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 ** "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
- "11 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	Data Mai	nagemen	t Boar	d
3		Date	Tank Name	Solution to measure	Set Value	esult Valu	
4							
5							
6							
7	-						
8							
10							
11	-						
12							
13							
14							
15							
16							
17							
18							
19	1						
20							
22	-						
23							
24	1			•	•		

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 data 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	 This step sets the following items: Specifying a template file (Creating a blank template); and Specifying an output file
	+	
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 "30 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 "31 Symbol Registration" for details about symbols.



Ex.

Setting item	Setting content						
Symbol Name	Tank Name	Type of measurement liquid	Setting Value	Performance Value			
Data Type	16Bit (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-Stu	💱 Pro-Studio EX 🛛 ?.npx								
File Edit	Tool Pro	gramming Assist	Settir	ng He	lp	_	_		
1	Start >	Node Node	>>		Symbol	پر	Feature	» 📄	Save
Symbol -				N	lode Name	AGP1		De	vice Nam
Gi	roup	Ungroup		s	heet Name	Sheet3		 Set	it as a glol
In	isert	Delete		ľ		1			k do digio.

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

💱 Pro-Studio EX 🛛 ?.npx	
File Edit Tool Programming Assist	Setting Help
Start 😕 🟹 Node	» 🕨 Symbol »
Add Import Edit Delete • 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".

Set ACTION Name/Parameter	×
Add a new ACTION. Specify an ACTION name, and set its parameter.	
ACTION Type Create form using Excel.	-
Create form using Excel.	9
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. Download from 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 Excel		
		Version 1.22
┌─Template Designation		
Please specify the name When you use the wizar When you create a new	of Excel template file that is the source of forms. d, the theme template file is copied to a file with this name. template, please specify the file name.	
Template File		Reference
	Edit Template	



 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				
Folder Name	E: Program Files Pro-face Pro-Server	EXWpxDatabase Reference		
File Name	MeasurementData.xls	Return to Default Settings		
Start from Disp Do not save the (Please use the	ilayed State ie output file when ACTION runs. s Save or Save by Macro of Excel.)			
	Ĺ	OK. Cancel		

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

Output File The template file stores setting info. The actual output result will be displayed in the following file.					
Folder Name	E: Program Files Pro-face Pro-Server EXW	xDatabase	Reference		
File Name	MeasurementData.xls Return to Default Settings				
Start from Disp Do not save the (Please use the	layed State e output file when ACTION runs. e Save or Save by Macro of Excel.)				
		ок	Cancel		

NOTE • 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 "5.8 Restrictions 1 Click the [Edit Template] button.

Create form using Exce		
		Version 1.22
- Template Designation		
Please specify the nam When you use the wize When you create a new	e of Excel template file that is the source of forms. rd, the theme template file is copied to a file with this name. v template, please specify the file name.	
Template File	E:\Documents and Settings\Owner\Desktop\template.xtt	Reference
	Edit Template	
Cutput File		

 $2 \ {\rm Select \ the \ [Yes] \ button.}$

Excel Form Action	×
Unable to find designated Templatebook. Make a new Templatebo	iok?
Yes No	

A blank form template will appear.

M	1icrosoft	Excel - temple	ate.xlt								-	. 🗆 🗙
	<u>Eile E</u> dit	<u>V</u> iew <u>I</u> nsert	Format T	ools <u>D</u> ata <u>W</u> ir	ndow <u>H</u> elp B	ExcelAction(A)				_	. 8 ×
	🖻 🔒	2 5 6	₩SC 🐰		- 🝓 Σ j	f≈ 21 🛍	, 😨 😤 🛛 Ar	ial	- 1	• B	<u>ı</u>	≣ *
1	i 🗗 👋	😭 🍇 🌾	🖉 🙀	💕 💣 🚊								
	A1	-	=									
	Α	В	С	D	E	F	G	Н	I	J	K	
1												
2												
3												_
5								þ				
6												
7												
8												
9												
10												
11												
12												_
13												_
15												
16												
17												
18												
19												
20		5heet1 /										
Rea	ady									NUM		

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

ExcelAction(A)		
鰻 Device One-Shot Area(M)		▼ 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)		I J
🔗 Buttonify Trigger Condition(<u>B</u>)		
Action Area List(I)	0	
- Tools(<u>T</u>)	Þ	Insert Sample(<u>I</u>)
- Communication(<u>⊂</u>)	C	iii OC Chart(L) りん
茸 Area display(<u>O</u>)	_	
Version Info(<u>A</u>)		

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

Open		? ×
Look in:	🔄 template	- 🔁 🖆 🎟 -
History Desktop My Documents	Andon.xit FirstRunRateTransitGraphPerDay.xlt FirstRunRateTransitGraphPerMonth.xlt FirstRunRateTransitGraphPerWeek.xlt FirstRunRateTransitGraphPerYear.xlt JinitialSetupManagement.xlt JinitialSetupTimeTransitGraph.xlt Logging_Excel.xlt MachineCheckList.xlt	MachineStopTimeTransitGraphPerDay.xl MachineStopTimeTransitGraphPerMonth. MachineStopTimeTransitGraphPerWeek.: MachineStopTimeTransitGraphPerWeer.x ManpowerGraph.xlt MeasurementData.xlt ProductInProcessStockTransitGraph.xlt ProductInProcessStockTransitGraph.xlt
My Computer	✓ File name: MeasurementData.xlt Files of type: Excel(*.xlt; *.xls) □ Open as read-only	Open Cancel

A form template will appear.

Microsoft Excel	- template.xlt					_ 🗆 ×
Eile Edit View	Insert Format Tools Data	<u>W</u> indow <u>H</u> elp Exi	celAction(<u>A</u>)			_ 8 ×
🗅 🛩 🖬 🔒	🖨 🖪 🖤 👗 🖻 🖻 s	5 10 + 01 + (🍰 Σ 🕫 🛃 🕌	. 🛍 🚯 100%	- 🛛 -	
	🛍 😹 🔗 🗐 🚟 🐭	💉 📩				
	= Excel26 Meas	urement Data Mai	nagement Board			
A	В	С	D	E	F	G
1 Excel	26 Measure	ment Da	ita Mana	agement	t Board	
2				×		ē
	D-t-	T	Solution to	0-11/-1		
3	Date	Tank Name	measure	Set value	Result value	
4						
5						
6						
7						
10						
11						
12						
13						
14						
15						-
III (I) I Sheet1 Template III III IIII IIII IIII IIIIIIIIIIIII						
	前 🔍 🗗 🚍 🎭 🖉 🛛	1 v				
Ready						

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/Syml	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 Logg	ging Area] from [Exc	el Action] of the menu displays the same screen.
		elAction(A) Device One-Shoc Area(U) Device Logging Area(L) Capaba in GP Area(U) Special Area(S) Execution Sequence List(E) Buttonify Trigger Condition(B) Action Area List(I) Tools(I) Area display(Q) Version Info(A)	

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

📲 Device Logging	_ 🗆 🗙
Action Settings Trigger Condition Settings	
Device Settings	
Node Trigger-Source Nodel 🔍 Device 🔍	
Device Address/Symbol Address Group No. of Devices Devices	
Data Type 16Bit(Signed)	
Add Device Address/Symbol Name Note: When specifying inconcecutive memory data place use a group	
Add Trigger-Node Name symbol.	

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

📳 Device Loggi	ng					_ 🗆 X
Action Settings	Trigger Condition	Settings				
Devic	e Settings	AGP1		Device Name	#INTERNAL	
Devid	e Address/Symbol Group		•	No. of Devices		
	Data Type	16Bit(Signed)				
	vdd Device Address vdd Trigger-Node Na	/Symbol Name ame	Not mer sym	e: When s nory data, bol.	pecifying inconcecutive please use a group	

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

📴 Device Lo	gging						
Action Settin	ngs Trigger Condition	Settings					
De	evice Settings Node	AGP1	•	Device Name	PLC1	•	
D	evice Address/Symbol Group	H	T =	- Loc al She TankN	et3 Name		
	Data Type	16Bit(Signed)		Measu	urem atSolutionType		
F	Add Device Addres	s/Symbol Name		Avtua	gvalue Value		
Γ	Add Trigger-Node N	ame					

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.

6	Device Logging	_ 🗆 🗙
	Action Settings Trigger Condition Settings	
	Device Settings Node AGP1 I 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
Logging O Vertical O Horizonta	An image of writing to a cell is shown below. The arrow points in the direction of data logging.
No. of Logging 1	1 2 3 4
Time Stamp © OFF C Forward Use GP Time	2 3 4 5 3 4 5 6 4 5 7 5 5 7 8
Note: The layout of a group symbol is fixed.	6 7 8 9 7 8 9 #

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					_0>
Eile Edit View	Insert Format Tools Data	<u>Window H</u> elp Exe	elAction(<u>A</u>)			_ 8 ×
	5 B. 🖤 👗 🖻 🖻 🚿	🖇 🗠 • 🖓 • 🖓	$\Sigma f_{s} \stackrel{A}{\geq} Z$	🏥 🚯 100%	• 🤋 •	
i 🤀 🔁 👋 🔗 🐰	L 🖉 🖉 🗉 🙀 💕 (쉙 🚊				
B4 💌	= Excel26 Measu	urement Data Mar	nagement Board			
A	В	С	D	E	F	G
1 Excel2	26 Measure	ment Da	ita Mana	igemen [.]	t Board	
2						
	Date	Tank Name	Solution to	Set Value	Result Value	
3	******************	*********** ***	measure			
4						
6	s	pecify Range	:	? ×		
7	F	lease specify the ran	iae.			
8	·					
9						
10						
11	[\$B\$4:\$C\$23				
12			Or	Canad		
13						
14						
15						
I Sheet1	Template		•	•		- II
	et et 🚽 🚍 🎶 🖉 🖞	- T				
Point						

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

Layout Settings	Camala
Target Cell Range \$8\$4:\$C\$23	An image of writing to a cell is shown below.
Logging Vertical O Horizontal Direction No. of Logging 20	
Time Stamp © OFF C Forward Use GP Time V C Backward	2 3 4 5 3 4 5 6 4 5 6 7 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".

Target Cell Range \$8\$4:\$C\$23	- Sample
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 O DFF	9:00:02 2 3 4 5 9:00:03 3 4 5 6
O Backward Use GP Time ▼	9:00:04 4 5 6 7 9:00:05 5 6 7 8
Note: The lavout of a group symbol is fixed	9:00:06 6 7 8 9

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

Convert device value to certain tex	kt at Read	
Action when cell gets full	Clear and Overwrite O Scroll	C 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 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	

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 and Settings\Administrator\Desktop\convert				
Action when cell gets full C Clear and Overw		Scroll C New Sheet	C Loop			
		0	K Cancel			

15) Click the [Trigger Condition Settings] tab.

🖅 Device Logging					
Action Settings Trigger Condition	Settings				
-Device Settings	<u>k</u>				
Node	AGP1	▼	Device Name	PLC1	•
Device Address/Symbo Group	📻 TankName	•	No. of Devices	1	3
Data Type	16Bit(Signed)				
🗖 Add Device Addres	s/Symbol Name	1	Note: When sp	pecifying inconcecutiv	/e
Add Trigger-Node N	lame	5	symbol.	nease use a group	

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.

Device Logging	. 🗆 🗙
Action Settings Trigger Condition Settings	
Action Area No. 0	
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	
Clear Cell when the following condition is	
Edit Delete Edit Delete	
Trigger Condition	
*	

17) Click the [New Trigger Condition] button.

Set Trigger Condition
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
E dit
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	r-Q	Find Nada
Node Name	PC1 R Add Node		Find Node
(AGP1		
			•

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

Condition Specify t	1 the Trigger Condition.				
Ŀ	When Turned ON		While Device is ON		While Condition Satisfied
Ġ	Specified Time		While Device is OFF		When Condition Satisfied
٢	Constant Cycle		When Device ON		When Partner Node ON
	When Device Changes		When Device OFF	*	When Partner Node OFF
□ Limi	ited Time Offer	n ⊡ hour	min		
			Datel California		OK 1 Council
			Detail Settings		

20) Click the [Close] button.

Set Trigger Condition	×
Trigger Condition	
New Trigger Condition	L
CreateAForm Edit	L
Node[PC1	L
In a Cycle of 3600000ms	L
	L
	1
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
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.

Setting item		Setting content			
Entry Node		AGP1			
Device Name		PLC1			
Device Address/Symb	ool Group	Measurement Solution Type			
Target Cell Range		D4 to D23			
Logging Direction		Vertical			
Time Stamp		OFF			
Convert device value EXCEL book stor to certain text at 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.

🖅 Devi	e Logging					_ 🗆 🗵
Action	Settings Trigger Condition	Settings				
	Node	AGP1		Device Name	PLC1	-
	Device Address/Symbol Group	MeasurementSolutionType	•	No. of Devices	1 🗄	1
	Data Type	16Bit(Signed)				
	Add Device Address	/Symbol Name ame	No me sy	ote: When sp emory data, p mbol.	ecifying inconcecutive lease 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 satisfied.
Edit Delete	Edit Delete
Trigger Condition	Trigger Condition
CreateAForm	

5) 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 <u>T</u> ools <u>D</u> ata
	🖻 🖬 🔒 🔮	3 🗟 🆤 👗 🖻 🖻
	🔃 👋 🞷 🐰	ì 🖉 🖉 🗰 💕 🔗
	AS 🔹	= Excel26 Meas
	Device Loggin	ng Area B
1	Excel	26 Measur
1	Excel	26 Measur
1 2 3	Excel	26 Measur Date

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

躍 Device Logging	_ 🗆 X
Action Settings Trigger Condition Settings	
Device Settings Node Device Address/Symbol Group Data Type 168it(Signed) Device Node No. of Devices Device Node Device Node Device Node Device Node No. of Devices Device Node No. of Devices No. of Devices No	
✓ 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.

📴 Device L	ogging				_ 🗆 X
Action Set	ttings Trigger Condition S	Settings			
[Device Settings	AGP1 -	1 1		
	Device Address/Symbol Group		·	Name No. of Devices	
	Data Type	16Bit(Signed)			
	Add Device Address	/Symbol Name ime	No me sy	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.

📴 Devid	e Logging							
Action	Settings Trigger Condi	ion Settings						
	Device Settings Node	AGP1	•		Device Name	PLC1	<u>-</u>]
	Device Address/Sym Group	bol 🔳		▼	⊡- Local:She I Tank	eet3 Name		
	Data Type Add Device Add	16Bit(Signed)			- Meas - Settin - Avtua	surementSolu ngValue aValue k	tionType	
	Add Trigger-Nod	e Name		-				

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

🖅 Dev	rice Logging						_ 🗆 X
Actio	n Settings Trigger Condition	Settings					
	Device Settings	AGP1	_	Device	PLC1	-	
	Device Address/Symbol Group	TankName	<u></u>	Name No. of Devices	7		
	Data Type	16Bit(Signed)					
	Add Device Address	/Symbol Name ame		Note: When sj memory data, j symbol.	pecifying inconce please use a grou	ecutive up	

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	
Target Cell Range \$E\$4:\$E\$23	An image of writing to a cell is shown below.
Logging Vertical O Horizontal	I ne arrow points in the direction of data logging.
No. of Logging 205	1 2 3 4
Time Stamp © OFF	2345
O Backward	4 5 6 7 5 6 7 8
Note: The layout of a group symbol is fixed.	6;7:8:9 7:8:9:#

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

Layout Settings	Cample
Target Cell Range 🛛 \$E\$4:\$E\$23 📃 🔣	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 12 13 14
Time Stamp OFF Forward Use GP Time I	2 3 4 5 3 4 6 6 4 6 6 7 6 6 7
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 🛛 💿 Sc	oroll 🔿 New Sheet	C Loop	
In creating a sheet, clear the specif	ied cell range and then start.			
,		0	K Cancel	

10) Click the [Trigger Condition Settings] tab.

🖅 Devic	e Logging							_ 🗆 X
Action	Settings Trigger Condition :	Settings						
	Node	AGP1	•		Device Name	PLC1	•	
	Device Address/Symbol Group	📰 TankName		•	No. of Devices	1	•	
	Data Type	16Bit(Signed)						
	Add Device Address	/Symbol Name ame		No me syn	te: When sp mory data, p nbol.	ecifying inconcecuti lease use a group	ve	

11) 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	

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'.

	Micr	osoft Excel - template.xlt					_ 🗆 ×
	Ēi	e Edit View Insert Format Tools Data W	indow <u>H</u> elp Exc	elAction(<u>A</u>)			_ 8 ×
	ם נ	New Ctrl+N	+ 🍓 Σ fs	24 🛍 🤉 🔋		• • B <i>I</i> U) 📄 🕴
	2 🖻	Open Ctrl+O	🗄 A 🗔 🕅	•			
		Same Chills	t				
	9	Save as Web Page	celFormOcx.Fc	ormRangeInfo.1","")	_	-	
-	- 7	Ulah Daga Dugulari	U	U	E	F	<u> </u>
1		web Page Preview	ment I)ata Mai	nagemen	it Board	
2		Page Setup					
	R	Print_Area		Solution			h 11
3		Print Ctrl+P	ank Name	to measure	Set Value	Result Value	
4		Cond To		0			1
5		Seng to					
6		1 \Documents and Settings\mh\test.xls					
4		Exit					
8							
10							
11							
12							
13							
	• •	N Sheet1 Template		•			
		🖬 OT QI 🔅 🔍 🖊 = 🎭 🖉 🗽	-				
Re	ady					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.

Output File The template file stores setting info. The actual output result will be displayed in the following file. Folder Name E: Program Files Pro-face Pro-Server EXWpxDatabase Reference						
File Name	MeasurementData.xls	Return to Default Settings				
✓ Start from Displayed State Do not save the output file when ACTION runs. (Please use the Save or Save by Macro of Excel.)						
		OK Cancel				

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	Lotification Exists pecify the notified device that will be informed of
the exec ACTION	ution of the ACTION. After the execution of the , it will be is turned on.
	#INTERNAL
	Notified Device
	<u>▼</u>
	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.

• 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-Sl	udio EX	?.пря			
File Edit	Tool	Programmin	g Assist		
	Start 🟅	»	Node		
Ad	bt	Impo	nt		
E	dit	Delete			
ACTION Trigger Condition Trigger Condition CreateAForm Data Transfer Device Cache					

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

	_ 🗆 ×
Setting Help	
>> 🔑 Symbol >> 襓 Feature >> 📄 Save >> 🆄 Tr	ansfer Monitor Status
CACTION-Specific Trigger Condition/Process List	ACTION
Add Edit Release	Delete ACTION
Data Source Node AGP1	FormCreation
Trigger In a Cycle of 3600000ms Data	Rename
Completion CreateA	Create form using Excel.
	Set Parameter
4	ACTION Node
l l	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	Programming Assist			
Start 🤉	Node			
Add	Import			
Edit	Delete			
ACTION 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	Ľ	🔰 Transfer	r Mo	onitor tatus
Trigger Condition	Sec	luence D	iagr	am by Ti	rigger Condition	
		Collapse		Tra	nsfer ACTION/Data	
CreateAForr Edit	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 "24 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".

IMPORTANT • 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 Exce	l - templ	ate.xlt					_
	ÈEile Edit ⊻ie	w <u>I</u> nsert	F <u>o</u> rmat <u>T</u> ools <u>D</u> ata	<u>W</u> indow <u>H</u> elp Ex	celAction(<u>A</u>)			_
) 😅 🖬 🔒	<i>a</i>	💱 🐰 🖻 💼	🖍 🔹 🍓 🗵 f_*	ê 🏭 🕄 💐		• •]	BIU
6	9 🗊 👋 🞷	X	0° 11 12 12	<u>i</u>				
	Picture 14	•	= 13					
	A		B	C C	D	E	F	
1	Exce	126	Measur	ement I	Data Mai	nagemen	t Boa	ard
2								
3			Date	Tank Name	Solution to measure	Set Value	Result	Value
		h						

The setup contents will be read in the template.

NOTE • Refer to "5.8 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 "25 Transferring" for details about transferring a network project file.

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

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.

I	M	licrosoft Excel	- template.xlt					_
		<u>File E</u> dit <u>V</u> iew	Insert Format <u>T</u> ools <u>D</u> ata	<u>W</u> indow <u>H</u> elp Exc	elAction(<u>A</u>)			_
	Ľ	🖻 🖬 🔒	😂 🖻 🖤 👗 🖻 🖻	🗠 🔹 🍓 Σ f *	≜↓ 🛍 🔋]		• 11 • B I U	
Ĩ	1	🗊 👋 🞷	🛍 🖉 🖋 🗰 💕 💣	ц				
ĺ		F11	=					
I		A	В	С	D	E	F	
	1 2	Excel	L26 Measur	ement I	Data Mai	nagemen	it Board	
	3		Date	Tank Name	Solution to measure	Set Value	Result Value	
I	4		200711/13 10:00	Tank A	Liquid1	120.0	123.0	
1	5		200711/13 11:00	Tank A	Liquid1	240.0	246.0	
1	6		200711/13 12:00	Tank A	Liquid1	360.0	369.0	
ШĒ	_							1

NOTE	If error occurs, you can check the log in the Log Viewer. For more details, refer to "27.5
	Monitoring System Event Logs".

• If you want to achieve faster communication during ACTION, refer to "28 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

ace form using ca			Manalaa d
Complete Designation			Version 1.
Please specify the r When you use the v When you create a	, name of Excel template file that is the source of for wizard, the theme template file is copied to a file w new template, please specify the file name.	ms. ith this name.	
Template File			Reference
	Edit Template		1
Dutput File The template file sto	pres setting info. The actual output result will be di	splayed in the foll	lowing file.
Output File The template file sto Folder Name	ores setting info. The actual output result will be di E:\Program Files\Pro-face\Pro-Server EXW	splayed in the foll lpxDatabase	lowing file.
Dutput File The template file sto Folder Name File Name	eres setting info. The actual output result will be di E:Program FilesPro-facePro-Server EXW Report_%Y%M%D.xts	splayed in the foll lpxDatabase Return to	lowing file. Reference Default Settings
Dutput File The template file sto Folder Name File Name IV Start from Displa	ores setting info. The actual output result will be di E:\Program Files\Pro-face\Pro-Server EX\N Report_%Y%M%D.xts ayed State	splayed in the foll pxDatabase Return to	owing file.
Dutput File The template file sto Folder Name File Name Start from Displa Do not save the (Please use the	ores setting info. The actual output result will be di E:\Program Files\Pro-face\Pro-Server EX\V Report_%Y%M%D.xls ayed State soutput file when ACTION runs. Save or Save by Macro of Excel.)	splayed in the foll (pxDatabase	lowing file.

Setting item		Setting content
Specify	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.

Setting item		Setting content
	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.
	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.
Output File	Start from Displayed State	 Starts data read/write when the output file is displayed. NOTE 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. Refer to "5.6 Creating Trigger Buttons in a Form" for details about the trigger condition button.
	Do not save the output file when Action runs.	 The output file is not automatically saved when executing the Action.Save the output file using the Excel menu. IMPORTANT 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". If [Excel Operation Function/Export] is specified in the Execution Sequence List and is activated, output files are saved.

"Device Logging" Screen

Action Settings Trigger Condition Settings Device Settings Device Address/Symbol Group Data Type 16Bit(Signed) V Add Device Address/Symbol Name	Device Name Devices Devices Note: When specifying inconcecutive
Add Trigger-Node Name	memory data, please use a group symbol.
Target Cell Range \$8\$8 Logging Vertical Horizontal Direction No. of Logging Data Time Stamp OFF Forward Use GP Time Backward Note: The layout of a group symbol is fixed.	Diperformance Diperfor
No. of Blank Cells to insert between Cells Row	
Convert device value to certain text at Read	
Action when cell gets full Clear and Overwri In creating a sheet, clear the specified cell range and then	ite C Scroll C New Sheet C Loop start.
	OK Cancel

Setting item		Setting content		
		 Selects entry nodes that include the devices to execute data logging. NOTE Clicking the [] button can retrieve or add entry nodes. Selecting "(Trigger-Source Node)" will select the entry node that has triggered the action. 		
Device		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	

Setti	ing item	Setting content		
	Device Name	 Selects Device/PLCs that include the devices to execute data logging. NOTE It is not necessary to set when the entry nodes are GP Series nodes and Pro- Server EX nodes. 		
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	 Sets the number of the devices to execute data logging. Enabled only when the device address has been directly input. NOTE When the symbol is specified, this is set automatically. When "String" is specified in [Data Type], the title of the setting item will be [No. of Characters]. 		

Setting item		Setting	g content			
	Writes the device a cells next to the ce In this case, depen symbol name, or g follows.	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		
	Ve	rtical	Above t	he value		
	Hori	izontal	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", No. of dev D100 D100 "D100", No. of dev	D101	ern "Vertical" D102 ern "Horizontal"		
		9:00:01	9:00:02	9:00:03		
	D100					
	D101					
	D102					
Add Trigger Nod Name	e Writes the name of cell.	f the entry node that	has triggered ACT	ION in the top of the		

Sett	ing item	Setting content	
	Target Cell Range	Displays the specified cell range. To change the cell range, click the button and select a cell range on Excel. Drag the mouse to select the cell range. NOTE • Setting range of cells: Rows 1 to 65536, Columns 1 to 256 • Instead of using the mouse, you can type a cell range. Click the Excel screen, enter a cell range on the "Specify Range" screen, and then click the [OK] button. Specify Range Please specify the range. • When you specify the cell range including 1501 lines or more, only the top- left cell of the selected range seems to be specified on the display. A B C 1 O Management Board 2 O O O O O O O O O O O O O O O O O O O	
Layout Settings		 6 7 8 The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide". 	
	Logging Direction	 Sets the data logging direction (vertical or horizontal). NOTE The write image of the content set in "Layout Settings" appears in [Sample]. 	
	No. of Logging Data	Sets and displays the number of data logging that was calculated automatically from the specified cell range.	
	Time Stamp	 Add time when data was written at the head of the logging data. OFF Not add time information Forward Add time information at the head of the logging data. Backward Add time information at the end of the logging data. You can select the following two types of time information by clicking the l button. Use GP time Use DC time 	
	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 plural cells. You can use different settings for columns and rows, respectively.	

Setting item	Setting content
Convert device value to certain text at Read	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	 Sets the action when the specified cell for data logging has got full. Clear and Overwrite Clears the cells, and continues logging from the beginning. Scroll Scrolls and continues logging New Sheet Continues logging on a new sheet. All features being output on the sheet will be copied to the new sheet. Loop Not clears the cells, and continues logging from the beginning.
In creating a sheet, clear the specified cell range 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. 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 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	The "Trigger Condition Settings" screen will appear. Click here to set a new trigger condition.					
New Trigger Button	gger ButtonDisplays the "Trigger Button" screen. Refer to "5.6.2 Setting Guide" for more details.					
	Selects a trigger condition for starting data logging. Click the blank line of [Trigger Condition] and then the list button to display the registered trigger condition.					
Logging	 NOTE When plural trigger conditions have been specified, satisfying at least one of those conditions executes ACTION. Clicking the [Edit] button can edit the specified trigger conditions. Clicking the [Delete] button cancels the specified trigger conditions. 					

Setting item	Setting content
Clear Cell when the following condition is satisfied	Selects a trigger condition for clearing data of the logging area. Click the blank line of [Trigger Condition] and then the list button to display the registered trigger condition. NOTE • When plural trigger conditions have been specified, satisfying at least one of those
	conditions executes ACTION.Clicking the [Edit] button can edit the specified trigger conditions.Clicking the [Delete] button cancels the specified trigger conditions.

• "Text Substitution Table Settings" Screen

Text Substitution Table Settings Image: 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. On the "Specify Cell" screen, click the button and enter the cell number of 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	1 02		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 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

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

Xii Special			
Action Settings Trigger Condition S	iettings		
Feature Type Show D Show D Write Current Time Triggers	ate/Time		
\$43	\$1		
Clock to get Current Time			
GP Date/Time	Node	(Trigger-Source Node 💌 🛛	
O 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	Show Date/Time	-		
Write Current Tim	e to Cell			
	\$4\$1			
Clock to get Curre	nt Time			
GP Date/Time	Node	(Trigger-Source Node		
C PC Date/Time				
			OK	Cancel

Setting item	Setting content
Feature Type	 Selects the type of feature to set. Show Date/Time Show Cell Arrow ("5.3 Writing Arrows in a Form") Trigger Source Node ("5.4 Writing Trigger Source Node Names in a Form")

Setting item	Setting content					
	 Specifies a cell range to write date and time. Clicking the button can select a cell range on Excel. Drag the mouse to select the cell range. NOTE When you select plural cells as a cell range, the date and time will be written in the left top cell only. Setting range of cells: Rows 1 to 65536, Columns 1 to 256 Instead of using the mouse, you can type a cell range. Click the Excel screen, enter a cell range on the "Specify Range" screen, and then click the [OK] button. 					
Write Current Time to Cell	Specify Range Please specify the range. Please specify the range. Note: Cancel • When you specify the cell range including 1501 lines or more, only the top-left cell of the selected range seems to be specified on the display. • When you specify the cell range including 1501 lines or more, only the top-left cell of the selected range seems to be specified on the display. • Management Board • OA Manage					
	• The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".					
GP Date/Time PC Date/Time	 Writes date and time of the specified node. GP Date/Time Writes date and time of the GP. In this case, click the list button to specify the entry node. PC Date/Time Write date and time of the PC on which ACTION is operating. 					

"Trigger Condition Settings" tab

Xii Special		_ 🗆 ×
Action Settings Trigger Condition Settings		
Action Area No. O When the specified trigger type (under-condition button) is satisfied, this area is executed. Image:		
	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	 NOTE When plural trigger conditions have been specified, satisfying at least one of those conditions executes ACTION. Clicking the [Edit] button can edit the specified trigger conditions. Clicking the [Delete] button cancels the specified trigger conditions.

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.

	Microso	ft Exce	el - test.xl	t										_ C	×
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][) 😅 🛛	. 🔒	<i>a</i>	** *	Ē		🤹 Σ	<i>f</i> ≈ 2↓ 🛍	ļ 🛛 🔋 🗛	rial	• 1	0 - B	I	<u>u</u> ≣	» •
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	Α	. [Special	Area C		D	E	F	G	Н		J		К	
1															
2															_

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

ð	Special	×
	Action Settings Trigger Condition Settings	
	Feature Type Show Date/Time Show Date/Time Write Current Time	
	\$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 "5.3.2 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 SA\$1	Arrow reinformed 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 \$B\$1	10 20 → → · · · · · · · · · · · · · · · · ·
Please specify Scale, Start Value, and End Value in 1 cell.	5 35
Arrow Settings	
Thickness	
Solid	
Color	
Style	
In displaying a cell arrow, remove the existing arrow.	and then show the new one
	OK Cancel

Setting item	Setting content
	Specifies a cell range to which cell arrows will be written. Clicking the button can select a cell range on Excel. Drag the mouse to select the cell range.
	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 Pange
Arrow Display Cell Range	 NOTE Setting range of cells: Rows 1 to 65536, Columns 1 to 256 Instead of using the mouse, you can type a cell range. Click the Excel screen, enter a cell range on the "Specify Range" screen, and then click the [OK] button.
	[‡∆\$1 Cancel
	• When you specify the cell range including 1501 lines or more, only the top-left cell of the selected range seems to be specified on the display.
	A B C 1 O∆Management Board
	• The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".

Setti	ng item	Setting content							
		• 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		
Arrow Display Ce	ll Range	10	20						
	antange								
		Start Value	End Value	10	20	30	Left Justification		
		10	20						
		Start Value	End Value	10	20	30	Right Justification		
		10	20						
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.							
		Specifies the first cell in which data of the start value of an arrow are stored.							
	Start Data Cell								
Data Call									
Data Cell Sottings		• An arrow will not be written if the start value is out of the scale range.							
Setungs	End Data Cell	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. Drag the mouse to select the cell range.							
		NOTE The same number of data as that of the start value must be specified							
		• An arrow will not be written if the end value is out of the scale range.							

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.

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	<u>File E</u> dit <u>V</u> i	iew <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	ExcelAction(A	0				-	. 8 ×
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2 Click the list button of [Feature Type] and then select [Trigger Source Node].

🕌 Special	
Action Settings Trigger Condition Settings	
Feature Type Trigger-Source Node Show Date/Time Write Trigger-Node Trigger-Source Node	
Target Cell Range \$4\$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 \$4\$1		
	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. Drag the mouse to select the cell range.							
	 When you select plural cells as a cell range, the node name will be written in the left top cell only. Setting range of cells: Rows 1 to 65536, Columns 1 to 256 Instead of using the mouse, you can type a cell range. Click the Excel screen, enter a cell range on 							
Target Cell Range	 the "Specify Range" screen, and then click the [OK] button. Specify Range Please specify the range. Please specify the range. The useful function is available to check the specified cell range (Action area) Refer to " Action 							
	• The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".							

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.

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Eile Edit View Insert Format Tools Data Wi	ndow <u>H</u> elp	ExcelAction(Ŋ				_	Ð×
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A1								
A B Execution Sequence List	E	F	G	Н		J	K	
1								
2								
2								

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

E	Executio Xecute v	on Sequence L when Trigger Cor	ist ndition sa	tisfied Wh	Execute when Trigger Bi	utton litio	clicked Execute from another applic	cation execut	ted.	_ 🗆 ×
	E di	New Trigger Con it Insert	dition Clea		Please place actions to e	execu	ite or EXCEL operation commands in	order of e	execution.	
		Trigger Conditi	on	1			2	3		4
	<i>.1</i> *	Trigger1		AREA	0(\$A\$1) One-Shot:Read	\	Excel Operation Function AREA0(\$A\$1) One-Shot AREA2(\$A\$3) Looging AREA2(\$A\$3) Recipe AREA2(\$A\$3) Recipe AREA0(\$A\$1) One-ShdxNead	AREA2	\$A\$5) Recipe:Write Recipe	AF

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.

ecute when Trigger Condition satisfi	ed Execute when Trigger Button clicked Execute from another application	
۱.	Ven Trigger Condition is satisfied. Action is executed	
New Trigger Condition	Please place actions to evecute or EXCEL operation commands in order of evecution	
New Trigger Condition	Please place actions to execute or EXCEL operation commands in order of execution.	
New Trigger Condition Edit Insert Clear	Please place actions to execute or EXCEL operation commands in order of execution.	
New Trigger Condition Edit Insert Clear Trigger Condition	Please place actions to execute or EXCEL operation commands in order of execution.	4
New Trigger Condition Edit Insert Clear Trigger Condition 1 Image: Image	Please place actions to execute or EXCEL operation commands in order of execution. 2 3 IEA2(\$A\$5) Recipe:Read REA1(\$A\$3) Logging:Logging	2

4 Similarly, click the ACTION name with other executing sequence and click the [OK] button. Refer to "5.5.2 Setting Guide" for more details.

5.5.2 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.

				_ 0
ecute	when Trigger Condition	satisfied Execute when Trigger Button	clicked Execute from another application	
		When Trigger Conditio	n is satisfied, Action is execu	ited.
-	New Trigger Condition	Please place actions to execu	ite or EXCEL operation commands in order of	execution.
Ec	dit Insert Lie	ar		
	Trigger Condition	1	2	3
1	Trigger1	AREA3(\$A\$7) One-Shot:Read	AREA1(\$A\$3) Logging:Logging	AREA2(\$A\$5) Recipe:Write Recip
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•				

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)	 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. NOTE Clicking "Excel Operation Function" displays the "Excel Operation Function Setting" screen.Refer to "■ "Excel Operation Function" Screen" Screen" for more details.

"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.

ecucio	on Sequence	.150									
ecute v	vhen Triager Co	ndition	satisfie	Execute	when Trigge	r Button c	licked Execute from	n another appli	cation]		
				oon Tria	 Idor Rut	tonic	clickad Activ	on can be	evecuted		
			***	ien mg	iger Dut	torna	checked, Activ	ncanbe	executed.		
	New Trigger Bu	itton		Please pla	ace actions I	to execute	e or EXCEL operatio	n commands ir	order of execution	1 .	
Edi	it Insert	Cle	ar								
	Trigger Button		1				2		3		4
•	Button1		AREA2	\$A\$5) Recij	oe:Write Rec	ipe	AREA3(\$A\$7) One-	ShotRead	AREA1(\$A\$3) L	.ogging:Logging	,
*											
4											Ŀ
4											Ŀ

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.
Execution Sequence (1 to 40)	 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. NOTE Clicking "Excel Operation Function" displays the "Excel Operation Function Setting" screen. Refer to "■ "Excel Operation Function" Screen" for more details.

"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.

20.UU	Jon Sequ	-ince use								
cute	when Tric	aer Conditi	on satisfied	Evecute with	hen Trigger Butt	on clicked Exect	ute from another app	lication		
cuic		der condia	an addanod	Encoure m	ion migger blatt					
	Bys	ending	, a com	imand fro	om a user	program to	Action, the	Action can be e	executed.	
E.	a Lu		Class	Please place	e actions to exe	ecute or EXCEL o	peration commands	in order of execution.		
E		isen								
	Comma	nd	1			2		3		4
•	ABC		AREA2(\$	A\$5) Recipe:1	Write Recipe	AREA3(\$A\$7) One-Shot:Read	AREA1(\$A\$3) Logg	ging:Logging	
*										
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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)	 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. NOTE Clicking "Excel Operation Function" displays the "Excel Operation Function Setting" screen. Refer to "■ "Excel Operation Function" Screen" for more details.

"Excel Operation Function" Screen

Excel Operation Func	tion 📃 🔍
New Sheet	O Print Sheet Sheet Name sheet1
🔿 New Book	
Show Book	O Hide Book
O Print Book	C Close Excel
C Execute Macro	
C Export	
File Name	Report_%Y%M%D%n.csv Default
Saving Folde	
Saving Format	CSV(:.csv) Export only the last page except Action Report.
	O H I ML(.htm)

Setting item	Setting content
New Sheet	 Creates a new sheet by copying a specified sheet from the template. NOTE You cannot use the following characters as a sheet name. ",", "=", "+", "-", ".", "/", "\", " " 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.
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	Executes macro. Enter a macro name to execute in the text box. NOTE • You cannot use the following characters as a macro name. ",", "=", "+", "-", ".", "/", "\", " "
Export	 Exports data in a specified format. Specify the file name, save folder, save format (CSV or HTML) of a file to export. NOTE You cannot use the following characters as a file name. "," "=", "+", "-", ".", "/", "/", " " 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.

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.

NOTE • 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.
- 1 Click the [Buttonify Trigger Condition] icon on the Excel template.

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A B Buttoniry Ingger 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.

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	<u>F</u> ile <u>E</u> dit	<u>V</u> iew <u>I</u> nsert	Format <u>T</u> ools	s <u>D</u> ata <u>W</u> in	dow <u>H</u> elp	ExcelAction(A)					[. B ×
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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.

• There are some restrictions when using this feature with 'Microsoft Excel 2002' or later. Refer to "5.8 Restrictions" for more details.

5.7.2 Setting Guide

■ "QC Chart" screen



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

"Create Pareto Graph" Screen

Create Pareto Graph	×
- Innut Data	
Label Bange	
Data Range:	T
- Output Settings -	
Output-Destination	
Start Cell:	
- Graph-To-Display §	Settings
Graph Title:	
Highlight: 🖲 Up to	080% C Top 3 C OFF
Combine iteme	with a ratio loop than 1%
	with a fatto less than 1 %
	1
OK	Cancel

Se	etting item	Setting content
Input Data	Label Range	 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. NOTE Setting range of cells: Rows 1 to 1500, Columns 1 to 256 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.
	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	 Highlights the following items. Up to 80% Highlights the main items with cumulative percentage 80% or more. Top 3 items Highlights the top three items. OFF Turns off highlighting.
	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):	<u>N</u>
— Graph-To-Display Se Graph Title:	ettings
ОК	Cancel

Setting item		Setting content
	Value of X	 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. NOTE Setting range of cells: Rows 1 to 1500, Columns 1 to 256 When you specify plural rows or columns, the data of one single row or column will be used to create a graph. Instead of using the mouse, you can type a cell range. On the "Specify Pageag" area and then aligh the IOK1 button
Input Data	Value of Y	 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. NOTE Setting range of cells: Rows 1 to 1500, Columns 1 to 256 When you specify plural rows or columns, the data of one single row or column will be used to create a graph. 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.
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
C Specify:	O Specify:
No. of Classes	Graph-To-Display Settings
 Auto 	Title:
C Specify:	OutLine: OFF OON
	OK Cancel

Set	ting 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	NOTE
		 Setting range of cells: Rows 1 to 1500, Columns 1 to 256 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.
Output Settings	Output- Destination Start Cell	Specifies a reference range to which a graph to create will refer.
Min Value		 Specifies a range of values of target data. Auto Uses the minimum value of a specified input data. Specify Uses the value entered in the text box.
Max Value		 Specifies a range of values of target data. Auto Uses the maximum value of a specified input data. Specify Uses the value entered in the text box.
No. of Classes		 Specifies the number of intervals to display. Auto Obtains the number of classes from Sturge's law (1+3.3*LOG10 (No. of Data), rounding off after the decimal point). Specify Uses the value entered in the text box.
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 Restrictions

■ Using 'Microsoft Excel 2002' or later

When using these features with 'Microsoft Excel 2002' or later, turn on the following check box of the window.

- (1) On the menu bar, select [Tools] [Macro] [Security].
- (2) On the security screen, click the [Reliable Issuer] tab.
- (3) Check the [Trust Access to the Visual Basic Project] check box.

Security			? 🗙
Security Level	Trusted Sources		
			<u> </u>
1			Remove
🔽 Trust <u>a</u> ll inst	alled add-ins and templ	ates	Komovo
	; to <u>V</u> isual Basic Project		
No virus scanner i	nstalled.		
		ОК	Cancel

If not checked, an error may occur while using the following features.

• [Tool] - [QC Chart]

Tools of Pareto graph, etc. cannot be used.

• [Tool] - [Insert Sample]

Form templates cannot be used.

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 plural 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.

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	T			
3				
4				
5				
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.



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 -		
Please specify the na When you use the wi When you create a n	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	
Output File		
The template file store	es setting info. The actual output result will be displayed in the follow	ing file.
Folder Name	C:\Documents and Settings\Administrator\Desktop	Reference
File Name	Report_%Y%M%D.xls Return to De	fault Settings
Start from Display	ved State	
Do not save the o (Please use the S	output 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>T</u> ools <u>D</u> ata <u>W</u> indow <u>H</u> elp	ExcelAction(<u>A</u>)	
¥	💱 Spelling F7	f≈ 2↓ 🛍 🛛 Ϋ	Arial 🗸
	<u>A</u> utoCorrect		
	S <u>h</u> are Workbook		
-	<u>T</u> rack Changes		
c	Merge <u>W</u> orkbooks	F G	H I
	Protection •		
	Online Collaboration		
	<u>G</u> oal Seek		
	Sc <u>e</u> narios		
	Auditing •		
	Macro	▶ <u>Macros</u>	Altiro
	Add- <u>I</u> ns	Record New Macro	
	Customize	Security	15
_	Options	🐔 Visual Basic Editor	Alt+F11
		💷 Microsoft Script Edito	r 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 recorded	1*/*/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.



 ${\bf 6}\,$ Select "Execution Sequence List" from the "Excel Action" menu.

Exc	elAction(<u>A</u>)
6	Device One-Shot Area(<u>M</u>)
- 🗊	Device Logging Area(L)
- 👋	Recipe Area(R)
- 😰	Log Data in GP Area(<u>U</u>)
298	Special Area(<u>S</u>)
Œ	Execution Sequence List(E)
<u>a</u>	Buttonify Trigger Condition(B)
_	Action Area List(<u>I</u>)
	Tools(<u>T</u>)
	Communication(C)
Ľ	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				<u>-0×</u>
Execute when Trigger Condition satis	ied Execute when Trigger Button clicked Execute	from another applicat	ion]	
١	When Trigger Condition is satisfie	d, Action is e	xecuted.	
New Trigger Condition Edit Insert Clear	Please place actions to execute or EXCEL oper	ation commands in o	rder of execution.	
Trigger Condition 1	2 3	4	5	6
CreateForm	Excel Operation Function			
*				the second s
				Þ
			04	
			UN	

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

Ex	cel	Operation Fur	icti	on			_ 🗆 ×
	0	New Sheet New Book	c	Print Sheet	Sheet Name	sheet1	-
	С	Show Book	C	Hide Book			
	C	Print Book	C	Close Excel			
(۲	Execute Macro		Macro1			-
	С	Export					
		File Name		Report_%	/%M%D%n.csv	D	efault
		Saving Folde	:1				
		Saving Format		CSV(Export Report	sv) only the last pag html	e except Action	
					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
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
Node
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	Find Node
	Trigger Condition	
When Node PC1 is Turned ON	113301 00100001	
Condition 1		
		1
Specify the Trigger Condition.		
When Turned ON	While Device is ON 🙀	While Condition Satisfied
Casaifad Tina		Autor Constant Constant
		when Condition Satisfied
Constant Cycle	When Device ON	When Partner Node ON
When Device Changes	🔯 When Device OFF 🔀	When Partner Node OFF
	Detail Settings	OK Cancel

5 Click [OK].

6 Click [Close].

et Trigger Condition 🛛 🛛
Specify a trigger condition of the ACTION.
Trigger Condition
New Trigger Condition
Trigger1Edit
Node AGP1
When Node AGP1 is Turned ON
Close

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

6 Е	xecuti	on Sequence List		
E>	ecute v	when Trigger Condition s	atisfied	Execute when Trigger Button clicked Execute
	V			en Trigger Condition is satisfie
	I	New Trigger Condition		Please place actions to execute or EXCEL ope
	Ed	it Insert Clea	I	
		Trigger Condition	1	2 3
	•	Trigger1		Excel Operation Function
	*			

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

Excel Operation Function	on 📃 🗆 🗙
New Sheet	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	CGV(.csv) Export only the last page except Action Report. HTML(.htm)
	OK Cancel

9 Performing a save or reload activates the New Book.