# 5 Creating a Form Using Excel

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'Pro-Server EX' supports a new action called "Excel Form" action, a simplified and sophisticated version of the "Creating a Report using Excel" action of 'Pro-Server'.

This allows you to collect data and execute various processing more easily than ever before.

This chapter describes how to use "Data Logging" feature, a typical feature to use in creating a form.

In addition to the "Data Logging" feature, 'Pro-Server EX' is provided with the following features for creating a form.

Monitoring device data in Excel

"6 Writing Device/PLC Data in Excel File"

- Correcting read device data and restoring the data to the source device <sup>(2)</sup> "6 Writing Device/PLC Data in Excel File"
- Writing log data and capture data in the GP to Excel
- Writing data of Excel in the Device/PLCs
- T12 Writing Excel Data in Device/PLC"

# 5.1 Writing Measurement Data in a Form

#### 5.1.1 Try to write Measurement Data in a Form

#### [Action Example]

This example reads four device data (Word device: Address "01", "02", "50", and "51") of the Device/PLC at an interval of one hour, and then write them to a form.

**NOTE** • Here, use the template sample attached to 'Pro-Server EX' to write in a form.

• Refer to "■ About Sample Template to Use" in the next page for details about data to be written to the form template to use.



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

#### About Sample Template to Use

First, you need to create the template based on a form, however, 'Pro-Server EX' includes the template samples according to various purposes.

In this trial, use the sample below as a form template.

	A		В	С	D	E	F	G
1	Excel	26	Measur	ement I	)ata Mai	nagemen	t Board	ł
2								
2					Solution			
			Date	Tank Name	to measure	Set Value	esult Valu	
3					to measure			
4								
5								
6								
8								
9								
10								
11								
12								
13								
14								
15								
16	1							
17								
18								
19								
20								
21								
22								
23								
24								

The table below shows the content of data to be written in each row of the template.

Item	Device	Description
Date	-	Date/Time of the PC (use time stamp)
Tank Name	D01	Character string (Tank name) converted from device data Device data "1": Tank A Device data "2": Tank B Device data "3": Tank C
Solution to measure	D02 Character string (Measurement solution type) converted from device dat Device data "1": Solution 1 Device data "2": Solution 2 Device data "3": Solution 3	
Set Value	D50	Device data not converted
Result Value	D51	Device data not converted

NOTE

• Pro-Server EX has approximately 30 kinds of built-in templates for creating a report.

You can create your own new template, or customize the existing sample templates.

• You can organize data as a QC chart. Refer to "5.7 Creating QC Charts in a Form" for details.

#### [Setting Procedure]

1	Creating Text Substitution Table	This step creates a table for substituting device data into a character string.
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 the device of the Device/PLC, from which data will be read, as a symbol.
	+	
5	Specifying Form Template and Output File	<ul><li>This step sets the following items:</li><li>Specifying a template file (Creating a blank template); and</li><li>Specifying an output file</li></ul>
6	Setting Content of Form Template	This step sets the conditions for writing data in the form template.
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
	+	
8	Verifying Setting Result	This step verifies setting results on the setting content list screen.
	+	
9	Saving 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 the data of Device/PLC is written in the form as logging data when the preset trigger condition has become effective.

#### Creating Text Substitution Table

This step creates a table for substituting device values, "01" (Tank Name) and "02" (Solution to measure), into character strings.

Refer to "■ About Text Substitution of Data" for more details about a text substitution table.

1 Start Microsoft Excel and create the text substitution table below.

Text Substitution Table of Device "01"

	A	В	С	D
1	Start Value	End Value	Character String	
2	1		TankA	
3	2		TankB	
4	3		TankC	
5				

Text Substitution Table of Device "02"

	A	В	С	D
1	Start Value	End Value	Character String	
2	1		Liquid1	
3	2		Liquid2	
4	3		Liquid3	
5				

2 Save the created table on the desktop of the PC as "Convert\_D01.xls" and "Convert\_D02.xls", respectively.

This is the end of creating a text substitution table.

Starting 'Pro-Studio EX'

This step starts 'Pro-Studio EX'.

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

#### Registering Entry Nodes

This step registers the PC and the GPs, which will serve as trigger conditions (trigger), as entry nodes. Refer to "31 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



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

#### Registering Symbols

This step registers the device address of the Device/PLC, from which data will be read, as a symbol. Refer to "32 Symbol Registration" for details about symbols.



### / Ex. /

Setting item	Setting content			
Symbol Name	Tank NameType of measurement liquid		Setting Value	Performance Value
Data Type 16Bit (Signed)		Signed)		
Device address for symbol registration	"D01" of Device/ PLC (PLC1)	"D02" of Device/ PLC (PLC1)	"D50" of Device/ PLC (PLC1)	"D51" of Device/ PLC (PLC1)
No. of Devices	1	1	1	1

#### ■ Specifying Form Template and Output File

This step specifies a template file (Creating a blank template) and an output file.

When the trigger condition is satisfied, the device data in the form template is reflected and output as a file.

In this case, the device data is not reflected to the form template.

Refer to "5.1.2 Setting Guide" for more details.



# Ex.

Setting item		Setting content
Specify Template	Template File	C:\Documents and Settings\Administrator\Desktop\templete.xls
	Folder Name	C:\Documents and Settings\Administrator\Desktop
	File Name	Measurement data.xls
Output File	Start with the output book displayed	Checked
	Do not save the output file when ACTION runs.	Not checked

1 Click the [Feature] icon on the status bar.

饕 Pro-Studio EX 💡	.npx		
File Edit Tool Pro	gramming Assist Set	etting Help	
Start 🔉	Node >	Symbol Symbol	Save
Symbol		Node Name AGP1 Dev	vice Nam
Group	Ungroup	Sheet Name Sheet3	t as a gloi
Insert	Delete	] ]	

2 Select [ACTION] from the tree display on the left of the screen, then click the [Add] button.

饕 Pro-Studio EX 🛛 ?.npx	
File Edit Tool Programming Assist	Setting Help
Start 🍑 🟹 Node	ン 눧 Symbol ン
Add Import Edit Delete ACTION ACTION Trigger Condition Data Transfer Device Cache	ACTION In addition to the using applicatior using Access. In the Pro-Server referred to as "A

**3** Click the [ACTION Type] list button, and select "EXCEL form".

Then, enter the name of ACTION to set in the [ACTION name] field. In this example, enter "Create form using Excel".

**NOTE** • [ACTION Name] can be an arbitrary name.

Set ACTION Name/Parameter
Add a new ACTION. Specify an ACTION name, and set its parameter.
ACTION Type Create form using Excel.
ACTION Name Writes Data from CSV file.
Upload of GP JPEG Data. Upload of GP Log Data. Writes Data to E-Mail
Upload to the database.

4 Click the [Click here to set the ACTION parameter] button.

Set ACTION Name/Parameter	×
Add a new ACTION. Specify an ACTION name, and set its parameter.	
ACTION Type Create form using Excel.	-
Display the Actions of the old version of Pro-Server	
ACTION Name FormCreation	
Click here to set the ACTION parameter.	)
Next Cancel	

5 Set regarding an Excel template and an output file.

1) Click the [Reference] button of [Template File]. On the "Select File" screen, type "template" in the [File name] field, and then click the [Open] button.

Create form using Ex	cel	
		Version 1.22
-Template Designation	1	
When you use the	name of Excel template file that is the source of forms. wizard, the theme template file is copied to a file with this name. new template, please specify the file name.	
Template File		Reference
	Edit Template	



2) Click the [Reference] button of [Folder Name], specify "Desktop" as a folder to save the output file, and then enter "Measurement data.xls" in the [File Name] field.

-Output File The template file sto	res setting info. The actual output result v	will be displayed in the following file.
Folder Name	E:\Program Files\Pro-face\Pro-Ser\	ver EXWpxDatabase
File Name	MeasurementData.xls	Return to Default Settings
	ived State output file when ACTION runs. Save or Save by Macro of Excel.)	
		OK Cancel

3) Check the [Start from Displayed State] check box.

Folder Name	E:\Program Files\Pro-face\Pro-Serv	er EXWpxDatabase	Reference	
File Name	MeasurementData.xls Return to Default Setting			
Start from Displ	ayed State - output file when ACTION runs. - Save or Save by Macro of Excel.)			

• If you check [Start from Displayed State], you can read/write data with an output file displayed. This is useful if you need to confirm data immediately.

#### Setting Content of Form Template

This step sets the content of the template for writing data in a form.

Refer to "5.1.2 Setting Guide" for more details.



NOTE

There are some restrictions when using this feature with 'Microsoft Excel 2002' or later. Refer to "5.9 Restrictions".

There are some restrictions when using this feature with 'Microsoft Excel 2007' or 'Microsoft Excel 2010'.

Refer to "■ Notes on File Format when using 'Microsoft Excel 2007' or 'Microsoft Excel 2010'" for more details.

1 Click the [Edit Template] button.

Create form using Exc	el
	Version 1.22
- Template Designation -	
When you use the wi	me of Excel template file that is the source of forms. zard, the theme template file is copied to a file with this name. w template, please specify the file name.
Template File	E:/Documents and Settings\/Owner\Desktop\template.xtt
	Edit Template
- Output File	

2 Select the [Yes] button.

Excel Form Action	$\times$
Unable to find designated Templatebook. Make a new Templatebook	ık?
Yes No	

A blank form template will appear.

Mici	rosoft I	Excel - templ	ate.xlt								_	
Ei Ei	le <u>E</u> dit	<u>V</u> iew <u>I</u> nsert	Format To	ols <u>D</u> ata <u>W</u> in	idow <u>H</u> elp I	ExcelAction( <u>A</u>	)				_	Ð×
	ê 🔒	a 🕹 🗟	🌮 🐰 🗉	h 🖪 🗠 -	🤮 Σ	f≈ <u>\$</u> ↓ 100	2 🏅 Ar	ial	- 1	- B	IU	≣ .*
	9 👋			sy 💉 茸								
	A1	✓ «	=	er er   🛏								
	A		- C	D	E	F	G	Н	1	J	K	
	А		U U	U	E	F	6	п		J	n	
2		-										
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4							C	5				
5							~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	P				- 11
6												- 1
7												
9												
10												
11												
12												
13												
14												- 1
15												
16 17												+
18												
19												
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Ready	/									NUM		

- **3** Open a built-in form template.
  - 1) Click [Excel Action] on the menu bar. Select [Tools] [Insert Sample].

ExcelAction( <u>A</u> )		
日 Device One-Shot Area		• 10 • B
📴 Device Logging Area(L)		
👋 Recipe Area( <u>R</u> )		
😰 Log Data in GP Area( <u>U</u> )		
🍇 Special Area( <u>S</u> )		
🕖 Execution Sequence List(E)		l J
🔗 Buttonify Trigger Condition(B)		
📑 Action Area List(I)	0	
- Tools( <u>T</u> )	Þ	Insert Sample( <u>T</u> )
Communication( <u>C</u> )	C	if QC Chart(L) りん
茸 Area display( <u>0</u> )	1	
Version Info( <u>A</u> )		

2) Select "MeasurementData.xlt", and click the [Open] button.

Open		? ×
Look in	: 🔄 template	- 🗲 🔁 🚔 🎟 -
History Desktop	Andon.xlt FirstRunRateTransitGraphPerDay.xlt FirstRunRateTransitGraphPerMonth.xlt FirstRunRateTransitGraphPerWeek.xlt FirstRunRateTransitGraphPerYear.xlt InitialSetupManagement.xlt InitialSetupTimeTransitGraph.xlt Logging_Excel.xlt MachineCheckList.xlt	MachineStopTimeTransitGraphPerDay.xll     MachineStopTimeTransitGraphPerMonth.     MachineStopTimeTransitGraphPerWeek.:     MachineStopTimeTransitGraphPerWeek.:     MachineStopTimeTransitGraphPerYear.x     ManpowerGraph.xlt     MessurementData.xlt     OperationRecord.xlt     ProductInProcessStockTransitGraph.xlt     ProductionCostTransitGraph.xlt
My Computer	File name:     MeasurementData.xlt       Files of type:     Excel(*,xlt; *,xls)       Open as read-only	Open     Cancel

A form template will appear.

M	licrosoft Excel -	· template.xlt						
	<u>File E</u> dit <u>V</u> iew	Insert Format Tools Data	<u>W</u> indow <u>H</u> elp Exe	elAction( <u>A</u> )			_ & ×	
	🖻 🔒 🔒 🤘	🗐 🗟 🆤 👗 🖻 🖻 s	🛇 bə r cə + 🌾	🔒 Σ <i>f</i> * 🛃 👗	🛍 🛷 100%	• 2 .		
	•	= Excel26 Meas	urement Data Mai	nagement Board				
	A	В	C	D	E	F	G 🔺	
1	Excel <sup>2</sup>	26 Measure	ment Da	ita Mana	igement	t Board		
2							-	
3		Date	Tank Name	Solution to measure	Set Value	Result Value		
4								
5								
6								
7								
9								
10								
11								
12								
13								
14								
							-	
	► ► Sheet1				•		▶	
	1	et et 🗗 🕈 🖉 🖉	* <b>*</b>					
Rea	ady					NUM		

4 Specify an area to enter "Tank Name".

NOTE

• You do not need to specify an area to enter "Time". The time stamp feature specifies this area.

## / Ex. /

Setti	ng item	Setting content	
Entry Node		AGP1	
Device Name		PLC1	
Device Address/Sym	bol Group	Tank Name	
Target Cell Range		B4 to C23	
Logging Direction		Vertical	
Time Stamp		Forward ("Use PC time")	
Convert device value to certain text	EXCEL book storing the table	C:\Documents and Settings\Administrator\Desktop\convert_D01.xls	
at Read	Cell storing the table	Sheet A2	
Action when cell gets full		Scroll	
Trigger Condition		Constant interval	
Interval		3600000ms (One hour)	

1) Click the [Device Logging Area] icon on the Excel template.



NOTE	Selecting [Device L	ogging Area] from [E	xcel Action] of the menu displays the same screen.
		ExcelAction(A)	

2) Click the list button of [Node] and select "AGP1" as a data transfer source node.

📲 Device Logging	_ 🗆 X
Action Settings Trigger Condition Settings	
Device Settings Node Triager-Source Nodel  Name Device Address/Symbol AGP1 PC1 No. of 1 Triager-Source Node) Data Type 16Bit(Signed)	
Add Device Address/Symbol Name     Note: When specifying inconcecutive memory data, please use a group symbol.	

3) Click the list button of [Node] and select "PLC1" as a data transfer source device.

📳 De	Logging	
Act	ettings Trigger Condition Settings	
	Device Settings Node AGP1 Device HINTERNAL V	
	Device Address/Symbol	
	Data Type 16Bit(Signed)	
	Add Device Address/Symbol Name     Note: When specifying inconcecutive memory data, please use a group symbol.	

 Click the list button of [Device Address/Symbol Group] and select "Tank Name" as a symbol of the data to log.

📴 Device Lo	ogging							_ 🗆 >	<
Action Setti	ngs Trigger Conditi	on Settings							
D	evice Settings	AGP1	•		Device Name	PLC1	•		
D	evice Address/Syml Group	ool 🗾		•	∃-Loc <del>alSha</del>	set3 Name			
	Data Type	16Bit(Signed)			Meas	urem atSolu	tionType		
I	Add Device Addr	ess/Symbol Name			Avtua	igValue aIValue			
1	Add Trigger-Node	Name							

The device number "1" will be automatically entered in [No. of Devices], and "16Bit(Signed)" in [Data Type].

5) Turn off the [Add Device Address/Symbol Name] check box, if checked.

1	Device Logging	_ 🗆 🗙
	Action Settings Trigger Condition Settings	
	Device Settings Node AGP1  Device PLC1	
	Device Address/Symbol TankName No. of 7	
	Data Type 16Bit(Signed)	
	Add Device Address/Symbol Name Note: When specifying inconcecutive memory data, please use a group symbol.	

6) Click the cell range specify button of [Target Cell Range].

Layout Settings	Sample
Target Cell Range \$4\$1:\$G\$1	An image of writing to a cell is shown below.
Logging © Vertical © Horizonta	The arrow points in the direction of data logging.
No. of Logging 1	1 2 3 4
Time Stamp  OFF	2 3 4 5 6
C Forward Use GP Time	4 5 6 7 5 6 7 8
Note: The layout of a group symbol is fixed.	6789 7189!#

7) Drag the mouse to specify the area to use for data logging (cells B4 to C23). Then click the [OK] button.

Microsoft Excel	- template.xlt					
Eile Edit View	Insert Format Tools Data	Window Help Exe	celAction( <u>A</u> )			_ 8 ×
	5 B. 🖤 👗 🖻 🖻 🖉	\$ <b>N</b> + CH + (	L <i>f</i> × ≜↓ Z↓	🏭 🚜 100%	• 🛛 •	
	🛍 🖉 🔗 🗐 🖼 💕 (	ý 🛓 👘				
B4 💌	= Excel26 Measu		nagement Board			
A	В	С	D	E	F	G
1 Excel2	26 Measure	ment Da	ita Mana	igement	t Board	
2						
з	Date	Tank Name	Solution to measure	Set Value	Result Value	
4	*******************	<del>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</del>	incusure			
5						
6	s	pecify Range		? ×		
7	F	lease specify the rar	nge.			_
8						
9				_		
10	<u> </u>	\$B\$4:\$C\$23				
11 12	ļ	\$D\$4:\$C\$23				
13			ОК	Cancel		
14			;			
15						
16  4 4 > > > Sheet1	Template		:	•		▼ ▶
	et et 🚽 🚽 🖉 🖌 🖞	<b>•</b>				
Point						

8) Select "Vertical" of [Logging Direction].

Layout Settings Target Cell Range \$B\$4:\$C\$23 Logging Q Vertical C Horizontal	Sample An image of writing to a cell is shown below. The arrow points in the direction of data logging.
Direction No. of Logging Data Time Stamp © OFF © Forward © Backward	1 2 3 4 2 3 4 5 3 4 5 6 4 5 6 7 5 6 7 8
Note: The layout of a group symbol is fixed.	6;7;8;9 7;8;9;#

The logging number "20" will be automatically entered in [No. of Logging Data].

9) Select [Forward] of [Time Stamp]. Then click the list button of [Time Stamp], and select "Use PC Time".

Layout Settings	<b>.</b> .
Target Cell Range \$8\$4:\$C\$23	Sample An image of writing to a cell is shown below.
Logging 💿 Vertical 🔿 Horizontal	The arrow points in the direction of data logging.
No. of Logging 20 🔹	9:00:01 1 2 3 4
Time Stamp C OFF • Forward Use GP Time	9:00:02 2 3 4 5 9:00:03 3 4 5 6
© Forward Use GP Time ▼ ○ Backward Use GP Time	9:00:04 44 5 66 7 9:00:05 5 66 7 8
Use PC Time Note: The layout of a group symbol is fixed.	9:00:06 6 7 8 9 9:00:07 7 8 9 10

10) Check the [Convert device value to certain text at Read] check box.

Convert device value to certain tex	t at Read	
Action when cell gets full	● Clear and Overwrite ⊂ O Scroll	O New Sheet C Loop
In creating a sheet, clear the special	ified cell range and then start.	
		OK Cancel

The "Text Substitution Table Settings" screen will appear.

11) Click the [...] button of [EXCEL book storing the table] and specify "convert\_D01", which you created as a text substitution table.

Text Substitution Table Settings	×
To convert a device value to a certain text, a conversion table specifiving the replacement rule is required.	
Please specify the storage location of the table.	
EXCEL book storing the table C:\Documents and Settings\Administrator\De Cell storing the table (top-left cell)	
Sheet A1 🔣	

12) Enter the sheet name in [Cell storing the table]. Click the cell range specification button, and then enter the sheet name of the text substitution table and the cell number "A2" of the top-left cell.

Text Substitution Table Settings				
To convert a device value to a certain text, a conversion table specifying the replacement rule is required.				
Please specify the storage location of the table.				
EXCEL book storing the table C:\Documents and Settings\Administrator\De Cell storing the table (top-left cell)				
Sheet1 \$4\$2				
OK Cancel				



13) Click the [OK] button.

14) Select "Scroll" in [Action when cell gets full].

Convert device value to certain te	xt at Read C:\Documents a	and Settings\Administrator\Desktop\convert
Action when cell gets full	Clear and Overwrite Constraints Constraint	C New Sheet C Loop
		OK Cancel

15) Click the [Trigger Condition Settings] tab.

🖅 Device	Logging						_ 🗆 🗙
Action Se	etting: Trigger Condition S	Settings					
Г	Device Settings						
	Node	AGP1	•	Device Name	PLC1	•	
	Device Address/Symbol Group	📰 TankName	•	No. of Devices	1	÷	
	Data Type	16Bit(Signed)					
	Add Device Address	•	rr		pecifying inconcecut please use a group	ive	

The "Trigger Condition Settings" screen will appear.

NOTE
------

• You can create a button on the Excel sheet, and use this as a trigger condition to execute ACTION. For more details, refer to "5.6 Creating Trigger Buttons in a Form".

 Write Data	

16) Click the [New Trigger Condition] button.

Pevice Logging	
Action Settings Trigger Condition Settings	
Action Area No.	
When the specified trigger type (under-condition button) is satisfied, this area is executed. Please specify a trigger type.	
New Trigger Condition New Trigger Button	
satisfied.	
Edit Delete Edit Delete	
Trigger Condition Trigger Condition	

17) Click the [New Trigger Condition] button.

Set Trigger Condition				
Specify a trigger condition of the ACTION.				
Trigger Condition				
New Trigger Condition				
Edit				
Node				
Close				

18) Enter the trigger condition name "Create a form" in [Trigger Condition Name], and select "AGP1" in [Node Name] as a name of the data transfer source.

			×
Trigger Condition Name	CreateAForm	FQ.	Find Node
Node Name	PC1 R Add Node		FINUNUUE
· · · · · · · · · · · · · · · · · · ·	AGP1		
	anon		
			•

 Click the [Constant Cycle] button in the [Condition 1] tab, and enter "3600000ms" (one hour). Then, click the [OK] button.

Condition	1   the Trigger Condition.				
Specily -	When Turned ON		While Device is ON		While Condition Satisfied
Ġ	Specified Time		While Device is OFF	N.	When Condition Satisfied
C	Constant Cycle		When Device ON		When Partner Node ON
	When Device Changes		When Device OFF	影	When Partner Node OFF
Cycle 3600000					
			Detail Settings		OK Cancel

20) Click the [Close] button.

Set Trigger Condition	×
Specify a trigger condition of the ACTION. Trigger Condition	
New Trigger Condition	
CreateAForm	Edit
Node PC1	
In a Cycle of 3600000ms	
	Close

21) In [Logging], click the blank line of [Trigger Condition] and select "CreateAForm" as a trigger condition.

Logging	Clear Cell when the following condition is satisfied.
Edit Delete	Edit Delete
Trigger Condition	Trigger Condition
CreateAForm	

22) Click the [OK] button.



This is the end of the settings of the "Tank Name" area.

5 Specify an area to enter "Measurement Solution Type".

#### Ex.

Setti	ng item	Setting content			
Entry Node		AGP1			
Device Name		PLC1			
Device Address/Symbol Group		Measurement Solution Type			
Target Cell Range		D4 to D23			
Logging Direction		Vertical			
Time Stamp		OFF			
Convert device value to certain text at EXCEL book storing the table		C:\Documents and Settings\Administrator\Desktop\convert_D02.xls			
Read	Cell storing the table	Sheet A2			
Action when cell gets full		Scroll			

- 1) Repeat the procedures 1) to 14) in 4 to set the above items.
- 2) Click the [Trigger Condition Settings] tab.

📳 Devic	e Logging					_ 🗆 🗙
Action 9	Settings Trigger Condition :	Settings				
	Node	AGP1		Device Name	PLC1	
	Device Address/Symbol Group		•	No. of Devices	1 🔅	
	Data Type	16Bit(Signed)				
	Add Device Address Add Trigger-Node Na	•	me		pecifying inconcecutive please use a group	

3) In [Logging], click the blank line of [Trigger Condition] and select "CreateAForm", which is the preset trigger condition.

Logging	Clear Cell when the following condition is
Edit Delete	Edit Delete
Trigger Condition	Trigger Condition
CreateAForm	<u>₹</u>

4) Click the [OK] button.

This is the end of the settings of the "Measurement Solution Type" area.

6 Specify an area to enter "Setting Value".



Setting item	Setting content
Entry Node	AGP1
Device Name	PLC1
Device Address/Symbol Group	Setting Value
Target Cell Range	E4 to E23
Logging Direction	Vertical
Time Stamp	OFF
Action when cell gets full	Scroll

1) Click the [Device Longing Area] icon on Excel.

M	licrosoft Excel -	template.xlt
	<u>File E</u> dit <u>V</u> iew	Insert Format Tools Data
	🖻 🖬 🔒 🗧	3 🗟 🆤 👗 🖻 💼
1	🔃 👋 🞷 🕷	1 🖉 🖉 🗰 💕 🔗
		= Excel26 Meas
	Device Loggir	ng Area B
1	Excel	26 Measur
<b>1</b>	Excel	26 Measur
	Excel	26 Measur Date

2) Click the list button of [Node] and select "AGP1" as a data transfer source node.

🖅 Device Lo	gging	_ 🗆 X
Action Settin	198 Trigger Condition Settings	
	evice Settings Node       Node     Image: Source Node)      Device       evice Address/Symbol     PD1      No. of	
	Group Intrigger-Source Node) Intrigger-Source Node Intrigger-Source Intrigger-Source Node Intrigger-Source Nod	
	Add Device Address/Symbol Name         Note: When specifying inconcecutive memory data, please use a group           Add Trigger-Node Name         symbol.	

3) Click the list button of [Device Name] and select "PLC1" as a data transfer source device.

🖅 Devic	e Logging				_ 🗆 X
Action	Settings Trigger Condition S	Settings			
	Device Settings Node	AGP1	<b>.</b>	Device	
	Device Address/Symbol Group	<b>a</b>		No. of PLC1	
	Data Type	16Bit(Signed)			
	Add Device Address		me	ote: When specifying inconcecutive emory data, please use a group mbol.	

4) Click the list button of [Device Address/Symbol Group] and select "Setting Value" as a symbol of the data to log.

🕫 Device Logging						
Action Settings Trigger Condi	tion Settings					
Device Settings Node	AGP1	<b>•</b>	Device Name	PLC1	•	
Device Address/Syn Group	nbol 💼		- Local:She			
Data Type	16Bit(Signed)			urementSolu igValue	tionType	
Add Device Add	fress/Symbol Name			Walue	)	
Add Trigger-Noc	le Name					

5) Turn off the [Add Device Address/Symbol Name] check box, if checked.

🖅 Device	e Logging						_ 🗆 X
Action 9	Settings Trigger Condition S	Settings					
	- Device Settings	AGP1	<b>_</b>	Device	PLC1	<b>_</b>	
	Device Address/Symbol	TankName		Name No. of	7		
	Group	16Bit(Signed)		⊥ Devices	J.		
	Data Type	,		 Note: When s	pecifying incon	cecutive	
	Add Device Address	-		memory data, symbol.	please use a gi	roup	

6) Click the cell range specify button of [Target Cell Range]. Drag the mouse to specify the area to use for data logging (cells E4 to E23). Then click the [OK] button.



7) Select "Vertical" of [Logging Direction].

Layout Settings	Camala
Target Cell Range \$E\$4:\$E\$23	Sample An image of writing to a cell is shown below. The arrow points in the direction of data logging.
Logging • Vertical O Horizontal	The arrow points in the direction of data logging.
No. of Logging	1 2 3 4
Time Stamp 💿 OFF	2 3 4 5 6
C Forward Use GP Time C Backward	4567
Note: The layout of a group symbol is fixed.	671819
Hote. The layout of a group symbol is fixed.	<u></u> ,,

8) Select "OFF" of [Time Stamp].

Layout Settings	C
Target Cell Range \$E\$4:\$E\$23	Sample An image of writing to a cell is shown below.
Logging 💿 Vertical 🔿 Horizontal	The arrow points in the direction of data logging.
No. of Logging 20 📑	1 2 3 4
Time Stamp OFF Forward Use GP Time	2 3 4 5 3 4 5 6 4 5 6 7 5 6 7 8
Note: The layout of a group symbol is fixed.	6 7 8 9 7 8 9 #

9) Select "Scroll" in [Action when cell gets full].

Convert device value to certain text	at Read	
Action when cell gets full	C Clear and Overwrite 📀 Scroll	C New Sheet C Loop
In creating a sheet, clear the speci	fied cell range and then start.	
		OK Cancel

10) Click the [Trigger Condition Settings] tab.

ŧ₽	Device Logging	_ 🗆 🗙
•	Action Settings Trigger Condition Settings	
	Node AGP1 Name PLC1	<b>_</b>
	Device Address/Symbol TankName No. of Devices	÷
	Data Type 16Bit(Signed)	
	Add Device Address/Symbol Name     Note: When specifying incommemory data, please use a group symbol.	

11) In [Logging], click the blank line of [Trigger Condition] and select "CreateAForm", which is the preset trigger condition.



12) Click the [OK] button.

This is the end of the settings of the "Setting Value" area.

7 Specify an area to enter "Actual Value".



Setting item	Setting content
Entry Node	AGP1
Device Name	PLC1
Device Address/Symbol Group	Actual Value
Target Cell Range	F4 to F23
Logging Direction	Vertical
Time Stamp	OFF
Action when cell gets full	Scroll

1) Repeat the procedures 1) to 12) in 5 to set the above items.

This is the end of the settings of a form template.

8 Close 'Excel'.

Microsoft Excel - template.xlt	
Eile Edit View Insert Format Tools Data	Window Help ExcelAction(A)
□         №ew         Ctrl+N           ▲         Øpen         Ctrl+O	
Ctrl+S	celFormOcx.FormRangeInfo.1","") C D E F G
1         Web_Page Preview           2         Page Setup           Print Area         Print Area	ment Data Management Board
Q     Print Preview       3        ⊕ Print	ank Name Solution to measure Set Value Result Value
4         Send To           5         1 \Documents and Settings\mh\test.xls	
10	
12 13 I Sheet1 Template	
	<u>بالم</u>
Ready	NUM NUM

**9** The following dialog box will appear, asking you if you want to save changes before closing. Click the [Yes] button.



10 On the "Create form using Excel" screen, click the [OK] button.

Folder Name	E:\Program Files\Pro-face\Pro-Server E	E:\Program Files\Pro-face\Pro-Server EX\NpxDatabase Referen				
File Name	MeasurementData.xls	Return to Default Settings				
🔽 Start from Disp	played State					
	e output file when ACTION runs. e Save or Save by Macro of Excel.)					

#### 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.



- ACTION Node : PC1
- Receive Notification: OFF

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

Set ACTION Name/Parameter					
Add a new ACTION. Specify an ACTION name, and set its parameter.					
ACTION Type Create form using Excel.					
Display the Actions of the old version of Pro-Server					
ACTION Name FormCreation					
Click here to set the ACTION parameter.					
Next Cancel					

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.

ACTION Node	
Receive N	otification Exists pecify the notified device that will be informed of it or of the ACTION. After the execution of the it will be is turned on.
	Device Name
	#INTERNAL
	Notified Device
	Data Type Bit



#### 4 Click the [Complete] button.

The "Set ACTION Node/Process Completion Notification" 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.

#### Verifying Setting Result

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

**NOTE** • In case of the Excel Report ACTION, you cannot add, edit or delete trigger conditions from "Trigger Condition/Process List per ACTION". To change the settings, click the [Parameters Settings] button and change the settings in [Edit Template] on Excel.

1 Select the ACTION name "Form Creation" from the tree display on the left of the screen.

💱 Pro-Studio EX 🛛 ?.npx						
File	Edit	Tool	Pro	gramming	g Assist	
	1	Start	<b>&gt;&gt;</b>		Node	
	Ad	ld		Impo	rt	
	Edit			Delete		
ACTION FormCreation Trigger Condition CreateAForm Data Transfer Device Cache						

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

Setting Help	
Symbol >> Feature >> Save >>	Transfer Monitor Status
ACTION-Specific Trigger Condition/Process List	ACTION
Add Edit Release	Delete ACTION
Data Source Node AGP1	FormCreation
Condition Data	Rename
Completion CreateA	Create form using Excel.
	Set Parameter
Ļ	ACTION Node
	PC1

2 Select the trigger condition name "CreateAForm" from the tree display on the left of the screen.

💱 Pro-Studio EX 🛛 ?.npx						
File	Edit	Tool	Pre	ogrammino	g Assist	
	1	Start	<b>&gt;&gt;</b>		Node	
	Add			Import		
	Edit			Delete		
ACTION     FormCreation     Trigger Condition     Data Transfer     Device Cache						

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

					X
Setting Help					
🍑 🕨 Symbol 🔉 💸 Feature	» 🔡	Save ン 🕻	🐚 Transfe		initor tatus
Trigger Condition	Seq	juence Diag	gram by T	rigger Condition	
		Collapse	Tra	ansfer ACTION/Data	
CreateAForr CreateAForr	Feature	Source	Destinat	Receive/Process Co	
Node AGP1	FormCrea	AGP1.#>	PC1.For		
In a Cycle of 3600000ms					

This is the end of the verification of the settings.

#### Saving Network Project File

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

Refer to "25 Saving" for details about saving a network project file.

# • '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.



• Title

: Desktop\report.npx : EXCEL Report ACTION
#### Test Read

You can check if the settings are correct before transferring a created network project file to entry nodes. When executing ACTION, the setting data is output to an output file. However, when executing a test read, it is reflected in a template file.

• You do not necessarily have to perform a test read. If you skip this, proceed to "■ Transferring a Network Project File".

• To perform a test read, 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 "ACTION" from the tree display on the left of the screen, then click the [Edit] button.
- 3 On the "Set ACTION Name/Parameter" screen, click the [Click here to set the ACTION parameter] button.
- 4 On the "Create form using Excel" screen, click the [Edit Template] button.
- 5 With the ACTION area selected, click the [Test Read] icon.

Microsoft Excel -	template.xlt				
Eile Edit View	Insert Format Tools Data	<u>W</u> indow <u>H</u> elp Ex	elAction( <u>A</u> )		[
] 🗅 😅 🖬 🔒   é	5 🗟 🖤 👗 🖻 🖻	ν • 🍓 Σ fs	24 🛍 🕄 🐫		• • B <i>I</i> <u>U</u>
] 🤀 🗗 👋 🞷 🎗	1 & 8 🗰 🗗	ц			
Picture 14 💌	= 4				
A	B Test R	C	D	E	F
E. Engel	0.0.34				
	26 Measur	ement I	Data Mai	n <mark>ageme</mark> n	t Board
1 Excel	26 Measur	ement I	Data Mai	nagemen	t Board
	26 Measur Date	ement I Tank Name	Solution	-	t Board
2			Solution	-	

The setup contents will be read in the template.

**NOTE** • Refer to "5.9 Restrictions" for details about the restrictions on test reads.

## Transferring a Network Project File

This step transfers a saved network project file to entry nodes.

Refer to "26 Transferring" for details about transferring a network project file.

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

## Executing ACTION

This step verifies that transferring the network project file activates ACTION, opens a form (file name:

"Measurement data.xls"), and then the logging data is written in the specified location at an interval of one hour.

Microsoft Excel	- template.xlt					_ [
Eile Edit View	Insert Format Tools Data	Window Help Exc	elAction( <u>A</u> )			_ (
🗅 🗳 🖬 🔒	a 🕼 🖤 👗 🖻 🖻	🖍 🔹 🍓 Σ f *	24 🛍 🛛 🔋		• 11 • B / U	!  ≣
i 🤬 🕼 👋 🔗 🕻	🛍 🐺 🔗 🗰 💕 💕	兰				
F11						
A	В	C	D	E	F	
1 Excel	126 Measur	ement I	)ata Mai	nagemen	nt Board	_
	Date	ement I	Solution		Result Value	
2			Solution			
2 3	Date	Tank Name	Solution to measure	Set Value	Result ¥alue	
2 3 4	Date 200711/13 10:00	<b>Tank Name</b> Tank A	Solution to measure Liquid1	<b>Set Value</b> 120.0	Result Value	

NOTE	•	If error occurs, you can check the log in the Log Viewer. For more details, refer to "28.5
		Monitoring System Event Logs".

• If you want to achieve faster communication during ACTION, refer to "29 Tips for Faster Communication".

This is the end of the explanation of this ACTION.

## 5.1.2 Setting Guide

This section explains how to set the parameters of ACTION.

#### "Creating form using Excel" Screen

Create form using Excel			
			Version 1.22
Template Designation ——			
When you use the wizar	of Excel template file that is the source of form d, the theme template file is copied to a file with template, please specify the file name.		
Template File	[		Reference
	Edit Template		
Output File The template file stores s Folder Name	etting info. The actual output result will be disp E: Program Files Pro-face Pro-Server EXINp		ing file.
File Name	Report_%Y%M%D.xls	Return to De	fault Settings
✓ Start from Displayed □ Do not save the outp (Please use the Save	State ut file when ACTION runs. e or Save by Macro of Excel.)		
	· ·		
		ок	Cancel

Setting item Setting content		Setting content
Specify Template	Template File	Specifies the location of Excel template. Click the [Reference] button. In the "Select File" dialog box, specify the location of the template and the file name.
Template	Edit Template	Displays the Excel template. On the Excel template, set the read/write condition of data.
	Folder Name	Specifies an output destination folder of the Excel file on which data are read/ written. Click the [Reference] button. In the "More Folders" dialog box, specify the location of an output file.
Output File	File Name	Sets the file name of an output file. Default is "Report_%Y%M%D.xls". NOTE • "%Y%M%D" is set as "Year/Month/Date".
	Return to Default Settings	Resets the file name to the default, "Report_%Y%M%D.xls", if it has been changed.

Setting item		Setting content
	Start from Displayed State	<ul> <li>Starts data read/write when the output file is displayed.</li> <li>NOTE</li> <li>Be sure to turn on this check box, if you want to create a button on the Excel sheet and use this as a trigger condition to execute ACTION.</li> <li>Refer to "5.6 Creating Trigger Buttons in a Form" for details about the trigger condition button.</li> </ul>
Output File	Do not save the output file when Action runs.	<ul> <li>The output file is not automatically saved when executing the Action.Save the output file using the Excel menu.</li> <li>IMPORTANT</li> <li>Checking this item helps if a large enough output file is used that it takes a long time to save. Note that if 'Pro-Server EX' or 'Excel' terminates abnormally for some reason, it's possible that the output file will not be saved, resulting in loss of data. Normally, we recommend leaving this item unchecked. If this item is checked, use the Excel auto save function to prevent unexpected loss of output files. For details on the Excel auto save function, refer to "■ Excel Auto Save Function".</li> <li>If [Excel Operation Function/Export] is specified in the Execution Sequence List and is activated, output files are saved.</li> </ul>

## "Device Logging" Screen

Constraints  Cons	
Node (Trigger-Source Node) Device Address/Symbol Group Data Type 168it(Signed)	Name  No. of  Devices
<ul> <li>Add Device Address/Symbol Name</li> <li>Add Trigger-Node Name</li> </ul>	Note: When specifying inconcecutive memory data, please use a group symbol.
Layout Settings Target Cell Range \$8\$8 Logging Vertical Horizontal Direction No. of Logging 1 Data Time Stamp OFF Forward Backward Note: The layout of a group symbol is fixed.	Sample An image of writing to a cell is shown below. The arrow points in the direction of data logging. DTDI D102 D103 D104 1 2 3 4 5 2 4 5 6 7 5 6 7 8 9 7 8 9 10 DTDI D102 D104 1 2 3 4 5 2 4 5 6 7 5 6 7 8 9 7 8 9 10
No. of Blank Cells to insert between Cells Row	Column 0 🕂
Convert device value to certain text at Read Action when cell gets full In creating a sheet, clear the specified cell range and then	· · · · · · · · · · · · · · · · · · ·
	OK Cancel

Setting item		Setting content		
		<ul> <li>Selects entry nodes that include the</li> <li>NOTE</li> <li>Clicking the [] button can retrive</li> <li>Selecting "(Trigger-Source Noder triggered the action.</li> </ul>		
Device	Node	Trigger Cause	Target Entry Node	
Settings	Node	The trigger condition satisfied	Trigger condition node (except for Pro-Server EX node)	
		The trigger button clicked	Pro-Server EX node on which you clicked the button	
		Started directly from the user program	Pro-Server EX node on which the user program is operated	

Setting item		Setting content		
	Device Name	<ul> <li>Selects Device/PLCs that include the devices to execute data logging.</li> <li>NOTE</li> <li>It is not necessary to set when the entry nodes are GP Series nodes and Pro Server EX nodes.</li> </ul>		
Device Settings	Device Address/ Symbol Group	Sets the device address or symbol to be used. • When specifying a device address: Enter directly from the Calculator icon. Calculator icon Device Address/Symbol Group • When specifying a symbol: Select the symbol by clicking the list button. List button Device Address/Symbol Group NOTE • When setting non-sequential devices, be sure to specify a group symbol.		
	Data Type	Selects the data type by clicking the [] button. Enabled only when the device address has been directly input.		
	No. of Devices	<ul> <li>This field displays the number of devices, calculated from the selected range of cells, for the write operation.</li> <li><b>NOTE</b></li> <li>• When "String" is specified in [Data Type], the title of the setting item will be [No. of Characters].</li> </ul>		

Setting item		Setting	g content	
	Writes the device address, symbol name, or group symbol name in the Excel cells next to the cells in which logging data have been written. In this case, depending on the data logging direction, the device address, symbol name, or group symbol name will be written in the different cells as follows.			
	Logging	Direction	Display Co	ell Position
		tical	Above t	he value
	Horiz	zontal	On the left	of the value
Add Device Address/Symbol Name	Example) • Device address " 9:00:01 9:00:02 9:00:03 • Device address "	D100	D101	D102
		9:00:01	9:00:02	9:00:03
	D100			
	D101			
	D102			
Add Trigger Node Name	Writes the name of cell.	the entry node that	has triggered ACT	ION in the top of the

Sett	ing item	Setting content
	Target Cell Range	<ul> <li>Displays the specified cell range.</li> <li>To change the cell range, click the button and select a cell range on Excel.</li> <li>NOTE</li> <li>For the process on how to select cell ranges, refer to "■ Action Area Settings" in "5.1.2 Setting Guide".</li> <li>The useful function is available to check the specified cell range (Action area). Refer to "■ Action Area List" in "5.1.2 Setting Guide".</li> </ul>
Layout	Logging Direction	<ul> <li>Sets the data logging direction (vertical or horizontal).</li> <li><b>NOTE</b></li> <li>The write image of the content set in "Layout Settings" appears in [Sample].</li> </ul>
Settings	No. of Logging Data	Sets and displays the number of data logging that was calculated automatically from the specified cell range.
	Time Stamp	<ul> <li>Add time when data was written at the head of the logging data.</li> <li>OFF</li> <li>Not add time information</li> <li>Forward</li> <li>Add time information at the head of the logging data.</li> <li>Backward</li> <li>Add time information at the end of the logging data.</li> <li>You can select the following two types of time information by clicking the list button.</li> <li>Use GP time</li> <li>Use PC time</li> </ul>
Layout Settings	No. of Blank Cells to Insert between Cells	Sets the number of blank cells to insert (blank cells to insert between data and data) when writing data in multiple cells. You can use different settings for columns and rows, respectively.
Convert device v at Read	value to certain text	Converts the read device values into text. Turning on this check box will display "Text Substitution Table Settings" screen. Refer to "■ "Text Substitution Table Settings" Screen" for more details.
Action when cell gets full		<ul> <li>Sets the action when the specified cell for data logging has got full.</li> <li>Clear and Overwrite</li> <li>Clears the cells, and continues logging from the beginning.</li> <li>Scroll</li> <li>Scrolls and continues logging</li> <li>New Sheet</li> <li>Continues logging on a new sheet. All features being output on the sheet will be copied to the new sheet.</li> <li>Loop</li> <li>Not clears the cells, and continues logging from the beginning.</li> </ul>
In creating a she specified cell rar	eet, clear the nge and then start.	Before copying a sheet from the template file, if data are written in the cell range of the sheet, clears the data and starts copying.

• "Trigger Condition Settings" tab

🚏 Device Logging	_ 🗆 🗙
Action Settings Trigger Condition Settings	
Action Area No.       2         When the specified trigger type (under-condition button) is satisfied, this area is executed.         Please specify a trigger type.         New Trigger Condition         New Trigger Button         Logging         Clear Cell when the following condition is satisfied.	
Edit     Delete       Trigger Condition     Trigger Condition       *     *	
If two or more are specified, the Action is executed when any of them is satisfied. For more complicated operation, please configure from [Excel Action]-[Execution Sequence List] in the menu.	
OK	Cancel

Setting item	Setting content
Action Area No.	Displays No. allocated to each ACTION area by template.
New Trigger Condition	The "Trigger Condition Settings" screen will appear. Click here to set a new trigger condition.
New Trigger Button	Displays the "Trigger Button" screen. Refer to "5.6.2 Setting Guide" for more details.
Logging	<ul> <li>Selects a trigger condition for starting data logging.</li> <li>Click the blank line of [Trigger Condition] and then the list button to display the registered trigger condition.</li> <li>NOTE</li> <li>When multiple trigger conditions have been specified, satisfying at least one of those conditions executes ACTION.</li> <li>Clicking the [Edit] button can edit the specified trigger conditions.</li> <li>Clicking the [Delete] button cancels the specified trigger conditions.</li> </ul>
Clear Cell when the following condition is satisfied	<ul> <li>Selects a trigger condition for clearing data of the logging area.</li> <li>Click the blank line of [Trigger Condition] and then the list button to display the registered trigger condition.</li> <li>NOTE</li> <li>When multiple trigger conditions have been specified, satisfying at least one of those conditions executes ACTION.</li> <li>Clicking the [Edit] button can edit the specified trigger conditions.</li> <li>Clicking the [Delete] button cancels the specified trigger conditions.</li> </ul>

• "Text Substitution Table Settings" Screen

ext Substitution Table Settings       ×         To convert a device value to a certain text, a conversion table specifying the replacement rule is required.         Please specify the storage location of the table.
EXCEL book storing the table
Cell storing the table (top-left cell)
Sheet A1
OK Cancel

Setting item	Setting content			
Excel book storing the table	Specifies the Excel book in which the text substitution table is stored. Click the [] button, and then specify the file on the "Open File" screen.			
Cell storing the table	Specifies the book name in which the text substitution table is stored and then the cell number of the top-left of the table. Click the button to display the "Specify Cell" screen. Then enter the cell number at the top- left of the table. Specify cell ?X Please specify the topleft cell of the conversion table specifying the replacement rule. OK Cancel			

Refer to "■ About Text Substitution of Data" for more details about a text substitution table.

## About Text Substitution of Data

"Excel Form" ACTION has a feature of text substitution to use when writing device data in Excel cells. This feature substitutes device data into a set of characters.

Before using this feature, it is necessary to create a substitution table in which a text substitution rule is set and to save the table at an arbitrary location.

Example of Text Substitution Table

	A	В	С	D
1	Start value	terminus value	character string	
2	0		bolt	
3	1		nut	
4	2		screw	
5	100		water level low	
6	101		water level excess	
7	102		Voltage decrease	
8	103		Voltage exaggerated	
9	500	599	red	
10	600	699	blue	
11	700		green	
12	ELSE		others	
13				

#### "Start Value"

Sets start values to compare device data with.

In case of using a value other than the set start values, enter "ELSE".

"End Value"

Sets end values to compare device data with.

• "Character String"

Sets character strings to substitute.

The flow of substitution is as follows: Compares device data with the substitution table from the top row. If

satisfied, writes the value of the character string of the row in the cell.

If not satisfied, retrieves data until a blank start value or "ELSE" is found.

If an "ELSE" row found, writes the character string in the "ELSE" row in the cell.

If an "ELSE" not found, writes the read value itself in the cell.

If a blank line row found, writes the compare source value itself in the cell.

The comparison method for substitution is as follows:

#### (1) Numeral Data

1. When only the start value is set, if the start value and device data are identical, converts the data to a character string.

2. When both the start value and end value are set, if start value  $\leq$  data < end value, converts the data to a character string.

3. When only the end value is set, regards the data as a blank row and ends the comparison. Then writes the compare source value itself in the cell.

4. When both the start value and the end value are set in character strings, regards the data as non-object and neglects them.

- 5. When the Data Type is "16Bit(Signed)", describe the integer in the table. Example) 1,2,3•••••10,11
- 6. When the Data Type is HEX, describe the hexadecimal number in the table. Example) 1,2,3,••••••a,b,•••••f,10,11,•••••1a,1b

#### (2) Character String Data

If device data and the start value are identical, converts the data to a character sting. Neglects the end value, if any.

After the conversion, the cell format as well as character strings will be reflected in the output file. The format preset on the template (format for lines excluded) will therefore be overwritten. When the substitution feature is not used, the cell format will remain unchanged.

When macro characters (%DEVICE\_VALUE%) for device value substitution are embedded in the string, converts the data to the character string of a device value.

#### Action Area Settings

The Action Area is a range of cells in Excel that you want to read from and write to when running actions in an Excel Form. You can set up the Action Area in Excel by dragging the mouse to select a range of cells.

NOTE

• Set up the cell range using the following parameters.

Rows: 65536 or less Columns: 256 or less

• Instead of using the mouse, you can specify a cell range by typing. Click the Excel screen, enter a cell range on the "Specify Range" screen, and then click the [OK] button.

Specify Range		? ×
Please specify the rang	je.	
\$A\$1		
	ОК	Cancel

- To change the Action Area by dragging the mouse, you need to display the Action Area. When the Action Area is not displayed, from the [Excel Action] menu select [Display Area].
- When you specify 1501 rows or more in your cell range, only the top-left cell of the selected range will look like it's selected. Although dragging the mouse and moving inside the area will not change the Action Area, if you change the size of the Action Area the newly specified range is saved as the Action Area.

	А	В	С
1	O∆Manage	ment Board	ł
2	_		
8			
4		[ [	
5			
6			
7			
8			

#### Action Area List

You can display the list of the specified Action area to check or edit quickly.

1 Click [Action Area List] under [Excel Action] on the Excel menu bar.



2 Click the Action area you want to check.

Ac	tion Area List	×
C	AREA0(\$B\$4:\$C\$23) Logging AREA1(\$D\$4:\$D\$23) Logging AREA2(\$E\$4:\$E\$23) Logging AREA3(\$F\$4:\$F\$23) Logging	
	Show Action Areas only on the currently active sheet.	
	Close	

The selected Action area is displayed.

• To display the Action area only on the currently displayed sheet, check [Show Action Areas only on the currently active sheet.].

• Double-click the item to display the edit screen for the selected Action area. This is useful when you want to edit quickly.

**3** Click the [Close] button and check or edit the selected Action area.

## 5.2 Writing Date/Time in a Form

• When using 'Microsoft Excel 2010', there have been instances when the display of Excel forms is incorrect. When the display is incorrect, refer to the following.

"■ Caution Regarding Incorrect Display of Excel Forms" in "5.1.2 Setting Guide"

#### 5.2.1 Try to Write Date/Time in a Form

This feature allows writing the current date and time in the specified cell of a form.

1 Click the [Special Area] icon on the Excel template.

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	<u>File E</u> dit <u>V</u>	jew <u>I</u> nsert	F <u>o</u> rmat <u>T</u> ools	; <u>D</u> ata <u>W</u> in	idow <u>H</u> elp	ExcelAction(A	)					_ 8 ×
	🖻 🖬 🔒	) 🖨 🖪	🂱 🐰 🖻		Σ 🥵	f≈ ĝ↓ 🛍	. 🝳 😤 🛛 A	rial	• 1	0 <b>- B</b>	ΙÜ	≣ *
] 🤬	t 🖗 🖗		🖉 🗰 🖪	벌 😒 🕲								
	A1		=									
	Α	Special	Area C	D	E	F	G	Н		J	K	
1		1										
2												
2												

2 Click the list button of [Feature Type] and then select [Show Date/Time].

Xii Special	_ 🗆 X
Action Settings Trigger Condition Settings	
Feature Type Show Date/Time Show Date/Time Show Date/Time Show Cell Arrow Write Current Time Trigger-Source Node	
\$4\$1	
Clock to get Current Time	
GP Date/Time Node [Trigger-Source Node]	
C PC Date/Time	

**3** Set the content and click the [OK] button.

Refer to "5.2.2 Setting Guide" for more details.

## 5.2.2 Setting Guide

"Action Settings" tab

Special Action Settings Trigger	Condition Settings			
Feature Type		•		
Write Current Tim	e to Cell			
	\$4\$1	R		
Clock to get Curre	ent Time			
GP Date/Time	Node	(Trigger-Source Node		
O PC Date/Time				
			(	DK Cancel

Setting item	Setting content
Feature Type	<ul> <li>Selects the type of feature to set.</li> <li>Show Date/Time</li> <li>Show Cell Arrow ("5.3 Writing Arrows in a Form")</li> <li>Trigger Source Node ("5.4 Writing Trigger Source Node Names in a Form")</li> </ul>
Write Current Time to Cell	<ul> <li>Specifies a cell range to write date and time. Clicking the button can select a cell range on Excel.</li> <li>NOTE</li> <li>For the process on how to select cell ranges, refer to "■ Action Area Settings" in "5.1.2 Setting Guide".</li> <li>When you select multiple cells as a cell range, the date and time will be written in the left top cell only.</li> <li>The useful function is available to check the specified cell range (Action area). Refer to "■ Action Area List" in "5.1.2 Setting Guide".</li> </ul>
GP Date/Time PC Date/Time	<ul> <li>Writes date and time of the specified node.</li> <li>GP Date/Time</li> <li>Writes date and time of the GP.</li> <li>In this case, click the list button to specify the entry node.</li> <li>PC Date/Time</li> <li>Write date and time of the PC on which ACTION is operating.</li> </ul>

"Trigger Condition Settings" tab

Xii Special	
Action Settings Trigger Condition Settings	1
Action Area No. When the specified trigger type (under-condition button) is satisfied, this area is executed. Please specify a trigger type.	
New Trigger Condition New Trigger Button	
Edit Delete Trigger Condition *	
If two or more are specified, the Action is executed when any of them is satisfied. For more complicated operation, please configure from [Excel Action]-[Execution Sequence List] in the menu.	
	OK Cancel

Setting item	Setting content		
Action Area No.	Displays No. allocated to each ACTION area by template.		
New Trigger Condition Displays the "Trigger Condition Settings" screen. Click here to set a new trigger condition.			
New Trigger Button	Displays the "Trigger Button" screen. Refer to "5.6.2 Setting Guide" for more details.		
	Selects a trigger condition for write. Click the blank line of the [Trigger Condition] and then the list button to display the registered trigger condition.		
Read	<ul> <li>NOTE</li> <li>When multiple trigger conditions have been specified, satisfying at least one of those conditions executes ACTION.</li> <li>Clicking the [Edit] button can edit the specified trigger conditions.</li> <li>Clicking the [Delete] button cancels the specified trigger conditions.</li> </ul>		

# 5.3 Writing Arrows in a Form

## 5.3.1 Try to Write Arrows in a Form

This feature allows writing arrows to show the area, etc on the specified cell of a form.

1 Click the [Special Area] icon on the Excel template.

M	licrosoft Ex	cel - test.xlt								_ [	×
	Bile Edit View Insert Format Iools Data Window Help ExcelAction(A)									_ 6	N ×
	🖻 🖬 🔒	} 🗿 🖪 🖤 👗 🖻		🍓 Σ	f≈ ĝ↓ 🛍	, 🝳 💝 🛛 A	rial	• 1	0 <b>- B</b>	ι π ≣	» •
	🗊 👋 🖸 A1	(X)⊊ Ø  ¥   ■ =	🛱 🔮								
	Α	Special Area	D	E	F	G	Н		J	К	
1											
2											_

2 Click the [Feature Type] button and then select [Show Cell Arrow].

Xii Special			
Action Settings Trigger Condition	on Settings		
Show	v Date/Time  V Date/Time V Date/Time V Cell Arrow er-Source Note	)	
I	\$4\$1		
Clock to get Current Tim	e		
GP Date/Time	Node	(Trigger-Source Node	
O PC Date/Time			

 $\mathbf{3}$  Set the content and click the [OK] button.

Refer to "5.3.2 Setting Guide" for more details.

## 5.3.2 Setting Guide

🔏 Special 📃 🖂 🔀
Action Settings Trigger Condition Settings
Feature Type Show Cell Arrow
Draw an arrow
Arrow Display Ats1 Arrow real Horizontal Vertical Arrow Arrow Arrow
Data Cell Settings
Data Axis Cell \$C\$1 Scale
Start Data Cell \$4\$1 Start Value End Value 0 10 20 30 40
End Data Cell \$8\$1
Please specify Scale, Start Value, and End Value in 1 cell.
Arrow Settings
Thickness 1.00
Solid
Color
Style
✓ In displaying a cell arrow, remove the existing arrow and then show the new one
OK Cancel

Setting item	Setting content						
Arrow Display Cell Range	Specifies a cell range to which cell arrows will be written. Clicking the button can select a cell range on Excel. Start Data Cell End Data Cell Data Axis Cell Start Value End Value 0 10 20 30 40 10 20 35 5 35 Display Cell Range						
	<ul> <li>• For the process on how to select cell ranges, refer to "■ Action Area Settings" in "5.1.2 Setting Guide".</li> <li>• The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".</li> </ul>						

Set	ting item	Setting content							
Arrow Display Cell Range		• A cell arrow will appear according to the cell format in Excel. When the cell format is in "Left Justification", the arrow starts at the left end of the cell. When the cell format is in "Right Justification", on the other hand, the arrow starts at the right end of the cell. When the cell format is not in either of "Left Justification", "Right Justification", or "Centering", the arrow will be centered.							
		Start Value End Value 10 20 30 Centering							
		Start Value End Value 10 20 30 Left Justification							
		Start Value End Value 10 20 30 10 20 Right Justification							
Arrow Direction		Selects either "Horizontal Arrow" or "Vertical Arrow".							
	Data Axis Cell	Specifies the first cell in which reference data are stored for wiring arrows. The write image of the content set in "Data Cell Settings" appears on the right of the screen. NOTE • Set the target cell range under the following conditions. Row: 65536 or less Column: 256 or less							
Data Cell Settings	Start Data Cell	<ul> <li>Specifies the first cell in which data of the start value of an arrow are stored</li> <li>NOTE</li> <li>Set the target cell range under the following conditions. Row: 65536 or less Column: 256 or less</li> <li>An arrow will not be written if the start value is out of the scale range.</li> </ul>							
	End Data Cell	<ul> <li>Specifies the first cell in which data of the end value of an arrow are stored. Clicking the button can select a cell range on Excel.</li> <li>Drag the mouse to select the cell range.</li> <li>NOTE</li> <li>Set the target cell range under the following conditions. Row: 65536 or less</li> <li>Column: 256 or less</li> <li>The same number of data as that of the start value must be specified.</li> <li>An arrow will not be written if the end value is out of the scale range.</li> </ul>							

Setti	ng item	Setting content				
	Thickness	Sets the thickness of arrows (mm).				
	Solid Line/Dotted Line	Sets the type of arrow line.				
Arrow Settings	Color	Sets the color of arrows. On the "Color Settings" screen, set color and click the [OK] button.				
Style		Sets the style of arrows.				
In displaying a cell arrow, remove the existing arrow, and then show a new one		Before displaying a cell arrow, clears the existing arrow and then show a new one.				

# 5.4 Writing Trigger Source Node Names in a Form

## 5.4.1 Try to Write Trigger Source Node Names in a Form

This feature allows writing the name of a trigger source node in the specified cell of a form. A trigger source node means an entry node which satisfies the trigger condition.

1 Click the [Special Area] icon on the Excel template.

M	licrosoft Exc	el - test.xlt	:								_ (	
	<u>File E</u> dit <u>V</u> i	ew <u>I</u> nsert	F <u>o</u> rmat <u>T</u> ool	s <u>D</u> ata <u>W</u> in	idow <u>H</u> elp I	ExcelAction(A	0					Ð×
	🖻 🖬 🔒	) 🖨 🖪	۵ 🎸 🎸		🔮 Σ ,	f* 🛃 🛍	, 🝳 🖏 A	rial	• 1	0 <b>- B</b>	<i>I</i> <u>U</u> ≣	≓ ¥
] 🤬	🗗 😻 🖸 A1		Ø 🗰 🛛	🛱 🔮 🕈								
	A	Special	_	D	E	F	G	Н	I	J	K	F
1												
2		-										

2 Click the list button of [Feature Type] and then select [Trigger Source Node].

💥 Special 📃 🚺	X
Action Settings Trigger Condition Settings	
Feature Type Trigger-Source Node ▼ Show Date/Time Write Trigger-Node Trigger-Source Node	
Target Cell Range \$A\$1	

**3** Set the content and click the [OK] button.

Refer to "5.4.2 Setting Guide" for more details.

## 5.4.2 Setting Guide

a Special		_ 🗆 🗙
Action Settings Trigger Condition Settings		
Feature Type Trigger-Source Node		
Write Trigger-Node Name to Cell		
Target Cell Range 🚯		
	OK	Cancel

Setting item	Setting content
	Specifies a cell range to which node names will be written. Clicking the button can select a cell range on Excel.
Target Cell Range	<ul> <li>NOTE</li> <li>For the process on how to select cell ranges, refer to "■ Action Area Settings" in "5.1.2 Setting Guide".</li> </ul>
	<ul> <li>When you select multiple cells as a cell range, the node name will be written in the left top cell only.</li> <li>The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".</li> </ul>

# 5.5 Arranging Sequence of ACTION (New Form)

#### 5.5.1 Try to arrange sequence of ACTION

This function allows you to specify the executing sequence of Excel Report Action, or Excel Operation Function including New Sheet or New Book.

It is capable of displaying 1 to 40 ACTION items. Sorting, editing, and deleting are possible.

Here is the example how to change the executing sequence of multiple setup ACTION.

1 Click the [Execution Sequence List] icon on the Excel template.

Microsoft Excel - test.xlt							_ 1	IX
Bile Edit View Insert Format Tools Data Wir	ndow <u>H</u> elp	ExcelAction(A	)				_ 1	۶×
0 🛱 🖬 🔒 🚭 💁 🖏 🛍 🛍 🕬	- 🍓 Σ	f* 🛃 🛍	, 🝳 💝 🛛 A	rial	• 1	0 <b>- B</b> .	<i>I</i> <u>U</u> ≣	÷ *
4 🗗 😻 🔗 💥 🚑 🔗 💥 💕 🖄 茸								
A1								
A B Execution Sequence List	E	F	G	Н		J	K	
2								
3								

2 After clicking the ACTION name with the executing sequence "1", select the ACTION to execute for the first time.

		When Trigger Cor	ndition is sati	isfied, Action is e	executed.	
Ed	New Trigger Condition dit Insert CI	Please place actions to	o execute or EXCE	L operation commands in (	order of execution.	
	Trigger Condition	1	2		3	4
I	Trigger1	AREA0(\$A\$1) One-Shot:Read	AREA0(\$A\$	ation Function \$1) One-Shot \$3) Logging	AREA2(\$A\$5) Recipe:Write Recipe	A
*				(5) Recipe		

**3** Select the ACTION type in the "Select contents to execute" screen, and click the [OK] button.



The ACTION name with the executing sequence "1" changes to the selected ACTION name.

🖩 Execution Sequence List	
Execute when Trigger Condition satisfied Execute when Trigger Button clicked Execute from another application	
When Trigger Condition is satisfied, Action is executed.	
New Trigger Condition         Please place actions to execute or EXCEL operation commands in order of execution.           Edit         Insert         Clear	
Trigger Condition 1 2 3	4
.∥ Trigger1 (AREA2(\$A\$5) Recipe:Read ▼ REA1(\$A\$3) Logging:Logging AREA2(\$A\$5) Rec	cipe:Write Recipe Af
*	

4 Similarly, click the ACTION name with other executing sequence and click the [OK] button. Refer to "5.5.3 Setting Guide" for more details.

#### 5.5.2 Excel Report Actions - Timing Differences When Reading Data

#### Summary

Using Excel Report Actions, after a trigger condition becomes true, you can export data to an Excel worksheet from internal devices on a display unit or from device addresses on an external device. However, if you set up multiple action areas on a single trigger condition, timing differences may arise when data is read. In the following paragraphs you can find why timing differences occur, examples of issues caused by a timing difference, and how to prevent timing differences.

#### Functions

Problems discussed in this topic occur when using the following functions.

- One-shot: Read
- Logging: Device logging
- Recipe: Read actual values

#### Why Timing Differences Occur (Excel Report Action operation flow)

Excel Report Actions run after a trigger condition becomes true. The following illustrates the operation workflow of Excel Report Actions.

- 1 Find the trigger condition of the targeted process.
- 2 Run the ACTION area associated with the trigger condition found in step 1. ACTION area operations are as follows.
  - 2-1. From the ACTION area, get the device address, data type, and number of devices.
  - 2-2. Using the information from step 2-1, Pro-Server EX reads data from the display unit.
  - 2-3. Results are applied to cells in the Excel worksheet.
  - 2-4. If there are further ACTION areas, repeat from step 2-1.
- **3** Run the Excel Report Action's exit process.

As indicated in the operation workflow, when a single trigger condition runs multiple ACTION areas, timing differences arise due to the timing on reading data for each ACTION area. Due to this timing difference, your design could cause unintended repercussions.

#### Example Problem Caused by a Timing Difference

When using a single trigger condition and you use separate ACTION areas to read the Hours, Minutes, and Seconds from the clock on an external device or display unit, you may not be able to read the data properly. The following is a concrete example that uses Logging. The same applies when using One-shot or Recipe functions.



The above illustration shows ACTION areas that get the Hours, Minutes, and Seconds from the external device's clock register, and populate the data in columns A, B, and C. Columns A, B, and C each have different ACTION areas set up.

As the hours, minutes, and seconds need to be read at one time, as shown below in the [Execution Sequence List] screen, the ACTION areas are set to run on a single trigger.

	Trigger Condition	1	2	3
•	Trigger1	AREA0(\$A\$2:\$A\$12) Logging:Logging	AREA1(\$B\$2:\$B\$12) Logging:Logging	AREA2(\$C\$2:\$C\$12) Loggin
*				

However, as described in "■ Why Timing Differences Occur (Excel Report Action operation flow)", because Excel Report Actions read data one action area at a time, timing differences will occur between the Hours, Minutes, and Seconds. If the Excel Report Action runs at the moment the external device's clock register changes from 00:00:59 to 00:01:00, then the resulting data may actually be 00:01:59.

#### Preventing Timing Differences

To prevent time differences, merge the multiple ACTION areas and associated device addresses into a single ACTION area. The following describes the actual settings.

# • If each of the multiple ACTION areas uses different functions, potential data-read timing differences cannot be prevented.



The above illustration shows the ACTION area that gets the Hours, Minutes, and Seconds from the external device's clock register, and populates the data in columns A, B, and C. Columns A, B, and C are set up in a single ACTION area. In the [Execution Sequence List] screen, set up one trigger condition to run one ACTION area.

		Trigger Condition	1	2	3	4	5
		Trigger1	AREA0(\$A\$2:\$C\$12) Logging:Logging				
*	÷						
							1

#### Device Settings (Consecutive device addresses)

In the ACTION area's [Device Settings], you can set up multiple devices. Using this setting, you can handle multiple, consecutive device addresses in one ACTION area. The following example ACTION area setup is for Device 1 = D100, Device 2 = D101, and Device 3 = D102.

Device Settings					
Node	AGP1	•	Device Name	PLC1	•
Device Address/Symbol Group	<b>D0100</b>	•	No. of Devices	3	⇒
Data Type	16Bit(Signed)			1	
🛛 🗹 Add Device Address	:/Symbol Name		Starting f	rom D100	set up 3 sets
Add Trigger-Node N	ame			s. Excel Re	
				ta from cons	secutive
			devices.		

#### Device Settings (Non-sequential device addresses)

By creating group symbols in Pro-Studio EX, you can use data from multiple, non-sequential device addresses in an ACTION area. The following example group symbol and ACTION area setup is for Device 1 = D100, Device 2 = D200, and Device 3 = D300.

💋 Start ≫	Node >>	1	Symbol ⋗ ≷	Feature >>	Save	🔊 📩 Trans	fer 🧖
Symbol	1 1	1	Node Name AGP1			non-sequent es in a group	
Group	Ungroup	9	Sheet Name Sheet2				- ,
Insert	Delete		,				
Сору (	Dut Paste	G	Symbol	Data Type 🔶	Consec utive	Device Address	No. of Data
Symbol Sheet		1	Group				
Add	Delete		Symbol1	16Bit(BCD)		D0100	1
		I.	Symbol2	16Bit(BCD)		D0101	1
Check Duplication/	/List Used Addresses		Symbol3	16Bit(BCD)		D0102	1



NOTE	•	For details about group	symbols, see	"29.3 Grouping Symbols".
NUTEI				

## 5.5.3 Setting Guide

#### "Execute when Trigger Condition satisfied" Tab

This tab displays the ACTION to be executed when the Trigger Condition is satisfied, or the sequence of Excel Operation Function.

It is capable of displaying 1 to 40 ACTION items separately by the trigger condition.

	ion Sequence List			
ecute	when Trigger Condition :	satisfied Execute when Trigger Button (	clicked Execute from another application	
			n is satisfied, Action is execu	ited.
		,	,	
	New Trigger Condition		e or EXCEL operation commands in order of	execution.
E	dit Insert Cle	ar		
	Trigger Condition	1	2	3
I	Trigger1	AREA3(\$A\$7) One-Shot:Read	AREA1(\$A\$3) Logging:Logging	AREA2(\$A\$5) Recipe:Write Recip
*				
•				,
1				F
•				DK Cancel

Setting item	Setting content
New Trigger Condition	Displays the "Trigger Condition Settings" screen. Click here to set a new trigger condition.
Edit	When selecting the Trigger Condition, you can click the [Edit] button to edit the Trigger Condition. Also, when selecting the ACTION to execute or Excel Operation Function, you can click the [Edit] button to display each edit screen.
Insert	Inserts an empty cell. You can specify the ACTION or Excel Operation Function.
Clear	Clears the content of the row where a trigger condition is displayed.
Trigger Condition	Displays the name of the trigger condition. To change a trigger condition, click the trigger condition name and then click the list button to select a new one.
Execution Sequence (1 to 40)	<ul> <li>Displays the ACTION items or the Excel operation function items in sequence (1 to 40). To change the sequence, click one of the ACTION items or of the Excel operation function items, and then click the list button to select new ones.</li> <li><b>NOTE</b></li> <li>Clicking "Excel Operation Function" displays the "Excel Operation Function Setting" screen.Refer to "■ "Excel Operation Function" Screen" Screen" for more details.</li> </ul>

## "Execute when Trigger Button clicked" Tab

This tab displays the ACTION or the sequence of Excel Operation Function to be executed when you click the created trigger button.

It is capable of displaying 1 to 40 ACTION items separately by the trigger button.

						<b>.</b>						_
scule ·	when Trigger C	ondition s						e from another app				
			Wh	en Trig	ger Bu	tton is	clicked, A	ction can b	e execut	ed.		
	New Trigger B	utton		Plassa al-		to oucout		eration commands	in order of e	uppution.		
Ec		Clea	ar l	r lease pic	ice actions	to execu	IE OF EACEE OP	station commanus	in older of e.	Recution.		
	Trigger Buttor	1 1   1					2		3			4
•	Button1			Arte) Dania	e:Write Re	oine		One-Shot:Read		\$A\$3) Loggin	al casina	4
*	Duttorn	-	IILM2(4	Appliech	Je. write the	cipe	ALIEA0(PAPT)	one-shochread	AILAI	akao) Loggin	ig.cogging	_
	100									_		
1												
1												<u>1</u>

Setting item	Setting content
New Trigger Button	Displays the "Trigger Button" screen. Click here to set a new trigger button.
Edit	When selecting the Trigger Condition, you can click the [Edit] button to edit the trigger button. Also, when selecting the ACTION to execute or Excel Operation Function, you can click the [Edit] button to display each edit screen.
Insert	Inserts an empty cell. You can specify the ACTION or Excel Operation Function.
Clear	Clears the content of the row where a trigger button is displayed.
Trigger Button	Displays the name of a trigger button. To change a trigger button, click the trigger button name and then click the list button to select a new one.
<b>F i O i</b>	Displays the ACTION items or the Excel operation function items in sequence (1 to 40). To change the sequence, click one of the items of the ACTIONs or of the Excel Operation Functions, and then click the list button to select new ones.
Execution Sequence (1 to 40)	<ul> <li>NOTE</li> <li>Clicking "Excel Operation Function" displays the "Excel Operation Function Setting" screen. Refer to "■ "Excel Operation Function" Screen" for more details.</li> </ul>

#### "Execute from another application" tab

You can execute ACTION by sending the command from the user program to the Excel Report Action. This tab displays the ACTION (Logging or Recipe function) or Excel Operation Function to be executed when sending this command.

It is capable of displaying 1 to 40 ACTION items separately by the trigger command.

ecuti	ion Sequence List				
cute	when Trigger Conditi	ion satisfied   Execute when Trigger Butto	n clicked Execute from another appli	cation	
	Bycondin	g a command from a user j	program to Action the	Action can be executed	
	by sending	g a command nom a user j	program to Action, the r	citori can be executed.	
Ec	dit Insert	Clear Please place actions to exec	ute or EXCEL operation commands in	n order of execution.	
	are moore				
	Command	1	2	3	4
•	ABC	AREA2(\$A\$5) Recipe:Write Recipe	AREA3(\$A\$7) One-Shot:Read	AREA1(\$A\$3) Logging:Logging	
*					
4					Þ
1		1		0K ( Ca	.► ncel

Setting item	Setting content
Edit	When selecting the ACTION to execute or Excel Operation Function, you can click the [Edit] button to display each edit screen.
Insert	Inserts an empty cell. You can specify the ACTION or Excel Operation Function.
Clear	Clears the content of the row where a trigger button is displayed.
Command	Inputs the trigger command created by the user program. Ex) You can use the following API function to send the command to Excel Report Action. "ABC" corresponds to the trigger command. WriteDeviceStr("PC1","Action1","ABC",5)
Execution Sequence (1 to 40)	<ul> <li>Displays the ACTION items or the Excel operation function items in sequence (1 to 40). To change the sequence, click one of the ACTION items or of the Excel operation function items, and then click the list button to select new ones.</li> <li><b>NOTE</b></li> <li>Clicking "Excel Operation Function" displays the "Excel Operation Function Setting" screen. Refer to "■ "Excel Operation Function" Screen" for more details.</li> </ul>

"Excel Operation Function" Screen

xcel Operation Fund	tion
New Sheet	C Print Sheet Sheet Name sheet1
C Show Book	C Hide Book
C Execute Macro C Export	
File Name Saving Folde	Report_%Y%M%D%n.csv Default
Saving Format	CGV(Lcsv) Export only the last page except Action Report.
	O HTML(htm)
	OK Cancel

Setting item	Setting content
New Sheet	<ul> <li>Creates a new sheet by copying a specified sheet from the template.</li> <li>NOTE</li> <li>You cannot use the following characters as a sheet name. <ul> <li>",", "=", "+", "-", ".", "/", "\", " "</li> </ul> </li> <li>When the cells used for write on "Device One-shot", etc are specified as data cells, you cannot see the cells on the new sheet.</li> </ul>
Print Sheet	Prints the latest output sheet in the template file. Select a template sheet to print in [Sheet Name].
New Book	Creates a new output book by copying a template book.
Show Book	Displays an output book.
Hide Book	Hides an output book.
Print Book	Prints the all sheets in an output book except for ACTION report sheets.
Close Excel	Closes Excel.
Execute Macro	<ul> <li>Executes macro.</li> <li>Enter a macro name to execute in the text box.</li> <li><b>NOTE</b></li> <li>There are some restrictions when using this feature with 'Microsoft Excel 2007' or 'Microsoft Excel 2010'. Refer to "■Notes on File Format when using 'Microsoft Excel 2007' or 'Microsoft Excel 2010'' for more details.</li> </ul>
Export	<ul> <li>Exports data in a specified format.</li> <li>Specify the file name, save folder, save format (CSV or HTML) of a file to export.</li> <li><b>NOTE</b> <ul> <li>You cannot use the following characters as a macro name.</li> <li>"," =", "+", "-", ".", "/", "\", "\"</li> </ul> </li> <li>If "Do not save the output file when ACTION runs" is checked on the "Create form using Excel" screen, output files are saved after being exported.</li> </ul>

# 5.6 Creating Trigger Buttons in a Form

#### 5.6.1 Try to Create Trigger Buttons in a Form

This feature allows creating a button on Excel. This button can be used as a trigger condition to execute ACTION.

• There are some restrictions when using this feature with 'Microsoft Excel 2007' or 'Microsoft Excel 2010'.

Refer to "■Notes on File Format when using 'Microsoft Excel 2007' or 'Microsoft Excel 2010'" for more details.

- ACTION you can execute by the trigger button is "Excel Report" Action only.
- You cannot use the trigger button to exit Excel or open a new book.
- When specifying [Freeze Panes] in Excel, you can put a trigger button on the fixed window, not the scrollable window.
- When specifying [Split] in Excel, do not put a trigger button on the split windows.
- After the security patch of Microsoft Office is applied, the trigger button may not function normally. For details, refer to "■When the trigger button in Excel Report does not function normally" of "37.2 Restrictions on Pro-Server EX".
- 1 Click the [Buttonify Trigger Condition] icon on the Excel template.

Microsoft Excel - test.xlt							_ 🗆 ×
Eile Edit View Insert Format Tools Data Window Help	ExcelAction(A	)					_ 8 ×
Δ 🛱 🖬 🔒 🎒 🖪 🕵 🕎 👗 🖻 💼 🕬 - 🍓 Σ	f∗ ĝ↓ 🛍	, 🝳 😤 🛛 A	rial	• 1	0 • B	ΙU	≣ *
A1 -							
A B Buttonify Trigger Condition E	F	G	Н		J	K	
1							
2							
3							
4							

Displays the "Trigger Button" screen.

🐠 Trigger Button		×
Trigger Button Name	Button1	
Button Caption	Excel Form Action	
	OK Cancel	

**2** Set the content and click the [OK] button.

Refer to "5.6.2 Setting Guide" for more details.

#### 5.6.2 Setting Guide

🦸 Trigger Button		×
Trigger Button Name	Button1	
Button Caption	Excel Form Action	
	OK Cancel	

Setting item	Setting content							
Trigger Button Name	Set the name to identify the trigger button in the 'Pro-Studio EX'. This will be displayed such as in the Execution Sequence List screen as shown below.							
Button Caption	Sets the caption to display above the button.							

• Executing ACTION requires that the output file on which the button is located be open. Check the [Start from Displayed State] check box on the "Create form using Excel" screen.



• The trigger button is disabled during outputting to Excel. The trigger button becomes effective when the ACTION is completed.

# 5.7 Creating QC Charts in a Form

#### 5.7.1 Try to Create QC Charts in a Form

This feature allows creating a QC chart such as a Pareto graph and a scatter graph on the Excel template.

1 Click the [QC Chart] icon on Excel.

Microsoft Excel - tes	t.xlt									_ 🗆 ×
Eile Edit Yiew Inse	ert F <u>o</u> rmat <u>T</u> oo	s <u>D</u> ata <u>W</u> in	dow <u>H</u> elp	ExcelAction(A	)					_ 8 ×
🗅 🖻 🖬 🔒 🎒 [	d. 🚏 🐰 🗈		😩 Σ	<i>f</i> ∗ <u></u> ≹↓ 🚺	, 🕄 ∛   A	rial	- 1	0 <b>- B</b>	ΙÜ	≣ *
🤀 🗗 🐝 🝞 🍇   d	5 8 III	📫 🔮 ۲								
A1 💌	=	Chart								
A B	<u> </u>	Chart D	E	F	G	Н		J	K	
2										

The "QC Chart" screen will appear.



2 Set the content and click the [OK] button.

Refer to "5.7.2 Setting Guide" for more details.


# 5.7.2 Setting Guide

■ "QC Chart" screen



Setting item	Setting content
Graph Type	<ul> <li>Select the type of a graph to create and then click the [OK] button.</li> <li>The following graphs can be created:</li> <li>Pareto Graph</li> <li>Scatter Graph</li> <li>Histogram</li> </ul>

# "Create Pareto Graph" Screen

Create Pareto Graph	×
– Input Data – Label Range:	
Data Range:	<b>N</b>
Output Settings Output-Destination Start Cell:	
Graph-To-Display Graph Title:	Settings
	080% C Top 3 C OFF with a ratio less than 1%
ОК	Cancel

Setting item		Setting content	
Input Data	Label Range	<ul> <li>Specifies a cell range of a label of the data items for input data. Clicking the button can select a cell range on Excel. Drag the mouse to select the cell range.</li> <li>NOTE</li> <li>Setting range of cells: Rows 1 to 1500, Columns 1 to 256</li> <li>Instead of using the mouse, you can type a cell range. On the "Specify Rang screen, enter a cell range and then click the [OK] button.</li> </ul>	
	Data Range	Specifies a cell range of input data. Clicking the button can select a cell range on Excel. Drag the mouse to select the cell range.	
Output Settings	Output- Destination Start Cell	Specifies a reference range to which a graph to create will refer.	
	Graph Title	Enter the title of a graph to create.	
Graph-To- Display Settings	Highlight	<ul> <li>Highlights the following items.</li> <li>Up to 80%</li> <li>Highlights the main items with cumulative percentage 80% or more.</li> <li>Top 3 items</li> <li>Highlights the top three items.</li> <li>OFF</li> <li>Turns off highlighting.</li> </ul>	
	Combine items with a ratio less than 1%	Combines the items of a ratio less than 1% into one single item as "Others".	

# "Create Scatter Graph" Screen

Create Scatter Graph		×
Input Data Value of X (A single row or column): Value of Y (A single row or column):		<b>x</b>
— Graph-To-Display Se Graph Title:	tings	
ОК	Cancel	

Setting item		Setting content
		Specifies a cell range of X-axis value of input data. Clicking the button can select a cell range on Excel. Drag the mouse to select the cell range.
Innuit Data	Value of X	<ul> <li>NOTE</li> <li>Setting range of cells: Rows 1 to 1500, Columns 1 to 256</li> <li>When you specify multiple rows or columns, the data of one single row or column will be used to create a graph.</li> <li>Instead of using the mouse, you can type a cell range. On the "Specify Range"screen, enter a cell range and then click the [OK] button.</li> </ul>
Input Data Value of Y		<ul> <li>Specifies a cell range of Y-axis value of input data. Clicking the button can select a cell range on Excel. Drag the mouse to select the cell range.</li> <li>NOTE</li> <li>Setting range of cells: Rows 1 to 1500, Columns 1 to 256</li> <li>When you specify multiple rows or columns, the data of one single row or column will be used to create a graph.</li> <li>Instead of using the mouse, you can type a cell range. On the "Specify Range" screen, enter a cell range and then click the [OK] button.</li> </ul>
Graph-To- Display Settings	Graph Title	Enter the title of a graph to create.

# "Create Histogram" Screen

Create Histogram	×
Input Data Data Range:	Output Settings Output-Destination Start Cell:
Min Value	Max Value
Auto	Auto
O Specify:	C Specify:
No. of Classes	Graph-To-Display Settings
Auto	Title:
C Specify:	OutLine: OFF CON
	OK Cancel

Setting item		Setting content		
		Specifies a cell range of input data. Clicking the button can select a cell range on Excel. Drag the mouse to select the cell range.		
Input Data	Data Range	<ul> <li>NOTE</li> <li>Setting range of cells: Rows 1 to 1500, Columns 1 to 256</li> <li>Instead of using the mouse, you can type a cell range. On the "Specify Range" screen, enter a cell range and then click the [OK] button.</li> </ul>		
Output Settings	Output- Destination Start Cell	Specifies a reference range to which a graph to create will refer.		
Min Value		<ul> <li>Specifies a range of values of target data.</li> <li>Auto</li> <li>Uses the minimum value of a specified input data.</li> <li>Specify</li> <li>Uses the value entered in the text box.</li> </ul>		
Max Value		<ul> <li>Specifies a range of values of target data.</li> <li>Auto</li> <li>Uses the maximum value of a specified input data.</li> <li>Specify</li> <li>Uses the value entered in the text box.</li> </ul>		
No. of Classes		<ul> <li>Specifies the number of intervals to display.</li> <li>Auto</li> <li>Obtains the number of classes from Sturge's law (1+3.3*LOG10 (No. of Data), rounding off after the decimal point).</li> <li>Specify</li> <li>Uses the value entered in the text box.</li> </ul>		
Graph-To-	Title	Enter the title of a graph to create.		
Display Settings	Outline	Selecting "ON" outlines the bar on a histogram. When a small number of classes are selected, this makes the graph easily viewable.		

# 5.8 Compatibility between 'Microsoft Excel 2007' or 'Microsoft Excel 2010' and 'Microsoft Excel 2003' or earlier

# 5.8.1 Specifying the Extension

In the Form Creation Action, you need specify the file extension for the following functions.

- Template Book
- Output Book
- Text Substitution Book
- Excel Operation Function Export CSV
- Excel Operation Function Export HTML

When using 'Microsoft Excel 2007' or 'Microsoft Excel 2010', specify the file extension according to the following table.

Functions	Corresponding Extensions	
Template Book	xlsx, xlsm, xltx, xltm	
Output Book	xlsx, xlsm	
Text Substitution Book	xlsx, xlsm	

• If you specify the file extension corresponding to 'Microsoft Excel 2007' or 'Microsoft Excel 2010' for the functions in the above table, that file will not operate with 'Microsoft Excel 2003' or earlier.

# 5.8.2 Compatibility Check Function

To open a file created by 'Microsoft Excel 2007' or 'Microsoft Excel 2010' using 'Microsoft Excel 2003', you need to check compatibility in advance. Use the compatibility check function of 'Microsoft Excel 2007' or 'Microsoft Excel 2010' to check that the file can be opened with "Microsoft Excel 2003" or earlier. To execute the compatibility check function, select as follows: [Office] button  $\rightarrow$  [Prepare]  $\rightarrow$  [Run Compatibility Checker].

# 5.8.3 Extensions for 'Microsoft Excel 2007' or 'Microsoft Excel 2010'

'Microsoft Excel 2007' defines the file extensions in the table below.

Туре	Extensions
Book	xlsx
Book with macro enabled	xlsm
Template	xltx
Template with macro enabled	xltm
Binary book not in XML format	xlsb
Add-in with macro enabled	xlam

# 5.9 Restrictions

# Changing the Security Settings

To execute the Excel Form Creation Action, you need to change the Excel security settings. If you do not change the settings, the following problems will occur.

•  $[Tool] \rightarrow [QC Chart]$ 

Pareto graph tools cannot be used.

• [Tool]  $\rightarrow$  [Insert Sample]

Form templates cannot be used.

The setting change steps vary depending on the Excel version.

Change the security settings according to the following steps.

- 'Microsoft Excel 2000'
- 1 Click [Security] from [Macro] under the Excel [Tool] menu.
- 2 Check "Middle" or "Low" on the [Security Level] tab in the [Security] dialog box.

'Microsoft Excel 2002' and 'Microsoft Excel 2003'

- 1 Click [Security] from [Macro] under the Excel [Tool] menu.
- 2 Check "Middle" or "Low" on the [Security Level] tab in the [Security] dialog box.
- 3 Check the [Trust Access to Visual Basic Project] option on the [Trusted Publisher] in the [Security] dialog box.
- 'Microsoft Excel 2007' or 'Microsoft Excel 2010'
- 'Microsoft Excel 2007': Click the [Office] button and [Excel Options].
   'Microsoft Excel 2010': From the [File] tab, click [Options].
- 2 'Microsoft Excel 2007': Click [Popular] in the [Excel Options] dialog box.
   'Microsoft Excel 2010': From the [Excel Options] dialog box, click [Customize Ribbon].
- 3 'Microsoft Excel 2007': Check the "Show Developer tab in the Ribbon" option.
   'Microsoft Excel 2010': From the [Main Tabs] list, select the [Developer] check box.



- 4 Click [Macro Security] on the [Developer] tab.
- 5 Click [Macro Settings] in the [Trust Center] dialog box.
- 6 Check the [Enable all macros] option under [Macro Settings].

7 Check the [Trust access to the VBA Project object model] option.

Trust Center	? X
Trusted Publishers	Macro Settings
Trusted Locations	For macros in documents not in a trusted location:
Add-ins	C Disable all macros without notification
ActiveX Settings	C Disable all macros with notification
Macro Settings	<ul> <li>Disable all macros except digitally signed macros</li> <li>Enable all macros (not recommended; potentially dangerous code can run)</li> </ul>
Message Bar	
External Content	Developer Macro Settings
Privacy Options	✓ Trust access to the <u>VBA</u> project object model
,	OK Cancel

## ■ Notes on File Format when using 'Microsoft Excel 2007' or 'Microsoft Excel 2010'

When using the following Excel Action, you need to specify "xlsm" (book file format with macro enabled) as the extension for the output book when using functions specific to 'Microsoft Excel 2007' or 'Microsoft Excel 2010'.

- [Execution Sequence List] (only for macro operation)
- [Buttonify Trigger Condition]
- $[Tool] \rightarrow [QC Chart]$
- [Tool]  $\rightarrow$  [Insert Sample]

Refer to "5.8.3 Extensions for 'Microsoft Excel 2007' or 'Microsoft Excel 2010'" for more details on extensions.

■ Additional Notes when using 'Microsoft Excel 2007' or 'Microsoft Excel 2010'

- The Excel Form Creation Action may execute even if the Excel 2007/2010 security level is "High" or the "Trust the access to the VBA project object model" option is OFF.
- Use the Excel 2007/2010 format for template files. Do not use Excel 2003 or earlier formats for output files.
- If you specify the macro enabled file format (xlsm, xltm) for a template file, and the macro disabled file format (xlsx, xlts) for the output file name with the Excel Form Creation Action, a warning message will appear in Excel 2007/2010. When that happens, select [Yes] to save the output file.

Notes when using Windows Vista or later

• You cannot save a template file for the Excel Form Creation Action directly under the root drive (C:\ or D:\).

# Combined Cells

Do not set an ACTION area on combined cells.

For example, if you set an ACTION area on the cells as shown below, correct operation can not be guaranteed.

	A	В	С	D
1	D1 00	D1 01	D1 02	D1 03
2				
3				
4				
5				
6				
7				

## Over-pasted ACTION Areas

When you over-paste multiple ACTION areas of different size, read/write will be executed in the pasted order.

## Action Report Sheet

This ACTION automatically adds the sheet called "Action Report" in the output book when creating the output book.

This Action Report sheet always describes the latest record for how this ACTION outputs the data to the output book. Refer to this report when checking how the process proceeds.

In addition, this ACTION executes the following operation based on the record in the Action Report sheet when the output book is once closed and reopened.

If you rewrite the contents of the Action Report sheet, it could cause the error, such as this ACTION does not normally operate. Be careful not to rewrite it.

#### Operation in ACTION area when error occurs

When you actually write/read in "Device Logging" function and exceed the ACTION area, perform the common operation as follows:

1) When performing a test read/ a test write

Error screen is displayed.

2) When executing ACTION in runtime

It will be recorded as ACTION error in the Log Viewer of the 'Pro-Server EX'.

# Write Operation of Device One-Shot Recipe

When writing the cell value in "Device One-Shot" or "Recipe" and the cell is empty, 0 will be written for the numeral type, blank will be written for the character string type.

Also, when the data type is the character string, but you do not set the target cell format to "character string", you sometimes fail to write correctly.

In this case, you need to change the cell format to "character string" in advance.

# Excel Window Size

When you open the setting screen of the Action Area, the Excel window is always displayed in regular size. (back to the regular size if maximized)The Excel user interaction mode is disabled then, you cannot operate Excel. If the setting screen is hidden behind the Excel window, the screen and task tray windows will blink and notify the user. Blinking will stop automatically when the setting screen comes forward.

#### About the 1500 row limit for Action Area settings

Exceeding 1500 rows for the Action Area could cause the action to run longer. If you use Device One Shot or Device Logging's text conversion, the action could take even longer.

## Grouping and Multiple Selections of Action Areas

You cannot group or make multiple selections of Action Areas. Grouping or multiple selections would result in improper management of the cell ranges. Also, be sure not to cancel grouping of Action Areas.

#### When deleting a line or row in the Action Area

When deleting a line or row in which the Action Area exists, the Action Area sometimes becomes linear depending on the object positioning setting. As the Action Area still exists in such status, the ACTION in that area will be executed when the Trigger Condition is satisfied.

Perform the following operation to display the object positioning.

Right-click - Object Format - Property - Object Positioning

Above status occurs when selecting "Move or Change Size According to Cell" here.

General auto shape operation in Excel is applied to the operation in the Action Area.

#### Restrictions on Copying or Cutting and Pasting the Action Area

When you paste the Action area using Ctrl+C & Ctrl+V or Ctrl+X & Ctrl+V, specify [Target Cell Range] for the copied Action area.

The Action area just after pasting remains the same [Target Cell Range] as that for the original Action area.

	A	В	С	D
1				
2				
3				
4				
5		0		
6	_	_		_
7				

## Copy Restriction by Ctrl + drag in the Action Area

When normally executing Ctrl+C & Ctrl+V to copy the Action Area, it will adhere to the cell just after pasting. Also, if you move the Action Area, it will continue to adhere to the cell.

Note that the restriction will be added if you copy by Ctrl + drag due to the restriction for OCX and Excel. If you copy by Ctrl + drag, the Action Area just after Ctrl + drag will not adhere to the cell. The Action Area will not adhere to the cell if you move it, either.

This happens because this Action Area is not placed under the control of the Excel New Form add-in. This Action Area is placed under the control of the Excel New Form add-in in the following cases.

When saving

When opening the setting screen (corresponding Action Area only)

When opening the "Execution Sequence List" screen

When one of the above operations is executed, the Action Area will adhere to the cell, and continue to adhere in the following operation. Note that this restriction is applied not only for the Action Area but also when dragging & copying the Sheet.

#### Functions which are not executed by a Test Read

The following functions are not executed by a Test Read.

Device Logging

"Add Trigger-Node Name"

"Time Stamp" (PC time is available)

"Action when cell gets full"

"In creating a sheet, clear the specified cell range and then start"

Special - "Show Date/Time"

"GP Date/Time" (PC Date/Time is available)

Special - "Show Cell Arrow"

"In displaying a cell arrow, remove the existing arrow, and then show a new one"

Special - "Trigger Source Node"

#### In the case of closing the displayed output book

If you have mistakenly closed an output book of Excel Report ACTION, follow these steps to open it again: Dragging and dropping the book to open will make it read-only and the start button etc. invalid.

1. Double-click the output book.

2. When the following dialog box appears, select "No" to open it.

Micros	soft	Excel
į	þ	Report_20060415.xls is already open. Reopening will cause any changes you made to be discarded. Do you want to reopen Report_20060415.xls?
		<u>Yes</u> <u>N</u> o

#### Receive notification

You cannot set the receive notification which indicates the completion of ACTION.

# ■ When setting "Trigger-Source Node"

When setting "Trigger-Source Node" at node in Excel Report action, node type and device are uncertain. Therefore, the device address is displayed in red.But, it is no problem.

#### Edit the output file

While Excel Report Action is executing, you can not edit the output file.

Therefore, it becomes very difficult to operate Excel at the setting in which the Trigger condition satisfies at a short cycle. Moreover, the following error message is displayed when the Action is executed during editing the output file.



#### Excel Auto Save Function

The Excel auto save function does not operate due to the Excel restrictions. To save automatically, create the Excel save macro using the following procedure and execute the created save macro by Action.

1 Open a template you want to save automatically using 'Pro-Studio EX'.

Create form using Exc	el						
		Version 1.22					
Template Designation -							
When you use the wi	me of Excel template file that is the source of forms. zard, the theme template file is copied to a file with this name. ew template, please specify the file name.						
Template File	C:\Documents and Settings\Administrator\Desktop\template.xl	Reference					
	Edit Template	)					
	The template file stores setting info. The actual output result will be displayed in the following file.						
Folder Name	C:\Documents and Settings\Administrator\Desktop	Reference					
File Name	Report_%Y%M%D.xls Return to Det	fault Settings					
🔽 Start from Display	red State						
Do not save the of (Please use the S	utput file when ACTION runs. ave or Save by Macro of Excel.)						
	ок	Cancel					

2 Select "Macro" and "Record New Macro" from the "Tools" menu.

lt										
t			<u>W</u> indow	Help	Exc	elAction(	A)			
¥	ABC :	Spelling		F7	f.	ê↓ 🛍	12	°≱ A	rial	•
-		<u>A</u> utoCorr	rect		<u> </u>					
		S <u>h</u> are W	orkbook							
		<u>T</u> rack Ch	anges	•						
c		Merge <u>W</u>	orkbooks.			F		G	Н	
		<u>P</u> rotectio	n	•						
		O <u>n</u> line Co	ollaboratio	on 🕨						
	!	<u>G</u> oal See	k		⊢		-			
		Sc <u>e</u> nario:	s							
		Auditing		+						
		<u>M</u> acro			-	Macros			mis	
_		Add-Ins				<u>R</u> ecord New Macro				
	1	Customize			Security K					
_	1	Options.			2	⊻isual Ba	sic Editi	or	Alt+	F11
					00	Microsof	: Script	Editor	Alt+Shift+	F11

**3** Enter the macro name "Macro1" and click the [OK] button.

Recording the macro starts.

Record Macro	? ×
Macro name: Macro1	
Shortcut <u>k</u> ey: Ctrl+	Store macro in: This Workbook
Description: Macro recorde	d */*/200* by *****
	OK Cancel

4 Select "Save" from the "File" menu.

"Macro1" is recorded in the macro.



5 Select "Macro" and "Stop Recording" from the "Tools" menu.

Recording the macro is complete.



6 Select "Execution Sequence List" from the "Excel Action" menu.

ExcelAction(A)  ExcelAction(A)  E Device One-Shot Area(M)  E Device Logging Area(L)  Recipe Area(R)  Log Data in GP Area(U)  Special Area(S)  Execution Sequence List(E)  D Litbolly Trigger Condition(R)  Action Area List(I)  C D Litbolly Ligger Condition(R)  C D Litbolly Ligger
Device Logging Area(L)     Recipe Area(R)     Log Data in GP Area(U)     Special Area(S)     Execution Sequence List(E)     Buttonify Trigger Condition(E)     Action Area List(I)
<ul> <li>Recipe Area(E)</li> <li>Log Data in GP Area(U)</li> <li>Special Area(S)</li> <li>Execution Sequence List(E)</li> <li>Buttonify Trigger Condition(E)</li> <li>Action Area List(I)</li> </ul>
Log Data in GP Area(U)     Special Area(S)     Execution Sequence List(E)     Buttonify Trigger Condition(E)     Action Area List(I)
Execution Sequence List(E) Buttonify Trigger Condition(
Execution Sequence List(E)                • Buttonify Trigger Condition(E)                 • Action Area List(I)
Buttonify Trigger Condition(B)     Action Area List(I)
Action Area List( <u>I</u> )
- 1 ()
Tools(I)
Communication( <u>C</u> ) ►
🗆 📩 Area display( <u>O</u> )
Version Info( <u>A</u> )

7 Create the trigger condition save automatically.

8 Select the created trigger condition and "Excel Operation Function".

Execution Sequence List			_0,
Execute when Trigger Condition satisfied Execute when Trigger Button clicked Execu	te from another applicati	ion	
When Trigger Condition is satisf	ied, Action is ex	xecuted.	
New Trigger Condition         Please place actions to execute or EXCEL op           Edit         Insert         Clear	eration commands in o	rder of execution.	
Trigger Condition 1 2 3	4	5	6
CreateForm			
*			the second s
•			Þ

9 Select "Execute Macro" and enter the macro name "Macro1".

Ewr	- ol	Operation Fun	eti	on a	
	561	operation run	eu	511	
	C	New Sheet	C	Print Sheet	Sheet Name sheet1
	C	New Book			
	C	Show Book	C	Hide Book	
	С	Print Book	О	Close Excel	
(	C	Execute Macro		Macro1	
	С	Export			
		File Name		Report_%	Y%M%D%n.csv Default
		Saving Folde	١ſ		
		Saving		CSV(.c	osv]
		Format		Export Report	only the last page except Action t.
				O HTML(.	.htm]
					OK Cancel

- 10 Click the [OK] button.
- **11** Finish editing the template.
- 12 Save/Reload the setting contents.

According to the created trigger condition, the template is automatically saved.

## Operation of the New Book Function

The New Book function acts differently between Excel Report Creation Action and Excel Form Creation Action. • Excel Report Action

Excel Report Action activates the New Book function when 'Pro-Server' is launched or NPX is reloaded. This means that if the output book includes a date macro (%Y%M%D) or time macro (%h%d%m), the book is replaced with a new one when 'Pro-Server' is launched or NPX is reloaded.

•Excel Form Creation Action

Excel Form Creation Action is designed to reopen the book file that was last output when 'Pro-Server' is launched or NPX is reloaded, and to output data subsequently.

For this reason, the difference between the New Book operations may result in problems when Excel Report Creation Action is replaced with Excel Form Creation Action.

1 From "Excel Action" on the Excel menu bar, select [Execution Sequence List].



2 Click [New Trigger Condition].



**3** Click [New Trigger Condition].

Set Trigger Condition III Specify a trigger condition of the ACTION.
Trigger-Condition New Trigger Condition
► Edit
Close

4 Select the 'Pro-Server EX' node from "Node Name", and click [When Turned ON].

		×							
Trigger Condition Name Trigger1									
Node Name PC1	Add Node	nd Node							
	Trigger Condition								
When Node PC1 is Turned ON									
Condition 1									
Specify the Trigger Condition.									
When Turned ON	While Device is DN 🙀 While Condition Sa	atisfied							
G Specified Time	🔚 While Device is OFF 📉 When Condition Sa	atisfied							
Constant Cycle	When Device ON 🐘 When Partner No	de ON							
When Device Changes	👔 When Device OFF 🧏 When Partner Noc	le OFF							
	Detail Settings OK	Cancel							

5 Click [OK].

6 Click [Close].

Set Trigger Condition
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
Trigger1 Edit
Node AGP1
When Node AGP1 is Turned ON
Close

7 Select the created power-on trigger condition, and select "Excel Operation Function".

<u>6</u>	Executi	on Sequence List	:	
Ē	xecute v	vhen Trigger Condit		<sup>ied</sup> Execute when Trigger Button clicked Execute ₩hen Trigger Condition is satisfie
	E di	New Trigger Conditi it Insert	on Clear	Please place actions to execute or EXCEL ope
		Trigger Condition	1	2 3
	<b>•</b>	Trigger1		Excel Operation Function
	*			

8 Select "New Book" and click [OK].

Excel Operation Functio	n 💶 🗙
New Sheet     New Book	Print Sheet Sheet Name sheet1
O Show Book O	Hide Book
C Print Book C	Close Excel
C Execute Macro	
C Export	
File Name	Report_%Y%M%D%n.csv Default
Saving Folder	
Saving Format	CSV(.csv)     Export only the last page except Action     Report.     HTML(.htm)     OK Cancel

**9** Performing a save or reload activates the New Book.

# About Tag Settings

In Excel Form Actions, you cannot set up DATE\_AND\_TIME formatted tags in the following features:

- Device Logging Device Settings
- Device One Shot Device Settings
- Recipe Device Settings
- Recipe record number on writing to recipe
- Recipe record number on reading recipe
- GP log data specify file number
- GP log data specify sampling group