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User Manual

Sofrware

atDesigner

MWA-ADV1U1-V1.2-1910US

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Preface

Thank you for purchasing Autonics product.

Please familiarize yourself with the information contained in the **Safety Considerations** section before using this product.

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User Manual Guide

- Please familiarize yourself with the information in this manual before using the product.
- This manual provides detailed information on the product's features. It does not offer any guarantee concerning matters beyond the scope of this manual.
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- This programming manual is not provided as part of the product package. Please visit our website (www.autonics.com) to download a copy.
- The manual's content may vary depending on changes to the product's software and other unforeseen developments within Autonics, and is subject to change without prior notice. Upgrade notice is provided through our homepage.
- We contrived to describe this manual more easily and correctly. However, if there are any corrections or questions, please notify us these on our website.

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User Manual Symbols

Symbol	Description
Note	Supplementary information for a particular feature.
Warning	Failure to follow instructions can result in serious injury or death.
Caution	Failure to follow instructions can lead to a minor injury or product damage.
Ex.	An example of the concerned feature's use.
※	Annotation mark.

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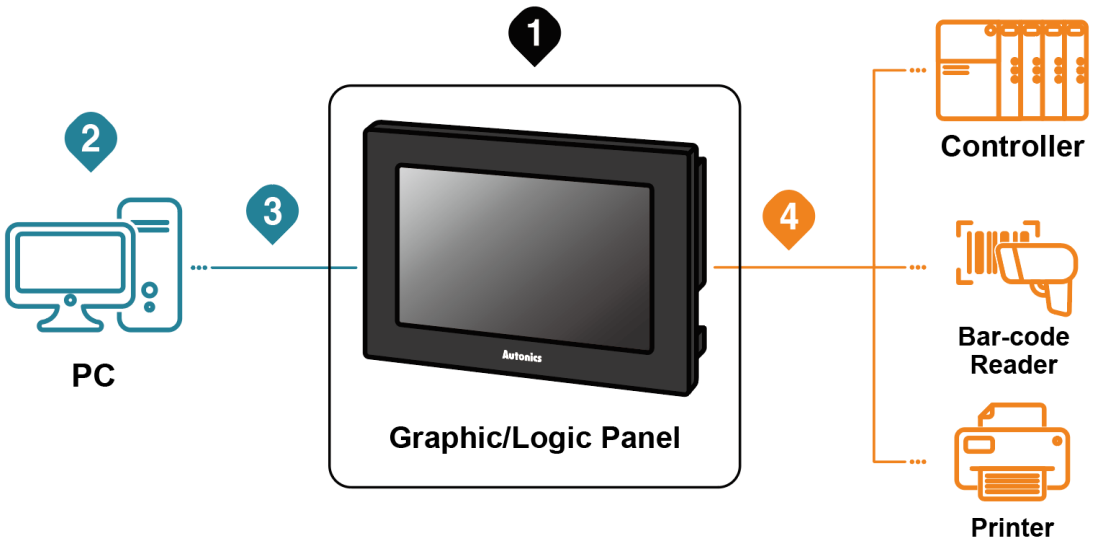
Reference Manual for Each Step



1 Graphic/Logic panel device specification, installation, maintenance, management, firmware update and system configuration

Hardware manual	GP-A Series user manual, LP-A Series user manual

2 Project drawing, programming

Software manual	Drawing	atDesigner user manual
	Programming	atLogic user manual, atLogic programming manual

3 Project upload/download

Hardware manual	GP-A Series user manual, LP-A Series user manual

4 Connected device setting, communication setting

Software manual	Drawing	atDesigner user manual
	Programming	atLogic user manual, atLogic programming manual
Hardware manual		GP-A Series user manual, LP-A Series user manual

4 Checking connectable device, model name of connection cable, and protocol

Communication manual	GP/LP user manual for communication

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1 atDesigner

1.1 atDesigner Overview

atDesigner is the user screen and project data editing program dedicated to GP/LP-A Series.

With atDesigner, user can edit shape, position, property of the object and figure in the user screen and set user account, security, language, script, or etc before download to the GP/LP.

It is also available to download a firmware of the GP/LP with ease.

1.2 Features

- Supporting for Windows true type font and other various bitmap font
- GP/LP-A Series firmware download function
- Project file converting function from project file of S Series to A Series
- Convenient user interface and display
  : Title bar, Ribbon Menu, Project window, Tool-bar/Library/Undo List, Work space, Message window, Status window
- Various editing functions for grouping, aligning, selecting, drawing
- Providing a selection of library and image
  : Image library, Object library, Window library, Key window library
- Over-rap screen to enhance efficiently of user screen drawing and to save data
- Automatic validation test for the project file and data when downloading to GP/LP
- Simulator included for testing the project file before downloading

1.3 System Requirements

Operating system and specifications of PC for using atDesigner is as follows.

- Operating system: Windows XP/Vista/7/8/10
- PC specification

Item	Minimum spec	Recommended spec
CPU	Pentium4 1.6GHz or above	Inter Core i5-2nd generation 2500 or above
Memory	Min. 4GB	Min. 8GB
Hard disk	Min. 4GB	Min. 8GB
Resolution	Min. 1280×1024	Min. 1920×1080

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1.4 Installation

Access to the Autonics website (www.autonics.com) to download atDesigner installation program.

Execute the downloaded installation file to start installation. Wait for a while until the installation finishes. Click 'Cancle', when you want to stop installation.

When installation finishes, language selecting window appears.

Click 'Next' after selecting the language you want.

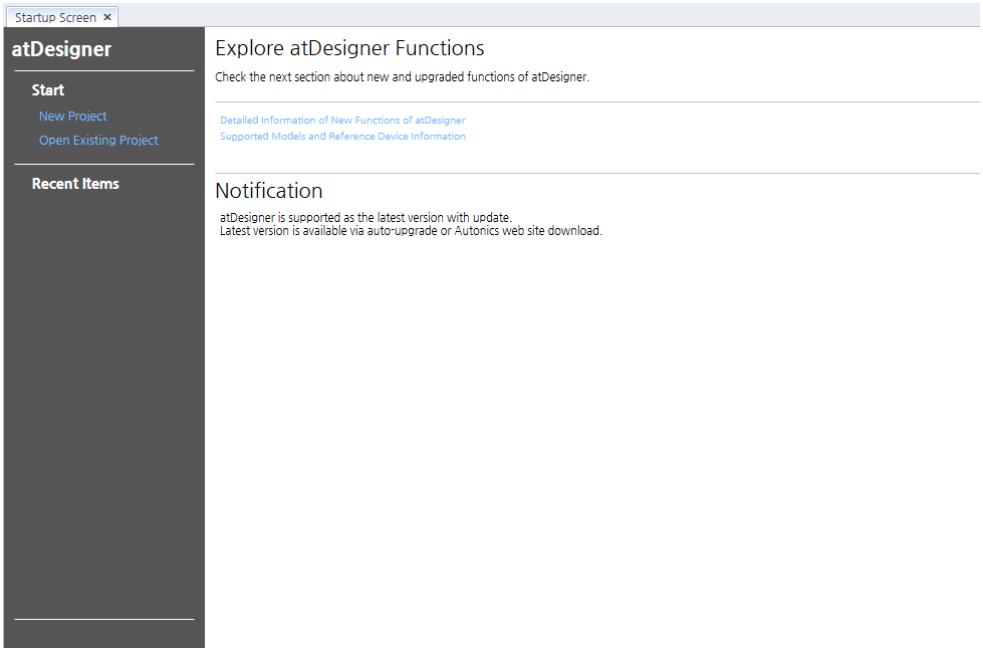
'atDesigner' runs in the language you selected, when you click 'Next'.

1.5 atDesigner Screen Layout

1.5.1 Startup Screen

Stratup screen is displayed, when the program is executed.

Startup screen consists of list of recently edited project file, information of program update, information of supported model and reference device, and notification.



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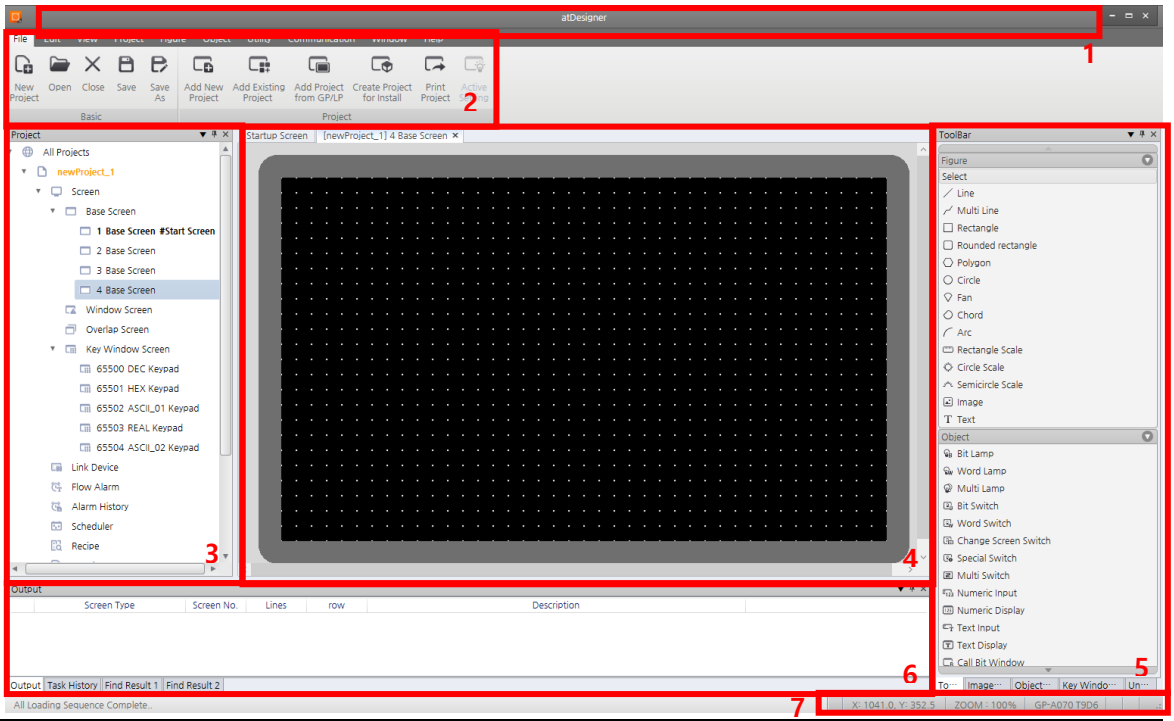
1.5.2 UI Component



No	Name	Description
1	Title bar	It displays project name, user level, and saved path of the editing project.
2	Ribbon menu	It displays functions of atDesigner.
3	Project window	It displays components of editing project in a tree structure.
4	Work space	It displays opened screen of the project in tap or MDI formation. It is space for drawing and editing user screen which is to be downloaded to GP/LP.
5	Tool bar/Library/ Undo List window	It displays tool bar of figure and object for drawing user screen, library of object/image/key window, and undo list.
6	Message window	It displays messages about result or status of the project file editing process.
7	Status window	It displays information about the selected figure or object and coordinate of the mouse cursor

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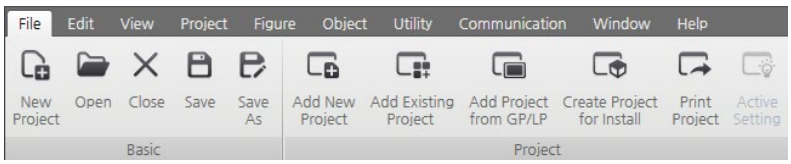
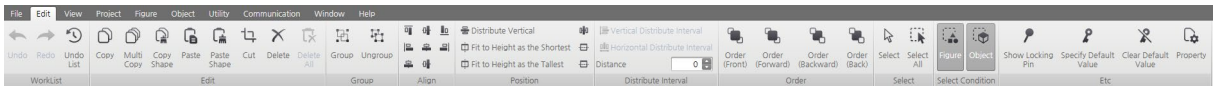
1.5.3 Ribbon Menu

1.5.3.1 File



Item		Function
Basic	New Project	It creates a new project.
	Open	It opens the saved project.
	Close	It closes the opened project.
	Save	It saves the project.
	Save As	It saves the project with a different name.
Project	Add New Project	It adds a new project.
	Add Existing Project	It adds the existing project.
	Add Project from GP/LP	It adds the project which is saved in GP/LP.
	Create Project for Install	It creates the project as installation file.
	Print Project	It saves the project in another form of file.
	Active Setting	It sets the current project to active status.

1.5.3.2 Edit



Item		Function
Work List	Undo	It goes backward to the previous work.
	Redo	It goes forward to the next work when Undo has operated.
	Undo List	It displays work history at the right side of the screen.
Edit	Copy	It copies the selected figure/object.
	Multi Copy	It copies the selected figure/object to multiple copies.
	Copy Shape	It copies only appearance setting of the selected figure/object.
	Paste	It pastes the copied figure/object.
	Paste Shape	It applies the copied appearance setting to the same type of figure/object.
	Cut	It cuts out the selected figure/object.
	Delete	It deletes the selected figure/object.
	Delete All	It deletes all figures/objects on the being edited screen.
Group	Group	It makes the two or more selected figures/objects as a group.
	Ungroup	It ungroups the selected group.
Align		It aligns the selected figures/objects to top, vertical center, bottom, left, horizontal center, right, vertical center of the screen, horizontal

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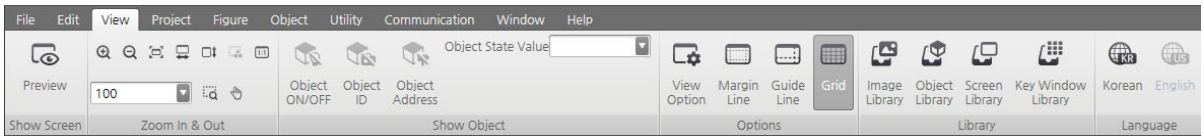
Item		Function
		center of the screen.
Fit	Distribute Vertical	It aligns the selected figures/objects to the vertical center with same interval.
	Fit to Height as the Shortest	It adjusts height of the selected figures/objects to that of the shortest figure/object among them.
	Fit to Height as the Tallest	It adjusts height of the selected figures/objects to that of the tallest figure/object among them.
	Distribute Horizontal	It aligns the selected figures/objects horizontally with the same length of interval.
	Fit to width as the Narrowest	It adjusts width of the selected figures/objects to that of the narrowest figure/object among them.
	Fit to width as the Widest	It adjusts width of the selected figures/objects to that of the widest figure/object among them.
Distribute Interval		It aligns the selected figures/objects horizontally or vertically with the designated length of distance.
Order		It moves layer of the selected figures/objects to the front, forward, backward, and to the back.
Select	Select	It selects figure or object.
	Select All	It selects all figures/objects in the editing screen.
Select Condition	Figure	It selects all figures in the editing screen.
	Object	It selects all objects in the editing screen.
Etc	Show Locking Pin	It displays locking pin to fix a figure/object on the screen.
	Specify Default Value	It sets appearance of the selected figure/object as default option.
	Clear Default Value	It clears saved default option of the appearance.
	Property	It checks property of the selected figures/objects.

1.5.3.3 View



Item		Function
Show Screen	Preview	It displays preview of the base screen selected in the project window.
Zoom In & Out	Zoom in/Zoom out	It enlarges/reduces the size of editing screen about 25%.
	Expand to Workspace	It enlarges/reduces the size of editing screen to that of work space.

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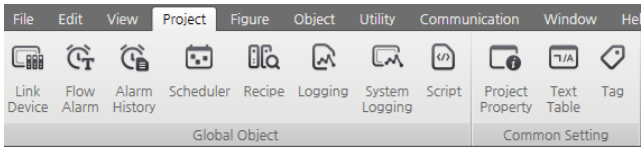
Item		Function
	Zoom in to Fit Workspace Width/Height	It enlarges/reduces the size of editing screen to width/height of work space.
	Zoom In Selected Figures/Objects to Fit Task Area	It enlarges/reduces the size of figures/objects to that of task area.
	Ratio 100%	It displays the editing screen in 100% ratio.
	Number (ratio)	It displays the editing screen in selected ratio.
	Zoom in Selected Area to Fit Task Area	It enlarges/reduces the size of selected area to that of task area.
	Moving screen tool	It moves the screen location to display.
Show Object	Object ON/OFF	It displays the object in ON/OFF status.
	Object ID	It displays object ID.
	Object Address	It displays object address.
	Object State Value	It displays object of several status value in the selected value.
Options	View Option	It sets display option of work space.
	Margin Line/ Guide Line/Grid	It displays margin line/guide line/grid in work space.
Library	Image/Object/Screen /Key Window Library	It displays each library window.
Language	Korean/English	It sets language of atDesigner.

1.5.3.4 Project



Item		Function
Global Object	Link Device	It links controller device and GP/LP internal device to read/write device value of the counterpart according to the set condition.
	Flow Alarm	It sets flow alarm for the set device status.
	Alarm History	It helps to check alarm history.
	Scheduler	It sets operation schedule for several conditions.
	Recipe	It reads/write device value of the target at once.
	Logging	It saves the set device value according to the set condition.
	System Logging	It saves system status of the GP/LP hardware device in a file.
	Script	It sets user made function beside atDesigner function.
Common Setting	Project Property	It sets project property.
	Text Table	It manages text for the project by language.
	Tag	It registers and manages the frequently used device.

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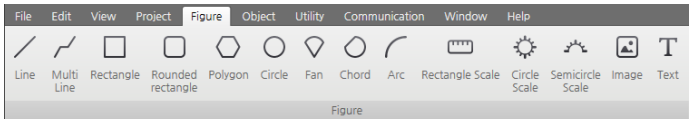
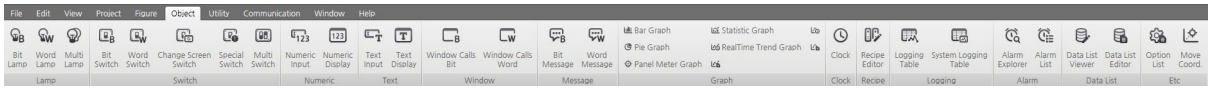
1.5.3.5 Figure



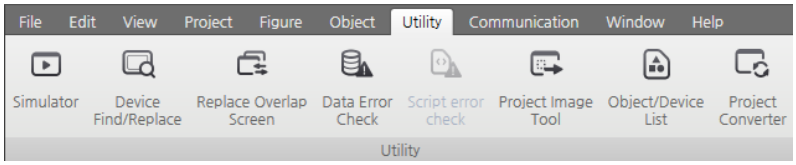
Item	Function
Figure	It adds line, multi-line, rectangle, rounded rectangle, polygon, circle, fan, chord, arc, rectangle scale, circle scale, semicircle scale, image or text.

1.5.3.6 Object



Item	Function
Lamp	It adds bit lamp, word lamp, or multi-lamp.
Switch	It adds bit switch, word switch, change screen switch, special switch or multi-switch.
Numeric	It adds numeric input or numeric display.
Text	It adds text input or text display.
Window	It adds window calls bit or window calls word.
Message	It adds bit message or word message.
Graph	It adds bar graph, pie graph, panel meter graph, statistic graph, real-time trend graph, logging trend graph, real-time distribution graph, or logging distribution graph.
Clock	It adds clock.
Recipe	It adds recipe editor.
Logging	It adds logging table or system logging table.
Alarm	It adds alarm explorer or alarm list.
Data list	It adds data list viewer or data list editor.
Etc.	It adds option list or move coord..

1.5.3.7 Utility



Item		Function
Utility	Simulator	It helps to the check edited screen data without downloading to HMI device.
	Device Find/Replace	It finds device or replace to another.
	Replace Overlap Screen	It adds/changes/deletes or sets at once.
	Data Error Check	It checks data error.
	Script Error Check	It checks script error.
	Project Image Tool	It exports image inserted in the project or change format of the

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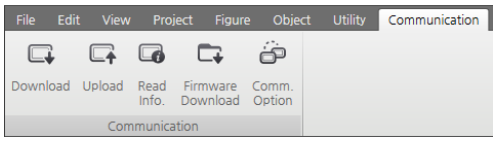
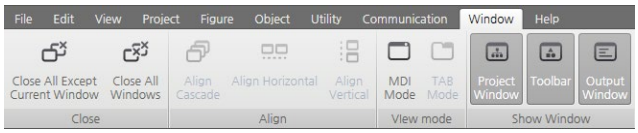
Item		Function
		image to export.
	Object/Device List	It checks registered object and device.
	Project Converter	It converts GP/LP S series project to GP/LP A Series project.

1.5.3.8 Communication



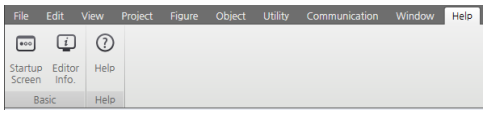
Item		Function
Communication	Download	It downloads edited project to the GP/LP.
	Upload	It uploads project from the GP/LP to the PC.
	Read Info.	It displays/sets information of the connected GP/LP.
	Firmware Download	It downloads firmware of the GP/LP.
	Comm. Option	It sets communication option.

1.5.3.9 Window



Item		Function
Close	Close All Except Current Window	It closed all windows except currently opened window.
	Close All windows	It closes all opened windows.
Align		It aligns project window in cascade, horizontal, vertical alignment, when the view mode is MDI.
View mode	MDI mode	It displays the opened window separately.
	TAB mode	It displays the opened window in tab.
Show window		It displays project window, toolbar, output window in atDesigner screen.

1.5.3.10 Help



Item	Function
Basic/Help	It shows start up screen of atDesigner, editor information and help.

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2 Screen

There are 4 types of screen in atDesigner.

- Base screen

  Base screen is basic screen for general use.

- Window screen

  Window screen is for alarming when condition for a certain alarm is satisfied.

  Window screen is displayed with bit/word window call object or flow alarm-details window function.

- Overlap screen

  Overlap screen is for covering the base screen. User can use the overlap screen with some of repetitively/commonly used figures or objects drawn on it.

- Key window screen

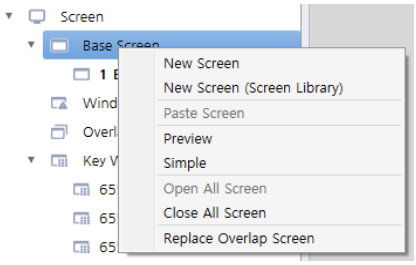
  Key window screen is screen with number or character input key. It is used for inputting value.

2.1 Base Screen

Base screen is basic screen of GP/LP in normal situation, and it is for monitoring the connected controllers.

The size of base screen is fixed to the screen size of the selected GP/LP model.

(1) Basic setting menu of base screen



Item	Description
New screen	It adds new base screen.
New Screen (Screen Library)	It adds new base screen from “Screen Library”. Clicking ‘New Screen (Screen Library)’ displays “Screen Library” dialogue window.
Paste Screen	It pastes copied base screen. [Shortcuts: Ctrl+V]
Preview	It displays base screen as thumbnail in the project window.
Simple	It displays base screen as icon in the project window.
Open All Screen	It opens all base screens in the work space.
Close All Screen	It closes all base screens opened in the work space.

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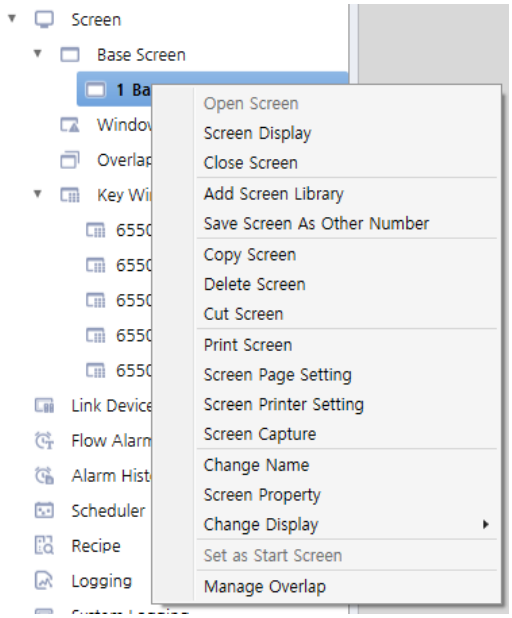
Item	Description
Replace Overlap Screen	It sets overlap screen of all/some of base screen. It is only activated when overlap screen exists.

(2) Individual setting menu of each base screen



Item	Description
Open Screen	It opens the selected base screen in the work space.
Screen Display	It displays the selected base screen in the work space.
Close Screen	It closes the selected base screen in the work space.
Add Screen Library	It adds the selected base screen to screen library.
Save Screen As Other Number	It saves the selected base screen with different number. The number should not be duplicated.
Copy Screen	It copies the selected base screen. [Shortcuts: Ctrl+C]
Delete Screen	It deletes the selected base screen. [Shortcuts: Del]
Cut Screen	It cuts the selected base screen. [shortcuts: Ctrl+X]
Print Screen	It prints out the selected base screen.
Screen Page Setting	It sets printing paper and print margins to print the selected base screen.
Screen Printer Setting	It sets printer to print the selected base screen.
Screen Capture	It captures the selected base screen and saves in png file.
Change Name	It changes name of the selected base screen. [Shortcuts: F2]
Screen Property	It sets screen property of the selected base screen. Clicking 'Screen Property' displays "Screen Property" setting window※1.
Change Display	It changes displaying method of base screen in the work space. Simple: It displays base screen as icon in the project window. Preview: It displays base screen as thumbnail in the project window.

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Item	Description
Set as Start Screen	It sets the selected base screen as starting screen of GP/LP. The name of screen set to starting screen is displayed with '#Start Screen' mark at the end of the name. This setting is linked with 'Start Screen Setting' in [Project]-[Project Property]-[Screen Setting].
Manage Overlap	It sets overlap screen of the selected base screen. It can change the order of overlap screen, add or delete overlap screen.

※1: "Screen Property" setting

- Basic setting: Basic

Item		Description
Basic	No.	It sets the number of the selected base screen. Setting range: 1 to 65,535
	Name	It sets the name of the selected base screen. (maximum 128 letters)
	Description	It sets description of the selected base screen. (maximum 64 letters)
Screen Size	Screen - Horizon	It displays the horizon/vertical size of the selected base screen. It is fixed to the screen size of the selected GP/LP model.
	Screen - Vertical	
Advanced	Screen Security Level	It sets security level of the selected base screen. Setting range: 1 to 15

- Basic setting: Display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library

- Basic setting: Script

Item	Description
Use Script for Screen Displaying	If it is checked, script function is activated at the moment when the screen is displayed. User can choose script to use among what user registered.
Use Script for Screen Disappearing	If it is checked, script function is activated at the moment when the screen is disappeared. User can choose script to use among what user registered.
Resister Screen Script	Clicking 'Resister Screen Script' displays "Scheduler" setting window※2. Script operates according to the time and repetition settings in the scheduler setting window.

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※2: “Scheduler” setting window

- Basic setting: Basic

Item	Description
Description	It describes name and decription of the scheduler.
Condition	It sets operation condition of the scheduler. According to type, following menus are different. Setting range: cycle (time), device

- Condition: Cycle (time)

Item	Description
Time	It sets time cycle of operation. Minute: operating the function at every minute Hour: operating the function at every hour Day: operating the function at every day Week: operating the function at every week Month: operating the function at every month Year: operating the function at every year Once: operating the function once
Repitition	It sets the number of iteration.
Repeat Cycle	It sets iteration cycle by day/hour/minute/second.

- Condition: Device – Bit device

Item	Description
Device Type	It sets device type. Setting range: bit device, word device
Edge Type	It sets edge type. Setting range: positive edge, negative edge, change
Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

- Condition: Device – Word device

Item		Description
Device Type		It sets device type. Setting range: bit device, word device
Reference Device	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Word Device Area” setting window.
	Setting	It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Formula		It sets conditional expression. Clicking ‘Formula’ displays “Operator Setting” window※3.

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※3: “Operator setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

- Basic setting: Operation

Item	Description
Add Operation Function	Script: operating set script when the set condition is satisfied User can select scrip among previously set scrips in script, project window by clicking ‘Script’.
Operation List	User can check a list of registered operation. With the buttons, user can delete registered operation or change the order of operations. User also can change the settings of reference device with the [+] button.

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2.2 Window Screen

Window screen is the screen that pops up on the base screen under the following circumstances.

[Window screen calling condition]

1. When device condition which is set for the 'call bit/word window' object is saticfied
2. When the special switch object (type-alarm history, function-details window) is touched

Default size of the window screen is width/2×height/2 of the selected GP/LP base screen size.

The size of the window screen can be changed by dragging the end point of the screen or setting in screen property.

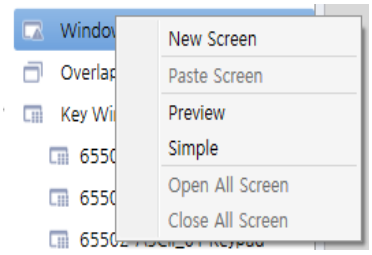
The maximum size of the window screen is the size of the selected GP/LP Base screen.

There are two kinds of window screen, local window and global window.

- Local window: It is only for the base screen which the window screen is called from, and is closed when the base screen is switched to another.
  Local window setting: [Object]-[Call Bit/Word Window]
- Global window: It is for all base screens, so that is kept opened regardless of number of base screen, if the window screen calling condition is satisfied.
  Global window setting: [Project]-[Project Property]-[Screen Setting]-"Use Change Screen Device and Call Control"-'Global Window 1/2 Device'

In single base screen, maximum 3 local windows and 2 global windows can be displayed.

(1) Basic setting menu of window screen



Item	Description
New Screen	It adds new window screen.
Paste Screen	It pastes copied window screen. [Shortcuts: Ctrl+V]
Preview	It displays window screen as thumbnail in the project window.
Simple	It displays window screen as icon in the project window.
Open All Screen	It opens all window screens in the work space.
Close All Screen	It closes all window screens opened in the work space.

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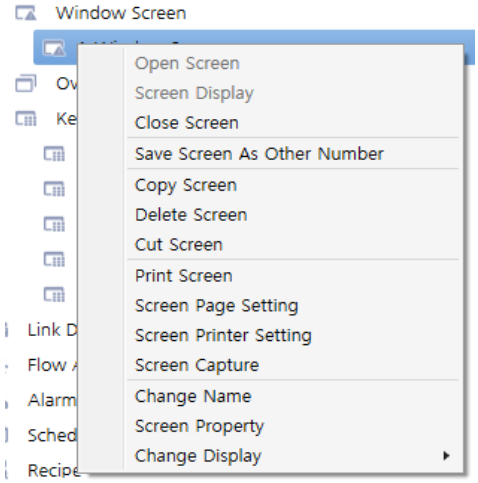
(2) Individual setting menu of each window screen



Item	Description
Open Screen	It opens the selected window screen in the work space.
Screen Display	It displays the selected window screen in the work space.
Close Screen	It closes the selected window screen in the work space.
Save Screen As Other Number	It saves the selected window screen with different number. The number should not be duplicated.
Copy Screen	It copies the selected window screen. [Shortcuts: Ctrl+C]
Delete Screen	It deletes the selected window screen. [Shortcuts: Del]
Cut Screen	It cuts the selected window screen. [shortcuts: Ctrl+X]
Print Screen	It prints out the selected window screen.
Screen Page Setting	It sets printing paper and print margins to print the selected window screen.
Screen Printer Setting	It sets printer to print the selected window screen.
Screen Capture	It captures the selected window screen and saves in png file.
Change Name	It changes name of the selected window screen. [Shortcuts: F2]
Screen Property	It sets screen property of the selected window screen. Clicking 'Screen Property' displays "Screen Property" setting window※1.
Change Display	It changes displaying method of window screen in the work space. Simple: It displays window screen as icon in the project window. Preview: It displays window screen as thumbnail in the project window.

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※1: “Screen Property” setting

- Basic setting: Basic

Item		Description
Basic	No.	It sets the number of the selected window screen. Setting range: 1 to 65,535
	Name	It sets the name of the selected window screen. (maximum 128 letters)
	Description	It sets description of the selected window screen. (maximum 64 letters)
Screen Size	Screen - Horizon	It displays the horizon/vertical size of the selected window screen.
	Screen - Vertical	

- Basic setting: Display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library

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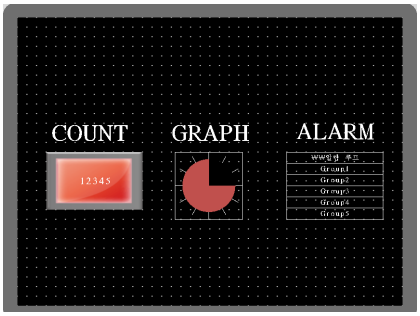
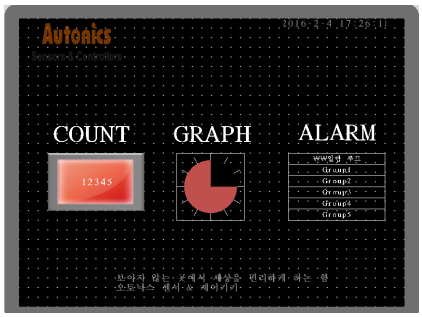
2.3 Overlap Screen

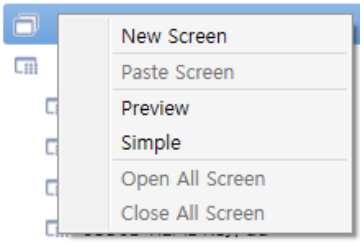
Overlap screen is is the screen that covers base screen.

It helps users to work efficiently by applying figures and objects with high frequency of use to a multiple of base screens. If the operlap screen is set as master operlap screen, It is applied to all of base screen at once.

In single base screen, maximum 2 overlap screens and 1 master operlap screen can be applied.

Overlap screen	Base screen without overlap screen
	
Base screen with overlap screen	
	

(1) Basic setting menu of overlap screen



Item	Description
New Screen	It adds new overlap screen.
Paste Screen	It pastes copied overlap screen. [Shortcuts: Ctrl+V]
Preview	It displays overlap screen as thumbnail in the project window.
Simple	It displays overlap screen as icon in the project window.
Open All Screen	It opens all overlap screens in the work space.
Close All Screen	It closes all overlap screens opened in the work space.

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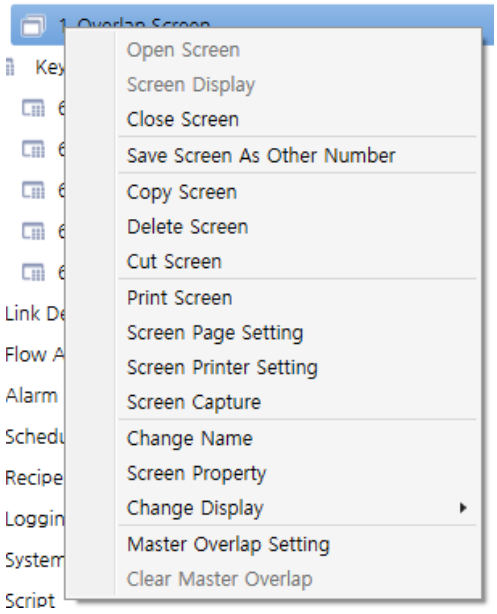
(2) Individual setting menu of overlap screen



Item	Description
Open Screen	It opens the selected overlap screen in the work space.
Screen Display	It displays the selected overlap screen in the work space.
Close Screen	It closes the selected overlap screen in the work space.
Save Screen As Other Number	It saves the selected overlap screen with different number. The number should not be duplicated.
Copy Screen	It copies the selected overlap screen. [Shortcuts: Ctrl+C]
Delete Screen	It deletes the selected overlap screen. [Shortcuts: Del]
Cut Screen	It cuts the selected overlap screen. [shortcuts: Ctrl+X]
Print Screen	It prints out the selected overlap screen.
Screen Page Setting	It sets printing paper and print margins to print the selected overlap screen.
Screen Printer Setting	It sets printer to print the selected overlap screen.
Screen Capture	It captures the selected overlap screen and saves in png file.
Change Name	It changes name of the selected overlap screen. [Shortcuts: F2]
Screen Property	It sets screen property of the selected overlap screen. Clicking 'Screen Property' displays "Screen Property" setting window※1.
Master Overlap Setting/Clear Master Overlap	It sets the selected overlap screen as the master overlap screen. Master overlap screen is applied all of base screen. The name of master overlap screen is displayed in red with '#Master' mark at the end of the name.

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※1: “Screen Property” setting

- Basic setting: Basic

Item		Description
Basic	No.	It sets the number of the selected window screen. Setting range: 1 to 65,535
	Name	It sets the name of the selected window screen. (maximum 128 letters)
	Description	It sets description of the selected window screen. (maximum 64 letters)
Screen Size	Screen - Horizon	It displays the horizon/vertical size of the selected window screen. It is fixed to the screen size of the selected GP/LP model.
	Screen - Vertical	

- Basic setting: Display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library

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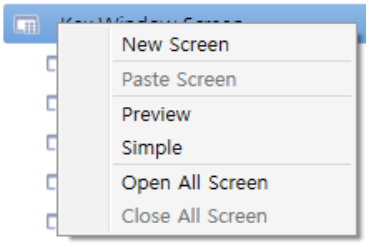
2.4 Key Window Screen

Key window screen is screen with number or character input key. It is used for inputting value

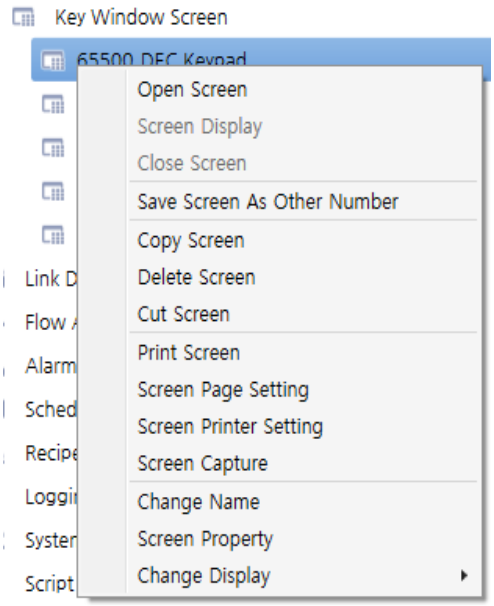
Default size of the key window screen is width/2×height/2 of the selected GP/LP base screen size. The size of the key window screen can be changed by dragging the end point of the screen or setting in screen property.

(1) Basic setting menu of key window screen



Item	Description
New Screen	It adds new key window screen.
Paste Screen	It pastes copied key window screen. [Shortcuts: Ctrl+V]
Preview	It displays key window screen as thumbnail in the project window.
Simple	It displays key window screen as icon in the project window.
Open All Screen	It opens all key window screens in the work space.
Close All Screen	It closes all key window screens opened in the work space.

(2) Individual setting menu of key window screen



Item	Description
Open Screen	It opens the selected key window screen in the work space.
Screen Display	It displays the selected key window screen in the work space.
Close Screen	It closes the selected key window screen in the work space.
Save Screen As	It saves the selected key window screen with different number.

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Item	Description
Other Number	The number should not be duplicated.
Copy Screen	It copies the selected key window screen. [Shortcuts: Ctrl+C]
Delete Screen	It deletes the selected key window screen. [Shortcuts: Del]
Cut Screen	It cuts the selected key window screen. [shortcuts: Ctrl+X]
Print Screen	It prints out the selected key window screen.
Screen Page Setting	It sets printing paper and print margins to print the selected key window screen.
Screen Printer Setting	It sets printer to print the selected key window screen.
Screen Capture	It captures the selected key window screen and saves in png file.
Change Name	It changes name of the selected key window screen. [Shortcuts: F2]
Screen Property	It sets screen property of the selected key window screen. Clicking 'Screen Property' displays "Screen Property" setting window※1.
Change Display	It changes displaying method of window screen in the work space. Simple: It displays window screen as icon in the project window. Preview: It displays window screen as thumbnail in the project window.

※1: Please refer to '"Screen Property" setting' for detailed information about "Screen Property" setting window.

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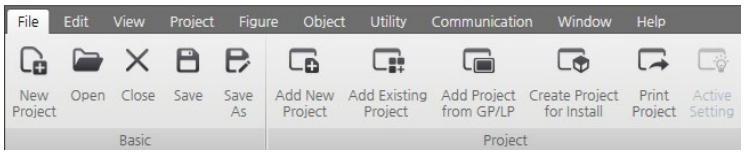
3 File



File menu is for managing the project.

With this menu, user can generate, open, close, save, add, make install project file, expert or run other operations.

3.1 Basic

Menus in 'Basic' is for the currently activated project.

3.1.1 New Project

It is for generating a new project. Only single project is activated.

1st Click [File] > [New Project].
Check whether to save of not, if there is previously opened project.

2nd Select GP/LP series and model to connect in [Model Setting] dialogue. Below the series and model, detailed information about GP/LP such as model no. resolution, color, memory, language and desctiption is displayed.

3rd Click [Add] in [Connected Device Setting] to select controller to connecto with GP/LP.

4th When the [Select Connected Device] setting window is displayed, select controller after checking maker, series, model, communication type, connection method and connection IF setting and clock 'OK'.

5th When the added controller is displayed in [Connected Device Setting], set transfer speed, data bit, flow control, parity, stop bit, time out, waiting time, and retry count and clock 'OK'.

3.1.2 Open

It is for openning a saved project file (*.smd). Only single project is activated.

1st Click [File] > [Open].
Check whether to save of not, if there is previously opened project.

2nd After selecting the project file to open, click 'Open'.

3.1.3 Close

It is for closing the activated project. The program asks whether to save or not, when user clicks [Close].

If user click 'Yes', user can designate saved path for the project file. If user clock 'Cancle' during saving process, the program closes the project without saving.

If user click 'No', the program closes the project without saving.

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3.1.4 Save

It is for saving the currently activated project.

- New project: saving the project after designating file saved path and entering name
- Saved project: overwriting the existing file and saving

3.1.5 Save As

It is for saving the currently opened project with the different name. In this menu, user selects the file saved path, enters the name and clicks save.

3.2 Project

With the menus in 'Project', user can work with a multiple of projects, creating project installation file, and expert project.

It is efficient for drawing screens because simultanous editing a multiple or projects allows copying screens between each of them.

3.2.1 Add New Project

It is for creating a new project without closing the currently opened project.

3.2.2 Add Existing Project

It is for openning an existing project (*.smd) without closing the currently opened project.

3.2.3 Add Project from GP/LP

It is for uploading project from GP/LP to atDesigner without closing the currently opened project.

3.2.4 Create Project for Install

It is for creating a project installation file. With this function, user can download project file from atDesigner to GP/LP without connecting with the PC by saving the created installation file to USB memory.

For more detailed information about how to install a project file to GP/LP, please refer to 'GP A Series, LP A Series user manual'.

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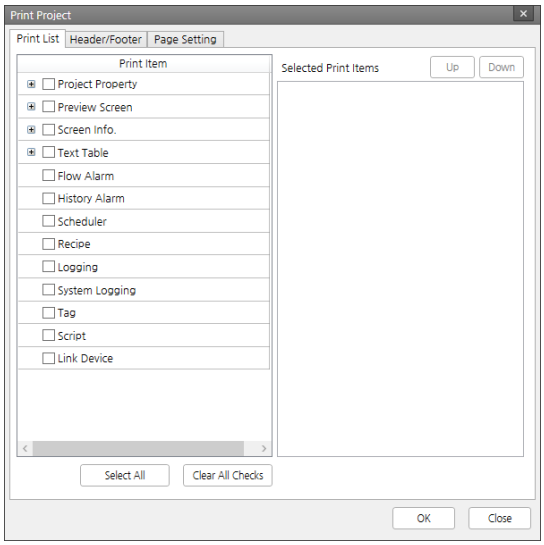
3.2.5 Print Project

It is for saving the project in excel file(*.xls).

User can select items to save and make an order of items.

Printing items are saved in one excel file and multiple sheet.

Clicking [Print Project] displays “Print Project” window. After selecting items to print, click ‘OK’ in the right bottom of the window to designate the saved path and name.



(1) Print list tab

Item	Description
Print Item	It is setting items of the project. If user checks items to print, they are added to “Selected Print Items” list.
Select All	It adds all items to “Selected Print Items” list.
Clear All Checks	It deletes all items from “Selected Print Items” list.
Selected Print Items	It displays a list of selected item.
Up/Down	It changes the order of items in the list so that the order of excel file sheet also is changed.

(2) Header/Footer tab

Item	Description
Use Header	It adds header. User enters contents to print in left/center/right. User also can select contents from the list on the right side so that the contents are applied automatically.
Use Footer	It adds footer. User enters contents to print in left/center/right. User also can select contents from the list on the right side so that the contents are applied automatically.

(3) Page setting tab

Item	Description
Page setting	It sets page layout.

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4 Edit

4.1 Work List

4.1.1 Undo

It is for restoring back to the status before deleting or modifying an object (by 1 step).

It is activated when an object is deleted or modified.

Click [Work List]-[Undo] in the edit tab or use Ctrl+Z keybord shortcuts.

4.1.2 Redo

It is for restoring ba to the status before using ‘undo’ function. It is activated when user uses ‘undo’ function, and it can be used as much as ‘undo’ function is used.

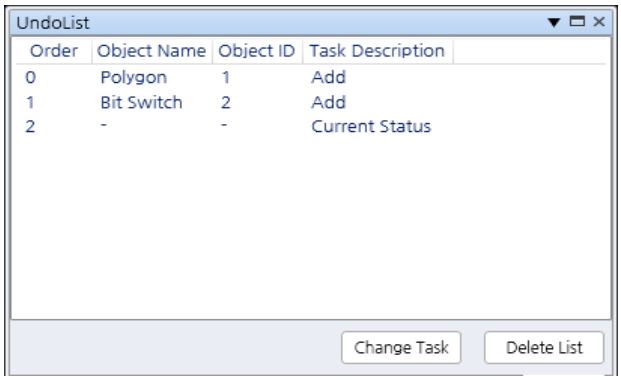
Click [Work List]-[Redo] in the edit tab or use Ctrl+Y keybord shortcuts.

4.1.3 Undo List

Every single task is saved in undo list as work history, so that user can restore back to previous status by double clicking a task in the list or click a task in the list and ‘Change Task’. All of tasks done after the selected task in the list are ignored.

If user clicks ‘Delete List’, all history in the list is deleted and the project stays in the current status.

Since undo function is to restore back to the status before modification, it is reversal of the task order.



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4.2 Edit

4.2.1 Copy

It is for copying object.

Click [Edit]-[Copy] in the Edit tab, use Ctrl+C keybord shortcuts, or click ‘copy’ in the mouse right-click popup manu.User can make identical object by copying and pasting object.

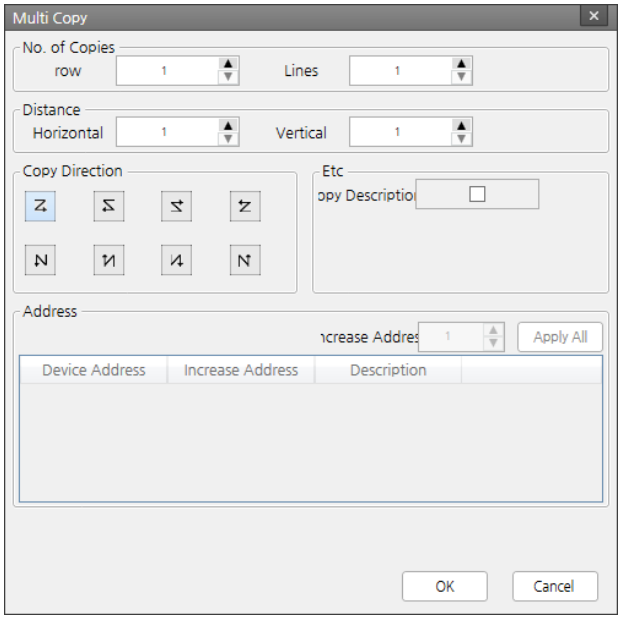
4.2.2 Multi Copy

It is for replicating one selected object and arranging copyed objects in the screen.

Click [Edit]-[Multi Copy] in the Edit tab or click ‘Multi Copy’ in the mouse right-click popup manu.

Then, “Multi Copy” window pops up.

After setting No. of copies (row, line), distance (horizontal, vertical), copy direction, address, click ‘OK’ to use this function.



Item		Description
No. of Copies		It sets the number of objects (figures) to be copied in a row/line.
Distance		It sets distance between each copied object (figures).
Copy Direction		It sets coping direction. Arrow direction of the icon means coping direction. Along with the direction, ID and address of the object increases.
Etc	Copy Description	It copies description of the object (figures).
Address	Increase Address	When the target to copy is object, device address of the object increases by set number (except figure).
	Apply All	It applies value of ‘increase address’ to the device address equally.
	List	It is for checking multi copy settings, and changing increase address manually.

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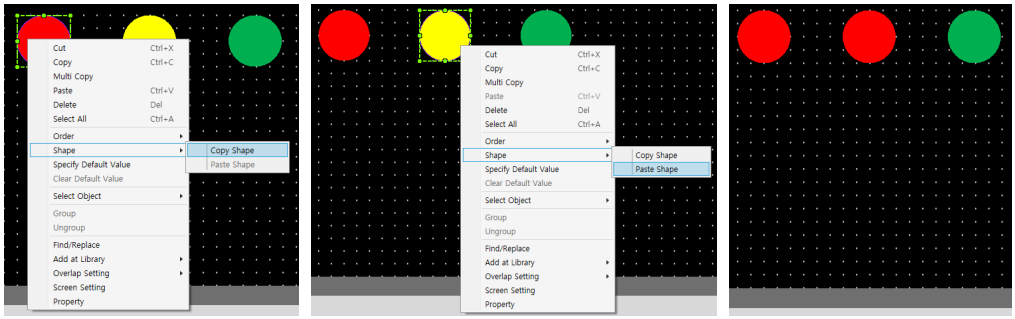
4.2.3 Copy/Paste Shape

It copies arrearance and settings (character, display setting) of object or figure and applies to another. This function can be used only for same type of object or figure.

Click [Edit]-[Copy Shape] in the Edit tab or click [Shape]-[Copy Shape] in the mouse right-click popup manu to copy settings.

After selecting target to be copied, click [Edit]-[Paste Shape] in the Edit tab or click [Shape]-[Paste Shape] in the mouse right-click popup manu.



4.2.4 Paste

It is for pasting a copied object or figure in the currently activated screen.

When clicking paste, a pasted object (figure) is displayed with the dotted line in the screen.

Drag an move the object (figure) to the place where it has to be.

Click [Edit]-[Paste] in the Edit tab, use Ctrl+V keyboard shortcuts, or click [Paste] in the mouse right-click popup manu to copy settings.

Note

Type of object which only one object can exist in a screen: Recipe Editor, Logging Table, System Logging Table

4.2.5 Cut

It is for cutting out an object (figure) from the screen.

Click [Edit]-[Cut] in the Edit tab, use Ctrl+X keyboard shortcuts, or click [Cut] in the mouse right-click popup manu to copy settings.

After using cut function, the cut object (figure) is saved in clipboard and paste function is activated, so that the cut object (figure) can be put in screen again.

4.2.6 Delete

It is for deleting the selected object (figure) from the screen.

Click [Edit]-[Delete] in the Edit tab, use ‘Del’ key, or click [Delete] in the mouse right-click popup manu to copy settings.

If you want to restore the deleted object (figurte), use ‘Undo’ function.

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4.2.7 Delete All

It is for deleting all objects and figures in the currently activated screen. Click [Edit]-[Delete All] in the Edit tab.

4.3 Group

4.3.1 Group

It is for grouping a multiple of objects (figures) more than two.

After selecting a multiple of objects (figures) more than two, click [Group]-[Group] in the Edit tab, or click [Group] in the mouse right-click popup manu to copy settings.

4.3.2 Ungroup

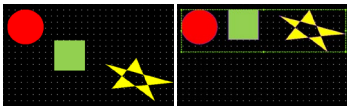
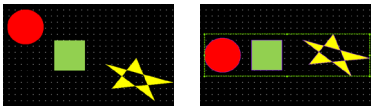
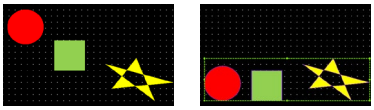
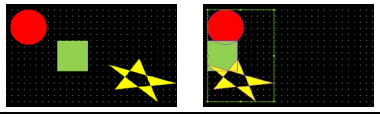
It is for ungrouping grouped multiple objects (figures).

After selecting the group, click [Group]-[Ungroup] in the Edit tab, or click [Ungroup] in the mouse right-click popup manu to copy settings.

4.4 Align

It is for aligning figures/objects.

After selecting a multiple of objects (figures) more than two, click alignment formation from [Align] in the Edit tab.

Item	Description
Align Top	It aligns selected figures/objects to the top of the object/figure which is placed highest among them. 
Align Center	It aligns selected figures/objects to the horizontal center of objects/figures. 
Align Lower	It aligns selected figures/objects to the bottom of the object/figure which is placed lowest among them. 
Align Left	It aligns selected figures/objects to the left end of the object/figure which is placed leftmost among them. 

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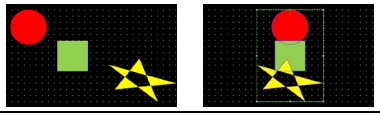
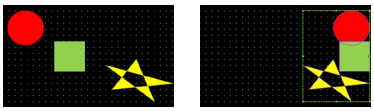
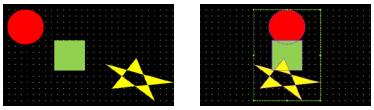
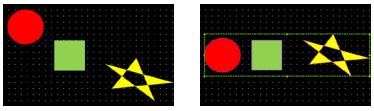
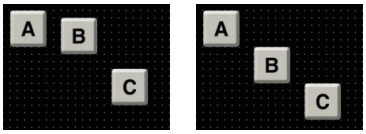
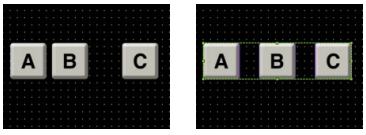
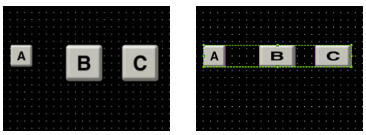
Item	Description
Align Center	It aligns selected figures/objects to the vertical center of objects/figures. 
Align Right	It aligns selected figures/objects to the right end of the object/figure which is placed rightmost among them. 
Screen – Horizontal Center	It aligns selected figures/objects to the horizontal center of the screen. 
Screen – Vertical Center	It aligns selected figures/objects to the vertical center of the screen. 

4.5 Fit

It is for aligning distance between objects/figures and adjusting size of objects/figures.

After selecting a multiple of objects (figures) more than two, click alignment formation from [Fit] in the Edit tab.

Item	Description
Distribute Vertical	It adjusts vertical distance between selected figures/objects to be same. It can be used when the selected figures/objects are more than three. 
Distribute Horizontal	It adjusts horizontal distance between selected figures/objects to be same. It can be used when the selected figures/objects are more than three. 
Fit to Height as the Shortest	It adjusts height of the selected figures/objects to height of the shortest figures/objects among them. 

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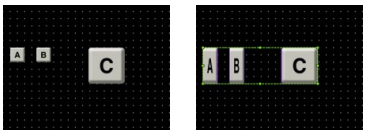
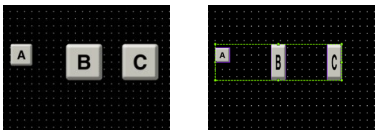
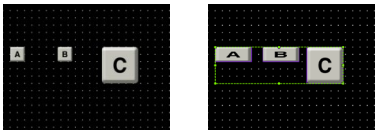
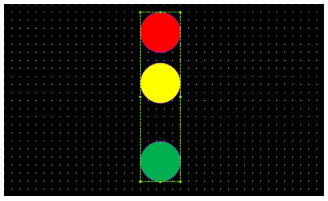
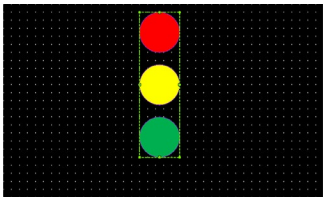
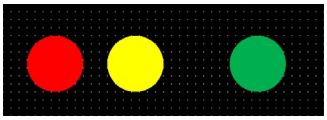
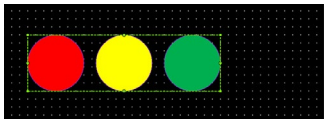
Item	Description
Fit to Height as the Tallest	It adjusts height of the selected figures/objects to height of the tallest figures/objects among them. 
Fit to Width as the Narrowest	It adjusts width of the selected figures/objects to height of the narrowest figures/objects among them. 
Fit to Width as the Widest	It adjusts width of the selected figures/objects to height of the widest figures/objects among them. 

4.6 Distribute Interval

It is for aligning the selected figures/objects horizontally or vertically with the designated distance.

After selecting a multiple of objects (figures) more than two, set distance and click alignment formation from [Distribute Interval] in the Edit tab.

Item	Description	
	Before	After
Vertical Distribution Interval		
Horizontal Distribution Interval		

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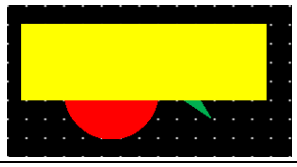
4.7 Order

It is for changing the displaying order of the objects (figures) on the screen.

After selecting an objects (figures) to change the displaying order, click a displaying order of [Order] in the Edit tab, or click [Order] in the mouse right-click popup manu.

Item	Description
Before	
Order (Front)	Moving the yellow object to the fore front. 
Order (Forward)	Moving the yellow object forward
Order (Backward)	Moving the green object backward
Order (Back)	Moving the green object to the very back

4.8 Select

4.8.1 Select

It is for selecting figure or object.

Click [Select]-[Select] in the Edit tab, or click figure of object directily with the mouse point.

4.8.2 Select All

It is for selecting all figures and objects. This function is not working with the selection condition function.

Click [Select All]-[Select] in the Edit tab, or click [Select All] in the mouse right-click popup manu.

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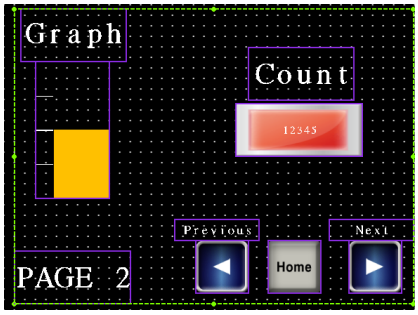
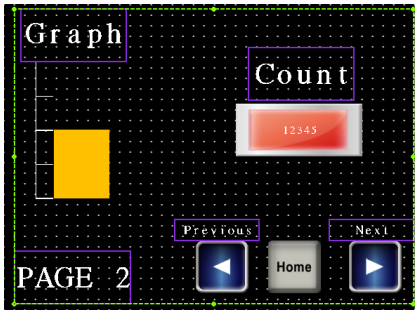
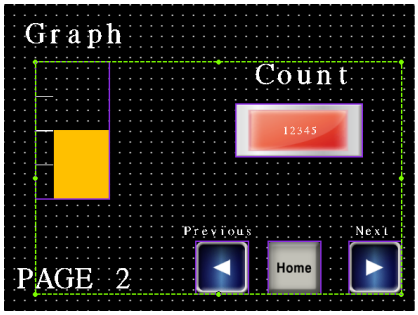
4.9 Select Condition

It is for selecting only objects or only figures in the drwaing area.

Click [Figure]-[Select] or [Object]-[Select] in the Edit tab, or click [Figure]-[Select] or [Object]-[Select] in the mouse right-click popup manu.

Select All	
Select Condition -Figure	
Select Condition -Object	

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4.10 Etc

4.10.1 Show Locking Pin

It is for showing the blue locking pin on the left top corner of figure/object.

By clicking 'Set Pin' in the right-click pop up menu or double clicking the blue pin, the pin turns into red color and the figure or object is locked to prevent moving or modifying the figure or object.

By clicking 'Clear Pin' in the right-click pop up menu or double clicking the red pin, the pin turns into blue color and the figure or object is unlocked.

4.10.2 Specify Default Value/Clear Default Value

It is for setting current status (character, display setting) of a figure/object as default value, so that the default value is applied automatically when the same kind of figure/object is drawn later.

This function is efficient for dwaring same figure/object in different project or screen because user does not need to copy and paste figure/object.

Saved default value is kept until user closes the program.

If you want to clear the saved default value, please click 'Clear Default Value'.

4.10.3 Property

It is for displaying property setting window of the selected figure/object.

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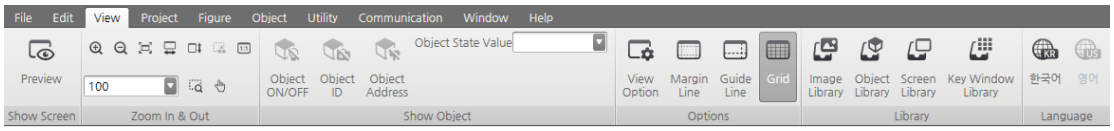
5 View



5.1 Show Screen

5.1.1 Preview

It is for previewing full screen. When drawing the screen, it is usable to see full screen when drawing work in on the process.

5.2 Zoom In & Out

It is for zooming in or out the screen.

Click a desired item in [Zoom In&Out] in the View tab.

Item	Description
Zoom in	It enlarges the size of editing screen about 25%.
Zoom out	It reduces the size of editing screen about 25%.
Expand to Work space	It enlarges/reduces the size of editing screen to that of work space.
Zoom in to Fit Work Space Width	It enlarges/reduces the size of editing screen to width of work space.
Zoom in to Fit Work Space Height	It enlarges/reduces the size of editing screen to height of work space.
Zoom in Selected Figures/Objects to Fit Task Area	It enlarges/reduces the size of figures/objects to that of task area.
Ratio 100%	It displays the editing screen in 100% ratio.
Number (ratio)	It displays the editing screen in selected ratio. Setting range: 25, 50, 80, 100, 200, 500, 1000
Zoom in Selected Area to Fit Task Area	It enlarges/reduces the size of selected area to that of task area.
Moving screen tool	It makes mouse point finger shape and moves the screen location to display.

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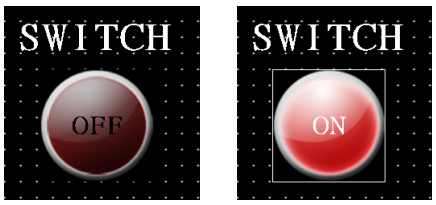
5.3 Show Object

5.3.1 Object ON/OFF

It is for displaying the object in ON/OFF status.



5.3.2 Object ID

It is for displaying object ID which consists of object type and nember (dwarn order). Object ID is information to distinguish each object.

5.3.3 Object Address

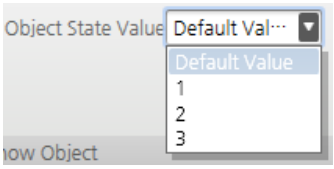
It is for displaying device address of each object. + is displayed at the front of the address when the object has several address.

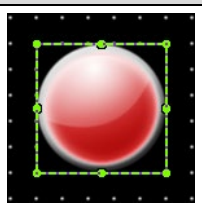
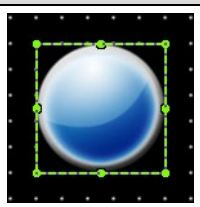
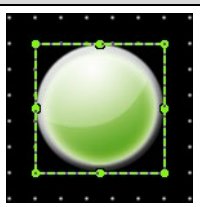
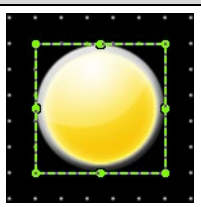
If user clicks +, + turned into – and all addresses are displayed.

5.3.4 Object State Value

It is for displaying object of several status values in the selected value.

Select the status to see from the object state value pull down menu.



Default Value	Condition 1	Condition 2	Condition 3
			

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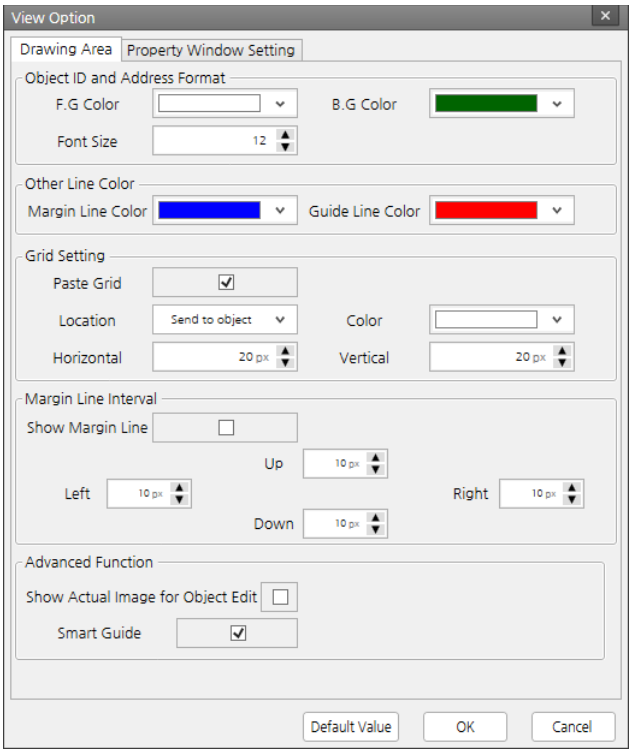
5.4 Option

5.4.1 View Option

It is for setting display option of work space.

(1) Drawing Area



Item	Description
Object ID and Address Format	It sets font color, font size, and background color of object ID and address.
Other Line Color	It sets color of the margin line and guide line.
Grid Setting	It sets paste grid, location, color, and horizontal/vertical interval.
Margin Line Interval	It sets whether to use margin line and spacing.
Advanced Function	It sets whether to display actual image when editing object, to use smart guide, and to use object display mode.
Default Value	It sets all settings to the default value.

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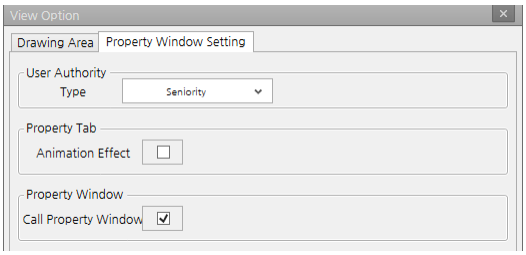
(2) Property Window Setting



Item		Description
User Authority		It sets user permissions for property window. Depending on the setting type, displayed menu of the property window is different. Setting range: beginner, intermediate, seniority
Property Tab	Animation Effect	It sets whether to display animation effect when displaying the property window.
Property Window		It sets whether to display property window. If it is checked to use, property window pops up whenever drawing a figure/object.

5.4.2 Margin Line

It is for displaying the margin line in the work space.

Click [Option]-[View Option] in the View tab to set margin line color and top/bottom/left/right space.

5.4.3 Guide Line

It is for displaying the guide line. Guide line if helpful for aligning and arranging figure/object on the screen. Click [Option]-[View Option] in the View tab to set guide line color.

- Creating guide line

  Right clicking on the work space displays a pop up menu. Click [Guide Line]-[Add Guide Line]-[Add Vertical Guide Line] or [Add Horizontal Guide Line] to create the guide line.

- Moving guide line

  Mouse point turns into the arrow when user puts mouse point on the guide line to move. At this moment, click the guide line and drag it to the desired location.

- Fixing Guide line/Unfixing Guide line

  It is for fixing the guide line. Put mouse point on the guide line to fix and right-click to display the pop up menu. Click [Guide Line]-[Fix Guide Line] to fix the line.

  Put mouse point on the fixed guide line and right-click to display the pop up menu. Click [Guide Line]-[Unfix Guide Line] to unfix the line.

- Deleting guide line

  Put mouse point on the guide line to delete and right-click to display the pop up menu. Click [Guide Line]-[Delete Guide Line] to delete line.

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5.4.4 Grid

It is for displaying grid on the work space. It is grid of dot for helping arrangment and alignment of objects (figures).

Click [Option]-[View Option] in the View tab to set whether to use paste grid, location, color, horizontal/vertical interval.

5.5 Library

Labrary is conveient function for drawing screens because user can use contents directly from library.

There are 4 types of library: Image/Object/Screen/Key window library.

- Image library: It includes basic images of button, lamp, graph, background, buzzer, motor, tank, compressor, fan, turbine, ventilator, valve, heater, pipe, duct, and conveyer.
- (Button, lamp, graph images in image library has no function of object, so that user has to create object and set functions.)
- Object library: It is for saving the object of frequent use.
- Screen library: It is for saving the screen of frequent use.
- Key window library: It is for saving the user made key window.

If user click a library icon from [Library] in the View tab, user can select image/object/key window library in the right side of the program.

If user click screen library, screen library window pops up.

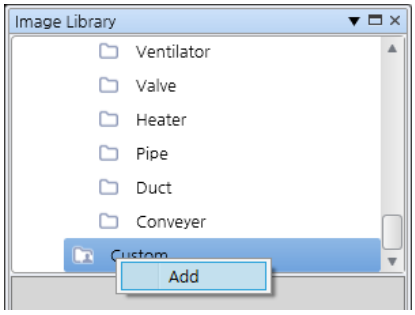
5.5.1 Image Library

It includes basic images of button, lamp, graph, background, buzzer, motor, tank, compressor, fan, turbine, ventilator, valve, heater, pipe, duct, and conveyer.

(Button, lamp, graph images in image library has no function of object, so that user has to create object and set functions.)

(1) Registering image

1st Click ‘Custom’ in the image library tree to add new forder.



2nd To change the name of folder, right click the folder and click ‘Change Name’ in the pop up menu.

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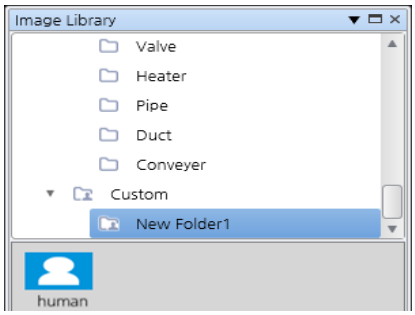
3rd To add/deleter the folder, right click the folder and click ‘Add/Delete’.

4th To add image to the folder, right click the folder and click ‘Add Image’.

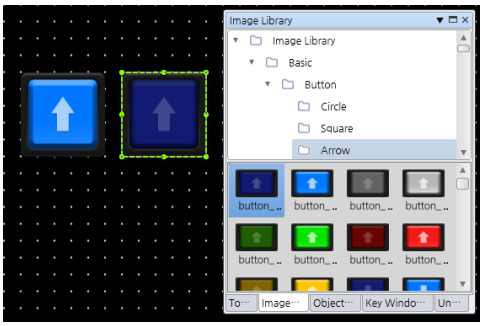
5th When “Open” window pops up, select an image to add and click ‘Open’.

6th Click the folder in the image library tree to check the added image.



(2) Using image

Click an image to use from the image list under the image library tree, and drop the image on the drawing screen.



(3) Managing image

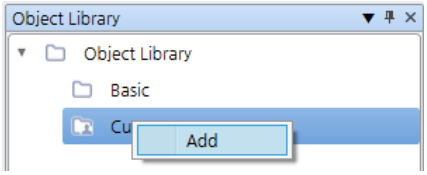
Click ‘Delete’ in the right click pop up menu of the image, or click the image and press ‘Del’ key to delete the image from the image library. Click ‘Change Name’ in the right click pop up menu to change the name of the image.

5.5.2 Object Library

It is for saving the object of frequent use.

(1) Registering object

1st Click ‘Custom’ in the ubject library tree to add new forder.



2nd To change the name of folder, right click the folder and click ‘Change Name’ in the pop up menu.

3rd To add/deleter the folder, right click the folder and click ‘Add/Delete’.

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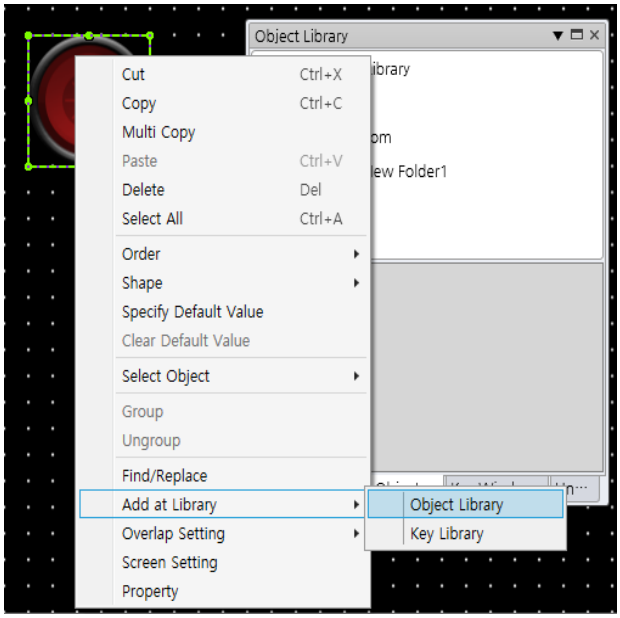
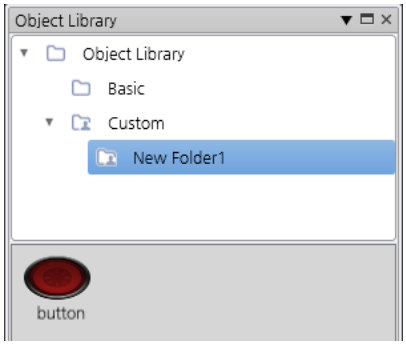
4th Right click an object to add to the library and click ‘Add at Library’-‘Object Library’.



5th Select a folder to save in, enter name of the object, and click ‘OK’.

6th Click the folder in the object library tree to check the added object.



(2) Using object

For information about using object, please refer to ‘(2) Using image’ of Image library.

(3) Managing object

For information about managing object, please refer to ‘(3) Managing image’ of Image library.

5.5.3 Screen Library

It is for saving the screen of frequent use.

(1) Registering screen

1st Click ‘Custom’ in the key window library tree to add new forder.

2nd To change the name of folder, right click the folder and click ‘Change Name’ in the pop up menu.

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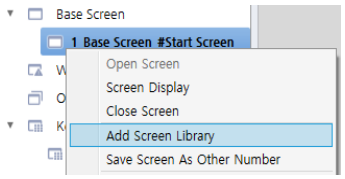
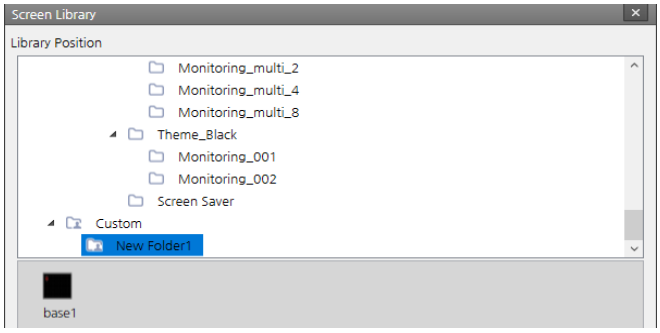
3rd To add/deleter the folder, right click the folder and click ‘Add/Delete’.

4th Right click a screen to add to the library in the project window and click ‘Add at Library’-‘Object Library’.



5th Select a folder to save in, enter name of the object, and click ‘OK’.

6th Click the folder in the screen library windor to check the added screen.



(2) Using screen

Click a screen to use from the screen list under the screen library, and click ‘OK’ to create new screen.

Added screen can be checked in the project window.

(3) Managing screen

For information about managing screen, please refer to ‘(3) Managing image’ of Image library.

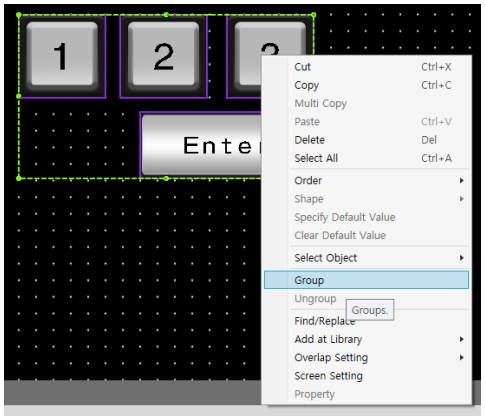
5.5.4 Key window Library

It is for saving the user made key window.

Only special key, numeric display, text display, and figure can be registered.

(1) Registering key

1st Group keys in the screen.



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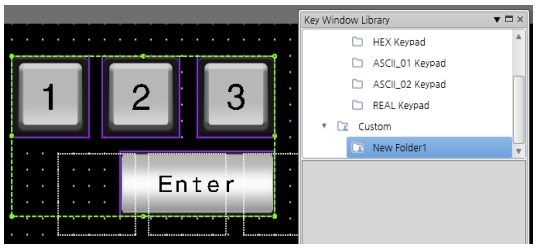
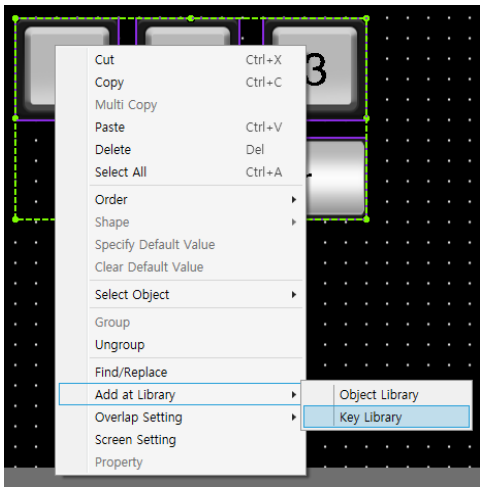
2nd Drag the grouped key and drop under the key window library tree, or right click the grouped key and click ‘Add at Library’-‘Key Library’.





3rd Select a folder to save in, enter name of the key object, and click ‘OK’.

(2) Using key

For information about using key, please refer to ‘(2) Using image’ of Image library.

(3) Managing key

For information about managing key, please refer to ‘(3) Managing image’ of Image library.

5.6 Language

It is for setting display language of atDesigner.

If user click language to use, atDesigner asks whether to save the project or not and is restarted in the selected language.

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6 Project

6.1 Global Object

6.1.1 Link Device

It is for reading/writing the set length of bit/word device data between GP/LP and the connected device (PLC) according to the bit status/cycle condition.

The window of link device list is displayed when user clicks [Link Device] in the Project tab, double clicks 'Link Device' in the project window, or clicks 'Open' in the right click pop up menu of Link Device in the project window.

Double click a line in the link device window to call the property window.

- Link device property window

Item		Description
Condtion		It sets condition for link device. Bit status: It controls communication with the status of bit device. When it is selected, 'Operation Form' item is activated. Cycle: It controls communication with the set time cycle.
Repetition	Count	When condition is set to 'Bit status', it sets the number of interation for operation.
	Cycle	It sets interval of interation for operation. It multiplys 500ms to the setting value.
Bit		It sets reference device which of status is to be operating condition of link device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Etc	Operation Form	It sets operation form of reference bit device. Setting range: ON, OFF, reversal
	Communication Type	It sets communication type when condition is satisfied. Read: It reads device data from the connected controllers to GP/LP inner device. Write: It writes data of GP/LP inner device to device of the connected controllers.
Device Format		It sets device format to read/wrtie. Setting range: BIT, WORD
GP/LP Inner Device		It sets GP/LP inner device area to read/write.
Connected Device		It sets device area of the connected controller to read/write.
Communication	Data type	It sets the size of the device when device format is set to WORD. (16/32 bit)
	Data Length	It sets the length of communicating data from the starting device for reading/writing.

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Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the object.
H	It sets the height of the object.

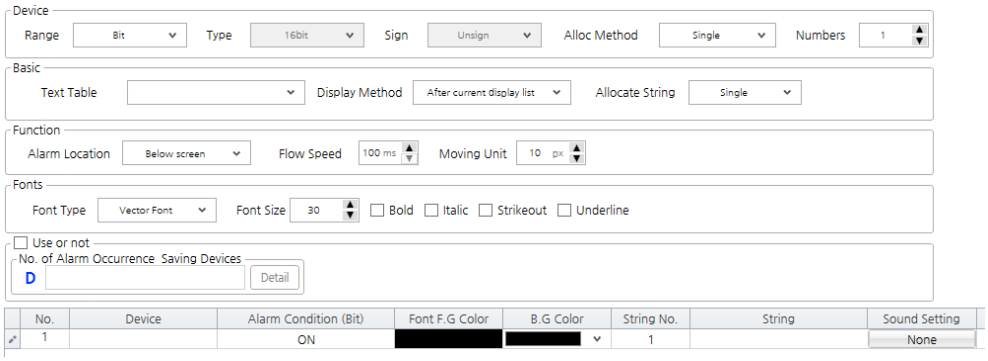
6.1.2 Flow Alarm

It is for displaying alaraming message in the designated place on the GP/LP screen, when set condition is satisfied.

To display the text, it needs vector font table or bitmap font table, depending on the type of the used font.

For detailed information about vector font table/bitmap font table, please refer to '6.2.2 Text Table'.

- Flow alarm



Item		Description
Device	Range	It sets device range which is to be condition for flow alarm. Setting range: Bit, Word
	Type	It sets the size of the device, when device range is set to Word. Setting range: 16 bit, 32 bit
	Sign	It sets device format, when diveice range is set to Word. Setting range: signed, unsigned, BCD
	Alloc Method	It sets whether to use individual device or consecutive device
	Number	It sets number of alarm device. Setting range: 1 to 8
Basic	Text Table	It sets alarming message. Message is selected from the added multilingual table.
	Display Method	It sets display method of message. Setting range: Newly display when alarm occurs, Consecutively display when alarm occurs
	Allocate String	It sets whether to use individual string or consecutive string.
Function	Alarm Location	It sets location to display the flow alarm.

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Item		Description	
		Setting range: Top of screen, center of screen, bottom of screen	
	Flow Speed	It sets speed of the flow alarm. The less the setting value is, the slower the alarm flows. (unit: ms) Setting range: 100 to 2000	
	Moving Unit	It sets unit of movement distance. (unit: px) Setting range: 1 to 100	
Font	Vector Font	Font Size	It sets font size of the flow alarm.
		Font Form	It sets font form of the flow alarm. Setting range: bold, italic, strikethrough, under line
	Bitmap Font	It sets font size of the flow alarm. Setting range: 1 to 8 (Font size Y, X)	
Alarm Saving	Use or Not	If it is checked, user can use the function of saving the number of alarm occurrence.	
	No. of Alarm Occurence Saving Device	It sets device to save the nuber of alaram occurrence. The number of flow alarm occurrence is saved in the device as data. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.	
List		It diaplays a list of alarms as much as the number of set device number. It consists of number, device, alarm condition, font F.G color, B.G color, string number, string, and sound setting※1.	

※1: 'Sound Setting' window

Item		Description
Sound Format		It sets sound format. Setting range: none, beep
Etc	Sound Output Stop Device	It sets device for stopping sound. If the device is turned ON while sounding, alarming sound stops. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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6.1.3 Alarm History

It is for checking alarm history. Is set condition for alarming is satisfied, occurred time, device, description is saved.

A list of alarm is displayed with the multilingual table.

Create alarm group first and then make a alarm list.

Alarm history function needs to be used with local objects such as alarm explorer, alarm list, and special switch.

(1) Alarm History

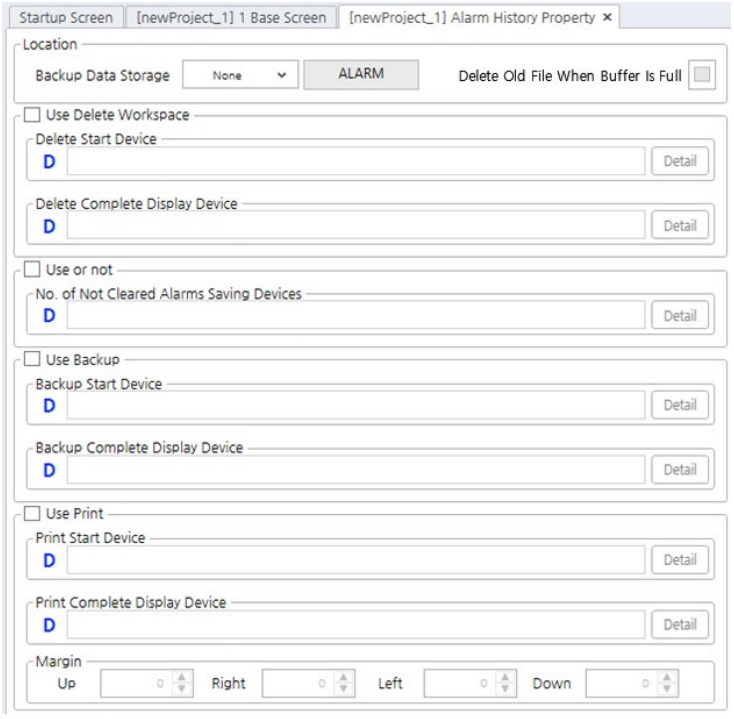
- Adding alarm history

  Right click alarm history in the project window and click 'Alarm Group'-'Insert' to add new alarm group (maximum 4 groups).

  Double click alarm history in the project window, or click [Alarm History]-[Global Object] in the Project tab to open alarm history property window.

  Alarm history property window is for setting management of alarm data, such as backup data saved location, whether to delete old file when buffer is full, whether to use work space deleting function, not cleared alarm number saving device, backup, printing and margin.

- Alarm history property window



Item	Description
Location	It sets saved location of backup data. Setting range: none, USB memory, internal memory, Micro SD card
Use Delete Workspace	If it is checked, user can set delete start device and delete complete device. If it is not checked, alarm data is not saved.

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Item	Description	
	Delete Start Device	If user set the delete start device, from the oldest file among alarm hisroty file is deleted when the storage is full. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
	Delete Complete Display Device	If user set the delete complete device, user can check whether the deleting is completed or not through the device value. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Use or Not	If it is checked, user can set device to save the number of not cleared alarm among occurred alarm. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.	
Use Backup	If it is checked, user can set backup start device, and backup complete display device.	
	Backup Strat Device	When the backup start device is ON, data backup starts. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
	Backup Complete Display Device	User can check whether the backup is completed or not through the device value. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Use Print	If it is checked, user can set print start device, and print complete display device.	
	Print Start Device	When the print start device is ON, data is printed. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
	Print Complete Display Device	User can check whether the print is completed or not through the device value. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Margin	It sets left, right, top, bottom martin for printing. Setting range: 1 to 100	

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(2) Alarm list

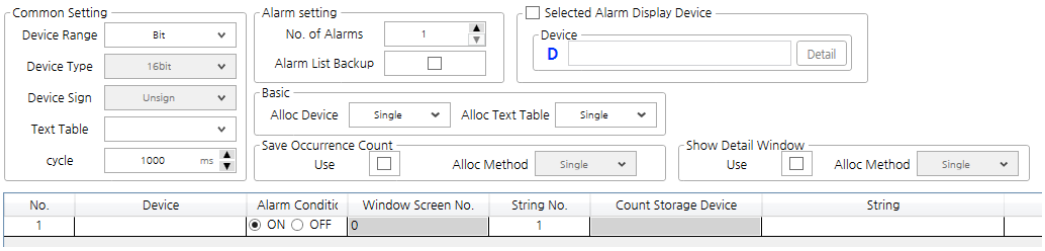
- Adding alarm list

  Right click alarm group in the project window and click 'Alarm List'-'Insert' to add new alarm list (maximum 4 lists).

  Double click alarm history in the project window to open alarm list setting window.

  Alarm list setting window is for setting specific functions of alarm, such as the number of alarm (maximum 16), alarm device, alarm condition, the number of alarm occurrence saving device.

- Alarm list setting window



Item		Description
Common Setting	Device Range	It sets reference device range which is to be watched. Setting range: Bit, Word
	Device Type	It sets device data size. It is activated only when the device range is set to Word. Setting range: 16 bit, 32 bit
	Device Sign	It sets device format of the device which is to be the reference of alarm condition. Setting range: signed, unsigned, BCD
	Text Table	It sets the text table from which display text is extracted, when the alarming condition is satisfied. Only vector font table is available.
	Cycle	It sets inspecting cycle of alarm occurring condition. Setting range: 500 to 10,000ms
Alarm Setting	No. of Alarms	It sets the number of alarm. The set number of alarms is displayed in the list. Setting range: 1 to 16
	Alarm List Backup	It sets whether to back up the alarm list. If it is checked, backup data is saved in the set saved path, when the backup start device, which is set in the alarm history property window, is ON.
Selected Alarm Display Device	Device	It sets whether to use selected alarm display device. It is function of displaying number of the selected alarm from the 'alarm list' local object. If it is checked, user has to set alarm display device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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Item		Description
Basic	Alloc Device	It sets how to allocate reference device address of alarming condition. Setting range: individual, consecutive In individual, user has to set device address for each alarm condition. In consecutive, device address is automatically allocated from address of first alarm on the list.
	Alloc Text Table	It sets how to allocate text string from the selected multilingual table. Setting range: individual, consecutive In individual, user has to set text string for each alarm condition. In consecutive, text string is automatically allocated from number of text string of first alarm on the list.
Save Occurrence Count	Use	It sets whether to use the function of saving the number of alarm occurrence. If it is checked, count storage device setting box is activated.
	Alloc Method	It sets how to allocate address of alarming count storage device. Setting range: individual, consecutive In individual, user has to set device address for each alarm condition. In consecutive, device address is automatically allocated from address of first alarm on the list.
Show Details window	Use	It is the displayed window of detailed information about alarm, when the details window special switch of alarm history is ON.
	Alloc Method	It sets how to allocate the window number. Setting range: individual, consecutive In individual, user has to set the window number for each alarm condition. In consecutive, window number is automatically allocated from the window number first alarm on the list.
No.		It is order of alarm condition.
Device		It sets reference device of each alarm condition. User can set device by entering the device directly or clicking 'Detail' to open "Bit/Word Device Area" setting window.
Alarm Condition	Bit	It sets alarm condition. Setting range: ON, OFF
	Word	It sets alarm condition. Clicking [···] button at the right end of the box opens "Enter condition" window※1.
Window Screen No.		It is the details window number.

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Item	Description
String No.	It is text string number to display from the multilingual table.
Count Storage Device	It is device in which the number of alarm occurrence is saved.
String	It is text to be displayed from the multilingual table. It is automatically displayed according to the set text string number.

※1: “Enter condition” window

Item		Description
Reference Device	Device	It is reference device.
	Setting	It is data size and form.
Formula		It sets conditional expression. Clicking ‘Formula’ displays “Operator Setting” window※2.

※2: “Operator setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

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6.1.4 Scheduler

It is for setting scheduler function that set operation is automatically executed when set condition (device/time) is satisfied.

- Cycle (time): Set operation is executed according to set cycle of time and the number of iteration.
- Cycle (device): Set operation is executed when device value is changed and satisfied set condition (positive edge/negative edge/change).
- Device: Set operation is executed when the status of Bit/Word device is satisfied set condition (positive edge/negative edge/change).

User can set maximum 16 schedulers, and maximum 4 operations (Bit ON, Bit OFF, Bit reversal, word value change, script) per each scheduler.

The scheduler list is displayed when user double clicks [Scheduler] in the project window, or click 'Open' in the right click pop up menu.

Double click a line in the scheduler window to call the property window.

(1) Basic setting: Basic

Item	Description
Description	It describes name and decription of the scheduler.
Condition	It sets operation condition of the scheduler. According to type, following menus are different. Setting range: cycle (time), cycle (device), device
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the object.
H	It sets the height of the object.

- Condition: Cycle (time)

Item	Description
Time	It sets time cycle of operation. Every minute: operating the function at every minute Every hour: operating the function at every hour Every day: operating the function at every day Every week: operating the function at every week Every month: operating the function at every month Every year: operating the function at every year Once: operating the function once
Repitition	It sets the number of iteration.
Repeat Cycle	It sets iteration cycle by day/hour/minute/second.

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- Condition: Cycle (device)

Item	Description
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Edge Type	It sets edge type. Setting range: positive edge, negative edge, change
Repitition	It sets the number of iteration. Setting range: 1 to 100
Repeat Cycle	It sets iteration cycle by day/hour/minute/second.

- Condition: Device – Bit device

Item	Description
Device Type	It sets device type. Setting range: bit device, word device
Edge Type	It sets edge type. Setting range: positive edge, negative edge, change
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

- Condition: Device – Word device

Item		Description
Device Type		It sets device type. Setting range: bit device, word device
Reference Device	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
	Setting	It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Formula		It sets conditional expression. Clicking 'Formula' displays "Operator Setting" window※3.

- ※1: Please refer to '"Operator setting" window' in alarm history, for the details about "Operator Setting" window.

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(2) Basic setting: Operation

Item	Description
Add Operation Function	It sets operation function among bit ON, bit OFF, bit inversion, word, and script. Bit ON: turning on the bit device when the set condition is satisfied Bit OFF: turning off the bit device when the set condition is satisfied Bit inversion: turning on the turned off bit device or turning off the turned on bit device when the set condition is satisfied Clicking each function allows to set reference device User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window. Word: operating function of the word device when the set condition is satisfied User can set device by clicking 'Word' to open "Word" setting window※1. Script: operating set script when the set condition is satisfied User can select scrip among previously set scrips in script, project window by clicking 'Script'.
Operation List	User can check a list of registered operation. With the buttons, user can delete registered operation or change the order of operations. User also can change the settings of reference device with the [+] button.

※1: "Word" window

Item		Description
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting		It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Operation	Form	It sets device operation.
Operand※2		Depending on the operation form, menu is different.
Description		It describes what it is.

Form	
Writing	Writing the set value to the device
Adding	Adding the set value to the value of device
Subtracting	Subtracting the set value from the value of device
Script	Executing set script
Increasing value of certain digit	Increasing/Decreasing value of a certain digit of work device
Decreasing value of certain digit	

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※2: Operand setting depending on operation form

- Writing, Adding, Subtracting

Item		Description
Value	Type	It sets operand. Setting range: fixed value, device In fixed value, user has to set the fixed value. In device, user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

- Script

Item	Description
Script No.	It sets script number.

- Increasing value of certain digit, Decreasing value of certain digit

Item	Description
Data Format	It sets format of data for increasing/decreasing value of certain digit. Setting range: HEX, BCD If digit position of the BCD data device is set to A to F, it is not operated.
Digit Position	It sets digit of value to be increased/decreased. Setting range Device size 16 bit: 1 to 4 Device size 32 bit: 1 to 8

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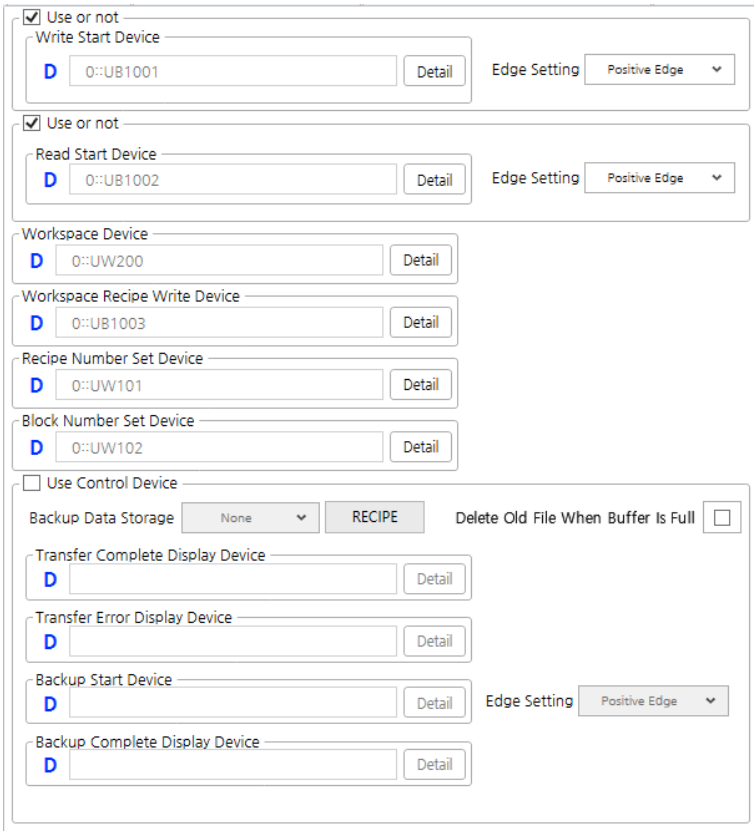
6.1.5 Recipe

It is for setting function of reading/writing the target devices (PLC devices) at once.

User can set maximum 32 recipes, and maximum 64 devices and 32 blocks per each recipe.

- Writing recipe: writing value of the target device as set value of recipe
- Reading recipe: reading value of the target device and saving in GP/LP inner device

(1) Recipe property window



Item	Description
Write Start Device	If it is checked, user can set write start device. When status of write start device satisfies operation condition (positive edge/negative edge/change), value of the recipe is written in the target device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Read Start Device	If it is checked, user can set read start device. When status of read start device satisfies operation condition (positive edge/negative edge/change), value of the target device is written in the recipe. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Workspace Device	It sets starting word device to use as workspace for writing/reading. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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Item	Description
Workspace Recipe Write Device	When workspace recipe write device is ON, recipe data in workspace is written in recipe of the project. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Recipe Number Set Device	It sets recipe number to execute, when reading/writing condition is satisfied. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Block Number Set Device	It sets block number to execute in the recipe, when reading/writing condition is satisfied. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Use Control Device	If it is checked, user can set whether to use control device. It sets backup data storage, transfer complete display device, transfer error display device, backup start device, and backup complete device.
Backup Data Storage	It sets backup data storage. Setting range: none, USB memory, inner memory, Micro SD card If 'Delete Oldest File When Buffer Is Full' is checked, from the oldest file among saved recipe filese is deleted when the storage is full.
Transfer Complete Display Device	When transferring recipe is completed, the set bit device is turned on. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Transfer Error Display Device	When error occurs while transferring recipe data, the set bit device is turned on. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Backup Start Device	It sets data backup start device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Edge Setting	It sets to start when set bit device is positive edge/negative edge/change. Setting range: positive edge, negative edge, change
Backup Complete Display Device	When backup is completed, the set bit device is turned on. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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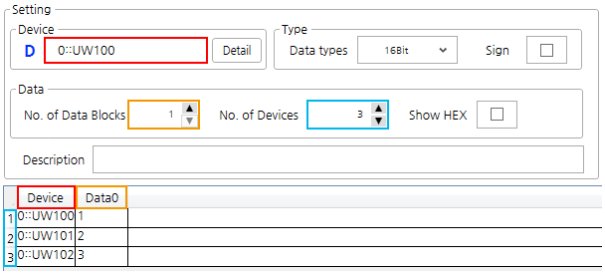
(2) Recipe registering window

Right click recipe in the project window and click 'Recipe'-'Add' to open the recipe window.
User can open/export recipe file from external storage or PC in which atDesigner is installed.
Recipe file is saves in *.csv.



Item		Description
Device		It sets the target device to which recipe data is transferred. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Type		It sets data type and whether to use sign. Setting range: 16 bit, 32 bit
Data	No. of Data Blocks	It sets the number of data block (maximum 32 blocks).
	No. of Devices	It sets the number of device from the target device (maximum 64 devices).
	Show HEX	If it is checked, recipe data is displayed in hexadecimal.
	Description	It is for description about recipe.
List		It displays a list of registered recipe.

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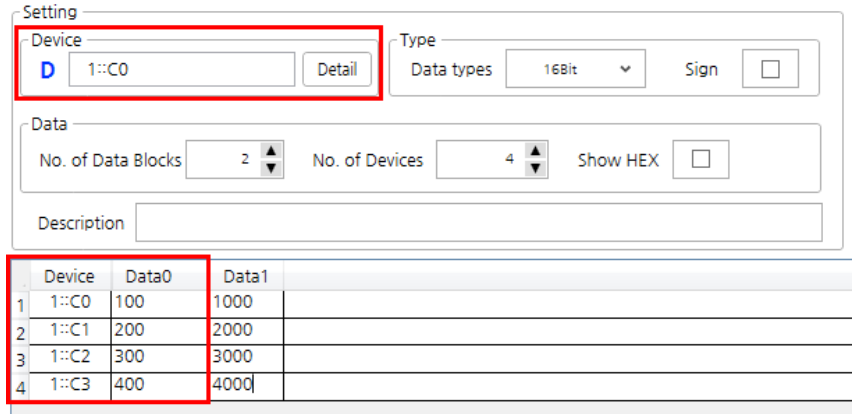
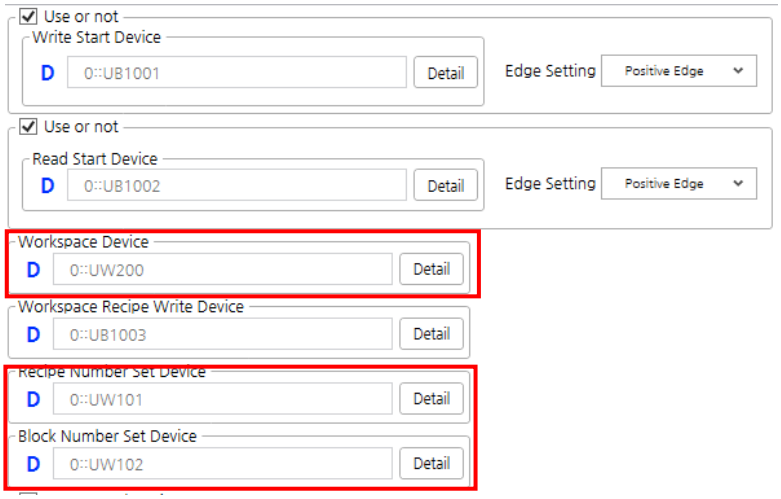
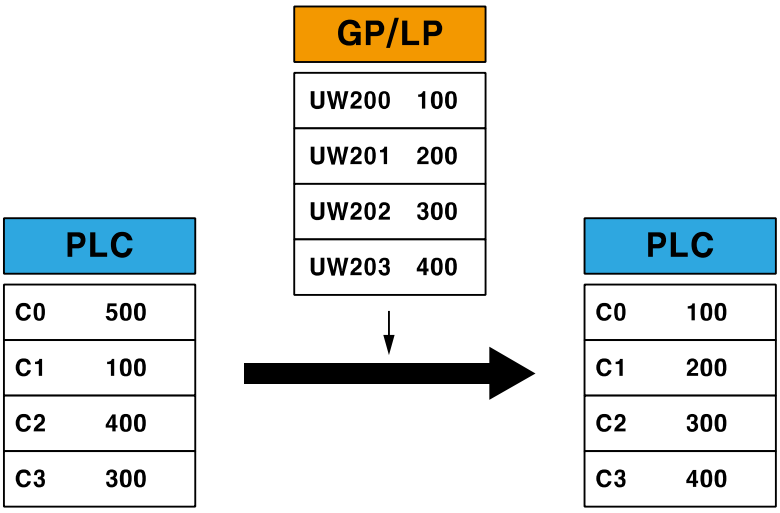
Ex.

- Writing recipe

Adding recipe as below and setting write start device, workspace device, recipe number set device, and block number set device in the “Recipe Property” window.

Recipe 1	
Recipe Property	

When the value of recipe number set device (UW101) is 1 and the value of block number set device (UW102) is 0, workspace device (UW200~) reads data in block 0 of recipe 1 and write to device C0 to C3 of the PLC.



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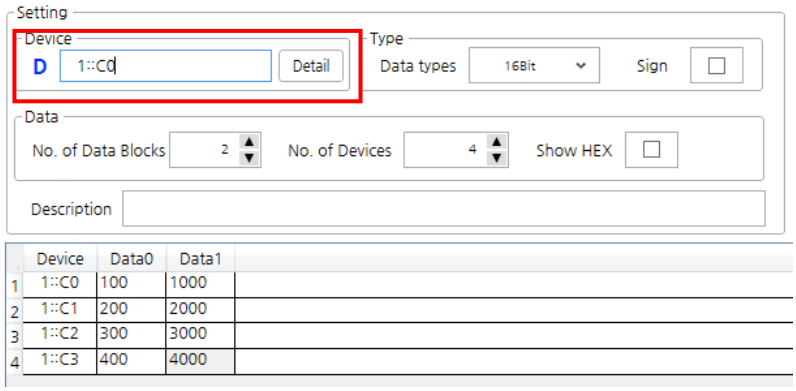
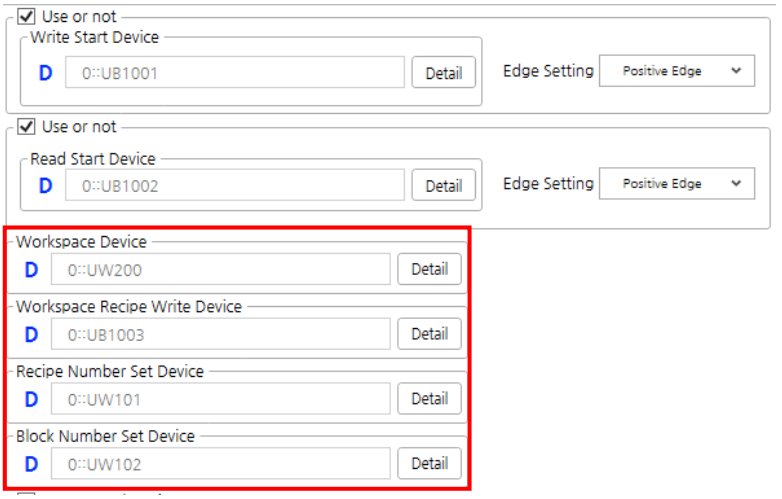
- Reading recipe

  Adding recipe as below and setting read start device, workspace device, workspace recipe write device, recipe number set device, and block number set device in the “Recipe Property” window.

Recipe 1	
Recipe Property	

When the value of recipe number set device (UW101) is 1, data of PLC device (C0 to C3) which is set in recipe 1 is saved in workspace device (UW200~).

PLC		GP/LP	
C0	200	UW200	200
C1	400	UW201	400
C2	100	UW202	100
C3	500	UW203	500

When workspace recipe write device (UB1003) is turned on, data saved in workspace is saved in block and recipe, depending on the value of recipe number set device (UW101) and block number set device (UW102)

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6.1.6 Logging

Is is for saving the value of device when set condition is satisfied. It is used for watching device.

- Logging condition: cycle (time)

  Logging starts at designated time and runs by set cycle and number of times.

  Following is example of logging that starts at 10:30 with the 3 times of 15 minutes interval.

M0000	10
M0001	15
M0002	17
M0003	11

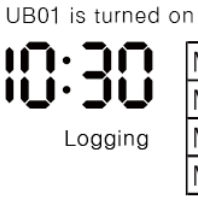
M0000	12
M0001	16
M0002	20
M0003	13

M0000	17
M0001	18
M0002	19
M0003	16

- Logging condition: cycle (device)

  Logging starts when the value of logging start device satisfies set condition (positive edge/negative edge/change) by set cycle and number of times.

  Following is example of logging that starts, when UB01 device is turned on, with the 2 times of 20 minutes interval.

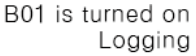


M0000	10
M0001	15
M0002	17
M0003	11

M0000	15
M0001	17
M0002	18
M0003	15

- Logging condition: device

  Logging operates once when the value of logging start bit/word device satisfies set condition.



M0000	10
M0001	15
M0002	17
M0003	11

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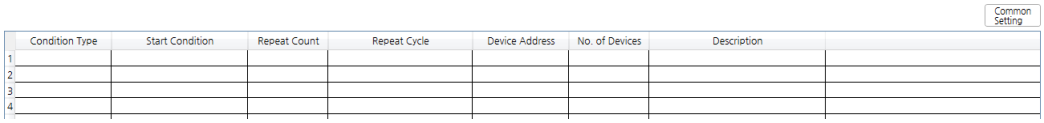
(1) Setting logging

Double click logging in the project window or right click logging in the project window and click 'Open' to open the list of logging.



Item	Description
Condition Type	It sets and displays logging condition and type. Setting range: cycle (time), cycle (device), device
Start Condition	It sets and displays logging start condition. It displays data of logging setting window briefly.
Repeat Count	It sets and displays number of iteration for cycle condition.
Repeat Cycle	It sets and displays interval of iteration for cycle condition.
Device Address	It sets and displays reference device address.
No. of Devices	It sets and displays the number of devices to watch (maximum 64 devices).
Description	It sets and displays description of logging.
Common Setting	It sets common options for loggings. Click this opens "Logging Setting" window※1.

※1: 'Logging Setting' window

- Basic setting: Backup

Item	Description
Backup Data Storage	It sets backup data saving location. Setting range: none, USB memory, internal memory, Micro SD card Backup file saved path: Backup Disk/LOG/01 (Log Number) File name: 01_YYYYMMDD_0000.log Maximum 10,000 log can be saved per a log file.
Delete Oldest File When Buffer Is Full	If it is checked, from the oldest file among saved logging filese is deleted when the storage is full. If it is not checked, logging data is not saved when the storage is full.

- Basic setting: Buffer

Item	Description
Workspace Setting	It sets buffer area for each logging. (minimum buffer size: 2kb, maximum buffer size: 512kb)
Logging Size Calculation	It calculates the required size of storage for saving logging data. After setting the number of device, the size of device, and the number of iteration, calculation result is displayed.

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(2) Registering logging

When double clicking an empty box to register new logging or a set logging line to edit settings, 'Logging Setting' window appears.

- Basic setting: Basic

Item		Description
Device Format		It sets logging device format. Setting range: BIT, WORD
Device		It sets logging device. User can set device by entering the device directly or clicking 'Detail' to open "Bit/Word Device Area" setting window.
Target	Logging No.	It displays currently editing logging number.
	No. of Devices	It sets the number of device to read, so that device address is allocated as much as set numbers, from the reference device address (maximum 64 devices).
	Device Size	It sets the size of reference device. (16 bit, 32 bit) When reference device is bit device, it is not activated.
Description		It describes description of logging.
X		It sets X coordinate on the screen.
Y		It sets Y coordinate on the screen.
W		It sets the width of the object.
H		It sets the height of the object.

- Basic setting: Condition

Item	Description
Condition	It sets operation condition of logging. According to type, following menus are different. Setting range: cycle (time), cycle (device), device

  - Condition: Cycle (time)

Item	Description
Time	It sets time cycle of operation. Every minute: operating the function at every minute Every hour: operating the function at every hour Every day: operating the function at every day Every week: operating the function at every week Every month: operating the function at every month Every year: operating the function at every year Once: operating the function once
Repitition	It sets the number of iteration.
Repeat Cycle	It sets iteration cycle by day/hour/minute/second.

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- Condition: Cycle (Device)

Item	Description
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Edge Type	It sets edge type. Setting range: positive edge, negative edge, change
Repitition	It sets the number of iteration. Setting range: 1 to 100
Repeat Cycle	It sets iteration cycle by day/hour/minute/second.

- Condition: Device – Bit device

Item	Description
Device Type	It sets device type. Setting range: bit device, word device
Edge Type	It sets edge type. Setting range: positive edge, negative edge, change
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

- Condition: Device – Word device

Item		Description
Device Type		It sets device type. Setting range: bit device, word device
Reference Device	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
	Setting	It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Formula		It sets conditional expression. Clicking 'Formula' displays "Operator Setting" window※1.

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※1: “Operator Setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

- Basic setting: Control

Item	Description
Logging Progress Display Device	It sets device for displaying whether logging is being processed or not. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.
Logging Stop Device	It sets device for forced shutdown. When the device is turned on, logging stops immediately. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.
Delete Workspace Device	It sets device for deleting the allocated workspace area when it is turned on. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.
Completed Delete Workspace Display Device	It sets device for displaying whether deleting workspace is completed by turning on the device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.
Display When Logging Buffer Is Full	It sets device for displaying whether all of devices allocated logging are used or not, by turning on the device. When data in allocated device is deleted, the device is turned off. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

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- Basic setting: Backup

Item		Description
Use Backup		If it is checked, user can use backup function. Following menus are activated. In order to use this function, user has to set 'Backup Data Storage' in [Project]-[Common Setting]-[Project Property]-[Storage Device Using Setting].
Auto Backup when Using All Workspace		If it is checked, backup is automatically processed when logging workspace is used all. If it is not checked, from the oldest file among saved filese is deleted when the storage is full to save new file.
Use Backup Control		If it is checked, user can use backup control. It sets backup start device and backup complement displaying device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Display Form	Number Form	It sets format of number to display. Setting range: unsigned decimal, signed decimal, BCD
	Digit	It sets digit of number to display. Setting range 1 to 64

6.1.7 System Logging

It is for saving system operation information in log file to monitor GP/LP system status.

Double click system logging in the project window to open system logging window.

Item		Description
Use System Logging		If it is checked, user can use system logging function.
Basic	Logging Target Function	It sets items to save in system logging. Setting range: system, bit switch, word switch, change screen, special switch-history alarm, recipe, communication and etc. Maximum 564 data can be saved.
	Select All/ Clear Selection	It selects all items or clears selections.
Backup	Backup Data Storage Location	It sets location of backup data storage. Setting range: none, USB memory, internal memory, Micro SD card
	Auto Backup When Using All Workspace	If it is checked, backup is automatically processed when storage is full.
	Backup Start Device	It sets backup start device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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(1) Memory structure

Item	Size (Byte)	Description
No.	4	It displays the order of logging.
Log time	8	It displays log time. Year (2byte), month (1byte), day (1byte), hour (1bute), minute (1byte), second (1byte)
User	20	It displays logging user ID. If there is no logging user, it is not displayed.
Category	4	It is logging category code. Category 1 (1byte), category 2 (1byte)
Log information	80	It displays detailed information about logging according to the category code in ASCII.

(2) Logging target information

Followings are information recorded in log file.

Category code 1	Category code 2	Operation	Logging information
01 (System)	00	Starting system	System Start.
	01	Log in	[#] Login success *# : User ID
	02	Log out	[ID] Logout success *# : User ID
	03	Log in failed	[#]Login fail. *# : User ID
	04	Changing language	Language Chg [# -> #] (#: Language (ex. Ko-KR, en-US))
	05	Project install (USB)	Project Install [USB]
	06	Starting project download	Project download Start
	07	Completing project download	Project download End
	08	Starting project upload	Project upload Start.
	09	Completing project upload	Project upload End.
02 (Bit switch)	00	Bit set	[$] Bit Set ($: Target device address (ex. M1000))
	01	Bit reset	[$] Bit Reset

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Category code 1	Category code 2	Operation	Logging information
			($:Target device address (ex. M1000))
	02	Bit momentary ON	[$] Bit Momentary On ($:Target device address (ex. M1000))
	03	Bit momentary OFF	[$] Bit Momentary Off ($:Target device address (ex. M1000))
	04	Bit reversal	[$] Bit Reverse ($:Target device address (ex. M1000))
03 (Word switch)	00	Writing value	[$] Write Value : # ($:Target device address (ex. M1000), #: Setting value (Integer))
	01	Adding value	[$] Add Value : # ($:Target device address (ex. M1000), #: Setting value (Integer))
	02	Subtracting value	[$] Sub Value : # ($:Target device address (ex. M1000), #: Setting value (Integer))
	03	Increasing value of certain digit	Digit Add # (#:Setting value (Integer))
	04	Decreasing value of certain digit	Digit Sub # (#:Setting value (Integer))
04 (Changing screen)	00	Changing screen (Base > Base)	Screen Chg[# -># (#:Number of screen)
	01	Calling system screen (Base > System screen)	System Screen Call
	02	Changing system screen (System screen > System screen)	System Screen Change[#-> # (#: Name of system setting)
	03	Returning to screen (System screen>Base)	System Screen Exit
	04	Calling window screen	Window Call [#] (#:Number of screen)
	05	Closing window screen	Windows Close[#] (#:Number of screen)
05	00	Printing data	[Alarm] Print Alarm(#)

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Category code 1	Category code 2	Operation	Logging information
(Special switch - Alarm history)			*# : ALL / Group No
	01	Deleting all cleared alarm data	[Alarm] Delete all cleared alarms(#) *#: Deleted alarm count
	02	Deleting selected data	[Alarm] Delete selected Alarm(#) *#: Selected alarm information
	03	Checking selected data	[Alarm] Alarm confirm(#) *#: Selected alarm information
	04	Deleting the number of occurrence of selected alarm	[Alarm] Delete alarm count of selected alarm (#) *#: Selected alarm information
	05	Changing checked alarm filter (unused/confirmed / unconfirmed)	[Alarm] Confirm filter change(# -> ##) *#: (unused/confirmed / unconfirmed)
	06	Changing cleared alarm filter (unused/cleared/ not cleared)	[Alarm] Cleared filter change (# -> ##) *# : (unused/cleared/not cleared)
	07	Deleting the total number of alarm occurrence	[Alarm] Delete occurred alarm count (#) *#: (Alarm count before deleting)
	08	Deleting data in the current page	[Alarm] Delete alarms in current page(#) *#: (The number of alarm to delete)
	09	Confirming data in the current page	[Alarm] Alarm confirm in current page(#) *# : (The number of alarm to confirm)
06 (Recipe)	00	Writing recipe	[Recipe] Recipe Write (#, ##) *# : recipe number, *## : recipe block no
	01	Reading recipe	[Recipe] Recipe Read (#, ##) *# : recipe number, *## : recipe block no
	02	Recipe backup	[Recipe] Work Area -> Recipe (#, ##) *# : recipe number, *## : recipe block no
07 (Communication)	00	Connection FAIL	[#] PLC Connect FAIL (#: Number of channel (ex: CH1))
	01	Communication FAIL	[#] PLC Communication FAIL. (#:Number of channel (ex: CH1))
11 (Etc.)	00	Screen capture	[Etc.] Screen print

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(3) System log backup

Saved path of system log file is “Backup Disk/SYSLOG”, and name of the file is “SL_YYYYMMDD_0000.log”.

SL	System Log
YYYY	It is the log file generated year.
MM	It is the log file generated month.
DD	It is the log file generated day.
0000	It displays unit of log file size. If the log file has log data more than 10,000, the number is 0001.

6.1.8 Script

It is for setting user made script besides of atDesigner function.

- Lua Script 5.1 function is available.
  (Only control statement and operator which are supported by script tool of atDesigner are available.)
- Script tool helps to enter commonly used function list and control statement with ease.
- It is available to check grammatical error of each script.

(1) Type of script

- Global script

  It is operated under the satisfied condition regardless of current screen number.
  It can be set in [Project]-[Common Setting]-[Project Property]-[Global Script Setting].
  For detailed information about global scrip, please refer to ‘6.2.1.8 Global Script Setting Tab’.
- Screen script

  It is operated when designated screen is displayed or closed.
  For deatailed information about screen script, please refer to ‘※1 “Screen Property” setting’.
- Scheduler script

  It is operated according to registered scheduler.
  For detailed information about scheduler script setting, please refer to ‘6.1.4 Scheduler’.
- Object script

  It is operated for each object.

  For detailed information about object script, please refer to the script chapter of each object.

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(2) Supported constant

Constant	Setting
Decimal	124, -34, 0, 2334454
Real number	0.123, 10.45E12, 0.0
Hexadecimal	0x45FA, 0xfff
Binary	true, false
Character constant	‘a’, ‘1’, ‘0’, ‘%’

(3) Applicable device

Device	Example of status	Example of usage
BIT	@[Channel:Address:Device code:Device:B]	@[1:1:77:X001:B]
SHORT (16bit)	@[Channel:Address:Device code:Device:W]	@[1:1:22:D100:W]
Unsigned SHORT (16bit)	@[Channel:Address:Device code:Device:UW]	@[1:1:23:D100:UW]
INT (32bit)	@[Channel:Address:Device code:Device:D]	@[1:1:33:D100:D]
Unsigned INT (32bit)	@[Channel:Address:Device code:Device:UD]	@[1:1:32:D100:UD]
FLOAT (32bit)	@[Channel:Address:Device code:Device:F]	@[1:1::28D100:F]

(4) Device structure

@[1:1:22:D100:W]

@[Channel : Address : Device code : Device name + Device address : Data type]

*Data type

BIT = B

SHORT(16bit) = W

Unsigned SHORT(16bit) = UW

INT(32bit) = D

Unsigned INT(32bit) = UD

FLOAT(32bit) = F

(5) Script tool

▪ Function list

Function	Description	
Device setting	SetData	It is C intrinsic function, interworking with lua script, which sets certain value to the designated device address.
		1) Function format: Result= SetData (device setting value, input value) 2) Return value (Result1, Result2): - Result1: Data value in the designated device address. - Result2: Return value 1: succeeded to write value, 0: failed to write value - If writing value is failed (Result2 = 0), Result1 is always set as 0. 3) Parameeter1 (Device setting value): “@[Channel:Address:Device

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Function	Description	
		code:Data location:Address:Data type]” 4) Parameter 2 (Input value): Data value in the designated device address. 5) Example code ① nResult = SetData("@[0:-1:95:UW1234:F]", b) ② if nResult == 1 then ③ print("success") ④ else ⑤ print("fail") ⑥ end 6) Code explanation ① Using SetData function, second parameter of “input value” is set to first parameter of “Device setting value”. After setting, return value is received to result variable. ② If setting value through SetData is succeeded, result value is 1, otherwise the value is 0. if setting is succeeded, branch statement is included. ③ If setting is succeeded, the value of “success” is output as standard in/output. ④, ⑤ If setting is failed, the value of “fail” is output as standard in/output. ⑥ Ends if statement.
	GetData	It is C intrinsic function, interworking with lua script, which reads certain value from the designated device address.
		1) Function format: Result1, Result2 = GetData (Device setting value) 2) Return value (Result1, Result2): - Result1 : Data value in the designated device address. - Result2: Return value 1: succeeded to read value, 0: failed to read value - If reading value is failed (Result2 = 0), Result1 is always set as 0. 3) Parameter 1 (Device setting value): “@[Channel:Address:Device code:Data location:Address:Data type]” 4) Example code ① nValue, gResult = GetData("@[0:-1:95:UW1234:F]“) ② if gResult == 1 then ③ print("success") print(nValue) ④ else ⑤ print("fail") ⑥ End 6) Code explanation

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Function	Description	
		① Using GetData function, first parameter of “Device setting value” is read and returned to the first return variable (nValue). ② After checking whether to execute function using second return value (gResult), branch statement is generated depending on success and fail. When reading value is succeeded, result value is 1 or 0. ③ If reading is succeeded, the value of “success” is output as standard output and read value is output. ④, ⑤ If reading is failed, the value of “fail” is output as standard in/output. ⑥ ends if statement.

- Control statement

Command	Description

IF	`--It reads the value of UW1000.`
	`nValue = GetData("@[0:-1:31:UB1000:W]")`
	
	`if nValue == 100 then`
	`  -- It enters 20 to UW1100.`
	`  SetData("@[0:-1:31:UB1100:W]", 20)`
	`elseif nValue == 200 then`
	`  -- It enters the value of 3*4 to UW1100.`
	`  SetData("@[0:-1:31:UB1100:W]", 3*4)`
	`else`
	`  --It enters remaining value (2) of 41/3 to UW1100.`
	`  SetData("@[0:-1:31:UB1100:W]", 41%3)`
	`end`

FOR	`--It reads the value of UW2000.`
	`nValue = GetData("@[0:-1:95:UW2000:W]")`
	
	`sum = 0`
	`for i = 1, 10 do  --or rotates a loop of decreasing by for i = 10, 1, -1 do.`
	`  sum = sum + nValue`
	`end`
	
	`--It enters 10 times of the value of UW2000 in UW2100.`
	`SetData("@[0:-1:95:UW2100:W]", sum)`

While	`-- It reads the value of UW3000.`
	`nValue = GetData("@[0:-1:95:UW3000:W]")`
	
	`sum = 0`
	`i = 10`
	`while i do`
	`  sum = sum + nValue`
	`  i = i -1`
	`end`
	
	`--It enters 10 times of the value of UW3000 in UW3100.`
	`SetData("@[0:-1:95:UW3100:W]", sum)`

REPEAT	`--It reads the value of UW4000.`
	`nValue = GetData("@[0:-1:95:UW4000:W]")`
	
	`sum = 0`
	`i = 10`
	`repeat`
	`  sum = sum + nValue`
	`  i = i - 1`
	`until i == 0`
	
	`--It enters 10 times of the value of UW4000 in UW4100.`
	`SetData("@[0:-1:95:UW4100:W]", sum)`

	Break statement inside of a loop breaks out the loop covering break.

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- Control statement (Operator)

Command		Setting description
Logic	&&	<Term 1> && <Term 2>
		If both <Term 1> and <Term 2> are true, it offers the value of 1, otherwise it offers the value of 0.
	||	<Term 1> || <Term 2>
		If both <Term 1> and <Term 2> are false, it offers the value of 0, otherwise it offers the value of 1.
	!	! <Term>
		If the value of <Term> is 0, it offers the value of 1, otherwise it offers the value of 0.
Relation	<	<Term 1> < <Term 2>
		If <Term 1> is less than <Term 2>, it offers the value of 1, otherwise it offers the value of 0.
	<=	<Term 1> <= <Term 2>
		If <Term 1> is less than or equal to <Term 2>, it offers the value of 1, otherwise it offers the value of 0.
	>	<Term 1> > <Term 2>
		If <Term 1> is greater than <Term 2>, it offers the value of 1, otherwise it offers the value of 0.
	>=	<Term 1> >= <Term 2>
		If <Term 1> is greater than or equal to <Term 2>, it offers the value of 1, otherwise it offers the value of 0.
	!=	<Term 1> != <Term 2>
		If <Term 1> is not equal to <Term 2>, it offers the value of 1, otherwise it offers the value of 0.
	=	<Term 1> = <Term 2>
		If <Term 1> is equal to <Term 2>, it offers the value of 1, otherwise it offers the value of 0.
Arithmetic	+	<Term> + <factor>
		It adds <Term> and <factor>.
	-	<Term> - <factor>
		It subtracts <factor> from <Term>.
	*	<Term> * <factor>
		It multiplies <Term> by <factor>.
	/	<Term> / <factor>
		It divides <Term> by <factor>.
	%	<Term> % <factor>
		It divides <Term> by <factor> and gets remaining value.

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6.2 Common Setting

6.2.1 Project Property

It is for setting projest property. It sets project summary, GP/LP, screen, security, key window, language, storage device usage, global script, special device, auxiliary, and system language.

Click [Project]-[Project Property] or [Project property] in the project window to open the project property window.

6.2.1.1 Project Summary Tab

Item	Description
Project Name	It displays and sets project name. Project name can be differently set with file name. (Maximum 32 letters)
Author	It sets author of the project. (Optional, maximum 32 letters)
Project Version	It sets the version of project.
Recent Download Date	It displays the latest date the project is downloaded.
Project File Path	It displays the saved path of project file.
Created	It displays the date the project is created.
Edited	It displays the date the project is modified.
Description	It describes description of the project. (Maximum 32 letters)

6.2.1.2 GP/LP Setting Tab

(1) Model setting

Item	Description
Series	It sets GP/LP series.
Model	It sets GP/LP model.
Description	It displays model number, resolution, color, memory, language, description and image of the GP/LP.

(2) Connected device setting

Click 'Add' in the connected device setting section to open "Select Connected Device" window※1.

※1: "Select Connected Device" window

Item	Description
Select Method	It sets how to display the connectable device list. Setting range: All, Filter
Vehicle Maker/Series/ Model/Comm. Type/ Connection Method	If the select method is set to filter, user can choose maker, series, and connection method of the connectable device.
List	It displays the list of connectable device.
Connection IF Setting	It sets connection IF Setting.

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After setting the connected device, user can change the device by clicking 'Edit' in the connected device setting section.

6.2.1.3 Screen Setting Tab

It is for setting start screen number in GP/LP and screen changing function according to the device value

Item		Description
Use Device for Switching Screen and Calling control		If it is checked, user can use function of changing screen by device. Following menus are activated.
Change Screen Device		It is for setting device for saving the number of base screen as device value, so that screen of number which is same with the device value is displayed. When the value of set device is changed, screen of the value (unsigned 16bit) is displayed. If screen of the value does not exist, error message is displayed and the current screen (current device value) is maintained.
Current Screen Device		It sets word device address for displaying current screen number.
Global Window 1/2 Device		It is for setting device for saving the number of window screen as device value, so that screen of number which is same with the device value is displayed. When the value of set device is changed, screen of the value (unsigned 16bit) is displayed. If screen of the value does not exist, inputting value is ignored. (Window screen is not displayed.
Start Screen Setting		It is for setting start screen (next to booting screen), after turning on the product (GP/LP). Start screen is the screen that is displayed when starting GP/LP or starting monitoring.
Booting Screen	No.	If it is checked, user can set screen for booting.
	Booting Screen Time	If booting screen in set, user can set holding time of the booting screen.
Screen Saver	No.	If it is checked, user can set screen for screen saver.
	Standby Time	When the amount of time elapses without inputting to GP/LP, screen saver is displayed.
	Auto Logout	When screen saver is displayed, user account automatically logs out.

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6.2.1.4 Security Setting Tab

Item		Description
Manage User Account	Add	It adds user account in the project. Clicking 'Add' displays "Register User" window※1.
	List	It displays the list of added account and whether to use.
Level Description		It sets description of each security level.
Control Address		Within internal devices which are designated user area, the 23 of control devices from the set device address are used for managing user account. User has to set word device as control device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window. (If control command, such as login, logout, and setting/adding/deleting account, is activated, 23 of control devices are reset for protecting account information.)
Use Administrator Account		If it is checked, user can use administrator account. Administrator account acquires a maximum level of security and object. It sets administrator ID, password, and whether to hide the account.
System Screen Security Setting		It sets security level of product system screen. Clicking 'Security Level Setting' opens "System Screen Setting" window※3.
Project File Password		It sets password to open project file in atDesigner.

※1: "Register User" window

Item	Description
User name	It sets user name. User name is maximum 16 letters including English (case-sensitive) and number and cannot contain spaces.
Password	It sets password. Password is maximum 16 letters including English (case-sensitive).
Accessibility to System Screen	If it is checked, this user account obtains accessibility to system screen. The system compares screen security level of the user and system screen security level of the project to control accessibility.
Secret User	If it is checked, user name is hidden. When the option list object is set to display 'User Account', secret user account is not displayed in the list of option list object.
Screen Security Level	It sets screen security level. For security of each screen, accessibility to each screen can be differently set. From 1 to 15 levels are available for security, and user account with higher lever can access to the screen with lower security level. (15 levels is the highest level.) When user uses system screen, this security level is applied for system screen security as well.
Object Level	It sets security level for accessing to object.

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Item	Description
	13 levels from A to M are available for security. User with security lever can has access to only checked level of object.

※2: Control device address (example when user sets UW100 as control device)

<table>
<tr><th>Control address</th><th>Description</th></tr>
<tr><td>UW100 (1 word)</td><td>[Command] It controls command to apply to the account. For detailed information about command control code, please refer to the following table.</td></tr>
<tr><td>UW101 (1 word)</td><td>[Result] It is for displaying result of executing command.
<table>
<tr><td>Control result code</td><td>Description</td></tr>
<tr><td>0x0001</td><td>Command is executed successfully.</td></tr>
<tr><td>0x0002</td><td>There is no user name.
(when logging in or editing/deleting/adding user account)</td></tr>
<tr><td>0x0004</td><td>Password is invalid.
(when logging in)</td></tr>
<tr><td>0x0008</td><td>User name is duplicated.
(when adding account)</td></tr>
<tr><td>0x0010</td><td>Adding account is impossible.
(when adding account)</td></tr>
<tr><td>0x0020</td><td>System screen security level is invalid.
(when adding account or modifying system screen security level)</td></tr>
<tr><td>0x0040</td><td>Screen security level is invalid.
(when adding account or modifying screen security level)</td></tr>
<tr><td>0x0080</td><td>Object security level is invalid.
(when adding account or modifying object security level)</td></tr>
<tr><td>0x0100</td><td>Secret user is invalid.
(when adding account or modifying use of secret user)</td></tr>
</table></td></tr>
<tr><td>UW102 (1 word)</td><td>It is device for inputting account number.
The account number is the number in list of ‘Manage User Account’.
(Generally, it is used for managing account with screen number (control command) or used with option list object.)</td></tr>
<tr><td>UW103 (1 word)</td><td>It is device for inputting value on whether to use system screen.
(0: not use, 1: use)</td></tr>
<tr><td>UW104 (1 word)</td><td>It is device for inputting value on whether to use the account as</td></tr>
</table>

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Control address	Description
	secret user. (0: not use, 1: use)
UW105 (1 word)	It is device for inputting screen security level. (1 to 15)
UW106 (1 word)	It is device for inputting privilege value. (setting level A: bit1 = 1, setting level B: bit 2 =1 ...)
UW107 to 114 (8 word)	[Name] It is for saving user name of account. (English, number, “-“ or "_", case-sensitive)
UW115 to 122 (8 word)	[Password] It is for saving password of account. (English, number, “-“ or "_", case-sensitive)

- Command control code

Value	Parameter	Description
1	[Name], [Password]	It logs in by user name.
2	* No parameter	It logs out.
3	[Name], [New password]	It changes password. (It is only activated when the logged in account is administrator account.)
4	[Name], [System screen security level]	It modifies system screen security level. (It is only activated when the logged in account is administrator account.)
5	[Name], [Screen security level]	It modifies screen security level. (It is only activated when the logged in account is administrator account.)
6	[Name], [Object security level]	It modifies object security level. (It is only activated when the logged in account is administrator account.)
7	[Name], [Secret user]	It modifies setting of whether to use this account as secret user or not. (It is only activated when the logged in account is administrator account.)
8	[Name]	It deletes account. (It is only activated when the logged in account is administrator account.)
9	[Name],[Password], [System screen security level], [Screen security level], [Object security level], [Secret user]	It adds account. (It is only activated when the logged in account is administrator account.)

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※3: 'System Screen Setting' window

Item		Description
List		It displays system screen and security level of the screen. Click system screen from the list to change security level. Kind of system screen is as following. Monitoring: device monitoring, IO monitoring (only LP) Environment: communication, local Ethernet, language, etc. Project property: project summary, screen, key window, etc. Function setting: scheduler, logging, system logging, etc. Data: data manager, firmware upgrade, multilingual table, etc. Diagnostic: battery remaining, screen diagnostic, touch diagnostic Security: login, GP/LP password Parameter (only LP): common, motion, high speed counter
System Screen Info.	Type	It displays the selected menu from the list.
	Screen Security Level	It sets system screen security level of the selected menu from the list. Click 'Edit' to change the setting.

6.2.1.5 Key Window Setting Tab

It is for setting key window to input any data. Key pad can be degisnated for each type of data.

- DEC key window
- HEX key window
- ASCII key window
- REAL key window

It can be set by inputting number directly or searching the key window

6.2.1.6 Language Setting Tab

It is for setting lanuage of multilingual table which is used for drwaing screen. User can set multilingual table-vertor font, multilingual table-bitmap font, text display/input object vector font, and object bitmap font settings.

(1) Multilingual table-vector font, bitmap font

It sets language of multilingual table.

Item	Description
Add	It adds language to the multilingual table. User can set font face for each language.
Delete	It deletes added language.
List	It displays language and font face of the multilingual table. Font face of each language can be changed in "Edit Language Font" window. Double click the language from the list to open "Edit Language Font" window.
Default Language Setting	It sets default language from the added languages.

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(2) Vector Font Setting for Text Display/Input Object

It sets vector font for text display/input object.

Only vector font which is set in this menu can be used [Text] tab of the object.

Item	Description
Add	It adds input language. User can set font face for each language.
Delete	It deletes added language.
List	It displays language and font face of the multilingual table. Font face of each language can be changed

(3) Language change of vector font multilingual table

Displaying language is changed according to the value of language change device.

For detailed information about setting multilingual table, please refer to '6.2.2 Text Table'.

(4) Object bitmap font setting

It sets bitmap font for object.

Only bitmap font which is set in this menu can be used [Text] tab of the object.

Item	Description
Add	It adds input language. User can set font face for each language.
Delete	It deletes added language.
List	It displays language and font face of the multilingual table. Font face of each language can be changed

(5) Language change of vector font multilingual table

Displaying language is changed according to the value of language change device.

For detailed information about setting multilingual table, please refer to '6.2.2 Text Table'.

6.2.1.7 Storage Device Usage Setting Tab

It is for setting saved location of backup data (alarm history data, logging data, and recipe data) and captured screen.

(1) Backup data storage

Item	Description
Saved location	It sets saved location for each alarm history data, logging data, and recipe data. Setting range: none, USB memory, internal memory, Micro SD card
Delete Oldest File When Buffer Is Full	If it is checked, from the oldest file among saved backup data is deleted when the storage is full.

(2) Screen Capture

Item	Description
Output position	It sets output format of captured screen. Setting range: save as file, print
Storage location	It sets saved location for captured screen. Setting range: none, USB memory, internal memory, Micro SD card

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Item	Description
Delete Oldest File When Buffer Is Full	If it is checked, from the oldest file among saved backup data is deleted when the storage is full.

Screen capture is executed when the bit switch of special device UB830 is turned on.

6.2.1.8 Global Script Setting Tab

It is operated under the satisfied condition regardless of current screen number.

It is selected from the registered script in [Project]-[Global Object]-[Script] (maximum 8 scripts).

If more than or equal to 2 scripts satisfy condition, they are executed in sequence.

Item	Description
List	It displays order, name, operation device, operation edge type of the added global script. User can modify settings by double clicking the script from the list.
Add	It adds the registered script as global script. It opens “Add Script” window※1.
Delete/Up/Down	It deletes added global script or moves up/down to change the order.

※1: “Add Script” Window

Item	Description
Device	It sets reference bit device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.
Select script	It selects script which is set in [Project]-[Global Object]-[Script].
Edge type	It sets edge type. Set script is executed when the reference device in in the status of set edge. Setting range: positive edge, negative edge
Preview	It displays contents of selected script.

6.2.1.9 Special Device Setting

It is for setting special device to be connected to GP/LP. It sets size of data from the serial barcode reader (RS232C) or USB barcode reader, whether to save data, and Read Complete Display Device.

(1) Serial barcode(RS232C)

Item	Description
Serial barcode (RS232C)	If it is checked, user can use the serial barcode reader (RS232C). Following menus are activated.
Setting	It sets No. of Byte to Read, Data Save Device, and reading completion display device.
Comm. Setting	It sets communication property of the serial barcode reader. It sets transfer speed, data bit, flow control, parity, and stop bit.

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(2) USB barcode

Item	Description
USB Barcode	If it is checked, user can use the USB barcode reader. Following menus are activated.
Setting	It sets No. of Read Byte Setting. Data Save Device, and reading completion display device. If user does not set data to read, data from the barcode reader is read until "₩0" is output.

6.2.1.10 Auxiliary Setting Tab

It is for setting the number of image color, type, backlight off time, whether to use buzzer, GP/LP address, date format and system menu key position.

Item	Description
No. of Image Colors	It sets the number of image colors to use for the project. Setting range: no transformation, MOMO, 256 Color, 24bit Color
Type	It sets orientation of display. Setting range: vertical, horizontal
Backlight OFF Time	It sets backlight off time, so that the system automatically turns off backlight when there is no touching during the set backlight off time. When user touches display, backlight is turned on again.
Use Buzzer	It sets whether to use buzzer of the GP/LP body or not.
GP/LP Address	It sets GP/LP address when GP/LP is slave.
Date Format	It sets date display format. Setting range: YY/MM/DD, YY/DD/MM, DD/YY/MM, DD/MM/YY, MM/DD/YY, MM/YY/DD
System Menu Key Position	It sets position of GP/LP system menu key. Maximum 2 positions can be set simultaneously (default: left top).

6.2.1.11 System Language Setting Tab

It is for setting language of the GP/LP system menu and font face.

Item		Description
Vector Font	Add/Delete	It adds/deletes system menu language. (Currently, only Korean and English is available.)
	List	It displays added language and font face. Font face of each language can be changed
	Default Language Setting	It sets default language.

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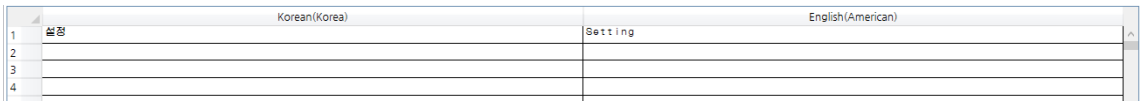
6.2.2 Text Table

It is for setting multilingual text table which helps users to manage frequently used text by language.

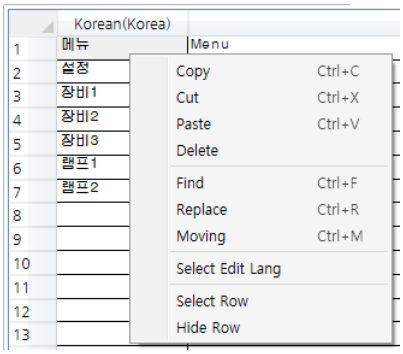
Right click vector font table/bitmap font table and click 'Insert' to creat multilingual table (verctor font)/bitmap font table (bitmap font).

When the list appears, user can fill in the blank of the language with contents.



User can set basic property of multilingual table in [Project]-[Common Setting]-[Text Table]. For detailed information, please refer to '6.2.1.6 Language Setting Tab'.

(1) Editing



Item	Description
Copy	It copies the selected cell.
Cut	It cuts the selected cell.
Paste	It pastes the copied or cut cell.
Delete	It deletes the selected cell.
Find	It searches a certain text from the multilingual table. It searches text after setting whether to be case sensitive and searching direction.
Replace	It replaces a certain text in the multilingual table. It searches text and replaces to another after setting whether to be case sensitive and searching direction.
Moving	It moves the currently editing line.

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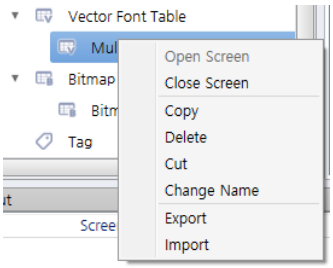
<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Select Language to Edit</td><td>It selects language to edit.
<table>
<tr><td>Select Language to Edit</td><td>It displays the list of language which can be used in text table.</td></tr>
<tr><td>Select All</td><td>It selects all languages from the list.</td></tr>
<tr><td>Clear Selection</td><td>It clears selection in the list.</td></tr>
<tr><td>Reverse Selection</td><td>It reverses selection in the list.</td></tr>
<tr><td>Hide</td><td>It hides this menu.</td></tr>
</table></td></tr>
<tr><td>Select Row</td><td>It selects whole row in which the selected cell is included.</td></tr>
<tr><td>Hide Row</td><td>It hides whole row in which the selected cell is included.
Hiding can be cancled in ‘Select Language to Edit’ setting menu.</td></tr>
</table>

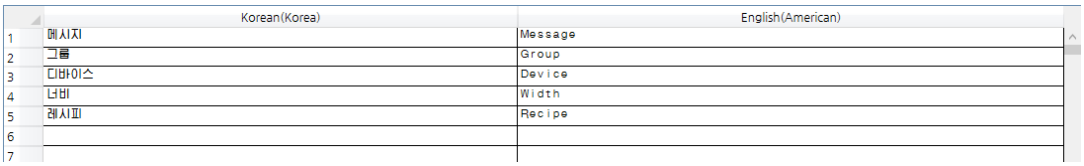
(2) Export/Import

It is for exporting/importing vector font/bitmap font table after saving them in *.csv file format.

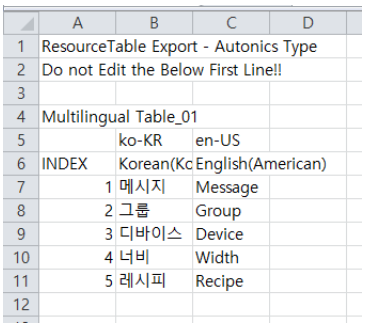
Right click vector font/bitmap font table to export/import in the project window and click export/import in the pop up menu to export/import vector font/bitmap font table.



Structure of *.csv file is as following.



	Korean(Korea)	English(American)
1	메시지	Message
2	그룹	Group
3	디바이스	Device
4	너비	Width
5	레시피	Recipe
6		
7		



	A	B	C	D
1	ResourceTable Export - Autonics Type			
2	Do not Edit the Below First Line!!			
3				
4	Multilingual Table_01			
5		ko-KR	en-US	
6	INDEX	Korean(Kc	English(American)	
7	1	메시지	Message	
8	2	그룹	Group	
9	3	디바이스	Device	
10	4	너비	Width	
11	5	레시피	Recipe	
12				

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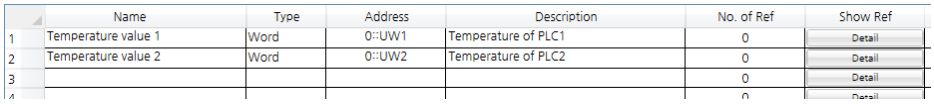
6.2.3 Tag

It is for managing frequently used devices by registering them as a group. One tag group can obtain maximum 1024 tags.

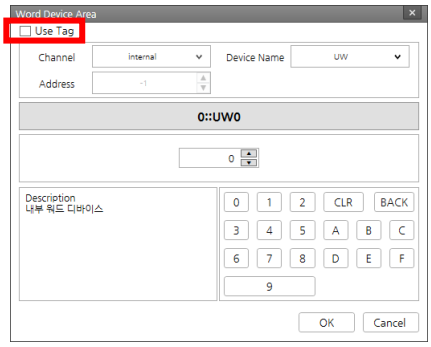
Right click tag in the project window and click ‘Open’ to display ‘Tag Group’.

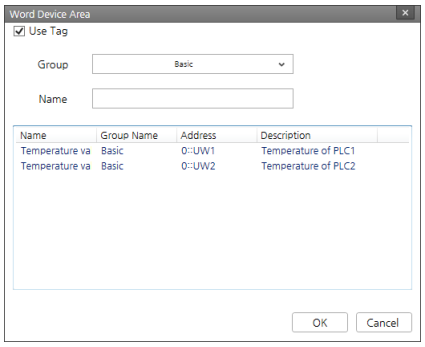


	Name	Type	Address	Description	No. of Ref	Show Ref
1	Temperature value 1	Word	0::UW1	Temperature of PLC1	0	Detail
2	Temperature value 2	Word	0::UW2	Temperature of PLC2	0	Detail
3					0	Detail

Following is how to use tag when setting device.

If user checkes ‘Use Tag’ in the Bit/Word Device Area window, user can select saved tag as follows.





(1) Registering tag

- Creating tag group

1st Double click [Project]-[Common Setting]-[Tag] or click ‘Tag’ in the project window to oprn tag setting window.

2nd If you want to add new group, right click in the tag group list and click ‘New Group’ in the pop up menu.

3rd If you wan to change group name, right click the group and click ‘Change Name’ in the pop up menu. System provides ‘System, Basic’ tag group. Name of these groups are not change and they are not deleted.

- Adding tag

1st Enter tag name in the ‘Name’ row of the tag list.

2nd Double click ‘Type’ row to set the device type (BIT/WORD).
Or, click [▼] button on the right to change the setting.

3rd Double click ‘Address’ row to set device address.
Enter directly or click [⋯] on the right to open “Bit/Word Device Area” window.

4th Click ‘Description’ row and enter description of tag.

5th In ‘No. of Ref’ row displays the number of usage, and in ‘Detail’ button shows the list of usage in the buttom of dwaing window.

6th If you click ‘>>’ in ‘Move’ row, the base screen the object is dwarn in is opened.

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(2) Editing tag

- Status display

  If 'Name' and 'Address' of tag is set improperly, the line of tag is displayed in red color. While registered tag can be copied and pasted, tag with error or duplication in its name cannot be pasted.

  Tag 1 is set property, while tag 2 is in red color because of empty 'Address' row.

	Name	Type	Address	Description	No. of Ref	Show Ref
1	Temperature value 1	Word	0::UW1	Temperature of PLC1	0	Detail
2	Temperature value 2	Word			0	Detail
3					0	Detail

- Device input

  When editing tag, user can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

  Click a cell and enter device address, referring to PLC connection information from project property. In case of entering address directly, it is recommended to be done by only a person who are familiar with the device address format. Small letter is automatically changed into capital letter, and wrong address remains the cell empty.

(3) Automatic fill

- Tag name

  It is used to register similar name as series.

  In case that name has number, automatic fill function registers tag name of "machine #1" to "machine #2 and "machine #3"…as series.

  In case that name has no number, automatic fill function registers tag name of "machine" to "machine 1" and "machine 2"…as series.

- How to use tag name automatic fill

1st Select tag name to be reference.

	Name	Type	Address
1	Machine #1	BIT	0::UB00
2			

2nd Move the mouse curser on which is placed at the right bottom corner, so that the mouse curser changes into shape.

Click and drag till the line to fill and release click to fill out.

	Name	Type	Address
1	Machine #1	BIT	0::UB00
2	Machine #2	BIT	0::UB01
3	Machine #3	BIT	0::UB02
4	Machine #4	BIT	0::UB03

- Device address

  It is used for registering device address consecutively. Applying automatic fill appoints device address by 1.

- How to use device address automatic fill

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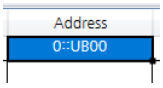
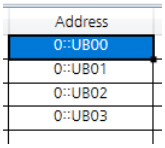
1st Select device address to be reference.



2nd Move the mouse curser on which is placed at the right bottom corner, so that the mouse curser changes into shape.

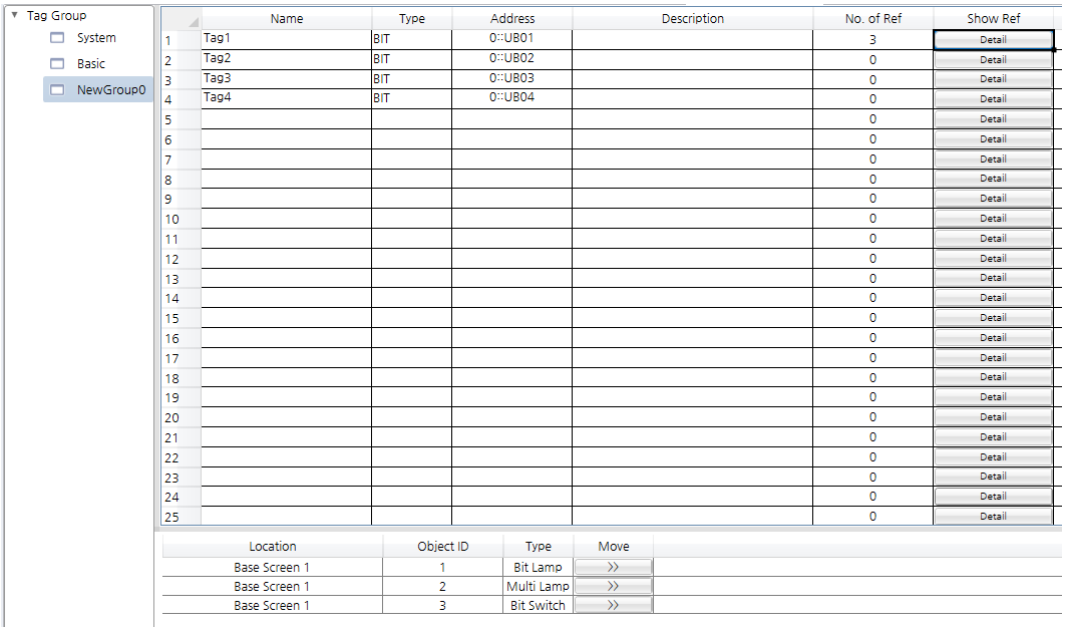
Click and drag till the line to fill and release click to fill out.



If select second line as reference device address, the value difference between first address and second address is to be standard value of increase.

(4) See used tag

It displays information about the usage number of tag and applied object.



Item	Description
No. of Ref	It displays the number of objects which are referring the tag.
Show Ref	Clicking ‘Detail’ displays the list of objects which are referring the tag in the “Tag referring object list”
Tag referring object list	It displays the screen name in which the object is placed, object ID, and type of object. It is able to move to the object directly.
Moving	Clicking it moves to the screen directly and select the object.

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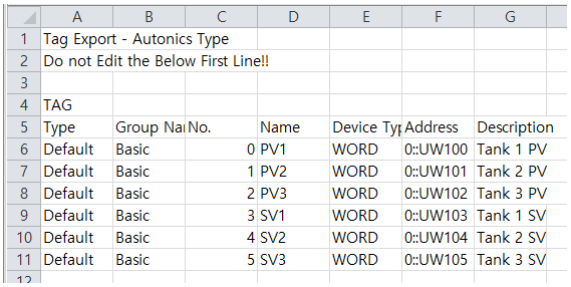
(5) Import/Export

It is for exporting/importing the tag list after saving them in *.csv file format.

Right click tag in the project window and opens the popup menu. Click export/import in the pop up menu to open the existing *.csv file or export the list in *.csv file format.

Structure of *.csv file is as following.



	A	B	C	D	E	F	G
1	Tag Export - Autonics Type						
2	Do not Edit the Below First Line!!						
3							
4	TAG						
5	Type	Group Nai	No.	Name	Device Ty	Address	Description
6	Default	Basic	0	PV1	WORD	0::UW100	Tank 1 PV
7	Default	Basic	1	PV2	WORD	0::UW101	Tank 2 PV
8	Default	Basic	2	PV3	WORD	0::UW102	Tank 3 PV
9	Default	Basic	3	SV1	WORD	0::UW103	Tank 1 SV
10	Default	Basic	4	SV2	WORD	0::UW104	Tank 2 SV
11	Default	Basic	5	SV3	WORD	0::UW105	Tank 3 SV

It can be edited with program Excel of Microsoft or other text editor.

(Display field: name, device type, address, number of reference)

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7 Figure

It adds line, multi-line, rectangle, rounded rectangle, polygon, circle, fan, chord, arc, rectangle scale, circle scale, semicircle scale, image or text.

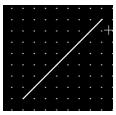
7.1 Line, Multi-line, Arc

(1) Drawing

- Line

1st Select line in [Figure] tab or [Figure] toolbar.

2nd Left click and drag from the starting point to the finishing point and release click. Pressing shift key helps to draw the vertivcally/horizontally straight line.



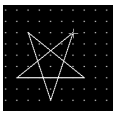
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the line.

4th Click 'OK' to draw the line.

- Multi-line

1st Select multi-line in [Figure] tab or [Figure] toolbar.

2nd Left click the starting point and the bended point, before right clicking the finishing point.



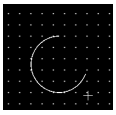
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the multi-line.

4th Click 'OK' to draw the multi-line.

- Arc

1st Select arc in [Figure] tab or [Figure] toolbar.

2nd Left click and drag from the point which is the left top corner of a square a acr inscribed in to the point of right bottom corner of the square, and release click. Pressing shift key helps to draw arc with same length of height and width.



3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the arc.

4th Click 'OK' to draw the arc.

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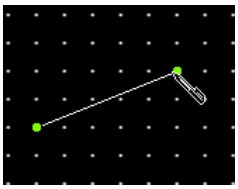
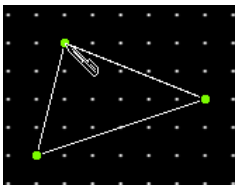
(2) Editing

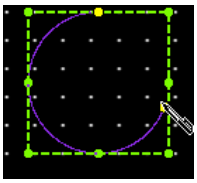
- Line, multi-line

  If user clicks a line or multi-line to edit it, the mouse curser on the ending/bending points is changed into pen shape. Click and drag the point to edit. If user clicks rest area of the screen, editing is completed. In order to modify property of the line/multi-line, double click the figure or click 'Property' in the right click pop up menu.

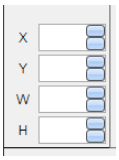
- Arc

  If user clicks an arc to edit it, the mouse curser on the ending points is changed into pen shape. Click and drag the point to edit. If user clicks rest area of the screen, editing is completed. In order to modify property of the arc, double click the figure or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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7.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Line Shape	Basic	It sets color, thickness and dash of the line.
	Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast
Dot Shape※1		It sets color and shape of the starting/finishing point.

※1: It is for line and multi-line. This menu is not displayed in property window of arc.

7.1.2 Extend Setting

(1) Extend setting: common effect

Item		Description
Shadow	Apply Shadow	It sets whether to apply shadow effect.
	Color, Distance, Direction	It sets color, distance, and direction (left top/center/bottom, center top/bottom, right top/center/bottom) of shadow.

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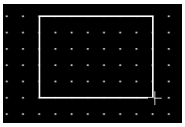
7.2 Rectangle/Rounded rectangle/Polygon/Circle/Fan/Chord

(1) Drawing

- Rectangle, rounded rectangle, circle, fan, chord

1st Select rectangle, rounded rectangle, circle, fan, or chord in [Figure] tab or [Figure] toolbar.

2nd Left click and drag from the starting point of the figure to the finishing point and release click. Pressing shift key helps to draw figure with same length of height and width.



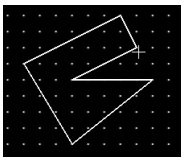
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of figure.

4th Click 'OK' to draw figure.

- Polygon

1st Select polygon in [Figure] tab or [Figure] toolbar.

2nd Left click the starting point and the bended point and right click the finishing point to connect starting point and finishing point.



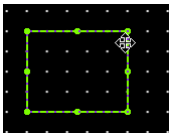
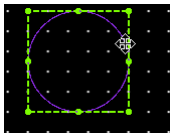
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of polygon

4th Click 'OK' to draw polygon

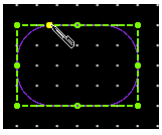
(2) Editing

- Rectangle, rounded rectangle, circle

  If user clicks a rectangle, rounded rectangle, or circle to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

  In case of rounded rectangle, user can adjust the size of rounded corner by dragging yellow dot on the left top. In order to modify property of the figure, double click the figure or click 'Property' in the right click pop up menu.



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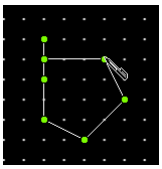
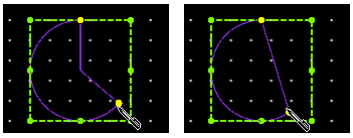
- Polygon

  If user clicks a polygon to edit it, the mouse curser on the bending points is changed into pen shape. Click and drag the point to edit. If user clicks rest area of the screen, editing is completed. In order to modify property of the polygon, double click the figure or click ‘Property’ in the right click pop up menu.



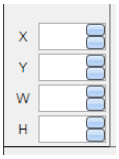
- Fan/Chord

  If user clicks a fan or chord to edit it, the mouse curser on the bending points is changed into pen shape. Click and drag the point to edit. If user clicks rest area of the screen, editing is completed. In order to modify property of the fan or chord, double click the figure or click ‘Property’ in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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7.2.1 Basic Setting

(1) Basic setting: basic

Item		Description
Line Shape	Basic	It sets color, thickness and dash of the line.
	Flash	It sets whether to use flash function and flashing speed for the line. Speed setting range: slow, normal, fast
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the figure. Speed setting range: slow, normal, fast

7.2.2 Extend Setting

(1) Extend setting: text

Item		Description
Text	Use	It sets use of text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to direct input.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(2) Extend setting: common effect

Item		Description
Shadow	Apply Shadow	It sets whether to apply shadow effect.
	Color, Distance, Direction	It sets color, distance, and direction (left top/center/bottom, center top/bottom, right top/center/bottom) of shadow.
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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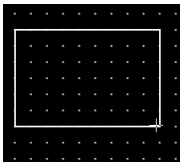
7.3 Rectangle Scale/Circle Scale/Semicircle Scale

(1) Drawing

1st Select rectangle scale, circle scale, or semicircle scale in [Figure] tab or [Figure] toolbar.

2nd Left click and drag from the starting point of the figure to the finishing point and release click. When drawing rectangle scale, pressing shift key helps to draw square. When drawing circle scale and semicircle scale, scale with same length of height and width is drawn, even without pressing shift key.



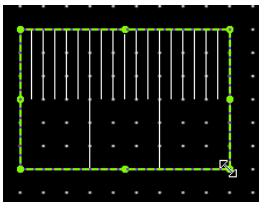
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of figure.

4th Click 'OK' to draw figure.

(2) Editing

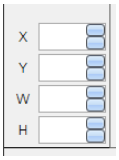
If user clicks a rectangle scale, circle scale, or semicircle scale to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the figure, double click the figure or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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7.3.1 Basic Setting

(1) Basic setting: basic

Item	Description
No. of Big Scales	It sets the number of big scales. Setting range: 2 to 100
Big Scale Length	It sets the length of big scale. Setting rang: length of small scale to 100
No. of Small Scales	It sets the number of small scale between two big scales. Setting range: 0 to 100
Small Scale Length	It sets the length of small scale. Setting range: 1 to length of big scale
Interval※1	It sets the interval of scales based on the height (width) of figure. Setting range: 1 to 100
Position	It sets the position of scale. Setting range: top, bottom, left, right
Direction※2	It sets the direction of scale. Setting range: inside, center, outside
Thickness	It sets the thickness of scale. Setting range: 1 to 100
Color	It sets the color of scale.
Apply Middle Scale	When the number of small scale is set to odd number, middle scale can be applied. The length of middle scale is as longer as the length of small scale plus 50% of the length difference between big scale and small scale.

※1: It is only for the rectangle scale.

※2: It is only for the circle scale and semicircle rectangle.

7.3.2 Extend Setting

(1) Extend setting: background

Item		Description
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the figure. Speed setting range: slow, normal, fast

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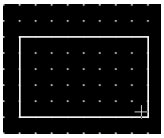
7.4 Image

(1) Drawing

1st Select image in [Figure] tab or [Figure] toolbar.

2nd Left click and drag from the starting point of the image to the finishing point and release click.
Pressing shift key helps to draw image with same length of height and width.



3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of image.

4th Click 'OK' to draw image.

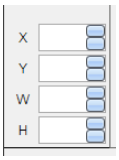
(2) Editing

If user clicks an image to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the image, double click the image or click 'Property' in the right click pop up menu.

- Size and coordinate setting

In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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7.4.1 Basic Setting

(1) Basic setting: basic

Item		Description
Fill	Form	It sets background type. According to type, following menus※1 are different. Setting range: image file, GIF animation, image library
Flash		It sets whether to use flash function and flashing speed for the figure. Speed setting range: slow, normal, fast

※1: Sub menu according to fill type

- Image

Item		Description
Image	Project	It is for reusing image in the project.
	Find	It searches image file in the PC.
	Fill	It sets alignment of the image in the figure. Setting range: none, fill, uniform, uniform to Fill
	Transparency	It transparentizes some part of the image. It opens “Color Extracting and Transparency Setting” window※1.

None	It inserts the image in original size.
Fill	It ignores the aspect ratio and fills the drawn image figure with the image.
Uniform	It fills the image figure with an aspect ratio. If the height of the image is longer than that of image figure, it fits the image to the height of the figure, and if the width of the image is longer than that of image figure, it fits the image to the width of the figure. (Empty space of the image figure remains.)
Uniform to Fill	It fills the image figure with an aspect ratio. If the height of the image is longer than that of image figure, it fits the image to the width of the figure, and if the width of the image is longer than that of image figure, it fits the image to the height of the figure. (Image can be clipped.)

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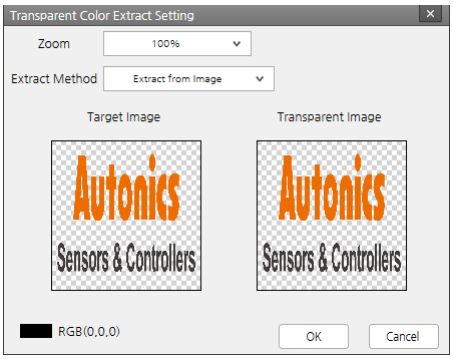
※1: “Color Extracting and Transparency Setting” window



Item	Description
Zoom	It displays target image and result image in a certain ratio.
Extract Method	It selects method for selecting color to transparentize. Setting range: Select color from image, Select color from color table
Target Image	It is displayed when the method is set to ‘Select color from image’. User can select color to be extracted from the image by clicking. The RGB value of the selected color is displayed under the image.
Select Color	It is displayed when the method is set to ‘Select color from color table’. User can select color to be extracted from the color table.
Result Image	It displays transparentized image as preview.
OK	It saved all settings.
Cancel	It cancels all settings and closed the window.

- GIF Animation

  Maximum 2 GIF animation figures can be drawn in a screen.

Item		Description
GIF animation	Project	It is for reusing GIF animation in the project.
	Fine	It searches GIF animation file in the PC.
	Edit	It is for making GIF animation image file.

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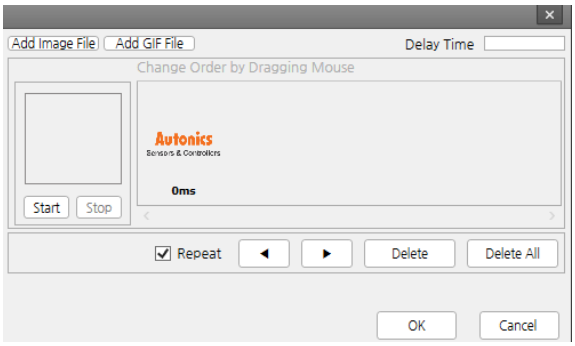
※ Edit GIF animation window



Item	Description
Add Image File	It adds another format of image file (*.gif, *.jpg) to GIF animation.
Add GIF file	It adds GIF image file to GIF animation.
Delay Time	It sets delay time of display for each frame.
Preview	It displays result GIF animation as preview.
Repeat	If it is checked, GIF animation is kept repeating.
Frame List	It helps to select a frame.
Delete	It deletes the selected frame.
Delete All	It deletes all of frames.
OK	It saved all setting.

- Image Library

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td rowspan="2">Standard Library</td><td>Find</td><td>It selects image from the image library.</td></tr>
<tr><td>Fill</td><td>It sets alignment of the image in the figure.
Setting range: none, fill, uniform, uniform to Fill
<table>
<tr><td>None</td><td>It inserts the image in original size.</td></tr>
<tr><td>Fill</td><td>It ignores the aspect ratio and fills the drawn image figure with the image.</td></tr>
<tr><td>Uniform</td><td>It fills the image figure with an aspect ratio.
If the height of the image is longer than that of image figure, it fits the image to the height of the figure, and if the width of the image is longer than that of image figure, it fits the image to the width of the figure.
(Empty space of the image figure remains.)</td></tr>
<tr><td>Uniform to Fill</td><td>It fills the image figure with an aspect ratio.
If the height of the image is longer than that of image figure, it fits the image to the width of the figure, and if the width of the image is longer than that of image figure, it fits the image to the height of the figure.
(Image can be clipped.)</td></tr>
</table></td></tr>
</table>

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7.4.2 Extend Setting

(1) Extend setting: background

Item		Description
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast
Flash		It sets whether to use flash function and flashing speed for the figure. Speed setting range: slow, normal, fast

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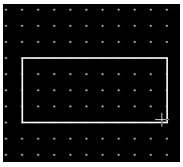
7.5 Text

It is for setting text to add in the screen.

(1) Drawing

1st Select text in [Figure] tab or [Figure] toolbar.

2nd Left click and drag from the starting point of the image to the finishing point and release click. Pressing shift key helps to draw text with same length of height and width.



3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of text.

4th Click 'OK' to draw text.

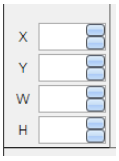
(2) Editing

If user clicks an image to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the text, double click the text or click 'Property' in the right click pop up menu.

- Size and coordinate setting

In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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7.5.1 Basic Setting

(1) Basic setting: basic

Item		Description
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

7.5.2 Extend Setting

(1) Extend setting: background

Item		Description
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the figure. Speed setting range: slow, normal, fast

(2) Extend setting: common effect

Item		Description
Shadow	Apply Shadow	It sets whether to apply shadow effect.
	Color, Distance, Direction	It sets color, distance, and direction (left top/center/bottom, center top/bottom, right top/center/bottom) of shadow.
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8 Object

Object is what changes shape or display according to the data value of the target which is being monitored and controlled.

In object, there are lamp, switch, numeric, text, window, nessage, graph, clock, recipe, logging, alarm, data list, option list and move coordinate.

8.1 Device

8.1.1 Device Setting

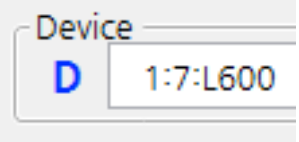
It is for setting device to be monitored or controlled by the object.

There are 2 method to setting device.

(1) Direct input

User directly enters device into the device address box.

Separate channel, address, device type, device address by colon ':'.



If the device in GP/LP internal device, set channel to 0.

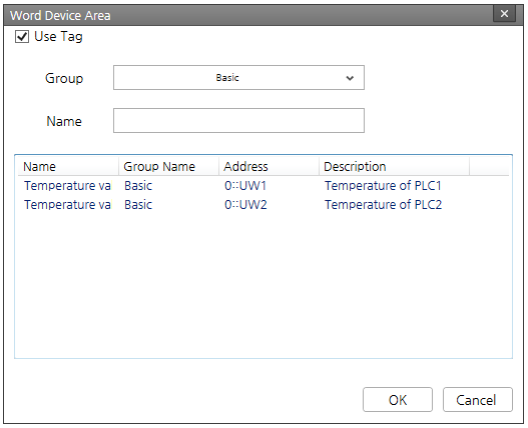
If the PLC does not support address, set address remained empty or to -1.

(2) Tag

User can register frequently used device as tag and manage them easily.

Following is the screen of registering temperature value 1, 2.

For detailed information about tag, please refer to '6.2.3 Tag'.



Item	Description
Use Tag	If it is checked, registered tag is used as device of the object.
Group	It selects the registered tag group.
Name	It displays the selected tag from the list.
Tag List	It displays tags included in the selected tag group.

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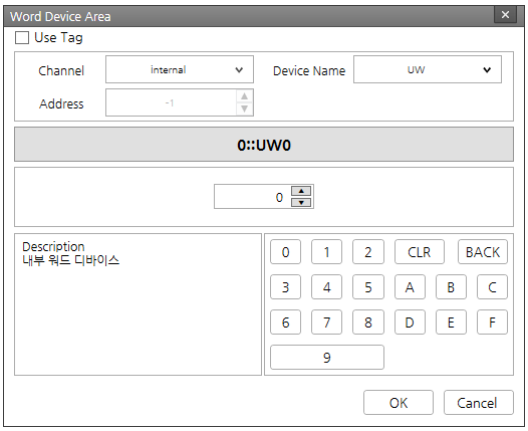
(3) Device area setting window

User can set device through 'Bit/Word Device Area' window which pops up when clicking [Basic Setting]-[Basic]-'Device'-'Detail' in the property window of each object. Set device in this window.



Item	Description
Use Tag	It sets whether to use tag. If it is not checked, user has to set channel, device name, and address of device.
Channel	It sets channel of device. It displays the list of connected device which is set in [Project Property]-[GP/LP Setting]. If you want to set GP/LP internal device through the window, set channel to 'internal'.
Device Name	It selects device name.
Address	It sets address. If the connected device does not support address, it is not activated.
Device Display	It displays the set device information (channel, address, device name, device address).
Device Description and Range	It displays description and range of the device which is set in device name. According to type of PLC, device address format and range is different.
Device Address Setting	It sets device address. Please refer to the device range.
Device Address Input Key Pad	It is key pad for entering device address. The activated keys are different by the type of device. Please refer to the device range.

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8.2 Lamp

Lamp displays the status of the device.

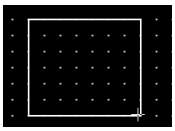
(1) Type

- Bit lamp: It changes its shape according to the ON/OFF status of the bit device.
- Word lamp: It changes its shape according to set condition for word device.
- Multi lamp: It changes its shape according to set condition which is ON/OFF value combination (3 to 13 combinations) of more than 2 bit device. Status combination must not be duplicated.

(2) Drawing

1st Select lamp in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the lamp to the finishing point and release click.



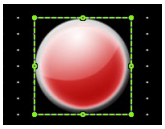
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the lamp.

4th Click 'OK' to draw the lamp.

(3) Editing

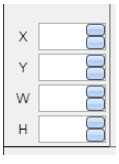
If user clicks a lamp to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the lamp, double click the lamp or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(4) Basic setting

User can set basic settings in the property window of lamp.

It is for setting basic aspect of lamp.

- Basic: It sets basic information of the lamp.
- Display: It sets shape or format of the lamp by device value.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of lamp.

It is for setting additional aspect of lamp.

- Security: It sets authorization for monitoring the lamp.
- Interlock: It sets condition of displaying the lamp.
- Offset: It sets offset device, so that reference device of the lamp is dynamically changed.
- Script: It sets script which is executed when the lamp is displayed.
- Common effect: It sets display effect of the lamp.

Available menus for each lamp are as follows.

Item	Bit lamp	Word lamp	Multi lamp
Security	○	○	X
Interlock	○	○	○
Offset	○	○	X
Script	○	○	X
Common effect	○	○	○

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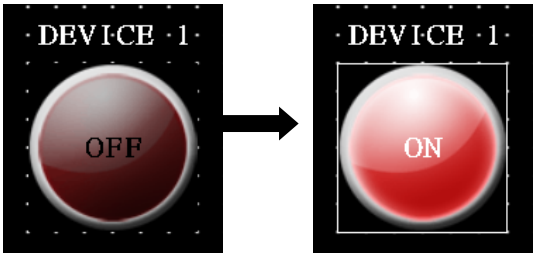
8.2.1 Bit Lamp

It changes its shape according to ON/OFF status of reference bit device.



8.2.1.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description of the lamp.
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(2) Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.2.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

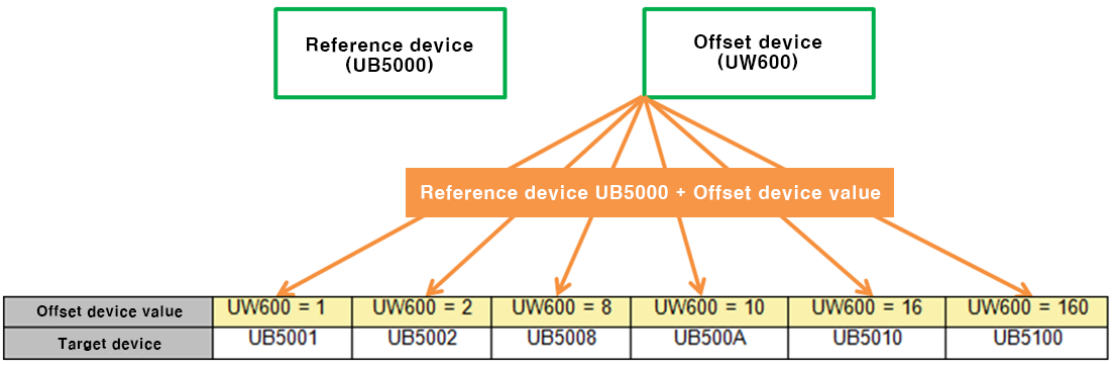
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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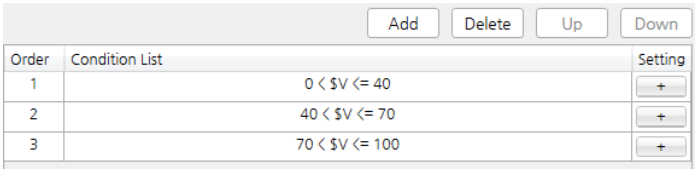
8.2.2 Word Lamp

It changes its shape according to set condition for word device.

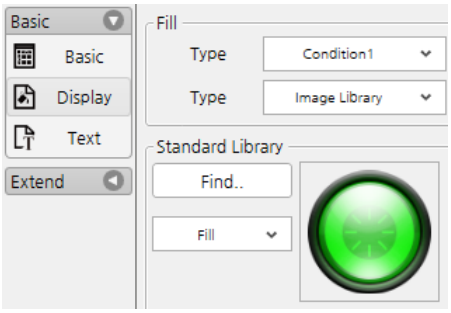
Ex.

Example of registering reference device and adding conditions for the word lamp

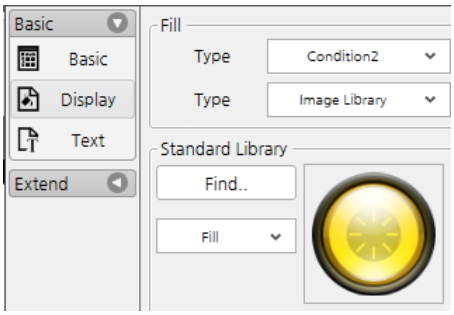
- Reference device: UW500
- Condition 1: 0<$V<=40, condition 2: 40<$V<=70, condition 3: 70<$V<=100



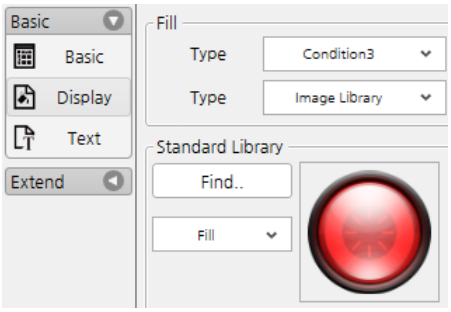
- Display setting
- Condition 1:



Condition 2:



Condition 3:



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- Display

Condition	Word device value	Lamp image
0<$V<=40	UW500 = 30	
40<$V<=70	UW500 = 50	
70<$V<=100	UW500 = 85	

8.2.2.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description of the lamp.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting		It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Condition	Add	It adds condition. Clicking add opens "Enter condition" window※1. Added conditions (maximum 8 conditions) are displayed in the list.
	Delete/Up/Down	It deletes the selected condition from the list of changes order in the list up and down.

※1: "Enter Condition" Window

Item		Description
Reference Device	Device	It displays reference device.User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window. To set condition, reference device must be set in 'basic setting: basic', and it is not able to add or change the reference device in "Enter Condition" window.
	Setting	It displays data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Formula		It sets conditional expression. Clicking 'Formula' displays "Operator Setting" window※2.

※2: "Operator setting" window

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Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

(2) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item		Description
Text	Use	It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type.

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Item	Description
	Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.2.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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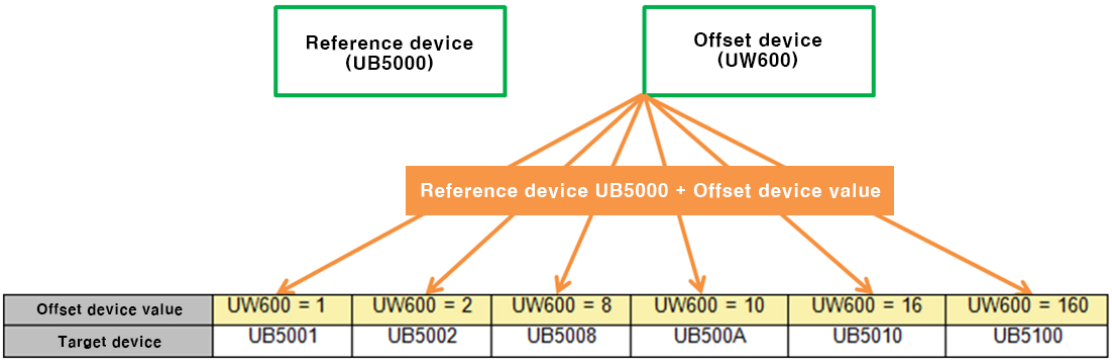
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.2.3 Multi Lamp

It changes its shape according to set condition which is ON/OFF value combination (3 to 13 combinations) of more than 2 bit device. Status combination must not be duplicated.

Ex.

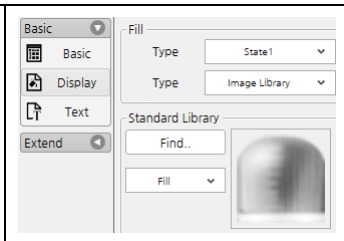
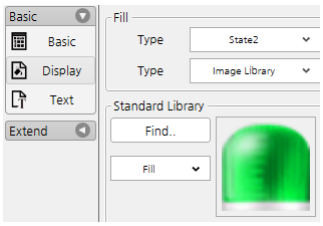
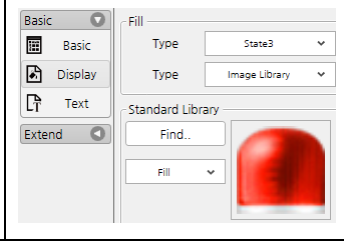
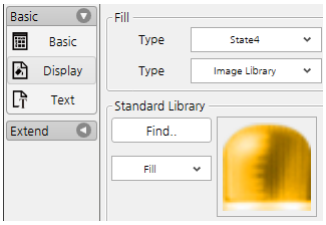
Example of registering reference device and adding conditions for the multi lamp.

- Bit device 1: UB5000, Bit device 2: UB6000
- Conditions

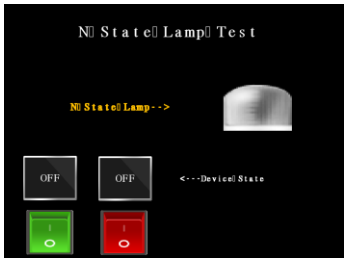
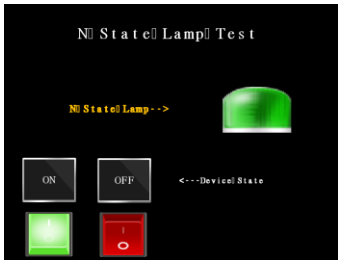
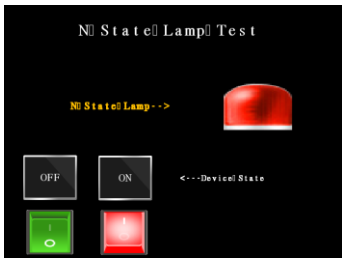
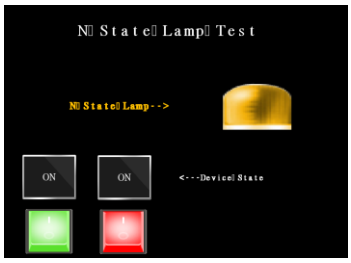
State Value Condition Table

	Device 1	Device 2
State1	OFF	OFF
State2	ON	OFF
State3	OFF	ON
State4	ON	ON

- Display setting

Status 1		Status 2	
Status 3		Status 4	

- Display

Status 1		Status 2	
Status 3		Status 4	

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8.2.3.1 Basic Setting

(1) Basic setting: basic

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td colspan="2">Definition</td><td>It sets name and description of the lamp.</td></tr>
<tr><td>Target</td><td>No. of Status</td><td>It set the number of status to display.
Setting range: 3 to 16</td></tr>
<tr><td colspan="2">Device Setting</td><td>It sets reference device.
User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.
The number of device is different, depending on the number of status.
<table>
<tr><th>No. of status</th><th>The number of activated device for setting</th></tr>
<tr><td>3 to 4</td><td>2</td></tr>
<tr><td>5 to 8</td><td>3</td></tr>
<tr><td>9 to 6</td><td>4</td></tr>
</table></td></tr>
<tr><td colspan="2">Condition Setting by Status</td><td>It sets status condition by device status. User can set status condition as many as the set number of status.
It sets ON/OFF status of each device.</td></tr>
</table>

(2) Basic setting: display

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td rowspan="2">Fill</td><td>Type</td><td>It selects target status to apply the display setting.
Default value: It is for the status that any condition is not satisfied.
Status (number): It is for the status of each condition which is set in [Basic setting: basic].</td></tr>
<tr><td>Form</td><td>It sets background type.
According to type, following menus are different.
Setting range: none, solid fill, gradation, pattern, image, image library</td></tr>
<tr><td colspan="2">Flash</td><td>It sets whether to use flash function and flashing speed for the object.
Speed setting range: slow, normal, fast</td></tr>
<tr><td rowspan="3">Frame</td><td>No.</td><td>It selects target status to apply the frame setting.
Default value: It is for the status that any condition is not satisfied.
Status (number): It is for the status of each condition which is set in [Basic setting: basic].</td></tr>
<tr><td>Use</td><td>It sets whether to use frame and color/thickness/dash of the frame.</td></tr>
<tr><td>Flash</td><td>It sets whether to use flash function and flashing speed for the frame.
Speed setting range: slow, normal, fast</td></tr>
</table>

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(3) Basic setting: Text

Item		Description
Text	Type	It selects target status to apply the text setting. Default value: It is for the status that any condition is not satisfied. Status (number): It is for the status of each condition which is set in [Basic setting: basic].
	Use	It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

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8.2.3.2 Extend Setting

(1) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(2) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.3 Switch

When it is touched, switch executes 1 or more operations.

(1) Type

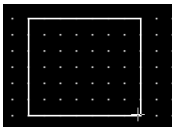
There are 5 kinds of switches.

- Bit switch: It controls bit device data to ON/OFF.
- Word switch: It executes writing fixed value, adding value, subtracting value, running script, increasing value of certain digit or decreasing value of certain digit of the device value.
- Change screen switch: It changes screen with option of device value, +1, -1, previous screen, or fixed screen.
- Special switch: It executes the special function (alarm history, alarm explorer, logging trend, logging table, system logging table, recipe editor, etc.).
- Types of special switch are followings.
  - Special key: It is for controlling an object.
  - ASCII: It is for inputting ASCII code. (It is used for creating user made key window.)
  - Unicode: It is for inputting Unicode. (It is used for creating user made key window.)
- Multi switch: It executes functions of bit switch, word switch, change screen switch, and special switch by single switch.

(2) Drawing

1st Select switch in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the switch to the finishing point and release click.



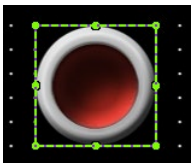
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the switch.

4th Click 'OK' to draw the switch.

(3) Editing

If user clicks a switch to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the switch, double click the switch or click 'Property' in the right click pop up menu.



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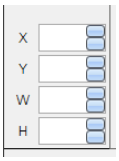
- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

(4) Basic setting

User can set basic settings in the property window of switch.

It is for setting basic aspect of switch.

- Basic: It sets basic information of the switch.
- Display: It sets shape or format of the switch by device value.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of switch.

It is for setting additional aspect of switch.

- Security: It sets authorization for monitoring/controlling the switch.
- Interlock: It sets condition of displaying/controlling the switch.
- Offset: It sets offset device, so that reference device of the switch is dynamically changed.
- Script: It sets script which is executed when the switch is displayed or touched.
- Common effect: It sets display effect of the switch.

Available menus for each switch are as follows.

Item	Bit switch	Word switch	Change screen switch	Special switch	Multi switch
Security	○	○	○	○	○
Interlock	○	○	○	○	○
Offset	○	○	○	X	X
Script	○	○	X	X	X
Common effect	○	○	○	○	○

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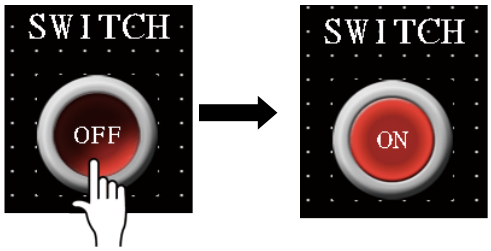
8.3.1 Bit Switch

It controls bit device data to ON/OFF.



8.3.1.1 Basic setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description of the switch.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Copy to Lamp		It sets the reference device also as lamp. It is activated when user checks to use lamp condition and set to use bit lamp for condition.
Control Form	Type	It sets switch operation. Set: When switch is touched, the bit device is turned on and the status is maintained. Reset: When switch is touched, the bit device is turned off and the status is maintained. Momentary: The bit switch is turned on only when the switch is being touched. Reverse: When switch is touched, status of the bit device is switched between ON and OFF.
Use Lamp Condition	Use Lamp Condition	If it is checked, user can set condition for displaying the switch appearance.
	Type	It sets lamp condition and reference device of the condition. Setting range: bit, word Bit: appearance of the switch is corresponding to the set lamp condition device value. Word: switch is displayed to ON status, when the set word condition is satisfied. It is only for the switch appearance, so that the reference device value of the switch is not affected.

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- Lamp condition device type: bit

Item	Description
Copy to Main	When lamp condition type is bit, It sets the lamp condition device as reference device of the bit switch.
Device	User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

- Lamp condition device type: word condition

Item		Description
Reference device	Device	User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
	Setting	It displays data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
	Formula	It sets conditional expression. Clicking 'Formula' displays "Operator Setting" window※1.

※1: "Operator setting" window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

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(2) Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item			Description
Text ON/ Text OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
Use			It sets whether to use text.
Type			It sets type of text. Setting range: vector font, bitmap font
Text Data	Type		It sets type of text data. Setting range: input text, text table
	Text Box		It is for entering text to display when the type is set to input text.
	String Table		It selects text string from the registered multilingual table when type is set to text table.
Property			It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type			It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font

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Item	Description
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.3.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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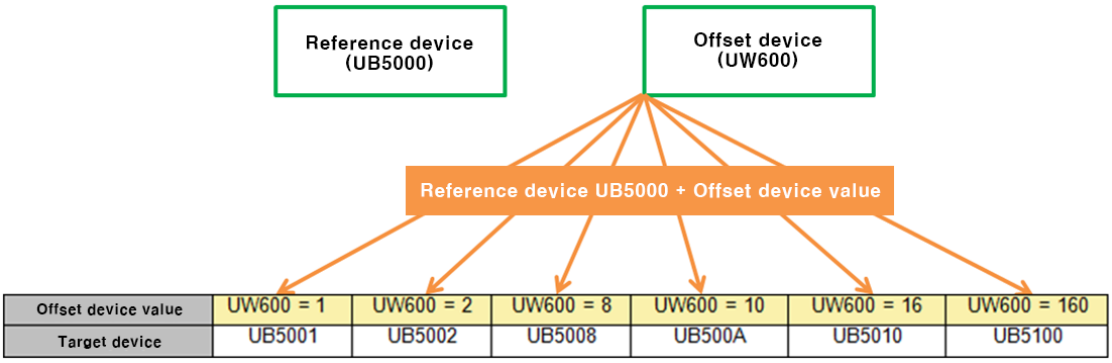
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Input Script	Use Input Script	If it is checked, user can use input script. Input script is what executed after the object it touched and operated.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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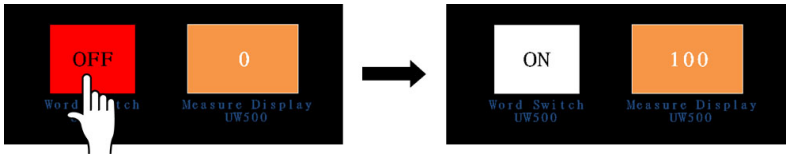
8.3.2 Word Switch

It executes writing fixed value, adding value, subtracting value, running script, increasing value of certain digit or decreasing value of certain digit of the device value.

Ex.

Example of word switch operation type: writing, operand type: fixed value (100)



8.3.2.1 Basic setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description of the switch.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting		It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Operation	Form	It sets device operation.

Writing	Writing the set value to the device
Adding	Adding the set value to the value of device
Subtracting	Subtracting the set value from the value of device
Script	Executing set script
Increasing value of certain digit	Increasing/Decreasing value of a certain digit of work device
Decreasing value of certain digit	

Operand※1	Depending on the operation form, menu is different.

※1: Operand setting depending on operation form

- Writing, Adding, Subtracting

Item		Description
Value	Type	It sets operand. Setting range: fixed value, device In fixed value, user has to set the fixed value. In device, user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

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- Script

Item	Description
Script No.	It sets script number.

- Increasing value of certain digit, Decreasing value of certain digit

Item	Description
Data Format	It sets format of data for increasing/decreasing value of certain digit. Setting range: HEX, BCD If digit position of the BCD data device is set to A to F, it is not operated.
Digit Position	It sets digit of value to be increased/decreased. Setting range Device size 16 bit: 1 to 4 Device size 32 bit: 1 to 8

(2) Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table

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Item		Description
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.3.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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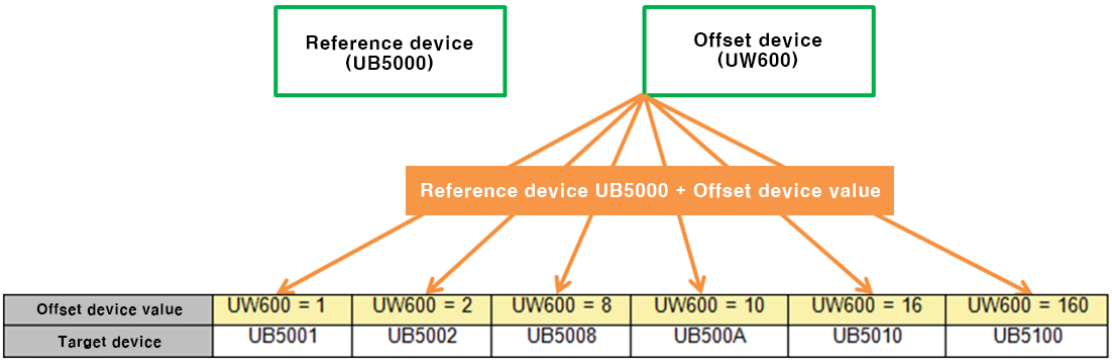
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Input Script	Use Input Script	If it is checked, user can use input script. Input script is what executed after the object it touched and operated.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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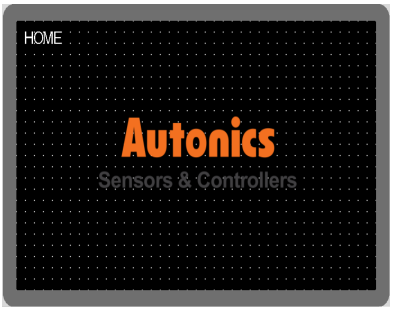
8.3.3 Change screen Switch

It changes screen with option of device value, +1, -1, previous screen, or fixed screen.

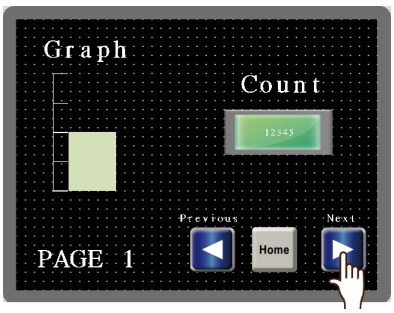
Draw the change screen switch on every screen to change the displayed screen to another.

Ex.

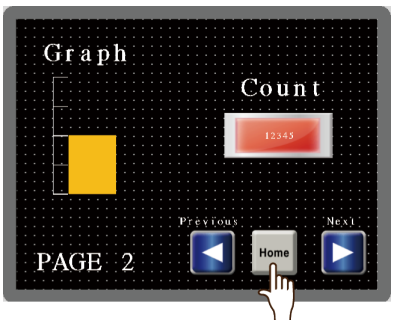
Home screen

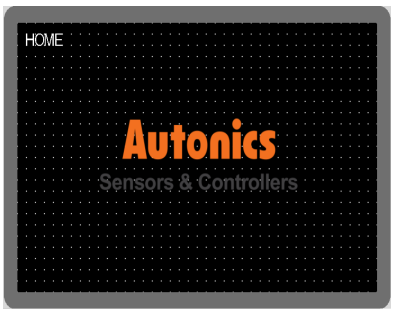


On the page 1, clicking the next switch (screen trsnsition +1) changes the displayed screen to page 2.



On the page 2, clicking the home switch (fixed screen 1) changes the displayed screen to home screen.





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8.3.3.1 Basic setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description of the switch.
Operation	It sets operation of the switch. Device: It sets device and uses the device value as screen number. +1: It moves to the next number of page. -1: It moves to the previous number of page. Previous screen: It moves to the previously displayed screen. Fixed screen: It moves to the fixed number of screen directly. Set the screen number to move or click 'Find' to search the screen.

(2) Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.

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Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.3.3.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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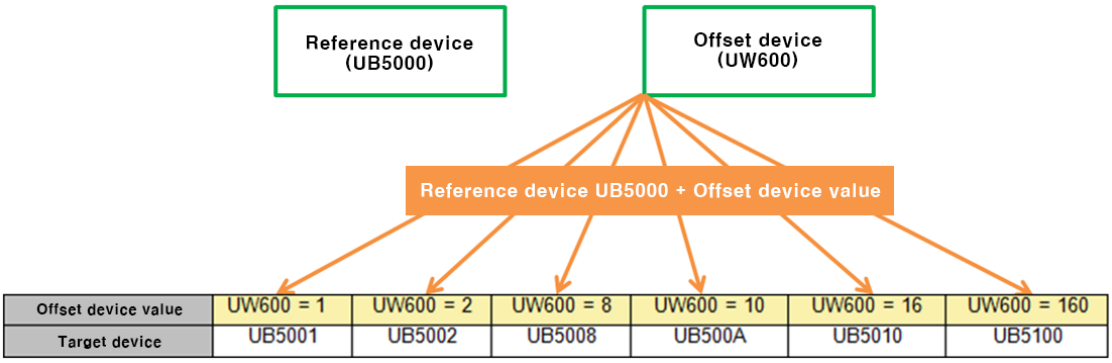
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.3.4 Special Switch

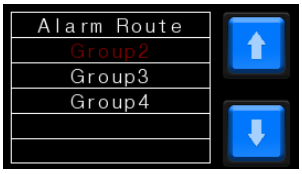
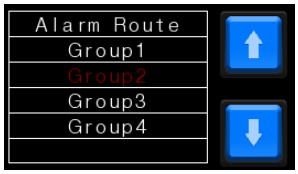
Special switch: It executes the special function (alarm history, alarm explorer, logging trend, logging table, system logging table, recipe editor, etc.).

Types of special switch are followings.

- Special key: It is for controlling an object.
- ASCII: It is for inputting ASCII code. (It is used for creating user made key window.)
- Unicode: It is for inputting Unicode. (It is used for creating user made key window.)

Ex.

Example of using the special switch with the alarm explorer

Special key: 1 line down	Special key: 1 line up
	

8.3.4.1 Basic Setting

(1) Basic setting: Basic

Item		Description
Definition		It sets name and description of the switch.
Special Switch	Type	It sets the type of the special switch. Setting range: special key, ASCII code, Unicode
	Target Object ID	It sets ID of target object which is to be controlled by the special switch. Object ID is displayed on the right top of the object, when 'Object ID' in [View]-[Show Object] is activated. If type of 'Basic setting: basic'-'Setting' is set to 'Etc.', the target object is the option list. If type of 'Basic setting: basic'-'Setting' is set to 'Control key', the target object is the text display object which of display type in 'Basic setting: basic'-'Text setting' is set to current input value.

- Special switch functions by setting (refer to the relevant object for detailed explanation.)

Object name	Special switch function	
Alarm history	Delete all cleared data	
	Details window	
	Delete selected data	
	Check selected data	
	Delete the number of occurrence of selected alarm	
	Alarm history filter	Target of alarm filter: occurrence, ok, clear, not checked, not clear

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Object name	Special switch function	
	Delete the number of occurrence of all alarm	
	Delete data on current page	
	Check data on current page	
	Print data	Alarm group ID: ALL
	Page down	
	Page up	
	One line down	
	One line up	
Alarm explorer, Logging table, System logging table	Page down	
	Page up	
	One line down	
	One line up	
Logging trend graph	Display fist data	
	Display last data	
	Display previous data	
	Display next data	
	Display data on a particular date	
	Close date searching	
Recipe editor	Open	
	Save	
	Save as	
Etc.	Switching language - Vector	Lang Change: Koran (Korea), English (America/Canada)
	Switching language - Bitmap	Lang change: Koran (Korea), English (America)
	Key window number	
Control key	Clear	
	Backspace	
	Enter	
	ESC	

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(2) Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font

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Item	Description
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.3.4.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(3) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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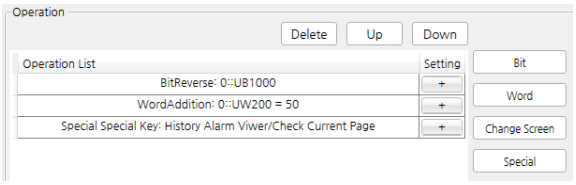
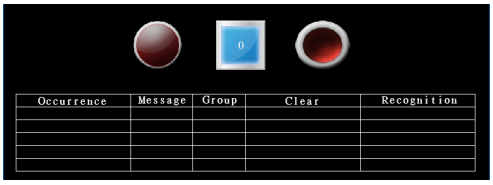
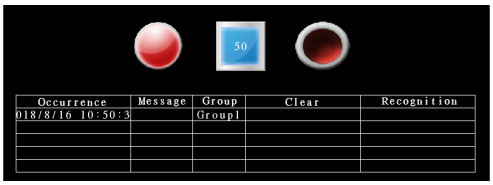
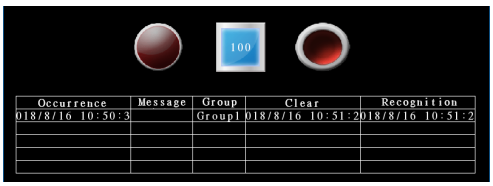
8.3.5 Multi Switch

It executes maximum 8 functions of bit switch, word switch, change screen switch, and special switch by single switch.

Ex.



Displaying status	Displaying image
The touched number of multi switch: 0 Bit lamp (reversal): OFF Displayed number: 0	
The touched number of multi switch: 1 Bit lamp (reversal): ON Displayed number: 50	
The touched number of multi switch: 2 Bit lamp (reversal): OFF Displayed number: 100	

8.3.5.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description of the switch.
Operation	List	It displays the list of registered multi switch operation.
	Bit	It adds the bit device function.
	Word	It adds the word device function.
	Change Screen	It adds the screen transition function. It can be added only once.
	Special	It adds the special function.
	Delete/Up/Down	It deletes the selected operation from the list of changes order up and down.

Note

In order to operate all functions user registered before switching to another screen, screen transition function must be set at the last order of the list.

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(2) Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font

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Item	Description
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.3.5.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(3) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.4 Numeric Input/Numeric Display

It is for inputting number or displaying number.

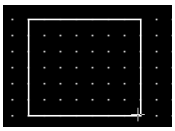
(1) Type

- Numeric input: When user input any value to this object using key window, the object displays the input value.
- Numeric display: It displays the value of reference word device in number. User can set various displaying conditions for the value of reference device, so that the object shows the status of the word device.

(2) Drawing

1st Select numeric input/numeric display in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the numeric input/numeric display to the finishing point and release click.



3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the numeric input/numeric display.

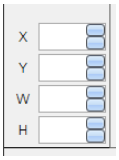
4th Click 'OK' to draw the numeric input/numeric display.

(3) Editing

If user clicks a numeric input/numeric display to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio. In order to modify property of the numeric input/numeric display, double click the numeric input/numeric display or click 'Property' in the right click pop up menu.

- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(4) Basic setting

User can set basic settings in the property window of numeric input/numeric display.
It is for setting basic aspect of numeric input/numeric display.

- Basic: It sets basic information of the numeric input/numeric display.
- Display: It sets shape or format of the numeric input/numeric display.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of numeric input/numeric display.
It is for setting additional aspect of numeric input/numeric display.

- Security: It sets authorization for monitoring/controlling the numeric input/numeric display.
- Interlock: It sets condition of displaying/controlling the numeric input/numeric display.
- Offset: It sets offset device, so that reference device of the numeric input/numeric display is dynamically changed.
- Script: It sets script which is executed when the numeric input/numeric display is displayed or touched.
- Conditional display: It sets displaying condition for each condition of value.
- Key window: It is used for selecting to use user made key window screen.
- Common effect: It sets display effect of the numeric input/numeric display.

Available menus for numeric input/numeric display are as follows.

Item	Numeric input	Numeric display
Security	○	○
Interlock	○	○
Offset	○	○
Script	○	○
Conditional display	○	○
Key window	○	X
Common effect	○	○

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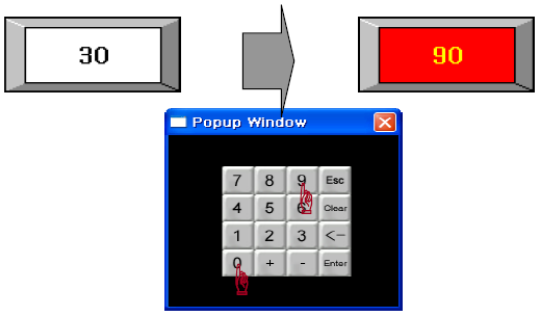
8.4.1 Numeric Input

When user input any value to this object using key window, the object displays the input value.



8.4.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Target	Size	It sets data size. Size: 16 bit, 32 bit
Display form	Number form	It sets data form. Form: signed decimal, unsigned decimal, BCD, binary, octal umber, hexadecimal
	Digit	It sets the number of digit to display. If there are more digits in data value than digit of the object, the object displays H, and if there are less digits in data value than digit of the object, the object displays L.
	No. of Decimal Places	When number form is set to signed decimal, unsigned decimal, or BCD, It sets the number of decimal places.
	Fill with 0	It displays empty digit by filling with 0. When the number of digit is set to 6 and the value to display is 1234, the object displays 001234.
Scale	Use Scaling	It sets to apply scaling to input value. Minimum/Maximum device value and minimum/maximum input value needs to be set. If input value is out of the range from minimum input value to maximum input value. Ex) Maximum device value: 100, maximum input value: 500, input value: 50 Displayed data with scaling: 10 Displayed data without scaling: 50
Use Password		If it is checked, data is displayed with '*'.

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(2) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item	Description
Type	It sets type of text. Setting range: vector font, bitmap font
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font, high quality
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.4.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.

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Item		Description
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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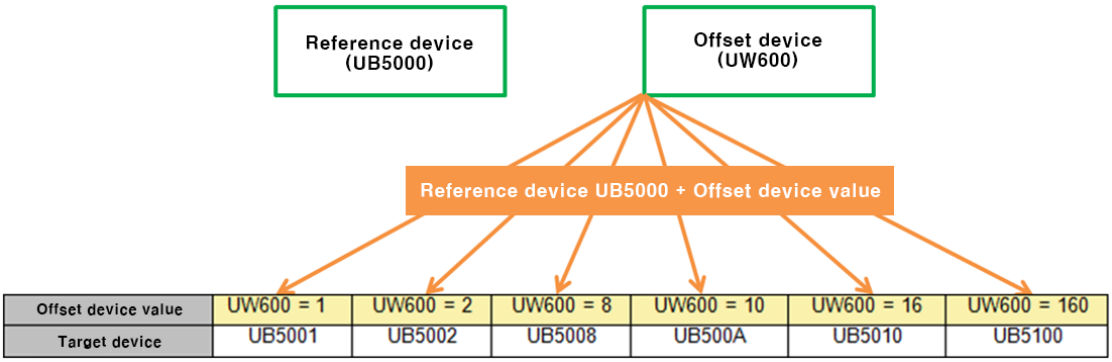
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Read	If it is checked, device from which data is read and device to which data is written are designated separately. It sets read offset device.
Check Write	If it is checked, the check write bit device in turned on when writing value to the reference device of basic setting is completed.
Reset Write Device	It sets period of time for which check write device is in on status.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Input Script	Use Input Script	If it is checked, user can use input script. Input script is what executed after the object it touched and operated.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

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(5) Extend setting: conditional display

It sets displaying condition for each condition of value.

Item		Description
Status Condition	List	It displays the list of registered conditions.
	Add	It adds condition. “Enter condition” window※1 appears.
	Delete/ Up/Down	It deletes the selected condition from the list of changes order up and down.

※1: “Enter condition” window

Item		Description
Reference Device	Device	It is reference device.
	Setting	It is data size and form.
Formula		It sets conditional expression. Clicking ‘Formula’ displays “Operator Setting” window※2.
Font color		It sets F.G color (font color) and B.G color (background color).
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

※2: “Operator setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

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(6) Extend setting: key window

It is used for selecting to use user made key window screen.

Item		Description
Use Key Window		If it is checked, user can use the user made key window. It selects key window number. Enter directly or select number by clicking 'Find'.
Call Position of Key Window		If it is checked, key window is displayed at the designated place. It sets X and Y coordinates. Setting range: under the vertical, horizontal resolution of GP/LP model for which the currently editing project is created. X coordinate: 0 to horizontal resolution Y coordinate: 0 to vertical resolution
Use Auto Cursor	Use Auto Cursor	If it is checked, user can use auto cursor function. It is function of moving the target of key window to the next object when 'Enter' key is touched in the displayed key window. This function is available only for the same kind of object which of auto cursor function is set to use.
	Input Order	It sets order of cursor input. Cursor moves to another according to the set input order among multiple same objects.
	Use Group	If it is checked, user can use auto cursor group. It is function of moving cursor to another within the set group which consists of objects more than 2.
	Group No.	It sets group number.

(7) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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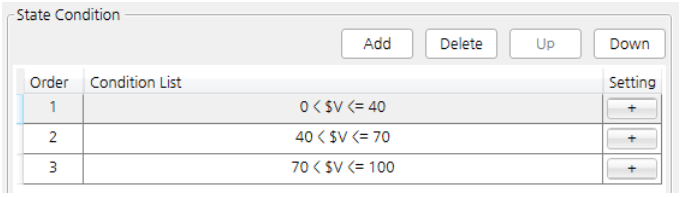
8.4.2 Numeric Display

It displays the value of reference word device in number. User can set various displaying conditions for the value of reference device, so that the object shows the status of the word device.

Ex.

Example of reference device and adding conditions for the numeric display

- Reference device: UW500
- Condition 1: 0<$V<=40, condition 2: 40<$V<=70, condition 3: 70<$V<=100



- Display setting

Condition 1	0 < $V <= 40 Formula Font Color F.G Color B.G Color
Condition 2	40 < $V <= 70 Formula Font Color F.G Color B.G Color
Condition 3	70 < $V <= 100 Formula Font Color F.G Color B.G Color

- Display

Condition	Status of the numeric display	Image of the numeric display
0<$V<=40	UW500 = 30	30
40<$V<=70	UW500 = 50	50
70<$V<=100	UW500 = 85	85

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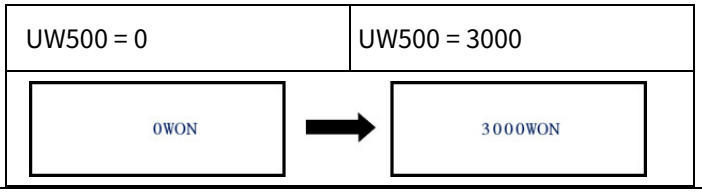
8.4.2.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Target	Size	It sets data size. Size: 16 bit, 32 bit
	Switching Endian	It switches type of endian, which is the method of ordering bytes to save data, between big endian and small little endian. Default setting of endian type is different by the connected device.
Display form	Number form	It sets data form. Form: signed decimal, unsigned decimal, BCD, binary, octal umber, hexadecimal
	Digit	It sets the number of digit to display. If there are more digits in data value than digit of the object, the object displays H, and if there are less digits in data value than digit of the object, the object displays L.
	No. of Decimal Places	When number form is set to signed decimal, unsigned decimal, or BCD, It sets the number of decimal places.
	Fill with 0	It displays empty digit by filling with 0. When the number of digit is set to 6 and the value to display is 1234, the object displays 001234.
Etc.	Display with Text	It sets text to display with the number, like unit. After inputting * as many as the set number of digit, input a text to display with the number. Ex) the number of digits: 4 → setting of 'display with text': ****Won 
	No. of Truncated digits	It sets the number of truncated digits when there are some data in the device value that user does not want to display. It truncates from bit of higher level. Setting range: 0 to 64 (under the number of digits)
Scale	Use Scaling	It sets to apply scaling to displayed value. Minimum/Maximum device value and minimum/maximum output value needs to be set. If input value is out of the range from minimum output value to maximum output value. Ex) Maximum device value: 100, maximum output value: 1000, input value: 100 Displayed data with scaling: 1000

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(2) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item	Description
Type	It sets type of text. Setting range: vector font, bitmap font
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font, high quality
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.4.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

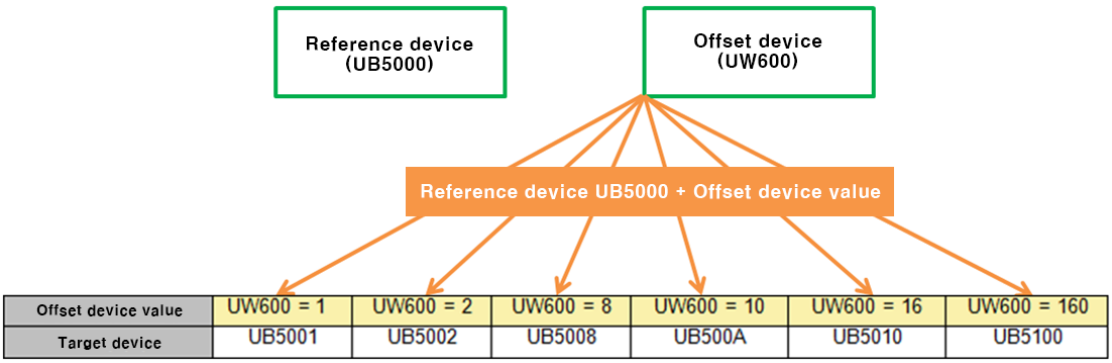
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: conditional display

It sets displaying condition for each condition of value.

Item		Description
Status Condition	List	It displays the list of registered conditions.
	Add	It adds condition. “Enter condition” window※1 appears.
	Delete/ Up/Down	It deletes the selected condition from the list of changes order up and down.

※1: “Enter condition” window

Item		Description
Reference Device	Device	It is reference device.
	Setting	It is data size and form.
Formula		It sets conditional expression. Clicking ‘Formula’ displays “Operator Setting” window※2.
Font color		It sets F.G color (font color) and B.G color (background color).
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

※2: “Operator setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right

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Item		Description
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

(6) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.5 Text Input, Text Display

It is for inputting text or displaying text.

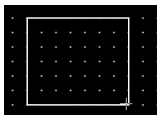
(1) Type

- Text input: When user input any text to this object using key window, the object displays the input text.
- Numeric display: It displays the value of reference word device in text. User can set various displaying conditions for the value of reference device, so that the object shows the status of the word device.

(2) Drawing

1st Select text input/text display in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the text input/text display to the finishing point and release click.

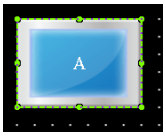


3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the text input/text display.

4th Click 'OK' to draw the text input/text display.

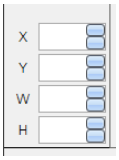
(3) Editing

If user clicks a text input/text display to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.
In order to modify property of the text input/text display, double click the text input/text display or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(4) Basic setting

User can set basic settings in the property window of text input/text display.

It is for setting basic aspect of text input/text display.

- Basic: It sets basic information of the text input/text display.
- Display: It sets shape or format of the text input/text display.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of text input/text display.

It is for setting additional aspect of text input/text display.

- Security: It sets authorization for monitoring/controlling the text input/text display.
- Interlock: It sets condition of displaying/controlling the text input/text display.
- Offset: It sets offset device, so that reference device of the text input/text display is dynamically changed.
- Conditional display: It sets displaying condition for each condition of value.
- Key window: It is used for selecting to use user made key window screen.
- Common effect: It sets display effect of the text input/text display.

Available menus for text input/text display are as follows.

Item	Text input	Text display
Security	○	○
Interlock	○	○
Offset	○	○
Conditional display	○	○
Key window	○	X
Common effect	○	○

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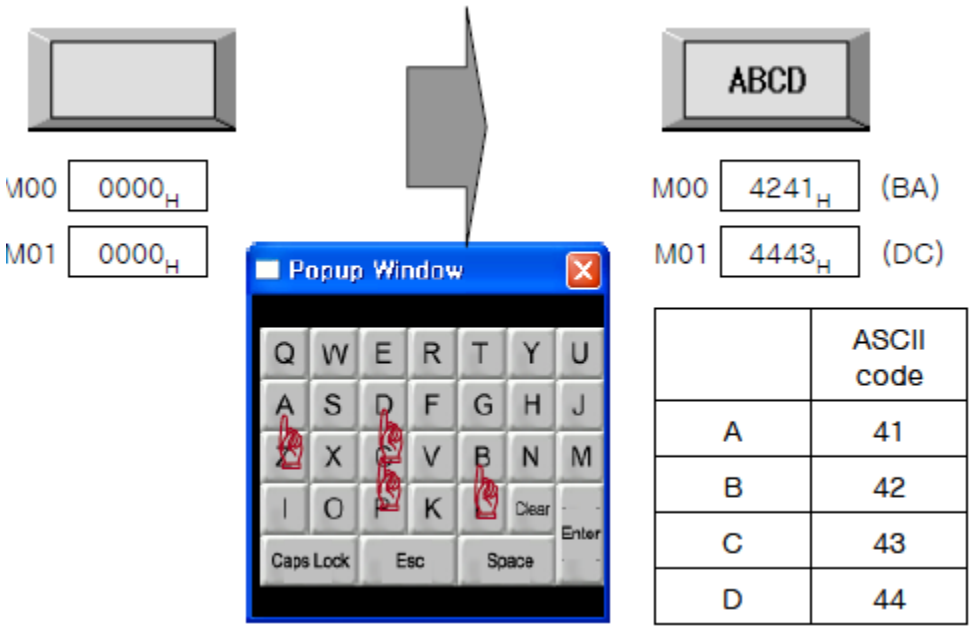
8.5.1 Text Input

When user input any text to this object using key window, the object displays the input text.

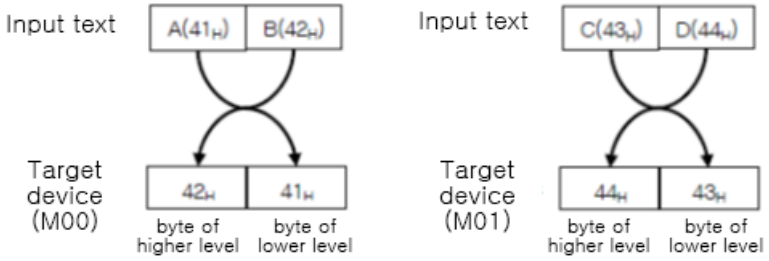
Ex.

Example of entering ABCD



	ASCII code
A	41
B	42
C	43
D	44

Writing data is applied from byte of lower level by word.



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8.5.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Text Setting	Type	It sets the type of text. Setting range: ASCII code, Unicode
	Use Data Byte Swap	If it is checked, inputting/displaying method of the text is swapped by byte. It is activated when the type is set to ASCII code.
	No. of Bytes	It sets the number of byte digit to display.
	Password	If it is checked, data is displayed with '*'.

(2) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item	Description
Type	It sets type of text. Setting range: vector font, bitmap font
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font, high quality
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

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8.5.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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Item		Description
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

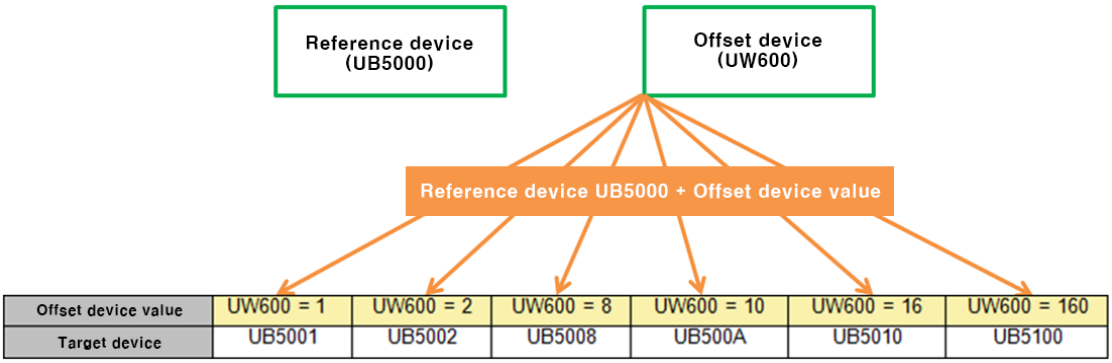
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Read	If it is checked, device from which data is read and device to which data is written are designated separately. It sets read offset device.
Check Write	If it is checked, the check write bit device in turned on when writing value to the reference device of basic setting is completed.
Return Write Device	It sets period of time for which check write device is in on status.

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(4) Extend setting: conditional display

It sets displaying condition for each condition of value.

Item		Description
Status Condition	List	It displays the list of registered conditions.
	Add	It adds condition. “Enter condition” window※1 appears.
	Delete/ Up/Down	It deletes the selected condition from the list of changes order up and down.

※1: “Enter condition” window

Item		Description
Reference Device	Device	It is reference device.
	Setting	It is data size and form.
Formula		It sets conditional expression. Clicking ‘Formula’ displays “Operator Setting” window※2.
Font color		It sets F.G color (font color) and B.G color (background color).
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

※2: “Operator setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

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(5) Extend setting: key window

It is used for selecting to use user made key window screen.

Item		Description
Use Key Window		If it is checked, user can use the user made key window. It selects key window number. Enter directly or select number by clicking 'Find'.
Call Position of Key Window		If it is checked, key window is displayed at the designated place. It sets X and Y coordinates. Setting range: under the vertical, horizontal resolution of GP/LP model for which the currently editing project is created. X coordinate: 0 to horizontal resolution Y coordinate: 0 to vertical resolution
Use Auto Cursor	Use Auto Cursor	If it is checked, user can use auto cursor function. It is function of moving the target of key window to the next object when 'Enter' key is touched in the displayed key window. This function is available only for the same kind of object which of auto cursor function is set to use.
	Input Order	It sets order of cursor input. Cursor moves to another according to the set input order among multiple same objects.
	Use Group	If it is checked, user can use auto cursor group. It is function of moving cursor to another within the set group which consists of objects more than 2.
	Group No.	It sets group number.

(6) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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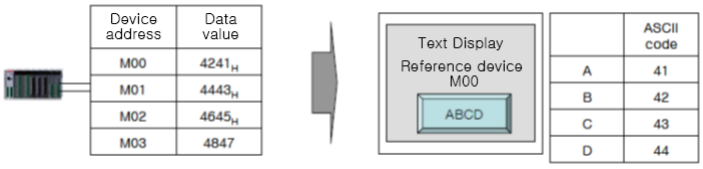
8.5.2 Text Display

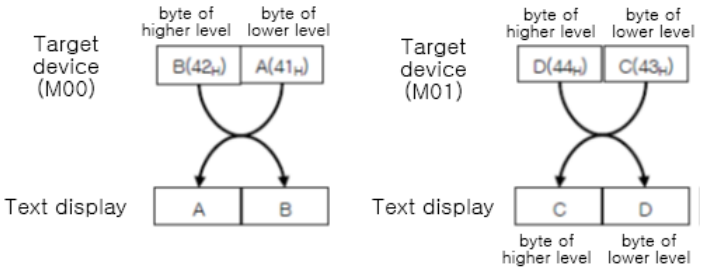
It displays word device value in ASCII code or Unicode.

Ex.

Example of reading ABC from the reference device



Reading data is applied from byte of lower level by word.



8.5.2.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Text Setting	Type	It sets the type of text. Setting range: ASCII code, Unicode
	Use Data Byte Swap	If it is checked, inputting/displaying method of the text is swapped by byte. It is activated when the type is set to ASCII code.
	No. of Bytes	It sets the number of byte digit to display.
	Display Type	It sets display type. Setting range: Device value – displaying data of the reference device Current input value – displaying the being input value Current upper limit value – displaying the upper limit value of the device Current lower limit value - displaying the lower limit value of the device

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(2) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item	Description
Type	It sets type of text. Setting range: vector font, bitmap font
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font, high quality
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.5.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

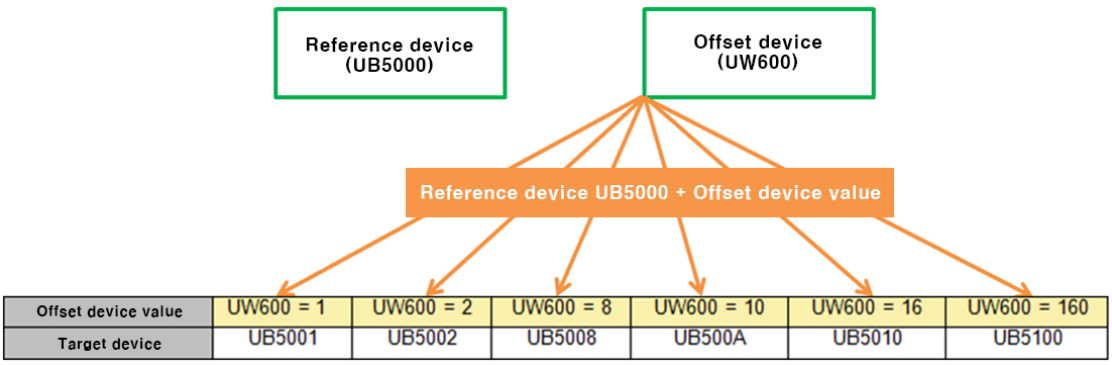
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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(4) Extend setting: conditional display

It sets displaying condition for each condition of value.

Item		Description
Status Condition	List	It displays the list of registered conditions.
	Add	It adds condition. “Enter condition” window※1 appears.
	Delete/ Up/Down	It deletes the selected condition from the list of changes order up and down.

※1: “Enter condition” window

Item		Description
Reference Device	Device	It is reference device.
	Setting	It is data size and form.
Formula		It sets conditional expression. Clicking ‘Formula’ displays “Operator Setting” window※2.
Font color		It sets F.G color (font color) and B.G color (background color).
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

※2: “Operator setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.6 Window

It displays window screen according to the set condition.

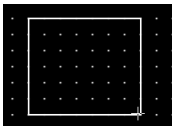
(1) Type

- Window calls bit: the set window screen is displayed according to the ON/OFF status of bit device.
- Window calls word: the set window screen is displayed according to the set condition of word device.

(2) Drawing

1st Select window calls bit/window calls word in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the window calls bit/window calls word to the finishing point and release click.

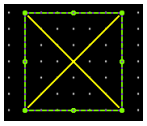


3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the window calls bit/window calls word.

4th Click 'OK' to draw the window calls bit/window calls word.

(3) Editing

If user clicks a window calls bit/window calls word to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.
In order to modify property of the window calls bit/window calls word, double click the window calls bit/window calls word or click 'Property' in the right click pop up menu.



- Coordinate setting

  In property window, X/Y coordinates on the screen.

Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.

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(4) Basic setting

User can set basic settings in the property window of window calls bit/window calls word.
It is for setting basic aspect of window calls bit/window calls word.

- Basic: It sets basic information of the window calls bit/window calls word.

(5) Extend setting

User can set extend settings in the property window of window calls bit/window calls word.
It is for setting additional aspect of window calls bit/window calls word.

- Security: It sets authorization for monitoring/controlling the window calls bit/window calls word.
- Interlock: It sets condition of displaying/controlling the window calls bit/window calls word.
- Offset: It sets offset device, so that reference device of the window calls bit/window calls word is dynamically changed.
- Script: It sets script which is executed when the window calls bit/window calls word is displayed or touched.

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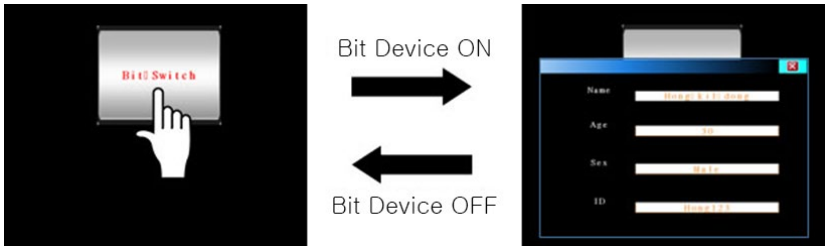
8.6.1 Window calls bit

The set window screen is displayed according to the ON/OFF status of bit device



8.6.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Screen No.		It sets window screen to display by entering the number directly or clicking 'Find' button.
Etc.	Bit Condition	It sets bit device condition for calling the window screen. Setting range: ON, OFF
	Window Screen Form	It sets display form of the called window screen. Pop up: Called window screen appears as pop up screen. Space of the base screen beneath the called window screen is hidden. Overlap: Called window screen is overlapped on the base screen. It the window screen has transparent background, space of the window screen without any object is displayed.
	Position	It sets displaying position of the called window screen in the screen. Setting range: left top, center, right top, left bottom, right bottom

8.6.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

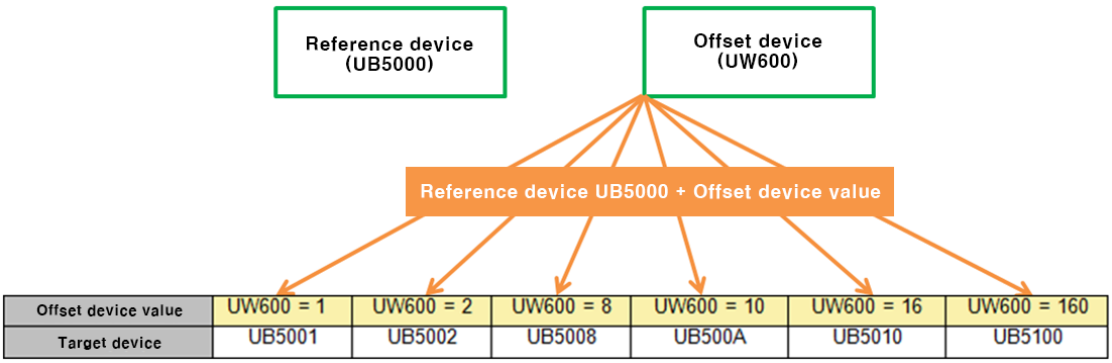
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

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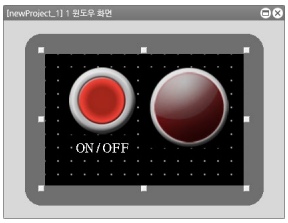
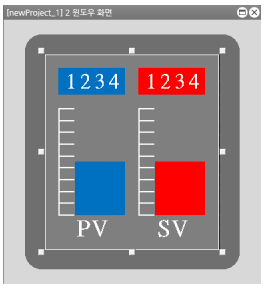
8.6.2 Window calls word

The set window screen is displayed according to the set condition of word device

Ex.

Example of resistering reference device and adding conditions

- Reference device: UW600
- Condition 1: $V==0, condition 2: 0<$V<=70, condition3: 70<$V
- Window screen setting

Window screen 1	
Window screen 2	
Window screen 3	

- Display setting

Condition 1	$V == 0 Formula Window Screen No. 1 Find
Condition 2	0 < $V <= 70 Formula Window Screen No. 2 Find
Condition 3	70 < $V Formula Window Screen No. 3 Find

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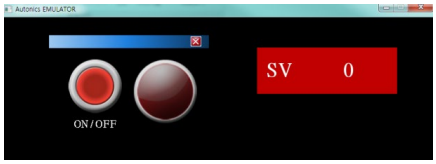
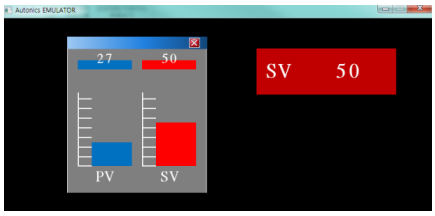
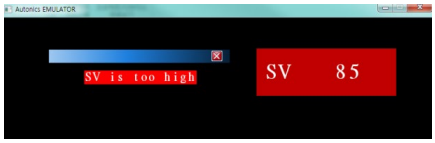
- Display

Condition	Word device status	Screen display
$V==0	UW500 = 0	
0<$V<=70	UW500 = 50	
70<$V	UW500 = 85	

8.6.2.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting	Size	It sets data size. Size: 16 bit, 32 bit
	Type	It sets data form. Form: signed decimal, unsigned decimal, BCD
Etc.	Bit Condition	It sets bit device condition for calling the window screen. Setting range: ON, OFF
	Window Screen Form	It sets display form of the called window screen. Pop up: Called window screen appears as pop up screen. Space of the base screen beneath the called window screen is hidden. Overlap: Called window screen is overlapped on the base screen. It the window screen has transparent background, space of the window screen without any object is displayed.
	Position	It sets displaying position of the called window screen in the screen. Setting range: left top, center, right top, left bottom, right bottom
Status Condition	List	It displays the list of registered conditions.
	Add	It adds condition. "Condition Setting" window※1 appears.
	Delete/ Up/Down	It deletes the selected condition from the list of changes order up and down.

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※1: 'Condition Setting' window

Item		Description
Reference Device	Device	It is reference device.
	Setting	It is data size and form.
Formula		It sets conditional expression. Clicking 'Formula' displays "Operator Setting" window※2.
Window Screen		It sets window screen to display by entering the number directly or clicking 'Find' button.

※2: "Operator setting" window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

8.6.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

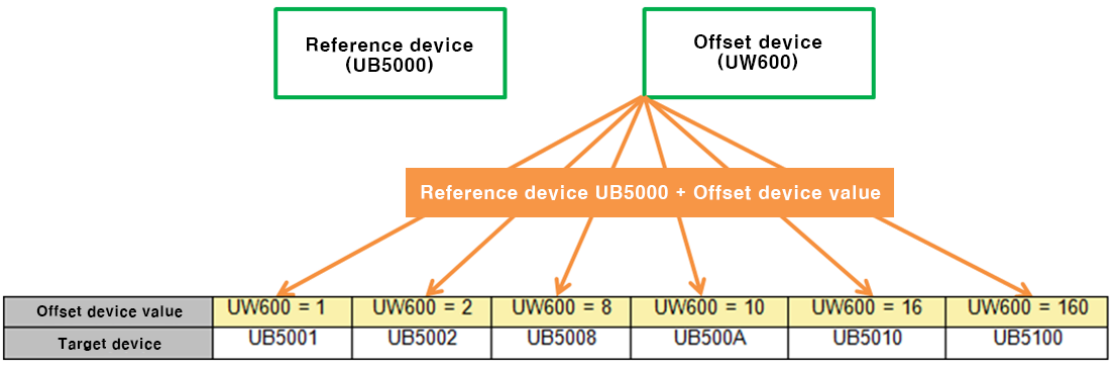
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

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8.7 Message

It displays the set messages accodting to the set conditions.

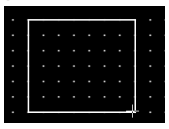
(1) Type

- Bit message: the set message is displayed according to the ON/OFF status of bit device.
- Word message: the set message is displayed according to the set condition of word device.

(2) Drawing

1st Select bit message/word message in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the bit message/word message to the finishing point and release click.



3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the bit message/word message.

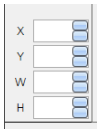
4th Click 'OK' to draw the bit message/word message.

(3) Editing

If user clicks a bit message/word message to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.
In order to modify property of the bit message/word message, double click the bit message/word message or click 'Property' in the right click pop up menu.

- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(4) Basic setting

User can set basic settings in the property window of bit message/word message.

It is for setting basic aspect of bit message/word message.

- Basic: It sets basic information of the bit message/word message.
- Display: It sets shape or format of the bit message/word message.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of bit message/word message.

It is for setting additional aspect of bit message/word message.

- Security: It sets authorization for monitoring the bit message/word message.
- Interlock: It sets condition of displaying the bit message/word message.
- Offset: It sets offset device, so that reference device of the bit message/word message is dynamically changed.
- Conditional display: It sets displaying condition for each condition of value.
- Common effect: It sets display effect of the bit message/word message.

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8.7.1 Bit Message

The set message is displayed according to the ON/OFF status of bit device.

OFF: Status 'Abnormal'	ON: Status 'Normal'

8.7.1.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(2) Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.7.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

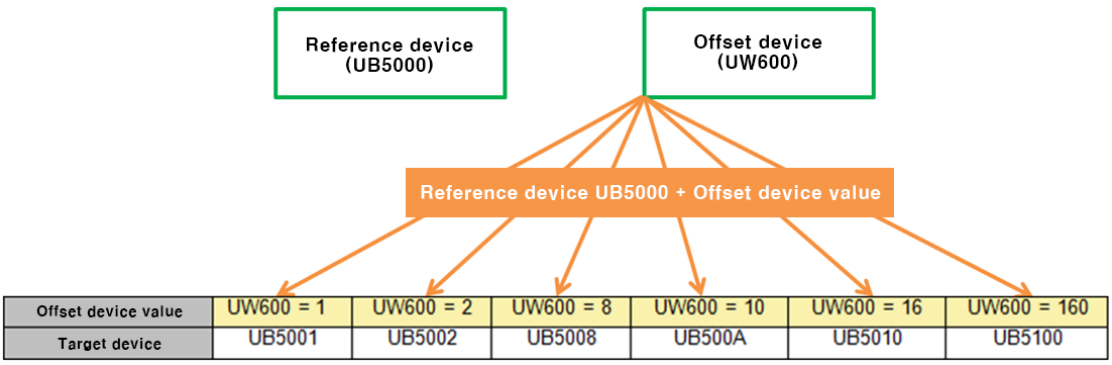
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.7.2 Word Message

the set message is displayed according to the set condition of word device.

Word device value < 10	10 < Word device value < 50	50< Word device value < 100

8.7.2.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description of the lamp.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting		It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Status	No. of Status	It set the number of status to display in text. Setting range: 1 to 32
	Message Type	It sets message type of displaying condition. Setting range: direct, condition Direct: Displaying the designated message of each status number which is same as the reference device value. Condition: Displaying the designated message according to the set status condition.
Status Condition	List	It displays the list of registered conditions.
	Add	It adds condition. "Condition Setting" window※1 appears.
	Delete/ Up/Down	It deletes the selected condition from the list of changes order up and down.

※1: 'Condition Setting' window

Item		Description
Reference Device	Device	It is reference device.
	Setting	It is data size and form.
Formula		It sets conditional expression. Clicking 'Formula' displays "Operator Setting" window※2.
Font color		It sets F.G color (font color) and B.G color (background color).
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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※2: “Operator setting” window

Item		Description
Operand	Preview	It displays set conditional expression in preview.
	Type	It sets conditional expression. Setting range: AB (2 terms), ABC (3 terms)
	Operator	<: value on the left is less than value on the right <=: value on the left is less than or equal to value on the right ==: value on the left is equal to value on the right !=: value on the left is not equal to value on the right >: value on the left is greater than value on the right >=: value on the left is greater than or equal to value on the right
	Operand	Operand (A): first operand setting Operand (B): second operand setting Operand (C): third operand setting (only activated when operand type is set to ABC (3 terms))
Operand Setting		Device: using data of the set device as operand value Reference device: using data of the reference device of the object as operand value Hold value: using the set constant value as operand value

(2) Basic setting: display

Item		Description
Fill	Type	It selects target status to apply the display setting. Default value: It is for the status that any condition is not satisfied. Status: It is for the status of each condition which is set in [Basic setting: basic].
	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame	No.	It selects target status to apply the frame setting. Default value: It is for the status that any condition is not satisfied. Status: It is for the status of each condition which is set in [Basic setting: basic].
	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item		Description
Text	Type	It selects target status to apply the text setting. Default value: It is for the status that any condition is not satisfied. Status (number): It is for the status of each condition which is set in [Basic setting: basic].
	Use	It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.7.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

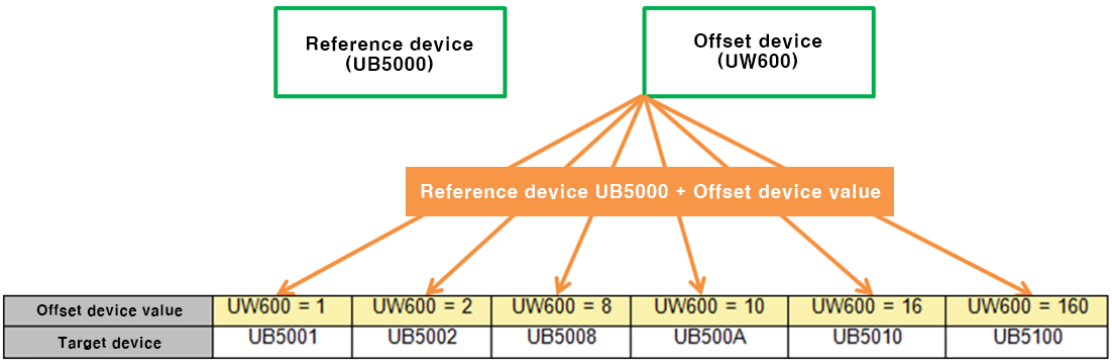
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

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(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.8 Graph

It the displays device value in a graph.

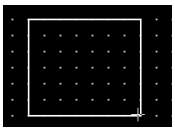
(1) Type

- Bar graph: It displays the device value in the bar shape.
- Pie graph: It displays the device value as proportions in a circle.
- Panel meter graph: It displays the device value in circle shape gauge.
- Statistic graph: It displays the value of 2 or more devices in a circle or rectangle as a proportion.
- Real time trend graph: It displays the device value in a stretching line in real time.
- Logging trend graph: It displays the device value of logging target in a stretching line.
- Real time distribution graph: It displays the device value of consecutive devices in dot/line.
- Logging distribution graph: It displays the device value of logging target in dot/line.

(2) Adding

1st Select graph in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the graph to the finishing point and release click.



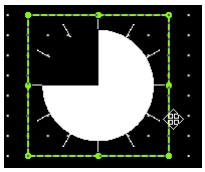
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the graph.

4th Click 'OK' to draw the graph.

(3) Editing

If user clicks a graph to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the graph, double click the graph or click 'Property' in the right click pop up menu.



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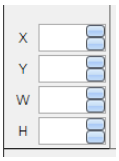
- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

(4) Basic setting

User can set basic settings in the property window of graph.

It is for setting basic aspect of graph.

- Basic: It sets basic information of the graph.
- Format: It sets length or shape of the parts which forms the graph.
- Display: It sets shape or format of the graph.
- Reference line: It sets reference line.

(5) Extend setting

User can set extend settings in the property window of graph.

It is for setting additional aspect of graph.

- Security: It sets authorization for monitoring the graph.
- Interlock: It sets condition of displaying the graph.
- Offset: It sets offset device, so that reference device of the graph is dynamically changed.
- Script: It sets script which is executed when the graph is displayed or touched.
- Show Scale Number: It sets arrangement of the label (number) to the scale.
- Common effect: It sets display effect of the graph.
- Cursor: It sets cursor function which displays the value at the point where the mouse cursor is pointing.
- Special switch: It sets to draw special switch for the graph automatically.

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Available menus for graph are as follows.

Item	Bar graph	Pie graph	Panel meter graph	Statistic graph	Real time trend graph	Logging trend graph	Real time distribution graph	Logging distribution graph
Security	○	○	○	○	○	○	○	○
Interlock	○	○	○	○	○	○	○	○
Offset	○	○	○	○	○	X	X	X
Script	○	○	○	X	○	X	X	X
Show scale number	○	○	○	X	○	○	X	X
Common effect	○	○	○	○	○	○	○	○
Cursor	X	X	X	X	X	○	X	X
Special switch	X	X	X	X	X	○	X	X

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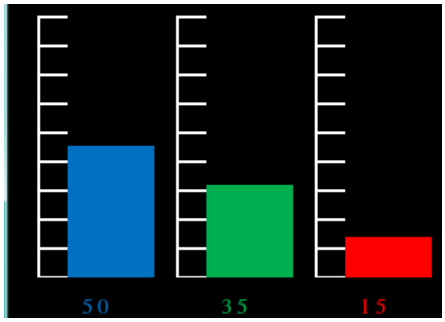
8.8.1 Bar Graph

It displays the device value in the bar shape.



8.8.1.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Setting	It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Maximum value/ Minimum value	It sets maximum value/minimum device value to display. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

(2) Basic setting: format

Item		Description
Direction	Graph Direction※1	It sets direction of the bar. Setting range: Top->Bottom, Bottom->Top, Left->Right, Right->Lest
Graph Region	Fill	It sets fill pattern of the graph. Clicking 'Setting' opens "Background Setting" window※2.
	Fill B.G	It sets fill pattern of the background. Clicking 'Setting' opens "Background Setting" window※2.
Outline		It sets whether to use background and color.
Scale	Use Scale	It sets whether to use graph scale.
	Length	It sets percentage of the scale region in graph region.
	Margin Ratio	It sets percentage of the scale to display in scale region.
	Position※1	It sets location of scale ruler in the scale region. According to the graph direction, fit setting and scale location has different option. Setting range: left, right / top, bottom

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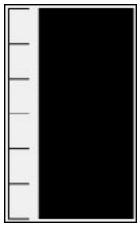
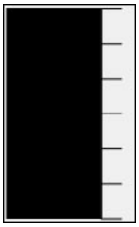
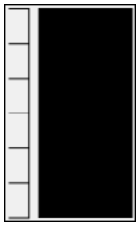
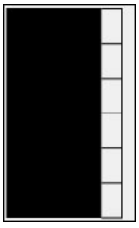
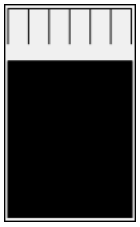
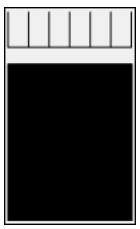
Item		Description
	Location※1	It sets location of scale region. According to the graph direction, fit setting and scale location has different option. Setting range: left, right / top, bottom
	No. of Scale/ Thickness/ Color	It sets the number/thickness/color of graduated ruler in scale.
	Background	It sets background of the scale. Clicking 'Setting' opens "Background Setting" window※2.
	Flash Scale	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

※1: Fitting and location of scale according to the graph direction

Graph direction: Top -> Bottom, Bottom -> Top

Location / Position	Left	Right
Left		
Right		

Graph direction: Left -> Right, Right -> Left

Location / Position	Top	Bottom
Top		
Bottom		

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※2: “Background setting” window

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

8.8.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

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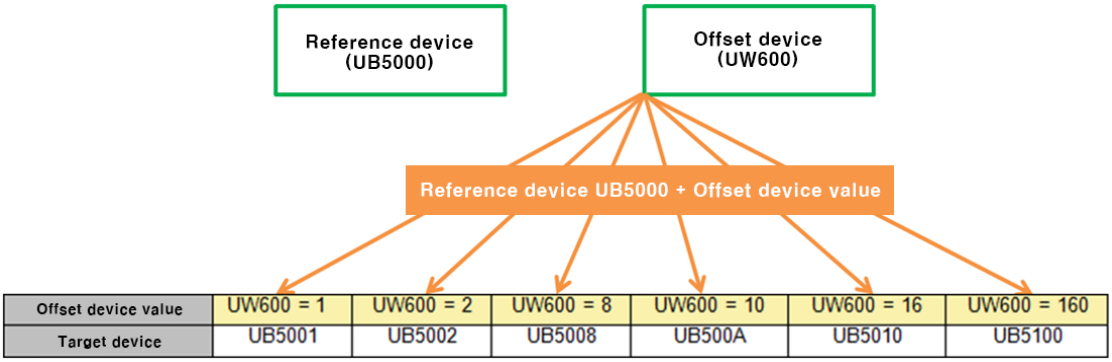
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

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(5) Extend setting: show scale number

It sets arrangement of the label (number) to the scale.

Item		Description
Numeric Info.	Minimum/ Maximum value	It sets minimum/maximum value of the graph.
	Horizontal/ Vertical Size	It sets the horizontal/vertical size of the text figure.
Type		It sets type of text. Setting range: vector font, bitmap font
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(6) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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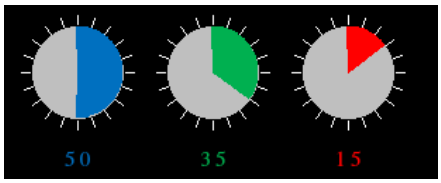
8.8.2 Pie Graph

It displays the device value as proportions in a circle.



8.8.2.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Setting	It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Maximum value/ Minimum value	It sets maximum value/minimum device value to display. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

(2) Basic setting: format

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td rowspan="5">Basic</td><td>Direction</td><td>It sets the progressing direction of the graph.
Setting range: clock wise, counter clock wise</td></tr>
<tr><td>Shape</td><td>It sets shape of the graph.
Setting range: circle, semi-circle, 1/4, 3/4</td></tr>
<tr><td>Location</td><td>It sets the place of the graph in a circle, according to the shape.
<table>
<tr><th>Shape</th><th>Setting</th></tr>
<tr><td>Circle, semi-circle</td><td>Left, top, right, bottom</td></tr>
<tr><td>1/4</td><td>Left, left top, top, right top, right, right bottom, bottom, left bottom</td></tr>
<tr><td>3/4</td><td>Top, bottom</td></tr>
</table></td></tr>
<tr><td>Fill</td><td>It sets fill pattern of the graph. Clicking 'Setting' opens "Background Setting" window※1.</td></tr>
<tr><td>Fill B.G</td><td>It sets fill pattern of the background. Clicking 'Setting' opens "Background Setting" window※1.</td></tr>
</table>

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Item		Description
Scale	No. of Big Scales/ Big Scale Length	It sets the number and length of big scales.
	No. of Small Scales/ Small Scale Length	It sets the number and length of small scales. When the number of small scale is set to odd number, middle scale can be applied.
	Color/Thickness	It sets the color and thickness of the scale.
	Apply Middle Scale	When the number of small scale is set to odd number, middle scale can be applied. The length of middle scale is as longer as the length of small scale plus 50% of the length difference between big scale and small scale.
Flash		It sets whether to use flash function and flashing speed for the scale. Speed setting range: slow, normal, fast
Outline		It sets whether to use outline and color or the circle.

※1: “Background setting” window

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast It is not displayed when the filling type is set to none.
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed of the frame. Speed setting range: slow, normal, fast

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8.8.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

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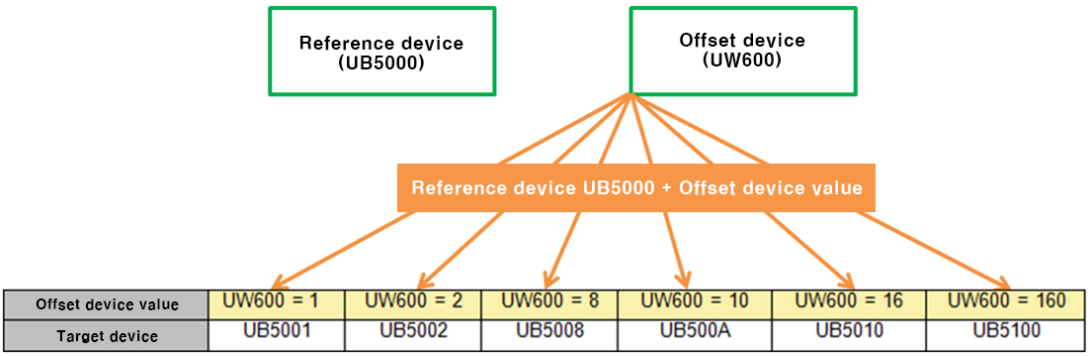
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: show scale number

It sets arrangement of the label (number) to the scale.

Item		Description
Numeric Info.	Minimum/ Maximum value	It sets minimum/maximum value of the graph.
	Horizontal/ Vertical Size	It sets the horizontal/vertical size of the text figure.
Type		It sets type of text. Setting range: vector font, bitmap font

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Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(6) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.8.3 Panel Meter Graph

It displays the device value in circle shape gauge.

8.8.3.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Setting	It sets data size and form. Size: 16 bit, 32 bit Form: signed decimal, unsigned decimal, BCD
Maximum value/ Minimum value	It sets maximum value/minimum value to display. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

(2) Basic setting: format

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td rowspan="4">Type</td><td>Direction</td><td>It sets the progressing direction of the graph.
Setting range: clock wise, counter clock wise</td></tr>
<tr><td>Shape</td><td>It sets shape of the graph.
Setting range: circle, semi-circle, 1/4, 3/4</td></tr>
<tr><td>Location</td><td>It sets the place of the graph in a circle, according to the shape.
<table>
<tr><th>Shape</th><th>Setting</th></tr>
<tr><td>Circle, semi-circle</td><td>Left, top, right, bottom</td></tr>
<tr><td>1/4</td><td>Left, left top, top, right top, right, right bottom, bottom, left bottom</td></tr>
<tr><td>3/4</td><td>Top, bottom</td></tr>
</table></td></tr>
<tr><td>Fill B.G</td><td>It sets fill pattern of the background. Clicking 'Setting' opens "Background Setting" window※1.</td></tr>
<tr><td rowspan="2">Scale</td><td>No. of Big Scales/ Big Scale Length</td><td>It sets the number and length of big scales.</td></tr>
<tr><td>No. of Small</td><td>It sets the number and length of small scales.</td></tr>
</table>

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Item		Description
	Scales/ Small Scale Length	When the number of small scale is set to odd number, middle scale can be applied.
	Color/Thickness	It sets the color and thickness of the scale.
	Apply Middle Scale	When the number of small scale is set to odd number, middle scale can be applied. The length of middle scale is as longer as the length of small scale plus 50% of the length difference between big scale and small scale.
Needle		It sets the type, thickness, length, color, and outline color of the needle.
Pin		It sets color, outline color, and size of the needle pin.
Outline		It sets whether to use outline and color or the circle.

※1: “Background setting” window

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast It is not displayed when the filling type is set to none.
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed of the frame. Speed setting range: slow, normal, fast

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8.8.3.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

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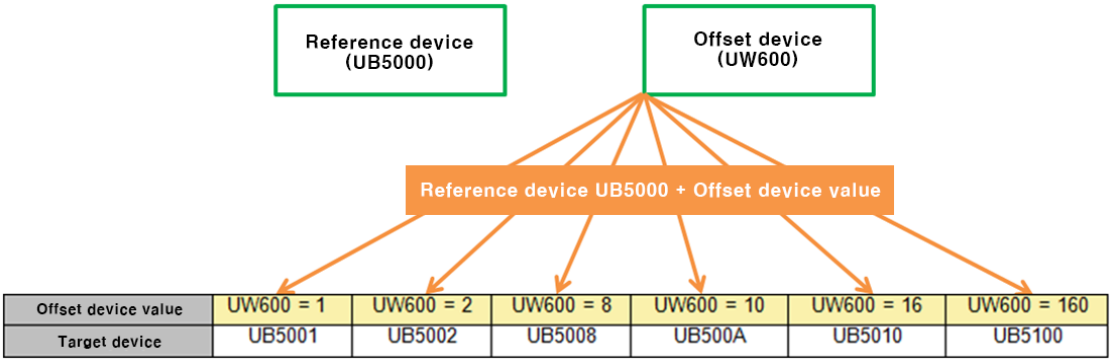
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

(5) Extend setting: show scale number

It sets arrangement of the label (number) to the scale.

Item		Description
Numeric Info.	Minimum/ Maximum value	It sets minimum/maximum value of the graph.
	Horizontal/ Vertical Size	It sets the horizontal/vertical size of the text figure.
Type		It sets type of text. Setting range: vector font, bitmap font

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Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(6) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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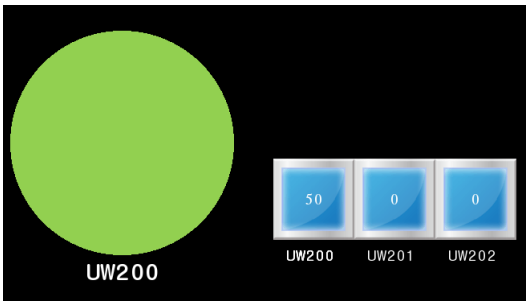
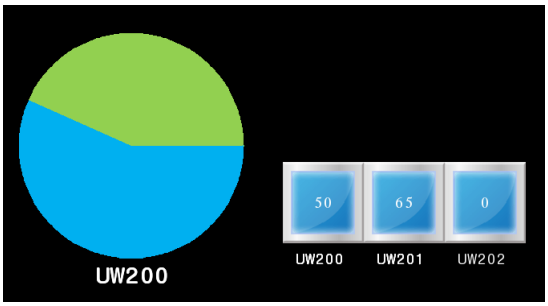
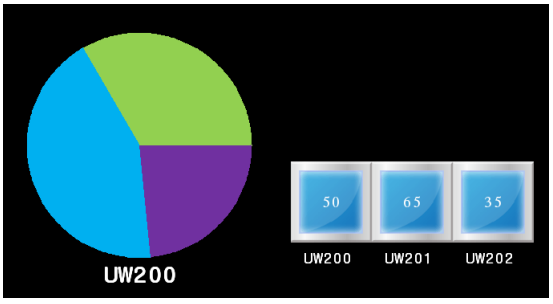
8.8.4 Statistic Graph

It displays the value of 2 or more devices in a circle or rectangle as a proportion.

Ex.

When the reference device is set to UW200 and the number of division is set to 3, the statistic graph shows the consicutive device value from UW200 to UW202 in the circle as proportion.

Inputting value in UW200	
Inputting value in UW200, UW201	
Inputting value in UW200, UW201, UW202	

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8.8.4.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Device	It sets reference device. According to the set number of division, device address is automatically allocated from the set reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Setting	It sets data size and form. Size: 16 bit, 32 bit Form: unsigned decimal, BCD

(2) Basic setting: format

Item		Description
Graph Shape		It sets shape of the graph. Setting range: circle, rectangle
Divisions		It sets the number of division. Setting range: 2 to 8
Use Outline/ Outline Color		It sets whether to use outline and color of the outline.
Fill	Type	It selects a partition to set fill pattern.
	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast It is not displayed when the filling type is set to none.
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed of the frame. Speed setting range: slow, normal, fast

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8.8.4.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

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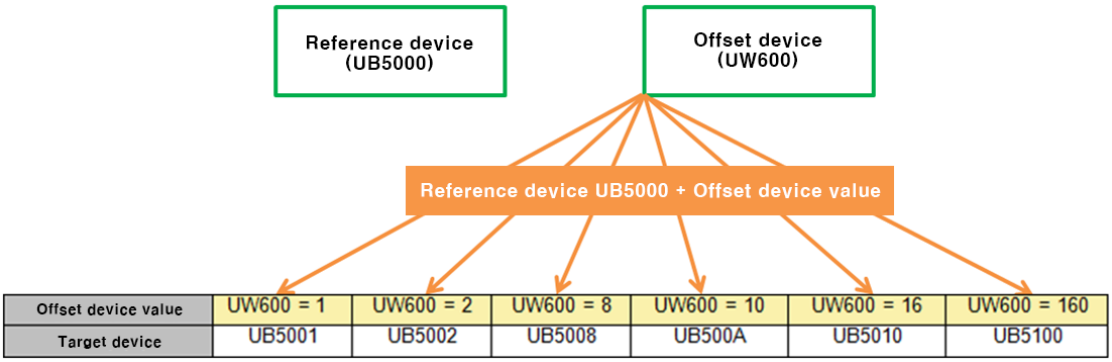
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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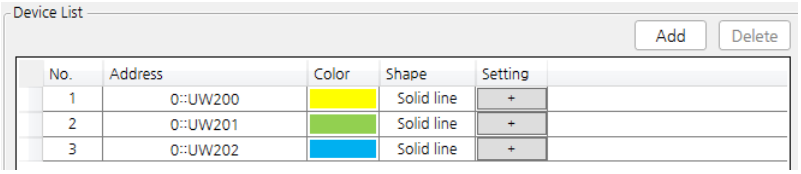
8.8.5 Real-time Trend Graph

It displays the device value in a stretching line in real time.

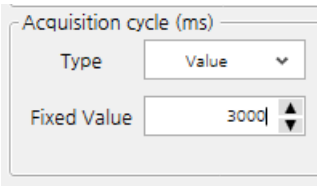
Real-time trend graph can be drawn upto 4 in a screen.

Ex.

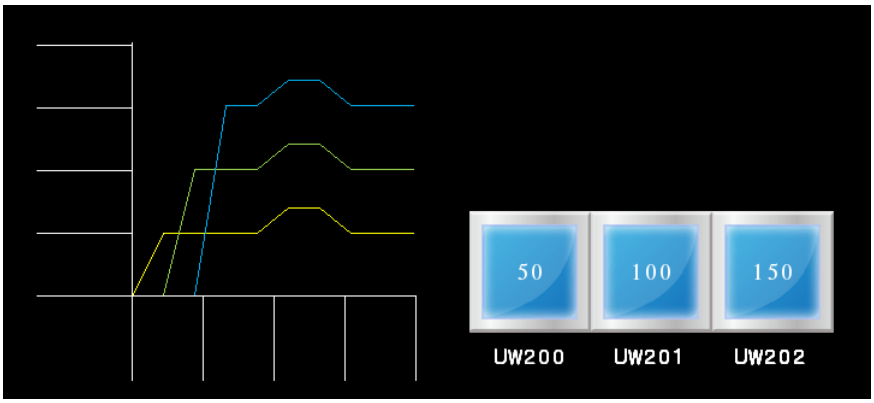
- Device list setting



- Acquisition cycle



- Graph display



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8.8.5.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Device List	List	It displays the list of added reference devices.
	Add	It adds reference device (maximum 8 devices). 'Device' setting window appears. Set reference device and format (line shape, color, color over H-limit and color under L-limit).
	Delete	It deletes the selected device from the list.
Maximum value/ Minimum value		It sets maximum value/minimum value to display. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.
Alarm Value	Alarm Value	If it is checked, user can set alarm value. When the device value is out of the range from low-limit value to high-limit value, graph line is displayed in the set color over H-limit and color under L-limit, which is set in the device list.
	High-Limit/ Low-Limit	It sets high-limit value and low-limit value for alarm. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

(2) Basic setting: format

Item	Description
Start Position	It sets the starting position of the graph. Setting range: right -> left, left -> right
Moving Unit	It sets the unit of data moving. When updating the graph by data acquisition, data moves by the set unit number. Setting range: 0 < moving unit <= the number of data to display
Fill B.G	It sets fill pattern of the background. Clicking 'Setting' opens "Background Setting" window※1.

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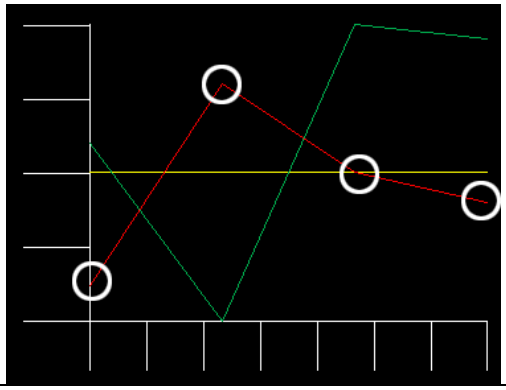
Item		Description
No. of Data to Display		It sets the number of data to display. Setting range: 3 <= the number of data to display <= 800 User has to enter the value directly. Example of setting the number to 4 
Acquisition Cycle (ms)		It sets data acquiring cycle. (unit: 1ms) Setting range: fixed value, device Fixed value: user has to enter the value directly. Setting range: 100 to 60,000 Device: the value of the set device is used as acquiring time, and minimum cycle time is automatically set to 100ms. User can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.
Scale	Show X/Y-axis	If it is checked, user can set to display X/Y axis scale.
	Region Ratio	It sets percentage of the scale region in graph region.
	Margin Ratio	It sets percentage of the scale to display in scale region.
	Direction	It sets direction of the scale. Setting range X-axis: top, bottom Y-axis: right, left
	No. of scale/ Thickness/ Color	It sets the number/thickness/color of graduated ruler in scale.
	Background	It sets background of the scale. Clicking 'Setting' opens "Background Setting" window※2.

※1: "Background Setting" window for fill background

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library

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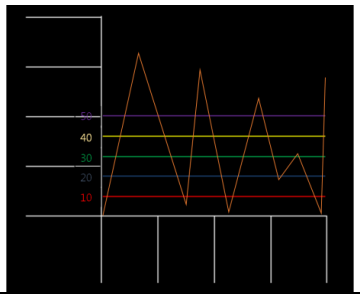
※2: “Background Setting” window for scale background

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(4) Basic setting: reference line

Item	Description
Use Reference Line	If it is checked, use can use reference line. Reference line is to mark place of the certain value, exempt for maximum/minimum value. Reference line is not displayed on the editing screen in atDesigner, exempt for simulator. 
Add	It adds reference line to display. Maximum 8 lines can be set. “Reference Line” setting window※1 appears.
List	It displays the list of added reference line.

※1: “Reference Line” setting window

Item		Description
Data	Type	It sets the type of data. Setting range: fixed value, device.
	Fixed Value/ Device	Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking ‘Detail’ to open “Device Area” setting window.
Format	Shape/Color	It sets the shape and color of the line. Setting range of the shape: solid line, dotted line

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8.8.5.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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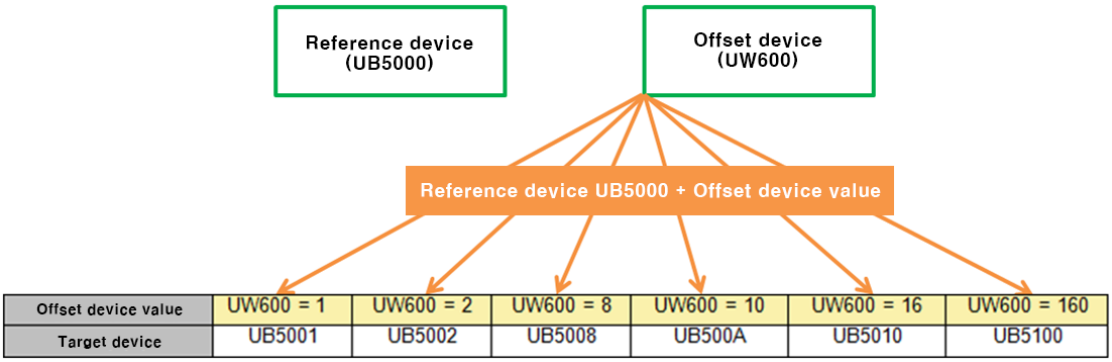
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: script

It sets script when the object appears.

User can set script in [Project]-[Global Object]-[Script].

Item		Description
Use Output Script	Use Output Script	If it is checked, user can use output script. Output script is what executed when the object appears on the screen. Script also can be executed using the value of reference device of the object.
	Select Script	It selects script from the registered script in [Project]-[Global Object]-[Script]. Selected script is displayed below.

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(5) Extend setting: show scale number

It sets arrangement of the label (number) to the scale.

Item		Description
Numeric Info.	Minimum/ Maximum value	It sets minimum/maximum value of the graph.
	Horizontal/ Vertical Size	It sets the horizontal/vertical size of the text figure.
Type		It sets type of text. Setting range: vector font, bitmap font
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(6) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.8.6 Logging Trend Graph

It displays the device value of logging target in a stretching line. User can set displaying condition (always displayed/conditionally displayed).

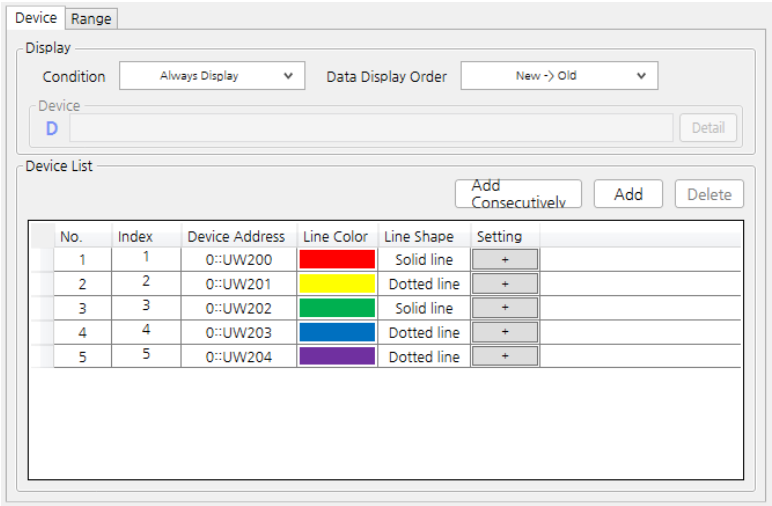
Result of the logging data is displayed only when user set logging in [Project]-[Global Project]-[Logging]. Logging trend graph can be drwan upto 2 in a screen.

Ex.

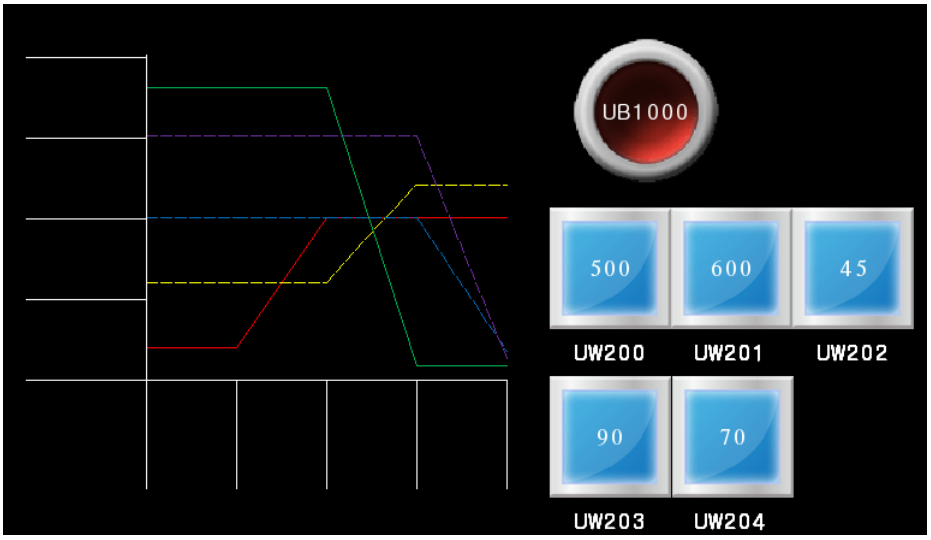
- Start condition: when bit device UB1000 is turned on from off
- Device address: UW200

	Condition Type	Start Condition	Repeat Count	Repeat Cycle	Device Address	No. of Devices
1	Cycle(Device)	Bit Device 0::UB1000 Rise Edge	10	0Day 0Hour0Min5Sec	0::UW200	5

- Line color and shape for each device address



- Graph display: displaying the device value on the graph in a straight line when bit device UB1000 is turned on



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8.8.6.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Logging Display	No./ Size/ Form	It sets logging number to display. Number is that user set in [Project]-[Global Object]-[Logging]. It sets data size and form. Form setting range: signed decimal, unsigned decimal, BCD

- 'Device' tab

Item		Description
Display	Condition	It sets displaying condition. Setting range: always displayed, conditionally displayed When user set to 'conditionally displayed', user can set reference pit device. Only when the reference device is turned on, data is displayed on the graph.
	Data Display Order	It sets the order of displaying data. Setting range: Old -> New, New -> Old
	Device	Display condition is set to conditionally displayed, user can set reference device of trigger. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Device List		It displays the list of added device to monitor.
Add Consecutively/ Add/Delete		It can add/delete device to display (maximum 8 devices). Clicking 'Add' opens "Logging Info. Setting" window. Clicking 'Add Continuous' opens "Add Several" window, so that user can add device to display as many as set in the logging. When user designates start index and end index within the range of device number, device address is automatically allocated as much as the set number. Set format (line shape, color, color over H-limit, and color under L-limit) in the device list.

- 'Range' tab

Item	Description
Maximum value/ Minimum value	It sets maximum value/minimum value to display. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

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Item	Description
Alarm Value	If it is checked, user can set alarm value. When the device value is out of the range from low-limit value to high-limit value, graph line is displayed in the set color over H-limit and color under L-limit, which is set in the device list.
High-Limit/ Low-Limit	It sets high-limit value and low-limit value for alarm. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

(2) Basic setting: format

Item		Description
Start Position		It sets the starting position of the graph. Setting range: right -> left, left -> right
Moving Unit		It sets the unit of data moving. When updating the graph by data acquisition, data moves by the set unit number. Setting range: 0 < moving unit <= The number of data displayed on X-axis
Fill B.G		It sets fill pattern of the background. Clicking 'Setting' opens "Background Setting" window※1.
The number of data displayed on X-axis		It sets the number of data to display. Setting range: fixed value, device Fixed value: user has to enter the value directly. (Setting range: 3 to 800) Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.
Scale	Show X/Y-axis	If it is checked, user can set to display X/Y axis scale.
	Region Ratio	It sets percentage of the scale region in graph region.
	Margin Ratio	It sets percentage of the scale to display in scale region.
	Direction	It sets direction of the scale. Setting range X-axis: top, bottom Y-axis: right, left
	No. of scale/ Thickness/ Color	It sets the number/thickness/color of graduated ruler in scale.
	Background	It sets background of the scale. Clicking 'Setting' opens "Background Setting" window※2.

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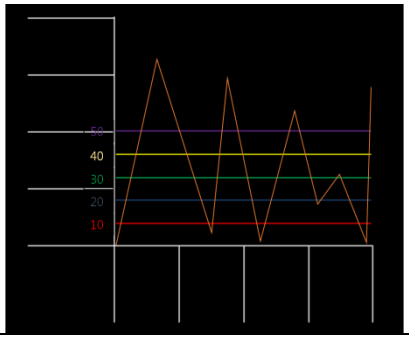
※1: “Background Setting” window for scale background

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(4) Basic setting: reference line

Item	Description
Use Reference Line	If it is checked, use can use reference line. Reference line is to mark place of the certain value, exempt for maximum/minimum value. Reference line is not displayed on the editing screen in atDesigner, exempt for simulator. 
Add	It adds reference line to display. Maximum 8 lines can be set. “Reference Line” setting window※1 appears.
List	It displays the list of added reference line.

※1: “Reference Line” setting window

Item		Description
Data	Type	It sets the type of data. Setting range: fixed value, device.
	Fixed Value/ Device	Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking ‘Detail’ to open “Device Area” setting window.
Format	Shape/Color	It sets the shape and color of the line. Setting range of the shape: solid line, dotted line

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8.8.6.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

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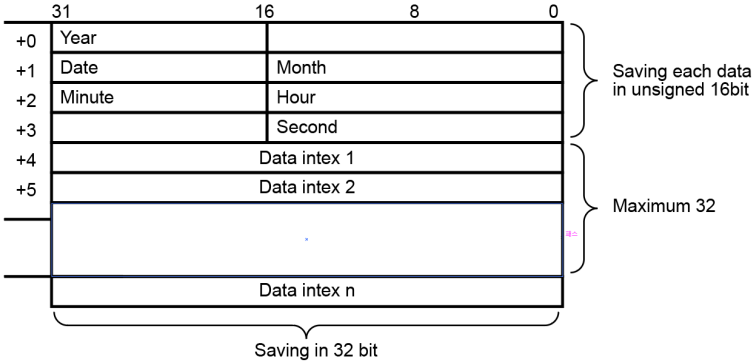
(3) Extend setting: curser

This is function that touching on the certain point of the graph displays the cursor, so that user can check the data value of the point. Also user can set data saving device to save logging device value and logging time. Touching the screen with a cursor can make the cursor disappeared.

Item		Description
Use Cursor		If it is checked, user can use cursor function. Touching graph displays the cursor.
Storage Device	Device	It sets storage device to save cursor information. Cursor information is logging device value and logging time of the point that cursor is pointing. User can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window. ※ When the size of the logging device is 32 bit 
Property	Color/Type	It sets cursor line color and type. Type setting range: solid line, dotted line

(4) Extend setting: show scale number

It sets arrangement of the label (number) to the scale.

Item		Description
Numeric Info.	Minimum/ Maximum value	It sets minimum/maximum value of the graph.
	Horizontal/ Vertical Size	It sets the horizontal/vertical size of the text figure.
Type		It sets type of text. Setting range: vector font, bitmap font
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)

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Item	Description
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(5) Extend setting: special switch

It generates special switch for the object automatically. If user checks switches on the list to generate, a series of switches are generated on the right side of the object.

Item	Description
Special Switch Type※1	It sets the type of special switch to display with the object. If user checks in the list, the special switch is generated. When checking is cleared, the special switch is deleted.
Detail	Clicking 'Detail' opens "Special Switch" setting window※1. Set the property of special switch. User can check preview of the switch.
Special Switch Size Setting	It sets the vertical/horizontal size of the switch.

※1: Special Switch Type

Item	Description
Display fist data	It displays first logging data on the graph.
Display last data	It displays last logging data on the graph.
Display previous data	It displays previous logging data of the currently displayed data on the graph.
Display next data	It displays next logging data of the currently displayed data on the graph.
Display data on a particular date	It displays logging data of a particular date, by selecting the date.
Close date searching	It closes date selecting window.

※2: "Special Switch" setting window

- Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object.

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Item			Description
			Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

- Basic setting: text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(6) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.8.7 Real-time Distribution Graph

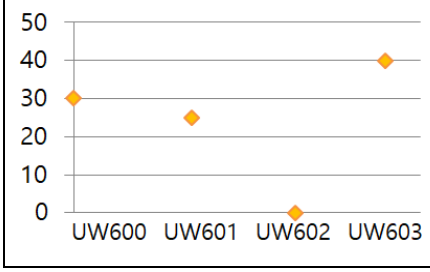
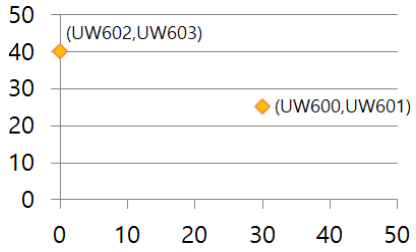
It displays the device value of consecutive devices in dot/line.
According to the graph type (X-Y distribution, Y distribution), displayed data on the graph is different.
Only single reat-time distribution graph can be drawn in a screen.

Ex.

- Condition setting
  - Control device: 0::UW200
  - Device to monitor: 0::UW600 to 603 (4 devices)

Device address	UW600	UW601	UW602	UW603
Device value	30	25	0	40

- Graph display by graph type

Y distribution	X-Y distribution
X: Device address Y: Device value	X: device value of preceding device between two consecutive devices Y: device value of following device between two consecutive devices
	

8.8.7.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Target		It sets graph type. Setting range: X-Y distribution, Y distribution
Device List	View	It is for checking items to display on the graph. Check device information ad minimum/maximum value. Setting range: Device information, minimum/maximum value, line/dot setting, alarm value (only for Y distribution) According to checked item, items in the device list are differed.
	Add	It adds device in the list (maximum 8 devices). "Add Device" window※1 appears.
	Delete	It deletes added device from the list.

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※1 “Add Device” window

- ‘Basic’ tab

<table>
<tr><th colspan="2">Item</th><th>Description</th></tr>
<tr><td colspan="2">Device</td><td>It sets control device. Control device is to control displaying/deleting graph data.
0th and 1st bit device value decides the function.
When 0th bit device value is turned to ‘1’ from ‘0’, dot and line is displayed on the graph.
If 0th bit is remained as ‘1’, graph is not synchronized.
When 1st bit device value is turned to ‘1’ from ‘0’, dot and line on the graph disappears.
<table>
<tr><th>1st bit device value</th><th>0th bit device value</th><th>Control</th></tr>
<tr><td>0</td><td>1</td><td>Displaying device value on the graph</td></tr>
<tr><td>1</td><td>0</td><td>Deleting device value on the graph</td></tr>
</table>
User can set device by entering the device directly or clicking ‘Detail’ to open “Word Device Area” setting window.</td></tr>
<tr><td colspan="2">Setting</td><td>It sets data size and form.
Size: 16 bit, 32 bit
Form: signed decimal, unsigned decimal, BCD</td></tr>
<tr><td rowspan="3">Monitoring Device</td><td>Device Auto Setting</td><td>If it is checked, device and the number of device are set automatically.
Monitoring device is data that is displayed on the graph.</td></tr>
<tr><td>Device</td><td>It sets device to monitor. Monitoring device is data that is displayed on the graph.
User can set device by entering the device directly or clicking ‘Detail’ to open “Word Device Area” setting window.</td></tr>
<tr><td>No. of Monitoring Devices</td><td>It sets the number of device to monitor (maximum 32 devices).
Setting range: fixed value, device
Fixed value: user has to enter the value directly.
Device: user can set device by entering the device directly or clicking ‘Detail’ to open “Device Area” setting window.</td></tr>
<tr><td rowspan="2">Offset</td><td>Use Offset</td><td>If it is checked, user can user offset function.
With the offset function, monitored device is changed to the address of offset value plus automatically allocated device address.</td></tr>
<tr><td>Type</td><td>It sets type of offset.
Setting range: fixed value, device</td></tr>
</table>

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Item		Description
		Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

- 'Shape' tab

Item	Description
Use	It checks whether to use line/dot.
Shape	It sets the shape of line/dot. Line shape setting range: solid line, dotted line Dot shape setting range: normal circle, normal square, normal triangle, filled circle, filled square, filled triangle
Color	It sets the color of line/dot.

- 'High-Limit/Low-Limit' tab (only for Y distribution)

Item	Description
Color	It sets the color high-limit line, low-limit line, high-limit dot, and low-limit dot.
Alarm value	It sets high-limit value and low-limit value for alarm. Setting range: fixed value, device Fixed value: user has to enter the value directly. (High-limit value must be bigger than low-limit value.) Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

- 'Maximum/minimum' tab

Item	Description
Maximum/ minimum value of X/Y axis	It sets maximum value/minimum value of X/Y axis. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

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(2) Basic setting: format

Item		Description
Start Position		It sets the starting position of the graph. Setting range: right -> left, left -> right
Fill B.G		It sets fill pattern of the background. Clicking 'Setting' opens "Background Setting" window※1.
No. of data to display		It sets the number of data to display. It is activated only when [Basic setting: basic]-[Target]-[Graph type] is set to 'Y distribution'. User has to enter the value directly. Setting range: 1<= The number of data to display <= 32
Scale	Show X/Y-axis	If it is checked, user can set to display X/Y axis scale.
	Region Ratio	It sets percentage of the scale region in graph region.
	Margin Ratio	It sets percentage of the scale to display in scale region.
	Direction	It sets direction of the scale. Setting range X-axis: top, bottom Y-axis: right, left
	No. of scale/ Thickness/ Color	It sets the number/thickness/color of graduated ruler in scale.
	Background	It sets background of the scale. Clicking 'Setting' opens "Background Setting" window※2.

※1: "Background Setting" window

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.8.7.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

(3) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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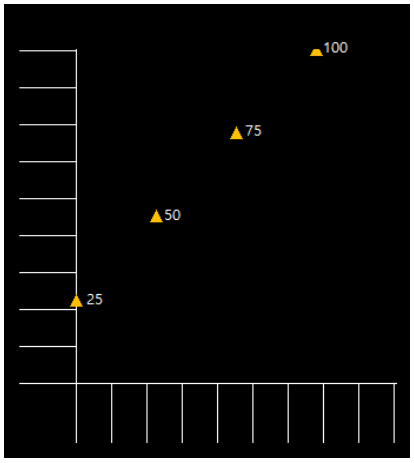
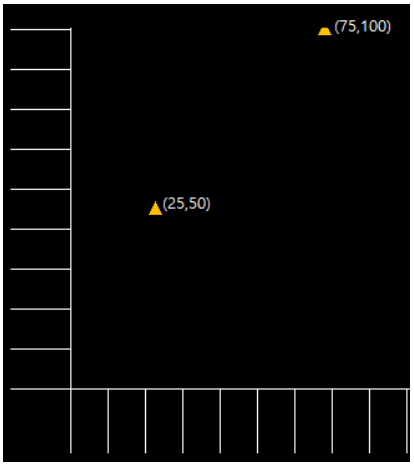
8.8.8 Logging Distribution Graph

It displays the device value of logging target in dot/line.
Whenever set logging condition is satisfied, logging data is displayed on the graph in dot/line.
According to the graph type (X-Y distribution, Y distribution), displayed data on the graph is different.
Result of the logging data is displayed only when user set logging in [Project]-[Global Project]-[Logging].
Only single logging distribution graph can be drawn in a screen.

Ex.

Device address	UW100	UW101	UW102	UW103
Device value	25	50	75	100

Y distribution	X-Y distribution
X: Device address Y: Device value	X: device value of preceding device between two consecutive devices Y: device value of following device between two consecutive devices
	

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8.8.8.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Target		It sets graph type. Setting range: X-Y distribution, Y distribution
Device List	View	It is for checking items to display on the graph. Setting range: Device information, minimum/maximum value, line/dot setting, alarm value (only for Y distribution) According to checked item, items in the device list are differed.
	Add Continuous// Add	It can add device to display (maximum 8 devices). Clicking 'Add' opens "Logging Info. Setting" window※1.
	Delete	It deletes added device from the list.

※1: "Logging Info." window

- 'Basic' tab

Item	Description
Logging	It sets logging number. The number is set in [Project]-[Logging]. It shows start device and data size, and sets data type. Type setting range: signed decimal, unsigned decimal, BCD

- 'Shape' tab

Item	Description
Use	It checks whether to use line/dot.
Shape	It sets the shape of line/dot. Line shape setting range: solid line, dotted line Dot shape setting range: normal circle, normal square, normal triangle, filled circle, filled square, filled triangle
Color	It sets the color of line/dot.

- 'High-Limit/Low-Limit' tab (only for Y distribution)

Item	Description
Color	It sets the color high-limit line, low-limit line, high-limit dot, and low-limit dot.
Alarm value	It sets high-limit value and low-limit value for alarm. Setting range: fixed value, device Fixed value: user has to enter the value directly. (High-limit value must be bigger than low-limit value.) Device: user can set device by entering the device directly or clicking 'Detail' to open "Device Area" setting window.

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- ‘Maximum/minimum’ tab

Item	Description
Maximum/ minimum value of X/Y axis	It sets maximum value/minimum value of X/Y axis. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking ‘Detail’ to open “Device Area” setting window.

(2) Basic setting: format

Item		Description
Start Position		It sets the starting position of the graph. Setting range: right -> left, left -> right
Fill B.G		It sets fill pattern of the background. Clicking ‘Setting’ opens “Background Setting” window※1.
No. of Data to Display		It sets the number of data to display. It is activated only when [Basic setting: basic]-[Target]-[Graph type] is set to ‘Y distribution’. User has to enter the value directly. Setting range: 1<= The number of data to display <= 32
Scale	Show X/Y-axis	If it is checked, user can set to display X/Y axis scale.
	Region Ratio	It sets percentage of the scale region in graph region.
	Margin Ratio	It sets percentage of the scale to display in scale region.
	Direction	It sets direction of the scale. Setting range X-axis: top, bottom, Y-axis: right, left
	No. of scale/ Thickness/Color	It sets the number/thickness/color of graduated ruler in scale.
	Background	It sets background of the scale. Clicking ‘Setting’ opens “Background Setting” window※2.

※1: “Background Setting” window

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

(3) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.8.8.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(3) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.9 Clock

8.9.1 Clock

It displays time or date of GP/LP internal clock, regardless of the external device (PLC, controller, or etc.).

(1) Drawing

1st Select clock in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the clock to the finishing point and release click.

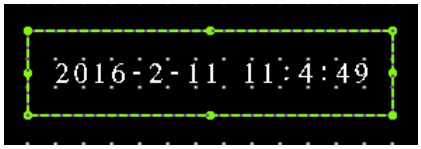
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the clock.

4th Click 'OK' to draw the clock.

(2) Editing

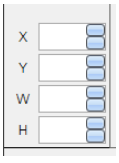
If user clicks a clock to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the clock, double click the clock or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(3) Basic setting

User can set basic settings in the property window of clock.

It is for setting basic aspect of clock.

- Basic: It sets basic information of the clock.
- Format: It sets length or shape of the parts which forms the clock.
- Display: It sets shape or format of the clock.

(4) Extend setting

User can set extend settings in the property window of clock.

It is for setting additional aspect of clock.

- Common effect: It sets display effect of the clock.

8.9.1.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Time & Date Display Setting	It sets form of time and date, whether to show day of the week, and whether to fill with 0. In the preview, user can check settings. Form: date/time, date, time Time: HH:MM, HH:MM:SS Date: YYYY/MM/DD, YY/MM/DD, MM/DD/YYYY, MM/DD/YY, MM/DD Show day of the week: If it is checked, the day of the week is displayed. Fill with 0: When date or time is one digit number, empty digit is displayed with 0. Ex) 2019, July 8th, twenty-five and thirty four seconds Fill with 0: 2019/07/08 20:05:34 Not fill with 0: 2019/7/8 20:5:34

(2) Basic setting: display

Item		Description
Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item	Description
Type	It sets type of text. Setting range: vector font, bitmap font
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.9.1.2 Extend Setting

(1) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.10 Recipe

8.10.1 Recipe Editor

With the recipe editor, user can edit recipe which is set in [Project]-[Global object]-[Recipe] or read/write recipe. By clicking a cell of the recipe editor in the screen, user can edit recipe.
For detailed information about recipe function, please refer to '6.1.5 Recipe'.

(1) Drawing

1st Select recipe editor in [Object] tab or [Object] toolbar.

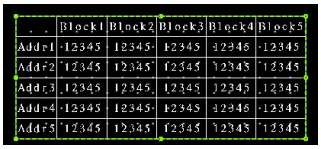
2nd Left click and drag from the starting point of the recipe editor to the finishing point and release click.

3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the recipe editor.

4th Click 'OK' to draw the recipe editor.

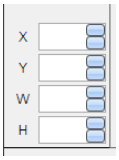
(2) Editing

If user clicks a recipe editor to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.
In order to modify property of the recipe editor, double click the recipe editor or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(3) Basic setting

User can set basic settings in the property window of recipe editor.

It is for setting basic aspect of recipe editor.

- Basic: It sets basic information of the recipe editor.
- Display: It sets shape or format of the recipe editor by device value.
- Text: It sets whether to add text and shape of text.

(4) Extend setting

User can set extend settings in the property window of recipe editor.

It is for setting additional aspect of recipe editor.

- Security: It sets authorization for monitoring the recipe editor.
- Interlock: It sets condition of displaying the recipe editor.
- Special switch: It sets to draw special switch for the recipe editor automatically.
- Key window: It is used for selecting to use user made key window screen.
- Common effect: It sets display effect of the recipe editor.

8.10.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Table Format	No. of row/column	It set the number of row and column. Setting range: 2 to 10
	Color/Thickness	It sets color and thickness of the table.
Display Form	No. of digits	It sets the number of digit to display. If there are more digits in data value than digit of the object, the object displays data with #.
	No. of Decimal Digit	When number form is set to signed decimal, unsigned decimal, or BCD, It sets the number of decimal places.
	Fill with 0	It displays empty digit by filling with 0. When the number of digit is set to 6 and the value to display is 1234, the object displays 001234.

(2) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item	Description
Type	It sets type of text. Setting range: vector font
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.10.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches ‘OK’, touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(3) Extend setting: special switch

It generates special switch for the object automatically. If user checks switches on the list to generate, a series of switches are generated on the right side of the object.

Item	Description
Special Switch Type※1	It sets the type of special switch to display with the object. If user checks in the list, the special switch is generated. When checking is cleared, the special switch is deleted.
Detail	Clicking 'Detail' opens "Special Switch" setting window※2. Set the property of special switch. User can check preview of the switch.
Special Switch Size Setting	It sets the vertical/horizontal size of the switch.

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※1: Special Switch Type

Item	Description
Open	It opens recipe in the project.
Save	It saves the opened recipe.
Save as	It saved the opened recipe with different name.

※2: “Special Switch” setting window

- Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

- Basic setting: text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G

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Item	Description
	color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(4) Extend setting: key window

It is used for selecting to use user made key window screen.

Item	Description
Use Key Window	If it is checked, user can use the user made key window. It selects key window number. Enter directly or select number by clicking 'Find'.
Call Position of Key Window	If it is checked, key window is displayed at the designated place. It sets X and Y coordinates. Setting range: under the vertical, horizontal resolution of GP/LP model for which the currently editing project is created. X coordinate: 0 to horizontal resolution Y coordinate: 0 to vertical resolution

(5) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.11 Logging

(1) Type

- Logging table: It displays logging data which is set in [Project]-[Global object]-[Logging]. In table.
- System logging table: It displays system logging data (start, restart, login, logout, and etc.) and user setting data (screen transition, setting value, parameter modification, and etc.) in table.

(2) Drawing

1st Select logging table in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the logging table to the finishing point and release click.

3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the logging table.

4th Click 'OK' to draw the logging table.

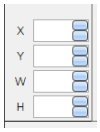
(3) Editing

If user clicks a logging table to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the logging table, double click the logging table or click 'Property' in the right click pop up menu.

- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(4) Basic setting

User can set basic settings in the property window of logging table.

It is for setting basic aspect of logging table.

- Basic: It sets basic information of the logging table.
- Display: It sets shape or format of the logging table by device value.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of logging table.

It is for setting additional aspect of logging table.

- Security: It sets authorization for monitoring the logging table.
- Interlock: It sets condition of displaying the logging table.
- Special switch: It sets to draw special switch for the logging table automatically.
- Common effect: It sets display effect of the logging table.

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8.11.1 Logging Table

It displays logging data in table.

Result of the logging data is displayed only when user set logging in [Project]-[Global Project]-[Logging].

Only single logging table can be drawn in a screen.

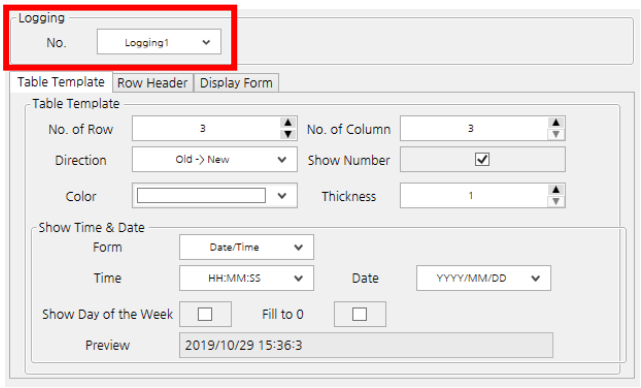
Ex.

- Logging setting

	Condition Type	Start Condition	Repeat Count	Repeat Cycle	Device Address	No. of Devices
1	Cycle(Device)	Bit Device 0::UB1000 Rise Edge	10	0Day 0Hour0Min55Sec	0::UW200	5

  - Start condition: when bit device UB2000 is turned on from off
  - Device address: UW500

- Set logging number and table format in 'Basic setting: basic' of the logging table



- Display: When UB2000 is turned on, data of logging target is displayed on the logging table.

No.	Date	Value1
2	2018/9/4 8:6:56	150
1	2018/9/4 8:6:51	100
0	2018/9/4 8:6:46	50

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8.11.1.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Logging	It sets logging number. The number is set in [Project]-[Global object]-[Logging].

- 'Table Format' tab

Item	Description
No. of Row/No. of column	It set the number of row and column. Setting range: 2 to 64
Direction	It sets the order of displaying data. Setting range: new -> old, old -> new
Show Number	If it is checked, logging number is displayed.
Color/Thickness	It sets color and thickness of the table.
Time & Date Display Setting	It sets form of time and date, whether to show day of the week, and whether to fill with 0. In the preview, user can check settings. Form: date/time, date, time Time: HH:MM, HH:MM:SS Date: YYYY/MM/DD, YY/MM/DD, MM/DD/YYYY, MM/DD/YY, MM/DD Show day of the week: If it is checked, the day of the week is displayed. Fill with 0: When date or time is one digit number, empty digit is displayed with 0. Ex) 2019, July 8th, twenty-five and thirty four seconds Fill with 0: 2019/07/08 20:05:34 Not fill with 0: 2019/7/8 20:5:34

- 'Row Header' tab

Item	Description
Header	It sets header of each row. User can edit header in white box.

- 'Display form' tab

Item	Description
Number Form	It sets display form of the number. Setting range: unsigned decimal, signed decimal, BCD, binary, octal number, hexadecimal
Digit	It sets the number of digit to display. If there are more digits in data value than digit of the object, the object displays data with #.
No. of Decimal Place	When number form is set to signed decimal, unsigned decimal, or BCD, It sets the number of decimal places.
Fill with 0	It displays empty digit by filling with 0. When the number of digit is set to 6 and the value to display is 1234, the object displays 001234.

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Item	Description
Number Form	It sets display form of the number. Setting range: unsigned decimal, signed decimal, BCD, binary, octal number, hexadecimal
Apply to All	It applies these settings to all.
Display Info.	It sets and displays settings of logging index, number format, digit, no. of decimal places and fill to 0 of all rows at the same time.

(2) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.11.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

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(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(3) Extend setting: special switch

It generates special switch for the object automatically. If user checks switches on the list to generate, a series of switches are generated on the right side of the object.

Item	Description
Special Switch Type※1	It sets the type of special switch to display with the object. If user checks in the list, the special switch is generated. When checking is cleared, the special switch is deleted.
Detail	Clicking 'Detail' opens "Special Switch" setting window※2. Set the property of special switch. User can check preview of the switch.
Special Switch Size Setting	It sets the vertical/horizontal size of the switch.

※1: Special Switch Type

Item	Description
Page down	It displays data of the previous page.
Page up	It displays data of the next page.
One line down	It displays data of the previous line on the first line of the table.
One line up	It displays data of the next line on the first line of the table.

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※2: “Special Switch” setting window

- Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

- Basic setting: text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)

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Item	Description
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.11.2 System Logging Table

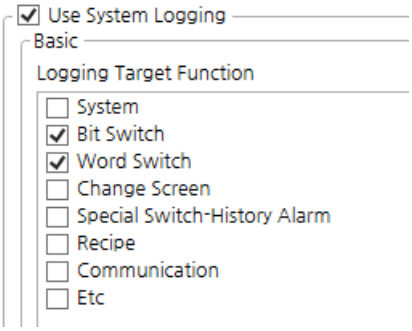
It displays system logging data (start, restart, login, logout, and etc.) and user setting data (screen transition, setting value, parameter modification, and etc.) in table.

Only single logging table can be drawn in a screen.

Ex.

- Selecting logging target to use:

  Bit switch, Word switch.



- display

  System logging – bit switch

No.	Log Time	User	Classify Code	Log Info.
0	018/9/4 8:	System	2-4	[UB1000] Bit Reverse(ON

  System logging – word switch

No.	Log Time	User	Classify Code	Log Info.
1	018/9/4 8:	System	3-1	[UW500] Add Value : 50
0	018/9/4 8:	System	3-1	[UW500] Add Value : 50

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8.11.2.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.

- 'Table Format' tab

Item	Description
No. of Row	It set the number of row. Setting range: 1 to 50
Direction	It sets the order of displaying data. Setting range: new -> old, old -> new
Show Number	If it is checked, logging number is displayed.
Color/Thickness	It sets color and thickness of the table.
Time & Date Display Setting	It sets form of time and date, whether to show day of the week, and whether to fill with 0. In the preview, user can check settings. Form: date/time, date, time Time: HH:MM, HH:MM:SS Date: YYYY/MM/DD, YY/MM/DD, MM/DD/YYYY, MM/DD/YY, MM/DD Show day of the week: If it is checked, the day of the week is displayed. Fill with 0: When date or time is one digit number, empty digit is displayed with 0. Ex) 2019, July 8th, twenty-five and thirty four seconds Fill with 0: 2019/07/08 20:05:34 Not fill with 0: 2019/7/8 20:5:34

- 'Row Header' tab

Item	Description
Header	It sets header of each row. User can edit header in white box.

(2) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item	Description
Type	It sets type of text. Setting range: vector font
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.11.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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(3) Extend setting: special switch

It generates special switch for the object automatically. If user checks switches on the list to generate, a series of switches are generated on the right side of the object.

Item	Description
Special Switch Type※1	It sets the type of special switch to display with the object. If user checks in the list, the special switch is generated. When checking is cleared, the special switch is deleted.
Detail	Clicking 'Detail' opens "Special Switch" setting window※2. Set the property of special switch. User can check preview of the switch.
Special Switch Size Setting	It sets the vertical/horizontal size of the switch.

※1: Special Switch Type

Item	Description
Page down	It displays data of the previous page.
Page up	It displays data of the next page.
One line down	It displays data of the previous line on the first line of the table.
One line up	It displays data of the next line on the first line of the table.

※2: "Special Switch" setting window

- Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

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- Basic setting: text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.12 Alarm

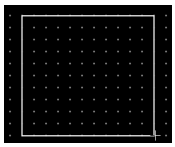
(1) Type

- Alarm explorer: It displays the list of alarm group which is set in alarm history.
- Alarm list: It displays alarm history in table. User can check alarm occurrence time, cleared time, alarm information, or etc.

(2) Drawing

1st Select alarm explorer/alarm list in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the alarm explorer/alarm list to the finishing point and release click.

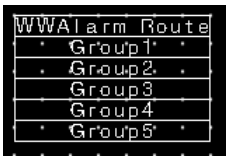


3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the alarm explorer/alarm list.

4th Click 'OK' to draw the alarm explorer/alarm list.

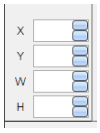
(3) Editing

If user clicks an alarm explorer/alarm list to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.
In order to modify property of the alarm explorer/alarm list, double click the alarm explorer/alarm list or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(4) Basic setting

User can set basic settings in the property window of alarm explorer/alarm list.

It is for setting basic aspect of alarm explorer/alarm list.

- Basic: It sets basic information of the alarm explorer/alarm list.
- Display: It sets shape or format of the alarm explorer/alarm list by device value.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of alarm explorer/alarm list.

It is for setting additional aspect of alarm explorer/alarm list.

- Security: It sets authorization for monitoring the alarm explorer/alarm list.
- Interlock: It sets condition of displaying the alarm explorer/alarm list.
- Special switch: It sets to draw special switch for the alarm explorer/alarm list automatically.
- Common effect: It sets display effect of the alarm explorer/alarm list.

Ex.

When using both alarm explorer and alarm list together.

Alarm explorer	Alarm list				
Alarm Route	Occurrence	Message	Group	Clear	Recognition
Group 1	08/01 10:05	Machine 5, abnormal increase of PV	Group 1	08/01 10:15	08/01 10:06
Group 2	08/01 18:25	Machine 7, abnormal increase of PV	Group 1	08/01 18:30	08/01 18:27
Group 3	08/01 20:00	Machine 1, opened	Group 3	08/01 20:02	08/01 20:01
Group 4	08/03 09:15	Machine 1, abnormal operation	Group 2	08/03 09:20	08/03 09:16
Group 5	08/03 10:43	Machin 1, SV modified	Group 5	08/03 10:45	08/03 10:44

▪ Alarm list display, when Group 1 is selected in the alarm explorer

Alarm explorer	Alarm list				
Alarm Route	Occurrence	Message	Group	Clear	Recognition
Group 1	08/01 10:05	Machine 5, abnormal increase of PV	Group 1	08/01 10:15	08/01 10:06
Group 2	08/01 18:25	Machine 7, abnormal increase of PV	Group 1	08/01 18:30	08/01 18:27
Group 3					
Group 4					
Group 5					

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8.12.1 Alarm Explorer

It displays the list of alarm group which is set in alarm history. It is used with the alarm list. Alarm explorer displays only alarms of the group, which is selected from the alarm explorer, in the alarm list. Alarm is set in [Project]-[Alarm History]-[Alarm Group]-[Alarm List].
Only single alarm explorer can be drawn in a screen.

8.12.1.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.
Target Object ID	It sets ID of target object, alarm list, to connect with alarm explorer.

- 'Table Format' tab

Item	Description
No. of Row	It set the number of row.
Color/Thickness	It sets color and thickness of the table.

- 'Row Header' tab

Item	Description
Header	It sets header of each row. User can edit header in white box.

(2) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

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8.12.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to

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Item		Description
		open “Bit Device Area” setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

(3) Extend setting: special switch

It generates special switch for the object automatically. If user checks switches on the list to generate, a series of switches are generated on the right side of the object.

Item	Description
Special Switch Type※1	It sets the type of special switch to display with the object. If user checks in the list, the special switch is generated. When checking is cleared, the special switch is deleted.
Detail	Clicking ‘Detail’ opens “Special Switch” setting window※2. Set the property of special switch. User can check preview of the switch.
Special Switch Size Setting	It sets the vertical/horizontal size of the switch.

※1: Special Switch Type

Item	Description
Page down	It displays data of the previous page.
Page up	It displays data of the next page.
One line down	It displays data of the previous line on the first line of the table.
One line up	It displays data of the next line on the first line of the table.

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※2: “Special Switch” setting window

- Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

- Basic setting: text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)

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Item	Description
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.12.2 Alarm List

It displays alarm history in table. User can check alarm occurrence time, cleared time, alarm information, or etc. Alarm is set in [Project]-[Alarm History]-[Alarm Group]-[Alarm List].
Only single alarm explorer can be drawn in a screen.

Occurence	Message	Group	Clear	Recognition
2019-08-01 10:05:03	Machine 5, abnormal increase of PV	Group 1	2019-08-01 10:15:00	2019-08-01 10:05:53
2019-08-01 18:25:17	Machine 7, abnormal increase of PV	Group 1	2019-08-01 18:30:00	2019-08-01 18:25:20
2019-08-01 20:00:05	Machine 1, opened	Group 3	2019-08-01 20:00:15	2019-08-01 20:00:10
2019-08-03 09:15:46	Machine 1, abnormal operation	Group 2	2019-08-03 09:20:00	2019-08-03 09:19:00
2019-08-03 10:43:40	Machin 1, SV modified	Group 5	2019-08-03 10:45:00	2019-08-03 10:43:45
2019-08-05 06:55:00	Machine 10, abnormal increase of PV	Group 1	2019-08-05 06:55:59	2019-08-05 06:55:02
2019-08-05 10:52:09	Machine 3, opened	Group 3	2019-08-05 10:52:55	2019-08-05 10:52:15

8.12.2.1 Basic Setting

(1) Basic setting: basic

Item	Description
Definition	It sets name and description.

- 'Table Format' tab

Item		Description
No. of Row		It set the number of line. Setting range: 1 to 50
Data sort		It sets the order of displaying data. Setting range: new -> old, old -> new
Color/Thickness		It sets color and thickness of the table.
Details window Called Position		If it is checked, user can set the called position (X-axis, Y-axis) of the details window. Setting range: fixed value, device Fixed value: user has to enter the value directly. Device: user can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Display filter	Cleared	It sets condition for displaying alarm upon cleared status. Setting range: none, cleared, not cleared
	Check	It sets condition for displaying alarm upon recognized status. Setting range: none, check, uncheck
	Set alarm group to display	If it is checked, alarms in the selected alarm group are only displayed. User can select the group to display.
Display		It sets data items to display. Setting range: occurrence, group, clear, check

- 'Row Header' tab

Item	Description
Header	It sets header of each row. User can edit header in white box.

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- ‘Display form’ tab

Item		Description
Change Color by Alarm State		It sets color for each status. User can check B.G color, check font color, cleared B.G color, and cleared font color.
Display format	Display type	It selects data type to set display format. Setting range: occurrence, recovery, check
	Time & Date Display Setting	It sets form of time and date, whether to show day of the week, and whether to fill with 0. In the preview, user can check settings. Form: date/time, date, time Time: HH:MM, HH:MM:SS Date: YYYY/MM/DD, YY/MM/DD, MM/DD/YYYY, MM/DD/YY, MM/DD Show day of the week: If it is checked, the day of the week is displayed. Fill with 0: When date or time is one digit number, empty digit is displayed with 0. Ex) 2019, July 8th, twenty-five and thirty four seconds Fill with 0: 2019/07/08 20:05:34 Not fill with 0: 2019/7/8 20:5:34

(2) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

(3) Basic setting: Text

Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

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8.12.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to

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Item		Description
		open “Bit Device Area” setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

(3) Extend setting: special switch

It generates special switch for the object automatically. If user checks switches on the list to generate, a series of switches are generated on the right side of the object.

Item	Description
Special Switch Type※1	It sets the type of special switch to display with the object. If user checks in the list, the special switch is generated. When checking is cleared, the special switch is deleted.
Detail	Clicking ‘Detail’ opens “Special Switch” setting window※2. Set the property of special switch. User can check preview of the switch.
Special Switch Size Setting	It sets the vertical/horizontal size of the switch.

※1: Special Switch Type

Item	Description
Delete all cleared data	It deletes all of cleared alarm data from the list.
Details window	It displays window screen of detailed information about the selected alarm from the list
Delete selected data	It deletes data of the selected alarm from the list.
Check selected data	It makes the selected alarm recognized. With this switch touched, checked time appears in the ‘recognition’ row of the alarm.
Delete the number of occurrence of selected alarm	It resets the number of occurrence of the selected alarm to 0.
Alarm history filter	It sets alarm filter target, so that only the designated data is displayed in the alarm list.
Delete the number of occurrence of all alarm	It resets the number of occurrence of all alarm to 0.

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Item	Description
Delete data on current page	It deletes data of the currently displayed page from the list.
Check data on current page	It makes the unchecked alarm in the current page recognized. With this switch touched, checked time appears in the 'recognition' row of the alarm.
Print data	It prints out alarm data.
Page down	It displays data of the previous page.
Page up	It displays data of the next page.
One line down	It displays data of the previous line on the first line of the table.
One line up	It displays data of the next line on the first line of the table.

※2: "Special Switch" setting window

- Basic setting: display

Item			Description
Background ON/ Background OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Fill	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
	Flash		It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast
Frame ON/ Frame OFF	Copy ON->OFF		It copies settings from ON and pastes to OFF.
	Copy OFF->ON		It copies settings from OFF and pastes to ON.
	Line Info.	Use	It sets whether to use frame and color/thickness/dash of the frame.
		Flash	It sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

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- Basic setting: text

Item		Description
Text ON/ Text OFF	Copy ON->OFF	It copies settings from ON and pastes to OFF.
	Copy OFF->ON	It copies settings from OFF and pastes to ON.
Use		It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.13 Data List

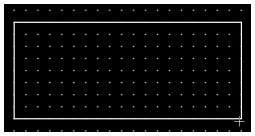
(1) Type

- Data List Viewer: It displays the value of consecutive devices in table.
- Data List Editor: It displays the value of consecutive devices in table, and they are modifiable.

(2) Drawing

1st Select data list viewer/editor in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the data list viewer/editor to the finishing point and release click.

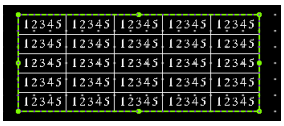


3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the data list viewer/editor.

4th Click 'OK' to draw the data list viewer/editor.

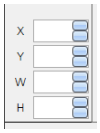
(3) Editing

If user clicks a data list viewer/editor to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.
In order to modify property of the data list viewer/editor, double click the data list viewer/editor or click 'Property' in the right click pop up menu.



- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

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(4) Basic setting

User can set basic settings in the property window of data list viewer/editor.

It is for setting basic aspect of data list viewer/editor.

- Basic: It sets basic information of the data list viewer/editor.
- Table format: It sets the number of row/line, direction, use of header, or etc. of the data list viewer/editor.
- Display: It sets shape or format of the data list viewer/editor by device value.
- Text: It sets whether to add text and shape of text.

(5) Extend setting

User can set extend settings in the property window of data list viewer/editor.

It is for setting additional aspect of data list viewer/editor.

- Security: It sets authorization for monitoring the data list viewer/editor.
- Interlock: It sets condition of displaying the data list viewer/editor.
- Common effect: It sets display effect of the data list viewer/editor.

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8.13.1 Data List Viewer

It displays the value of consecutive devices in table.

Only single alarm explorer can be drawn in a screen.

Ex.

When device of the data viwer is set to UW200

	Row header 1	Row header 2	Row header 3	Row header 4
Line header 1	UW200 value 2018	UW201 value 100	UW202 value 80	UW203 value 7
Line header 2	UW204 value 2018	UW205 value 90	UW206 value 40	UW207 value 15
Line header 3	UW208 value 2018	UW209 value 85	UW210 value 80	UW211 value 3
Line header 4	UW212 value 2018	UW213 value 70	UW214 value 50	UW215 value 4

	Year	Desired value	PV	Defective
Machine 1	2018	100	80	7
Machine 2	2018	90	40	15
Machine 3	2018	85	80	3
Machine 4	2018	70	50	4

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8.13.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting	Size	It sets data size. Size: 16 bit, 32 bit
Display form	Number form	It sets data form. Form: signed decimal, unsigned decimal, BCD, binary, octal umber, hexadecimal
	Digit	It sets the number of digit to display. If there are more digits in data value than digit of the object, the object displays H, and if there are less digits in data value than digit of the object, the object displays L.
	No. of Decimal Places	When number form is set to signed decimal, unsigned decimal, or BCD, It sets the number of decimal places.
	Fill with 0	It displays empty digit by filling with 0. When the number of digit is set to 6 and the value to display is 1234, the object displays 001234.

(2) Basic setting: table format

Item	Description
No. of Row/Column	It set the number of row/line.
Data sort	It sets the order of displaying data. Setting range: Left -> Right, Right -> Left
Color/Thickness	It sets color and thickness of the table.
Use Row/Line Header	If it is checked, user can set header of row/line. Following menu is activated.
Header	It sets header of each row and line.

(3) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

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(4) Basic setting: Text

Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.13.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(3) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.13.2 Data Editor

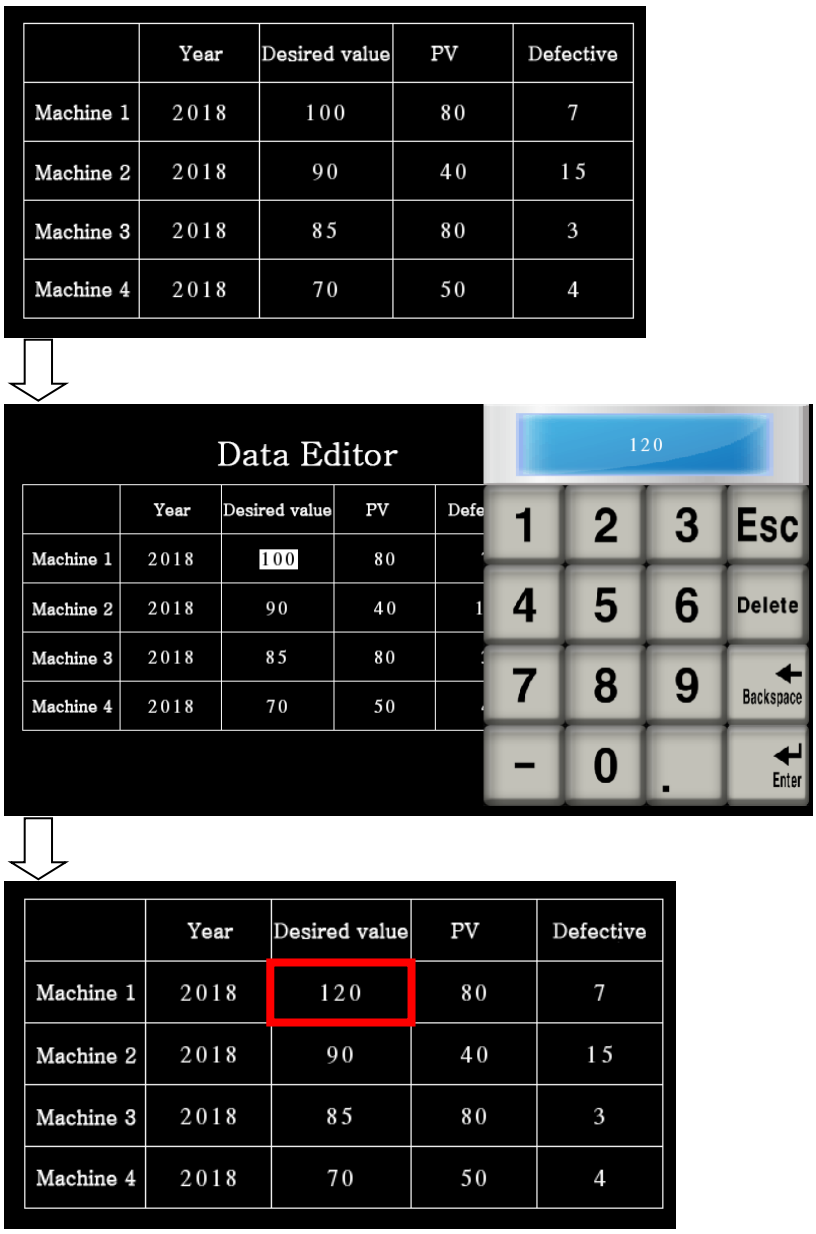
It displays the value of consecutive devices in table, and they are modifiable.

When user touches a cell to edit, key window appears to help user to edit the value.

Only single alarm explorer can be drawn in a screen.

Ex.

Example of editing the value of a cell



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8.13.2.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting	Size	It sets data size. Size: 16 bit, 32 bit
Display form	Number form	It sets data form. Form: signed decimal, unsigned decimal, BCD, binary, octal umber, hexadecimal
	Digit	It sets the number of digit to display. If there are more digits in data value than digit of the object, the object displays H, and if there are less digits in data value than digit of the object, the object displays L.
	No. of Decimal Places	When number form is set to signed decimal, unsigned decimal, or BCD, It sets the number of decimal places.
	Fill with 0	It displays empty digit by filling with 0. When the number of digit is set to 6 and the value to display is 1234, the object displays 001234.

(2) Basic setting: table format

Item	Description
No. of Row/Column	It set the number of row/line.
Data sort	It sets the order of displaying data. Setting range: new -> old, old -> new
Color/Thickness	It sets color and thickness of the table.
Use Row/Line Header	If it is checked, user can set header of row/line. Following menu is activated.
Header	It sets header of each row and line.

(3) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

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(4) Basic setting: Text

Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.13.2.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

(3) Extend setting: key window

It is used for selecting to use user made key window screen.

Item	Description
Use Key Window	If it is checked, user can use the user made key window. It selects key window number. Enter directly or select number by clicking 'Find'.
Call Position of Key Window	If it is checked, key window is displayed at the designated place. It sets X and Y coordinates. Setting range: under the vertical, horizontal resolution of GP/LP model for which the currently editing project is created. X coordinate: 0 to horizontal resolution Y coordinate: 0 to vertical resolution

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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8.14 Option List

8.14.1 Option List

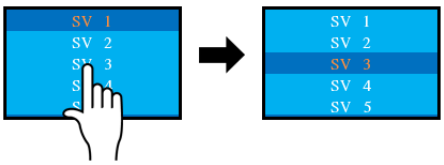
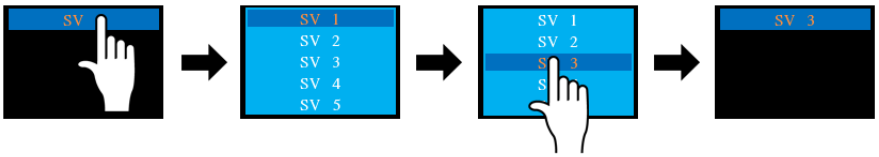
It helps user to select value to input, so that user can chage the value easlily.

- Fixed value

  Option list displays the set name of data. When user select the name, the value corresponding to name is written in the target device.

- User account

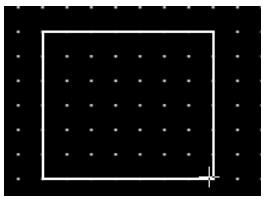
  Option list displays the list of user accounts (set is each project). It can be used for drawing the login screen in the base screen.

Display type	Screen
List box	
Drop-down list	

(1) Drawing

1st Select option list in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the option list to the finishing point and release click.



3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the option list.

4th Click 'OK' to draw the option list.

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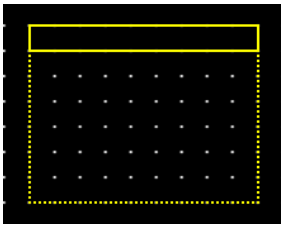
(2) Editing

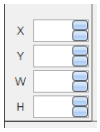
If user clicks an option list to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the option list, double click the option list or click 'Property' in the right click pop up menu.



- Size and coordinate setting

In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

(3) Basic setting

User can set basic settings in the property window of option list.

It is for setting basic aspect of option list.

- Basic: It sets basic information of the option list.
- Display: It sets shape or format of the option list by device value.
- Text: It sets whether to add text and shape of text.

(4) Extend setting

User can set extend settings in the property window of option list.

It is for setting additional aspect of option list.

- Security: It sets authorization for monitoring the option list.
- Interlock: It sets condition of displaying the option list.

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8.14.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Common	Display type	It sets the type of option list. Setting range: list box, drop-down box
	Display Data Type	It sets data type to display in the list. According to the type, setting menus are different. Setting range: value, account
	No. of List Items	It sets the number of items in the list. Setting range: 1 to 100
	Selected Data Color	It sets color for displaying the selected item in the list.

- Settings: Display Data Type – 'Value'

Item	Description
Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Data types	It sets data size. Size: 16 bit, 32 bit
Sign	If it is checked, data is recognized ad signed number.
List	It sets data and the name of data, according to the number of list items.

- Settings: Display Data Type – 'Account'

Item	Description
Account Displaying Order	It sets the displaying order of user accounts. Setting range: ascending sort older, descending sort older
Show level	If it is checked, user security level is displayed.
Show Secret User	If it is checked, secret user is displayed.

(2) Basic setting: display

Item	Description
Fill	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item	Description
Property	It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type	It sets text shape by text type. Vector font: bold, italic, strikeout, underline
Flash	It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

8.14.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor or control the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.
	Window No. without Authority	If a user who is not certified touches the object, warning window appears.
Touch	Use Minimum Touching Time / Minimum Touching Time	If it is checked, user can set minimum length of time of touching, so that touching over the minimum time is only recognized as touch action. Set minimum touching time for the object. (unit: second)
	Use Touch Checking Window	If it is checked, touch checking window appears when touching the object. Only when user touches 'OK', touching is recognized as touch action and operates the object.
	Disappear Time of Check Window	It sets time after which the window closes automatically. (unit: second)

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(2) Extend setting: interlock

It sets to display or control the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.
Control	Control	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is able to be controlled (touched). Following menus are activated.
	Type	It sets control interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Bit Device Area" setting window.

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8.15 Move Coord.

8.15.1 Move Coord.

This is function that the move coord. object moves its location, according to the reference device value.

There are 3 types of control.

- X: It moves the object along the X-axis.
- Y: It moves the object along the Y-axis.
- X, Y: It moves the object along the X-axis/Y-axis.

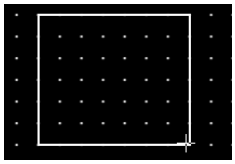
This object used three consecutive devices from the reference device.

- Reference device address: It is control device that decides status value of the object.
- Reference device address+1: If the control type is X or Y, it decides coordinate of X or Y axis.
  If the control type is X, Y, it decides coordinate of X axis.
- Reference device address+2: If the control type is X, Y, it decides coordinate of Y axis.

(1) Drawing

1st Select move coord. in [Object] tab or [Object] toolbar.

2nd Left click and drag from the starting point of the moove coord. to the finishing point and release click.



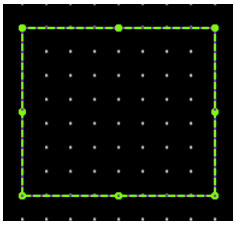
3rd When property setting window apprears, set basic setting and extend setting. On the left bottom, there is preview of the move coord..

4th Click 'OK' to draw the move coord..

(2) Editing

If user clicks a move coord. to edit it, the mouse curser on the center points of the border line and the point of every corner is changed into arrow shape. Click and drag the point to edit the size. Pressing shift key helps to edit the size with an aspect ratio.

In order to modify property of the move coord., double click the move coord. or click 'Property' in the right click pop up menu.



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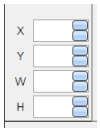
- Size and coordinate setting

  In property window, X/Y coordinates on the screen and size of width/height.



Item	Description
X	It sets X coordinate on the screen.
Y	It sets Y coordinate on the screen.
W	It sets the width of the figure.
H	It sets the height of the figure.

(3) Basic setting

User can set basic settings in the property window of move coord..

It is for setting basic aspect of move coord..

- Basic: It sets basic information of the move coord..
- Display: It sets shape or format of the move coord. by device value.
- Text: It sets whether to add text and shape of text.

(4) Extend setting

User can set extend settings in the property window of move coord..

It is for setting additional aspect of move coord..

- Security: It sets authorization for monitoring/controlling the move coord..
- Interlock: It sets condition of displaying/controlling the move coord..
- Offset: It sets offset device, so that reference device of the move coord. is dynamically changed.
- Common effect: It sets display effect of the move coord..

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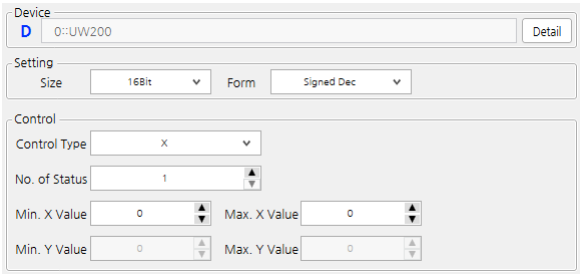
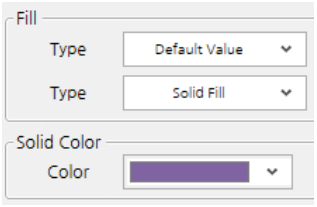
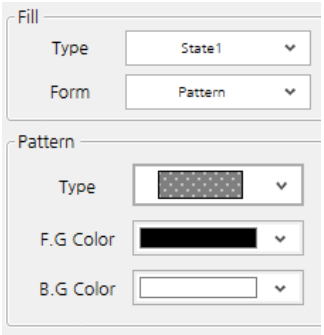
Ex.

When the type is set to 'X, Y', and the reference device is set to UW200

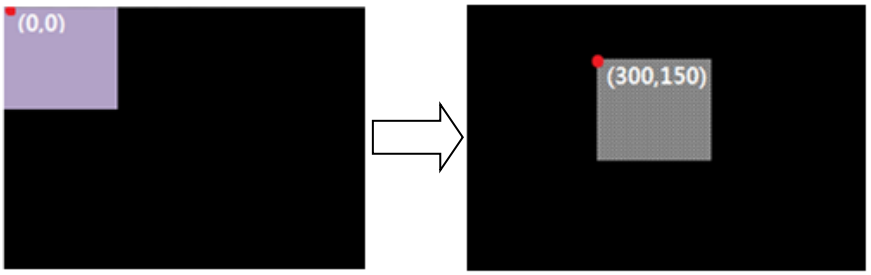
- UW200: Control device
- UW201: moving distance along the X axis
- UW202: moving distance along the Y axis



- Object display setting

Default	Status 1 setting
	

- Object moving

UW200 value: 1 UW201: 300 UW202: 150	

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8.15.1.1 Basic Setting

(1) Basic setting: basic

Item		Description
Definition		It sets name and description.
Device		It sets reference device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.
Setting	Size	It sets data size. Size: 16 bit, 32 bit
	Type	It sets data form. Form: signed decimal, unsigned decimal, BCD
Control	Control type	It sets type of axis the object moves along with Setting range: X, Y, X/Y
	No. of Status	It sets the number of status to display. Setting range: 1 to 2555
	Minimum/Maximum X Value	It sets minimum/maximum value of X axis. Setting range: with in the X axis resolution of the product. (It is activated only when the type is set to X, X/Y.)
	Minimum/Maximum Y Value	It sets minimum/maximum value of Y axis. Setting range: with in the Y axis resolution of the product. (It is activated only when the type is set to Y, X/Y.)

(2) Basic setting: display

Item	Description	
Fill	Type	It selects target status to apply the display setting. Default value: It is for the status that any condition is not satisfied. Status (number): It is for the status of each condition which is set in [Basic setting: basic].
	Form	It sets background type. According to type, following menus are different. Setting range: none, solid fill, gradation, pattern, image, image library
Flash	It sets whether to use flash function and flashing speed for the object. Speed setting range: slow, normal, fast	
Frame	No.	It selects target status to apply the frame setting. Default value: It is for the status that any condition is not satisfied. Status (number): It is for the status of each condition which is set in [Basic setting: basic].
	Use	It sets whether to use frame and color/thickness/dash of the frame.
	Flash	t sets whether to use flash function and flashing speed for the frame. Speed setting range: slow, normal, fast

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(3) Basic setting: Text

Item		Description
Text	Type	It selects target status to apply the text setting. Default value: It is for the status that any condition is not satisfied. Status (number): It is for the status of each condition which is set in [Basic setting: basic].
	Use	It sets whether to use text.
Type		It sets type of text. Setting range: vector font, bitmap font
Text Data	Type	It sets type of text data. Setting range: input text, text table
	Text Box	It is for entering text to display when the type is set to input text.
	String Table	It selects text string from the registered multilingual table when type is set to text table.
Property		It sets text property by text type. Vector font: font face, size, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment) Bitmap font: font face, size X/Y, F.G color (font color), B.G color (background color), V align (vertical alignment), H align (horizontal alignment)
Type		It sets text shape by text type. Vector font: bold, italic, strikeout, underline Bitmap: 6×8 dot font
Flash		It sets whether to use flash function and flashing speed for the text. Speed setting range: slow, normal, fast

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8.15.1.2 Extend Setting

(1) Extend setting: security

It sets object level so that only user who obtains authority to access the level can monitor the object.

Security level is set in [Project]-[Common Setting]-[Project Property]-[Security Setting].

Item		Description
Authority	Object Level	If user wants to set security function for object, user can select level to give accessibility from A to M (multiple choices available).
	Only Use at Initial Run	If it is checked, security function is operated only at first time. When user disables security, the function is disabled.
	Not Displayed without Authority	If it is checked, object is not displayed when user does not meet the security level of the object.

(2) Extend setting: interlock

It sets to display the object when set condition is satisfied.

Item		Description
Display	Display	If it is checked, user can use interlock function. When set interlock condition is satisfied, the object is displayed on the screen. Following menus are activated.
	Type	It sets display interlock type. Bit ON: True when reference bit device is turned on Bit OFF: True when reference bit device is turned off Multiple bit: True when satisfies multiple bit device setting Area: True when satisfies word device setting
	Device	It sets reference device. User can set device by entering the device directly or clicking ‘Detail’ to open “Bit Device Area” setting window.

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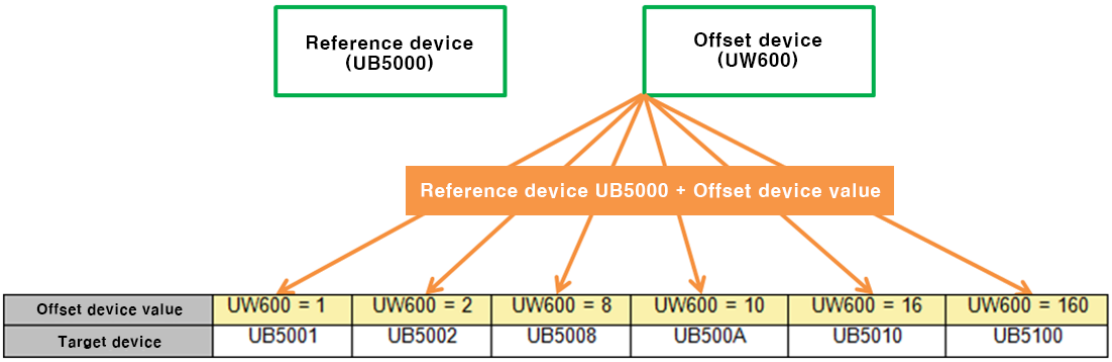
(3) Extend setting: offset

It sets offset device so that device address is changed to the sum of 'reference device address and the value of offset device'.

It helps to change target device address to monitor.

Target device address (UB5001)

= reference device address (UB5000) + offset device value (1)



Item	Description
Offset	If it is checked, user can use offset function. User can set offset device. User can set device by entering the device directly or clicking 'Detail' to open "Word Device Area" setting window.

(4) Extend setting: common effect

It sets display effect of the object.

Item	Description
Flash	It sets whether to use flash function and flashing speed. Speed setting range: slow, normal, fast

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9 Utility

9.1 Simulator

Using simulator, user can check whether the drawn screens are well operated or not without downloading to HMI.

9.2 Device Find/Replace

It finds or replaces address of all objects which is within the searching range.

User can set searching range.

Item		Description
Device Type		It sets type of device to fine and replace. Setting range: bit, word
Find device		It sets device to fine. User can set device by entering the device directly or clicking 'Detail' to open "Bit/Word Device Area" setting window.
Setting	Consecutive Device	It sets the number of consecutive device to fine.
	Output at Find Result 2	If it is checked, result of finding/replacing is displayed in find result 2.
	Include Direct Address/Tag	It finds direct address/tag.
Replace Device		It sets device to which the found device is replaced. User can set device by entering the device directly or clicking 'Detail' to open "Bit/Word Device Area" setting window.
Search Range		It sets the searching range. Device address is found within screen, project property, and global object. Setting range: screen (base screen, window screen, overlap screen, key window screen), project property, link device, flow alarm, alarm history, scheduler, recipe, logging, tag, system logging
Find All		It finds all devices in the searching range.
Replace All		It replaces all devices in the searching range.

Note

When using [Utility]-[Device Find/Replace], this function finds/replaces all devices in the project.

If you want to fine/replace devices in a certain screen (base screen, window screen, overlap screen, key window screen), right click the empty space in the screen to click 'Fine/Replace' in the popup menu, or use Ctrl+F keybord shortcuts to open 'Find/Replace at Screen' window.

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9.3 Replace Overlap Screen

It replaces overlap screen of all screens.

It replaces overlap screen of the base screen with another overlap screen.

Item		Description
Select Base Screen		It selects the base screen which of overlap screen is changed to another.
Select All/ Clear Selection / Reverse Selection		It selects or clears selection of the base screen which of overlap screen is changed to another. And it reverses selection.
Select Range		It sets the range of base screen which of overlap screen is changed to another.
Overlap Screen Setting	Setting	It sets overlap screen to apply to the base screen. Previously set overlap screen is deleted.
	Add	It adds overlap screen to apply to the base screen.
	Change	It changes the applied overlap screen to another.
	Delete	It deletes the applied overlap screen.

9.4 Data Error Check

It checks error, before downloading project file to GP/LP.

After data error checking, screen number and description of the error in the output window, so that clicking error in the output window moves to the screen.

9.5 Script Error Check

It checks script error. If there is no script, it is not activated.

After script error checking, error message is displayed in the output window, so that clicking error in the output window moves to the script.

User can set to check script error as option, so that program automatically checkes data error.

9.6 Project Image Tool

It displays all image files which are used for the project.

User can edit the image or saves the image to the PC, with the project image Tool.

Item	Description
List	It selects an image or selects all images. It displays registered number of the image, file name, type, horizontal/vertical size, and data size.
Convert Type	It sets image convert type. Setting range: JPG, GIF, BMP, EMF, ICO, TIFF, WMF
Convert and Export	It converts the image to the selected format and exports the image as individual image file. User can set the saved file path.

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Item	Description
Export	It exports the image as individual image file. User can set the saved file path.

9.7 Object/Device List

It displays the list of objects and devices which are registered in the project.

It displays the devices by project, connected device, search range, and device name.

Item	Description
Search filter	It searches device by project, connected device, search range, and device name.
Alignment filter	It sets alignment filter. It aligns order of the list by screen number, screen name, object ID, object name, or device address, or aligns order ascending sort order or descending sort older.
Search range	It sets search range. Setting range: all, object, common setting.
Export	It exports the list of search result in excel file (*.xls).
Searching	It searches object device applying filter.
List	It displays order, screen number, screen name, object ID, name, device address, tag name, location, and description of the object device.

9.8 Project Converter

It converts project file for GP/LP-S series to that for GP/LP-A Series.

Item	Description
S Series Model	It selects the project file for S series to convert. When file selecting window appears, select file and click ‘open’.
A Series Model	It selects GP/LP A series model for which the converted project file is used. When “Select Model” window appears, select the series and model and click ‘OK’.
File Saving Location	It sets saved path for the converted project file. When path setting window appears, select the path and set file name and click ‘OK’.
Convert/Close	After setting all settings, click ‘Convert’. If you want to cancel the converting, click ‘Close’.

9.8.1 Project Convert Not Supported Functions and Countermeasures

There is some functions that is not converted from GP/LP S series project file to GP/LP A series project file,with project convert function.

For the details about the not supported functions and countermeasures, please refer to the following tables.

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9.8.1.1 Screen

(1) Cursor movement

	S Series function	A Series function	Countermeasures
Menu 1	Base screen	Project property	Not supported (unnecessary)
Menu 2	Auxiliary property	-	
Menu 3	Hide cursor and key window	-	

(2) Allow floating alarm

	S Series function	A Series function	Countermeasures
Menu 1	Base screen	Project property	Not supported (All screens allow floating alarm.)
Menu 2	Auxiliary property	-	
Menu 3	Other configuration (allow floating alarm)	-	

(3) Security level

	S Series function	A Series function	Countermeasures
Menu 1	Base screen	Project property	Changed security approach to user account (creating user account and setting security level)
Menu 2	Auxiliary property	Security setting	
Menu 3	Security level	-	

9.8.1.2 Figure/object

(1) Frame and parts shape

	S Series function	A Series function	Countermeasures
Menu 1	Common	Common	Setting background to color, image, image library, gradation
Menu 2	Basic tab	Display tap	
Menu 3	Frame shape, parts shape	Fill type	

(2) Number with sign, number without sign

	S Series function	A Series function	Countermeasures
Menu 1	Common	-	Not supported (unnecessary)
Menu 2	Form tab	-	
Menu 3	Number with sign, number without sign	-	

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(3) Bitmap font - 6×8 dot font, high quality font

	S Series function	A Series function	Countermeasures
Menu 1	Common	-	Not supported
Menu 2	Form tab	-	
Menu 3	Bitmap font - 6×8 dot font, high quality font	-	

(4) Factor1/factor2/offset

	S Series function	A Series function	Countermeasures
Menu 1	Common	-	Not supported
Menu 2	Other tab	-	
Menu 3	Factor1/factor2/ offset	-	

(5) User ID, destination ID

	S Series function	A Series function	Countermeasures
Menu 1	Common	-	Using auto cursor function
Menu 2	Other tab	Key window tab	
Menu 3	User ID, destination ID	Use auto cursor	

(6) Numeral Input – maximum/minimum value

	S Series function	A Series function	Countermeasures
Menu 1	Numeral input	Numeric input	Not supported
Menu 2	Other tab	-	
Menu 3	Maximum/minimu m	-	

(7) Comment display – word setting

	S Series function	A Series function	Countermeasures
Menu 1	Comment Display	Word message	Using word message object (setting message type to 'direct')
Menu 2	Word tab	Basic tab	
Menu 3	-	-	

(8) Alarm history - width

	S Series function	A Series function	Countermeasures
Menu 1	Alarm history	Alarm list	Not supported (automatically set according to the size and length of the text)
Menu 2	Display form tab	-	
Menu 3	Width	-	

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(9) Alarm list

	S Series function	A Series function	Countermeasures
Menu 1	Alarm list	Alarm list	Using combination of alarm history (project) and alarm list (local object)
Menu 2	Form tab	-	
Menu 3	-	-	

(10) Part display - bit

	S Series function	A Series function	Countermeasures
Menu 1	Part display	Bit lamp	Saving the part image in image library and drawing a bit lamp
Menu 2	Bit	-	
Menu 3	-	-	

(11) Part display - word

	S Series function	A Series function	Countermeasures
Menu 1	Part display	Word lamp	Saving the part image in image library and drawing a word lamp
Menu 2	word	-	
Menu 3	-	-	

(12) Touch key – display trigger – bit switch

	S Series function	A Series function	Countermeasures
Menu 1	Touch key	Bit switch	Setting in basic tab of the bit switch, when it is used as only bit switch
Menu 2	Basic tab	Basic tab	
Menu 3	Display trigger - Bit switch	-	

(13) Touch key – word switch – initial condition

	S Series function	A Series function	Countermeasures
Menu 1	Touch key	-	Not supported
Menu 2	Action tab	-	
Menu 3	Word switch - initial condition - condition value, reset value	-	

(14) Touch key – key code

	S Series function	A Series function	Countermeasures
Menu 1	Touch key	Special switch	Setting the target object ID for the special switch in the special switch property window
Menu 2	Action tab	Basic tab	
Menu 3	Key code: Function key code	-	

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(15) Touch key – option/trigger – auto repeat

	S Series function
Menu 1	Touch key
Menu 2	Option/trigger tab
Menu 3	Auto repeat

A Series function
-
-
-

Countermeasures
Not supported

(16) Line graph

	S Series function
Menu 1	Line graph
Menu 2	-
Menu 3	-

A Series function
-
-
-

Countermeasures
Using the real-time distribution graph (Y distribution)

(17) Line graph – not displayed value

	S Series function
Menu 1	Line graph
Menu 2	Other tab
Menu 3	Not displayed value

A Series function
-
-
-

Countermeasures
Not supported

(18) Bar graph – basic display value

	S Series function
Menu 1	Bar graph
Menu 2	Display range tab
Menu 3	Basic value

A Series function
-
-
-

Countermeasures
Not supported

(19) Trend graph – Store memory

	S Series function
Menu 1	Trend graph
Menu 2	Other tab
Menu 3	Store memory

A Series function
-
-
-

Countermeasures
Not supported

(20) Statistic graph – direction

	S Series function
Menu 1	Statistic graph
Menu 2	Basic tab
Menu 3	Direction

A Series function
-
-
-

Countermeasures
Not supported

(21) Statistic graph – display scale

	S Series function
Menu 1	Statistic graph
Menu 2	Graph tab
Menu 3	Display scale

A Series function
-
-
-

Countermeasures
Not supported

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(22) Panel meter – display scale

	S Series function	A Series function	Countermeasures
Menu 1	Panel meter	-	Not supported (unconditionally scale is displayed.)
Menu 2	Graph tab	-	
Menu 3	Display scale	-	

9.8.1.3 Draw menu

(1) Key window position

	S Series function	A Series function	Countermeasures
Menu 1	Key window position	Numeric input/ text input	Setting the key window position by each object
Menu 2	-	Key window tab	
Menu 3	-	-	

(2) Panel kit

	S Series function	A Series function	Countermeasures
Menu 1	Panel kit	View	Using image library, after saving image in the library
Menu 2	-	Image library	
Menu 3	-	-	

(3) Parts

	S Series function	A Series function	Countermeasures
Menu 1	Parts	View	Using image library, after saving image in the library
Menu 2	-	Image library	
Menu 3	-	-	

9.8.1.4 Common

(1) Project ID

	S Series function	A Series function	Countermeasures
Menu 1	Title	-	Not supported (Not using project ID)
Menu 2	Project	-	
Menu 3	Project ID	-	

(2) System information

	S Series function	A Series function	Countermeasures
Menu 1	System information	-	Fixed system information (system device)
Menu 2	-	-	
Menu 3	-	-	

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(3) Overlap window device

	S Series function	A Series function	Countermeasures
Menu 1	Switch screen	Project property	Creating an overlap screen for A series which is same with the base screen used as overlap window screen for S series. (Base screen can be used as overlap screen for S series, while only window screen can be used as global window screen for A series.)
Menu 2	Overlap window device	Screen setting	
Menu 3	-	Global window device	

(4) Security – communication password

	S Series function	A Series function	Countermeasures
Menu 1	Security	-	Setting GP/LP password in the hardware system setting menu
Menu 2	Communication password	-	
Menu 3	-	-	

(5) Comment list

	S Series function	A Series function	Countermeasures
Menu 1	Comment list	-	Setting by object which uses comment (multilingual table)
Menu 2	Comment color	-	
Menu 3	-	-	

(6) Alarm history – store history

	S Series function	A Series function	Countermeasures
Menu 1	Alarm history	Project	Setting alarm history saving device for each [Alarm group]-[Alarm list]
Menu 2	Basic tab	Alar history	
Menu 3	Store history	-	

(7) Alarm history – erase history

	S Series function	A Series function	Countermeasures
Menu 1	Alarm history	-	Not supported
Menu 2	Basic tab	-	
Menu 3	Erase history	-	

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(8) Alarm history – use monitor device reset

	S Series function	A Series function	Countermeasures
Menu 1	Alarm history	-	Not supported
Menu 2	Monitor device tab	-	
Menu 3	Device reset	-	

(9) Monitor status

	S Series function	A Series function	Countermeasures
Menu 1	Monitor status	Project	Using alarm history (project)
Menu 2	-	Alarm history	
Menu 3	-	-	

(10) Auxiliary property – operate for screen switching

	S Series function	A Series function	Countermeasures
Menu 1	Auxiliary property	-	Not supported
Menu 2	Basic tab	-	
Menu 3	operate for screen switching	-	

(11) Auxiliary property – CH1 communication setting

	S Series function	A Series function	Countermeasures
Menu 1	Auxiliary property	Project	Setting communication in connected device setting
Menu 2	Basic tab	Project property	
Menu 3	CH1 communication setting	GP/LP setting	

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10 Communication

10.1 Download

It downloads the drawn project file from atDesigner to GP/LP.

Item	Description
Communication port (RS232C/Ethernet/USB)	It is the communication port to download project file. It is set in 'communication option'.
GP/LP password	It is for entering GP/LP password for communication. Only when the password is valid, downloading is processed. (default value: 0000)
Communication option	"Communication option" window appears. Please refer to '10.5 Communication Option'.
Download	Clicking this processes downloading.

10.2 Upload

It uploads the project file from GP/Lp to atDesigner.

Item	Description
Communication port (RS232C/Ethernet/USB)	It is the communication port to upload project file. It is set in 'communication option'.
GP/LP password	It is for entering GP/LP password for communication. Only when the password is valid, uploading is processed. (default value: 0000)
Communication option	"Communication option" window appears. Please refer to '10.5 Communication Option'.
Upload	Clicking this processes uploading.

10.3 Read Info.

It displays/sets information of the connected GP/LP.

Item	Description
Firmware version	It displays firmware version of the currently connected GP/LP.
Connected device info.	It displays information about the connected device.
Disk usage	It displays usage of GP/LP project disk and user disk.
Buzzer	It displays ON/OFF status of GP/LP internal buzzer.
Backlight OFF time	It displays automatic backlight OFF time.
Device name	It displays the name of GP/LP.
GP/LP time	It displays the time of GP/LP.
Sync Current PC Time	If it is checked, the time of GP/LP is synchronized with that of PC.
GP/LP password	It sets GP/LP communication password.
Communication option	"Communication option" window appears. Please refer to '10.5

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Item	Description
	Communication Option'.
Read information	Clicking this reads information of the connected GP/LP.
Write information	Clicking this writes above settings to the connected GP/LP.

10.4 Firmware Download

It upgrades the GP/LP firmware.

Please download the GP/LP firmware file from Autonics website (www.autonics.com).

Item	Description
Select firmware file	It selects the firmware file to download.
Firmware information	It displays firmware version and model ID.
GP/LP password	It is for entering GP/LP password for communication. Only when the password is valid, downloading is processed. (default value: 0000)
Communication option	"Communication option" window appears. Please refer to '10.5 Communication Option'.
Firmware download	Clicking this downloads firmware to the connected GP/LP.

Note

Do not forcibly exits atDesigner or disconnect the GP/LP, while firmware updating is processed.

10.5 Communication Option

- It sets communication between GP/LP and atDesigner. According to the connecting method, specific settings are different.

Item		Description
Connection method		It selects connecting method. Setting range: RS232C, Ethernet, USB According to the connection method, following menus are different.
Detail setup	RS232C	It sets COM port and transfer speed.
	Ethernet	It sets IP address and communication port.
	USB	It selects connected device.
Searching		It searches and displays the connected GP/LP with the selected communication method.

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11 Window

It sets closing, alignment, view mode, and use of each functional window of the atDesigner window

11.1 Close

- Close All except Current Window

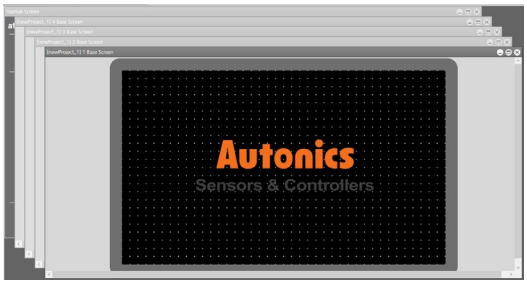
  It closes windows, except the currently displayed window in the workspace.
- Close All windows
- It closes all windows.

11.2 Align

It sets window alignment when the veiw mode is set to MDI mode.

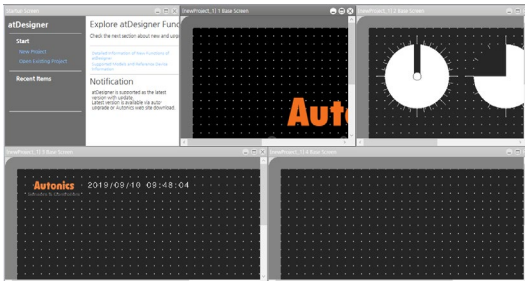
- Align Cascade

  It aligns windows in cascade.



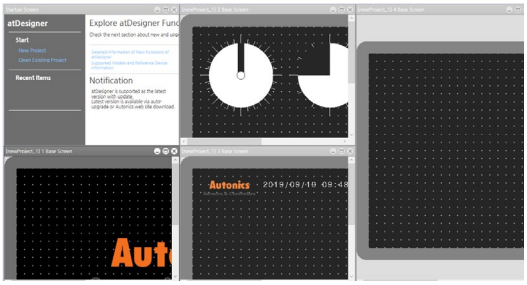
- Align horizontal

  It aligns windows horizontally.



- Align vertical

  It aligns windows vertically.



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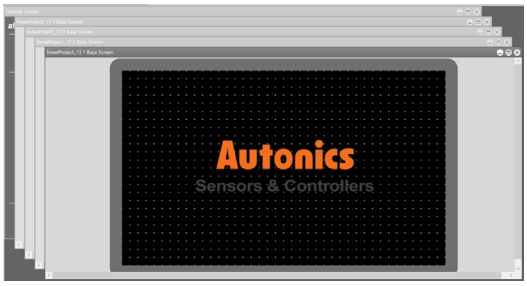
11.3 View mode

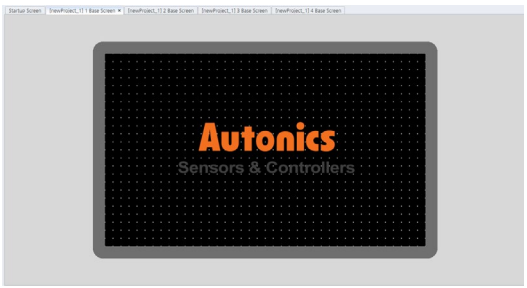
- MDI Mode

  User can work with the multiple windows at once. User can align windows in the workspace in cascade, horizontal, and vertical.



- TAB Mode

  It displays the multiple windows in tab. When user double clicks the tab of window to see, the window is displayed in the workspace.



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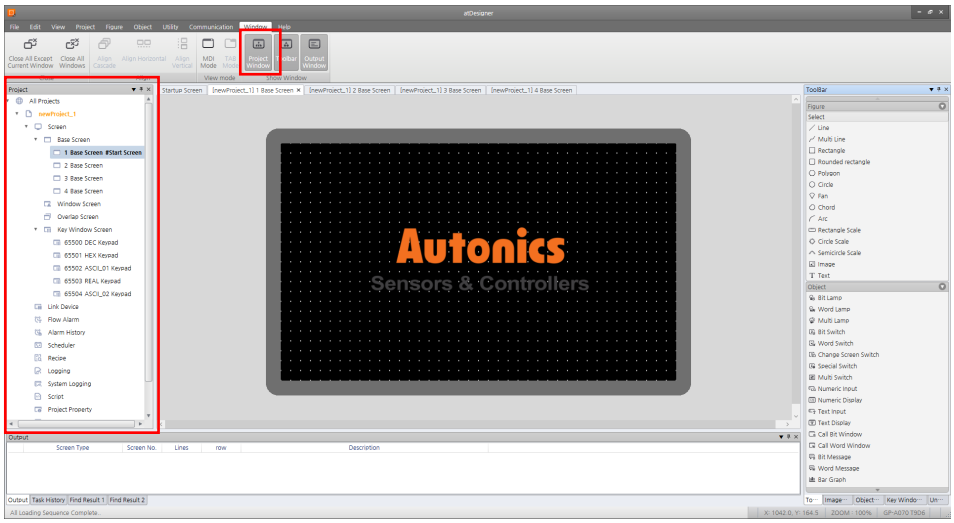
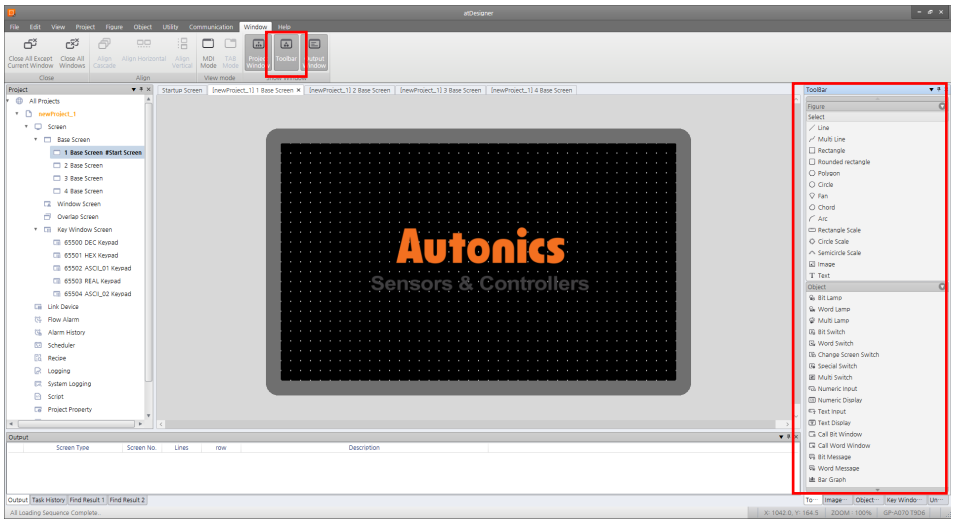
11.4 Show Window

It sets whether to display each functional windows of atDesigner.

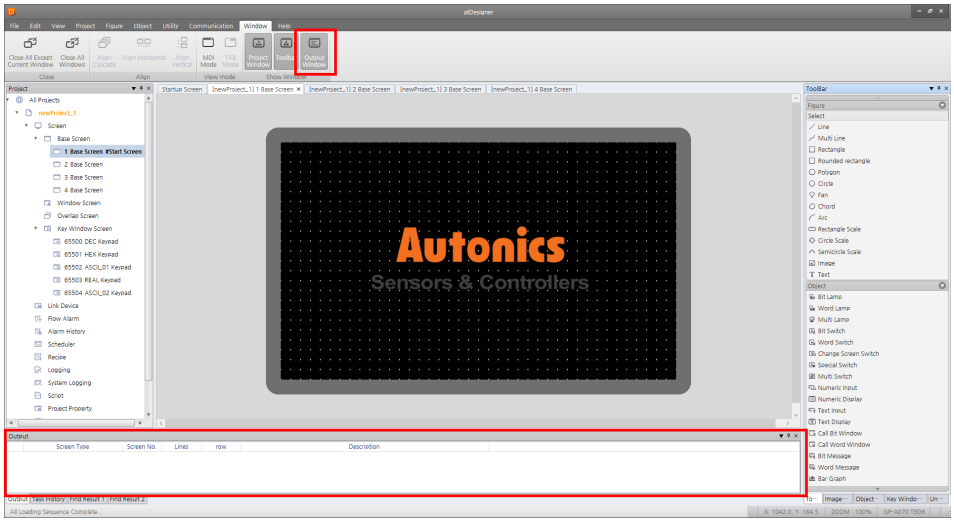
- Project window



- Toolbar



- Output window



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12 Help

(1) Startup screen

It activates startup screen of atDesigner. It displays the list of currently edited project file and update information of atDesigner.

(2) Editor info.

It displays atDesigner version information.

(3) Help

It displays help for using atDesigner.

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13 Appendix

13.1 List of System Device

13.1.1 Read Only Area

UW area	Read Only area	Bit	Description
UW0	Current screen display device	-	-
UW1	Overlap 1 screen number	-	-
UW2	Overlap 2 screen number	-	-
UW3	Master overlap screen number	-	-
UW4	Global window 1 screen number	-	-
UW5	Global window 2 screen number	-	-
UW6	Input object ID number	-	-
UW7	Time sec (seconds)	-	-
UW8	Time min (minutes)	-	-
UW9	Time hour (hours)	-	-
UW10	Date day (day)	-	-
UW11	Date month (month)	-	-
UW12	Date year (year)	-	-
UW13	Date (day of the week)	-	-
UW14	System Read Only signal 1	Bit 0	Always ON
		Bit 1	Always OFF
		Bit 2	0.5 sec clock
		Bit 3	1 sec clock
		Bit 4	2 sec clock
		Bit 5	5 sec clock
		Bit 6	10 sec clock
		Bit 7	30 sec clock
		Bit 8	60 sec clock
		Bit A	Turns ON when the battery is Low
UW15	System Read Only signal 2	Bit 0	USB memory mounted: ON, USB memory discarded: OFF
		Bit 4	MicroSD mounted: ON, Micro SD discarded: OFF
UW16	System Read Only signal 3	Bit 1 to F	Each bit is matched to channel 1 to 15 when there is no external device connected to each channel or a connection problem, the corresponding

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UW area	Read Only area	Bit	Description
			bit turns ON
UW17	System Read Only signal 4	Bit 0	Keep ON while one of the history alarm monitoring devices turned ON
		Bit 1	Keep ON while one of the flow alarm monitoring devices is turned ON
UW18	System Read Only signal 5	-	Reserved area
UW19	System Read Only signal 6	Bit 0	Turns ON in case of no mobile disk to store history alarm backup data
		Bit 1	Turns ON in case of no mobile disk to store the logging data
		Bit 2	Turns ON in case of no mobile disk to store the system logging data
		Bit 3	Turns ON in case of no mobile disk to store the recipe data
		Bit 4	Turns ON in case of no mobile disk to store the screen capture data
UW20	System Read Only signal 7	-	Logged in account number
UW21	System Read Only signal 8	-	Logged in account screen security level
UW22 to 29	System Read Only signal 9 to 16	-	Logged in account ID
UW30	System Read Only signal 17	-	Reserved area
UW31	System Read Only signal 18	-	Reserved area
UW32	System Read Only signal 19	-	Reserved area
UW33 to 34	System Read Only signal 20 to 21	-	User internal memory total capacity (Unit: KB) Low: 20, High: 21
UW35 to 36	System Read Only signal 22 to 23	-	USB memory total capacity Low: 22, High: 23
UW37 to 38	System Read Only signal 24 to 25	-	MicroSD memory total capacity Low: 24, High: 25
UW39	System Read Only signal 26	-	Reserved area
UW40	System Read Only signal 27	-	Reserved area
UW41	System Read Only signal 28	-	Counter value at 1 second interval (0 to 65535)
UW42	System Read Only signal 29	-	Counter value at 2 seconds interval (0 to 65535)
UW43	System Read Only signal 30	-	Counter value at 5 seconds interval (0 to 65535)
UW44	System Read Only signal 31	-	Counter value at 10 seconds interval (0 to

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UW area	Read Only area	Bit	Description
			65535)
UW45 to 80	Read Only area reserve	-	-

13.1.2 Read/Write Area

UW area	Read / Write area	Bit	Description
UW81	System Read / Write signal 1	Bit 0	ON: buzzer function enabled OFF: buzzer function disabled
		Bit 1	Control buzzer ON: buzzer ON, OFF: buzzer OFF
		Bit 4	Control backlight ON: backlight ON, OFF: backlight OFF
		Bit 5	When turns ON, backlight is turned OFF or OFF after the time set in the system preferences, or when touch area is touched, backlight ON
UW82	System Read / Write signal 2	Bit 1 to F	Each bit is matched to channels 1 to 15. In case of no external device is connected to each channel or there is a problem with the connection, the corresponding bit is ON and an error message appears
UW83	System Read / Write signal 3	Bit 0	When turns ON, capture the current screen (Capture window, key window, overlap, system message, etc. as current status)
		Bit 1	When turns ON, all alarm history and occurrence count are deleted
		Bit 2	When turns ON, print the history alarm

13.1.3 User Area

UW area	Read area	Write area
UW100	User area	User area
…		
UW128999		

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13.2 List of LP Special Device

13.2.1 Bit Special Device

13.2.1.1 System Mode

Name	Function	Initial value	R/W	GP device	LP device
Run mode	• Turns ON in run mode • Turns OFF when run mode is changed	OFF	R	UB744000	F00000
Stop mode	• Turns ON in stop mode • Turns OFF when stop mode is changed	OFF	R	UB744001	F00001
Pause mode	• Turns ON in pause mode • Turns OFF when pause mode is changed	OFF	R	UB744002	F00002
Debug mode	• Turns ON in debug mode • Turns OFF when debug mode is changed	OFF	R	UB744003	F00003

13.2.1.2 System Signal

Name	Function	Initial value	R/W	GP device	LP device
Always ON	• Always ON when PLC is run, debug mode • Always OFF when PLC mode is not run, debug mode	OFF	R	UB744010	F00010
Always OFF	• Always OFF when PLC is run, debug mode • Always ON when PLC is not run, debug mode	OFF	R	UB744011	F00011
1 Scan ON	• Turns ON only for the first 1 scan when PLC is run mode • Turns OFF after the 2nd scan when PLC is run mode	OFF	R	UB744012	F00012
1 Scan OFF	• Turns OFF only for the first 1 scan when PLC is run mode • Turns ON after the 2nd scan when	OFF	R	UB744013	F00013

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Name	Function	Initial value	R/W	GP device	LP device
	PLC is run mode				
Scan pulse	• Reverse every scan when PLC is run mode	OFF	R	UB744014	F00014
Time sync pulse	• Synchronized pulse in RTC time	OFF	R	UB744015	F00015

13.2.1.3 System Status

Name	Function	Initial value	R/W	GP device	LP device
Forced input activating	• Turns ON when forced input device is registered • Turns OFF when forced input device is released	OFF	R	UB744020	F00020
Forced output activating	• Turns ON when forced output device is registered • Turns OFF when forced output device is released	OFF	R	UB744021	F00021
Periodic operating	• Turns ON during periodic operation • Turns OFF when periodic operation stops	OFF	R	UB744024	F00024
Backup battery error (current)	• Turns ON when the backup battery voltage is below the reference value • Turns OFF when the backup battery voltage is above the reference value	OFF	R	UB744025	F00025
Backup battery error (maintain)	• Keep ON when Backup battery error (current) is ON • Turns OFF when program is changed or mode is changed	OFF	R	UB74402C	F0002C

13.2.1.4 System Error

Name	Function	Initial value	R/W	GP device	LP device
Error occur	• Turns ON when one or more of defined errors occur • Turns OFF when error is cleared	OFF	R	UB744030	F00030

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Name	Function	Initial value	R/W	GP device	LP device
PLC program error	• Turns ON when program related error occurs • Turns OFF when program error is cleared • Turns OFF when operation stops • Turns OFF when program is changed • Turns OFF when mode is changed	OFF	R	UB744034	F00034
Periodic calculation error	• Turns ON when the scan time exceeds periodic setting time • Turns OFF when the scan time is less than periodic setting time	OFF	R	UB744035	F00035
Time setting error	• Turns ON when time is not written normally • Turns OFF when time is written normally by RTC	OFF	R	UB744036	F00036
Communication error	• Turns ON when communication error occurs • Turns OFF when communication is made normally	OFF	R	UB744038	F00038
I/O setting value error	• Turns ON when internal device contains the unavailable range, in case of check the use internal device for setting the I/O contact in atLogic's parameter extension slot • Keep status until user sets OFF	OFF	R	UB744039	F00039
Watchdog timer error	• Turns ON when watchdog timer error occurs • Turns OFF when watchdog timer error is cleared	OFF	R	UB74403A	F0003A

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13.2.1.5 Module Status

Name	Function	Initial value	R/W	GP device	LP device
Use SLOT0 internal device	• Turns ON when SLOT0 parameter uses more than one internal device • Turns OFF when SLOT0 parameter does not use internal device	OFF	R	UB744040	F00040
Use SLOT 1 internal device	• Turns ON when SLOT1 parameter uses more than one internal device • Turns OFF when SLOT1 parameter does not use internal device	OFF	R	UB744041	F00041
Use SLOT 2 internal device	• Turns ON when SLOT2 parameter uses more than one internal device • Turns OFF when SLOT2 parameter does not use internal device	OFF	R	UB744042	F00042
Use SLOT 3 internal device	• Turns ON when SLOT3 parameter uses more than one internal device • Turns OFF when SLOT3 parameter does not use internal device	OFF	R	UB744043	F00043
Use SLOT 4 internal device	• Turns ON when SLOT4 parameter uses more than one internal device • Turns OFF when SLOT4 parameter does not use internal device	OFF	R	UB744044	F00044
Use SLOT 5 internal device	• Turns ON when SLOT5 parameter uses more than one internal device • Turns OFF when SLOT5 parameter does not use internal device	OFF	R	UB744045	F00045
Use SLOT 6 internal device	• Turns ON when SLOT6 parameter uses more than one internal device • Turns OFF when SLOT6 parameter does not use internal device	OFF	R	UB744046	F00046
Use SLOT 7 internal device	• Turns ON when SLOT7 parameter uses more than one internal device • Turns OFF when SLOT7 parameter does not use internal device	OFF	R	UB744047	F00047
Use SLOT 8 internal device	• Turns ON when SLOT8 parameter uses more than one internal device	OFF	R	UB744048	F00048

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Name	Function	Initial value	R/W	GP device	LP device
	• Turns OFF when SLOT8 parameter does not use internal device				
Use SLOT 9 internal device	• Turns ON when SLOT9 parameter uses more than one internal device • Turns OFF when SLOT9 parameter does not use internal device	OFF	R	UB744049	F00049
Use SLOT 10 internal device	• Turns ON when SLOT10 parameter uses more than one internal device • Turns OFF when SLOT10 parameter does not use internal device	OFF	R	UB74404A	F0004A
Use SLOT 11 internal device	• Turns ON when SLOT11 parameter uses more than one internal device • Turns OFF when SLOT11 parameter does not use internal device	OFF	R	UB74404B	F0004B
Use SLOT 12 internal device	• Turns ON when SLOT12 parameter uses more than one internal device • Turns OFF when SLOT12 parameter does not use internal device	OFF	R	UB74404C	F0004C
Use SLOT 13 internal device	• Turns ON when SLOT13 parameter uses more than one internal device • Turns OFF when SLOT0 parameter does not use internal device	OFF	R	UB74404D	F0004D
Use SLOT 14 internal device	• Turns ON when SLOT14 parameter uses more than one internal device • Turns OFF when SLOT14 parameter does not use internal device	OFF	R	UB74404E	F0004E
Use SLOT 15 internal device	• Turns ON when SLOT15 parameter uses more than one internal device • Turns OFF when SLOT15 parameter does not use internal device	OFF	R	UB74404F	F0004F

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13.2.1.6 System Clock

Name	Function	Initial value	R/W	GP device	LP device
10ms clock	Generate 10ms system clock		R	UB744050	F00050
20ms clock	Generate 20ms system clock		R	UB744051	F00051
50ms clock	Generate 50ms system clock		R	UB744052	F00052
100ms clock	Generate 100ms system clock		R	UB744053	F00053
200ms clock	Generate 200ms system clock		R	UB744054	F00054
500ms clock	Generate 500ms system clock		R	UB744055	F00055
1s clock	Generate 1s system clock		R	UB744056	F00056
2s clock	Generate 2s system clock		R	UB744057	F00057
5s clock	Generate 5s system clock		R	UB744058	F00058
10s clock	Generate 10s system clock		R	UB744059	F00059
60s clock	Generate 60s system clock		R	UB74405A	F0005A

13.2.1.7 Calculation

Name	Function	Initial value	R/W	GP device	LP device
Zero flag	• Turns ON when calculation result is 0 • Turns OFF when calculation result is not 0	OFF	R	UB744060	F00060
Carry flag	• Turns ON when carry occurs in calculation result • Turns OFF when carry does not occur in calculation result	OFF	R	UB744061	F00061
Borrow flag	• Turns ON when borrow occurs in calculation result • Turns OFF when borrow does not occur in calculation result • Turns OFF when program is changed or mode is changed	OFF	R	UB744062	F00062
Calculation error flag (current)	• Turns ON when calculation error occurs during scanning • Turns OFF when the mode is changed except STOP mode • Turns OFF when there is no calculation error after completing one scan	OFF	R	UB744068	F00068

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Name	Function	Initial value	R/W	GP device	LP device
	• Turns OFF when program download or power reset				
Calculation error flag (maintain)	• Keep ON when calculation error occurs during scanning • Turns OFF when power is reset	OFF	R	UB744069	F00069

13.2.1.8 System Setting

Name	Function	Initial value	R/W	GP device	LP device
Set all output prohibit	• When it is ON, the port out is prohibited, all output ports are OFF	OFF	W	UB744070	F00070
Set output reset prohibit	• When it is ON, the output reset is prohibited	OFF	W	UB744071	F00071
Start periodic operation	• When it is ON, the periodic operation is set and periodic operation starts depending on periodic operation word setting • When it is OFF, operate at the minimum scan speed as possible	OFF	W	UB744074	F00074
Change periodic operation time	• When it is ON, change periodic operation time	OFF	W	UB744075	F00075
Change periodic interrupt time	• When it is ON, change periodic interrupt time	OFF	W	UB744076	F00076
Keep output status during stop	• Turns ON when output status is maintained • Turns OFF when output status is not maintained	OFF		UB744077	F00077
Extension module function activate	• Reset when ‘extended module operating condition’ for parameter common setting of atLogic checked	OFF	W	UB744078	F00078

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Name	Function	Initial value	R/W	GP device	LP device
condition	and downloaded 'operates only in run mode'. • Set when 'extended module operating condition' for parameter common setting of atLogic is checked and downloaded 'operates in stop mode'. • When uploading from the LP device, the data is no retrieved from the parameter file but uploaded with the set by the special register.				
Default filter setting flag	• When it is SET, operate filters on all undefined modules in parameters as default values • When it is RESET, operate without filters on all undefined modules	OFF	W	UB744079	F00079

13.2.1.9 Time Setting

Name	Function	Initial value	R/W	GP device	LP device
Time setting	• After turns ON, set as special register, no time change • Turns OFF after setting is completed, write as RTC and the special register time is in progress	OFF	W	UB64080	F00080
Time setting +/- 30 sec calibration	• When change OFF→ON in 0 to 29 sec, the time (sec) is changed to 00 • When change OFF→ON in 30 to 59 sec, the time (sec) is changed to 00 and the time (min) is increased by 1	OFF	W	UB64081	F00081

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13.2.1.10 Module Setting

Name	Function	Initial value	R/W	GP device	LP device
Set SLOT0 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744090	F00090
Set SLOT1 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744091	F00091
Set SLOT2 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744092	F00092
Set SLOT3 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744093	F00093
Set SLOT4 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744094	F00094
Set SLOT5 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744095	F00095
Set SLOT6 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744096	F00096
Set SLOT7module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744097	F00097
Set SLOT8 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB744098	F00098
Set SLOT9 module	When bit is ON, the	OFF	W	UB744099	F00099

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Name	Function	Initial value	R/W	GP device	LP device
function internal device enable	internal device value is written to module register				
Set SLOT10 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB74409A	F0009A
Set SLOT11 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB74409B	F0009B
Set SLOT12 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB74409C	F0009C
Set SLOT13 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB74409D	F0009D
Set SLOT14 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB74409E	F0009E
Set SLOT15 module function internal device enable	When bit is ON, the internal device value is written to module register	OFF	W	UB74409F	F0009F

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13.2.1.11 Motion Control

(1) CH1 special device

Name	Function	R/W	GP device	LP device
CH1 axis usage	• 1: enable • 0: disable	R	UB744100	F00100
CH1 currently moving (acceleration, deceleration, constant)	• 1: enable moving • 0: disable moving	R	UB744101	F00101
CH1 axis accelerating	• 1: enable acceleration • 0: disable acceleration	R	UB744102	F00102
CH1 operating in specified speed	• 1: enable operating in specified speed • 0: disable operating in specified speed	R	UB744103	F00103
CH1 axis decelerating	• 1: enable deceleration • 0: disable deceleration	R	UB744104	F00104
CH1 dwelling	• 1: enable dwelling • 0: disable dwelling	R	UB744105	F00105
CH1 operation completed	• 1: operation completed • 0: operation not completed	R	UB744106	F00106
CH1 axis S/W lower limit detection	• 1: enable S/W lower limit detection • 0: disable S/W lower limit detection	R	UB744107	F00107
CH1 axis S/W upper limit detection	• 1: enable S/W upper limit detection • 0: disable S/W upper limit detection	R	UB744108	F00108
CH1 axis H/W lower limit detection	• 1: enable H/W lower limit detection • 0: disable H/W lower limit detection	R	UB744109	F00109
CH1 axis H/W upper limit detection	• 1: enable H/W upper limit detection	R	UB74410A	F0010A

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Name	Function	R/W	GP device	LP device
	• 0: disable H/W upper limit detection			
Motion CH1 use error	• 1: error occur • 0: no error	R	UB744110	F00110
Motion CH1 emergency stop error	• 1: error occur • 0: no error	R	UB74411F	F0011F
MTSRS operation specification flag (operation list end)	• 1: enable operation list end • 0: disable operation list end	R	UB744400	F00400
MTSRS operation specification flag (group end)	• 1: enable group end • 0: disable group end	R	UB744401	F00401

(2) CH2 special device

Name	Function	R/W	GP device	LP device
CH2 axis usage	• 1: enable • 0: disable	R	UB744120	F00120
CH2 currently moving (acceleration, deceleration, constant)	• 1: enable moving • 0: disable moving	R	UB744121	F00121
CH2 axis accelerating	• 1: enable acceleration • 0: disable acceleration	R	UB744122	F00122
CH2 operating in specified speed	• 1: enable operating in specified speed • 0: disable operating in specified speed	R	UB744123	F00123
CH2 axis decelerating	• 1: enable deceleration • 0: disable deceleration	R	UB744124	F00124
CH2 dwelling	• 1: enable dwelling • 0: disable dwelling	R	UB744125	F00125
CH2 operation completed	• 1: operation completed • 0: operation not completed	R	UB744126	F00126

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Name	Function	R/W	GP device	LP device
CH2 axis S/W lower limit detection	• 1: enable S/W lower limit detection • 0: disable S/W lower limit detection	R	UB744127	F00127
CH2 axis S/W upper limit detection	• 1: enable S/W upper limit detection • 0: disable S/W upper limit detection	R	UB744128	F00128
CH2 axis H/W lower limit detection	• 1: enable H/W lower limit detection • 0: disable H/W lower limit detection	R	UB744129	F00129
CH2 axis H/W upper limit detection	• 1: enable H/W upper limit detection • 0: disable H/W upper limit detection	R	UB74412A	F0012A
Motion CH2 use error	• 1: error occur • 0: no error	R	UB744130	F00130
Motion CH2 emergency stop error	• 1: error occur • 0: no error	R	UB74413F	F0013F
MTSRS operation specification flag (operation list end)	• 1: enable operation list end • 0: disable operation list end	R	UB744402	F00402
MTSRS operation specification flag (group end)	• 1: enable group end • 0: disable group end	R	UB744403	F00403

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(3) Jog special device

Name	Function	R/W	GP device	LP device
CH1 Jog CW operation	• ON rise: Jog acceleration in CW, constant speed start • OFF fall: Jog deceleration and stop in CW	R/W	UB744501	F00500
CH1 Jog CCW operation	• ON rise: Jog acceleration in CCW, constant speed start • OFF fall: Jog deceleration and stop in CCW	R/W	UB744502	F00501
CH2 Jog CW operation	• ON rise: Jog acceleration in CW, constant speed start • OFF fall: Jog deceleration and stop in CW	R/W	UB744503	F00502
CH2 Jog CCW operation	• ON rise: Jog acceleration in CCW, constant speed start • OFF fall: Jog deceleration and stop in CCW	R/W	UB744504	F00503

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13.2.1.12 High Speed Counter

(1) CH1 special device

Name	Function	R/W	GP device	LP device
High speed counter CH1 activation status	• 1: enable • 0: disable	R	UB744300	F00300
High speed counter CH1 up counting or down counting status	• 1: enable • 0: disable	R	UB744301	F00301
High speed counter CH1 match value 1 match status	• 1: match • 0: not match	R	UB744303	F00303
High speed counter CH1 match value 2 match status	• 1: match • 0: not match	R	UB744304	F00304
High speed counter CH1 current value overflow status	• 1: overflow • 0: not overflow	R	UB744308	F00308

(2) CH2 special device

Name	Function	R/W	GP device	LP device
High speed counter CH2 activation status	• 1: enable • 0: disable	R	UB744310	F00310
High speed counter CH2 up counting or down counting status	• 1: enable • 0: disable	R	UB744311	F00311
High speed counter CH2 match value 1 match status	• 1: match • 0: not match	R	UB744313	F00313
High speed counter CH2 match value 2 match status	• 1: match • 0: not match	R	UB744314	F00314
High speed counter CH2 current value overflow status	• 1: overflow • 0: not overflow	R	UB744318	F00318

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13.2.2 Word Special Device

13.2.2.1 PLC Model Classification

Name	Function	R/W	GP device	LP device
PLC series and model code	• Upper 2 digits: series code • Lower 2 digits: model code	R	UW74500	F100
System version	Displays firmware version in 5 word range	R	UW74501	F101
Release date (Year)	Version released year	R	UW74506	F106
Release date (Month, Day)	Version released month, day Upper 2 digits are the month, lower 2 digits are the day	R	UW74507	F107

13.2.2.2 Scan Time

Name	Function	R/W	GP device	LP device
Current scan time	Current scan running time (update every scan)	R	UW74510	F110
Minimum scan time	Minimum scan time during operation (clear at PLC mode change or program change)	R	UW74511	F111
Maximum scan time	Maximum scan time during operation (clear at PLC mode change or program change)	R	UW74512	F112
Average scan time	Display average scan time	R	UW74513	F113
Scan time count	Count and display every scan time	R	UW74514	F114

13.2.2.3 Calculation

Name	Function	R/W	GP device	LP device
Calculation error occur step (current)	Replace the current step or program where calculation error occur or reset when PLC mode is changed	R	UW74520	F120
Calculation error occur step (maintain)	Replace the first occurrence step or program where calculation error occur or reset when PLC mode is changed	R	UW74521	F121

13.2.2.4 Step

Name	Function	R/W	GP	LP

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			device	device
Error step	Currently stopped step due to error	R	UW74530	F130
Brake step	Braked step during the debug mode operation Reset when program is changed or PLC mode is changed	R	UW74531	F131

13.2.2.5 Diagnosis

Name	Function	R/W	GP device	LP device
Self-diagnosis error code	Display self-diagnosis error code	R	UW74540	F140

UW74540(F140)	Type	Cause
0X0010	Watchdog error	Scan time exceeds watchdog timer setting
0X0020	Memory error	When the memory specific area is inaccessible
0x0021	Battery error	When the battery value is below the specified value
0x0022	RTC setting error	RTC cannot be set and RTC operation error
0X0030	Program command error	When the program contains commands that cannot be decoded or that do not match the format
0X0031	Program sequence error	When there is no command to program flow such as user function, label name, END, RET, IRET
0X0040	Parameter setting error	When there is a problem with common parameter setting or expansion slot setting
0X0041	Periodic operation error	When operation exceeds the set periodic operation time
0X0050	Extension module setting error	When the hardware is configured differently from the previous parameter setting during the power is turned on again or the mode is changed
0X0051	Extension module detachment error	When detaching an expansion module in RUN mode
0x0060	Communication failure error	When receiving NAK and non-decryption data format
0x0061	Communication format error	When downloading or uploading format (such as out of range) and CHECK SUM is abnormal

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13.2.2.6 Time

Name	Function	R/W	GP device	LP device
Time setting (Year)	Save the year setting value as BCD data	W	UW74550	F150
Time setting (Month)	Save the month setting value as BCD data	W	UW74551	F151
Time setting (Day)	Save the day setting value as BCD data	W	UW74552	F152
Time setting (Hour)	Save the hour setting value as BCD data	W	UW74553	F153
Time setting (Minute)	Save the minute setting value as BCD data	W	UW74554	F154
Time setting (Second)	Save the second setting value as BCD data	W	UW74555	F155
Time setting (day of the week)	Save the day of the week setting value as BCD data 0: Sunday, 1: Monday, 2: Tuesday, 3: Wednesday, 4: Thursday, 5: Friday, 6: Saturday	W	UW74556	F156

13.2.2.7 Input Filter Setting

Name	Function	R/W	GP device	LP device
Input filter setting	Set the default input filter value in ms, When the value is 0, do not set filter value, Apply to all modules that do not have filter settings	R/W	UW74560	F160

13.2.2.8 Periodic Operation Time Setting

Name	Function	R/W	GP device	LP device
Periodic operation time setting	When the periodic operation setting flag is ON, the periodic operation starts in this register setting time	R/W	UW74561	F161
Watchdog timer value setting	0 to 65535(unit: ms)	R/W	UW74562	F162

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13.2.2.9 Periodic Interrupt

Name	Function	R/W	GP device	LP device
Periodic interrupt cycle setting 1	Periodic interrupt cycle setting 1	R/W	UW74570	F170
Periodic interrupt cycle setting 2	Periodic interrupt cycle setting 2	R/W	UW74571	F171
Periodic interrupt cycle setting 3	Periodic interrupt cycle setting 3	R/W	UW74572	F172
Periodic interrupt cycle setting 4	Periodic interrupt cycle setting 4	R/W	UW74574	F174
Periodic interrupt cycle setting 5	Periodic interrupt cycle setting 5	R/W	UW74575	F175
Periodic interrupt cycle setting 6	Periodic interrupt cycle setting 6	R/W	UW74576	F176
Periodic interrupt cycle setting 7	Periodic interrupt cycle setting 7	R/W	UW74577	F177
Periodic interrupt cycle setting 8	Periodic interrupt cycle setting 8	R/W	UW74578	F178

13.2.2.10 Motion Control

(1) CH1 special device

Name	Function	R/W	GP device	LP device
Current position	Current position of CH1	R	UW74460	F60
Current speed	Current speed of CH1	R	UW74462	F62
Operation number	Current operation number of CH1	R	UW74464	F64
Pattern number	Current pattern number of CH1	R	UW74465	F65
Origin position	Current origin position of CH1	R	UW74466	F66
Setting speed	Setting speed of CH1	R	UW74468	F68
Check error	Check error code of CH1	R	UW74420	F20

(2) CH2 special device

Name	Function	R/W	GP device	LP device
Current position	Current position of CH2	R	UW74470	F70
Current speed	Current speed of CH2	R	UW74472	F72
Operation number	Current operation number of CH2	R	UW74474	F74
Pattern number	Current pattern number of CH2	R	UW74475	F75
Origin position	Current origin position of CH2	R	UW74476	F76
Setting speed	Setting speed of CH2	R	UW74478	F78
Check error	Check error code of CH2	R	UW74421	F21

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13.2.2.11 High Speed Counter

(1) CH1 special device

Name	Function	R/W	GP device	LP device
Current position counting mode	1-phase:1, 2 2-phase: 1,2,3,4 disable: -1	R	UW74590	F190
Current counting value	High speed counter CH1 current counting value	R	UW74592	F192
Match value 1	High speed counter CH1 match value 1	R	UW74596	F196
Match value 2	High speed counter CH1 match value 2	R	UW74598	F198
current phase type	0: NO USE (Normal input), 1: CH1 - phase1, 2: CH2 - phase1, 3: CH1,CH2 - phase1, 4: phase2	R	UW74612	F212
CH1 total counting number	Total pulse input number after counting starts (64 bit) Current total counter number = Total counting number + Current HNCNT counting number	R	UW74620	F220

(2) CH2 special device

Name	Function	R/W	GP device	LP device
Current position counting mode	1-phase: 1, 2 disable: -1	R	UW74591	F191
Current counting value	High speed counter CH2 current counting value	R	UW74602	F202
Match value 1	High speed counter CH2 match value 1	R	UW74606	F206
Match value 2	High speed counter CH2 match value 2	R	UW74608	F208
CH2 total counting number	Total pulse input number after counting starts (64 bit) Current total counter number = Total counting number + Current HNCNT counting number	R	UW74628	F228

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13.3 UW Correspondence Table

Description		Bit range	Word range	GP device (UB)	GP device (UW)
X	Input device	X0 to X999F	X0 to X999	UB750000 to UB75999F	UW75000 to UW75999
Y	Output device	Y0 to Y999F	Y0 to Y999	UB760000 to UB76999F	UW76000 to UW76999
M	Auxiliary device	M0 to M14999	M0 to M14999F	UB830000 to UB97999F	UW83000 to UW97999
S	Step device	S0.00 to S999.99		UB980000 to UB98999F	
D	Data device		D0 to D28999		UW129000 to UW129299
T	Timer contact	T0 to T255		UB770000 to UB77015F	
T	Timer current value		T0 to T255		UW78000 to UW78999
T	Timer set value		T0 to T255		UW79000 to UW79999
C	Counter contact	C0 to C255		UB770000 to UB77015F	
C	Counter current value		C0 to C255		UW81000 to UW81999
C	Counter set value		C0 to C255		UW82000 to UW82999
Z	Index device	Z0 to Z299F	Z0 to Z299	UB747000 to UB74999F	UW74700 to UW74999
F	Special device	F0 to F299F	F0 to F299	UB744000 to UB74699F	UW74400 to UW74699
V	Virtual device	V0 to V299F	V0 to V299	UB741000 to UB74399F	UW74100 to UW74399
L	Link device	L0 to L9999F	L0 to L9999	UB990000 to UB99999F	UW99000 to UW99999
R	File device	R0 to R3999F	R0 to R3999	UB020000 to UB05999F	UW02000 to UW05999

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13.4 Error Code and Troubleshooting

- Display of error code: flashes the error lamp or saves error code which is corresponding the module code
- Self-diagnosis error code: When operating PLC program, self-diagnosis runs with the sequence of 'refreshing input – executing program – refreshing output – self-diagnosis'. Error code of detected error which is detected during the self-diagnosis process is displayed (UW74540) at 'self-diagnosis special device [F140]', as follows.

(1) Self-diagnosis error code

UW74540 (F140)	Type	Cause of error
0X0010	Watchdog error	Scan time excesses watchdog timer setting value
0X0020	Memory error	When a certain area of memory is the un-approached state.
0x0021	Battery error	When battery value is below the standard level
0x0022	RTC setting error	Disable to set RTC and RTC operation error
0X0030	Program instruction error	When the program contains instructions that are not able to read and inappropriate forms.
0X0031	Program sequence error	When there is not the instructions required to process the program, such as user defined functions, label name, END, RET and IRET, etc.
0X0040	Parameter setting error	When there are some problems in settings for common and expansion parameters.
0X0041	Time-driven error	When it operates longer than the given time-driven run-time.
0X0050	Extended module setting error	In case, the hardware constructions are different from previous parameter settings when applying power again and changing the mode.
0X0051	Extended module attaching and removing error	When the extended module is attached or removed in run mode.
0x0060	Communication fail error	When it is received NAK and data format not able to read.
0x0061	Communication format error	When there are some problems occurred in formats (excess of limited range etc.) and CHECK SUM while download and upload.

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(2) Motion error code

- UW74420(F20), UW74421(F21)

	Symptom	Run state	Troubleshooting
1	When inputting other starting instruction signal during using channel	Run	Clear the error by MTMEC(removing error) instruction and executes next start instruction
2	When giving progress instruction to other direction than current progressing direction during consecutive running 'C'	Stop	Edit the pattern list, which has problem. Clear the error by MTMEC(removing error) instruction and executes motion operation
3	When setting position preset during running	Run	Clear the error by MTMEC(removing error) instruction
4	When there is no action list to operate during executing pattern action	Stop	Edit the action list, which has problem. Clear the error by MTMEC(removing error) instruction
5	When action list type is position drive during executing pattern action and destination position is out of S/W limit range	Stop	Check and edit action list and S/W limit value, which have problem. Clear the error by MTMEC(removing error) instruction
10	Excess high low limit error	Stop	Clear the error by MTMEC(removing error) instruction and escape limit with jog operation and execute the next
20	When speed parameter value is higher than maximum speed (100,000PPS) Designated pattern number of MTIDM(Indirect designated drive) instruction is out of 1 to 99	Stop	Clear the error by MTMEC(removing error) instruction and check the set parameter values

※ Be sure that errors related with motion are remained even if restarting LP.

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