# 5 Creating a Form Using Excel

5.1	Writing Measurement Data in a Form	5-3
5.2	Writing Date/Time in a Form	5-52
5.3	Writing Arrows in a Form	5-56
5.4	Writing Trigger Source Node Names in a Form	5-61
5.5	Arranging Sequence of ACTION (New Form)	5-63
5.6	Creating Trigger Buttons in a Form	5-69
5.7	Creating QC Charts in a Form	5-71
5.8	Restrictions	5-76

'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

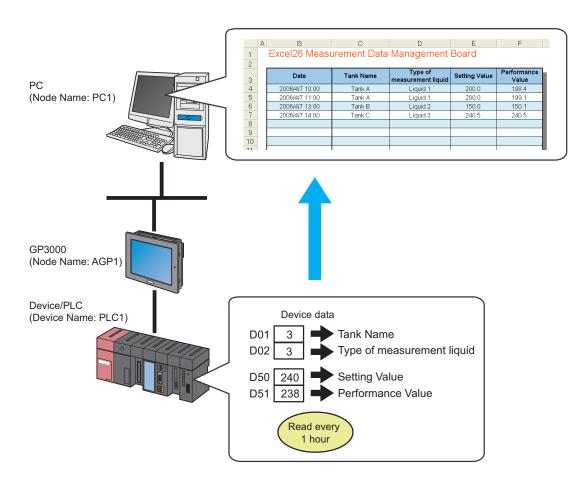
# 5.1.1 Try to write Measurement Data in a Form

#### [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	)ata Mai	nagemen	t Boar	d
2							
3		Date	Tank Name	Solution to measure	Set Value	esult Valu	
4							
5							
6							
7							
8							
9							
10 11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21 22							
22							
24			11				1

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

Item	Device	Description
Day/Time	-	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
Measurement Solution TypeD02Character string (Measurement solution type) converted from dev Device data "1": Solution 1 Device data "2": Solution 2 Device data "3": Solution 3		Device data "2": Solution 2
Setting Value	D50	Device data not converted
Actual 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>
		L
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" (Measurement solution type), 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

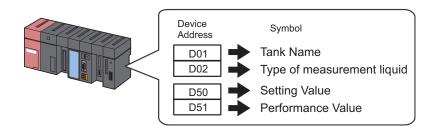
Device/PLC Information



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	Tank NameType of measurement liquid		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

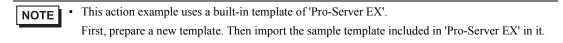
# ■ Specifying Form Template and Output File

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
Output File	File Name	Measurement data.xls
	Start with the output book displayed	Checked

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

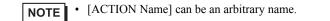
🎕 Pro-Studio EX 💡	.npx		
File Edit Tool Pro	gramming Assist Set	etting Help	
Start >	Node >	Symbol Symbol	Save
Symbol		Node Name AGP1	Device Nam
Group	Ungroup	Sheet Name Sheet3	Set it as a glol
Insert	Delete		

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	ン 눧 Symbol ン
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. Writes Data to CSV file.
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 Excel		
		Version 1.10
F Template Designation —		
When you use the wiza	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		Reference
	Edit Template	

Select File				? ×
Look in:	🔁 Desktop		<b>d</b> 🖬	•
History Desktop My Documents	Convert_D01.xls			
My Computer		template		Open Cancel
My Network P	riles of type:	Microsoft Excel Template or Book (*.XLT, *.XL Open as read-only	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 st	pres setting info. The actual output result will be displayed in the following file.
Folder Name	E: Program Files Pro-face Pro-Server EXWpxDatabase
File Name	MeasurementData.xls Return to Default Settings
	ayed State e output file when ACTION runs. Save or Auto-save function of Excel.)
	OK. Cancel

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

Output File The template file st	ores setting info. The actual output result will be disp	layed in the following file.
Folder Name	E:\Program Files\Pro-face\Pro-Server EX\Np>	xDatabase Reference
File Name	MeasurementData	Return to Default Settings
Start from Disp Do not save the (Please use the	layed State <del>s output file wh</del> en ACTION runs. ·Save or Auto-save function of Excel.)	
		OK 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.

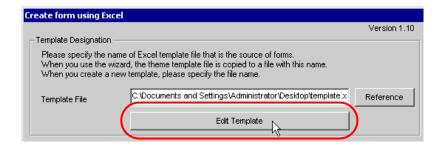
## Setting Content of Form Template

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

Refer to "5.1.2 Setting Guide" for more details.

		rget C				rget Cell Ran etting Value"	ge	of			
	"Ta	inge o ank Na ith tim		) "Ту	get Cell Range be of measurer					Range of ice Value"	
				liqu	id"						
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3			Date		Tank Name	to	s	et Value	esı	ılt Valu	
4	1					mosquino	Γ				
5											
6											
7							⊢				
8		<u> </u>					┢				
9 10		<u> </u>					┢				
11		<u> </u>					F		-		L L
12							t				
13	1						Γ				Logging
14											Direction
I					11						

**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.



2 Select the [Yes] button.



A blank form template will appear.

	1icrosoft	Excel - temple	ate.xlt								-	
	<u>Eile E</u> dit	<u>V</u> iew <u>I</u> nsert	Format 1	ools <u>D</u> ata <u>W</u> ir	ndow <u>H</u> elp B	ExcelAction(A	)				_	8×
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		5heet 1 /										
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Rea	ady									NUM		

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

ExcelAction(A)		
🟭 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	H OC Chart(L) 45
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.xlt FirstRunRateTransitGraphPerDay.xlt FirstRunRateTransitGraphPerMonth.xlt FirstRunRateTransitGraphPerWeek.xlt FirstRunRateTransitGraphPerWeek.xlt InitialSetupManagement.xlt InitialSetupTimeTransitGraph.xlt Iogging_Excel.xlt MachineCheckList.xlt	MachineStopTimeTransitGraphPerDay.xl MachineStopTimeTransitGraphPerMonth. MachineStopTimeTransitGraphPerWeek.: MachineStopTimeTransitGraphPerWeek.: MachineStopTimeTransitGraphPerWeek.: MachineStopTimeTransitGraphPerWeek.: MachineStopTimeTransitGraph.xlt MeasurementData.xl OperationRecord.xlt ProductInProcessStockTransitGraph.xlt ProductionCostTransitGraph.xlt
My Computer	File name: MeasurementData.xlt Files of type: Excel(".xlt: ".xls)	Open     Cancel

A form template will appear.

M	licrosoft Exc	el - templa	ate.xlt				Ŷ	_ 🗆 ×
	<u>File E</u> dit <u>Vi</u>	w <u>I</u> nsert	Format <u>T</u> ools <u>D</u> ata	<u>W</u> indow <u>H</u> elp Exc	elAction( <u>A</u> )			_ 8 ×
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3			Date	Tank Name	to	Set Value	esult ∀alu	
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11								
12								
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1		t șt șt	# 🔳 🦏 🖉   1	<b>•</b>				
Rea	idy						NUM	

4 Specify an area to enter "Tank Name".

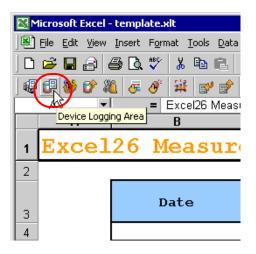
```
NOTE
```

• 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 [Excel Action] of the menu displays the same screen.	
	ExcelAction(A)	
	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 AGP1 PC1 S Group No. of Devices 1	
Data Type 16Bit(Signed)	
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 [Node] and select "PLC1" as a data transfer source device.

🖅 Devi	ce Logging					_ 🗆 X
Action	Settings Trigger Condition	Settings				
	Device Settings	AGP1	<b>.</b>	Name 🦼	#INTERNAL	
	Device Address/Symbol Group	<b>H</b>	•		PLC1	
	Data Type	16Bit(Signed)				
	Add Device Address	•	me		cifying inconcecutive ase 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	<b>•</b>	Device Name	PLC1	•	
D	evice Address/Symbol Group	<b>H</b>	<b>T</b> =	- Loc <del>al She</del> TankN			
	Data Type	16Bit(Signed)			urem atSolutionType		
E.	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.

1	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
Target Cell Range \$4\$1:\$G\$1	An image of writing to a cell is shown below.
Logging C Vertical C Horizonta	The arrow points in the direction of data logging.
Direction	
No. of Logging 1	1 2 3 4
Time Stamp 💿 OFF	2 3 4 5
	3 4 5 6
🖸 Forward 🛛 Use GP Time 👻	4 5 6 7
O Backward	5 6 7 8
	6 7 9 9
Note: The layout of a group symbol is fixed.	7 10 10 14
Note. The layout of a group symbol is lixed.	<u>7 (8 (9 (# )</u>

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

	licrosoft Excel -	template.xlt					
Be Edit View Insert Format Iools Data Window Help ExcelAction(A)						_ 8 ×	
		3 🖪 🖤 👗 🖻 🖻	🖍 🔹 🕵 Σ 🎵	👌 🏥 🕄 🐥		• 20 • B 1	/ U E E E
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	B4 🔻	= Excel26 Meas		nagement Board			
	A	В	С	D	E	F	G
2							
3		Date	Tank Name	Solution to measure	Set Value	esult Valu	
4				<u> </u>			
5				ļ			
6				. <u> </u>			
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8			cify Range		? ×		
10		Ple	ase specify the range	э,			
11							
12							
13		4	3\$4:\$C\$23				
14							
15				ОК	Iancel		
16							
17				1			
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19							
20				1			
22				i			
23							
	▶ N \ Sheet1	Template /		·			
		int at <b>  ≠ = % ∠</b>	1 .				
Poir							

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

Layout Settings	Sample
Target Cell Range \$8\$4:\$C\$23	-
Logging G Vertical O Horizontal	An image of writing to a cell is shown below. The arrow points in the direction of data logging.
No. of Logging 20 💼	1 2 3 4
Time Stamp	2 3 4 5 3 4 5 6 4 5 6 7
C Backward '	5 6 7 8 6 7 8 9 7 8 9
Note. The layout of a group symbol is fixed.	<u>vio (5 ; #</u>

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  O Vertical O Horizontal	An image of writing to a cell is shown below. 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
O Backward Use GP Time	9:00:04 4 5 6 7 9:00:05 5 6 7 8
Note: The layout 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 specified cell range and then start.				
		OK Cancel		

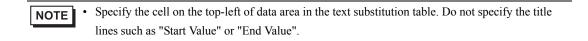
The "Text Substitution Table Settings" screen will appear.

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 C:\Documents and Settings\Administrator\De				
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 text at Read		cuments and Settings\Administra	ator\Desktop\convert
Action when cell gets full In creating a sheet, clear the spe		Scroll     O New Sheet	C Loop
		0	K Cancel

15) Click the [Trigger Condition Settings] tab.

📲 Device Logging						_ 🗆 🗙
Action Setting: Trigger Condition	Settings					
Device Settings						
Node	AGP1	▼	Device Name	PLC1	•	
Device Address/Symbol Group	TankName	•	No. of Devices	1	-	
Data Type	16Bit(Signed)					
Add Device Address	•	me		ecifying inconced lease use a grou		

The "Trigger Condition Settings" screen will appear.

NOTE	
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• 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 cit
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 Node
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 I	1				
5	When Turned ON		While Device is ON		While Condition Satisfied
Ġ	Specified Time		While Device is OFF	<b>N</b> k	When Condition Satisfied
٢	Constant Cycle		When Device ON		When Partner Node ON
	When Device Changes		When Device OFF	寒	When Partner Node OFF
	Cycle 3600000 m m	hour	min		
			Detail Settings		OK Cancel

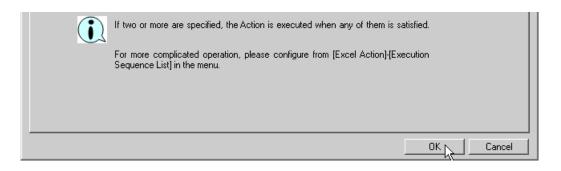
20) Click the [Close] button.

Set Trigger Condition Specify a trigger condition of the ACTION.	X
Trigger Condition	
New Trigger Condition	_
CreateAForm Ed	it
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.

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 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.

🖅 Devi	e Logging					_ 🗆 🗵
Action		Settings				
	Node	AGP1		Device Name	PLC1	-
	Device Address/Symbol Group	MeasurementSolutionType	•	No. of Devices	1 🗄	1
	Data Type	16Bit(Signed)				
	Add Device Address		me		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
Edit Delete	Edit Delete
Trigger Condition	Trigger Condition
	<u>▶</u>

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.

Micr	osoft Excel - template.xlt
🖳 🖳 Eile	e <u>E</u> dit <u>V</u> iew Insert F <u>o</u> rmat <u>T</u> ools <u>D</u> ata
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🤬 🚭	👹 💕 🍇 🖉 🔗 🗰 💕 💣
	🕆 🚽 😑 Excel26 Measi
	Device Logging Area B
1 <mark>E</mark>	xcel26 Measur
2	
2	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 Tigger Source Node) Data Type Device Node) Device Node Device Node Device Node Device Node No. of Devices Device Node Device N	
✓ 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		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						_ IX
Action Settings Trigger Condi	tion Settings					
Device Settings Node	AGP1	▼	Device Name	PLC1	•	
Device Address/Syn Group Data Type	16Bit(Signed)	E		Name urementSoluti	onType	
Add Device Add				gValue Nalue		

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	<b>.</b>	Device	PLC1	-	
	Device Address/Symbol Group	TankName	<u></u>	Name No. of Devices	7		
	Data Type	16Bit(Signed)					
	Add Device Address	-		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.

Mic	crosoft Excel ·	· template.xlt						
E 🔍	jle <u>E</u> dit ⊻iew	Insert Format Tools Data						Ð×
0	🛎 🖪 🔒 (:	5 B. 🖤 👗 🖻 🖻 🖉	κ) • 🍓 Σ fκ	2. 🛍 🕄 💐		• 20 • B 1		» *
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	E4 💌	= Excel26 Meas		nagement Board				
	Α	В	С	D	E	F	G	
2								
3		Date	Tank Name	Solution to measure	Set Value	esult Valu		
4					************			
5								
6								
7					[			
8			Specify Range		? ×			
9			Please specify the	range.	_			
10					-			
11					-			
13			\$E\$4:\$E\$23		-			
14			pcp+.pcp23					
15				ОК	Cancel			
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22					Į			
23					1	<u>ا</u>		_ె
	▶ ▶ \ Sheet1		6		•			
		et et 🖬 🤧 🖉 🗄	- M					

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

Layout Settings	Sample
Target Cell Range 🛛 👫 🔣	An image of writing to a cell is shown below. The arrow points in the direction of data logging.
Logging • Vertical • Horizontal	The arrow points in the direction of data logging.
No. of Logging	
Data 🔎 🖃	1 2 3 4
Time Stamp 💿 OFF	2 3 4 5
C Forward Use GP Time	3 4 5 6
	4 5 6 7
	5 6 7 8
	6 7 8 9
Note: The layout of a group symbol is fixed.	7 8 9 #

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

Layout Settings	- Sample
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 🔹 Clear and Overwrite 💿 Scroll 🕓 New Sheet 🔿 Loop							
In creating a sheet, clear the specified cell range and then start.							
		OK Cancel					

10) Click the [Trigger Condition Settings] tab.

🖅 Devic	e Logging						_ 🗆 🗙
Action	Settings Trigger Condition :						
	Node	AGP1	•		Device Name	PLC1	]
	Device Address/Symbol Group	TankName		V	No. of Devices	1 🗦	
	Data Type	16Bit(Signed)					
	Add Device Address			mei		ecifying inconcecutive lease use a group	

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 satisfied.
Edit Delete	E dit 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'.

Microsoft Excel - template.xlt	-[0]
File Edit View Insert Format Tools Data	Window Help ExcelAction(A)
□         №.         Ctrl+N           ▶         >         Open         Ctrl+O           ↓         Close         Ctrl+O         Ctrl+O	- · · · · · · · · · · · · · · · · · · ·
G Save Ctrl+S	celFormOcx.FormRangeInfo.1","") C D E F G
1 Web Page Preview 2 Page Setup	ment Data Management Board
Print Area  Print Preylew  Bernint Preylew  Ctrl+P  Ctrl+P	ank Name Solution to measure Set Value Result Value
4         Send To           5         1 \Documents and Settings\mh\test.xls	
10 11 12	
13	
🔚 Of OL ☆t ↔   ≠ = 🦘 🖉 🏌 Ready	

**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 EX\N	PXDataBase Reference		
File Name	MeasureData.xis	Return to Default Settings		
✓ Start from Displayed State □ Do not save the output file when ACTION runs. (Please use the Save or Auto-save function 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.

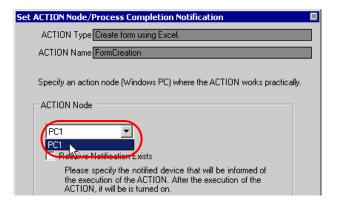


- ACTION Node : PC1
- Receive Notification: OFF

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

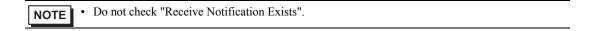
Set ACTION Name/Parameter	×
Add a new ACTION. Specify an ACTION name, and set its parameter.	
ACTION Type Create form using Excel.	-
Display the Actions of the old version of Pro-Server	
ACTION Name FormCreation	
Click here to set the ACTION parameter.	
Next Cancel	

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.

Please s the exec	Iotification Exists pecify the notified device that will be informed of ution of the ACTION. After the execution of the it will be is turned on.
	Device Name
	#INTERNAL
	· · · · · · · · · · · · · · · · · · ·
	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 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
Trigger In a Cycle of 3600000ms Data	Rename
Completion CreateA	Create form using Excel.
	Set Parameter
L	ACTION Node
	PC1

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

饕 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		onitor tatus
Trigger Condition	Sec	luence D	iagr	am by Ti	rigger Condition	
	<b>•</b>	Collapse		Tra	nsfer ACTION/Data	
CreateAForr Edit	Feature	Source		Destinat	Receive/Process Co	
Node AGP1	<ul> <li>FormCrea</li> </ul>	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 Excel	- template.xlt				
Eile Edit View	Insert Format Tools Data	<u>W</u> indow <u>H</u> elp Exc	elAction( <u>A</u> )		_
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1 Excel	26 Measur	ement I	Data Mai	nagemen	t Board
	.26 Measur	ement I Tank Name	Solution	-	t Board
2			Solution	-	

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.

M	1icrosoft Excel	template.xlt						-
	<u>File E</u> dit <u>V</u> iew	Insert Format I	ools <u>D</u> ata	<u>Window H</u> elp E	celAction( <u>A</u> )			_
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	F11 💌	=						
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1 2 3	Excel	26 Mea Date		ement Tank Name	Solution	nagemen Set Value		
<u> </u>	Excel		,		Solution	-		
3	Excel	Date	• 10:00	Tank Name	Solution to measure	Set Value	Result V	
3	Excel	<b>Date</b> 20064/30 1	• 10:00 11:00	<b>Tank Name</b> Tank A	Solution to measure Liquid1	<b>Set Value</b> 120.0	Result V.	

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

This is the end of the explanation of this ACTION.

### 5.1.2 Setting Guide

This section explains how to set the parameters of ACTION.

#### "Creating form using Excel" Screen

eate form using Ex	kcel	
		Version 1.1
Template Designation	۱ <u> </u>	
When you use the	name of Excel template file that is the source of form wizard, the theme template file is copied to a file with new template, please specify the file name.	
Template File		Reference
	Edit Template	
Output File		
	ores setting info. The actual output result will be disp E: Program Files Pro-face Pro-Server EX/NP	
The template file sto		
The template file sto Folder Name	E:Program Files/Pro-face/Pro-Server EX/WP Report_%Y%M%D.xls	XDataBase Reference
The template file sto Folder Name File Name Start from Displ	E:Program Files/Pro-face/Pro-Server EX/WP Report_%Y%M%D.xls	XDataBase Reference

Setting item		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.

Setti	ng 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	<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>
	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>If 'Pro-Server EX' or 'Excel' exits abnormally due to some reasons, the output file may not be saved and the contents may be lost.Normally, we recommend unchecking this item.</li> </ul>

"Device Logging" Screen

Device Logging     Action Settings     Device Settings     Node     (Trigger-Source Node)     Device Address/Symbol     Group     Data Type     16Bit(Signed)	Device     Name     No. of     Devices
Add Device Address/Symbol Name	Note: When specifying inconcecutive memory data, please use a group symbol.
Layout Settings Target Cell Range \$8\$8 Logging Vertical O Horizontal Direction 1 Constraints No. of Logging 1	Diple           An image of writing to a cell is shown below. The arrow points in the direction of data logging.           DIDI         D102         D103         D104           1         2         3         4         5           3         4         5         6         7           4         5         6         7         8         9           6         7         8         9         10         0
No. of Blank Cells to insert between Cells Row	0 📩 Column 0 📫
Convert device value to certain text at Read  Action when cell gets full  Clear and Overwrit  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 retrice</li> <li>Selecting "(Trigger-Source Node 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	
			·	

Sett	ing 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>Sets the number of the devices to execute data logging. Enabled only when the device address has been directly input.</li> <li>NOTE</li> <li>When the symbol is specified, this is set automatically.</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 ad cells next to the cell In this case, depend symbol name, or gr follows.	ls in which logging ling on the data log	g data have been wr gging direction, the	device address,
	Logging	Direction	Display Co	ell Position
	Vert	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
Set Layout Settings	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. <b>NOTE</b> • 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. <b>Setting range of cells:</b> 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. <b>Setting range of cells:</b> 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. • The useful function is available to check the specified cell range (Action
	Logging Direction	<ul> <li>area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".</li> <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>
	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>
	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	<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 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

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.	Device Logging       Image: Condition Settings         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	
OK Cancel	Image: Trigger Condition         *         *         Image: Trigger Condition         *         *         *         *         *         *         *         *         *	

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 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	<ul> <li>NOTE</li> <li>When plural 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>		

Setting item	Setting content
Clear Cell when the	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.
following condition is satisfied	<ul> <li>NOTE</li> <li>When plural 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

Text Substitution Table Settings     X       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. 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	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.

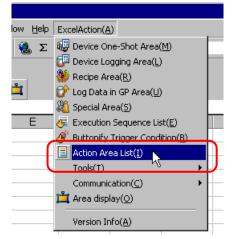
After the conversion, the cell format as well as character strings will be reflected in the output file. The format preset on the template (format for lines excluded) will therefore be overwritten. When the substitution feature is not used, the cell format will remain unchanged.

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 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	ction 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.

**NOTE** • 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.

M	icrosoft Ex	cel - test.xl	lt								-	
	<u>File E</u> dit <u>V</u>	jew <u>I</u> nsert	Format <u>T</u> ool	s <u>D</u> ata <u>W</u> in	idow <u>H</u> elp	ExcelAction(A	0				_	B×
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	69 👋 🖸		🐠 🗰 🛯	🖆 🔮 ۱								
	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	
Action Settings Trigger Condition Settings	
Feature Type Show Date/Time Show Date/Time Show Cell Arrow Write Current Time Trigger Source Noc	
\$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	Show Date/Time	-		
Write Current Tim	e to Cell			
	\$4\$1	<b></b>		
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	<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>

Setting item	Setting content				
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.         Specify Range       ? Image: Tell range.         Please specify the range.       ? Image: Tell range including 1501 lines or more, only the top-left cell of the selected range seems to be specified on the display.         Image: Tell range including 1501 lines or more including 1 to 1 the selected range seems to be specified on the display.				
	<ul> <li>The useful function is available to check the specified cell range (Action area).Refer to " <ul> <li>Action Area List" in "5.1.2 Setting Guide".</li> </ul> </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		
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	<ul> <li>NOTE</li> <li>When plural 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	icrosoft Ex	cel - test.xl	t								-	
	B File Edit Yiew Insert Format Iools Data Window Help ExcelAction(A)									_	Ð×	
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] 🤬	69 👋 🖸		🐠 🗰 🛯	🛱 🔮 🕈								
	A1		=									
	Α	Special	Area C	D	E	F	G	Н		J	K	
1		1										
2												
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 Show Date/Time Show Date/Time Time
	\$A\$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	<u>10</u> 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 Range							
	<ul> <li>NOTE</li> <li>Setting range of cells: Rows 1 to 65536, Columns 1 to 256</li> <li>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.</li> </ul>							
Arrow Display Cell Range	Specify Range     ? X       Please specify the range.       \$A\$1       OK     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.							
	1 O A Management Board 2 0000 AAA 000 6 6 7 8 8 9 10 11 12 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0							
	• The useful function is available to check the specified cell range (Action area).Refer to "■ Action Area List" in "5.1.2 Setting Guide".							

Sett	ing 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	ell Range								
		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	<ul> <li>Specifies the first cell in which reference data are stored for wiring arrows.</li> <li>The write image of the content set in "Data Cell Settings" appears on the right of the screen.</li> </ul>							
Data Cell Settings	Start Data Cell	<ul> <li>Specifies the first cell in which data of the start value of an arrow are store</li> <li>NOTE</li> <li>An arrow will not be written if the start value is out of the scale range.</li> </ul>							
	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.							
		<ul> <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.

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Eile Edit Viev	v <u>I</u> nsert F <u>o</u> r	rmat <u>T</u> ools	; <u>D</u> ata <u>W</u> in	dow <u>H</u> elp	ExcelAction(A	)					۶×
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A	Special Are	a C	D	E	F	G	Н		J	K	
1											
2											
2											

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 \$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 \$4\$1		
	OK	Cancel

Setting item	Setting content
Setting item Target Cell Range	<ul> <li>Specifies a cell range to which node names will be written.</li> <li>Clicking the button can select a cell range on Excel.</li> <li>Drag the mouse to select the cell range.</li> <li>NOTE <ul> <li>When you select plural cells as a cell range, the node name will be written in the left top cell only.</li> <li>Setting range of cells: Rows 1 to 65536, Columns 1 to 256</li> </ul> </li> <li>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.</li> </ul>
	<ul> <li>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.</li> <li>A B C A A B C A A A A A A A A A A A A A</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.

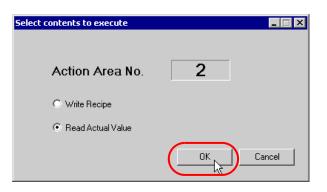
1 Click the [Execution Sequence List] icon on the Excel template.

Microsoft Excel - test.xlt							-	
Eile Edit View Insert Format Tools Data Wi	ndow <u>H</u> elp	ExcelAction(A	0				_	8×
🗅 🖙 🖬 🔒 🎒 💁 🕲 🖤 👗 🛍 🛍 🗠	- 🍓 Σ	f≈ ĝ↓ 🛍	, 🝳 💥 🗛	rial	• 1	<b>₽ В</b> .	<u>u</u>	≣ *
A1	_							
A B Execution Sequence List	E	F	G	Н	I	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.

	on Sequence L when Trigger Cor					clicked Execute from another applic		ted.	_ 🗆 X
۱ Edi	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	<b>\</b>	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.	When Trigger Condition is satisfied, Action is executed.				
New Trigger Condition					
New Trigger Condition	Please place actions to evecute or EXCEL operation commands in order of evecution				
	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.				
	Please place actions to execute or EXCEL operation commands in order of execution.	4			
Edit Insert Clear		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.

xecution Sequence List								
ecute 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.								
Ec	dit Insert Cle	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				
*								
•				•				
1				ľ				
•				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.

ecutio	cution Sequence List								
ecute w	vhen Trigger Cor	dition s	atisfied Execu	ite when Trigger Button	clicked Execute from another app	lication ]			
	When Trigger Button is clicked, Action can be executed.								
	New Trigger Button Please place actions to execute or EXCEL operation commands in order of execution.								
Edi	it Insert	Clea	r						
	Trigger Button	1			2	3	4		
•	Button1	A	REA2(\$A\$5) Re	ecipe:Write Recipe	AREA3(\$A\$7) One-Shot:Read	AREA1(\$A\$3) Logging:Logging			
*									
1									
4							Þ		
4						οκ	► Cancel		

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	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.
to 40)	<ul> <li>NOTE</li> <li>Clicking "Excel Operation Function" displays the "Excel Operation Function Setting" screen.</li> <li>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 Li	ist			_ [	
outou	when Trigger Con	dition satisfied Execute when Trigger Butto	n clicked Execute from another ann	ication ]		
cute						
	By sendi	ng a command from a user	program to Action, the A	Action can be executed.		
E E E E E E E E E E E E E E E E E E E						
Edit Insett Clear Please place actions to execute or EXCEL operation commands in order of execution.						
	Command	1	2	3	4	
•	ABC	AREA2(\$A\$5) Recipe:Write Recipe	AREA3(\$A\$7) One-Shot:Read	AREA1(\$A\$3) Logging:Logging		
*						
(						
•				OK 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.</li> </ul>
	Refer to "■ "Excel Operation Function" Screen" Screen" for more details.

"Excel Operation Function" Screen

Excel Operation Fund	ction
New Sheet	C Print Sheet Sheet Name sheet1
C New Book	
C Show Book	O Hide Book
O Print Book	O Close Excel
C Execute Macro	
C Export	
File Name	Report_%Y%M%D%n.csv Default
Saving Folde	er
Saving	CSV(.csv)
Format	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.</li> <li>",", "=", "+", "-", ", ", ", ", ", ", " "</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	Executes macro. Enter a macro name to execute in the text box. NOTE • You cannot use the following characters as a macro name. ",", "=", "+", "-", ",", "/", "\", " "
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></li> <li>You cannot use the following characters as a file name.</li> <li>",", "=", "+", "-", ",", "/", "\", " "</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.

**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.

Microsoft Excel - test.xl	t							_ 🗆 ×
Eile Edit Yiew Insert	Format <u>T</u> ools <u>D</u> ata <u>W</u> ind	dow <u>H</u> elp Excel	Action( <u>A</u> )				ĺ	_ 8 ×
🗅 🖻 🖬 🔒 🎒 🔕	🖇 🖺 🔂 🕬 🗸	🍓 Σ f 🖌 🛓	🕴 🛍 🛛 🙄	Arial	<b>→</b> 1	0 <b>- B</b> .	ΖU	≣ ."
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A1 -	Duthanifu Trianau Candilia							
A B	Buttonify Trigger Conditio	<u> </u>	F G	H	1	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

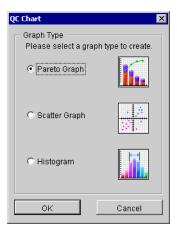
### 5.7.1 Try to Create QC Charts in a Form

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 - test.xl	t								_ 🗆 🗙
Eile Edit Yiew Insert	F <u>o</u> rmat <u>T</u> ools <u>D</u> ata <u>W</u> in	idow <u>H</u> elp	ExcelAction(A	)				l	_ 8 ×
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A B	C QC Chart D	E	F	G	Н		J	K	
1									

The "QC Chart" screen will appear.



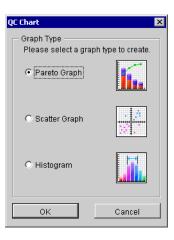
2 Set the content and click the [OK] button.

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	<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:	<b></b>
Data Range:	<b>T</b>
- Output Settings -	
Output-Destination	
Start Cell:	
- Graph-To-Display 8	Settings
Graph Title:	
Highlight: 💿 Up to	080% C Top 3 C OFF
	with a ratio less than 1%
	with a ratio less tridin 1 %
	1
OK	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.</li> <li>Clicking the button can select a cell range on Excel.</li> <li>Drag the mouse to select the cell range.</li> <li><b>NOTE</b> <ul> <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> </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.		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):	
— Graph-To-Display Se Graph Title:	ettings
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.
Input 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 plural 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>
	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 plural 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
<ul> <li>Auto</li> </ul>	<ul> <li>Auto</li> </ul>
C Specify:	C Specify:
No. of Classes	Graph-To-Display Settings
<ul> <li>Auto</li> </ul>	Title:
C Specify:	OutLine: OFF OON
	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 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	Kolilovo
	; 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 of Action Areas

Action Areas cannot be grouped. If grouped, the cell range cannot be managed correctly. Do not release the group 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				
I 0 I				
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"

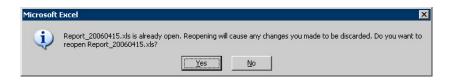
Special - "Trigger Source Node"

#### ■ 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.



#### Receive notification

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

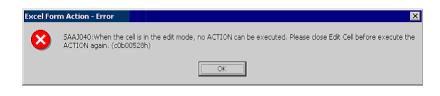
#### When setting "Trigger-Source Node"

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 Excel			
			Version 1.10
Template Designation			
When you use the wizard	of Excel template file that is the source of d, the theme template file is copied to a file template, please specify the file name.		
Template File	E:\Documents and Settings\Owner\Des	sktop'template.×It	Reference
	Edit Template	-k	
-Output File			
The template file stores s	etting info. The actual output result will be	e displayed in the follo	wing file.
Folder Name	E:\Documents and Settings\Owner\Des	sktop	Reference
File Name	Report_%Y%M%D.xls	Return to D	efault Settings
Start from Displayed	State		
	ut file when ACTION runs. e or Auto-save function 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(A)			
¥	🗸 Spelling F7	f≈ 2↓ 🛍	2 ° A	rial	•
	<u>A</u> utoCorrect				
	S <u>h</u> are Workbook				
	<u>T</u> rack Changes				
c	Merge <u>W</u> orkbooks	F	G	Н	
	Protection •				
_	Online Collaboration				
-	<u>G</u> oal Seek				
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	ustomize	Security	и	2	
_	Options	者 Visual Basic	: Editor	Alt+F	11
		OD Microsoft S	icript Editor	Alt+Shift+F	11

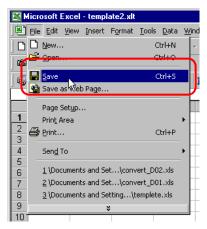
**3** Enter the macro name "Macro1" and click the [OK] button.

Recording the macro starts.

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

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

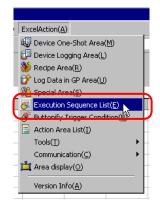
"Macro1" is recorded in the macro.



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

t Tools Data <u>W</u> indow H	elp ExcelAction( <u>A</u> )
¥ 🍄 Spelling F7	🕫 🛃 🛍 😨 😤 Arial
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⊆ustomize	Stop <u>R</u> ecording
Options	Security
- <b>×</b>	→ Žisual Basic Editor Alt+F11

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



7 Create the trigger condition save automatically.

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

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.								
Ne Edit	w Trigger Condition		lace actions to execute (	or EXCEL operation	commands in or	der of execution.			
	rigger Condition	1	2	3	4	5	6		
► U	reateForm		<ul> <li>Excel Operation Fur</li> </ul>						
•							Þ		
						ОК	Cancel		

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

Ехс	cel	Operation Fun	cti	on	
		New Sheet New Book	0	Print Sheet	Sheet Name sheet1
	$\circ$	Show Book	C	Hide Book	
	C	Print Book	C	Close Excel	
(	•	Execute Macro		Macro1	
	С	Export			
		File Name		Report_%	Y%M%D%n.csv Default
		Saving Folde	r		
		Saving Format		CSV(.c Export Report	only the last page except Action
				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.