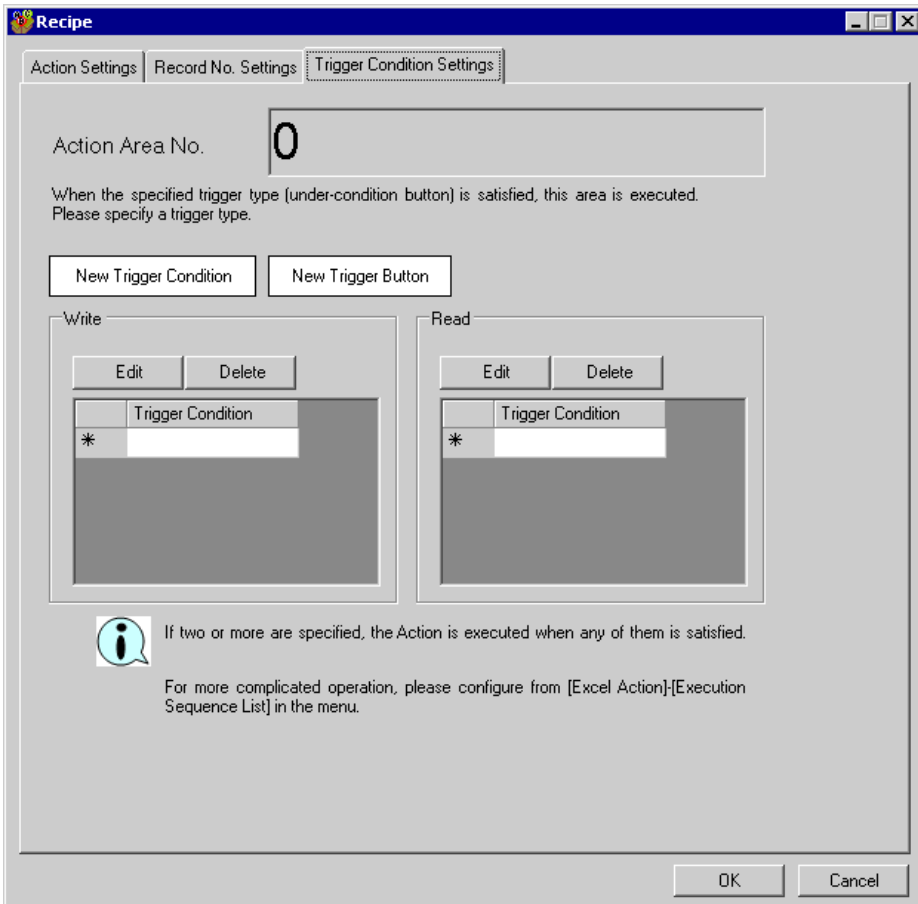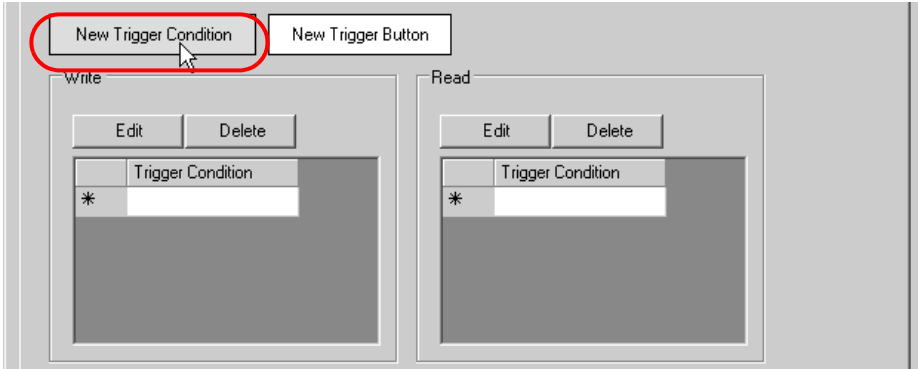
4 Set trigger conditions.

1) Click the [Trigger Condition Settings] tab.
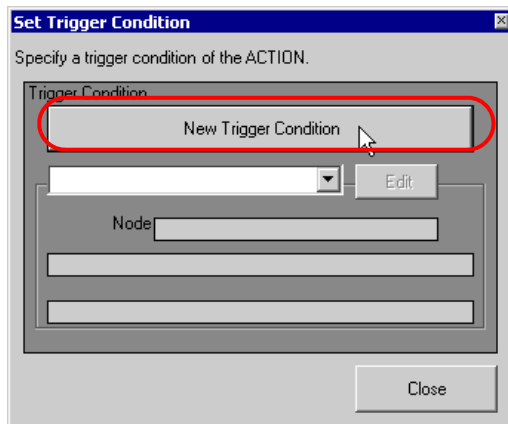

The "Trigger Condition Settings" screen will appear.
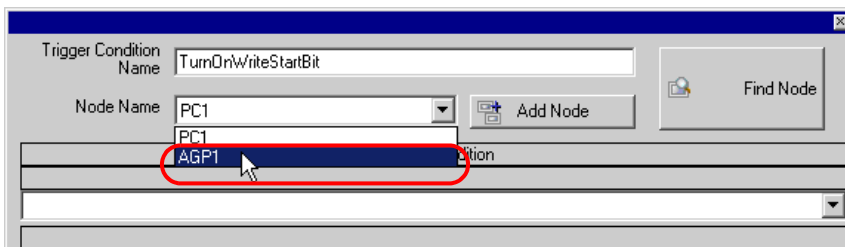
2) Click the [New Trigger Condition] button.

NOTE
- You can also activate ACTION by placing a button on Excel from [New Trigger Button] and clicking it. Refer to "11.3 Setting Guide" for more details.
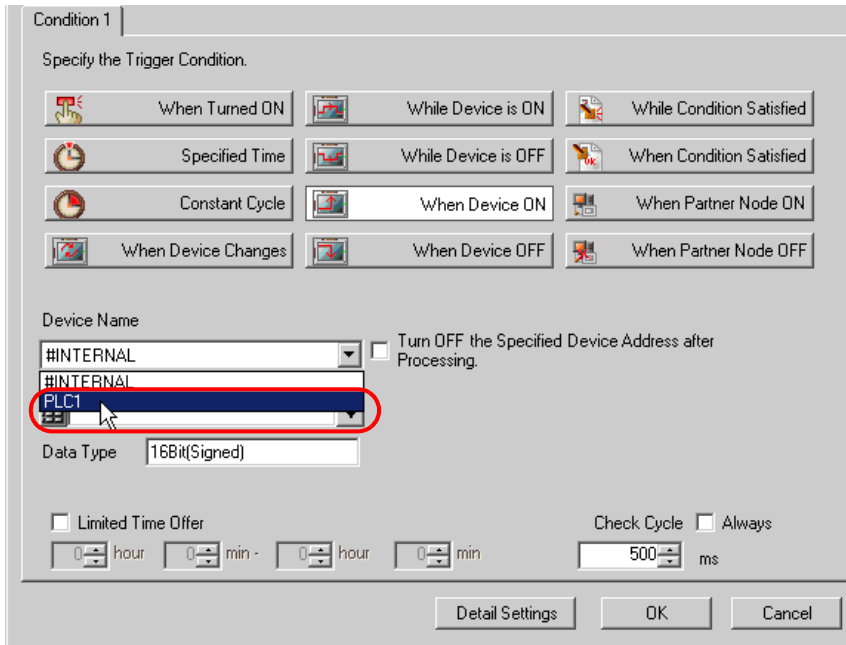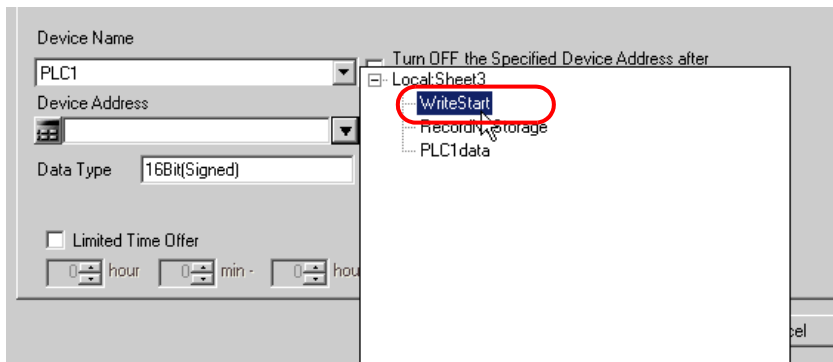
3) Click the [New Trigger Condition] button.

4) Enter the trigger condition name "Turn on write start bit" in [Trigger Condition Name], and select "AGP1" in [Node Name] as a name of the data transfer source.

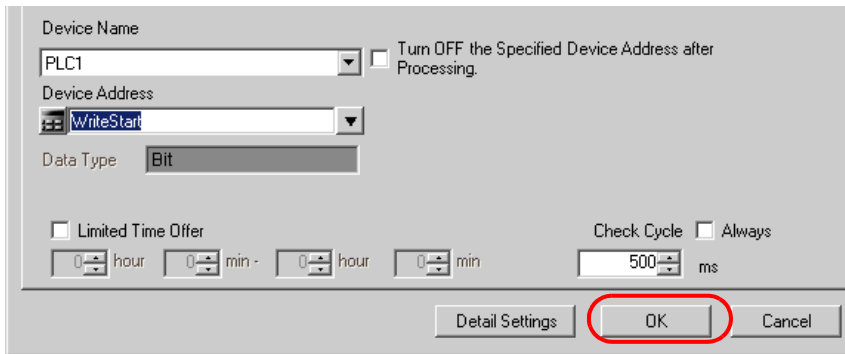5) Click the [When Device ON] button in the [Condition 1] tab and select "PLC1" for the device name.

6) Click the [Device Address] list button and select "Start writing" for the device symbol name which serves as the trigger.
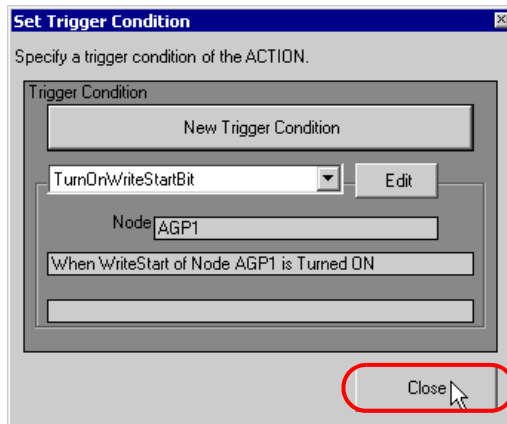

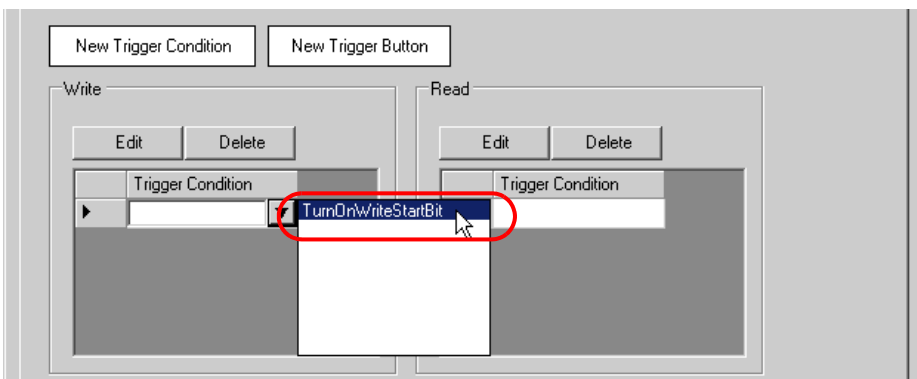[Data Type] automatically appears after selection, too.
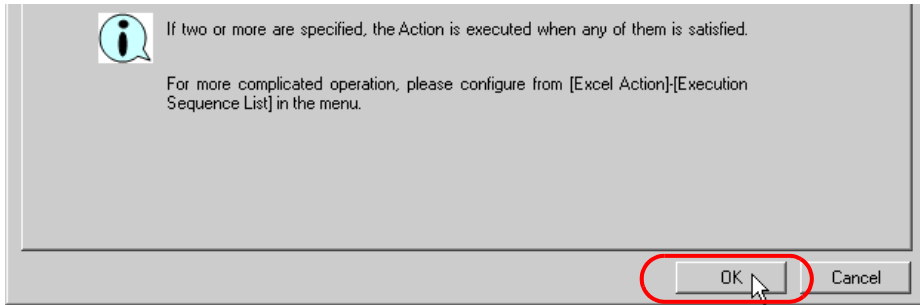
7)　Click the [OK] button.

8)　Click the [Close] button.

9)　Click the blank line of [Write] and select "Turn on write start bit" as a trigger condition.

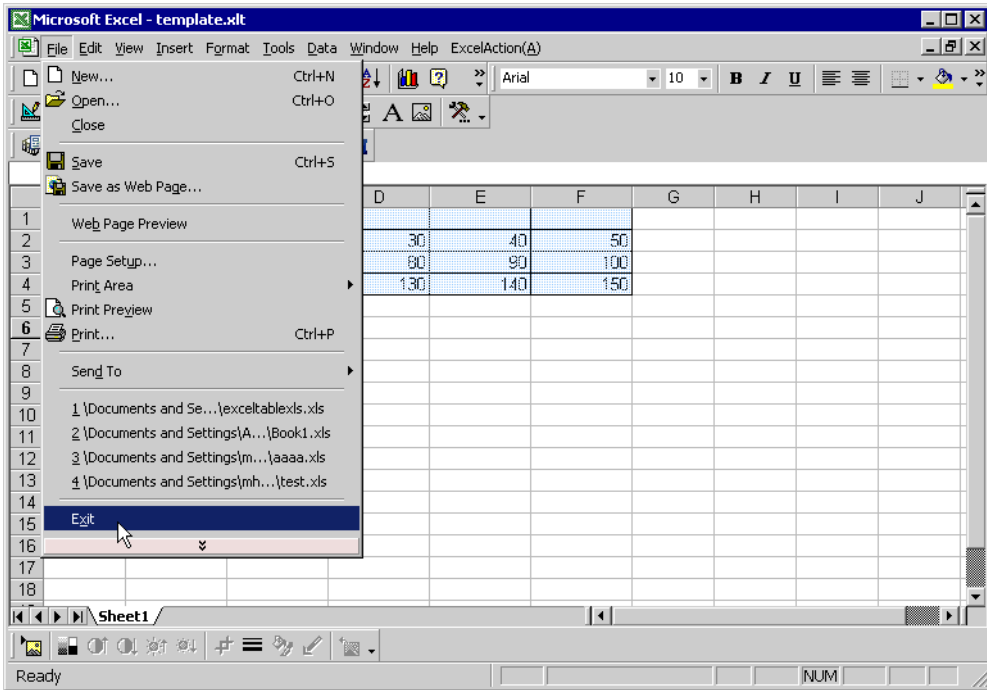10) Click the [OK] button.

11) Click the [OK] button.

NOTE • Here the dialog box will appear because no network project file is loaded to 'Pro-server EX'. This is not a problem, however.
The file will be loaded in "11.1.9 Saving a Network Project File mentioned later.

This is the end of the content settings of a recipe sheet.

NOTE • Can display Data/Time on an Excel sheet.

)☞ "5.2 Writing Date/Time in a Form"

• Can display arrows on an Excel sheet.

)☞ "5.3 Writing Arrows in a Form"

• Can display a trigger source node on an Excel sheet.

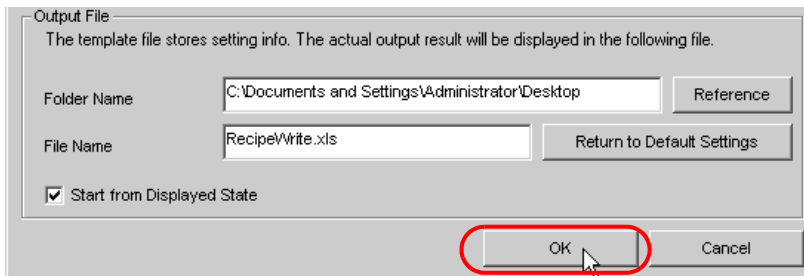)☞ "5.4 Writing Trigger Source Node Names in a Form"

5 Close 'Excel'.

The following dialog box will appear, asking you if you want to save changes before closing. Click the [Yes] button.
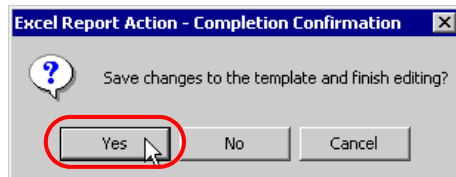
6 On the "Create a Form Using Excel" screen, click the [OK] button.

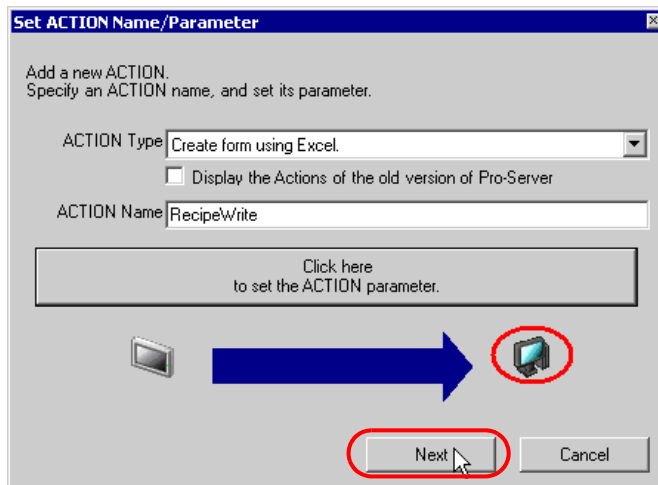## 11.1.7 Setting ACTION Node/Process Completion Notification

This step sets the name of an ACTION node and the alert setting whether it should be tuned on or off when the ACTION is completed.
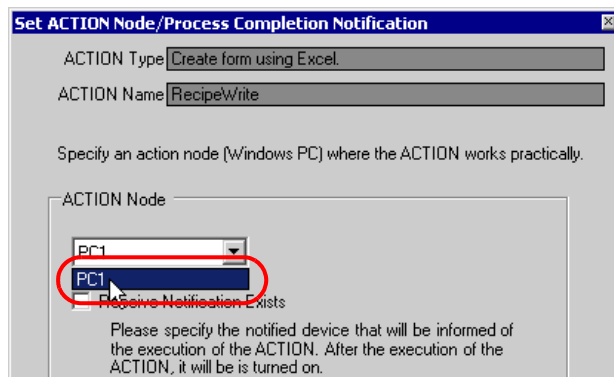
Ex.

- ACTION Node : PC1
- Receive Notification: OFF

1 On the "ACTION Name/Parameter Settings" screen, click the [Next] button.

2 Click the list button of [Action Node] and select "PC1" as a node where ACTION operates.

3 Turn off the [Receive Notification Exists] check box, if checked.
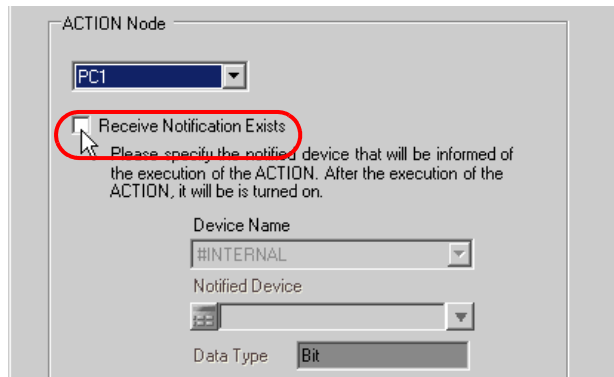
NOTE	• Do not set "Receive Notification".

4 Click the [End] button.

The "ACTION Node/Process Completion Notification Settings" screen will disappear. On the left of the screen, the name of ACTION you set will appear.
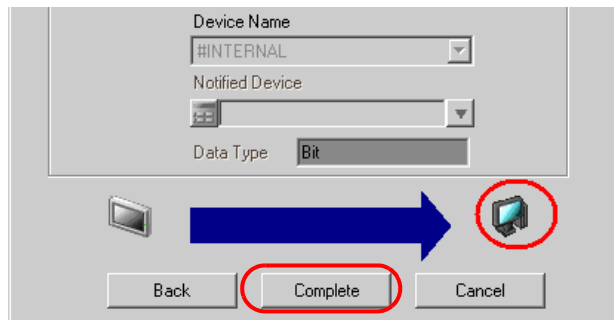
This is the end of the settings of the ACTION node and process completion notification.

11.1.8　Verifying Setting Result

This step verifies setting results on the setting content list screen.

1 Select the ACTION name "Recipe write" from the tree display on the left of the screen.
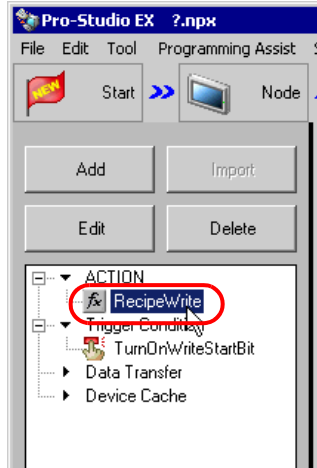
Confirm that the setting content appears on the right of the screen.
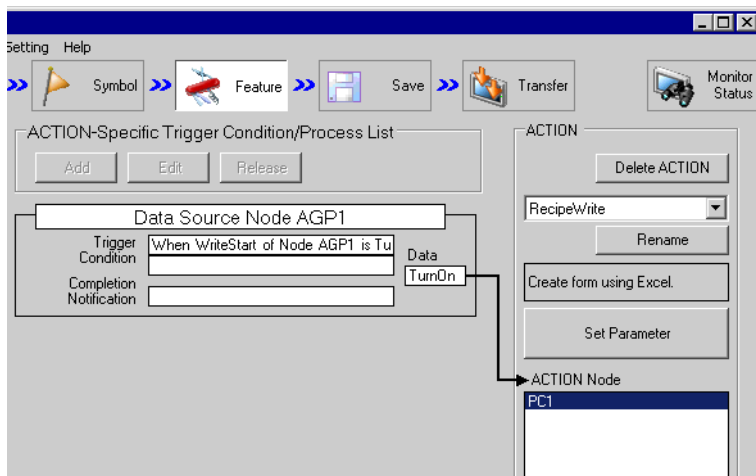
2 Select the trigger condition name "Turn on write start bit" from the tree display on the left of the screen.

Confirm that the setting content appears on the right of the screen.

This is the end of the verification of the settings.

11.1.9   Saving a Network Project File

This step saves the current settings as a network project file and reloads to 'Pro-Server EX'.

Refer to "24 Saving" for details about saving a network project file.
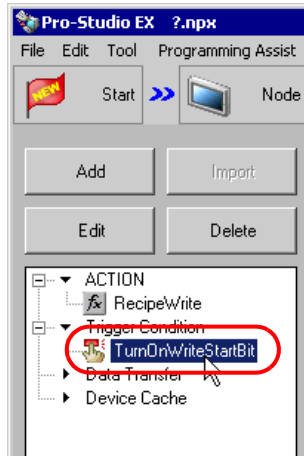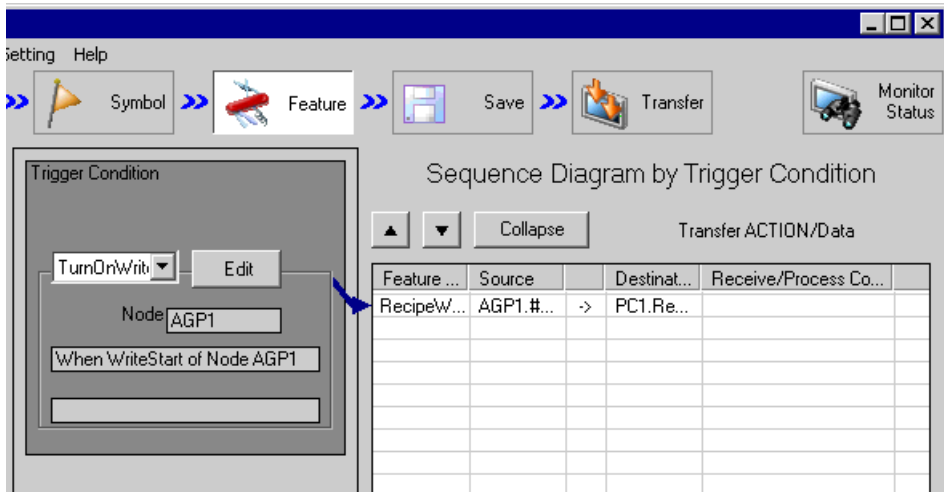
> IMPORTANT • 'Pro-Server EX' reads a created network project file, and then executes ACTION
> according to the settings in the file. The settings therefore need be saved in the network
> project file.
> • Be sure to reload the network project file to 'Pro-Server EX' If not, ACTION will not work.

Ex.

• Path of network project file   : Desktop\monitor.npx
• Title   : EXCEL Report ACTION

11.1.10   Test Write

You can check if the settings are correct before transferring a created network project file to entry nodes.

> NOTE • You do not necessarily have to perform a test write.
> If you skip this, proceed to "11.1.11 Transferring a Network Project File".

> IMPORTANT • Note that the data will be actually written in the Device/PLC when you specify the device
> of Device/PLC as a write destination.
> • To perform a test write, it is necessary that 'Pro-Server EX', to which a created network
> project file has been loaded, is running.

1 Click the [Feature] button.

2 Click "Excel Report ACTION" from the tree display on the left of the screen, then click the [Edit] button.

3 On the "ACTION Name/Parameter Settings" screen, click the [Click here to set ACTION parameter] button.

4 On the "Create a Form Using Excel" screen, click the [Edit Template] button.

5 With the ACTION area selected, click the [Test Write] icon.
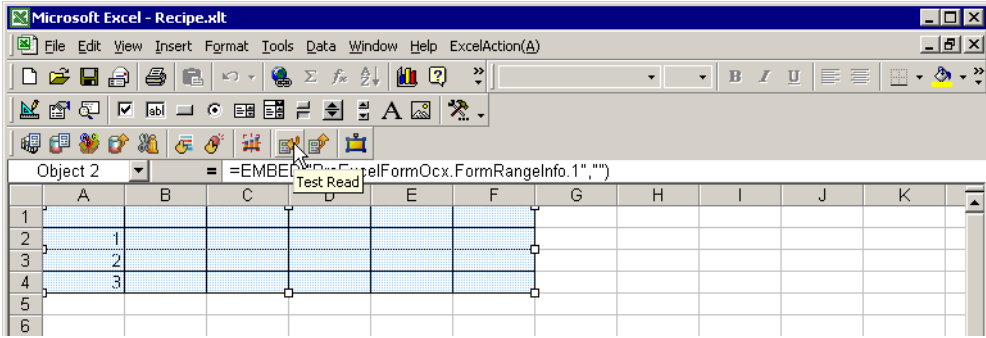
At this point, data is written in the Device/PLC.

NOTE
• You can check that data is being written on the "Symbol Monitor" screen of "Status Monitor". For more details, see "27 Simply Confirming On-site Status".
• Refer to "11.4 Restrictions" for details about the restrictions on test writes.

11.1.11 Transferring a Network Project File

This step loads a saved network project file to 'Pro-Server EX' and then transfers to entry nodes.

Refer to "25 Transferring" for details about transferring a network project file.

NOTE
• Be sure to transfer a network project file. If not, ACTION will not work.

11.1.12 Executing ACTION

This step verifies that enabling a trigger condition activates ACTION and writes the data of the recipe sheet (File name: "Recipe write.xls") to the specified device of Device/PLC.
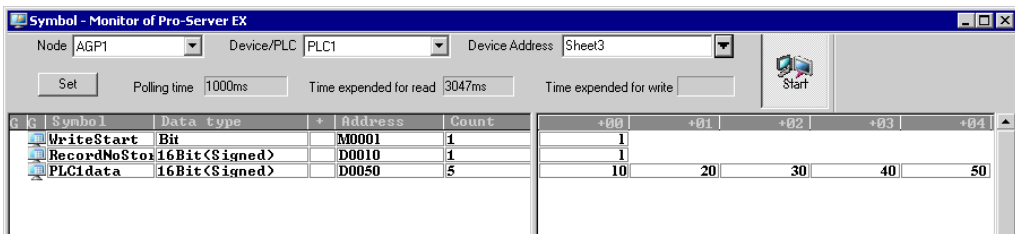
NOTE
• You can check the write/read status using the symbol or device monitor. For more details, see "27 Simply Confirming On-site Status".
• If error occurs, you can check the log in the Log Viewer. For more details, refer to "27.5 Monitoring System Event Logs".

This is the end of the explanation of this ACTION.